FINAL

ENVIRONMENTAL ASSESSMENT

OF
INSTALLATION DEVELOPMENT
AT
SCOTT AIR FORCE BASE, ILLINOIS

AUGUST 2012

Report Documentation Page

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14. ABSTRACT

Scott AFB uses numerous 375th Air Mobility Wing- (375 AMW) approved plans to project installation development requirements. These plans propose demolition, construction, infrastructure improvement, and natural infrastructure management activities intended to ensure that the installation can sustain its current and future national security operations and mission-readiness status. These projects include installation development projects contained in the Scott AFB Installation Development Plan, Base Comprehensive Asset Management Plan, and the community of all other existing Wing-approved development and resource management plans. Scott AFB seeks to improve its understanding of the potential environmental consequences associated with the continuing installation development process by evaluating in a single EA selected projects from those projects proposed in the Scott AFB Wing-approved community of plans for installation development, called the Installation Development EA (IDEA). The Proposed Action is to implement a range of selected projects, such as demolition of aging facilities, new facility construction, facility upgrades, facility repair and renovation, utilities upgrades, community living upgrades, infrastructure improvement, recreational upgrades, natural infrastructure management, and other environmental projects that would be among those proposed to be completed or implemented during the next 5 years (from Fiscal Year [FY] 2012 to FY 2017). The IDEA uses the fenceline-to-fenceline approach, capturing and addressing in some form identified projects within the installation boundary that have been proposed by host and tenant agencies in accordance with Interservice Support Agreements. The intent of the IDEA is to address the Proposed Action of implementing installation development actions for continuing development on Scott AFB to ensure that future mission and facility requirements are met. The scope of the IDEA includes a detailed analysis of the selected projects, an evaluation of alternatives applicable to the various categories of projects, and an analysis of the cumulative effects on the natural and man-made environment of all other identified projects from the installation development and resource management plans. Through the IDEA, Scott AFB provides a constraints-based environmental impact analysis of installation development actions for projects selected from those projected over the next 5 years and thus help to identify environmental concerns that could exist throughout the installation and those unique to specific areas of the installation. The analysis draws from the knowledge gained from extensive recent evaluations for similar types of projects to determine the direct, indirect, and cumulative effects of projects that would be completed as part of the installation?s development. This IDEA has been prepared to evaluate the Proposed Action and alternatives, including the No Action

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FINDING OF NO SIGNIFICANT IMPACT (FONSI)

AND

FINDING OF NO PRACTICABLE ALTERNATIVE (FONPA)

Installation Development Environmental Assessment (IDEA)
Scott Air Force Base (AFB), Illinois

Federal actions that potentially involve significant impacts on the environment must be reviewed in accordance with the National Environmental Policy Act (NEPA) and all other applicable laws. The U.S. Air Force (USAF) has completed an Environmental Assessment (EA) to address the potential environmental consequences associated with implementing selected installation development projects at Scott AFB, Illinois, as found in the Scott AFB Wing-approved community of plans for installation development and resource management. The selected installation development projects were grouped into four categories: demolition, construction, infrastructure improvement, and natural infrastructure management because of common elements of their activity and the nature of their expected potential environmental impacts. The selected installation development projects include the following:

Demolition Projects

- D1. Demolish Old Service Station (Building 48)
- D2. Demolish James Gym (Building 1987) and associated facilities that include Buildings 1984, 1985, and 1986, and outdoor pool (Facility 6303)
- D3. Demolish Buildings 512, 513, 514, 515, 516, 517, 519, 520, 521, 522, 523, 528, 530, 531, 533, 542, 543, 546, 549, 552, and 6354 in support of the Consolidated Base Civil Engineering and Contracting Complex.

Construction Projects

- C1. Construct and Operate Explosive Ordnance Proficiency Range
- C2. Construct New Defense Information System Agency (DISA) Facility
- C3. Construct New Fitness Facility
- C4. Construct U.S. Transportation Command Mission Planning Center
- C5. Construct Joint Cyber Facility
- C6. Construct Consolidated Base Civil Engineering and Contracting Complex.

Infrastructure Improvement Projects

- I1. Construct Civil Engineering Open Storage Yard
- I2. Construct Communication Infrastructure for DISA facility and other future development at the former Cardinal Creek military family housing neighborhood
- I3. Construct Aircraft Deicing Pad.

Natural Infrastructure Management Projects

- NI1. Remove and Trim Trees Affecting Airfield Visibility
- NI2. Remove Log Jam from Silver Creek
- NI3. Improve Foraging Habitat for Indiana Bat.

The Proposed Action, implementing these 15 selected projects, and the No Action Alternative, not implementing any projects, have been reviewed in accordance with NEPA as implemented by the

regulations of the Council on Environmental Quality (CEQ) and USAF regulation in 32 Code of Federal Regulation (CFR) 989, *Environmental Impact Analysis Process*. The analyses focus on the following environmental resources: noise, land use, air quality, geological resources, water resources, biological resources, cultural resources, socioeconomic resources and environmental justice, infrastructure, hazardous materials and waste, and safety. Details of the potential environmental consequences can be found in the attached Installation Development Environmental Assessment (IDEA).

Finding of No Practicable Alternative. Executive Order (EO) 11990, *Protection of Wetlands*, (24 May 1977) directs agencies to avoid to the extent possible the long and short term adverse impacts associated with the destruction or modification of wetlands and to avoid direct or indirect support of new construction in wetlands wherever there is a practicable alternative. Federal agencies are 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 associated with development in the wetland. Agencies should use economic and environmental data, agency mission statements, and any other pertinent information when deciding whether or not to build in wetlands. EO 11990 directs each agency to provide for early public review of plans for construction in wetlands. In accordance with EO 11990 and 32 CFR Part 989, a Finding of No Practicable Alternative (FONPA) must accompany the Finding of No Significant Impact (FONSI) stating why there are no practicable alternatives to development within or affecting wetland areas.

Wetland impacts are reduced to the maximum extent possible through project design and implementation of environmental protection measures. However, as noted in the attached IDEA, two selected projects have the potential for minor, direct, adverse impacts on wetlands. These projects are Project NI2 and NI3 and both projects are considered construction in a wetland. As noted in the attached IDEA, effects on wetlands from Projects NI2 and NI3 will not be significant, but there will be minor effects that will be minimized with proper implementation of environmental protection measures and construction best management practices (BMPs) as outlined in **Appendix E** of the IDEA. These environmental protection measures and BMPs include flagging the wetland boundary, installing silt fencing, establishing a wetland buffer, and following policies and procedures as detailed in erosion and sediment control plans; Storm Water Pollution Prevention Plans; and Spill Prevention, Control, and Countermeasures Plans. Any necessary agency coordination and required permits will be acquired prior to commencing any ground-breaking activities associated with construction. As noted in the attached IDEA, there are no practicable alternatives to these projects because the objectives sought by these projects preclude the selection of any practicable alternatives.

EO 11988, *Floodplain Management* (May 24, 1977), requires Federal agencies to avoid to the maximum extent possible the long and short-term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative. If it is found that there is no practicable alternative, the agency must minimize potential harm to the floodplain, and circulate a notice explaining why the action is to be located in the floodplain prior to taking action. Finally, new construction in a floodplain must apply accepted flood proofing and flood protection to include elevating structures above the base flood level rather than filling in land.

As noted in the attached IDEA, the Proposed Action will place portions of Project I2, NI2, and NI3 in the 100-year floodplain. As previously stated and as stated in the attached IDEA, practicable alternatives are not available for projects NI2 and NI3, and no alternatives to Project I2 meet the safety or operational requirements of the 375th Air Mobility Wing. Because these projects will only impact a small portion of the 100-year floodplain area and no physical structures are proposed for construction within the 100-year floodplain area, long-term adverse effects on floodplains are anticipated to be negligible to minor. Projects I2, NI2, and NI3 will not have significant effects on floodplains.

Pursuant to Executive Orders 11988, *Floodplain Management*, and 11990, *Protection of Wetlands*, and the authority delegated by Secretary of the Air Force Order 791.1, *Environment*, and taking the above information into account, I find that there is no practicable alternative to Projects I2, NI2, and NI3 and that these projects include all practicable measures to minimize harm to the environment.

Finding of No Significant Impact. Based on the information and analysis presented in the IDEA conducted in accordance with the requirements of the NEPA, the CEQ regulations implementing NEPA, USAF implementing regulations as set forth in 32 CFR 989 (EIAP), as amended, and after a review of the agency comments submitted during the 45-day public comment period, I conclude that implementation of the Proposed Action will not result in significant impacts on the quality of the human or natural environment. For these reasons, a FONSI is approved and preparation of an Environmental Impact Statement is not warranted. This decision has been made after taking into account all submitted information, and considering a full range of practicable alternatives that will meet project requirements and are within the legal authority of the USAF.

Tim Green

TIMOTHY S. GREEN
Brigadier General, USAF
Director of Installations and
Mission Support

6 Sep 12

DATE

Attachment: *Environmental Assessment of Installation Development at Scott Air Force Base, Illinois*

ACRONYMS AND ABBREVIATIONS

$\mu g/m^3$	micrograms per cubic meter
126 ARW	126th Air Refueling Wing
375 AMW	375th Air Mobility Wing
375 CES/CEA	375th Civil Engineering Squadron/Asset Management Flight
932 AW	932nd Airlift Wing
ACM	asbestos-containing material
ADP	Area Development Plan
AFB	Air Force Base
AFH	Air Force Handbook
AFI	Air Force Instruction
AFNIC	Air Force Network Integration Center
AFPD	Air Force Policy Directive
AICUZ	Air Installation Compatible Use Zone
AMC	Air Mobility Command
AOC	Areas of Concern
APE	Area of Potential Effect
APZ	accident potential zone
AQCR	Air Quality Control Region
AST	aboveground storage tank
AT/FP	Anti-Terrorism/Force Protection
BFSA	Bulk Fuel Storage Area
BMP	Best Management Practice
CAA	Clean Air Act
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CO	carbon monoxide
CO_2	carbon dioxide
CWA	Clean Water Act
CZ	clear zone
dB	Decibel
dBA	A-weighted decibel
dBC	C-weighted decibel
dBP	unweighted decibel
DERP	Defense Environmental Restoration Program
DISA	Defense Information System Agency
DNL	day-night average A-weighted sound level
DOD	Department of Defense
EA	Environmental Assessment
EIAP	Environmental Impact Analysis Process
EIS	Environmental Impact Statement
EISA	Energy Independence and Security Act
EO	Executive Order
EOD	Explosive Ordnance Disposal
EPF	Environmental Planning Function
ERP	Environmental Restoration Program
ESA	Endangered Species Act
ESCP	erosion-and-sediment control plan
FEMA	Federal Emergency Management Agency
FOD	foreign object damage
FONPA	Finding of No Practicable Alternative
FONSI	Finding of No Significant Impact
FPPA	Farmland Protection Policy Act
ft^2	square feet
FUB	Facilities Utilization Board
FY	fiscal year
GHG	greenhouse gas
HAP	hazardous air pollutant
HMMP	hazardous materials management program
HQ	Headquarters
I	Interstate
ICRMP	Integrated Cultural Resources Management Plan
IDEA	Installation Development Environmental Assessment
IDP	Installation Development Plan
IICEP	Interagency and Intergovernmental Coordination for Environmental Planning

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IL	Illinois Highway
INRMP	Integrated Natural Resources Management Plan
JLUS	Joint Land Use Study
LBP	lead-based paint
LEED	Leadership in Energy and Environmental Design
LF-01	ERP Site 1
LUPZ	land use planning zone
MBTA	Migratory Bird Treaty Act
MFH	Military Family Housing
mg/m^3	milligrams per cubic meter
mgd	million gallons per day
MILCON	military construction
MMRP	Military Munitions Response Program
MOA	Memorandum of Agreement
MSA	Metropolitan Statistical Area
MSDS	Material Safety Data Sheets
MSL	mean sea level
MW	megawatts
NAAQS	National Ambient Air Quality Standards
NAGPRA	Native American Graves Protection and Repatriation Act
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NO_2	nitrogen dioxide
NOA	Notice of Availability
NO_x	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NSR	New Source Review
O&M	Operations and Maintenance
O_3	ozone
OSHA	Occupational Safety and Health Administration
Pb	lead
PCB	polychlorinated biphenyls
pCi/L	picocuries per liter
percent g	percentage of the force of gravity
PK15(met)	Peak sound pressure levels
PM_{10}	particulate matter equal to or less than 10 microns in diameter
$PM_{2.5}$	particulate matter equal to or less than 2.5 microns in diameter
ppb	parts per billion
ppm	parts per million
PSD	Prevention of Significant Deterioration
QD	quantity-distance
RCRA	Resource Conservation and Recovery Act
ROI	Region of Influence
SAAQS	State Ambient Air Quality Standards
SDWA	Safe Drinking Water Act
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SO_2	Sulfur Dioxide
SPCC	Spill Prevention Control and Countermeasures
SS-25	ERP Site 25
St. Louis, MO-IL MSA	St. Louis, Missouri-Illinois Metropolitan Statistical Area
SWPPP	Storm Water Pollution Prevention Plan
TBD	to be determined
tcp	traditional cultural properties
tpy	tons per year
TSCA	Toxic Substances Control Act
TNT	trinitrotoluene
U.S.C.	United States Code
UFC	Unified Facilities Criteria
US TRANSCOM	U.S. Transportation Command
USAF	U.S. Air Force
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UST	underground storage tank
VOC	volatile organic compound
WWTP	wastewater treatment plant

COVER SHEET

FINAL
ENVIRONMENTAL ASSESSMENT OF INSTALLATION DEVELOPMENT
AT
SCOTT AIR FORCE BASE, ILLINOIS

Responsible Agencies: U.S. Air Force (USAF), Headquarters Air Mobility Command (AMC), Scott Air Force Base (AFB), Illinois.

Affected Location: Scott AFB.

Proposed Action: Implementation of Selected Installation Development Projects.

Report Designation: Final Environmental Assessment (EA).

Abstract: Scott AFB uses numerous 375th Air Mobility Wing- (375 AMW) approved plans to project installation development requirements. These plans propose demolition, construction, infrastructure improvement, and natural infrastructure management activities intended to ensure that the installation can sustain its current and future national security operations and mission-readiness status. These projects include installation development projects contained in the Scott AFB Installation Development Plan, Base Comprehensive Asset Management Plan, and the community of all other existing Wing-approved development and resource management plans. Scott AFB seeks to improve its understanding of the potential environmental consequences associated with the continuing installation development process by evaluating in a single EA selected projects from those projects proposed in the Scott AFB Wing-approved community of plans for installation development, called the Installation Development EA (IDEA). The Proposed Action is to implement a range of selected projects, such as demolition of aging facilities, new facility construction, facility upgrades, facility repair and renovation, utilities upgrades, community living upgrades, infrastructure improvement, recreational upgrades, natural infrastructure management, and other environmental projects that would be among those proposed to be completed or implemented during the next 5 years (from Fiscal Year [FY] 2012 to FY 2017). The IDEA uses the fenceline-to-fenceline approach, capturing and addressing in some form identified projects within the installation boundary that have been proposed by host and tenant agencies in accordance with Interservice Support Agreements. The intent of the IDEA is to address the Proposed Action of implementing installation development actions for continuing development on Scott AFB to ensure that future mission and facility requirements are met. The scope of the IDEA includes a detailed analysis of the selected projects, an evaluation of alternatives applicable to the various categories of projects, and an analysis of the cumulative effects on the natural and man-made environment of all other identified projects from the installation development and resource management plans.

Through the IDEA, Scott AFB provides a constraints-based environmental impact analysis of installation development actions for projects selected from those projected over the next 5 years and thus help to identify environmental concerns that could exist throughout the installation and those unique to specific areas of the installation. The analysis draws from the knowledge gained from extensive recent evaluations for similar types of projects to determine the direct, indirect, and cumulative effects of projects that would be completed as part of the installation's development.

This IDEA has been prepared to evaluate the Proposed Action and alternatives, including the No Action Alternative. Resources that were considered in the impacts analysis are noise, land use, air quality, geological resources, water resources, biological resources, cultural resources, socioeconomic resources and environmental justice, infrastructure, hazardous materials and waste, and safety.

Inquiries regarding this document should be directed to the 375 AMW Public Affairs Office, Attn: Christine Spargur, 101 Heritage Drive, Scott Air Force Base, Illinois, 62225. Telephone calls can be directed to (618) 256-4241, and email comments should be addressed to christine.spargur@us.af.mil.

FINAL

ENVIRONMENTAL ASSESSMENT
OF
INSTALLATION DEVELOPMENT
AT
SCOTT AIR FORCE BASE, ILLINOIS

HEADQUARTERS AIR MOBILITY COMMAND
INTEGRATED PLANNING BRANCH
507 SYMINGTON DRIVE
SCOTT AIR FORCE BASE, ILLINOIS 62225-5022

AUGUST 2012

FINAL ENVIRONMENTAL ASSESSMENT OF INSTALLATION DEVELOPMENT AT SCOTT AIR FORCE BASE, ILLINOIS

TABLE OF CONTENTS

TABLE OF CONTENTS (CONTINUED)

TABLE OF CONTENTS (CONTINUED)

APPENDICES

FIGURES

TABLES

TABLES (CONTINUED)

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1. Purpose, Need, and Scope

Scott Air Force Base (AFB) seeks to improve its understanding of the potential environmental consequences associated with the continuing installation development process by evaluating in a single Environmental Assessment (EA) selected projects from those projects proposed in the Scott AFB Wing-approved community of plans for installation development and resource management. The 375th Air Mobility Wing (375 AMW) at Scott AFB, Illinois, and Headquarters (HQ) Air Mobility Command (AMC) believe a comprehensive U.S. Air Force (USAF) Environmental Impact Analysis Process (EIAP) document would improve the continuing activity of installation development and facilitate compliance with the National Environmental Policy Act (NEPA) documentation process and requirements. As a result, the 375 AMW and HQ AMC have initiated an evaluation in this EA of selected projects from the programmed and reasonably foreseeable projects identified for the next 5 fiscal years (FYs), FY 2012 to FY 2017.

This document constitutes an Installation Development EA (IDEA). The intent of the IDEA is to address the Proposed Action of implementing selected installation development actions as found in the community of all current 375 AMW-approved plans on Scott AFB. The projects identified in the various sections of this IDEA are a compilation of installation development activities as described in the Scott AFB Installation Development Plan (IDP), Base Comprehensive Asset Management Plan, and the community of all other existing Wing-approved development and resource management plans. These plans provide for future development of the installation to accommodate future mission and facility requirements, include projects for transportation improvements and airfield and utility infrastructure enhancements, address natural and cultural resource management, and consider development constraints and opportunities and land use relationships. Since the establishment of Scott AFB, as with all other USAF installations, development of the installation has occurred continuously.

The community of installation development plans is linked to individual funding programs, such as Base Realignment and Closure; Military Construction (MILCON), Operations, and Maintenance; Military Family Housing (MFH); Sustainment, Restoration, and Modernization; Anti-Terrorism/Force Protection (AT/FP); Nonappropriated Funds; and others. The Scott AFB community of plans was examined to provide a consolidated list of projects that are planned and programmed over the next 5 FYs for the continued physical development of the installation to support air mobility missions and other readiness training and operational assignments. In addition to evaluating in detail the selected projects, the IDEA serves as a baseline for future environmental analysis of mission and training requirements and future projects. Alternatives applicable to the various categories of projects are provided. An analysis of the potential cumulative effects associated with all the other projects from the installation development plans is also included in this IDEA in the cumulative impacts section.

This section of the IDEA includes: background information on the location and mission of Scott AFB, a statement of the purpose of and the need for the Proposed Action, an overview of the scope of the analysis, and a summary of key environmental compliance requirements.

1.1 Location and Mission

Scott AFB is in St. Clair County, Illinois, approximately 20 miles east of the City of St. Louis, Missouri (see **Figure 1-1**). The installation is 3,638 acres in size and consists of 2,898 acres of Government-owned property and 740 acres of Government-leased property. Scott AFB is under the command and control of AMC. The 375 AMW serves as the host installation at Scott AFB. Tenants on Scott AFB include the 932nd Airlift Wing (932 AW) of Air Force Reserve Command, the 126th Air Refueling Wing

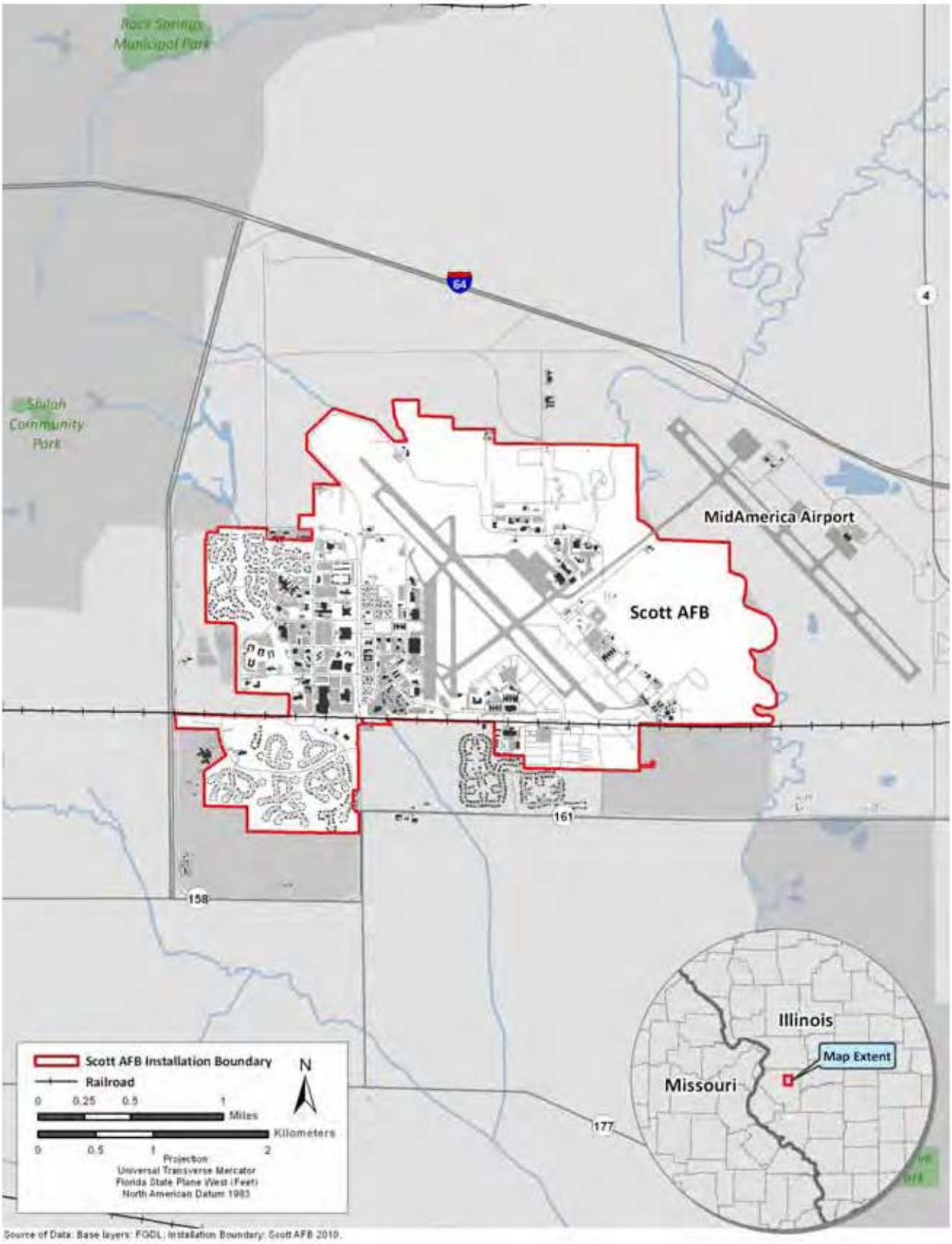


Figure 1-1. Scott AFB and Surrounding Area

(126 ARW) of the Illinois Air National Guard, HQ AMC, HQ U.S. Transportation Command (US TRANSCOM), the 18th Air Force, the Air Force Global Logistic Support Center, the Air Force Network Integration Center (AFNIC), and the Defense Information System Agency (DISA) (SAFB 2010a). The average daily population of Scott AFB is 41,204 people, which includes military personnel, family members, retired military personnel, and civilians. The employee population includes 5,533 active-duty military personnel, 1,519 Air Force Reserve personnel, 865 Air National Guard personnel, and 5,032 civilian employees (SAFB 2010g).

1.2 Purpose of and Need for the Proposed Action

The purpose of the Proposed Action is to complete selected construction, demolition, infrastructure improvement, and natural infrastructure management improvement projects from among those identified as necessary to ensure that future mission and facility requirements are met. The analysis of applicable installation development projects in a single EA will facilitate an understanding of the potential environmental consequences associated with the continuing installation development process, facilitate the NEPA review and compliance process; eliminate project fractionation and segmentation; improve the coordination of land use planning; expedite project execution by using early planning; reduce installation, reviewing agency, and major command workloads; provide cost savings; help better evaluate potential cumulative environmental impacts; assist in maintaining a baseline for future analysis; support strategic basing decision making; encourage agency coordination; and meet the USAF's EIAP goals.

The need for the Proposed Action is to meet current and future mission requirements and national security objectives associated with Scott AFB. This involves meeting ongoing mission requirements that necessitate repairing and upgrading installation utilities, pavements, and facilities; improving the efficiency and effectiveness of forces with the capability to expand; replacing older, substandard facilities with new buildings that are on a par with workplaces outside the gate; and providing reliable utilities, quality housing, and an efficient transportation system to support Scott AFB. In addition, morale and welfare projects that are a critical part of supporting the Scott AFB mission are addressed. Continued development of infrastructure at Scott AFB must take into account future facility construction, demolition, renovation, transportation needs, airfield alterations and enhancements, utilities improvements, land use planning, energy requirements, and development constraints and opportunities.

Contributions by Scott AFB to national security dictate that the installation implement planning for the next 5 FYs. To ensure complete readiness at the installation for any tasks assigned, infrastructure improvement projects must take into account—and be capable of supporting—all functions inherent to a USAF installation. These include aircraft operations and maintenance activities, security, administration, communications, billeting, supply and storage, training, transportation, and community quality of life.

1.2.1 Purpose and Need of Proposed Demolition Actions

The Department of Defense (DOD) has called for significant transformation in all services to strengthen U.S. warfighting capabilities and to operate more efficiently. A key element of USAF transformation is embodied in the goal "20/20 by 2020." The 20/20 by 2020 term describes a major goal of USAF Civil Engineering to achieve offsetting efficiencies to ensure that installations remain capable of enabling USAF missions. The purpose of the proposed demolition actions is to remove excess, obsolete, deteriorating, and underused facilities and pavements throughout the installation to improve mission capability, meet security objectives, and comply with the USAF's "20/20 by 2020" goal. The need for the proposed demolition actions is for USAF Civil Engineering to reduce the amount of the physical plant that it spends money on by 20 percent by the year 2020. USAF Civil Engineering currently manages more infrastructure than is necessary and must focus limited time and funding on only the infrastructure needed to perform the USAF mission. In order to achieve this goal, the USAF must divert its resources

away from excess, obsolete, and under-used infrastructure, and implement processes to increase consolidation and demolition, optimize space allocation and utilization, and promote other emerging initiatives. Therefore, HQ AMC has worked together for the past year to align AMC's consolidation/demolition plan with the 2009 through 2013 USAF Civil Engineer Strategic Plan to develop sustainable AMC installations by implementing asset management principles for built and natural assets. As a result of this alignment, AMC's target is to reduce the building footprint at all AMC installations (HQ AMC 2010).

1.2.2 Purpose and Need of Proposed Construction Actions

The purpose of the proposed construction actions is to provide state-of-the-art facilities to accommodate current and future mission and facility spacing requirements, while meeting national security objectives. The need for the proposed construction actions is because fundamental support of mission requirements is not being met by existing facilities. In addition, proposed construction projects are needed to improve mission efficiency by consolidating mission functions currently housed in multiple, older, and undersized facilities into more modern facilities with sufficient space; to incorporate life safety and handicapped accessibility requirements; and to meet modern AT/FP measures. The proposed construction projects are also needed to enhance morale and wellness for active and retired military members and their dependents. Individual purpose and need statements for each of the selected construction projects are provided in **Section 2.1.4**.

1.2.3 Purpose and Need of Proposed Infrastructure Improvement Actions

The purpose of the proposed infrastructure improvement actions is to remove and replace excess, obsolete, and deteriorating utilities; improve the installation's parking and transportation systems; improve and maintain airfield pavements and supporting infrastructure; and enhance existing communication systems. The need for the infrastructure improvements is to improve mission efficiency and effectiveness, improve ground and airspace safety, incorporate life safety and handicapped accessibility requirements, address parking limitations, and provide the installation with state-of-the-art utilities and communication systems to enhance and improve the installation's mission and meet security objectives. Individual purpose and need statements for each of the selected infrastructure improvement projects are provided in **Section 2.1.5**.

1.2.4 Purpose and Need of Proposed Natural Infrastructure Management Actions

The purpose of the natural infrastructure management actions is to enhance airspace management, improve water quality, improve species habitat, enhance outdoor recreation opportunities, and implement projects for the protection and enhancement of the installations' natural and historic resources as identified in the Integrated Natural Resources Management Plan (INRMP) and Integrated Cultural Resources Management Plan (ICRMP). The need is to develop a sustainable installation by implementing asset management principles for built and natural resource assets. Other needs for the proposed natural infrastructure actions are to comply with Federal, state, and local regulations to limit downstream water quality degradation by reducing erosion, which causes sedimentation to accumulate and disperse in the installation's waterways; to improve or maintain safe aircraft takeoff and landing conditions; to protect and enhance cultural resources; and to comply with the Migratory Bird Treaty Act (MBTA) of 1918 and other laws designated to protect migratory birds, threatened and endangered species, wetlands, and other natural resources while balancing the requirements of its military mission. In addition, the need for the proposed natural infrastructure actions is to comply with the Federal Noxious Weed Act (7 United States Code [U.S.C.] 2801 et seq.) and Executive Order (EO) 13112, *Invasive Species*, which require Federal agencies to control noxious weeds on Federal properties by removing

noxious and invasive species throughout their installations. Individual purpose and need statements for each of the selected natural infrastructure management projects are provided in **Section 2.1.6**.

1.3 Scope of the Analysis

Scott AFB seeks to improve its understanding of the potential environmental consequences associated with the continuing installation development process by evaluating in a single EA selected projects proposed in the Scott AFB Wing-approved community of plans. The complete list of all identified proposed installation development and resource management projects from these plans, presented in **Appendix A**, was developed from the projects identified in the Scott AFB IDP and other Wing-approved plans using a fenceline-to-fenceline approach to capture projects within the installation boundary as proposed by host and tenant agencies in accordance with Interservice Support Agreements.

This IDEA evaluates the potential environmental impact of selected projects involved in modernizing and upgrading Scott AFB to meet future requirements in each of the following categories: demolition, construction, infrastructure improvement, and natural infrastructure management. These four categories were identified for use in the IDEA because they allow the grouping of development initiatives by generally common elements of their activity and the nature of their expected potential environmental impacts. These categories and the selected projects are described in detail in **Sections 2.1.3**, **2.1.4**, **2.1.5**, and **2.1.6** of the IDEA. The individual projects analyzed in this IDEA should be considered independent of each other and the USAF may eventually choose to implement all, none, or any combination of these projects. This would be the case even if a finding of no significant impact (FONSI) is reached based on the analyses in the IDEA.

From the list of proposed projects identified in **Appendix A**, projects were selected for detailed analysis in the IDEA based on two independent criteria. First, projects were selected that are expected to have the greatest potential to impact the natural and man-made environment. They are typical of the types of projects that are proposed at Scott AFB. They were selected based on geographic setting, project size, acreage disturbed, amount of air emissions, increases in impervious surfaces, vegetation disturbed, and other relevant factors associated with environmental and socioeconomic resources. Second, projects were selected for detailed analysis if they have the potential to result in impacts on sensitive resources, such as 100-year floodplains, wetlands, protected cultural resources, or species protected under the Endangered Species Act (ESA). Such projects were selected because they are believed as a group to frame the range of potential impacts that reasonably could be expected from other projects within the category and consequently are subject to detailed analysis in this IDEA. The projects selected for analysis in this IDEA are described in **Sections 2.1.3** through **2.1.6**.

The remaining other projects from the installation development and resource management plans (see the "Other Projects" portions of the tables presented in **Appendix A**) are considered in the cumulative impacts analysis of the IDEA. This IDEA does not represent NEPA documentation for projects other than the selected projects. Projects listed in the "Other Projects" inventory will be reviewed individually to determine the necessary environmental analysis needed to make a decision on whether or not to approve each of these projects, which are outside the scope of the IDEA.

The Proposed Action includes numerous projects selected from those listed in **Appendix A**, such as the demolition of aging facilities, new facility construction, facility upgrades, facility repair and renovation, utilities upgrades, quality of life upgrades, infrastructure improvement, recreational upgrades, natural infrastructure management and other environmental projects, and sustainable improvement projects that would be completed or implemented during the next 5 FYs (2012 to 2017). The assessment compiles information on constraints that might inhibit development or dictate courses of actions affecting

development, improve the facility planning process, and capture the Wing Commander's vision of the facility and infrastructure improvements necessary to support the installation's ongoing mission.

The scope of the IDEA may include an evaluation of actions that might have the potential to impact the 100-year floodplain or wetlands. If it is determined that a project would directly or indirectly impact floodplain or wetland areas, a Finding of No Practicable Alternative (FONPA) and approval from HQ AMC would be required. Floodplain and wetland impacts would be reduced to the maximum extent practicable through project design and the implementation of environmental protection measures. In addition, appropriate permits would be obtained from applicable regulatory agencies to address impacts on wetland areas and to determine potential mitigation, if required.

This IDEA could include projects that might have direct or indirect impacts on historic properties, especially considering the extent of the historic district at Scott AFB. All projects that could impact properties listed in or adjacent to the historic district or that could be potentially eligible for listing on the National Register of Historic Places (NRHP) are subject to the consultation requirements of Section 106 of the National Historic Preservation Act (NHPA) of 1966. Projects could be included in the selected projects for the IDEA if the consultation process under Section 106 of the NHPA has been recently completed for properties potentially eligible for listing in the NRHP; however, if new or additional consultation would be required and would not be completed by the finalization of the signed FONSI, such projects might not be appropriate for inclusion in the IDEA analysis.

The precise design, footprint, and location on the installation of all projects are in the early planning stages. Therefore, exact locations and layouts are generally not finalized at this time. Should locations and final layouts of the projects differ substantially from those anticipated in term of the land use category involved or the compatibility with the land use category at the final designated location, then separate environmental documentation for those projects might be required.

It is intended that the projects contained in the IDEA generally will be reviewed on a 5-year rotational basis and that an additional NEPA document may need to be prepared to accommodate changes in development plans, mission objectives, laws and regulations, or land use plans. During the course of the next 5 FYs (FY 2012 to FY 2017), if significant new circumstances or information relevant to environmental concerns are discovered or the scope or proposed siting of any of the selected projects associated with the Proposed Action change enough to be outside the coverage of the analysis provided in the IDEA, the specified projects would no longer be covered by the NEPA analysis represented by the IDEA, but this would not affect other projects originally included in the IDEA.

The IDEA examines potential effects of the Proposed Action and alternatives on 11 resource areas: noise, land use, air quality, geological resources, water resources, biological resources, cultural resources, socioeconomic resources and environmental justice, infrastructure, hazardous materials and wastes, and safety. These resources were identified as being potentially affected by the Proposed Action and include applicable elements of the human environment that are prompted for review by EO, regulation, or policy.

After a FONSI is signed (if applicable), and as funding becomes available, each project would be reviewed by the Environmental Planning Function (EPF) prior to implementation to ensure that it has been sufficiently analyzed in this IDEA and that there has not been a substantial change in the installation mission or project scope, or there are no significant new circumstances or information relevant to environmental conditions; and that there have not been new or modified environmental regulations promulgated warranting reevaluation of potential environmental consequences. If the project has not been sufficiently analyzed or there has been a change in scope, conditions, or regulations, Scott AFB would complete additional environmental documentation for the project, as applicable.

1.4 Summary of Key Environmental Compliance Requirements

1.4.1 National Environmental Policy Act

NEPA of 1969 (42 U.S.C. Section 4321–4347) is a Federal statute requiring the identification and analysis of potential environmental impacts associated with proposed Federal actions before those actions are taken. The intent of NEPA is to help decisionmakers make well-informed decisions based on an understanding of the potential environmental consequences, and take actions to protect, restore, or enhance the environment. NEPA established the Council on Environmental Quality (CEQ) that was charged with the development of implementing regulations and ensuring Federal agency compliance with NEPA. The CEQ regulations mandate that all Federal agencies use a prescribed structured approach to environmental impact analysis. This approach also requires Federal agencies to use an interdisciplinary and systematic approach in their decisionmaking process. This process evaluates potential environmental consequences associated with a proposed action and considers alternative courses of action.

The process for implementing NEPA is codified in Title 40 of the Code of Federal Regulations (CFR), Parts 1500–1508, *Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act*. The CEQ was established under NEPA to implement and oversee Federal policy in this process. The CEQ regulations specify that an EA be prepared to briefly provide evidence and analysis for determining whether to prepare a FONSI or FONPA, where a FONPA is appropriate (see **Section 1.4.2**), or whether the preparation of an Environmental Impact Statement (EIS) is necessary. The EA can aid in an agency's compliance with NEPA when an EIS is unnecessary and facilitate preparation of an EIS when one is required.

Air Force Policy Directive (AFPD) 32-70, *Environmental Quality*, states that the USAF will comply with applicable Federal, state, and local environmental laws and regulations, including NEPA. The USAF's implementing regulation for NEPA is *Environmental Impact Analysis Process*, 32 CFR Part 989, as amended.

1.4.2 Integration of Other Environmental Statutes and Regulations

To comply with NEPA, the planning and decisionmaking process for actions proposed by Federal agencies involves a study of other relevant environmental statutes and regulations. The NEPA process, however, does not replace procedural or substantive requirements of other environmental statutes and regulations. It addresses them collectively in the form of an EA or EIS, which enables the decisionmaker to have a comprehensive view of major environmental issues and requirements associated with the Proposed Action. According to CEQ regulations, the requirements of NEPA can be integrated "with other planning and environmental review procedures required by law or by agency practice so that all such procedures run concurrently rather than consecutively."

As noted in **Section 1.3**, this IDEA examines potential effects of the Proposed Action and alternatives on 11 resource areas. These resources were identified as being potentially affected by the Proposed Action and include applicable elements of the human and natural environments that are prompted for review by EO, regulation, or policy.

1.4.3 Interagency and Intergovernmental Coordination for Environmental Planning (IICEP), Native American Tribal Consultation, and Public Involvement

IICEP. NEPA requirements help ensure that environmental information is made available to the public during the decisionmaking process and prior to actions being taken. The premise of NEPA is that the

quality of Federal decisions will be enhanced if proponents provide information to the public and involve the public in the planning process. The Intergovernmental Coordination Act and EO 12372, *Intergovernmental Review of Federal Programs*, require Federal agencies to cooperate with and consider state and local views in implementing a Federal proposal. Air Force Instruction (AFI) 32-7060, *Interagency and Intergovernmental Coordination for Environmental Planning*, requires the USAF to implement the IICEP process, which is used for the purpose of agency coordination and implements scoping requirements.

Through the IICEP process, Scott AFB notified relevant Federal, state, and local agencies of the Proposed Action and alternatives and provided them with sufficient time to make known their environmental concerns specific to the action. The IICEP process also provided Scott AFB the opportunity to cooperate with and consider state and local views in implementing the Federal proposal. Comments from the U.S. Environmental Protection Agency (USEPA), Illinois Environmental Protection Agency, the U.S. Fish and Wildlife Service (USFWS), and the State Historic Preservation Officer (SHPO) were received on the Draft IDEA and Draft FONSI/FONPA during the review period. All agencies contacted during the IICEP process, comments received, and responses to comments received are included in **Appendix B**. Agency comments on the Draft EA were considered prior to a decision being made as to whether or not to sign the FONSI/FONPA.

Native American Tribal Consultation. EO 13175, *Consultation and Coordination with Indian Tribal Governments* (6 November 2000) directs Federal agencies to establish regular and meaningful relationships with affiliated federally-recognized Native American tribal governments on a government-to-government basis. Additionally, Section 106 of the NHPA requires consultation with tribes whose interests might be impacted by activities on federally administered lands; thus, those tribes that are affiliated historically with the Scott AFB geographic region are invited to consult on all proposed undertakings that have a potential to affect properties of cultural, historical, or religious significance to the tribes. Because many tribes were displaced from their original homelands during the historical period, tribes with cultural roots in an area might not currently reside in the region where the undertaking is to occur. Effective consultation requires identification of tribes based on ethnographic and historical data and not simply a tribe's current proximity to a project area. The tribal consultation process is distinct from NEPA consultation or the IICEP processes and requires separate notification of all relevant tribes by Scott AFB. The timelines for tribal consultation are also distinct from those of intergovernmental consultations. The Scott AFB point-of-contact for Native American tribes is the Installation Commander. The Scott AFB point-of-contact for consultation with the SHPO and the Advisory Council on Historic Preservation is the Cultural Resources Manager.

The goal of the tribal consultation process is not to simply consult on a particular undertaking but rather to build constructive relationships with appropriate Native American tribes. Consultation should lead to constructive dialogs in which the Native American tribes are active participants in the planning process. As such, consultation regarding specific proposed projects must begin very early in the process and is outside the scope of the IDEA. Native American tribal government coordination materials for this IDEA are included in **Appendix B**.

Public Involvement. A Notice of Availability (NOA) for the Draft IDEA and Draft FONSI/FONPA was published in the *Belleville News-Democrat* on 26 April 2012 announcing that these materials were made available to the public for a 45-day review period. Copies of the Draft IDEA and Draft FONSI/FONPA were made available in the Belleville Public Library and the Scott AFB Library and on the Scott AFB website. The 45-day review period ended on 11 June 2012 and no public comments on the Draft EA and Draft FONSI/FONPA were received during this review period. **Appendix B** contains a copy of the NOA as it appeared in the *Belleville-News Democrat*.

2. Description of the Proposed Action and Alternatives

This section presents information on the Proposed Action of implementing selected installation development projects, as drawn from the relevant Scott AFB Wing-approved installation development and resource management plans. **Section 2.1** describes the Proposed Action at Scott AFB. **Section 2.2** identifies alternatives to the Proposed Action. **Section 2.3** discusses the No Action Alternative. **Section 2.4** identifies the decision to be made and the Preferred Alternative.

2.1 Proposed Action

As noted in **Section 1.3**, the Proposed Action is to implement a range of selected installation development projects drawn from projects contained in the community of all current 375 AMW-approved plans on Scott AFB. The projects selected for analysis in this IDEA are described in **Sections 2.1.3** through **2.1.6** and would meet the selection criteria presented in **Section 2.2**. Each of the projects has been assigned a project identification number, corresponding to the category to which they belong. **Figures 2-1** and **2-2** show the proposed potential locations of all mapable projects associated with the Proposed Action relative to known constraints at Scott AFB. The remaining other projects that have been drawn from the applicable Wing-approved development plans, which are listed in **Appendix A** under the "Other Projects" portions of the tables, are addressed in the cumulative impacts analysis in this IDEA.

2.1.1 Project Considerations

Each project ultimately would be sited in a manner compatible with Scott AFB's surrounding land uses. The analyses provided in this IDEA addressing the selected projects evaluates their siting anywhere within the improved or semi-improved areas of the installation that are within compatible land use areas of the installation, as analyzed in **Section 4** of this IDEA. They are not assessed for a site-specific location within that area of compatible land use because the environmental impacts would be essentially the same no matter where the project is specifically located in that land use area. The Scott AFB IDP identifies 10 land use categories (excluding water as a land use category): administrative, airfield, aircraft operations and maintenance, community, housing accompanied, housing unaccompanied, maintenance, medical, outdoor recreation, and open space. **Figure 2-3** shows the locations of Scott AFB's existing land use categories.

Projects would avoid sensitive or constrained areas (see **Figures 2-1** and **2-2**) to the maximum extent practicable. Sensitive areas include wetlands, Environmental Restoration Program (ERP) sites, floodplains, nesting and foraging areas for species of special concern, migration and breeding habitat areas, and known archaeological sites. Constrained areas include airfield and airspace clear zones (CZs) and accident potential zones (APZs), areas within safety quantity-distance (QD) arcs, areas inside the 65+ A-weighted decibel (dBA) noise contours, and areas restricted per AT/FP and other mission requirements.

The exterior and interior design of new facilities would follow the design guidelines outlined in the *Air Mobility Command Civil Engineering Squadron Design Guide* (AMC 1999) and the *Scott AFB Architectural Compatibility Design Plan* (SAFB 2000). This guidance would ensure a consistent and coherent architectural character throughout Scott AFB. These documents are available for review at the web addresses provided in **Section 7**.

Landscaping would be used to provide an attractive and professional-looking installation by using plants, shrubs, and trees to blend with the surrounding environment. Landscape design would use regionally appropriate plants for improved and semi-improved grounds. Landscape designs would use regionally appropriate species that would minimize adverse effects on natural habitats while reducing maintenance inputs in terms of energy, water, manpower, and equipment. In addition, the landscape designs would

choose plant species adapted to local environmental conditions that have potential to reduce the need for irrigation and fertilization or pesticide use. Landscaping would conform to the Scott AFB INRMP requirements regarding suggested and prohibited plants, and landscape modifications within the installation's historic district would be subject to Section 106 of the NHPA consultation requirements.

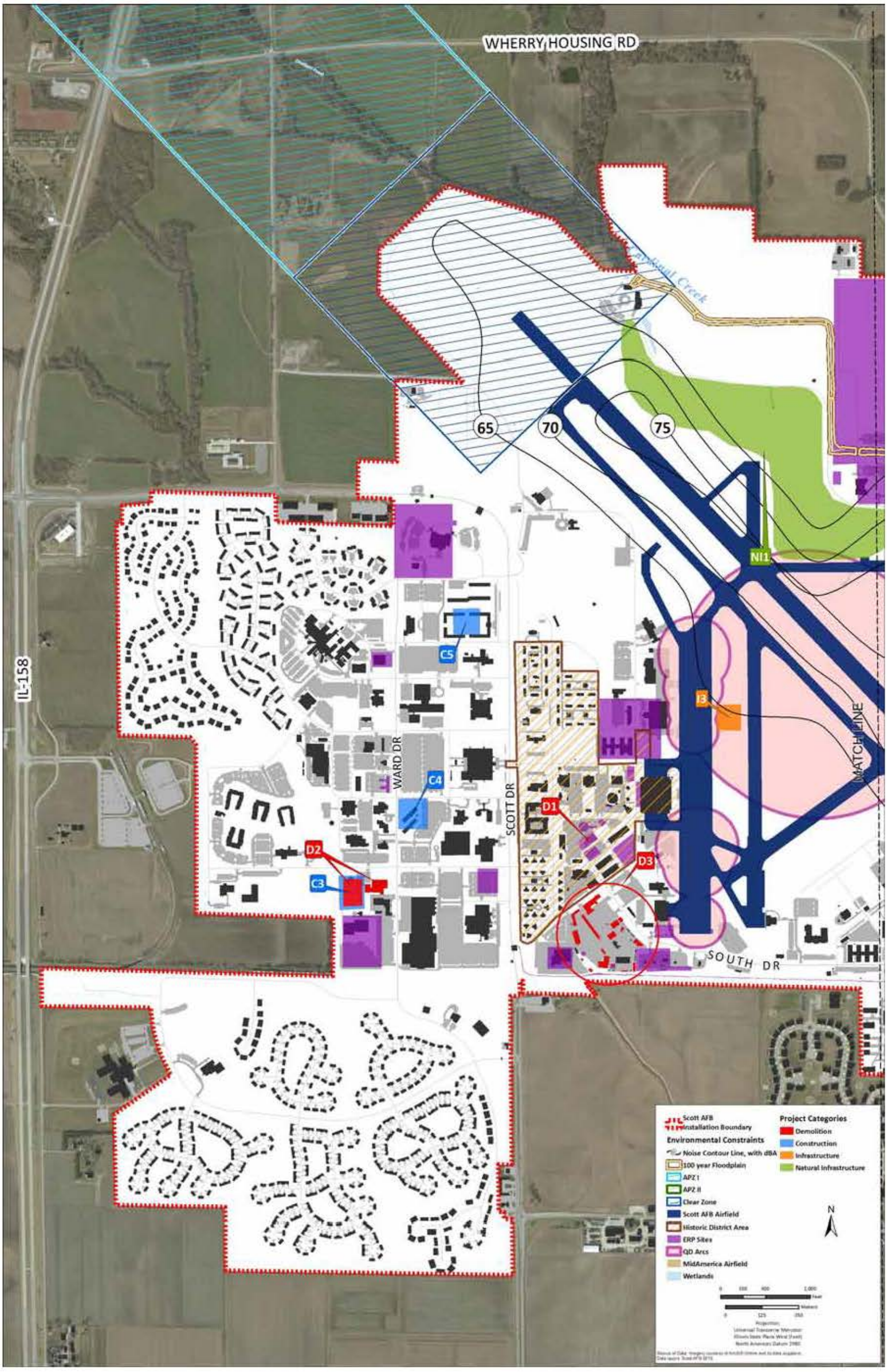
Force protection measures would be incorporated in accordance with the Unified Facilities Criteria (UFC) 4-010-01, *DOD Minimum Antiterrorism Standards for Buildings*, 9 February 2012 (DOD 2012). This document is available for review at the web address provided in **Section 7** of the IDEA. All construction would comply with applicable building, fire, and safety codes. The proposed construction projects would be implemented using sustainable design concepts. Sustainable design concepts emphasize state-of-the-art strategies for site development, efficient water and energy use, and improved indoor environmental quality.

2.1.2 Major Installation Constraints

To incorporate selection parameters for the siting of projects, this IDEA has been prepared using a constraints-based analysis. This approach enables a comprehensive evaluation of environmental concerns throughout the installation and also those concerns unique to specific areas of Scott AFB. This analysis uses information layers from the installation's Geographical Information System database (also called the GeoBase system) and the information obtained from extensive recent EIAP evaluations for similar types of projects to help determine the direct, indirect, and cumulative effects of projects that would be completed as part of the installation's development plan.

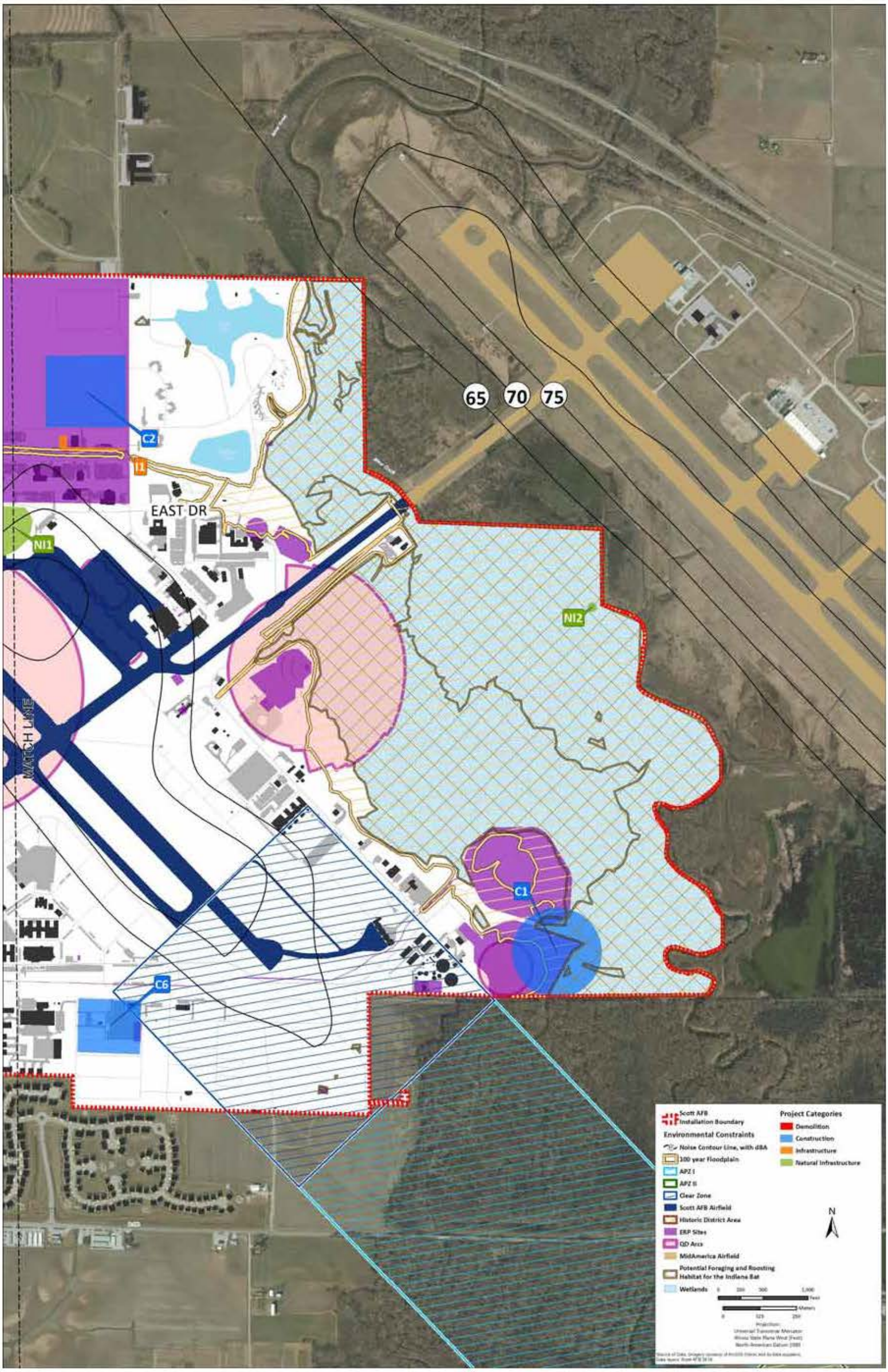
There are a number of land use, regulatory, and mission-related constraints within the boundaries of Scott AFB that influence and limit future development at the installation. The major constraints on Scott AFB are depicted in **Figures 2-1** and **2-2**. The electronic mapping data from Scott AFB's Geographical Information System database were used to quantify the major installation constraints to development, unless another source of information is identified. Some constraint areas overlap, and therefore, the acreages listed in the following bulleted items do not equal the total acreage of Scott AFB. The acreage calculations do not include any portions of the constraint areas that extend off the installation. The major constraints are discussed in the following bulleted paragraphs.

- ***Noise Zones (522 acres).*** Aircraft operations are a dominant component of the noise environment at Scott AFB. USAF, Federal Aviation Administration, and the U.S. Department of Housing and Urban Development criteria specify that noise levels in noise-sensitive land use areas are normally considered unacceptable where they exceed a day-night average A-weighted sound level (DNL) of 65 dBA. The USAF recommends restricting development to compatible uses when noise levels exceed 65 dBA DNL. A total of 522 acres of Scott AFB property are inside the 65+ dBA noise contour generated by the Scott AFB runway. Less than 1 acre of the installation is inside of the 65+ dBA noise contour generated by the MidAmerica Airport runway.
- ***Airfield Infrastructure, Clear Zones, and Imaginary Surfaces (1,209 acres).*** The airfield at Scott AFB includes pavement, runways, overrun, apron and ramp, and arm/disarm pads, and totals approximately 178 acres. The airfield for the adjoining MidAmerica Airport totals approximately 105 acres. CZs, APZs, and imaginary surfaces are areas where nonairfield development is constrained or discouraged for airfield safety. These areas would allow only airfield improvements and projects directly associated with airfield operations. All projects within this area must be approved by the Facilities Utilization Board (FUB) and airfield management prior to commencing any construction-related activities. For the runway at Scott AFB, the CZs measure approximately 206 acres, APZ I measures approximately 344 acres, and APZ II measures approximately 481 acres. The CZs, APZs, and imaginary surfaces at the nearby MidAmerica Airport runway do not encroach on Scott AFB property.



Notes: Project numbers and associated descriptions are shown in **Tables 2-1** through **2-4**. Project I2 has been omitted from this figure due to its sensitivity.
All buildings shaded in red within the circle labeled D3 are proposed for demolition under Project D3.

Figure 2-1. Possible Locations and Environmental Constraints Associated with Selected Projects (West)



Note: Project numbers and associated descriptions are shown in **Tables 2-1** through **2-4**. Project I2 has been omitted from this figure due to its sensitivity.

Figure 2-2. Possible Locations and Environmental Constraints Associated with Selected Projects (East)

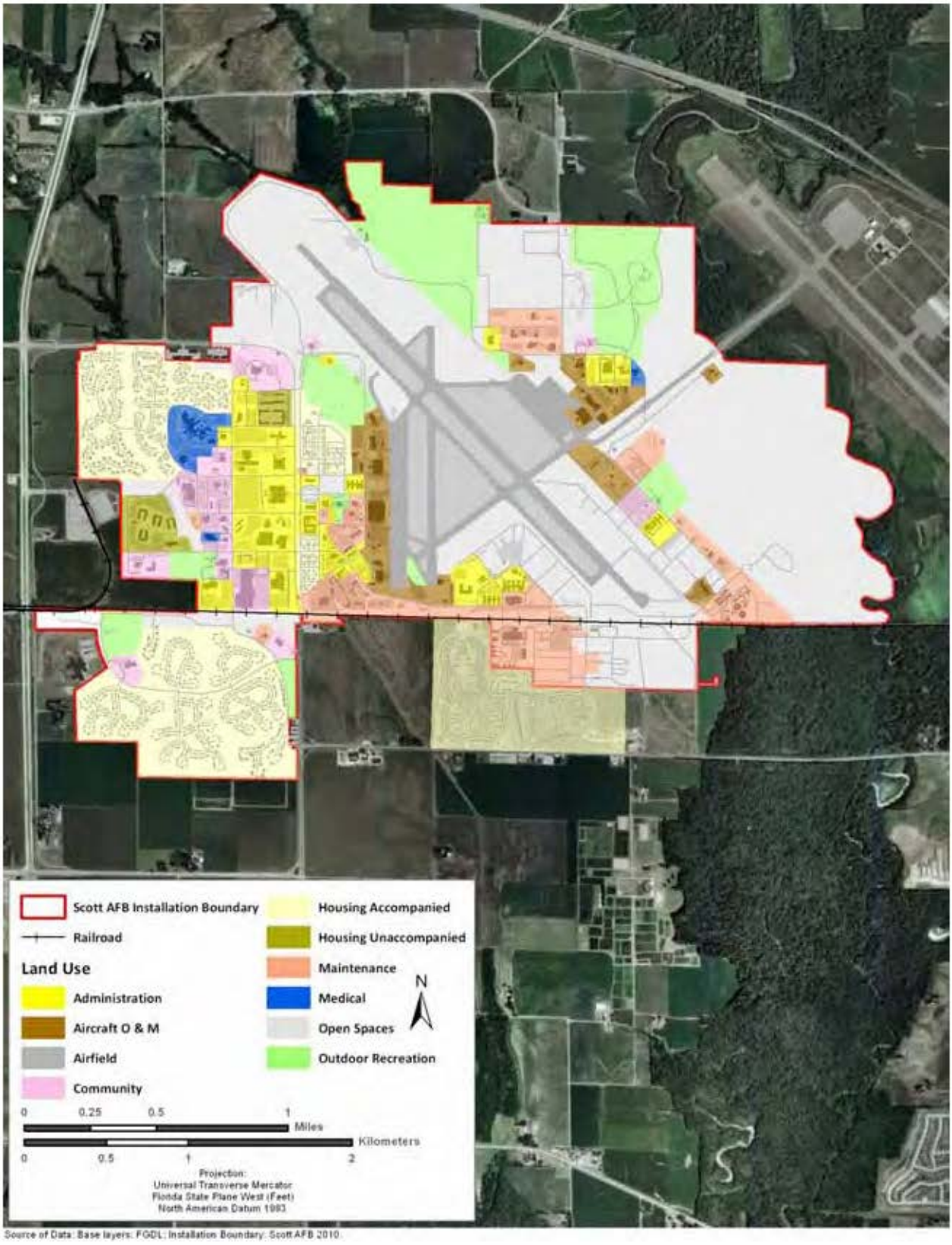


Figure 2-3. Scott AFB Existing Land Use Categories

- ***Munitions and Other Safety Criteria (300 acres).*** There are several areas that are constrained for safety reasons at Scott AFB. The QD arcs are the minimum prescribed distance between munitions site handling and storage areas and inhabited areas. QD arcs on Scott AFB are mostly located at the airfield and on the eastern side of the installation near Building 3150. These QD arcs are generated from the hot cargo pad and the munitions storage area.

- ***Environmental Restoration Program Sites (189 acres).*** Scott AFB has 45 ERP sites (SAFB 2011d). New facilities might be constructed within certain ERP sites depending upon the level of contamination, clean-up efforts, and land use controls. Approval of new construction within ERP sites must be obtained from the FUB and coordinated with the 375th Civil Engineering Squadron/Asset Management Flight (375 CES/CEA). In addition, an *ERP Waiver to Construct* must be reviewed and approved by HQ AMC in order to construct on an ERP site.

- ***Wetlands (378 acres).*** In accordance with EO 11990, construction of new facilities within areas containing wetlands is avoided where practicable. Scott AFB has approximately 36 wetland areas covering 378 acres. Wetland impacts would be reduced to the maximum extent practicable through project design and implementation of environmental protection measures. However, some projects might have minimal direct impacts on wetland areas and there is potential for indirect impacts on wetland areas from development and excavation in areas adjacent to these wetland areas. In accordance with EO 11990, a FONPA must be prepared and approved by HQ AMC for all projects impacting wetland areas. In addition, appropriate permits must be obtained from applicable regulatory agencies to address impacts on wetland areas and to determine potential mitigation, if required.

- ***100-Year Floodplain (464 acres*).** In accordance with EO 11988, constructing new facilities within the 100-year floodplain is avoided in order to protect the functions of floodplains, minimize the potential damage to facilities, and ensure the safety of working personnel. Should construction within the 100-year floodplain be considered, a FONSI/FONPA must be obtained and the project must be approved by HQ AMC.

- ***Threatened and Endangered Species and Associated Habitats.*** One Federal-listed endangered species (Indiana bat) has been documented on Scott AFB. The Silver Creek floodplain and bottomlands at Scott AFB provide adequate roosting and foraging habitat for a number of bat species including the Indiana bat. The USFWS has not designated any of Scott AFB as critical habitat for the Indiana bat (SAFB 2010c). Any project with the potential to impact the Indiana bat or any Federal-listed threatened or endangered species would require consultation with the USFWS (i.e., under Section 7 of the ESA.) Two state-listed endangered species (little blue heron and snowy egret) have been documented on Scott AFB; however, nesting areas have not been observed on-installation for either bird. No other Federal- or state-listed threatened or endangered species are known to occur on Scott AFB (SAFB 2005a).

- ***Cultural Resources, Historic Buildings, and Archaeological Sites (456 acres).*** Scott AFB has an 81-acre historic district that is composed of 102 contributing and 10 non-contributing buildings and structures and is listed on the NRHP. In addition to the historic district, multiple archaeological areas have been documented on Scott AFB. These areas measure approximately 375 acres and have been determined as ineligible for the NRHP. Two additional constraints are the pioneer cemeteries on the installation; however, they are not considered archaeological sites and are not eligible for listing on the NRHP (SAFB 2011e). Activities potentially affecting cultural resources must be coordinated with the FUB and the 375 CES/CEA Conservation Manager who will coordinate with the SHPO.

- ***AT/FP Setback Requirements.*** Minimum AT/FP design standards for new construction have been specified by the DOD and would increase the land area required for individual facilities.

Design standards for new construction are contained in UFC 4-010-01, *DOD Minimum Antiterrorism Standards for Buildings*, 9 February 2012, (DOD 2012) and augmented by USAF instructions. The USAF Force Protection Design Guide, published by the Air Force Center for Engineering and the Environment, supplements the DOD standards and must also be consulted during the planning and design processes. Scott AFB has numerous existing road, parking, and perimeter setback issues that do not meet current AT/FP standards.

Installation constraints are an important parameter in the siting of projects and the development of reasonable alternatives for all projects proposed at Scott AFB. As a general practice, Scott AFB seeks to avoid, wherever possible, any disturbance to sensitive or constrained areas. This effort to avoid sensitive and constrained areas limits the number of feasible alternatives for projects due to the densely constructed nature of the installation around the expanse of existing constrained areas on Scott AFB. However, avoiding or restricting future development within the constrained acreage might not be practical and could limit the installation's ability to successfully accomplish its missions. When these resources cannot be avoided and actions result in moderate to major environmental impacts, separate and additional NEPA documentation would occur and coordination with the appropriate regulatory agencies would be completed prior to initiating the action. All construction or other activities that would occur within areas of concern (AOC) would comply with the requirements of various Federal, state, and local policies and regulations that govern such resources, and the appropriate environmental protection measures would be followed and instituted.

2.1.3 Demolition Projects

Of the demolition projects proposed for the next 5 FYs (as identified in **Appendix A**), three projects were identified for detailed analysis as selected projects under the Proposed Action. The other remaining proposed demolition projects are addressed in the cumulative impacts analysis for this IDEA. The selected demolition projects would remove an estimated 158,174 ft^2 of facilities of an estimated 720,541 ft^2 of demolition projects proposed over the next 5 FYs. These demolition projects would contribute to the goal of reducing the physical plant footprint on the installation according to the "20/20 by 2020" initiative or making space available for future development. In accordance with AFI 32-1032, *Planning and Programming Appropriated Funded Maintenance, Repair, and Construction Projects*, it is USAF policy to replace a facility when the estimated repair cost exceeds 70 percent of the replacement cost. All facilities proposed for demolition have either been deemed to be unusable or too costly to repair or renovate to meet the future mission requirements of Scott AFB by the 375 CES/CEA and other installation personnel. **Section 2.2.1** provides an overview of this determination process, and **Section 2.2.2** further discusses the estimated renovation cost, the estimated building replacement value, and the percentage of the replacement value that the renovations would represent for each building proposed for demolition.

Projects within this category primarily include the demolition of structures, but could also include demolition of parking lots and other pavements. The demolition of old or outdated facilities would minimize the area of undisturbed land required for new facilities and reduce labor costs associated with maintenance and repair of these excess facilities. **Table 2-1** identifies the selected demolition projects to be evaluated in detail in this IDEA. **Figures 2-1** and **2-2** show the possible locations of the selected demolition projects relative to known constraints at Scott AFB.

The three selected demolition projects are believed to encompass the upper range of potential impacts on the natural and man-made environment from such projects in the demolition category and thus frame the upper limits for potential impacts that reasonably could be expected from the demolition projects proposed at the installation. For example, the demolition of Old Service Station, Building 48 would have

Table 2-1. Selected Facilities Demolition Projects Analyzed in this IDEA

Project Identification Number and Title	Installation Project Number	FY	Land Use	Description	Potential Constraints	Project Area (ft^2)	Change in Impervious Surface (ft^2)
D1. Demolish Old Service Station, Building 48	VDYD090158	2013	Maintenance	Demolish Building 48, Old Service Station. This project does not include the demolition of surrounding pavements, which serve as a barrier between storm water and soil contamination.	Cultural Resources, Historic District, ERP	910	-910
D2. Demolish James Gym (Building 1987), Buildings 1984 and 1985, 1986, and outdoor pool (Facility 6303)	VDYD080130B	2015	Community and Outdoor Recreation	Demolish James Gym (Building 1987), Buildings 1984, 1985, and 1986, and outdoor pool (Facility 6303), and associated pavements in support of the construction of the proposed modern fitness center.	None	72,596	-63,410
D3. Demolish 21 Buildings in Support of the Base Civil Engineering and Contracting Complex	VDYD111242	2017/8	Maintenance and Administrative	Demolish Buildings 512, 513, 514, 515, 516, 517, 519, 520, 521, 522, 523, 528, 530, 531, 533, 542, 543, 546, 549, 552, and 6354 as these buildings will be vacant following the construction of the proposed Base Civil Engineering and Contracting Complex.	ERP	84,668	- 84,668
					Total Square Feet	**158,174**	**-148,988**

Key:
ft^2 = square feet
FY = Fiscal Year
NHPA = National Historic Preservation Act

the largest possible impact on cultural resources due to the historical significance of this building and a greater potential for impacts on hazardous materials and waste due to the prolonged former use of this building as an automobile service station. Demolition of the James Gym (Building 1987), Buildings 1984, 1985, and 1986 (pool water treatment buildings and pool house), and outdoor pool (Facility 6303) present the most diverse array of buildings and facilities to be demolished. Demolition of 21 buildings in support of the Base Civil Engineering and Contracting Complex would represent one of the largest demolition undertakings in terms of square footage and number of structures. The other demolition projects not selected under the Proposed Action are considered in the cumulative impacts analysis for this IDEA.

All demolition projects that could impact properties listed in or adjacent to historic districts or that could be potentially eligible for the listing as a NRHP are subject to consultation with the Illinois SHPO as per 36 CFR 800. **Appendix C** includes a list of facilities on Scott AFB that have reached or are reaching 50 years in age by 2017 and contains documentation on NRHP eligibility evaluations, SHPO concurrences, and Advisory Council on Historic Preservation (ACHP) program comments. All consultations with the Illinois SHPO for facilities that meet applicable parameters and any mitigation requirements developed during consultation would be completed prior to signature of a FONSI (if applicable) to garner a no-adverse effect on historic properties determination. In addition, all fill used for post-demolition activities would be obtained from an approved borrow pit and screened to ensure it contains no cultural resources. All trees and vegetation associated with facilities scheduled for demolition would be replaced or relocated as applicable and the area reseeded with appropriate species. Greater detail on each of the selected demolition projects is given in the following paragraphs.

D1. Demolish Old Service Station, Building 48. Project D1, Demolish Old Service Station, would entail the demolition of Building 48. Building 48 measures 910 ft^2 and is located within the installation's historic district. The building was constructed in 1940 as the installation's first automobile service station. The building currently is vacant. Scott AFB attempted to demolish this building in 2009; however, at that time the Illinois Historic Preservation Agency did not concur with the proposed demolition due to the historical significance of this building. Formal consultation under Section 106 of the NHPA recently was completed, and the SHPO concurred with the demolition of this building. A MOA between Scott AFB and the SHPO requires the installation to complete a Level III Historic American Buildings Survey prior to demolition (see **Appendix G**). Building 48 is associated with three ERP sites for former underground storage tanks (USTs). Soil and groundwater contamination have been confirmed and the pavement surrounding the building serves as an engineering barrier between the contaminated soil and the environment. Groundwater monitoring wells have been installed on property surrounding the building and would need to be protected from damage during demolition activities. Remedial action, in accordance with a 15 December 2009 letter from the Illinois Environmental Protection Agency, would need to be taken prior to and following demolition of Building 48 (IEPA 2009c).

D2. Demolish James Gym (Building 1987), Buildings 1984, 1985, and 1986, and outdoor pool (Facility 6303). Project D2, Demolish James Gym (Building 1987), Buildings 1984, 1985, and 1986 (pool water treatment buildings and pool house), and outdoor pool (Facility 6303), would entail the demolition of 72,596 ft^2 of inadequate fitness facilities at Scott AFB. These demolition activities would be conducted in support of the construction of a new fitness center (Project C4). The James Gym is a 33,841-ft^2 brick building that was constructed approximately 30 years ago. Buildings 1984, 1985, and 1986 are support facilities for the outdoor pool and are located with the tennis courts adjacent to the west of Building 1987.

D3. Demolish 21 Buildings in Support of the Base Civil Engineering and Contracting Complex. Project D3, Demolish 21 Buildings in Support of the Base Civil Engineering and Contracting Complex,

would entail the demolition of 84,668 ft² of facilities currently used for the installation's Civil Engineering and Contracting Departments. Scott AFB has proposed to construct a modern, consolidated facility to house all installation civil engineering and contracting personnel (see Project C6); therefore, following the construction of this proposed facility, these 21 buildings would be vacant. Building design constraints limit the ability to renovate or designate these buildings for other usages; therefore, their demolition has been proposed. The buildings proposed for demolition are Buildings 512, 513, 514, 515, 516, 517, 519, 520, 521, 522, 523, 528, 530, 531, 533, 542, 543, 546, 549, 552, and 6354 and include associated walkways, parking areas, and other impervious surfaces. Buildings 512, 520, 528, 530, 531, 533, and 543 were constructed more than 50 years ago. Additionally, some buildings proposed for demolition are in close proximity to ERP sites. Remedial actions might need to be considered prior to conducting demolition activities. Project D3 does not include the demolition of Buildings 52, 54, 56, 57, and 60, which are used for civil engineering and contracting functions and are located within the installation's historic district.

2.1.4 Construction Projects

Of the construction projects proposed at Scott AFB over the next 5 FYs (identified in **Appendix A)**, six were selected for detailed analysis under the Proposed Action. The other remaining proposed construction projects are addressed in the cumulative impacts analysis for this IDEA. The selected construction projects would add an estimated 659,209 ft^2 of facilities, new pavements, and site improvements of an estimated 1,426,666 ft^2 of construction projects proposed over the next 5 FYs. Projects within this category primarily include new facility construction and additions to existing facilities, but could also include renovations, repairs, alterations, parking areas, and other pavements when these elements are a large relevant component of a facility construction project. The construction of new facilities would be zoned in accordance with appropriate land use areas in order to continue or enhance compatibility with currently designated land use areas. **Table 2-2** identifies the selected construction projects to be evaluated in detail in this IDEA, and **Figures 2-1** and **2-2** show the possible locations of the selected construction projects relative to known constraints at Scott AFB.

The selected construction projects are believed to encompass the upper range of potential impacts on the natural and man-made environment from such projects in the construction category and thus frame the upper limits for potential impacts that might reasonably be expected from the construction projects proposed at the installation. For example, construction of the DISA Facility would represent a major construction effort at the former Cardinal Creek MFH area and would have the greatest potential to impact hazardous materials and wastes because of the existing soil contamination at the Cardinal Creek MFH neighborhood. Construction of the US TRANSCOM Mission Planning Center would result in the greatest surface disturbance compared to other construction projects. Construction of the Joint Cyber Facility would represent the construction of a large administrative building in an area currently designated for housing. The other construction projects listed in **Appendix A** not selected under the Proposed Action are considered in the cumulative impacts section of this IDEA.

All fill used for construction activities would be obtained from an approved borrow pit and screened to ensure it contains no cultural materials. All trees and vegetation impacted from construction activities would be replaced or relocated, as applicable. All ground disturbed during construction activities that does not include site improvements would be reseeded with appropriate species. All MILCONs would be constructed to the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) Silver standard. Greater detail on each of the selected construction projects is given in the following paragraphs.

Table 2-2. Selected Facilities Construction Projects Analyzed in this IDEA

Project Identification Number and Title	Installation Project Number	FY	Land Use	Description	Potential Constraints	Project Area (ft^2)	Change in Impervious Surface (ft^2)
C1. Construct and Operate Explosive Ordnance Proficiency Range	VDYD101141	2012	Open Space	Construct and operate an explosive ordnance proficiency range with appropriate barricades, holding areas, fences, and access roads.	ERP, QD, Proximate Sensitive Habitats	888	+888
C2. Construct New DISA Facility	VDYD597032	2013	Open Space	Construct a multi-story masonry facility with necessary parking and infrastructure to replace the current outdated DISA Facility.	ERP, Visual Alternation	164,048	+54,682
C3. Construct New Fitness Facility	VDYD080130B	2015	Community and Outdoor Recreation	Construct modern fitness facilities with associated parking and pavements.	None	103,166	+51,583
C4. Construct US TRANSCOM Mission Planning Center	VDYD101207	2014	Administrative	Construct a new multi-story US TRANSCOM Mission Planning Center with necessary parking and infrastructure.	Parking	218,507	+72,835
C5. Construct Joint Cyber Facility	VDYD101053	2017	Housing Accompanied	Construct a Joint Cyber Facility to provide consolidated and modern office space for base communication staff.	Land-use category	52,000	+52,000

Project Identification Number and Title	Installation Project Number	FY	Land Use	Description	Potential Constraints	Project Area (ft^2)	Change in Impervious Surface (ft^2)
C6. Construct Consolidated Base Civil Engineering and Contracting Complex	VDYD111242	2017/8	Maintenance	Construct a Base Civil Engineering and Contracting Complex to consolidate functions currently spread across 26 different buildings into one new facility.	ERP, Clear Zone	120,600	+120,600
					Total Square Feet	**659,209**	**+ 352,588**

Key:
CZ = Clear Zone
DISA = Defense Information System Agency
ERP = Environmental Restoration Program
ft^2 = square feet
FY = Fiscal Year
QD = quantity-distance
US TRANSCOM = U.S. Transportation Command

C1. Construct and Operate Explosive Ordnance Proficiency Range. Project C1, Construct and Operate Explosive Ordnance Proficiency Range, entails the construction of an 888-ft^2 explosive ordnance proficiency range and appropriate barricades, holding areas, fences, and access roads. The purpose of Project C1 is to construct an explosive ordnance proficiency range that allows military personnel to obtain the necessary realistic training with live explosives and explosively actuated explosive ordnance disposal tools to support the USAF's warfighter mission. Project C1 is needed because Scott AFB lacks a proficiency range that meets the space and functional requirements provided in Air Force Manuel 91-201, *Air Force Explosive Safety Standards*, Air Force Handbook 32-1084 (USAF 1996), *Facility Requirements* (USAF 2011), and AFI 32-3001, *Explosive Ordnance Disposal Program* (USAF 2007).

The explosive ordnance proficiency range would measure 37 feet by 24 feet and would be constructed from 2-foot thick concrete walls placed in an arrangement that allows two entryways. The interior surfaces of the concrete walls would be lined with 6-inch thick timber, and the exterior surfaces would be mounded with sand. The floor of the proficiency range would measure 1-foot in depth and would be composed of three, 3-inch thick layers of sand, gravel, and concrete above a 3-inch thick cap. A 500-ft radius CZ would be established around the proficiency range and secured with a perimeter fence. An access road would allow vehicular access. Three concrete holding areas measuring 5-foot by 5-foot would be constructed within the CZ approximately 400 feet from the range. The proficiency range would be constructed at the northeastern end of the south cell of the former base landfill. This location is within ERP Site LF-01 where there is reported groundwater contamination. This location is in close proximity to the 100-year floodplain, wetlands, and some potentially sensitive habitats; however, construction of the project would not disturb such. Due to the proximity of Indiana bat habitat to the project site, Scott AFB conducted consultation with the USFWS under Section 7 of the ESA. The USFWS provided concurrence that this project is not likely to adversely affect the Indiana bat (see **Appendix H**). **Figure 2-4** provides a conceptual diagram of the proposed proficiency range, and **Figure 2-5** is a photograph of an existing proficiency range at another military installation.

C2. Construct New DISA Facility. Project C2, Construct New DISA Facility, entails the construction of a 164,048-ft^2, multi-story, replacement facility for the DISA at the former Cardinal Creek MFH neighborhood. The purpose of Project C2 is to construct a facility that meets the global mission needs of the DISA. Project C2 is needed because the existing DISA facility is outdated, undersized, and does not meet current mission requirements of the DISA.

The new DISA Facility would consolidate functions currently occurring in three older, undersized buildings into one modern building with sufficient space. The new DISA facility would have computer operations space, secure compartmentalized information facilities, administrative work areas, staging and testing areas, conference rooms, supply and storage areas, a cafeteria, training rooms, a loading dock, a security office, and a visitor reception area. The new DISA facility would represent the first major construction project at the former Cardinal Creek MFH area since the housing units were demolished in 1999. Construction of the new DISA Facility has the potential to disturb ERP Site 25 (SS-25). SS-25 addresses pesticide-contaminated soil within the area associated with the former Cardinal Creek MFH neighborhood. Appropriate remedial action and soil disposal practices would need to be considered during the construction of this facility. **Figure 2-6** shows the possible location of the proposed DISA facility.

C3. Construct New Fitness Facility. Project C3, Construct New Fitness Facility, entails the construction of a modern fitness facility measuring 103,166 ft^2. The purpose of Project C3 is to construct a fitness facility on Scott AFB that provides sufficient space to meet fitness readiness requirements. Project C3 is needed because the existing fitness facility on Scott AFB is undersized and lacks the available space to meet the demands and intent of the Air Force fitness program stated in AFI 36-2905, *Fitness Program* (USAF 2012).

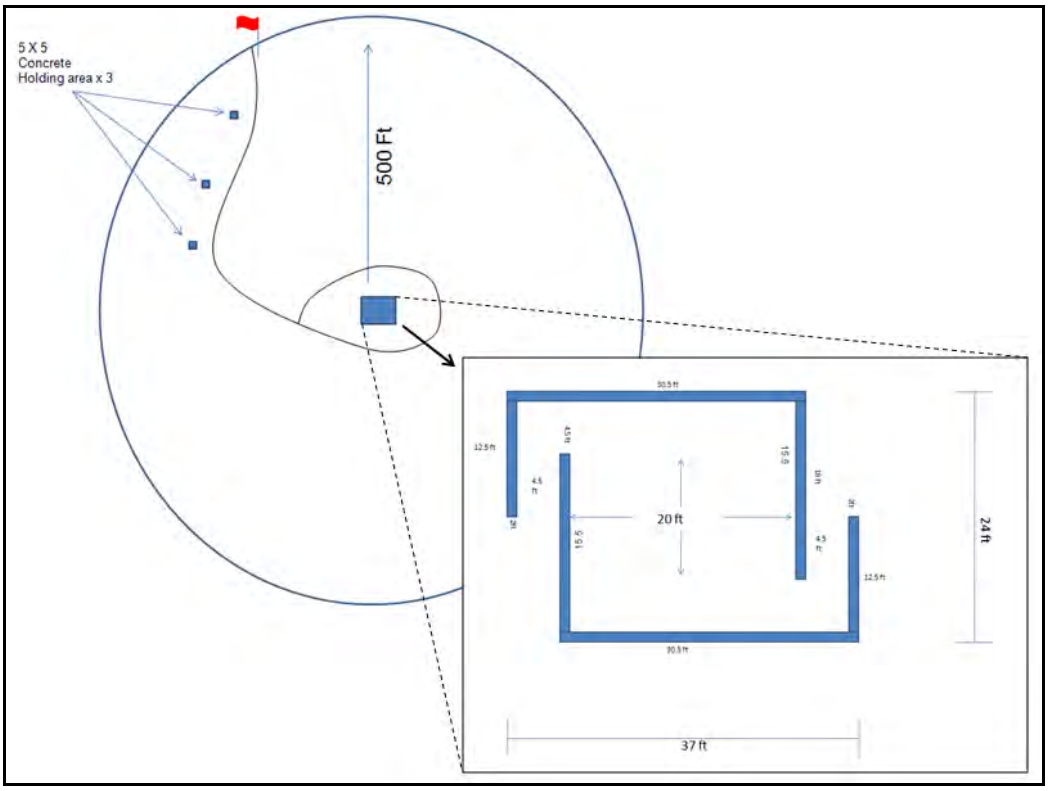


Figure 2-4. Conceptual Drawing of the Proposed Explosive Ordnance Proficiency Range

Figure 2-5. Photograph of an Existing Explosive Ordnance Proficiency Range at Another Installation

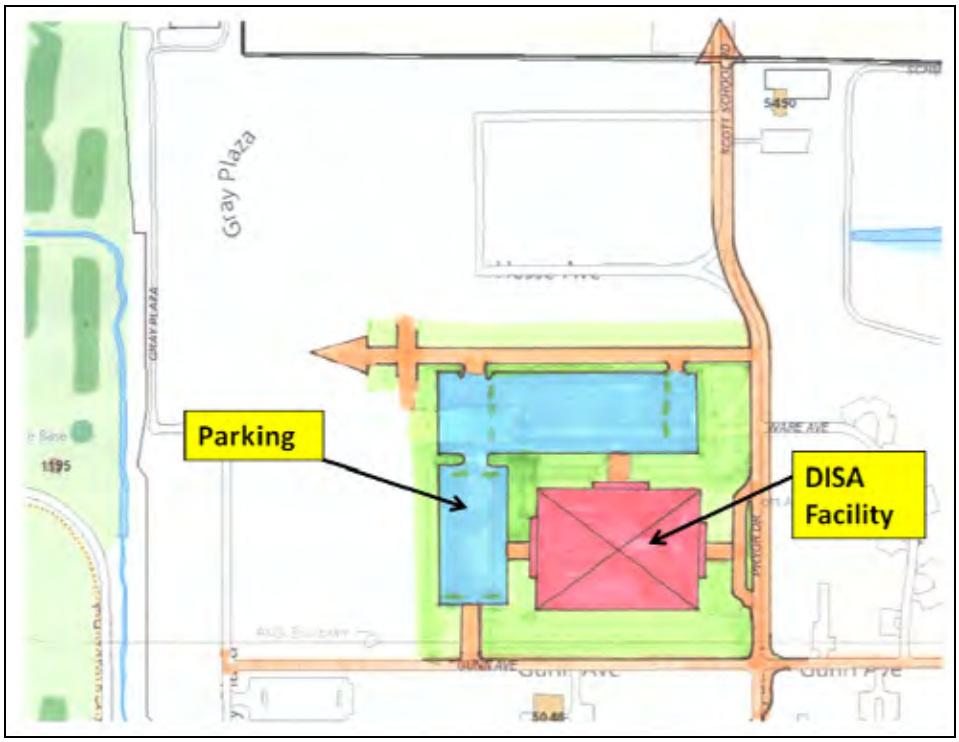


Figure 2-6. Possible Location for the Proposed DISA Facility

The new fitness facility would be two stories in height and would be constructed immediately to the west of the existing fitness center at Building 1987. It would house exercise, cardiovascular, and resistance weight-training equipment; dual-use courts; an indoor running track; administrative support space; racquetball courts; locker rooms; and aquatic facilities. The proposed fitness facility would provide Scott AFB with a modern exercise environment and would alleviate overcrowding issues currently experience at the James Gym (Building 1987). Additionally, the facilities would provide sufficient available space to eliminate the need for personnel to exercise at off-installation, private facilities. Details and analysis regarding the demolition of the existing fitness facilities are discussed under Project D2. **Figure 2-7** shows the possible location of the proposed fitness facility.

C4. Construct US TRANSCOM Mission Planning Center. Project C4, Construct US TRANSCOM Mission Planning Center, entails the construction of a 218,507-ft^2, multi-story US TRANSCOM Mission Planning Center at the location of Buildings 1910 and 1911, which are awaiting demolition in FY 2012. The purpose of Project C4 is to construct a mission planning center that centralizes cyber operations, warfighter force flow planning, critical information technology command and control systems, and medical planning for the US TRANSCOM. Project C4 is needed because the existing facilities are outdated and do not provide a consolidated work environment. Approximately 218,500 ft² of building space is needed to meet mission integration space needs.

The proposed US TRANSCOM Mission Planning Center would consolidate functions currently occurring in several older, undersized buildings into a modern building with sufficient space and modern AT/FP measures. The proposed facility would provide a centralized center for cyber operations, warfighter force flow planning, direct mission planning, medical planning, program management offices, and communications operations. Combining these mission-planning offices into a single modern building would greatly enhance the mission of the US TRANSCOM and help to meet current and future mission requirements. **Figure 2-8** shows the possible location for the US TRANSCOM Mission Planning Center.

Figure 2-7. Possible Location of the Proposed Fitness Facility

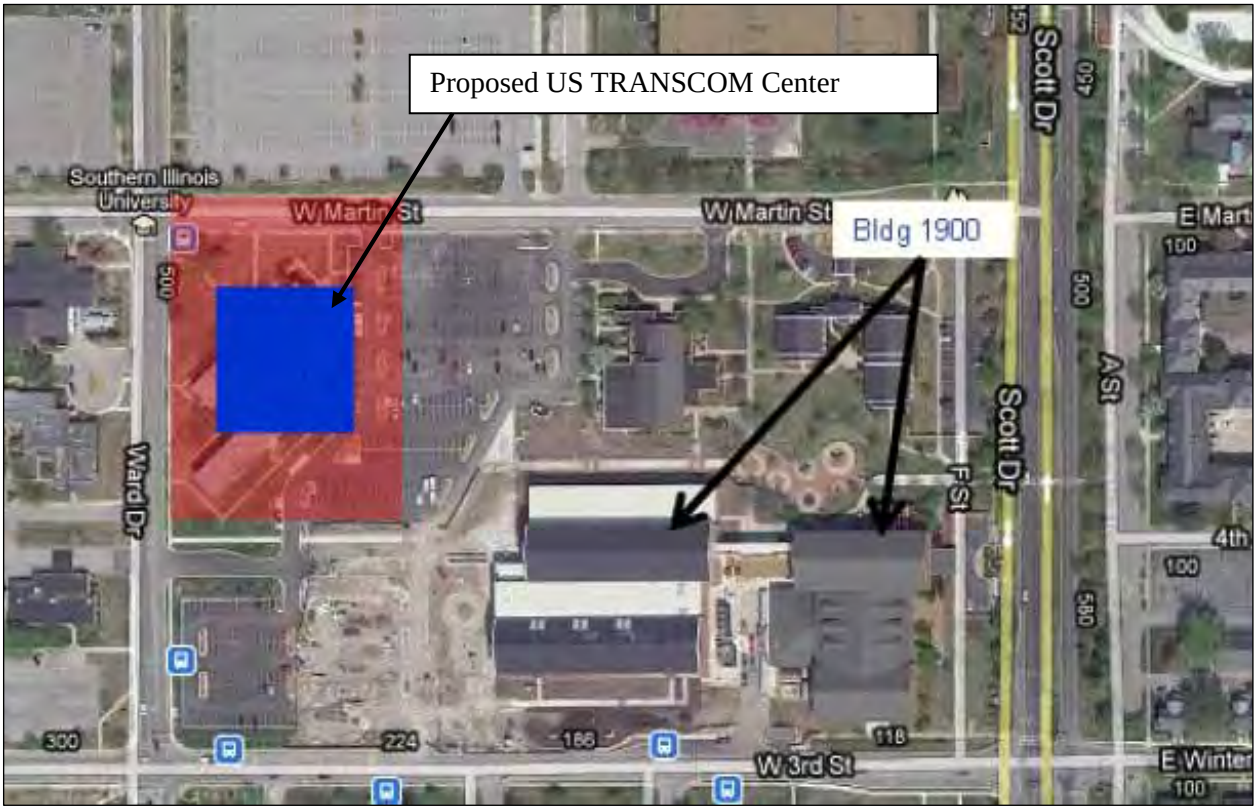


Figure 2-8. Possible Location for the US TRANSCOM Mission Planning Center

C5. Construct Joint Cyber Facility. Project C5, Construct Joint Cyber Facility, entails the construction of an approximately 52,000-ft^2, single-story communications center at the location of Buildings 1508, 1509, 1510, 1511, 1512, and 1513. The purpose of Project C5 is to construct a facility to provide the primary communications node and secure server space for the 375 AMW and all tenants of Scott AFB. Project C5 is needed because the existing facilities, most notably Building 1575, have degraded mechanical and infrastructure systems and do not meet the 375 AMW mission integration space needs. The proposed Joint Cyber Facility would consolidate functions currently occurring in several older, undersized buildings into a modern building with sufficient space and modern AT/FP measures.

Construction of the Joint Cyber Facility at this location would require the demolition of Buildings 1508, 1509, 1510, 1511, 1512, and 1513. These buildings are currently proposed for demolition following the construction of a new Visiting Quarters complex. Because Buildings 1508, 1509, 1510, 1511, 1512, and 1513 are currently used for housing, the construction of the proposed Joint Cyber Facility would require a change in the land-use category for this portion of the installation. Details regarding the demolition of Buildings 1508, 1509, 1510, 1511, 1512, and 1513 and the construction of the Visiting Quarters complex are provided in **Appendix A**, Projects D5 and C14, respectively. **Figure 2-9** shows the possible location of the proposed Joint Cyber Facility.

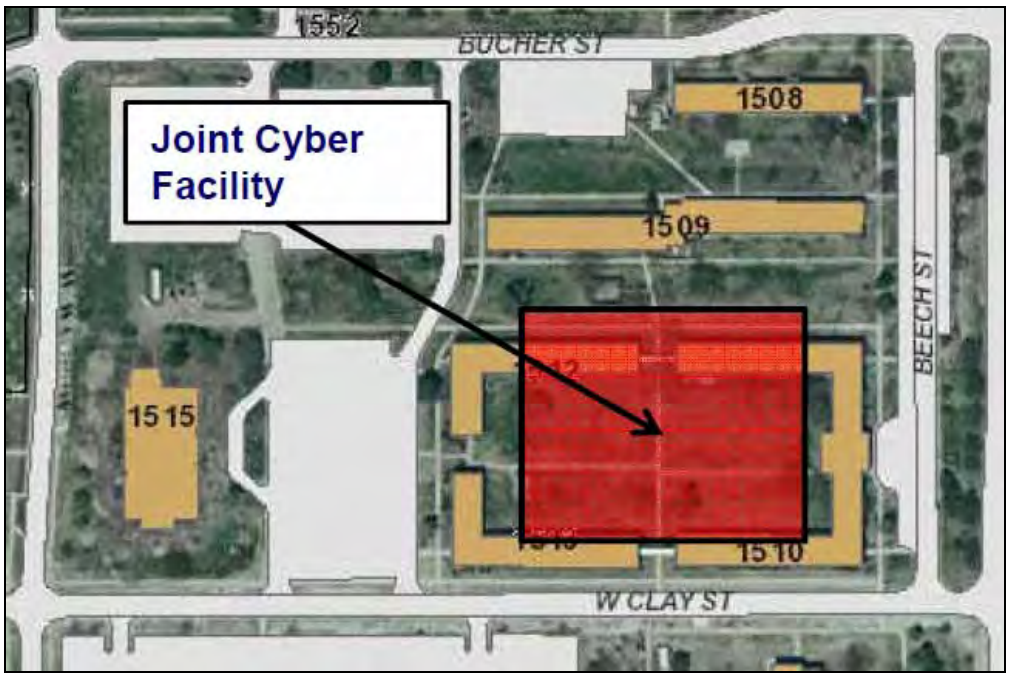


Figure 2-9. Possible Location for the Proposed Joint Cyber Facility

C6. Construct Consolidated Base Civil Engineering and Contracting Complex. Project C6, Construct Consolidated Base Civil Engineering and Contracting Complex, would entail the construction of an approximately 107,000 ft² facility to consolidate functions currently spread throughout 26 base civil engineering and contracting buildings (i.e., Buildings 52, 54, 56, 57, 60, 512, 513, 514, 515, 516, 517, 519, 520, 521, 522, 523, 528, 530, 531, 533, 542, 543, 546, 549, 552, and 6354). The purpose of Project C6 is to construct a centralized complex for the 375 CES/CEA and the 375 CONS that facilitates improved operations to meet their customer's needs. Project C6 is needed to increase efficiencies for the 375 CES/CEA and the 375 CONS services while reducing the installation's footprint.

The consolidation of civil engineering and contracting functions from multiple older buildings into a single modern facility would streamline operations and improve work efficiency while reducing the

overall footprint of the installation by nearly 50,000 ft². In addition to the main facility, mission requirements necessitate the construction of one entomology facilities measuring approximately 1,200 ft² each and two vehicle storage facilities measuring approximately 5,000 ft² each. The proposed Consolidated Base Civil Engineering and Contracting Complex would be constructed in the vicinity of Building 4130; however, its exact placement has not yet been determined. As such, this IDEA evaluates the construction of this building anywhere within the approximately 9.5-acre area depicted on **Figure 2-10**. Further information on the proposed demolition of 21 of the 26 buildings currently used for civil engineering and contracting functions is provided under Project D3.

Figure 2-10. Possible Location for the Proposed Consolidated Base Civil Engineering and Contracting Complex

2.1.5 Infrastructure Improvement Projects

Of the infrastructure improvement projects proposed at Scott AFB over the next 5 FYs (as identified in **Appendix A**), three were identified for detailed analysis as selected projects under the Proposed Action. The other remaining proposed infrastructure improvement projects are addressed in the cumulative impacts analysis for this IDEA. The selected infrastructure improvement projects could disturb as much as 343,260 ft^2 of land from an estimated 1,318,133 ft^2 of infrastructure improvement projects proposed over the next 5 FYs. Projects within this category include the removal, installation of, or upgrades to, paved roadways, sidewalks, parking lots, utilities, storm water systems, fences, and outdoor recreational facilities. **Table 2-3** identifies the selected infrastructure improvement projects to be evaluated in detail in this IDEA, and **Figures 2-1** and **2-2** show the possible locations of the selected infrastructure improvement projects relative to known constraints at Scott AFB.

The selected infrastructure improvement projects are believed to encompass the upper range of potential impacts on the natural and man-made environment from such projects in the infrastructure improvement category and thus frame the upper limits for potential impacts that reasonably could be expected from the projects proposed at the installation. For example, the construction of the Aircraft Deicing Pad would

Table 2-3. Selected Infrastructure Improvement Projects Analyzed in this IDEA

Project Identification Number and Title	Installation Project Number	FY	Land Use	Description	Potential Constraints	Project Area (ft^2)	Change in Impervious Surface (ft^2)
I1. Construct Civil Engineering Open Storage Yard	VDYD102004	2012	Maintenance	Construct civil engineering open storage yard near Building 5540. The project would also include the construction of an asphalt-paved roadway to provide access from Pryor Drive.	ERP	31,500	+31,500
I2. Construct Communication Infrastructure for DISA and other future development at the Cardinal Creek MFH neighborhood	TBD	2013	Airfield and Administrative	Construct and upgrade communications duct bank system to service the proposed DISA facility and for future development at the former Cardinal Creek MFH neighborhood. Due to the sensitivity of this information, the location of the communication duct banks is not shown on **Figures 2-1** and **2-2.**	Floodplain, ERP, QD	221,760	No change
I3. Construct Aircraft Deicing Pad	VDYD070134	2017	Airfield	Construct a concrete aircraft deicing pad that includes an underground storage tank, a drainage system, and permanent lighting.	QD	90,000	+90,000
					Total Square Feet	**343,260**	**+121,500**

Key:
DISA = Defense Information System Agency
ERP = Environmental Restoration Program
ft^2 = square feet
FY = Fiscal Year
MFH = Military Family Housing
QD = quantity-distance
TBD = to be determined

have the potential to create the greatest amount of new impervious surface of any of the infrastructure improvement projects proposed at Scott AFB. Construction of the communications infrastructure for the DISA and for other future development at the Cardinal Creek MFH neighborhood would entail extensive trenching across large portions of the installation including under Cardinal Creek and portions of the airfield. An example of a road and parking lot repair project resulting in the most land disturbance would be the construction of the Civil Engineering Open Storage Yard. The other infrastructure improvement projects identified in **Appendix A** not selected under the Proposed Action are considered in the cumulative impacts analysis of this IDEA.

All fill used for infrastructure improvement activities would be obtained from an approved borrow pit and screened to ensure it contains no cultural materials. All trees and vegetation impacted from infrastructure improvement activities would be replaced or relocated, as applicable. All ground disturbed during construction activities that does not include site improvements would be reseeded with appropriate ground cover. Greater detail on each of the selected infrastructure improvement projects is given in the following paragraphs.

I1. Construct Civil Engineering Open Storage Yard. Project I1, Construct Civil Engineering Open Storage Yard, would entail the construction of an approximately 31,500-ft^2 storage yard and access road for the 126th ARW. The purpose of Project I1 is to install a properly sized, adequately configured, and secured base civil engineering open storage yard with adequate drainage to support the 126 ARW. The need is to eliminate the current untenable situation are the existing undersized, unsecured, dilapidated, poorly drained, and aesthetically unacceptable facility.

The proposed civil engineering open storage yard would replace the existing storage yard located at Building 5540, which is proposed for demolition under Project D6 (see **Appendix A**). The proposed storage yard would be made of concrete and would be situated immediately to the west of Buildings 5046 and 5048. An approximately 500-foot-long, asphalt-paved roadway would provide access from Pryor Drive. No structures would be constructed with the project; however, appropriate fencing, lighting, and storm water infrastructure would be included. The proposed civil engineering open storage yard is approximately 60 feet to the north of Cardinal Creek and the 100-year floodplain. **Figure 2-11** shows the Civil Engineering Open Storage Yard.

Figure 2-11. Civil Engineering Open Storage Yard

I2. Construct Communication Infrastructure for DISA and other future development at Cardinal Creek MFH neighborhood. Project I2, Construct Communication Infrastructure for DISA and other future development at the Cardinal Creek MFH neighborhood, would entail the construction of a 6,840-liner-foot communications duct bank system and upgrades to no more than 11,640 linear feet of existing communication duct banks to service the DISA facility and for other future development proposed for the former Cardinal Creek MFH neighborhood. The purpose of Project I2 is to provide the necessary communications infrastructure to support future development north of the airfield and at the former Cardinal Creek MFH neighborhood. The need for Project I2 is to upgrade existing communications infrastructure to meet future mission requirements of the DISA and other future tenants of the former Cardinal Creek MFH neighborhood. One new communication duct bank and two existing communication duct banks proposed for upgrades cross under Cardinal Creek. Another existing communication duct bank crosses under portions of the installation's airfield including the runway. The new duct banks would require ground disturbance measuring as much as 12 feet wide by 12 feet deep. Manholes would be positioned approximately every 500 feet to allow access. Ground disturbance from the new duct banks would measure no more than 82,080 ft^2 and ground disturbance from upgrades to existing duct banks would measure no more than 139,680 ft^2. Horizontal drilling techniques would be used to the greatest extent practicable to minimize ground disturbance and to limit impacts on the installation's airfield. Ducts installed under the airfield would require steel casing. Due to the sensitivity of this information, the locations of the communication duct banks are not shown on **Figures 2-1** and **2-2**.

I3. Construct Aircraft Deicing Pad. Project I3, Construct Aircraft Deicing Pad, would entail the construction of an approximately 90,000-ft^2 concrete aircraft-deicing pad with a UST to hold deicing fluid runoff, a drainage system to route deicing fluid runoff into the UST, and a permanent lighting system. The purpose of Project I3 is to construct an aircraft deicing pad that allows the 375 AMW to conduct aircraft deicing operations at the western parking ramp of Scott AFB's airfield. Project I3 is needed to ensure that the 375 AMW has immediate access to deicing operations during mission exercises without relying on the availability of the 126 ARW deicing pad.

The proposed aircraft deicing pad would be constructed on the grassy area to the east of Building 450 and would have sufficient clearance space to handle aircraft such as C-40s, KC-10s, C-17s, and C-5s, and the concrete of the pad would be designed to support aircraft weighing up to 900,000 pounds. The centerline of the deicing pad would be oriented with the prevailing winds, and the functional layout would prevent jet blasts onto surrounding aircraft. When not used, the proposed aircraft-deicing pad could be used for aircraft parking.

2.1.6 Natural Infrastructure Management Projects

The IDEA addresses three natural infrastructure management projects proposed over the next 5 FYs (FY 2012 to FY 2017) to support future mission requirements. All three natural infrastructure management projects from the listing in **Appendix A** are large enough in scope to warrant analysis as projects under the Proposed Action. As such, there are not any other projects for the natural infrastructure management category. Natural infrastructure management projects could disturb as much as 2,151,000ft^2 of land, though this area includes a project to remove select trees from within a 2,150,000 ft^2 defined area. Projects within this category include upgrades to enhance airspace management (tree removal and trimming), improvements to water quality, and improvements to species habitat. **Table 2-4** identifies natural infrastructure management projects associated with the Proposed Action, and **Figures 2-1** and **2-2** show the possible locations of all natural infrastructure management projects relative to known constraints at Scott AFB.

Table 2-4. Proposed Natural Infrastructure Management Projects Analyzed in this IDEA

Project Identification Number and Title	Installation Project Number	FY	Land Use	Description	Potential Constraints	Project Area (ft^2)	Change in Impervious Surface (ft^2)
NI1. Airfield Tree Violations	VDYD070142	2016	Airfield	Remove or trim approximately 255 trees from the installation to avoid conflicts with the airfield. The majority of the trees are located at the golf course between Golf Course Road and the airfield.	Clear Zone, Noise, QD, T & E Species	2,150,000	No change
NI2. Remove Log Jam from Silver Creek	TBD	2012	Open Space	Remove log jam from Silver Creek, which is resulting in the accumulation of logs, silt, and debris. Minimal vegetation removal might be required to allow vehicular access to the log jam.	Wetlands, Floodplains, Cultural Resources, T & E Species	1,000	No change
NI3. Improve Foraging Habitat for Indiana Bat	TBD	2012 through 2017	Open Space	Improve foraging habitat for Indiana bat by establishing management zones and conducting periodic tree thinning and planting. Because the habitat of the Indiana bat has not been determined on-installation, this project is not shown on **Figures 2-1** and **2-2**.	Wetlands, Floodplains, QD, ERP, Cultural Resources, T & E Species	TBD	No change
					Total Square Feet	**2,151,000**	**No change**

Key:
ERP = Environmental Restoration Program
ft^2 = square feet
FY = Fiscal Year
QD = quantity-distance
T & E = Threatened and Endangered
TBD = to be determined

Projects with the potential to affect Federal-listed threatened and endangered species would require consultation with the USFWS under Section 7 of the ESA. All fill used for natural infrastructure management activities would be obtained from an approved borrow pit and screened to ensure it contains no cultural resources. All trees and vegetation impacted from natural infrastructure management activities would be replaced or relocated, as applicable. All ground disturbed during activities that does not include site improvements would be reseeded with appropriate species, as applicable. Greater detail on each of the natural infrastructure management projects is given in the following paragraphs.

NI1. Airfield Tree Violations. Project NI1, Airfield Tree Violations, entails the removal or trimming of approximately 255 trees from the installation. The purpose of Project NI1 is to avoid conflicts with the airfield criteria and meet the Joint Use Agreement signed between the Secretary of the Air Force and St. Clair County. The need for Project NI1 is for Scott AFB's airfield to comply with UFC 3-260-01, *Airfield and Heliport Planning and Design* (DOD 2008), and with the FAA Regulation Part 77, *Objects Affecting Navigable Airspace* (FAA 2012).

As part of this project, any trees and bushes within 500 feet of the runway centerline would be totally removed and any vegetation penetrating the 7:1 slope runway approach would either be removed or cut to a height of 10 feet below the imaginary slope. Trees that cannot be cut to a height at which they would remain healthy would be removed. The majority of trees to be removed are on the east side of the runway at the golf course between Golf Course Road and the airfield; however, select trees outside of this area that are identified as blocking the view of the runway from the airfield control tower would be included. Removal of the trees would entail grinding the stumps and perimeter roots to a depth between 6 and 12 inches below existing grade and removing excessive wood chips. Ground within a radius of 10 feet surrounding the tree stump would be graded to match the existing grade of the adjacent ground and would be reseeded with grasses or appropriate vegetation. Topsoil would be used to fill holes and voids. New trees would be planted in areas that do not interfere with the airfield and might include short-growing trees and shrubs within the 7:1 slope runway approach. Replacement trees could be planted anywhere on the installation and would take bird/animal aircraft strike hazards into account prior to planting. Due to the proximity of Indiana bat habitat to the project site, Scott AFB conducted consultation with the USFWS under Section 7 of the ESA. The USFWS provided concurrence that this project is not likely to adversely affect the Indiana bat (see **Appendix H**).

NI2. Remove Log Jam from Silver Creek. Project NI2, Remove Log Jam from Silver Creek, entails the removal of a log jam from Silver Creek. The purpose of Project NI2 is to remove a log jam from Silver Creek that is causing an accumulation of logs, heavy silt, and debris (e.g. appliances, plastic, and other refuse) and restricting the flow within Silver Creek. The need for Project NI2 is to ensure effective flow is restored within Silver Creek thus reducing the accumulation of excessive woody debris within the Silver Creek riparian corridor, maintaining effective drainage within the northeastern portion of the installation, and complying with the Scott AFB INRMP.

Two log jams were removed from Silver Creek in 2008 but a third log jam remains, and it is increasing in size. The log jam is causing the accumulation of additional logs, heavy silt, and debris, such as appliances, plastic, and other refuse, which are restricting the flow of Silver Creek. This project might also include minimal amounts of vegetation removal to allow work vehicles access to the log jam from the nearby perimeter road. Due to the proximity of Indiana bat habitat to the project site, Scott AFB conducted consultation with the USFWS under Section 7 of the ESA. The USFWS provided concurrence that this project is not likely to adversely affect the Indiana bat (see **Appendix H**).

NI3. Improve Foraging Habitat for Indiana Bat. Project NI3, Improve Foraging Habitat for Indiana bat, entails establishing habitat management zones for the Indiana bat and conducting periodic habitat improvement projects. The purpose of Project NI3 is to increase long-term viability of Indiana bat habitat

on Scott AFB. The need for Project NI3 is to ensure conservation of the existing 20 acres of known Indiana bat roosting habitat at Scott AFB per the Scott AFB INRMP.

This project would be conducted over a period of 5 years and would entail several components including identifying potential Indiana bat habitats, conducting tree thinning, planting Shagbark Hickory or other preferred roosting tree species, and maintaining an adaptive management program to address future issues as they occur. Due to this project's nature, prior to FONSI signature, Scott AFB conducted consultation with the USFWS under Section 7 of the ESA. The USFWS provided concurrence that this project is not likely to adversely affect the Indiana bat (see **Appendix H**). Because the habitat of the Indiana bat has not been determined on-installation, this project is not shown on **Figures 2-1** and **2-2**.

2.1.7 Summary of Proposed Activities

As a result of implementing the projects described in the preceding subsection (all projects identified in **Tables 2-1** through **2-4**), there would be 158,174 ft^2 of demolished buildings at Scott AFB, resulting in a decrease of impervious surfaces of 148,988 ft^2. Over the course of the next 5 years (FY 2012 to FY 2017), these projects would add 659,209 ft^2 of new facilities, site improvements, and new pavements, resulting in an anticipated increase of 352,588 ft^2 of impervious surface. Additionally, there would be infrastructure and natural infrastructure upgrades and improvements. The selected infrastructure improvement projects under the Proposed Action could disturb as much as 343,260 ft^2 of area and would increase impervious surfaces by 121,500 ft^2; the natural infrastructure projects could disturb as much as 2,151,000 ft^2 of area but would not result in an increase in impervious surfaces. **Table 2-5** summarizes the anticipated project areas and changes in impervious surfaces from the selected projects under the Proposed Action.

Table 2-5. Project Area and Change in Impervious Surfaces

Project Type	Total Project Area (ft^2)	Change in Impervious Surfaces (ft^2)
Demolition	158,174	-148,988
Construction	659,209	+352,588
Infrastructure Improvement	343,260	+121,500
Natural Infrastructure Management	2,151,000	No change
Total	**3,311,643**	**+325,100**

Note: Changes in impervious surfaces are not necessarily equivalent to the project area square footage because some facilities proposed for demolition are multiple stories, and many new facilities would be multiple stories. Furthermore, some infrastructure improvement and natural infrastructure management projects would disturb area but not add impervious surfaces.

2.2 Alternatives

All proposed projects and their associated possible locations at Scott AFB have undergone an intensive review by Civil Engineering Planning and Asset Management Flights and supporting installation staff. During revision to Scott AFB installation development plans and individual project planning and programming, alternatives for all projects are considered and evaluated. The best operational and engineering solutions, including facility siting proposals, are identified based on the following selection criteria:

- Fulfillment of current mission requirements

- Facility sustainability as mission evolves or changes
- Economical feasibility
- Consistency with future land uses and the IDP
- Consistency with state, regional, and local plans
- Consistency with DOD and USAF policies, guidances, and directives
- Functional compatibility with adjacent facilities
- Collocation of like services
- Availability of sites and adequacy of space
- Adherence to USAF Strategic Sustainable Performance goals and objectives
- Environmental constraints (see **Section 2.1.2**).

All proposed projects are reviewed and approved by the FUB, which is chaired by the Wing Commander.

Some projects, such as those that require demolition, renovation, or an addition to a specific building, might not have any alternatives by their very nature. Based on the above criteria, the scope and possible locations for each project identified in **Section 2.1** was determined by installation personnel to be mission supportive, sustainable, and an economical solution. **Section 2.2.1** provides an overview of the alternative analysis determination process.

The individual projects identified in this IDEA would be prioritized and implemented as funding becomes available. The Proposed Action encompasses all the currently identified priority projects and the analyses describe the specific and cumulative consequences of implementing installation development. Since project phasing is expected to occur based on the availability of funding, no phasing alternatives were carried forward for independent analysis. The following subsections discuss alternatives for each of the project categories.

2.2.1 Alternatives Analysis

The process for selecting projects to be analyzed in the IDEA is initiated with a review of all projects included in the community of the installation-approved 5-year development plans. The inclusion of a project in a base-approved plan begins with the identification of a DOD mission essential requirement by a proponent. The proponent submits the requirement to the Base Civil Engineer (BCE) for project consideration. Working with the proponent, the Engineering staff, and other subject matter experts (SME), including planners and environmental scientists, the BCE conducts an internal review to determine if the requirement can be met with operational or engineering solutions, while minimizing potential environmental impacts to natural and man-made environments. Additional reviews are conducted to determine if the proposed solution is consistent with the IDP, Antiterrorism/Force Protection Plan, INRMP, ICRMP, and other approved base plans. If the requirement includes facility construction, the internal review will include an evaluation of alternatives for potential development sites, which in turn must meet mission and national security requirements and minimize potential environmental concerns. The siting analysis for the proposed facility considers the adequacy of the site to fulfill current requirements with space for future expansion, functionality, command and control, compatibility with existing and future land use, compatibility with adjacent facilities, infrastructure availability, and site development costs. Once the requirement is determined to need an engineering solution and is consistent with base plans, a project is created and additional screening is conducted to determine placement of the project into the appropriate construction program (i.e., MILCON, SRM, NAF) or plan (i.e., INRMP, ICRMP). Finally, the project is presented to the FUB for approval. If it is approved, it is assigned a priority and recommended for a specific FY for completion.

2.2.2 Alternatives for Demolition Projects

The projects selected under the Proposed Action are facilities proposed for demolition because they have been deemed by the proponent, BCE, and other SME to be obsolete or economically infeasible to repair or renovate. In accordance with AFI 32-1032, *Planning and Programming Appropriated Funded Maintenance, Repair, and Construction Projects*, it is USAF policy to replace a facility when the estimated repair or renovation costs exceeds 70 percent of the replacement cost. **Table 2-6** provides the estimated renovation costs, the estimated building replacement value, and the percentage of the replacement value that the renovations would represent for each building proposed for demolition. Based on data provided by Scott AFB (Collingham, B. 2012) and in conjunction with UFC 3-701-09, *DOD Facilities Pricing Guide* (DOD 2009), the renovation of all of the buildings proposed for demolition would exceed 70 percent of the value of each building; therefore, renovation is not a reasonable alternative to the demolition of these buildings.

Although not alternatives to demolition, different demolition methods, and the timing of demolition activity to minimize fugitive dust generation, would be employed. Alternative demolition methods would vary depending on the area where demolition is planned, the building or structural materials to be demolished, the purpose of the demolition and the way the resultant debris would be disposed and are discussed within the analysis, where appropriate. These alternative demolition methods are not alternatives in the sense that the USAF would consider them during project planning, but rather, the USAF would choose the appropriate demolition method as dictated by local site conditions.

2.2.3 Alternatives for Construction Projects

Scott AFB is a densely constructed installation supporting a complex variety of command-level activities. Consequently, the need for adjacency in operational activity and the overall lack of and competition for available space results in most construction alternatives being limited to sites made available through demolition for a specific intended purpose. As noted in **Sections 2.1.2** and **Figures 2-1** and **2-2**, much of the installation is constrained by the location of the airfield and its associated CZs, APZs, and noise zones through the center of the installation; the existence of cultural resource sites, including the historic district, which is composed of more than 100 buildings; numerous ERP sites; extensive wetlands and floodplain areas; QD arcs; AT/FP standoffs; parking shortages; and designated land use categories. Due to the constraints described here and in **Section 2.1.2**, the analyses provided in this IDEA addressing the selected projects evaluates their siting anywhere within the improved or semi-improved areas of the installation that are within compatible land use areas of the installation.

In consideration of the existing installation land use constraints, the use of DOD-owned land surrounding Scott AFB or the leasing of privately owned facilities in the surrounding community have been considered as alternatives for construction projects. These alternatives are discussed in the following two paragraphs.

Alternative for All Construction Projects – Site Facilities on DOD-Owned Land Surrounding Scott AFB. There are no suitable DOD-owned lands surrounding Scott AFB to use for siting facilities. A 30-acre parcel of land on State Highway 161 near the intersection of State Highway 158 is a former communications tower annex of Scott AFB commonly referred to as the Mystic Star site. Because this site has only limited infrastructure, the cost of securing this site and providing the necessary infrastructure to meet mission requirements would be cost-prohibitive. Therefore, this alternative is not considered reasonable and is eliminated from further detailed analysis in this IDEA.

Table 2-6. Comparison of Building Renovation and Replacement Costs

Building Number	Building Square Footage[a]	Estimate Cost to Renovate per Square Foot[b]	Estimated Renovation Cost[c]	Building Replacement Value[b]	Percent of Building Replacement Value (70% Threshold)
48	910	$476	$526,146	$840,150	62.6%[d]
512	2,016	$102	$249,775	$244,059	102.3%
513	7,153	$137	$1,190,329	$1,517,675	78.4%
514	6,799	$137	$1,131,420	$1,442,566	78.4%
516	15,691	$137	$2,611,136	$3,329,210	78.4%
517	5,722	$137	$952,197	$1,214,055	78.4%
519	360	$137	$59,908	$43,582	137.5%
520	151	$137	$25,128	$32,038	78.4%
521	2,975	$137	$495,069	$631,215	78.4%
522	273	$137	$45,430	$57,923	78.4%
523	1,528	$137	$254,274	$324,201	78.4%
528	16,320	$205	$4,063,800	$5,093,393	79.8%
530	7,993	$205	$1,990,316	$2,041,594	97.5%
531	8,351	$205	$2,079,460	$2,819,131	73.8%
533	9,709	$102	$1,202,910	$1,175,381	102.3%
542	2,533	$137	$421,516	$537,435	78.4%
543	1,535	$137	$255,439	$325,686	78.4%
546	286	$137	$47,593	$17,123	277.9%
549	13,269	$137	$2,208,092	$2,815,327	78.4%
552	514	$137	$85,535	$109,057	78.4%
1984	3,168	$134	$515,642	$593,839	86.8%
1985	441	$89	$47,675	$51,559	92.5%
1986	2,383	$102	$295,245	$288,488	102.3%
1987	34,803	$188	$7,947,542	$9,377,492	84.8%
6303	5,540	$275	$1,850,550	$2,168,561	85.3%
6354	910	$61	$67,426	$70,070	96.2%

Notes:

a. Provided by Scott AFB (Collingham, B. 2012).

b. Provided by Scott AFB (Collingham, B. 2012) and derived from UFC 3-701-09, *DOD Facilities Pricing Guide* (DOD 2009).

c. Calculation includes a 1.0655 escalation factor for 2012 and a 1.14 regional cost factor for Scott AFB, as derived from UFC 3-701-09 (DOD 2009).

d. The calculation for Building 48 does not include the costs to remediate existing environmental contamination associated with onsite soil and groundwater contamination. Building 48 will exceed the 70 percent threshold after these costs have been determined and are included.

Alternative for All Construction Projects – Lease Additional Facilities in the Surrounding Community. Under this scenario, Scott AFB would lease office and warehouse space in the surrounding private-sector community to house personnel and provide space for mission operations. This alternative would result in an insufficient span of control for the command-and-control function. The leased facilities would have great limitations in their ability to meet the DOD force protection requirements, resulting in high

additional costs or noncompliance with force protection requirements. In addition, a 2002 DOD policy seeks to limit land acquisition or lease agreements and, as such, USAF approval of this alternative would be problematic. This alternative is not considered reasonable and is eliminated from further detailed analysis in this IDEA.

Specific alternatives to the six selected construction projects were considered by the 375 CES/CEA and other installation personnel during the planning process for these projects. The following paragraphs provide a summary of the alternatives considered and the reasoning behind why no reasonable alternatives were identified or were included for further evaluation in this IDEA.

Project C1. Construct and Operate Explosive Ordnance Proficiency Range. No alternatives were identified for Project C1 due to the unique space requirements needed for the detonation of explosive material, as noted in stated regulations. Scott AFB does not have available space that meets the operational needs of a proficiency range; therefore, no alternative can meet the availability of sites and adequacy of space selection criteria presented in **Section 2.2**.

Project C2. Construct New DISA Facility. Alternatives to Project C2 include the consideration of different layouts of the facility within the former Cardinal Creek MFH neighborhood. Each orientation would disturb approximately the same amount of space as the current proposed layout of the facility and, due to the proximity of each alternative layout to the proposed layout and the largely similar site conditions throughout the former Cardinal Creek MFH neighborhood, the environmental effects from these alternative layouts are expected to be the same. Therefore, this alternative has been eliminated from further detailed analysis.

Project C3. Construct Fitness Facility. An alternative to Project C3 would be to renovate the existing structure. However, renovations of this building are considered economically unfeasible due to the building's age and renovation of the existing fitness facility would not provide the space needed to meet space requirements and alleviate overcrowding. Therefore, this alternative does not meet the selection criteria presented in **Section 2.2**, namely to fulfill mission requirements, be economically feasible, and provide adequate space. As such, it has been eliminated from further detailed analysis.

Project C4. Construct US TRANSCOM Mission Planning Center. An alternative site to Project C4 has been identified as the parking area to the south of the current US TRANSCOM Headquarters Facility (Building 1900). Construction of the proposed US TRANSCOM Mission Planning Center at this alternative location would require the construction of a pedestrian walkway above Winters Drive to connect the proposed facility with the Headquarters Facility, and the connector road between Scott Drive and the Commissary, immediately south of the proposed facility, would need to be closed to traffic. Construction at this location would also disturb ERP Site 6. ERP Site 6 addresses an area of soil and groundwater contamination that results of a release of an undetermined amount of gasoline from an underground storage tank in the 1970s at a former gasoline station. While remedial action is currently underway, construction at this location would require further remedial consideration. Additionally, this area of the installation is currently constrained with by a lack of parking and this alternative would provide a reduced amount of parking when compared to the proposed site. Based on these factors, this alternative does not meet the selection criteria presented in **Section 2.2** as it would not be economically feasible or functionally compatible with adjacent facilities due to environmental constraints. Therefore, this alternative has been eliminated from further detailed analysis.

Project C5. Construct Joint Cyber Facility. An alternative to Project C5 would be to construct an addition to Building 1575 for the Cyber Complex. Construction of the addition would provide the space needed to meet current and future mission requirements and limit the amount of land disturbance, construction, and infrastructure upgrades when compared to constructing a new facility. However,

Building 1575 is in extremely poor condition and cannot be renovated to provide a functional work environment. The air conditioning system for Building 1575 cannot be upgraded to provide sufficient cooling for the electrical equipment currently in use and the support columns beneath the server floor have started to deteriorate causing safety concerns. Based on these factors, this alternative does not meet the selection criteria presented in **Section 2.2** as it would not fulfill current mission requirements. Therefore, this alternative has been eliminated from further detailed analysis.

Project C6. Construct Consolidated Base Civil Engineering and Contracting Complex. An alternative to Project C6 is to renovate the 26 existing facilities being used for civil engineering and contracting functions. However, renovation of these existing facilities would not provide a consolidated workplace for civil engineering and contracting personnel and, as shown in **Table 2-6**, would cost more than 70 percent of each building's current replacement value. Based on these factors, this alternative does not meet the selection criteria presented in **Section 2.2** as it would not collocate like services or be economically feasible. Therefore, this alternative has been eliminated from further detailed analysis.

2.2.4 Alternatives for Infrastructure Improvement Projects

Infrastructure improvement projects include the removal, installation of, or upgrades to airfield pavements, paved roadways, sidewalks, parking lots, utilities, storm water systems, fences, and outdoor recreational facilities. Alternatives are limited to existing and proposed locations of real property facilities (i.e., buildings, structures) and non-real property assets (i.e., aircraft, equipment, vehicles) that the infrastructure serves. As noted in **Section 2.2.3**, Scott AFB is a densely constructed installation supporting a complex variety of command-level activities. Consequently, the need for adjacency in operational activity and the overall lack of and competition for available space results in most infrastructure alternatives being limited to areas that such infrastructure would serve (i.e., Project I1 must be located on the 126 ARW campus, Project I2 must be constructed in coordination with the development actions at the former Cardinal Creek MFH area, and Project I3 must be located on the western ramp of the airfield.) Additionally, as noted in **Sections 2.1.2** and **Figures 2-1** and **2-2**, much of the installation is constrained by the existing land use. Due to the constraints described here and in **Section 2.1.2**, the selection criteria presented in **Section 2.2**, namely the fulfillment of mission requirements, the collocation of like services, and the availability of sites and adequacy of space, preclude the development of reasonable alternatives to the infrastructure improvement projects analyzed in this IDEA.

2.2.5 Alternatives for Natural Infrastructure Management Projects

Natural infrastructure management projects are selected because they are required to ensure the natural environment remains compatible with military operations; the goals and objectives identified in the INRMP and ICRMP are met; and environmental statutes, rules, regulations, and permit conditions are followed. There are no reasonable alternatives to the selected natural infrastructure management projects at Scott AFB. For instance, in Project NI1, stands of trees that may violate airfield height criteria must be clear cut, selectively harvested, or topped (effectively causing the demise of the tree) to meet the requirements of stated regulations. In Project NI2, the alternatives are to complete the objective of the project or the No Action Alternative. In Project NI3, the stated objectives can only be accomplished in one 20-acre area of the installation, and there are no alternative methods to accomplishing these objectives.

2.3 No Action Alternative

CEQ regulations require consideration of the No Action Alternative for all proposed actions. The No Action Alternative serves as a baseline against which the impacts of the Proposed Action and other

potential action alternatives can be compared and consequently it is carried forward for further evaluation in this IDEA. The No Action Alternative would be 'no change' from current practices, or continuing with the present course of action until that action is changed.

Through implementation of the No Action Alternative, future installation development projects would continue to be evaluated on an individual project basis. It is anticipated that future development would occur under the No Action Alternative, but those development projects would be analyzed through the preparation of project-specific NEPA documentation, as appropriate. This alternative is carried forward for analysis as a baseline against which the impacts of the Proposed Action and potential action alternatives can be evaluated.

2.3.1 No Action Alternative for Selected Demolition Projects

Under the No Action Alternative, the selected demolition projects would not be implemented. In some situations relevant to the projects addressed in the IDEA, mission functions would continue to occur, and personnel would continue to work in obsolete, deteriorating, and underused facilities or would be consolidated into other less appropriate facilities within the installation, if space is available. In addition, limited funding would have to be used to continue maintenance and upkeep of these facilities diverting necessary funding away from other mission essential functions. The No Action Alternative for demolition projects is considered unreasonable because it would prevent Scott AFB from meeting its prescribed goals and reducing the physical plant footprint on the installation pursuant to the "20/20 by 2020" initiative or allowing the installation to make space available for future development.

2.3.2 No Action Alternative for Selected Construction Projects

Under the No Action Alternative, the selected construction projects under the Proposed Action would not be built. In some situations relevant to the projects addressed in this IDEA, Scott AFB would not have new state-of-the-art facilities to accommodate current and future missions and address facility workspace requirements. For instance, projects to upgrade and enhance AT/FP and communication capabilities would not be constructed, causing the installation to decrease mission efficiency and experience difficulty meeting national security requirements. Projects planned to enhance morale and wellness for active and retired military members and their dependents would not be constructed, causing fitness and other recreational programs to be held in facilities that are inadequate in size and considered to be in substandard conditions; ultimately causing Scott AFB to experience difficulty meeting USAF physical fitness and welfare requirements.

2.3.3 No Action Alternative for Selected Infrastructure Improvement Projects

Under the No Action Alternative, the selected infrastructure improvement projects would not be implemented. In some situations relevant to the projects addressed in this IDEA, Scott AFB would continue to use obsolete and deteriorating utilities, vehicle and storage parking space would continue to be inadequate to support mission functions and meet national security objectives, and the installation's roadways and airfield pavements and parking space would continue to deteriorate and could cause unsafe conditions. Scott AFB would still be required to repair breaks and interruptions in utilities and would continue to repair cracks and deteriorating pavement areas by patching until their useful life has ended. In addition, not upgrading and replacing outdated and unsafe infrastructure would hinder Scott AFB's mission and security objectives and could increase potential foreign object damage (FOD) hazards to aircraft.

2.3.4 No Action Alternative for Selected Natural Infrastructure Management Projects

Under the No Action Alternative, the natural infrastructure management projects would not be implemented. In some situations relevant to the projects addressed in this IDEA, Scott AFB would not be able to enhance airspace management and safety, the potential for erosion and degradation of water quality would increase, habitat for sensitive species would not be enhanced, and historic resources could be at risk. Scott AFB would not be in full compliance with INRMP and ICRMP management objectives to protect its natural and historic resources. In addition, Scott AFB would not be in full compliance with Federal, state, and local regulations requiring protection of water quality, sensitive species and their associated habitat, and protection of historic resources.

2.4 Decision to be Made and Identification of the Preferred Alternative

In this IDEA, Scott AFB evaluates the selected projects to determine whether the Proposed Action would result in any significant impacts. If such impacts are predicted, Scott AFB would provide mitigation to reduce impacts to below the level of significance, undertake the preparation of an EIS addressing the Proposed Action, or abandon the Proposed Action. The IDEA is also be used to guide Scott AFB in implementing the Proposed Action, should it be approved, in a manner consistent with USAF standards for environmental stewardship. The Preferred Alternative is the Proposed Action as set forth in **Section 2.1**.

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3. Affected Environment

Section 3 describes the environmental resources and conditions most likely to be affected by the Proposed Action and provides information to serve as a baseline from which to identify and evaluate potential environmental and socioeconomic impacts that could result from the Proposed Action. Baseline conditions represent current conditions. The potential environmental impacts of the Proposed Action and the No Action Alternative on the baseline conditions are described in **Section 4**. In compliance with NEPA, CEQ guidelines, and USAF guidance in 32 CFR Part 989, as amended, the description of the affected environment focuses on those resources and conditions potentially subject to impacts.

3.1 Noise

3.1.1 Definition of the Resource

Sound is defined as a particular auditory effect produced by a given source, for example the sound of rain on a rooftop. Noise and sound share the same physical aspects, but noise is considered a disturbance while sound is defined as an auditory effect. Noise is defined as any sound that is undesirable because it interferes with communication, is intense enough to damage hearing, or is otherwise annoying. Noise can be intermittent or continuous, steady or impulsive, and can involve any number of sources and frequencies. It can be readily identifiable or generally nondescript. Human response to increased sound levels varies according to the source type, characteristics of the sound source, distance between source and receptor, receptor sensitivity, and time of day. How an individual responds to the sound source will determine if the sound is viewed as music to one's ears or as annoying noise. Affected receptors are specific (e.g., schools, churches, or hospitals) or broad areas (e.g., nature preserves or designated districts) in which occasional or persistent sensitivity to noise above ambient levels exists.

Noise Metrics and Regulations

Noise Metrics. Two types of measurements are normally considered when determining noise impacts on the surrounding population: the DNL and peak sound levels. DNL represents daily operations averaged over a prescribed time period with a 10-decibel (dB) penalty assigned to noise events occurring hours between the hours of 10 p.m. and 7 a.m. DNL is the primary descriptor of noise impacts because it represents a daily average. Single event noise levels are also used to assess the risk of noise complaints. A peak sound level is a single noise event; it is the estimated maximum noise level that is heard.

Sound levels can be dBA, C-weighted (dBC), or unweighted (dBP). An A-weighted measurement depresses the noise levels in low- and high-frequency bands to approximate the range of human hearing. This noise measurement provides a good indication of the impact produced by aircraft activities. The C-weighting measurement includes a lower frequency range of sounds than the A-scale, and only is used to evaluate the DNL noise levels from the proposed explosive ordnance proficiency range operations. The low-frequency components of sound from high-amplitude impulse noise cause buildings and windows to shake and rattle (vibration). Peak sound pressure levels (PK15[met]), a single event metric, only is used to evaluate the levels from proposed explosive ordnance proficiency range operations. PK15(met) accounts for statistical variation in received single-event peak noise levels due to weather. It is the calculated peak noise level, without frequency weighting, expected to be exceeded by 15 percent of all events that might occur. If there are multiple weapon types fired from one location, or multiple firing locations, the single-event level used is the loudest noise level that occurs at each receiver location. PK15(met) does not take the duration or the number of events into consideration; it is measured in unweighted decibels.

Federal Regulations. DNL is the designated metric of the Federal government for measuring noise and its impacts on humans. According to the USAF, FAA, and the U.S. Department of Housing and Urban Development criteria, residential units and other noise-sensitive land uses are "clearly unacceptable" in areas where the noise exposure exceeds 75 dBA DNL, "normally unacceptable" in regions exposed to noise between 65 and 75 dBA DNL, and "normally acceptable" in areas exposed to noise of 65 dBA DNL or less. The Federal Interagency Committee on Noise developed land use compatibility guidelines for noise in terms of DNL (FICON 1992). For outdoor activities, the USEPA recommends 55 dBA DNL as the sound level below which there is no reason to suspect that the general population would be at risk from any of the effects of noise (USEPA 1974).

The Federal government has 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. Under the Noise Control Act of 1972, the Occupational Safety and Health Administration (OSHA) established workplace standards for noise. The minimum requirement states that constant noise exposure must not exceed 90 dBA over an 8-hour period. The highest allowable sound level to which workers can be constantly exposed is 115 dBA and exposure to this level must not exceed 15 minutes within an 8-hour period. The standards limit instantaneous exposure, such as impact noise, to 140 dBA. If noise levels exceed these standards, employers are required to provide hearing protection equipment that will reduce sound levels to acceptable limits (29 CFR Part 1910.95).

State Regulations. Noise regulations for the State of Illinois are provided in Title 35 of the Illinois Administrative Code, Subtitle H: Noise (State of Illinois 2002). The code includes limits for several types of noise-producing activities; however, these limits do not apply to construction equipment. The code contains noise level limits for explosive blasting, which are 107 dBC at the property line of a residential area and 112 dBC at the property line of a commercial area. These limits are lowered by 10 dBC during nighttime hours (i.e., between 10:00 p.m. and 7:00 a.m.). Persons causing or allowing explosive blasting must notify the local public prior to the commencement of blasting operations, except in emergency situations (State of Illinois 2002).

Local Regulations. Scott AFB is in an unincorporated area of St. Clair County. Per Chapter 40 of the St. Clair County Code of Ordinances, "noise emanating from any use shall not be of such volume or frequency as to be unreasonably offensive at or beyond the property lines. Unreasonably offensive noises, due to intermittence, beat frequency, or shrillness shall be muffled so as not to become a nuisance to adjacent uses" (St. Clair County 2006). However, a person or business may obtain a permit from the county to create loud noises.

Common Sounds. **Table 3-1** compares common sounds and shows how they rank in terms of the effects of hearing. As shown, a whisper is normally 30 dBA and considered to be very quiet while an air conditioning unit 20 feet away is considered an intrusive noise at 60 dBA. Noise levels can become annoying at 80 dBA and very annoying at 90 dBA. To the human ear, each 10 dBA increase seems twice as loud (USEPA 1981).

Construction Sound Levels. Building demolition and construction work can cause an increase in sound that is well above the ambient level. A variety of sounds are emitted from loaders, trucks, saws, and other work equipment. **Table 3-2** lists noise levels associated with common types of construction equipment. Construction equipment usually exceeds the ambient sound levels by 20 to 25 dBA in an urban environment and up to 30 to 35 dBA in a quiet suburban area.

Table 3-1. Sound Levels and Human Response

Noise Level (dBA)	Common Sounds	Effect
10	Just audible	Negligible*
30	Soft whisper (15 feet)	Very quiet
50	Light auto traffic (100 feet)	Quiet
60	Air conditioning unit (20 feet)	Intrusive
70	Noisy restaurant or freeway traffic	Telephone use difficult
80	Alarm clock (2 feet)	Annoying
90	Heavy truck (50 feet) or city traffic	Very annoying Hearing damage (8 hours)
100	Garbage truck	Very annoying*
110	Pile drivers	Strained vocal effort*
120	Jet takeoff (200 feet) or auto horn (3 feet)	Maximum vocal effort
140	Carrier deck jet operation	Painfully loud

Source: FICON 1992

Note: *HDR extrapolation

Table 3-2. Predicted Noise Levels for Construction Equipment

Construction Category and Equipment	Predicted Noise Level at 50 feet (dBA)
Clearing and Grading	
Bulldozer	80
Grader	80–93
Truck	83–94
Roller	73–75
Excavation	
Backhoe	72–93
Jackhammer	81–98
Building Construction	
Concrete mixer	74–88
Welding generator	71–82
Pile driver	91–105
Crane	75–87
Paver	86–88

Source: USEPA 1971

3.1.2 Existing Conditions

The ambient noise environment around Scott AFB is affected mainly by military aircraft operations and automobile traffic. Military operations that impact the noise environment can also include aircraft maintenance activities on the ground and weapons training.

Scott AFB is home to the 375 AMW, which flies C-21 aircraft; the 932 AW, which flies C-9 and C-40 aircraft; and the 126th ARW, which flies KC-135 aircraft. In March 2010, an Air Installation Compatible Use Zone (AICUZ) study was completed for the installation (SAFB 2010i). As shown in **Figures 2-1** and **2-2**, the 65–80+ dBA DNL noise zones from the 2010 AICUZ Study extend north and south from the runway centerlines and parallel the runways. The noise zones do not extend outside the installation boundary. The majority of the selected projects are not encompassed by the noise zones; only small portions of Project I3 and NI1 are within the noise zones.

Vehicle use associated with military operations at Scott AFB consists of passenger and military vehicles and delivery and fuel trucks. Passenger vehicles compose most of the vehicles present at Scott AFB and the surrounding community roadways.

Considering the military aircraft operations and vehicle traffic at and adjacent to Scott AFB, the ambient sound environment around Scott AFB is likely to resemble an urban atmosphere.

3.2 Land Use

3.2.1 Definition of the Resource

The term "land use" refers to real property classifications that indicate either natural conditions or the types of human activity occurring on a parcel. In many cases, land use descriptions are codified in local zoning laws. However, there is no nationally recognized convention or uniform terminology for describing land use categories. As a result, the meanings of various land use descriptions, "labels," and definitions vary among jurisdictions. Natural conditions of property can be described or categorized as unimproved, undeveloped, conservation or preservation area, and natural or scenic area. There is a wide variety of land use categories resulting from human activity. Descriptive terms often used include residential, commercial, industrial, agricultural, institutional, and recreational. USAF installation land use planning commonly use 12 general land use classifications: Airfield, Aircraft Operations and Maintenance, Industrial, Administrative, Community (Commercial), Community (Service), Medical, Housing (Accompanied), Housing (Unaccompanied), Outdoor Recreation, Open Space, and Water (USAF 1998).

Two main objectives of land use planning are to ensure orderly growth and compatible uses among adjacent property parcels or areas. According to Air Force Pamphlet 32-1010, *Land Use Planning*, land use planning is the arrangement of compatible activities in the most functionally effective and efficient manner (USAF 1998). The highest and best uses of real property are obtained when compatibility among land uses fosters societal interest. Tools supporting land use planning within the civilian sector include written master plans/management plans, policies, and zoning regulations. The USAF comprehensive planning process also uses functional analysis, which determines the degree of connectivity among installation land uses and between installation and off-installation land uses, to determine future installation development and facilities planning.

In appropriate cases, the location and extent of a proposed action needs to be evaluated for its potential effects on a project site and adjacent land uses. The foremost factor affecting a proposed action in terms of land use is its compliance with any applicable land use or zoning regulations. Other relevant factors

include matters such as existing land use at the project site, the types of land uses on adjacent properties and their proximity to a proposed action, the duration of a proposed activity, and its "permanence."

3.2.2 Existing Conditions

Surrounding Off-Installation Land Use. Scott AFB is on unincorporated land in the northeastern portion of St. Clair County, Illinois; approximately 20 miles east of the City of St. Louis, Missouri (see **Figure 1-1**). The installation is surrounded by the Village of Shiloh to the west, the City of O'Fallon to the northwest, the City of Mascoutah to the east-southeast, and unincorporated St. Clair County to the north and south. The area immediately surrounding the installation generally consists of agriculture or undeveloped land (pasture, wetlands, wooded areas); however, there are several developed areas including an office building/commercial shopping center to the northwest, Shiloh-Scott MetroLink Station to the west, Scott Elementary School to the southwest, Lincoln Landing privatized housing area to the south. MidAmerica Airport is collocated with Scott AFB and adjoins the installation to the east-northeast. Under a joint use agreement, MidAmerica Airport and Scott AFB share airfield facilities, including an air traffic control tower staffed by USAF personnel and are connected by a Taxiway G.

Due to the economic importance of Scott AFB and MidAmerica Airport, St. Clair County in cooperation with Scott AFB, MidAmerica Airport, and surrounding jurisdictions prepared the *Scott Air Force Base/MidAmerica St. Louis Airport Joint Land Use Study* (JLUS) in order to clarify land use compatibility guidance and develop tools to prevent encroachment and land-use conflicts related to aviation and training activities (SAFB 2008). The JLUS is an advisory document that identifies a series of suggested best practices and policies for the military, airport, and local jurisdictions to ensure compatible development and protect public welfare in areas near Scott AFB and MidAmerica Airport. The JLUS identifies several planning areas within which increased coordination and communication among stakeholders, and increasing levels of land use compatibility guidance (e.g., restrictions on residential and other sensitive land uses, building/structure heights, lighting, and development density and implementation of noise attenuation standards) (SAFB 2008a).

The goals of the JLUS are partially reflected in the land use categories and associated zoning classifications assigned by the jurisdictions surrounding Scott AFB (Village of Shiloh, the City of O'Fallon, the City of Mascoutah, and St. Clair County). The cities of O'Fallon and Mascoutah and St. Clair County have all enacted special airport-related zoning overlay districts at and in the vicinity of Scott AFB and MidAmerica Airport (City of O'Fallon 2011, City of Mascoutah 2011, St. Clair County 2011). Designated land uses in these jurisdictions include Business/Industrial Park and General Commercial in the City of O'Fallon, Airport in the City of Mascoutah, and Government and Agriculture in St. Clair County (City of O'Fallon 2006, City of Mascoutah 2008, St. Clair County 2011). The Village of Shiloh has designated the land adjacent to Scott AFB as Military, Transit-Oriented Development, and Light Industrial land uses, and the associated zoning as Office/Business and Light Industrial (Village of Shiloh 2009).

On-Installation Land Use. Scott AFB consists of 3,638 acres and is home to two major commands (HQ AMC and HQ US TRANSCOM), five headquarters (HQ AMC, HQ US TRANSCOM, Air Force Communications Agency, Defense Information Technology Contracting Organization, and DISA), the 126 ARW, and the 932 AW.

As discussed in **Section 2.1**, the Scott AFB Installation General Plan identifies 10 land use categories: Administrative, Aircraft Operations and Maintenance (O&M), Airfield, Community, Housing Accompanied, Housing Unaccompanied, Maintenance, Medical, Open Space, and Outdoor Recreation (SAFB 2011a). **Figure 2-3** shows the land uses that have been defined at Scott AFB. The dominant land use at Scott AFB is the Airfield, which runs northwest-southeast and occupies the central portion of the

installation. Due to their interdependent natures, Airfield, Aircraft O&M, and Maintenance uses are found in close proximity to the Airfield. The main residential and community area is west of the airfield and includes most Administration, Housing (Accompanied and Unaccompanied), Medical, and Community uses; and some Outdoor Recreation uses. The primary land uses east of the airfield are Open Space and Outdoor Recreation.

In addition to land use categories, Scott AFB has created district overlays to serve as a guide for future development by identifying desired functional land use relationships and evaluating these relationships among installation tenants and activities. The district areas are identified as administration, airfield, core, and industrial (SAFB 2011a). The administration district area is in the north-central portion of the installation, and provides land that might require isolation or physical separation from the general installation population. The airfield district area encompasses the airfield in the center of the installation, and includes associated uses that support flightline functions (e.g., aircraft maintenance, operation and administrative activities, and fire and crash and rescue). The core district area includes most of the western portion of the installation, except for the Housing Accompanied areas. It fosters a mixed use concept of an environment where personnel can live, work, and play. The industrial district area supports supply and warehousing activities in the south-central portion of the installation.

Future land use at Scott AFB, as presented in the Scott AFB Installation General Plan, shows the development of a sustainable platform to support the execution of current and future mission requirements. The primary proposed changes to future land use include the following:

- Conversion of the former Cardinal Creek MFH area and most of the golf course to Administrative land use functions
- Expansion of the Airfield pavement at the east-central portion to accommodate a possible future beddown area
- Expansion of Aircraft O&M uses on the southwest and southeast sides of the Airfield.

Seven Area Development Plans (ADPs) have been prepared to provide a long-term, coordinated framework for future land use development at Scott AFB. The ADPs provide an important link between the broad land use categories outlined in the Scott AFB IDP and site-specific planning for individual construction projects in the seven ADPs. The ADPs cover the Major Command Administration Area, Community and Housing Area, Historic District Area, Hospital Complex Area, Flightline Support Area, Warehouse and Storage Area, and Major Tenant Area. The future development plan includes 16 major projects and many smaller projects separated into current, short-range, and long-range development timeframes.

With respect to the selected projects, **Table 3-3** identifies the land use categories that each selected project is within or has been proposed within. Some selected projects occur in multiple land use categories.

Project C6 is within the southern runway CZ. CZs are safety areas, 3,000 feet by 3,000 feet, located immediately off the ends of runways where the overall risk for aircraft accidents is high (USAF 1999). Projects C1, I2, I3, NI1, and NI3 are within explosives QD safety zones, or QD arcs. QD arcs are imaginary predetermined distances surrounding potential explosive sites in which land use restrictions are established in order to limit damage in the unlikely event of a mishap (SAFB 2011a). See **Section 3.11** for more information on safety at Scott AFB.

Table 3-3. Land Use Categories Associated with the Selected Projects

Land Use Category	Selected Project
Airfield	• Construct Aircraft Deicing Pad (Project I3)
Maintenance	• Demolish Old Service Station, Building 48 (Project D1) • Demolish 21 Buildings in Support of the Base Civil Engineering and Contracting Complex (Project D3) • Construct Consolidated Base Civil Engineering and Contracting Complex (Project C6) • Construct Civil Engineering Open Storage Yard (Project I1)
Administration	• Demolish 21 Buildings in Support of the Base Civil Engineering and Contracting Complex (Project D3) • Construct US TRANSCOM Mission Planning Center (Project C4)
Open Space	• Construct Explosive Ordnance Proficiency Range (Project C1) • Construct New DISA Facility (Project C2) • Airfield Tree Violations (Project NI1)* • Remove Log Jam from Silver Creek (Project NI2) • Improve Foraging Habitat for Indiana Bat (Project NI3)
Community	• Demolish James Gym (Building 1987), Buildings 1984, 1985, and 1986, and outdoor pool (Facility 6303) (Project D2) • Construct New Fitness Facility (Project C3)
Outdoor Recreation	• Demolish James Gym (Building 1987), Buildings 1984, 1985, and 1986,and outdoor pool (Facility 6303) (Project D2) • Construct New Fitness Facility (Project C3) • Airfield Tree Violations (Project NI1)*
Housing Accompanied	• Construct Joint Cyber Facility (Project C5)

Note: * The specific locations of trees are estimated be in the Open Space and Outdoor Recreation land use categories.

Projects D1, D3, C1, C2, C6, I1, I2, and potentially NI3 are at or near ERP sites. Projects C2, I1, and I2 are at SS-25 (Former Base Housing Area), which has pesticide-contaminated soil. The anticipated remedy for site SS-25 is placement of land use controls (SAFB 2011d), although currently there are no land use controls at this ERP site (Collingham, R. 2012). The Scott AFB ERP Program Site Summaries does not identify land use controls for the ERP sites at or near Projects D1, D3, C1, and C6 (SAFB 2011d). The specific locations where Indiana bat foraging habitat would be improved (Project NI3) have not been determined; however, this project would likely be in the forested areas in the eastern portion of the installation. This area encompasses ERP Site 1 (LF-01) (Base Landfill) for which land use controls will be implemented to ensure the long-term integrity of the landfill cap. The land use controls at ERP Site LF-01 will prevent the use of the site for any purpose other than open space and detonation training at the explosive ordnance proficiency range (Project C1) (Collingham, R. 2012). See **Section 3.10** for more information on ERP sites at Scott AFB.

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 or area is measured by the concentration of criteria pollutants in the atmosphere. The air quality in a region is a result of not only the types and quantities of atmospheric pollutants and pollutant sources in an area, but

also surface topography, the size of the topological "air basin," and the prevailing meteorological conditions.

Ambient Air Quality Standards. Under the CAA, the USEPA developed numerical concentration-based standards, or National Ambient Air Quality Standards (NAAQS), for pollutants that have been determined to affect human health and the environment. The NAAQS represent the maximum allowable concentrations for ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), respirable particulate matter (including particulate matter equal to or less than 10 microns in diameter [PM_{10}] and particulate matter equal to or less than 2.5 microns in diameter [$PM_{2.5}$]), and lead (Pb) (40 CFR Part 50). The CAA also gives the authority to states to establish air quality rules and regulations. The State of Illinois has adopted the NAAQS and promulgated additional State Ambient Air Quality Standards (SAAQS) for criteria pollutants. In some cases, the SAAQS are more stringent than the Federal primary standards. **Table 3-4** presents the NAAQS and SAAQS.

Attainment Versus Nonattainment and General Conformity. The USEPA classifies the air quality in an air quality control region (AQCR), or in subareas of an AQCR, according to whether the concentrations of criteria pollutants in ambient air exceed the NAAQS. Areas within each AQCR are therefore designated as either "attainment," "nonattainment," "maintenance," or "unclassified" for each of the six criteria pollutants. Attainment means that the air quality within an AQCR is better than the NAAQS; nonattainment indicates that criteria pollutant levels exceed NAAQS; maintenance indicates that an area was previously designated nonattainment but is now attainment; and an unclassified air quality designation by USEPA means that there is not enough information to appropriately classify an AQCR, so the area is considered attainment. USEPA has delegated the authority for ensuring compliance with the NAAQS in Illinois to the Illinois Environmental Protection Agency, Bureau of Air. In accordance with the CAA, each state must develop a State Implementation Plan (SIP), which is a compilation of regulations, strategies, schedules, and enforcement actions designed to move the state into compliance with all NAAQS.

The General Conformity Rule applies only to significant actions in nonattainment or maintenance areas. This rule requires that any Federal action meet the requirements of a SIP or Federal Implementation Plan. More specifically, CAA conformity is ensured when a Federal action does not cause a new violation of the NAAQS; contribute to an increase in the frequency or severity of violations of NAAQS; or delay the timely attainment of any NAAQS, interim progress milestones, or other milestones toward achieving compliance with the NAAQS.

Federal Prevention of Significant Deterioration. Federal Prevention of Significant Deterioration (PSD) regulations apply in attainment areas to a major stationary source, (i.e., source with the potential to emit 250 tons per year [tpy] of any criteria pollutant), and a significant modification to a major stationary source, (i.e., change that adds 15 to 40 tpy to the major stationary source's potential to emit depending on the pollutant). Additional PSD major source and significant modification thresholds apply for greenhouse gases (GHGs), as discussed in the Greenhouse Gas Emissions subsection. PSD permitting can also apply to a proposed project if all three of the following conditions exist: (1) the proposed project is a modification with a net emissions increase to an existing PSD major source, and (2) the proposed project is within 10 kilometers of national parks or wilderness areas (i.e., Class I Areas), and (3) regulated stationary source pollutant emissions would cause an increase in the 24-hour average concentration of any regulated pollutant in the Class I area of 1 mg/m^3 or more (40 CFR 52.21[b][23][iii]). A Class I area includes national parks larger than 6,000 acres, national wilderness areas and national memorial parks larger than 5,000 acres, and international parks. PSD regulations also define ambient air increments, limiting the allowable increases to any area's baseline air contaminant concentrations, based on the area's Class designation (40 CFR 52.21[c]).

Table 3-4. National and State Ambient Air Quality Standards, Effective October 2011

Pollutant	Averaging Time	Primary Standard		Secondary Standard
		Federal	State	
CO	8-hour (1)	9 ppm (10 mg/m^3)	Same as Federal	None
	1-hour (1)	35 ppm (40 mg/m^3)	Same as Federal	None
Pb	Rolling 3-Month Average (2)	0.15 µg/m^3 (3)	Same as Federal	Same as Primary
NO_2	Annual (4)	53 ppb (5)	50 ppb	Same as Primary
	1-hour (6)	100 ppb	--	None
PM_{10}	24-hour (7)	150 µg/m^3	Same as Federal	Same as Primary
$PM_{2.5}$	Annual (8)	15 µg/m^3	Same as Federal	Same as Primary
	24-hour (6)	35 µg/m^3	Same as Federal	Same as Primary
O_3	8-hour (9)	0.075 ppm (10)	Same as Federal	Same as Primary
SO_2	1-hour (11)	75 ppb (12)	--	None
	Annual (Arithmetic Average)	--	0.03 ppm	None
	24-hour	--	0.14 ppm	None
	3-hour (1)	--	--	0.5 ppm

Sources: USEPA 2011a, State of Illinois 2011

Notes: Parenthetical values are approximate equivalent concentrations.

1. Not to be exceeded more than once per year.
2. Not to be exceeded.
3. Final rule signed 15 October 2008. The 1978 lead standard (1.5 µg/m^3 as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.
4. Annual Mean.
5. The official level of the annual NO_2 standard is 0.053 ppm, equal to 53 ppb, which is shown here for the purpose of cleaner comparison to the 1-hour standard.
6. 98th percentile, averaged over 3 years.
7. Not to be exceeded more than once per year on average over 3 years.
8. Annual mean, averaged over 3 years.
9. Annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years.
10. Final rule signed 12 March 2008. The 1997 ozone standard (0.08 ppm, annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years) and related implementation rules remain in place. In 1997, EPA revoked the 1-hour ozone standard (0.12 ppm, not to be exceeded more than once per year) in all areas, although some areas have continued obligations under that standard ("anti-backsliding"). The 1-hour ozone standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above 0.12 ppm is less than or equal to 1.
11. 99th percentile of 1-hour daily maximum concentrations, averaged over 3 years.
12. Final rule signed 2 June 2010. The 1971 annual (0.3 ppm) and 24-hour (0.14 ppm) SO_2 standards were revoked in that same rulemaking. However, these standards remain in effect until one year after an area is designated for the 2010 standard, except in areas designated nonattainment for the 1971 standards, where the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standard are approved.

Key: ppm = parts per million; ppb = parts per billion; mg/m^3 = milligrams per cubic meter; µg/m^3 = micrograms per cubic meter

Title V Requirements. Title V of the CAA Amendments of 1990 requires states and local agencies to permit major stationary sources. A Title V major stationary source has the potential to emit criteria air pollutants and hazardous air pollutants (HAPs) at levels equal to or greater than Major Source Thresholds. Major Source Thresholds vary depending on the attainment status of an ACQR. The purpose of the permitting rule is to establish regulatory control over large, industrial-type activities and monitor their impact on air quality. Section 112 of the CAA lists HAPs and identifies source categories.

Greenhouse Gas Emissions. GHGs are gaseous emissions that trap heat in the atmosphere. These emissions occur from natural processes and human activities. The most common GHGs emitted from human activities include carbon dioxide (CO_2), methane, and nitrous oxide. GHGs are primarily produced by the burning of fossil fuels and through industrial and biological processes. On 22 September 2009, the USEPA issued a final rule for mandatory GHG reporting from large GHG emissions sources in the United States. The purpose of the rule is to collect comprehensive and accurate data on CO_2 and other GHG emissions that can be used to inform future policy decisions. In general, the threshold for reporting is 25,000 metric tons or more of CO_2 equivalent emissions per year but excludes mobile source emissions. The first emissions report was due in 2011 for 2010 emissions. GHG emissions will also be factors in PSD and Title V permitting and reporting, according to a USEPA rulemaking issued on 3 June 2010 (75 Federal Register [FR] 31514). GHG emissions thresholds of significance for permitting of stationary sources are 75,000 tons CO_2 equivalent per year and 100,000 tons CO_2 equivalent per year for PSD and Title V permitting, respectively.

EO 13514, *Federal Leadership in Environmental, Energy, and Economic Performance*, was signed in October 2009 and requires agencies to set goals for reducing GHG emissions. One requirement within EO 13514 is the development and implementation of an agency Strategic Sustainability Performance Plan (SSPP) that prioritizes agency actions based on lifecycle return on investment. Each SSPP is required to identify, among other things, "agency activities, policies, plans, procedures, and practices" and "specific agency goals, a schedule, milestones, and approaches for achieving results, and quantifiable metrics" relevant to the implementation of EO 13514. On 26 August 2010, DOD released its SSPP to the public. This implementation plan describes specific actions the DOD will take to achieve its individual GHG reduction targets, reduce long-term costs, and meet the full range of goals of the EO. All SSPPs segregate GHG emissions into three categories: Scope 1, Scope 2, and Scope 3 emissions. Scope 1 GHG emissions are those directly occurring from sources that are owned or controlled by the agency. Scope 2 emissions are indirect emissions generated in the production of electricity, heat, or steam purchased by the agency. Scope 3 emissions are other indirect GHG emissions that result from agency activities but from sources that are not owned or directly controlled by the agency. The GHG goals in the DOD SSPP include reducing Scope 1 and Scope 2 GHG emissions by 34 percent by 2020, relative to FY 2008 emissions, and reducing Scope 3 GHG emissions by 13.5 percent by 2020, relative to FY 2008 emissions.

3.3.2 Existing Conditions

Scott AFB is located in St. Clair County, Illinois, which is within the Metropolitan St. Louis Interstate (MSLI) AQCR 70. The MSLI also includes Bond, Clinton, Madison, Monroe, Randolph, and Washington counties in Illinois; Franklin, Jefferson, St. Charles, and St. Louis counties in Missouri; and the City of St. Louis (USEPA 2002a). St. Clair County has been designated as unclassified/attainment for all criteria pollutants except 8-hour O_3 and $PM_{2.5}$. O_3 is classified as moderate nonattainment, and $PM_{2.5}$ is classified as nonattainment (USEPA 2002b, USEPA 2011b, and USEPA 2011c). According to 40 CFR Part 81, no Class I areas are located within 10 kilometers of Scott AFB (USEPA 2011d).

The most recent emissions for St. Clair County and the MSLI AQCR are shown in **Table 3-5**. St. Clair County is considered the local area of influence, and the MSLI AQCR is considered the regional area of influence for this air quality analysis. O_3 is not a direct emission; it is generated from reactions of volatile organic compounds (VOCs) and nitrogen oxides (NO_x), which are precursors to O_3. Therefore, for the purposes of this air quality analysis, VOCs and NO_x emissions are used to represent O_3 generation.

Table 3-5. Local and Regional Air Emissions Inventory for the Proposed Action (2008)

	NO_x (tpy)	VOC (tpy)	CO (tpy)	SO_2 (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (tpy)
St. Clair County	10,648	8,653	51,233	283	13,110	2,561
MSLI AQCR	130,134	96,913	538,781	215,363	154,345	29,608

Source: USEPA 2008

Scott AFB has a Federally Enforceable State Operating Permit to operate emissions sources consisting of jet fuel storage tanks, diesel emergency power generators and natural gas-fired equipment, a jet engine test cell (currently decommissioned), gasoline storage tanks, one ethylene glycol storage tank, an indoor shooting range, and one sulfur dioxide generator. The operating permit reduces the installation's potential emissions of NO_x and CO to below the major source threshold of 100 tpy by imposing operating restrictions (SAFB 2010d). **Table 3-6** summarizes Scott AFB's potential to emit and actual air emissions.

Table 3-6. Potential and Actual Emissions at Scott AFB

	NO_x (tpy)	VOC (tpy)	CO (tpy)	SO_x (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (tpy)
Potential to Emit	100.00*	225.33	100.00*	4.60	12.78	3.73
2007 Actual Emissions	19.93	88.53	9.96	0.30	1.22	0.26

Source: SAFB 2010d
Note: * Scott AFB's operating permit limits potential to emit to 100 tpy.

3.4 Geological Resources

3.4.1 Definition of the Resource

Geological resources consist of the Earth's surface and subsurface materials. Within a given physiographic province, these resources typically are described in terms of topography and physiography, geology, soils, and, where applicable, geologic hazards and paleontology.

Topography and physiography pertain 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. Such information derives from field analysis based on observations of the surface and borings to identify subsurface composition.

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. In appropriate cases, soil properties must be examined for their compatibility with particular construction activities or types of land use.

Prime farmland is protected under the Farmland Protection Policy Act (FPPA) of 1981 and is defined as land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops, and is also available for these uses. The soil qualities, growing season, and moisture supply are needed for a well-managed soil to produce a sustained high yield of crops in an economic manner. The land could be cropland, pasture, rangeland, or other land, but not urban built-up land or water. The intent of the FPPA is to minimize the extent that Federal programs contribute to the unnecessary conversion of farmland to nonagricultural uses. The Act also ensures that Federal programs are administered in a manner that, to the extent practicable, will be compatible with private, state, and local government farmland protection programs and policies.

The implementing procedures of the FPPA and Natural Resources Conservation Service (NRCS) require Federal agencies to evaluate the adverse effects (direct and indirect) of their activities on prime and unique farmland, as well as farmland of statewide and local importance, and to consider alternative actions that could avoid adverse effects. Determination of whether an area is considered prime or unique farmland, and potential impacts associated with a proposed action, is based on preparation of the farmland conversion impact rating form AD-1006 for areas where prime farmland soils occur and by applying criteria established at Section 658.5 of the FPPA (7 CFR 658). The NRCS is responsible for overseeing compliance with the FPPA and has developed the rules and regulations for implementation of the Act (see 7 CFR Part 658, 5 July 1984).

Geologic hazards are defined as a natural geologic event that can endanger human lives and threaten property. Examples of geologic hazards include earthquakes, landslides, rock falls, ground subsidence, and avalanches.

3.4.2 Existing Conditions

Regional Geology. The stratigraphic sequence in the region consists of approximately 50- to 100-foot-thick deposits of Cenozoic (Quaternary) unconsolidated sediments overlying Paleozoic sedimentary bedrock. The Cenozoic unconsolidated materials consist of eolian, alluvial, and glacial deposits. The underlying bedrock consists primarily of low permeability, Pennsylvanian-age shale with thin, discontinuous beds of sandstone and limestone. The bedrock surface ranges from a high of approximately 400 feet above mean sea level (MSL) in the northwestern corner of the installation to a low of approximately 350 feet above MSL in the southwest portion of the installation (SAFB 2011b).

The geologic units of St. Clair County include Paleozoic sedimentary rocks and Cenozoic unconsolidated materials. Glacial and alluvial deposits ranging in thickness from 50 feet to 125 feet dominate surficial geology at the installation. Underlying the glacial and alluvial deposits is the Pennsylvanian-age layers of shale, siltstone, sandstone, limestone, claystone, and coal, lying approximately 85 feet below ground surface. The Pennsylvanian strata are approximately 265 feet thick. Water-yielding Chesterian Series sandstones lie beneath the Pennsylvanian strata. The Herron No. 6 coal bed, with an average thickness of 6 to 7 feet, lies 90 to 200 feet below the surface of Scott AFB and extends out several miles to the west and south (SAFB 2011b).

Topography. The installation lies on the Springfield Plain subdivision of the Till Plains section of the Central Lowlands Physiographic Province and is on the western end of the Silver Creek Valley Basin. The Silver Creek Valley Basin is generally characterized by flat topography to gently rolling hills. The land surface at Scott AFB is generally flat with maximum surface elevations occurring at 510 feet above MSL on a till ridge north of the installation's golf course. The lowest surface elevation is approximately

420 feet above MSL along the eastern boundary of the installation within the Silver Creek floodplain. The elevation of Silver Creek east of the installation is about 405 feet above MSL (SAFB 2007a).

Soils. The predominant soil types at Scott AFB are silt loams and silty clay loams occurring to a depth of 16 inches. They have a moderately high water-holding capacity, moderate to high shrink-to-swell ratio, and moderate to high corrosive potential. The topsoil is moderately permeable. These soils are fertile and productive because of their development from tall prairie grass and mixed hardwood forest. Soil pH varies from 5 to 7.3, requiring occasional lime and fertilizers in accordance with soil tests for agricultural production. Due to the nearly level topography, native soils have undergone only slight alteration due to grading, fill, or excavation associated with construction and development in and around Scott AFB (SAFB 2007a).

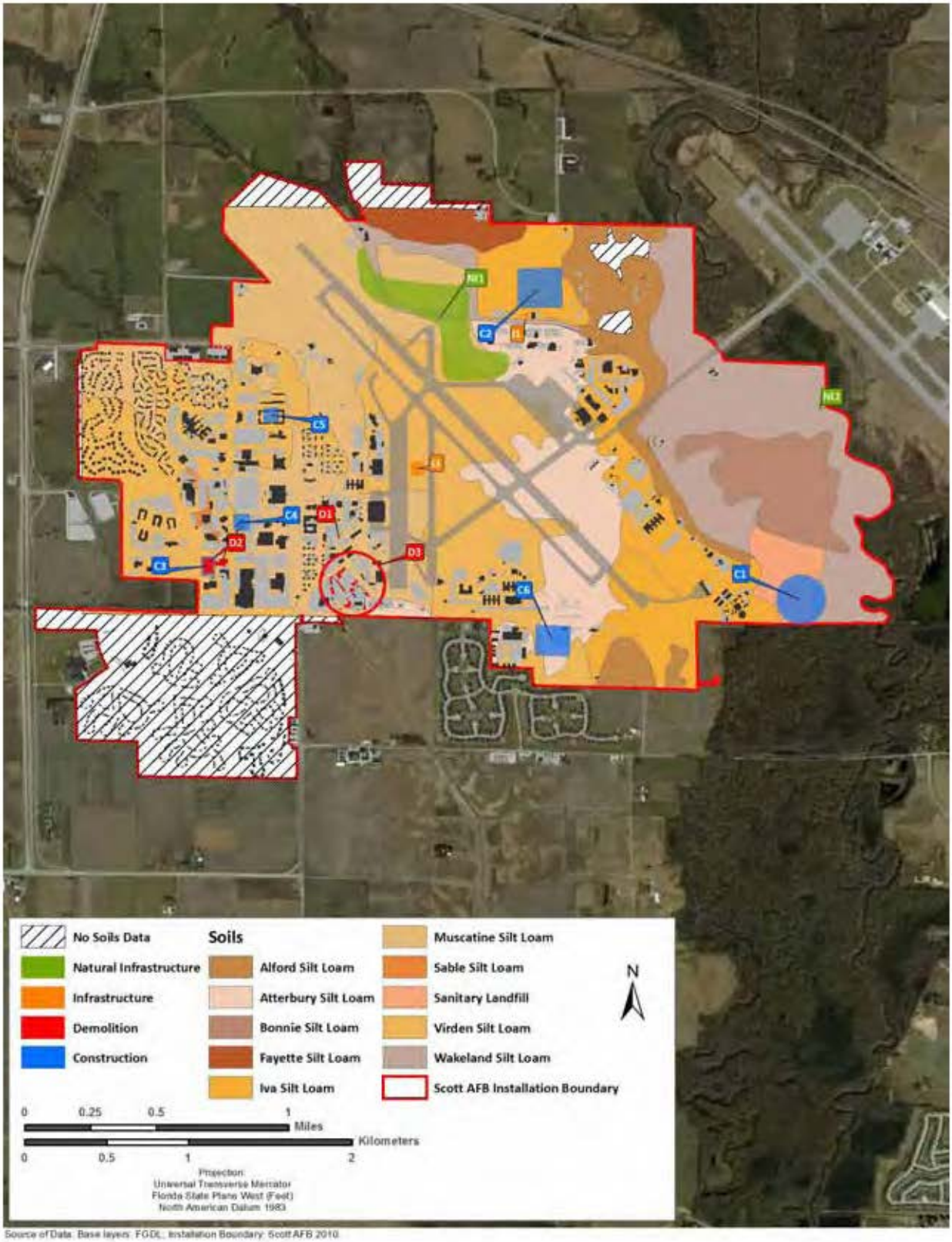
Two soil associations, the Herrick-Virden Association and the Wakeland-Bonnie Association, are mapped at Scott AFB. A soil association is a landscape that has a distinctive pattern of soils in defined proportions. Each soil association is composed from more than one kind of "soil type." A soil type is the smallest mapped soil unit. Each soil association has different land management implications and different soil types have different management prescriptions.

The six major soil series at Scott AFB, in order of acreage, are Mascoutah silty clay loam, Edwardsville silt loam, Wakeland silt loam, Bethalto silt loam, Petrolia silty clay loam, and Caseyville silt loam (see **Figure 3-1**). The majority of the installation south and west of the flightline has been constructed on Mascoutah soils, including most of the parking apron and the central portion of the flightline. The Mascoutah series consists of very deep and poorly drained soils that are moderately permeable and formed in loess. The Edwardsville series consists of deep and poorly drained soils that are moderately permeable and formed in loess on till plains. Most of the acreage of this soil is found in the improved areas of the installation and at the golf course. The Wakeland series consists of deep and poorly drained soils that are moderately permeable and formed in silty alluvium. Wakeland soils are found in the bottomland forest adjacent to Silver Creek. The Bethalto series consists of deep, poorly drained, moderately permeable soils and are formed in loess on till plains. Most of these soils are mapped in the airfield and in developed areas. The Petrolia series consists of very deep and poorly drained soils. These soils are moderately slowly permeable and formed in the silty alluvium of the Silver Creek floodplain. The Caseyville series consists of deep, poorly drained soils that are moderately permeable and formed in loess on till plains. Most of the acreage of this soil is next to the main airfield and in other nearby improved areas of the installation. Other less common soil series include Menfro silt loam, Downsouth silt loam, Winfield silt loam, and Orthents silt loam (SAFB 2011b). Soils mapped at the selected construction and infrastructure improvement project sites are listed in **Table 3-7**. Demolition and natural infrastructure management projects would not disturb soil to an appreciable degree; therefore, these projects have been omitted from **Table 3-7**.

Sediment. Sediment within Silver Creek would be disturbed under the Proposed Action. Siltation from agriculture is a source of pollution within the creek. Silver Creek is within the 100-year floodplain (SAFB 2011b).

Additional information on the water quality and hydrology of Silver Creek is in **Section 3.5**.

Geologic Hazards. Scott AFB lies within Seismic Zone IX, which contains the New Madrid Fault Zone that extends from Cairo, Illinois, on the Ohio River southward through New Madrid, Missouri. The New Madrid Fault Zone is the most active seismic area east of the Rocky Mountains with almost weekly tremors and, on rare occasions, small earthquakes measuring 3.0 to 4.0 or more on the Richter scale. The last major earthquake along this fault was in 1812 and had an estimated magnitude of 8.0. The most recent significant earthquake in southern Illinois occurred in April 2008 and measured 5.4 on the Richter scale. The epicenter was approximately 110 miles east of Scott AFB (SAFB 2011b).



Notes: Project I2 has been omitted from this figure due to its sensitivity. All buildings shaded in red within the circle labeled D3 are proposed for demolition under Project D3.

Figure 3-1. Soil Units Mapped at Scott AFB

Table 3-7. Characteristics of Soils Mapped at Selected Construction and Infrastructure Improvement Project Sites Associated with the Proposed Action

Mapping Unit	Texture	Location (Project)	Construction Limitations	Farmland
Wakeland	Silt loam (0 to 2 percent slope)	C1, C2, I1, I2	Very limited. Flooding, depth to saturated zone (about 15 inches), frost action, flooding, and unstable excavation walls.	Prime farmland soil if drained and either protected from flooding or not frequently flooded during the growing season.
Bethalto	Silt loam (0 to 2 percent slope)	C2, I1, I2	Very limited. Frost action, low strength, depth to saturated zone (about 15 inches), shrink-swell potential.	Prime farmland.
Winfield	Silt loam (2 to 5 percent slope)	C2, I2	Somewhat limited. Shrink-swell potential, depth to saturated zone (about 33 inches), unstable excavation walls.	Prime farmland.
Winfield	Silt loam (5 to 10 percent slope)	C2, I2	Somewhat limited to very limited. Slope, shrink-swell potential, depth to saturated zone (about 33 inches) and unstable excavation walls.	Farmland of statewide importance.
Mascoutah	Silty clay loam (0 to 2 percent slope)	C3, C4, C5, C6, I3	Very limited. Ponding, depth to the saturated zone (about 6 inches), and shrink-swell potential	Prime farmland if drained.
Edwardsville	Silt loam (0 to 2 percent slope)	C6, I2	Somewhat limited to very limited. Depth to saturated zone (about 18 inches), shrink-swell potential, and unstable excavation walls.	Prime farmland.
Menfro	Silt loam (5 to 10 percent slope)	I2	Somewhat limited. Unstable excavation walls and slope.	Not prime farmland.

Source: USDA-NRCS 2011

Note: Soils described for each of the project sites might differ from what is shown on **Figure 3-1** [soils] due to the scale at which the figure is shown.

The U.S. Geological Survey (USGS) has produced seismic hazard maps based on current information for the rate at which earthquakes occur in different areas and on how far strong shaking extends from the quake source. The hazard maps show the levels of horizontal shaking that have a 2 in 100 chance of being exceeded in a 50-year period. Shaking is expressed as a percentage of the force of gravity (percent g) and is proportional to the hazard faced by a particular type of building. In general, little or no damage is expected at values less than 10 percent g, moderate damage could occur at 10 to 20 percent g, and major damage could occur at values greater than 20 percent g. The 2008 United States National

Seismic Hazards Map shows that the region of Scott AFB has a seismic hazard rating of 20 to 30 percent g (USGS 2009).

3.5 Water Resources

3.5.1 Definition of the Resource

Water resources are natural and man-made sources of water that are available for use by and for the benefit of humans and the environment. Water resources relevant to Scott AFB in Illinois include groundwater, surface water, and floodplains. Hydrology concerns the distribution of water through the processes of evapotranspiration, atmospheric transport, precipitation, surface runoff and flow, and subsurface flow. Hydrology is affected by climatic factors such as temperature, wind direction and speed, topography, soil, and geologic properties.

Groundwater is water that exists in the saturated zone beneath the earth's surface and includes underground streams and aquifers. It is an essential resource that functions to recharge surface water and is used for drinking, irrigation, and industrial processes. Groundwater features include depth from the surface, aquifer or well capacity, quality, recharge rate, and surrounding geologic formations.

Groundwater quality and quantity are regulated under several different programs. The Federal Underground Injection Control regulations, authorized under the Safe Drinking Water Act (SDWA), require a permit for the discharge or disposal of fluids into a well. The Federal Sole Source Aquifer regulations, also authorized under the SDWA, protect aquifers that are critical to water supply.

Surface water resources generally consist of wetlands, lakes, rivers, and streams. Surface water is important for its contributions to the economic, ecological, recreational, and human health of a community or locale.

Waters of the United States are defined within the Clean Water Act (CWA), as amended, and jurisdiction is addressed by the USEPA and the U.S. Army Corps of Engineers. These agencies assert jurisdiction over (1) traditional navigable waters, (2) wetlands adjacent to navigable waters, (3) nonnavigable tributaries of traditional navigable waters that are relatively permanent where the tributaries typically flow year-around or have continuous flow at least seasonally (e.g., typically 3 months), and (4) wetlands that directly abut such tributaries. Section 404 of the CWA authorizes the Secretary of the Army, acting through the Chief of Engineers, to issue permits for the discharge of dredge or fill into waters of the United States including wetlands. Encroachment into waters of the United States and wetlands requires a permit from the state and the Federal government.

A water body can be deemed impaired if water quality analyses conclude that exceedances of CWA water quality standards occur. The CWA also mandated the National Pollutant Discharge Elimination System (NPDES) program, which requires a permit for any discharge of pollutants into waters of the United States.

The USEPA issued a Final Rule for the CWA concerning technology-based Effluent Limitations Guidelines and New Source Performance Standards for the Construction and Development point source category. All NPDES storm water permits issued by the USEPA or states must incorporate requirements established in the Final Rule. This Rule is effective 1 February 2010 and will be phased in over four years. All new construction sites are required to meet the non-numeric effluent limitations and to design, install, and maintain effective erosion and sedimentation controls, including the following:

- Control storm water volume and velocity to minimize erosion

- Minimize the amount of soil exposed during construction activities
- Minimize the disturbance of steep slopes
- Minimize sediment discharges from the site
- Provide and maintain natural buffers around surface waters
- Minimize soil compaction and preserve topsoil where feasible.

In addition, construction site owners and operators that disturb 1 or more acres of land are required to use best management practices (BMPs) to ensure that soil disturbed during construction activities does not pollute nearby water bodies. Effective 1 August 2011, construction activities disturbing 20 or more acres must comply with the numeric effluent limitation for turbidity in addition to the non-numeric effluent limitations. On 2 February 2014, construction site owners and operators that disturb 10 or more acres of land are required to monitor discharges to ensure compliance with effluent limitations as specified by the permitting authority. The USEPA's limitations are based on its assessment of what specific technologies can reliably achieve. Permittees can select management practices or technologies that are best suited for site-specific conditions.

Construction activities such as clearing, grading, trenching, and excavating displace soils and sediment. If not managed properly, disturbed soils and sediments can easily be washed into nearby water bodies during storm events and reduce water quality. Section 438 of the Energy Independence and Security Act (EISA) (42 U.S.C. Section 17094) establishes into law new storm water design requirements for Federal construction projects that disturb a footprint greater than 5,000 ft^2 of land. The project footprint consists of all horizontal hard surfaces and disturbed areas associated with the project development, including both building area and pavements such as roads, parking lots, and sidewalks. Note that these requirements do not apply to resurfacing of existing pavements. Under these requirements, predevelopment site hydrology must be maintained or restored to the maximum extent technically feasible with respect to temperature, rate, volume, and duration of flow. Predevelopment hydrology will be modeled or calculated using recognized tools and must include site-specific factors such as soil type, ground cover, and ground slope. Site design will incorporate storm water retention and reuse technologies such as bioretention areas, permeable pavements, cisterns/recycling, and green roofs to the maximum extent technically feasible. Post-construction analyses will be conducted to evaluate the effectiveness of the as-built storm water reduction features. As stated in a 19 January 2010 DOD memorandum, these regulations will be incorporated into applicable DOD UFC within 6 months (DOD 2010). Additional guidance is provided in the USEPA's *Technical Guidance on Implementing the Stormwater Runoff Requirements for Federal Projects under Section 438 of the Energy Independence and Security Act*.

Floodplains are areas of low-level ground present along rivers, stream channels, or coastal waters. The living and nonliving parts of natural floodplains interact with each other to create dynamic systems in which each component helps to maintain the characteristics of the environment that supports it. Floodplain ecosystem functions include natural moderation of floods, flood storage and conveyance, groundwater recharge, nutrient cycling, water quality maintenance, and diversification of plants and animals. Floodplain storage reduces flood peaks and velocities, and the potential for erosion. In their natural vegetated state, floodplains slow the rate at which the incoming overland flow reaches the main water body.

Floodplains are subject to periodic or infrequent inundation due to rain or melting snow. Risk of flooding typically depends on local topography, the frequency of precipitation events, and the size of the watershed above the floodplain. Flood potential is evaluated by the Federal Emergency Management Agency (FEMA), which defines the 100-year floodplain. The 100-year floodplain is an area that has a 1 percent chance of inundation by a flood event in a given year. Certain facilities inherently pose too great a risk to be in either the 100- or 500-year floodplain, such as hospitals, schools, or storage buildings for

irreplaceable records. Federal, state, and local regulations often limit floodplain development to passive uses such as recreational and preservation activities to reduce the risks to human health and safety.

EO 11988, Floodplain Management, requires Federal agencies to determine whether a proposed action would occur within a floodplain. This determination typically involves consultation of FEMA Flood Insurance Rate Maps, which contain enough general information to determine the relationship of the project area to nearby floodplains. EO 11988 directs Federal agencies to avoid floodplains unless the agency determines that there is no practicable alternative.

In accordance with EO 11990 and EO 11988, construction of new facilities within areas containing wetlands or within the 100-year floodplain is avoided, where practicable. If a construction project does occur within a wetland or the 100-year floodplain, direct, adverse effects would be expected. Wetland and floodplain impacts would be reduced to the maximum extent practicable through project design and implementation of environmental protection measures. However, some projects might have minimal direct impacts on wetland areas and floodplains and there is potential for indirect impacts from development and excavation in areas adjacent to these areas. In accordance with EOs 11988 and 11990, a FONPA must be prepared and approved by HQ AMC for all projects impacting wetland and floodplain areas. For those actions determined to adversely impact jurisdictional wetlands Scott AFB would be required to obtain a permit under Section 404 of the CWA and would likely be required to mitigate or compensate in order to comply with the "No Net Loss" national policy.

3.5.2 Existing Conditions

Groundwater. Scott AFB lies in an area of western Illinois that lacks aquifers of regional significance. No drinking water wells are known to be in use at the installation. However, domestic and agricultural users within about 10 miles of the installation obtain a limited amount of water from shallow aquifers. The significant hydrogeologic units present in the area include alluvium containing sand and gravel lenses, sand and gravel layers within the glacial deposits, and sandstone or other permeable strata within the bedrock. Water quality varies greatly, with water from the surficial deposits usually of slightly better quality than water from the bedrock units. Precipitation is the primary source of groundwater recharge in the area (SAFB 2004a).

The shallow groundwater at Scott AFB is classified by the Illinois Environmental Protection Agency as Class 1 Groundwater [i.e., groundwater that meets the Class I potable resource groundwater criteria set forth in the board regulations adopted pursuant to the Illinois Groundwater Protection Act (415 ILCS 5/57.2)].

Surface Water. Scott AFB is in the Lower Kaskaskia Watershed, which drains approximately 1,060,900 acres (USDA-NRCS 2004). Silver Creek, a tributary of the Kaskaskia River (which is a tributary of the Mississippi River), is on the east side of Scott AFB. It drains approximately 60 percent of surface runoff from the installation (SAFB 2011b, SAFB 2004a). The Illinois Environmental Protection Agency rates water quality in Silver Creek as "fair" in the vicinity of Scott AFB. Nutrients and siltation from agricultural operations are the primary nonpoint sources of water pollution into Silver Creek (SAFB 2011b). Ash Creek drains the remainder of Scott AFB. Scott AFB and surrounding communities purchase water supplies from the Illinois American Water Company municipal water distribution system, which obtains its water supply from the Mississippi River.

Surface water features on Scott AFB include the North Ditch, South Ditch, Cardinal Creek, and Mosquito Creek, all of which are tributaries of Silver Creek; and Scott Lake, Cardinal Lake, and the installation golf course ponds (SAFB 2004a). A substantial percentage of land use at Scott AFB consists of surfaces that are impervious to water infiltration, such as asphalt, concrete, or buildings/facilities. Drainage from these

areas is directed by surface topography and perimeter curbing to enclosed storm sewers. Runoff is managed in accordance with the Scott AFB *Final Storm Water Pollution Prevention Plan* (SWPPP), which is a requirement of the permit (SAFB 2004b). The Scott AFB SWPPP is an engineering and management strategy prepared specifically for Scott AFB to improve the quality of the storm water runoff and thereby improve the quality of the receiving waters. The SWPPP also works to minimize storm water runoff thereby enhancing infiltration and subsequent ground water recharge. This plan ensures implementation of BMPs and delineates monitoring, training, and documentation requirements of Scott AFB's NPDES storm water permit. The plan includes notification, permit application, and erosion-control requirements for any construction activity that will cause a disturbance through clearing, grading, or excavating greater than one acre at the installation.

Wetlands covering approximately 378 acres were identified at Scott AFB (SAFB 2010e). The wetlands at Scott AFB are the primary natural resource feature at the installation. Approximately 375 acres are considered Section 404 jurisdictional wetlands. The majority of jurisdictional wetlands at Scott AFB are in the Silver Creek Riparian Corridor and are classified as forested emergent wetlands.

Floodplains. According to the Scott AFB Final Floodplain Survey (SAFB 2009) and the FEMA Flood Insurance Rate Map (FEMA 2003), portions of the 100-year and 500-year floodplain associated with Silver Creek and Cardinal Creek are located within the installation boundaries. The 100-year and 500-year floodplains associated with Cardinal Creek are in the northern portion of the installation, while a small portion of the 100-year and 500-year floodplains associated with Silver Creek are in the eastern portion of the installation.

3.6 Biological Resources

3.6.1 Definition of the Resource

Biological resources include native or naturalized plants and animals and the habitats (e.g., forests and grasslands) in which they exist. Protected and sensitive biological resources include federally listed (endangered or threatened), proposed, and candidate species designated by the USFWS. Federal species of concern are not protected by law; however, these species could become listed, and therefore are given consideration when addressing impacts of an action on biological resource. Sensitive habitats include those areas designated by the USFWS as critical habitat protected by the ESA, and sensitive ecological areas as designated by state or Federal rulings. Sensitive habitats also include wetlands, plant communities that are unusual or of limited distribution, and important seasonal use areas for wildlife (e.g., migration routes, breeding areas, crucial summer and winter habitats).

Under the ESA (16 U.S.C. 1536), an "endangered species" is defined as any species in danger of extinction throughout all or a significant portion of its range. A "threatened species" is defined as any species likely to become endangered 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 ESA. It is USAF policy to provide protection of candidate and state-listed species where practical and not in conflict with USAF mission objectives.

The Illinois Department of Natural Resources oversees the protection and management of state-protected species under the Illinois Endangered Species Protection Act (520 Illinois Compiled Statutes 10/1-11). Under this Act, the Endangered Species Protection Board determines those species to be state-listed as endangered or threatened for Illinois.

3.6.2 Existing Conditions

Vegetation. Scott AFB is within the Till Plains Section of the Central Lowlands Physiographic Province (Illinois State Geological Survey 2009). Natural vegetative communities within the installation have been highly modified by current and former development (SAFB 2010e). The majority of the natural areas on Scott AFB are on the east side. Vegetation on Scott AFB has been characterized into four community types: urban upland, upland forest, non-forested upland, and bottomland riparian forest (SAFB 2010f). A description of these community types is provided in the following paragraphs.

The urban upland community covers approximately 80 percent (2,910 acres) of Scott AFB and typically consists of manicured lawns and associated landscaping and trees planted along streets. Other areas included in this community type are the east portion of the installation, the golf course, the driving range, the unpaved areas of the airfield, and the former Cardinal Creek MFH area (SAFB 2010f).

The upland forest community, which represents 1.4 percent (6 acres) of all forested areas on installation (SAFB 2010f), is dominated by upland trees such as white oak (*Quercus alba*), northern red oak (*Quercus rubra*), sassafras (*Sassafras albidum*), black walnut (*Juglans nigra*), hickories (*Carya* spp.), black cherry (*Prunus serotina*), and hackberry (*Celtis occidentalis*). Various species of pine (*Pinus* spp.) trees have also been planted in these areas. Amur honeysuckle (*Lonicera maackii*) is established and is a prominent component of the understory. Nearly all of the upland forested areas occur between the Silver Creek floodplain and the Family Camp area which is in the northeast portion of Scott AFB. Other fragments of this community occur as narrow strips along steep fill slopes of the existing installation development adjacent to the floodplain (SAFB 2005a).

The non-forested upland community covers 8.8 percent (322 acres) of Scott AFB and is dominated by grass species such as fescue (*Festuca* spp.) and bluegrass (*Poa pratensis*) and typical open-field vegetation such as goldenrod (*Solidago* sp.) with some invasion of smaller trees and shrubs in areas that are not maintained by mowing. The non-forested upland areas are present around the Family Camp area, various locations around Scott Lake, an area at the southern end of the airfield, and an area at the southern portion of the installation near the former landfill (SAFB 2010f).

Bottomland riparian forest covers 11 percent (400 acres) of Scott AFB along the Silver Creek floodplain and constitutes 98.6 percent of forested areas on the installation (SAFB 2010e). Areas of bottomland riparian forest are located throughout the Silver Creek floodplain and portions of this area have been classified as jurisdictional wetlands (SAFB 2010e). A 2001 botanical survey in the bottomland riparian forest concluded that portions of this area were "Regionally Significant" due to the presence of a sizable acreage of very high quality floodplain forest along Silver Creek (SAFB 2007a). The predominant species in this community are silver maple (*Acer saccharinum*), box elder (*Acer negundo*), eastern cottonwood (*Populus deltoides*), American sycamore (*Plantanus occidentalis*), pin oak (*Quercus palustris*), American elm (*Ulmus americana*), and green ash (*Fraxinus pennsylvanica*) (SAFB 2010f). The shrub layer is relatively sparse; however, stinging nettle (*Laportea canadensis*) and white heath aster (*Symphyotrichum* sp.) dominate a dense herbaceous layer in this community (SAFB 2010c). Scott AFB has managed much of the bottomland riparian forest community as commercial forest. Several selective-cut commercial timber sales were completed during the 1980s as part of the Forest Management Plan (SAFB 2010c). No further commercial forestry actions have been conducted at Scott AFB.

The current list of noxious weeds on Scott AFB includes giant ragweed (*Artemisia trifida*), Canada thistle (*Cirsium arvense*), musk thistle (*Carduus nutans*), and Japanese honeysuckle (*Lonicera japonica)* and Amur honeysuckle (*Lonicera maackii*). Invasive populations are greatest in areas that have been disturbed but are not mowed regularly. Compliance with Federal and state law requires the development of an installationwide noxious weed control and monitoring program (SAFB 2007a).

Wildlife. The installation supports a relatively high diversity of wildlife given its size and location within an agricultural matrix. The Silver Creek riparian corridor on the western side of the installation provides important habitat for native plant and wildlife species (SAFB 2007a).

Common mammals on the installation include white-tailed deer (*Odocoileus virginianus*), eastern cottontail (*Sylvilagus floridanus*), coyote (*Canis latrans*), Virginia opossum (*Didelphis virginiana*), beaver (*Castor canadensis*), raccoon (*Procyon lotor*), eastern gray and fox squirrel (*Sciurus carolinensis* and *S. niger*), muskrat (*Ondatra zibethicus*), red bat (*Lasiurus borealis*), and big brown bat (*Eptesicus fuscus*) (SAFB 2010c, SAFB 2007a).

A total of 83 bird species were recorded during the 2001 surveys at Scott AFB (Martin et al. 2002). Common bird species included the downy woodpecker (*Picoides pubescens*), red-bellied woodpecker (*Melanerpes carolinus*), common grackle (*Quiscalus quiscula*), wood duck (*Aix sponsa*), and white-breasted nuthatch (*Sitta carolinensis*). Common migratory songbirds include the indigo bunting (*Passerina cyanea*), blue-gray gnatcatcher (*Polioptila caerulea*), and prothonotary warbler (*Protonotaria citrea*) (SAFB 2005a).

Largemouth bass (*Micropterus salmoides*), bluegill (*Lepomis macrochirus*), and crappie (*Pomoxis* spp.) are the common freshwater fish located in Scott AFB lakes. Both Scott Lake and Cardinal Lake are actively managed for recreational fishing. Other species associated with the lakes include the common snapping turtle (*Chelydra serpentine*), painted turtle (*Chrysemys picta*), and northern water snake (*Nerodia sipedon*) (SAFB 2005a, Martin et al. 2002).

Protected and Sensitive Species. **Table 3-8** lists special status species occurring or potentially occurring in St. Clair County. No designated critical habitat is located on or near Scott AFB. It is the policy of the USAF to treat any state-listed species with the same protection afforded federally listed species whenever practicable (AFI 32-7064). Although not required by the ESA, the USAF will provide acceptable conservation measures for species protected by Illinois state law, when such protection is not in direct conflict with the military mission.

One federally listed endangered species, the Indiana bat (*Myotis sodalis*), has been documented on Scott AFB. Indiana bats were captured on Scott AFB during surveys conducted in 2001 (Martin et al. 2002), 2007 (SAFB 2007b), and 2009 (SAFB 2010c). The Silver Creek floodplain and bottomland riparian forest at Scott AFB provide adequate roosting and foraging habitat for a number of bat species including the Indiana bat. During 2009 surveys, Indiana bats were captured at the former landfill and Scott Lake. In addition, five maternity roost trees were identified within the Silver Creek bottomland forest via radio-telemetry (SAFB 2010c). The USFWS has not designated any of Scott AFB as critical habitat for the Indiana bat (SAFB 2010c).

Suitable habitat for the federally listed decurrent false aster (*Boltonia decurrens*) and eastern prairie fringed orchid (*Platanthera leucophaea*) is extremely limited on installation and, as a result, these species are unlikely to be present. Botanical surveys conducted over the past 10 years have failed to document the state-listed buffalo clover (*Trifolium reflexum*) and green trillium (*Trillium viride*), although suitable habitat for these species exists within the floodplain forests on installation (SAFB 2005a). An up-to-date, comprehensive, botanical survey conducted during the flowering period of all the above-mentioned species is needed at Scott AFB (SAFB 2010c).

Migratory birds are protected under the MBTA of 1918 and EO 13186, *Responsibilities of Federal Agencies to Protect Migratory Birds*. Suitable habitat for the state-listed short-eared owl (*Asio flammeus*) and loggerhead shrike (*Lanius ludovicianus*) exists on Scott AFB; however, neither species has been

Table 3-8. Threatened and Endangered Species Documented or Likely to Occur in St. Clair County with Assessment of Potential for Occurrence on the Installation

Common Name	Scientific Name	Status	Potential for Occurrence
Birds			
Bald eagle	*Haliaeetus leucocephalus*	D	Low. Very limited habitat on installation.
Short-eared owl	*Asio flammeus*	SE	Low. No known nests or sightings in the project areas. Nests on ground. Prefers meadows, open fields, and prairies.
Loggerhead shrike	*Lanius ludovicianus*	ST	Low. Not known from the project areas. Prefers open areas with windrows of trees and brush.
Little blue heron	*Egretta caerulea*	SE	Possible. Documented during 2001 bird survey, 2004 habitat survey, and 2005 wetland survey. Breeding potential of this species at Scott AFB is unknown.
Snowy egret	*Egretta thula*	SE	Possible. Documented during 2001 bird survey, 2004 habitat survey, and 2005 wetland survey. Breeding potential of this species at Scott AFB is unknown.
Mammals			
Indiana bat	*Myotis sodalis*	FE	High. Indiana bats have been captured in 2001, 2007, and 2009.
Plants			
Eastern prairie fringed orchid	*Platanthera leucophaea*	FT	Low. Not known from project areas. Occurs in open wetlands. Very limited habitat on installation.
Decurrent false aster	*Boltonia decurrens*	FT	Low. Not known from the project areas. Occurs on sunlit floodplains and open wetlands. Very limited habitat on installation.
Buffalo clover	*Trifolilum reflexum*	ST	Low. Not known from the project areas. Occurs on dry mesic savannas, flatwoods, and prairies. Suitable habitat could exist.
Green trillium	*Trillium viride*	SE	Low. Not known from the project areas. Occurs in bottomland forests. Suitable habitat could exist.

Sources: Mankowski 2010, USFWS 2011a.

Key: FE = Federally Endangered; FT = Federally Threatened; SE = State Endangered; ST = State Threatened; D = Delisted.

recorded at or near the installation. Two other state-listed bird species, the little blue heron (*Egretta caerulea*) and the snowy egret (*Egretta thula*), have been documented during bird surveys in 2001 at Scott and Cardinal lakes, in 2004 habitat surveys at Scott Lake and the deepwater swamp south of the MidAmerica Airport taxiway, and during 2005 wetland delineation activities (SAFB 2010c, SAFB 2005a). As nesting and breeding potential could not be determined by these surveys, a breeding bird survey has been recommended. No other state-listed bird species have been observed on installation (SAFB 2005a).

Although no longer federally listed, the bald eagle (*Haliaeetus leucocephalus*) remains protected under the Bald and Golden Eagle Protection Act. This species is typically attracted to large open-water bodies which are lacking on Scott AFB. As suitable habitat does not exist on or adjacent to the installation, any bald eagle occurrences would likely involve transient individuals.

3.7 Cultural Resources

3.7.1 Definition of the Resource

Cultural resources is an umbrella term for many heritage-related resources, including prehistoric and historic sites, buildings, structures, districts, or any other physical evidence of human activity considered important to a culture, a subculture, or a community for scientific, traditional, religious, or any other reason. Depending on the condition and historic use, such resources might provide insight into the cultural practices of previous civilizations or they might retain cultural and religious significance to modern groups.

Several Federal laws and regulations govern protection of cultural resources, including the NHPA of 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 (NAGPRA) (1990).

Typically, cultural resources are subdivided into archaeological resources (prehistoric or historic sites, where human activity has left physical evidence of that activity but no structures remain standing); architectural resources (buildings or other structures or groups of structures, or designed landscapes that are of historic or aesthetic significance); or resources of traditional, religious, or cultural significance to Native American tribes.

Archaeological resources comprise areas where human activity has measurably altered the earth, or deposits of physical remains are found (e.g., projectile points 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 eligible for the NRHP. More recent structures, such as Cold War-era resources, might warrant protection if they are of exceptional importance or if they have the potential to gain significance in the future.

Resources of traditional, religious, or cultural significance to Native American tribes can include archaeological resources, structures, neighborhoods, prominent topographic features, habitat, plants, animals, and minerals that Native Americans or other groups consider essential for the preservation of traditional culture.

The EA process and the consultation process prescribed in Section 106 of the NHPA require an assessment of the potential impact of an undertaking on historic properties that are within the proposed project's Area of Potential Effect (APE), which is defined as the geographic area(s) "within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist." Under Section 110 of the NHPA, Federal agencies are required to inventory resources under their purview and nominate those eligible to the NRHP. In accordance with the NHPA, consultation with the SHPO is required regarding determination of potential effects of an undertaking on historic properties. Scott AFB has begun consultation with federally recognized Native American tribes in accordance with EO 13175, *Consultation and Coordination With Indian Tribal Governments* (9 November 2000). This consultation is not specifically for this IDEA, but rather it is to determine each tribe's level of interest in being consulted regarding projects at Scott AFB. Tribal consultation under

Section 106 of the NHPA is not necessary for this IDEA because the tribes do not meet the criteria as consultative parties under Section 106 of the NHPA for any of the selected projects.

3.7.2 Existing Conditions

Scott AFB is an installation rich in prehistory and history. Scott AFB is located in the uplands adjacent to the American Bottom, an area rich in archaeological sites. The American Bottom was the center of the Mississippian culture during the 11th century AD, specifically at the Cahokia Mounds site and its outliers. In the early 18th century, the French traded sporadically in the area and began to settle it. Beginning around 1790 and peaking around the 1830s, the area became heavily settled by German and German American settlers. Scott AFB is one of the oldest continuous service Air Force installations, constructed in 1917. It is important to many themes in USAF history, from its Lighter-than-Air Station predating the USAF through Cold War air defense and aeromedical USAF missions (SAFB 2006a).

In 1992 a Section 110 survey was conducted that covered the entire installation (SAFB 1992). Through this survey, 12 archaeological sites and 2 historic cemeteries were identified. Only one of these sites was evaluated eligible for the NRHP, and it was destroyed through construction with mitigation agreed upon through SHPO consultation. From the 1992 Section 110 survey, most of the installation is categorized as highly disturbed ground from construction and demolition efforts related to the development and use of Scott AFB during and after World War II. No prehistoric archaeological sites have been identified on installation (SAFB 2006a).

The 1992 archaeological reconnaissance survey (SAFB 1992) divided the installation into areas of disturbed ground and those with low or moderate potential for archaeological materials. Eleven survey units were identified in the areas of low to moderate potential for a reconnaissance survey. The survey report classified two areas (Survey Units 3 and 4) as holding moderate potential for archaeological materials. Survey Unit 3 at the south end of the runway and Survey Unit 4 at the northeast edge of the installation were identified as having moderate potential for archaeological sites. Survey Unit 10, encompassing the open space east of the runway to the eastern boundary, was found to be intact with a low potential for archaeological sites, but the SHPO expressed interest in it respective to future undertakings. The installation's ICRMP is being updated in 2012 and will review the current status of the 1992 identified archaeological survey results.

Scott AFB has one historic district, Scott Field Historic District, composed of 102 contributing and 10 non-contributing buildings and structures. In 1992, 119 buildings and structures built prior to 1946 were inventoried and evaluated for NRHP eligibility. The report proposed a historic district in the core area of the installation and the Scott Field Historic District was listed in the NRHP in 1994, encompassing 84.7 acres in the center of Scott AFB. The historic district is significant under Criterion A for its associations with military aviation history from its founding in 1917 through the end of its World War II training mission in 1945 and under Criterion C for its uniformity of materials and design reflected in various early 20th century revival styles and the overall plan and design of the district reflected in street orientation, streetscape elements, and landscaping.

In 1994, 59 buildings and structures built prior to 1989 were inventoried and evaluated for NRHP eligibility related to Cold War significance under Criterion Consideration G. All of the inventoried properties were evaluated not eligible for NRHP listing. An inventory and evaluation of 50 pre-1964 buildings and structures and two 19th century cemeteries was conducted in 2011. The two cemeteries were evaluated as not significant and therefore as not eligible. Two buildings, Buildings 506 and 3200, (both outside of the historic district) were evaluated as NRHP eligible with SHPO concurrence (SAFB 2011e). **Appendix C** includes a list of facilities on Scott AFB that have reached or are reaching 50 years in age by 2017.

Two mid-19th century family cemeteries are within the Scott AFB boundaries. The Middlecoff Family Cemetery is along the south boundary of the installation, just west of the Belleville Gate. The Perschbacher Cemetery is in the uplands along an unnamed tributary of Silver Creek. Neither cemetery is eligible for the NRHP, and the SHPO has concurred with these evaluations.

There are no traditional cultural properties (TCPs) or sites sacred to Native Americans at Scott AFB (SAFB 2006a). Scott AFB has begun consultation with the Peoria Tribe of Indians of Oklahoma and the Osage Nation under EO 13175 and is not aware of any TCPs or sacred sites on Scott AFB.

3.8 Socioeconomics and Environmental Justice

3.8.1 Definition of the Resource

Socioeconomic Resources. Socioeconomics is defined as the basic attributes and resources associated with the human environment, particularly characteristics of population and economic activity. Regional birth and death rates and immigration and emigration affect population levels. Economic activity typically encompasses employment, personal income, and industrial or commercial growth. Changes in these fundamental socioeconomic indicators typically result in changes to additional socioeconomic indicators, such as housing availability and the provision of public services. Socioeconomic data at county, state, and national levels permit characterization of baseline conditions in the context of regional, state, and national trends.

Demographics, employment characteristics, and housing occupancy status data provide key insights into socioeconomic conditions that might be affected by a proposed action. Demographics identify the population levels and the changes in population levels of a region over time. Demographics data might also be obtained to identify a region's characteristics in terms of race, ethnicity, poverty status, educational attainment level, and other broad indicators. Data on employment characteristics identify gross numbers of employees, employment by industry or trade, and unemployment trends. Data on personal income in a region can be used to compare the "before" and "after" effects of any jobs created or lost as a result of a proposed action. Data on industrial or commercial growth or growth in other sectors of the economy provide baseline and trend line information about the economic health of a region. Housing statistics provide baseline information about the local housing stock, the percentage of houses that are occupied, and the ratio of renters to homeowners. Housing statistics allow for baseline information to evaluate the impacts a proposed action might have upon housing in the region.

In appropriate cases, data on an installation's expenditures in the regional economy help to identify the relative importance of an installation in terms of its purchasing power and influence in the job market.

Socioeconomic data shown in this section are presented at census tract, county, state, and national levels to characterize baseline socioeconomic conditions in the context of regional and state trends.

Environmental Justice. EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, requires that Federal agencies' actions substantially affecting human health or the environment do not exclude persons, deny persons benefits, or subject persons to discrimination because of their race, color, or national origin. The EO was created to ensure the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment means that no groups of people, including racial, ethnic, or socioeconomic groups, should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of Federal, state, tribal, and local programs and policies.

Consideration of environmental justice concerns includes race, ethnicity, and the poverty status of populations in the vicinity of a proposed action. Such information aids in evaluating whether a proposed action would render vulnerable any of the groups targeted for protection in the EO.

3.8.2 Existing Conditions

For the purposes of this socioeconomic analysis, four different spatial levels will be used: (1) Region of Influence (ROI), defined as the census tracts including and surrounding Scott AFB, which are tracts 5018, 5019, 5033.23, 5033.24, 5033.32, 5033.34, 5034.13, 5034.14, 5038, 5039.03, 5039.04, 5043.02, 5043.03, 5043.51, 5043.52, 5043.53, 5043.54 and 5043.55; (2) St. Clair County, the county within which Scott AFB is located; (3) St. Louis, Missouri-Illinois Metropolitan Statistical Area (St. Louis, MO-IL MSA), the Metropolitan Statistical Area (MSA) that encompasses Scott AFB; and (4) the State of Illinois. **Figure 3-2** illustrates the ROI. Data from the installation will also be used where applicable.

The ROI best illustrates socioeconomic characteristics for the area nearest Scott AFB, and includes all or portions of the cities of Mascoutah, Shiloh, Lebanon, O'Fallon, Summerfield, and Belleville. St. Clair County and the St. Louis MO-IL MSA represent the geographic area where most impacts from the Proposed Action would occur; therefore it is included in the analysis. The St. Louis MO-IL MSA includes the City of St. Louis and all or portions of eight counties in Missouri and eight counties in Illinois, including St. Clair County. Data for the State of Illinois provide baseline comparisons for the spatial levels mentioned above. Data for the United States are included to provide an additional level for comparison.

Demographics. The population of St. Clair County decreased 2.6 percent from 1990 to 2000, but increased 5.5 percent from 2000 to 2010. The population of St. Clair County in 2010 was 270,056. In 2010, the population of the St. Louis MO-IL MSA was 2,812,896. The population of Illinois increased 8.6 percent from 1990 to 2000, and 3.3 percent from 2000 to 2010. The United States experienced large population growths of 13.2 percent from 1990 to 2000, and 9.7 percent from 2000 to 2010 (U.S. Census Bureau 1990, U.S. Census Bureau 2000, U.S. Census Bureau 2010a).

In 2010, the ROI had a population of 97,525 people (U.S. Census Bureau 2010a). The U.S. Census Bureau changed the census tract boundaries between the 1990 and 2000 U.S. Censuses and again between the 2000 and 2010 U.S. Censuses. Therefore, 2000 population data were compiled using the 2000 census tracts that are equivalent with the 2010 census tracts in the ROI. Population data from 1990 were not available for the ROI because the 1990 census tracts are not equivalent to the 2010 census tracts. Complete population data are presented in **Table 3-9**.

Employment Characteristics. The percentage of persons employed in the armed forces is 7.2 percent in the ROI, 1.8 percent in St. Clair County, 0.3 percent in the St. Louis, MO-IL MSA, 0.1 percent in Illinois, and 0.7 percent in the United States. The largest percentage of employees by industry across all spatial levels is the educational, health, and social services industry. The second largest industry for all spatial levels except Illinois is the retail trade industry, in which approximately 11 to 12 percent of employees are employed. The second largest industry in Illinois is manufacturing, which employs 12.3 percent of the state labor force (U.S. Census Bureau 2010b, U.S. Census Bureau 2009). For complete information regarding employment by industry see **Table 3-10**.

Scott AFB is the largest employer in southwest Illinois employing more than 13,000 people. The annual payroll at Scott AFB is approximately $1.3 billion. Annual direct expenditures are approximately $222 million, and the estimated annual value of jobs created is approximately $773 million, which represents more than 18,000 jobs. The total estimated annual impact of Scott AFB is $2.3 billion (SAFB 2010g).

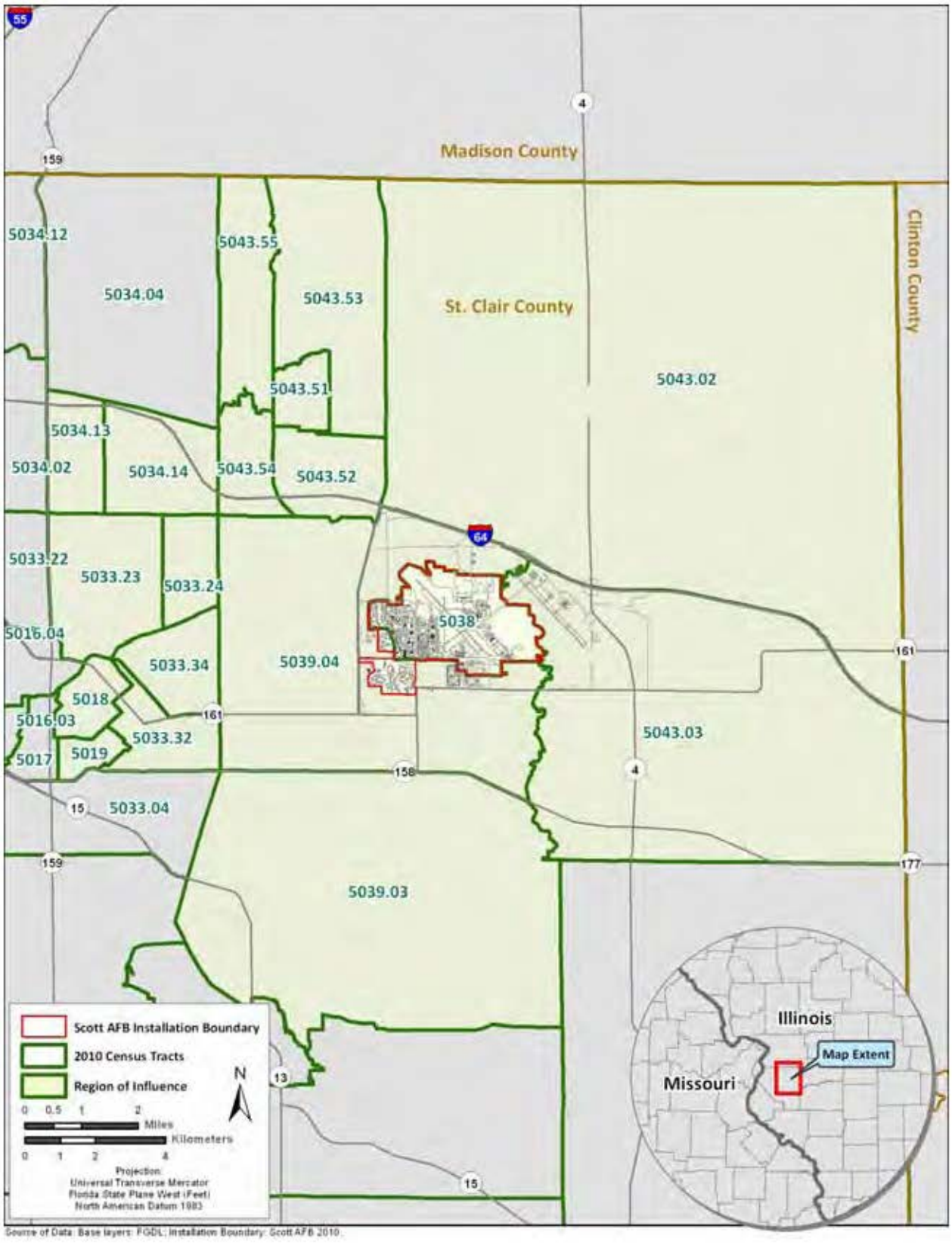


Figure 3-2. Socioeconomic Region of Influence for the Proposed Action

Table 3-9. Population Data for 1990, 2000, and 2010

	Population			Percent Change in Population	
	1990	2000	2010	1990 to 2000	2000 to 2010
ROI	N/A [a]	81,888 [b]	97,525	N/A [a]	19.1 [b]
St. Clair County	262,852	256,082	270,056	(2.6)	5.5
St. Louis, MO-IL MSA	N/A [c]	N/A [c]	2,812,896	N/A [c]	N/A [c]
Illinois	11,430,602	12,419,293	12,830,632	8.6	3.3
United States	248,709,873	281,421,906	308,745,538	13.2	9.7

Sources: U.S. Census Bureau 1990, U.S. Census Bureau 2000, U.S. Census Bureau 2010a

Notes:

N/A = Not available.

a. The population of the ROI in 1990 is not suitable for comparison with 2000 and 2010 because the census tract boundaries changed between the 1990 and 2000 Censuses.

b. The definitions of the census tracts used in the ROI changed between the 2000 and 2010 Censuses. Therefore, the population of the ROI in 2000 was compiled using the 2000 census tracts that are equivalent with the 2010 census tracts that make up the ROI. These include census tracts 5018, 5019, 5033.21, 5033.31, 5033.32, 5034.05, 5038, 5039.01, 5043.02, 5043.03, 5043.04, 5043.51, 5043.52, and 5043.53.

c. The populations of the St. Louis, MO-IL MSA in 1990 and 2000 are not presented here because the MSA boundary changed between the 1990 and 2000 Censuses, and again between the 2000 and 2010 Censuses, and is therefore not suitable for comparison.

Unemployment in the project area is generally higher than the national average. The monthly unemployment rates (not seasonally adjusted) for St. Clair County, the St. Louis, MO-IL MSA, and Illinois were all higher than 10 percent from June 2009 through March 2010, and intermittently during several following months (BLS 2011a). However, the national seasonally adjusted unemployment rate has only risen above 10 percent one time in the past 10 years; in October 2009 it was 10.1 percent (BLS 2011b). The overall unemployment trends in St. Clair County, the St. Louis, MO-IL MSA, and Illinois are similar; however, St. Clair County is usually higher (see **Figure 3-3**). As of November 2011, the unemployment rates in St. Clair County, the St. Louis, MO-IL MSA, and Illinois were 9.9 percent, 8.2 percent, and 9.4 percent, respectively (BLS 2011a). The seasonally adjusted national unemployment rate for November and December 2011 was 8.7 percent and 8.5 percent, respectively (BLS 2011b).

Housing Characteristics. The U.S. Census Bureau reported that in 2010 there were 116,249 housing units in St. Clair County; of these units 11,204 were vacant, resulting in a 9.6 percent vacancy rate. In the St. Louis, MO-IL MSA there were 1,236,222 housing units with 9.5 percent vacancy rate. Owner-occupied units in St. Clair County totaled 69,646 units, or 66.3 percent of all occupied units, while the remaining 33.7 percent were renter-occupied units. In the St. Louis, MO-IL MSA in 2010, 791,029 units (70.7 percent) were owner-occupied and 327,991 units (29.3 percent) were renter-occupied. Homeowner vacancy rate for the St. Louis, MO-IL MSA was 2.4 percent and the rental vacancy rate was 10.8 percent. In 2010, there were 40,974 housing units in the ROI of which 7.4 percent were vacant. Of the 37,950 occupied housing units in the ROI, 66.3 percent were owner-occupied and 33.7 percent were renter-occupied (U.S. Census Bureau 2010a).

As discussed in **Section 1.1**, the average daily population of Scott AFB is 45,749 people, which includes more than 13,000 Scott AFB employees. The Scott AFB community consists of more than 22,800 military and civilian personnel and their families living on and off installation. Scott AFB includes 1,593 permanent MFH units consisting of 1,207 privatized family housing units on Scott AFB, and 386 privatized housing units on private land adjoining the installation. Of these, 325 are designated for officers and 1,268 units are for enlisted personnel (SAFB 2011a).

Table 3-10. Overview of Employment by Industry, 2010

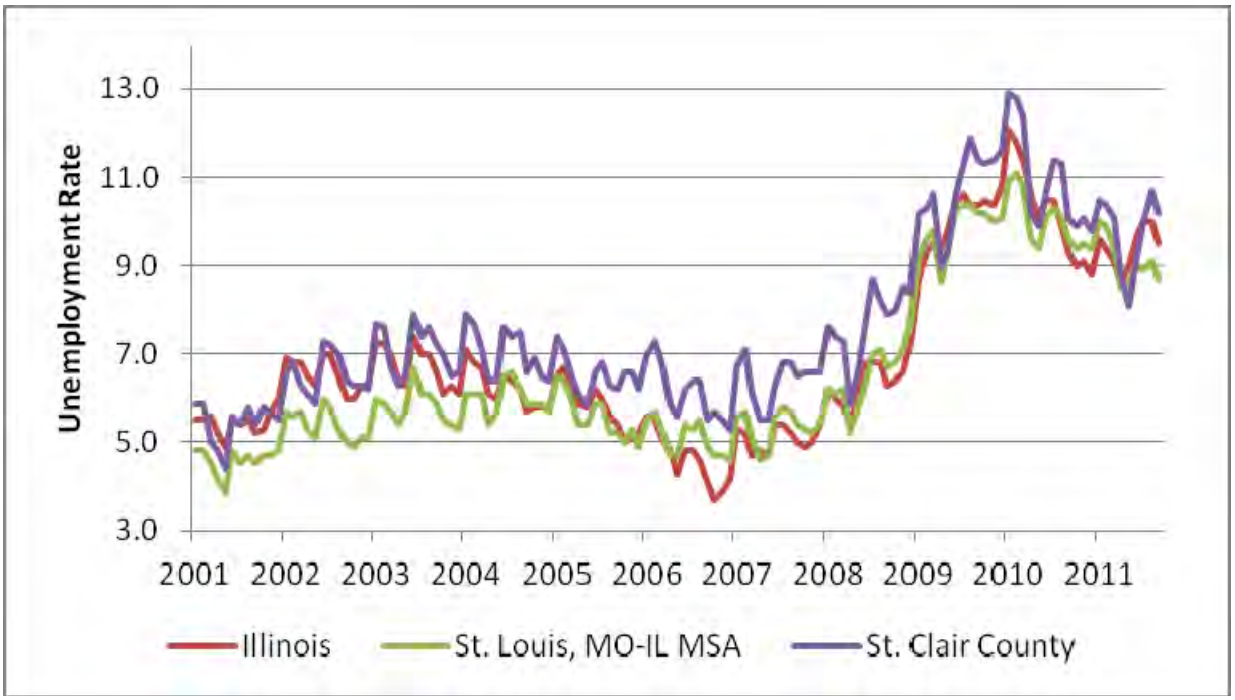
Employment Types	ROI [b]	St. Clair County	St. Louis MO-IL MSA	Illinois	United States
Population 16 Years and Over in the Labor Force [a]	71,001	137,166	1,487,670	6,683,498	156,966,769
Percent of population 16 years and over in labor force employed within the armed forces	7.2	1.8	0.3	0.1	0.7
Percent Employed Persons 16 years old and over in Civilian Labor Force (by industry)					
Agriculture, forestry, fishing and hunting, and mining	0.9	1.0	0.8	1.1	1.9
Construction	5.0	4.6	5.6	5.2	6.2
Manufacturing	6.2	8.6	11.0	12.3	10.4
Wholesale trade	2.2	2.5	2.9	3.1	2.8
Retail trade	12.1	11.8	11.3	11.0	11.7
Transportation and warehousing, and utilities	5.9	5.2	4.9	5.9	4.9
Information	2.2	1.2	2.2	2.1	2.2
Finance, insurance, real estate, and rental and leasing	8.3	7.3	8.2	7.4	6.7
Professional, scientific, management, administrative, and waste management services	10.9	10.5	10.5	11.1	10.6
Educational, health, and social services	21.4	26.9	24.4	22.9	23.2
Arts, entertainment, recreation, accommodation, and food services	9.6	8.8	9.4	9.0	9.2
Other services (except public administration)	4.9	5.3	4.8	4.9	5.0
Public administration	10.5	6.3	4.0	4.1	5.2

Sources: U.S. Census Bureau 2010b, U.S. Census Bureau 2009

Notes:

a. Labor force includes persons that are employed or unemployed civilians and members of the armed forces.

b. The most recent industry employment data available for the ROI are from the 2005–2009 American Community Survey, which uses the census tract definitions used in the 2000 Census. The industry employment data for the ROI were obtained by using the 2000 census tracts that are equivalent with the 2010 census tracts that make up the ROI. These include census tracts 5018, 5019, 5033.21, 5033.31, 5033.32, 5034.05, 5038, 5039.01, 5043.02, 5043.03, 5043.04, 5043.51, 5043.52, and 5043.53.



Source: BLS 2011a

Figure 3-3. Unemployment Percentages, 2001 to 2011

Environmental Justice. For the purpose of the environmental justice analysis, the ROI from the socioeconomic analysis will also be used for environmental justice baseline conditions.

Minority population levels within the ROI are less than minority levels in St. Clair County, Illinois, and the United States; and similar to those in the St. Louis, MO-IL MSA. The ROI's population reporting to be a race other than white was 23.7 percent, which is similar to the St. Louis, MO-IL MSA (23.5 percent) and less than St. Clair County (35.4 percent), Illinois (28.5 percent), and the United States (27.6 percent). The Hispanic or Latino population in the ROI was similar to that in St. Clair County and the St. Louis, MO-IL MSA, and less than that in Illinois and the United States (U.S. Census Bureau 2010a, U.S. Census Bureau 2010b, U.S. Census Bureau 2009). **Table 3-11** shows the regional race and ethnicity demographic data.

The poverty status in the ROI for individuals and families was less than that of St. Clair County, the St. Louis, MO-IL MSA, Illinois, and the United States. Similarly, the per capita income and median household income for the ROI was higher than in the other spatial levels (see **Table 3-11**) (U.S. Census Bureau 2010a, U.S. Census Bureau 2010b, U.S. Census Bureau 2009).

3.9 Infrastructure

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 for expansion are generally regarded as essential to the economic growth of an area. The infrastructure components discussed in this section include airfield, transportation, utilities, and solid waste management.

Table 3-11. Minority, Low-Income, and Poverty Status, 2010

Demographic	ROI	St. Clair County	St. Louis, MO-IL MSA	Illinois	United States
Total Population	97,525	270,056	2,812,896	12,830,632	308,745,538
Percent Male	48.5	48.1	48.4	49.0	49.2
Percent Female	51.5	51.9	51.6	51.0	50.8
Percent Under 5 Years	6.7	6.8	6.3	6.5	6.5
Percent Over 65 Years	10.7	12.5	13.3	12.5	13.0
Percent White	76.3	64.6	76.5	71.5	72.4
Percent Black or African American	17.4	30.5	18.4	14.5	12.6
Percent American Indian, Alaska Native	0.2	0.2	0.2	0.3	0.9
Percent Asian	2.2	1.2	2.1	4.6	4.8
Percent Native Hawaiian and Other Pacific Islander	0.1	0.1	0.0	0.0	0.2
Percent Some Other Race	0.8	1.2	0.9	6.7	6.2
Percent Reporting 2 or more races	3.0	2.2	1.8	2.3	2.9
Percent Hispanic or Latino [a]	3.3	3.3	2.6	15.8	16.3
Percent of Individuals Below Poverty	7.4 [d]	15.5	13.3	13.8	15.3
Percent of Families Below Poverty	5.5 [d]	12.9	9.6	10.1	11.3
Per Capita Income [b]	$28,828 [c]	$23,873	$27,242	$27,325	$26,059
Median Household Income [b]	$65,340.79 [c]	$47,156	$50,912	$52,972	$50,046

Sources: U.S. Census Bureau 2010a, U.S. Census Bureau 2010b, U.S. Census Bureau 2009

Notes:

a. Persons of Hispanic or Latino origin can be of any race, and thus are also included in applicable race categories.

b. Per Capita Income and Median Household Income for the ROI consist of the average of all census tracts included in the ROI.

c. The most recent income and poverty data available for the ROI are from the 2005–2009 American Community Survey, which uses the census tract definitions used in the 2000 Census. The income and poverty data for the ROI were obtained by using the 2000 census tracts that are equivalent to the 2010 census tracts that make up the ROI. These include census tracts 5018, 5019, 5033.21, 5033.31, 5033.32, 5034.05, 5038, 5039.01, 5043.02, 5043.03, 5043.04, 5043.51, 5043.52, and 5043.53.

The airfield includes all pavements, runways, overruns, aprons, ramps, and arm/disarm pads that are associated with aircraft maintenance and aircraft operations. Transportation includes major and minor roadways that feed into the installation and the security gates, roadways, and parking areas on the installation. Public transit, rail, and pedestrian networks are also elements of transportation. Utilities include electrical supply, central heating and cooling, liquid fuel supply, natural gas supply, water supply, sanitary sewer and wastewater systems, storm water drainage, and communications systems. Solid waste

management primarily relates to the availability of systems and landfills to support a population's residential, commercial, and industrial needs. The infrastructure information contained in this section provides a brief overview of each infrastructure component and comments on its existing general condition.

3.9.2 Existing Conditions

Airfield. Scott AFB has one runway (Runway 14/32) measuring 8,001 feet long and 150 feet wide with a 1,000-foot-long overrun on each end. The runway roughly extends in a northwest-to-southeast direction through the center of the installation. There are two principal aircraft parking ramps on the airfield: the Main Ramp, which is located on the western side of the runway and serves the aircraft of the 375 AMW and the 932 AW; and the Air National Guard Ramp, which is located on the eastern side of the runway and serves the aircraft of the 126 ARW. Multiple taxiways allow aircraft access between the runway and the parking ramps (SAFB 2006b).

The installation's airfield is connected to the airfield of MidAmerica Airport immediately to the east. MidAmerica Airport is owned by St. Clair County and has one runway measuring 10,000 feet long and 150 feet wide. MidAmerica Airport provides limited commercial cargo and private service; no regularly scheduled passenger service currently is provided from MidAmerica Airport. Taxiway G connects the two airfields (SAFB 2006b, MidAmerica St. Louis Airport 2011).

The primary aircraft stationed at Scott AFB include C-21s assigned to the 375 AMW, C9-Cs assigned to the 932 AW, and KC-135E Stratotankers assigned to the 126 ARW. Transient aircraft traffic at Scott AFB includes the C-5 Galaxy, C-130 Hercules, and KC-10 Extender (SAFB 2005b).

An Airfield Pavement Evaluation was conducted in 2005 for the airfield at Scott AFB. This evaluation determined that approximately 85 percent of the installation's airfield is in good condition. The only areas rated as in poor condition were the access aprons to Hangar 1 and portions of Taxiway E and H due to cracking and spalling from pavement age (SAFB 2006b). Runway 14/32 was resurfaced in 2011.

Transportation. Scott AFB is in St. Clair County, Illinois, approximately 20 miles to the east of the City of St. Louis, Missouri. The primary regional access road to the installation is Interstate- (I) 64, which runs from the St. Louis area to southeast Illinois. Most traffic accessing the installation exits I-64 at Exit 19 and proceeds south along Illinois Highway- (IL) 158 (Air Mobility Drive) to Seibert Road and enters the installation through the Shiloh Gate (Main Gate). Truck traffic must take IL-158 south to IL-161 east to access the installation through the Mascoutah Gate on the southern side of the installation. There are two other vehicular gates to access Scott AFB: the Belleville Gate, which is at the southwestern edge of the installation near the intersections of IL-158 and IL-161; and the Cardinal Creek Gate, which is a single-lane gate along the northern edge of the installation at Wherry Housing Road. The Cardinal Creek Gate primarily serves as a shortcut for personnel accessing the eastern portion of the installation and is open only during certain times of the day. Because it is only a single lane, this gate alternates with the time of day between allowing traffic to enter the installation and allowing it to exit.

On-installation, Scott Drive is the primary roadway. Scott Drive is a four-lane roadway that extends from the Shiloh Gate through the heavily developed western portion of the installation to the Belleville Gate. Branching off of Scott Drive are two-lane secondary roads such as Golf Course Road, Winters Street, and Birchard Street. Ward Street is a secondary road that parallels Scott Drive to the west. Golf Course Road, East Drive, and South Drive compose a half-circle of secondary roads that allow traffic to reach destinations on the eastern portion of the installation from Scott Drive.

Scott AFB has estimated traffic volumes on major roadways throughout the installation. **Table 3-12** summarizes the daily traffic volume for several major roadways on installation. The roadways at Scott AFB have sufficient capacity to meet current traffic volumes (Gannett Fleming 2007).

Table 3-12. Average Daily Traffic Volume for Select Roadways at Scott AFB

Roadway	Recording Location	Traffic Count
Scott Drive	Entering Installation at Shiloh Gate	9,173
Scott Drive	Exiting Installation at Shiloh Gate	9,339
Scott Drive	Entering Installation at Belleville Gate	6,015
Scott Drive	Exiting Installation at Belleville Gate	6,557
Pryor Drive	Entering Installation at Cardinal Creek Gate	791
Pryor Drive	Exiting Installation at Cardinal Creek Gate	634
East Winters Street	Eastbound at Hangar Road	3,243
East Winters Street	Westbound at Hanger Road	3,385
West Winters Street	Eastbound at Ward Drive	4,202
West Winters Street	Westbound at Ward Drive	4,075
Ward Drive	Northbound at Winters Street	4,266
Ward Drive	Southbound at Winters Street	4,512
Golf Course Road	Eastbound at Scott Drive	1,845
Golf Course Road	Westbound at Scott Drive	1,633
South Drive	Eastbound near Mascoutah Gate	1,105
South Drive	Westbound near Mascoutah Gate	1,243

Sources: Gannett Fleming 2007, SAFB 2010j

Certain areas of Scott AFB have noticeable parking shortages during normal work hours. A parking study found that many parking lots on the western side of the installation, especially those adjacent to Scott Drive, frequently reach and exceed 100 percent utilization during peak periods. The parking study also noted most parking lots in other portions of Scott AFB do not reach capacity and some stay significantly below capacity. The parking study found that the construction of additional parking would help to alleviate parking deficiencies; however, there is only limited space available at the areas of the installation with parking shortages (SAFB 2007c).

Public transportation service is available to/from and within Scott AFB. The MetroLink Red Line, which runs from Lambert International Airport through the downtown portions of St. Louis, terminates immediately to the west of Scott AFB at the Shiloh-Scott Station. Passengers with proper installation-access credentials can then enter the installation through a pedestrian gate. MetroBus operates two on-installation bus routes to transport passengers from the Shiloh-Scott Station around the installation. Route 21, Scott AFB – Main Base Shuttle, transports riders around the western portion of the installation on Scott Drive, Ward Drive, Winters Street, and Heritage Drive; Route 21X, Scott AFB–East Base Shuttle, transports riders along Winters Street, South Drive, and East Drive to the eastern portion of the installation (MetroTransit 2011).

Electrical Supply. The installation's electricity is purchased from Integrys Energy Services and distributed by Ameren Illinois. The contract to purchase electricity from Integrys Energy Services expires in May 2012 and currently is being negotiated with multiple suppliers. The installation receives power via three 34.5-kilovolt electrical feeds. The electricity is primarily supplied by three main substations via an open switch. The installation is in the process of replacing their overhead distribution system with an underground system (SAFB 2011a).

In 2009, Scott AFB purchased 132,722 megawatts (MW) of electricity from Integrys. During this year, the average hourly demand was 15.15 MW and reached a peak demand of 48.81 MW in August (SAFB 2010h).

Central Heating. Scott AFB's central heating plant has been decommissioned and demolished and no central heating service is currently provided. The installation has installed individual facility boilers fueled by natural gas (SAFB 2011a).

Liquid Fuel Supply. The majority of Scott AFB's liquid fuel is supplied by the 375 Supply Squadron Logistics Group Supply Fuels and stored in Building 560 (Bulk Fuel Storage Area [BFSA]). The three aboveground storage tanks (ASTs) at the BFSA (with a total capacity of 567,000 gallons) have containment systems that are in excellent condition. The BFSA has no pipe supply lines or hydrant systems. Tanker trucks deliver to the BFSA and refuelers transport JP-8 to the aircraft. Fuel is also delivered by tanker to the hydrant system at the Air National Guard Ramp. The other liquid fuel storage locations that are greater than 10,000 gallons include the military service station (Building 565), Army and Air Force Exchange Service station (Building 1640), AST A8741, and the emergency generator USTs (Buildings 1575 and 1900) (SAFB 2011a). Areas of the Proposed Action that have liquid fuel supplies include Buildings 516 and 528 (see **Section 3.10** for additional details).

Natural Gas Supply. Ameren Illinois provides natural gas services to the installation. In 2009, Scott AFB used a total of 195,609 million British thermal units of natural gas (SAFB 2010h). The installation is heated via individual facility boilers fueled by natural gas (SAFB 2011a).

Water Supply. Scott AFB's water supply system is owned and operated by Illinois-American Water. Illinois-American Water delivers water to Scott AFB through two water mains measuring 12- and 16-inches, respectively. On installation, water is transported through the installation's water distribution system and is stored in three ASTs that measure 200,000 gallons, 300,000 gallons, and 3,000,000 gallons, respectively. The maximum amount of water that can be delivered to the installation is 4.26 million gallons per day (mgd). The average daily water demand for Scott AFB in 2005 was approximately 2.0 mgd, which is approximately 47 percent of the water supply capacity, and daily water demand for peak periods was approximately 3.15 mgd, which is 74 percent of available capacity. All water delivered to the installation originates from the Mississippi River and is treated off-installation (SAFB 2007d).

Sanitary Sewer and Wastewater Treatment. Scott AFB owns and operates its own sanitary sewer and wastewater treatment system. Wastewater generated on-installation is transported through a series of mains and lift stations to the installation's wastewater treatment plant (WWTP). Effluent from the WWTP is permitted for discharge into an unnamed stream, Golf Course Pond, and Scott Lake under NPDES Permit IL0026859 (IEPA 2007). Sludge from the WWTP is permitted for application onto agricultural lands in accordance with Illinois Environmental Protection Agency Water Pollution Control Permit 2010-SC-0711 (IEPA 2009a).

Scott AFB's WWTP is designed to handle an average of 2.0 mgd of inflow and a temporary maximum of 3.0 mgd during storm events. In 2009, the WWTP treated on average approximately 1.1 mgd, which is approximately 55 percent of available capacity. However, during major storm events, peak inflow can

exceed 3.0 mgd. When inflow exceeds capacity, excess wastewater is treated with chlorine and discharged through one the installation's permitted outfalls (SAFB 2007d, Smith 2010).

Scott AFB is currently in the process of conducting a feasibility study for privatizing the wastewater system. There currently is no plan to construct a new WWTP or to treat wastewater at an off-installation facility (Smith 2010).

Storm Water. The installation's storm water drainage is provided by a series of storm sewers and open channels. During rainfall events, water is conveyed to the main drainage channels and exits the installation from the south and east boundaries (SAFB 2004b). There are three identified storm drainage areas with defined outfalls. Outfall area 1 encompasses the Cardinal Creek Golf Course, the north side of the airfield, the former Cardinal Creek MFH area, and the 126 ARW campus. Storm water and water quality is monitored along the North Ditch. Outfall area 2 is in the east-central portion of the installation and includes parts of the active airfield and the 932 AW campus. It is drained by the ditch adjacent to the intersection of Maple and Monroe Streets. Outfall area 3 is the largest and encompasses the western and southern portions of the installation (i.e., the bulk of the industrial operations). It drains into Ash Creek, South Ditch, and Mosquito Creek. The drainage ditches need immediate attention if major flood damage is to be prevented. An installationwide infiltration study discovered infiltration issues causing the overloading of the WWTP during heavy precipitation. The U.S. Army Corps of Engineers determined that the slope and sediment conditions of pipes significantly reduce capacity and exacerbate drainage issues (SAFB 2011a). The insufficient storm water management system can cause disruptions and interference with the efficiency and operations of Scott AFB (SAFB 2007d).

Scott AFB possesses a valid NPDES permit for storm water discharges from industrial activities (ILR002659) issued on 3 April 2009 and expiring on 30 April 2014 (IEPA 2009a). The NPDES permit for small municipal separate storm sewer systems (IRL40) has been effective since 1 March 2009 and expires 30 March 2014 (IEPA 2009b). The installation has also developed a comprehensive SWPPP (SAFB 2004b).

Communications. The communications system on the installation consists of fiber optic cable between buildings and twisted pair copper cable for in-building conductivity. Manhole and conduit systems provide communications support for use on-installation through buried communication infrastructure. Service and infrastructure are available to support a wide range of communication requirements such as voice, data, video, wireless, land mobile radio, aircraft communications, and security systems.

Solid Waste. The Solid Waste Management Plan at the Scott AFB follows required solid waste management requirements stipulated by AFI 32-7042. All nonrecyclable municipal solid waste is collected by a contractor and disposed in landfills off installation. The installation implements a comprehensive *Qualified Recycling Program* under a contract with Challenge. The recycling center is located along the east side of New Mexico Street, between Missouri Street and Indiana Street, in the south-southeastern portion of the installation. Industrial recycling is done on an as-needed basis. Demolition construction waste is managed by individual construction contracts. Yard waste is collected from the MFH areas and composted by a contractor.

Pollution Prevention. The Scott AFB Integrated Pollution Prevention Management Action Plan identifies processes and procedures that reduce or eliminate the need for hazardous materials. Scott AFB has several other pollution prevention plans including the following:

- Hazardous Material Emergency Planning and Response Plan
- Hazardous Waste Management Plan
- Integrated Contingency Plan for Oil Spill Prevention and Response Action Plan Summary.

3.10 Hazardous Materials and Waste

3.10.1 Definition of the Resource

Hazardous materials are defined by 49 CFR 171.8 as "hazardous substances, hazardous wastes, marine pollutants, elevated temperature materials, materials designated as hazardous in the Hazardous Materials Table (49 CFR 172.101), and materials that meet the defining criteria for hazard classes and divisions" in 49 CFR Part 173. Transportation of hazardous materials is regulated by the U.S. Department of Transportation regulations within 49 CFR Parts 105–180.

Hazardous wastes are defined by the Resource Conservation and Recovery Act (RCRA) at 42 U.S.C. 6903(5), as amended by the Hazardous and Solid Waste Amendments, as "a solid waste, or combination of solid wastes, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may (A) cause, or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; or (B) pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed." Certain types of hazardous wastes are subject to special management provisions intended to ease the management burden and facilitate the recycling of such materials. These are called universal wastes and their associated regulatory requirements are specified in 40 CFR Part 273. Four types of waste are currently covered under the universal waste regulations: hazardous waste batteries, hazardous waste pesticides that are either recalled or collected in waste pesticide collection programs, hazardous waste thermostats, and hazardous waste lamps.

Special hazards are those substances that might pose a risk to human health and are addressed separately from other hazardous substances. Special hazards include asbestos-containing material (ACM), polychlorinated biphenyls (PCBs), and lead-based paint (LBP). The USEPA is given authority to regulate these special hazard substances by the Toxic Substances Control Act (TSCA) Title 15 U.S.C. Chapter 53. TSCA Subchapter I identifies PCBs, Subchapter II handles ACMs, and Subchapter IV discusses LBP. USEPA has established regulations regarding asbestos abatement and worker safety under 40 CFR Part 763 with additional regulation concerning emissions (40 CFR Part 61). Whether from lead abatement or other activities, depending on the quantity or concentration, the disposal of the LBP waste is potentially regulated by the RCRA at 40 CFR Part 260. The disposal of PCBs is addressed in 40 CFR Parts 750 and 761. 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 DOD has developed the ERP, which facilitates environmentally responsible land management thorough investigation and cleanup of contaminated sites on military installations. Through the ERP, DOD evaluates and cleans up sites where hazardous wastes have been spilled or released to the environment. Description of 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 the identification of properties and their usefulness for given purposes (e.g., activities dependent on groundwater usage might be restricted until remediation of a groundwater contaminant plume has been completed).

For the USAF, AFPD 32-70, *Environmental Quality*, and the AFI 32-7000 series incorporate the requirements of all Federal regulations, and other AFIs and DOD Directives for the management of hazardous materials, hazardous wastes, and special hazards. Evaluation extends to generation, storage, transportation, and disposal of hazardous wastes when such activity occurs at or near the project site of the Proposed Action.

3.10.2 Existing Conditions

Hazardous Materials and Petroleum Products. AFI 32-7086, *Hazardous Materials Management*, establishes procedures and standards that govern management of hazardous materials throughout the USAF. It applies to all USAF personnel who authorize, procure, issue, use, or dispose of hazardous materials, and to those who manage, monitor, or track any of those activities. Under AFI 32-7086, the USAF has established roles, responsibilities, and requirements for a hazardous materials management program (HMMP). The purpose of the HMMP is to control the procurement and use of hazardous materials to support USAF missions, ensure the safety and health of personnel and surrounding communities, and minimize USAF dependence on hazardous materials. The HMMP includes the activities and infrastructure required for ongoing identification, management, tracking, and minimization of hazardous materials (SAFB 2006c). The Scott AFB Integrated Pollution Prevention Management Action Plan supplements the Scott AFB Hazardous Materials Management Process by identifying processes and procedures that reduce or eliminate the need for hazardous materials. Hazardous materials at Scott AFB are managed by the HAZMAT Pharmacy. The Environmental Management Information System tracks acquisition and inventory control of hazardous materials (SAFB 2011a).

Hazardous materials and petroleum products such as fuels, flammable solvents, paints, corrosives, pesticides, deicing fluid, and cleaners are used throughout Scott AFB for various functions including aircraft maintenance; aircraft ground equipment maintenance; and ground vehicles, communications infrastructure, and facilities maintenance. The HAZMAT Emergency Planning Team coordinates all hazardous materials training for Scott AFB.

The areas of the Proposed Action that contain hazardous materials and petroleum products are Buildings 513, 515, 516, 517, 528, 533, and 1985 (SAFB 2006c). Hazardous materials and petroleum products in storage tanks are discussed in the Storage Tanks subsection.

Hazardous and Petroleum Wastes. Scott AFB's Hazardous Waste Management Plan is required under AFI 32-7042 and complies with 40 CFR Parts 260 to 272. It prescribes the roles and responsibilities of all members of Scott AFB with respect to the waste stream inventory, waste analysis plan, hazardous waste management procedures, training, emergency response, and pollution prevention. The plan establishes procedures to comply with applicable Federal, state, and local standards for solid waste and hazardous waste management (SAFB 2008b). The Hazardous Waste Stream Inventory is maintained as part of the Scott AFB Hazardous Waste Management Plan (SAFB 2008b, SAFB 2011a).

Hazardous waste generated at Scott AFB includes bead blast media, fuels, spent solvents, paint, stripping chemicals, oils, batteries, shelf life expired materials, contaminated soil, mercury, pesticides, methyl ethyl ketone, xylene, sulfur dioxide, and spill residue (SAFB 2006c). Hazardous wastes, including contaminated soil, contaminated personal protective equipment, contaminated equipment and materials, used decontamination solution, used absorbents, and spent chemicals, are all containerized with other contaminated compatible materials and sent off site to permitted treatment, storage, and disposal facilities (SAFB 2006c).

Areas of the Proposed Action that contain hazardous or petroleum wastes include Buildings 513, 516, 517, and 533. Hazardous and petroleum wastes in storage tanks are discussed in the Storage Tanks subsection.

Storage Tanks. AFI 32-7044, *Storage Tank Compliance*, implements AFPD 32-70 and identifies compliance requirements for USTs, ASTs, and associated piping that store petroleum products and hazardous substances. USTs are subject to regulation under RCRA, 42 U.S.C. 6901, and 40 CFR 280.

An inventory of ASTs and USTs is maintained at Scott AFB and includes the location, contents, capacity, containment measures, status, and installation dates. Scott AFB has a total aboveground storage capacity of 1,028,317 gallons and an underground storage capacity of 149,600 gallons (SAFB 2007e). The Scott AFB Spill Prevention Control and Countermeasures (SPCC) Plan is the key document addressing management of bulk fuels at the installation (SAFB 2011a).

The areas of the Proposed Action that contain hazardous materials, petroleum products, and hazardous and petroleum wastes in storage tanks are Building 515 (1,000-gallon calcium chloride AST), Building 516 (1,000-gallon diesel AST, 200-gallon diesel AST, and 500-gallon used oil AST), and Building 528 (500-gallon diesel AST) (SAFB 2006c).

Runway and Aircraft Deicer. Scott AFB has one aircraft deicer pad at the 126 ARW campus. Runway deicers (potassium acetate) and aircraft deicers (propylene glycol) are contained in ASTs. One 10,000-gallon propylene glycol AST is located at Building 560 (SAFB 2006c). One 20,000-gallon UST at Building 5026 contains recovered deicer fluid (SAFB 2007e). Neither of these buildings is within the area of the Proposed Action.

Asbestos-Containing Material. Asbestos is regulated by the USEPA under the CAA; TSCA; and Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). The USEPA has established that any material containing more than 1 percent asbestos by weight is considered an ACM. Friable ACM is any material containing more than 1 percent asbestos, and that, when dry, can be crumbled, pulverized, or reduced to powder by hand pressure. Nonfriable ACM is any ACM that does not meet the criteria for friable ACM. Illinois has its own program and guidelines to manage ACM.

AFI 32-1052, *Facilities Asbestos Management,* provides the direction for asbestos management at USAF installations. It requires installations to develop an asbestos management plan for the purpose of maintaining a permanent record of the status and condition of ACM in installation facilities, and to document asbestos management efforts. In addition, the instruction requires installations to develop an asbestos operating plan detailing how the installation accomplishes asbestos-related projects. Building materials in older buildings (pre-1980) are assumed to contain asbestos; however, asbestos is still used in some construction materials today. Asbestos exists in a variety of forms and can include siding, ceiling tiles, floor tiles, floor tile mastic, roofing materials, joint compound, wallboard, thermal system insulation, boiler gaskets, paint, and other materials. If asbestos is disturbed, fibers can become friable. Common sense measures, such as avoiding damage to walls and pipe insulation, help keep the fibers from becoming airborne.

The Scott AFB maintains a record of ACM maintenance and abatement. The Scott AFB Asbestos Management Plan stipulates how to manage ACM throughout the installation.

The following buildings within the area of the Proposed Action were built before 1980; therefore, they are assumed to contain asbestos: 48, 512, 519, 520, 528, 530, 531, 533, 543, 1984, 1985, and 1987 (SAFB 2011c).

Lead-Based Paint. Lead is a heavy, ductile metal commonly found simply as metallic lead or in association with organic compounds, oxides, and salts. It was commonly used in house paint for several years. The Federal government banned the use of most LBP in 1978. Therefore, it is assumed that all structures constructed prior to 1978 could contain LBP. Paint chips that fall from the exterior of buildings can contaminate the soil if the paint contains lead.

Federal agencies are required to comply with applicable Federal, state, and local laws relating to LBP activities and hazards. The requirements for the management of LBP in Illinois are outlined by the Illinois Environmental Protection Agency and generally follow the guidelines stipulated by the USEPA.

The Scott AFB Lead-Based Paint Management Plan is in accordance with DOD guidance and addresses regulatory requirements, responsibilities, and management activities (SAFB undated).

No comprehensive LBP survey of non-priority buildings has been conducted at Scott AFB. However, non-priority buildings are surveyed on a case-by-case basis in conjunction with the work request process when renovation, maintenance, or other work practices could disturb painted surfaces (SAFB undated).

The following buildings within the area of the Proposed Action were built before 1978; therefore, they could contain LBP: 48, 512, 519, 520, 528, 530, 531, 533, 543, 1984, 1985, and 1987 (SAFB 2011c).

Polychlorinated Biphenyls. PCBs are a group of organic compounds used as dielectric and coolant fluids in equipment such as transformers, capacitors, fluorescent light ballasts, electric motors, and hydraulic systems. PCBs are managed and regulated in accordance with the USEPA's TSCA of 1976 (40 CFR 761). Chemicals classified as PCBs were widely manufactured and used in the United States throughout the 1950s and 1960s. The production of PCBs was banned in the United States in 1979.

Most major equipment, components, and transformers with PCB concentrations of 500 ppm or greater have been removed from service or are refilled with non-PCB oils at Scott AFB. The installation has obtained "PCB-free" status in April 1996 (SAFB 2011a).

Based on their age, it is assumed that several of the buildings associated with the Proposed Action might have PCB-containing equipment, particularly fluorescent light ballasts.

PCBs or PCB-contaminated fluids could have leaked or spilled at several locations on the installation (SAFB 2011a). ERP sites involving PCBs are addressed in the ERP subsection.

Pesticides. The Scott AFB Pest Management Plan, required by AFI 32-1053, describes the pest management practices at the installation. The plan outlines the pest management efforts of the Pest Management Shop. Chemical controls are a last resort method implemented only after all other procedures have failed. Scott AFB uses an integrated pest management approach to minimize the types and quantities of pesticides used at the installation. When chemicals are depleted they are replaced with chemicals that have lower concentrations of active ingredients with equal or greater effectiveness. As a result, chemical use at the installation is lowered (SAFB 2007f).

No pesticides, insecticides, or herbicides are known to have been stored, mixed, or disposed of within the Proposed Action areas. ERP sites involving pesticide contamination are addressed in the ERP subsection.

Radon. Radon is a naturally occurring radioactive gas found in soils and rocks. It comes from the natural breakdown or decay of uranium. Radon has the tendency to accumulate in enclosed spaces that are usually below ground and poorly ventilated (e.g., basements). Radon is an odorless, colorless gas that has been determined to increase the risk of developing lung cancer. In general, the risk of lung cancer increases as the level of radon and length of exposure increase.

The USEPA has established a guidance radon level of 4 picocuries per liter (pCi/L) in indoor air for residences; however, there have been no standards established for commercial structures. Radon gas accumulation greater than 4 pCi/L is considered to represent a health risk to occupants. All radon testing at Scott AFB is performed by the bioenvironmental engineers. St. Clair County has been designated a zone 2 radon area, which means that the predicted average indoor radon screening level is between 2 and 4 pCi/L and that there is a moderate potential for elevated indoor radon levels (USEPA 2011e). Additionally, approximately 30 housing units in the Galaxy and Colonial housing areas have subslab ventilation systems installed to reduce high radon levels. Therefore, radon is a potential concern at Scott AFB (SAFB 2011c).

Environmental Restoration Program. The Defense Environmental Restoration Program (DERP) was formally established by Congress in 1986 to provide for the cleanup of DOD property at active installations, Base Realignment and Closure installations, and formerly used defense sites throughout the United States and its territories. The two restoration programs under the DERP are the ERP and Military Munitions Response Program (MMRP). The ERP requires each installation to identify, investigate, and clean up contaminated sites. The MMRP addresses nonoperational military ranges and other sites that are suspected or known to contain unexploded ordnance, discarded military munitions, or munitions constituents. Eligible DERP sites include those contaminated by past defense activities that require cleanup under CERCLA, as amended by Superfund Amendment and Reauthorization Act, and certain corrective actions required by RCRA. Non-DERP sites are remediated under the Compliance-Related Cleanup Program.

Scott AFB has 45 ERP sites and seven AOCs. All AOCs have been closed or merged with the ERP sites. The following projects of the Proposed Action are proposed on or near ERP sites: D1, D3, C1, C2, C6, I1, I2, and potentially NI3. **Table 3-13** lists the ERP sites and their current statuses that have the potential to affect the Proposed Action. There are no MMRP sites on the installation (SAFB 2011d).

3.11 Safety

3.11.1 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. Human health and safety addresses both workers' health and public safety during facility demolition and construction, and during subsequent operation of newly constructed facilities.

Construction site safety is largely a matter 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 numerous DOD and USAF 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.

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 location of the hazard to the population. Activities that can be hazardous include transportation, maintenance and repair activities, and the creation of extremely noisy environments. 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 process creates unsafe environments for nearby populations. Extremely noisy environments can also mask verbal or mechanical warning signals such as sirens, bells, or horns.

AFI 91-301, *Air Force Occupational and Environmental Safety, Fire Protection, and Health Program*, implements AFPD 91-3, *Occupational Safety and Health*, by outlining the AFI 91-301. The purpose of the AFI 91-301 is to minimize loss of USAF resources and to protect USAF personnel from occupational deaths, injuries, or illnesses by managing risks. In conjunction with the USAF Mishap Prevention Program, these standards ensure all USAF workplaces meet Federal safety and health requirements. This instruction applies to all USAF activities.

Table 3-13. Status of ERP Sites Potential Affected by the Proposed Action

Site Number	Site Name	Site Description	Current Status	Potential Affected Project	Date of Remedy In Place
TU-23 TU-24 TU-25	Building 48 UST 23, 24, and 25	Three ERP sites have been identified at Building 48 in association with former USTs. Soil and groundwater contamination have been confirmed and the pavement surrounding the building serves as an engineering barrier between the contaminated soil and the environment. Groundwater monitoring wells have been installed on property surrounding the building.	PP/ROD	D1	30 September 2014
LF-01	Base Landfill	This former landfill was used for the disposal of domestic and industrial wastes from early 1940 to 1976. Since 1976, only hard and earthen fill materials, sewage treatment plant sludge, and contaminated soils from environmental projects have been disposed of on the surface of both cells. Groundwater, surface water, sediments, and soil at this site have all been confirmed to be impacted.	PP/ROD	C1	30 June 2012
SS-05	Spill Site Area #5	A 20,000-gallon spill occurred at the BFSA in 1977. Approximately 13,000 gallons of jet propellant-4 were not recovered. Passive groundwater treatment and limited soil excavation might be required for remedial action.	FS	D3	30 June 2012
ST-10	Base wide Underground Storage Tanks	This ERP site includes 27 former UST sites at various stages of closure. Only two UST sites are in the vicinity of the Proposed Action. The closure/remedial status of these two sites are not available.	RA-O	D3	8 March 2011
SS-15	Former Defense Reutilization and Marketing Office Facility	ERP Site SS-15 is the site of a 14-gallon spill of PCB-contaminated dielectric fluid at the former Defense Reutilization and Marking Office. PCBs have been detected in soil and groundwater at this site. In addition to PCBs, benzo(a)pyrene, benzo(b)flouranthene, endrin aldehyde, and 1,1,2-trichloroethane have been detected in soils and 1,1,2-trichloroethane, 1,4-dichlorobenzene, chlorobenzene, and manganese have been detected in groundwater.	ROD	C6	31 August 2012

Site Number	Site Name	Site Description	Current Status	Potential Affected Project	Date of Remedy In Place
SS-21	PCB Spill Site	Sediment samples taken from the vicinity of Building 540 detected PCB-impacted sediments in the vicinity of the South Ditch.	PP/ROD	D3	30 June 2012
SS-25	Former Base Housing Areas	Chlordane was used to treat former buildings for termite control. As such, pesticide-impacted soil resulted.	RI	C2, I1, I2	24 August 2012

Sources: SAFB 2011d, SAFB 2012

Key:

RI = Remedial Investigation
FS = Feasibility Study
PP = Proposed Plan
ROD = Record of Decision

3.11.2 Existing Conditions

Construction Safety. All contractors performing demolition and construction activities at Scott AFB are responsible for following ground safety regulations and workers compensation programs and are required to conduct demolition and 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 Material Safety Data Sheets (MSDS). Industrial hygiene is the responsibility of contractors, as applicable. Contractor responsibilities are to review potentially hazardous workplace operations; to monitor exposure to workplace chemicals (e.g., asbestos, lead, hazardous materials), physical hazards (e.g., noise propagation, falls), and biological agents (e.g., infectious waste, wildlife, poisonous plants); to recommend and evaluate controls (e.g., prevention, administrative, engineering) 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.

Explosives and Munitions Safety. Explosive safety clearance zones must be established around facilities used for the storage, handling, and maintenance of munitions. Air Force Manual 91-202 establishes the size of the clearance zone based upon QD criteria or the category and weight of the explosives contained within the facility. Areas that require QD safety zones include munitions facilities, firing ranges, and Federal Aviation Administration restricted areas. There are several areas that are constrained by QD arcs or CZ at Scott AFB. QD arcs on Scott AFB are primarily located at the airfield and on the eastern side of the installation near Building 3150. According to the IDP, the three primary QD zones on the installation are the 607-foot QD associated with the munitions storage area, the 300-foot QD for the Explosive Ordnance Disposal (EOD) area, and the 1,250-foot QD associated with the flightline hot cargo pad (SAFB 2011a). **Figures 2-1** and **2-2** present the locations of the QD arcs on Scott AFB.

4. Environmental Consequences

This section contains four subsections. **Section 4.1** provides a general introduction to the environmental consequences analysis, including significance criteria for each resource area. **Section 4.2** presents the No Action Alternative, which is prescribed by CEQ regulations. **Section 4.3** provides a general analysis of the environmental consequences by resource area. **Section 4.4** provides the detailed analysis of the Proposed Action, as presented in **Section 2.1**. Potential cumulative effects that could occur as a result of implementing the Proposed Action and other past, present, and reasonably foreseeable projects are discussed in **Section 5**.

4.1 Introduction

The intention of **Section 4** of this IDEA is to present both a general analysis of the environmental effects of installation development activities (see **Section 4.3**), and to provide potential environmental effects of selected installation development projects (see **Section 4.4**). The general analysis identifies the general environmental effects on each resource area associated with construction, demolition, infrastructure improvement, and natural infrastructure upgrade activities, with a focus on avoiding those areas that are constraints to development. However, a general analysis of potential activities alone does not provide the framework to assess adequately the potential environmental consequences of a single proposed project. Therefore, **Section 4.4** presents a detailed analysis of the selected demolition, construction, infrastructure improvement, and natural infrastructure improvement projects under the Proposed Action as described in **Section 2.1**.

The specific criteria for evaluating the potential environmental effects of the No Action Alternative or the Proposed Action are discussed in the following text, identified by resource area. The significance of an action is also measured in terms of its context and intensity. The context and intensity of potential environmental effects are described in terms of duration, whether they are direct or indirect, the magnitude of the impact, and whether they are adverse or beneficial, as summarized below:

- ***Short-term or long-term.*** In general, short-term effects are those that would occur only with respect to a particular activity, for a finite period, or only during the time required for construction or installation activities. Long-term effects are those that are more likely to be persistent and chronic.
- ***Direct or indirect.*** A direct effect is caused by an action and occurs around the same time at or near the location of the action. An indirect effect is caused by an action and might occur later in time or be farther removed in distance but still be a reasonably foreseeable outcome of the action.
- ***Negligible, minor, moderate, or significant.*** These relative terms are used to characterize the magnitude or intensity of an impact. Negligible impacts are generally those that might be perceptible but are at the lower level of detection. A minor effect is slight, but detectable. A moderate effect is readily apparent. Significant effects are those that, in their context and due to their magnitude (severity), have the potential to meet the thresholds for significance set forth in CEQ regulations (40 CFR 1508.27) and, thus, warrant heightened attention and examination for potential means for mitigation to fulfill the policies set forth in NEPA. Significance criteria by resource area are presented in the following text.
- ***Adverse or beneficial.*** An adverse effect is one having unfavorable or undesirable outcomes on the man-made or natural environment. A beneficial effect is one having positive outcomes on the man-made or natural environment.

Mitigation measures, BMPs, and environmental protection measures are discussed to describe how the level of impact of a project on a resource area could be minimized. Mitigation measures only refer to those actions that could reduce impacts below significance. BMPs are actions required by statutes, regulations, or to fulfill permitting requirements that reduce potential impacts. Environmental protection measures are those actions that are used to minimize impacts that are not required as a part of statutes, regulations, or to fulfill permitting requirements, but are typically measures taken during design and construction phases of a project to reduce impacts on the environment. None of the BMPs or environmental protection measures described is needed to bring an impact below the threshold of significance.

The following text presents the criteria that would constitute a significant environmental effect resulting from implementation of the No Action Alternative (see **Section 4.2**), or the Proposed Action. The same significance criteria are also applied to potential cumulative effects (see **Section 5**) of implementing the Proposed Action in conjunction with past, present, or reasonably foreseeable future actions.

Noise Evaluation Criteria

Potential changes in the noise environment can be beneficial (i.e., if they reduce the number of sensitive receptors that are potentially exposed to unacceptable noise levels), negligible (i.e., if the total area exposed to unacceptable noise levels is essentially unchanged), or adverse (i.e., if they result in increased noise exposure to unacceptable noise levels). Projected noise effects are evaluated quantitatively and qualitatively. A proposed action could have a significant effect with respect to noise if the following were to occur:

- Noise-sensitive areas experience an increase in noise exposures at or above a DNL of 65 dBA when compared to the baseline levels.

Land Use Evaluation Criteria

The significance of potential land use effects is based on the level of land use sensitivity in areas affected by a proposed action and the compatibility of a proposed action with existing conditions. A proposed action could have a significant effect with respect to land use if any the following were to occur:

- Be inconsistent or in noncompliance with existing land use plans or policies
- Preclude the viability of existing land use
- Preclude continued use or occupation of an area
- Be incompatible with adjacent land use to the extent that public health or safety is threatened
- Conflict with planning criteria established to ensure the safety and protection of human life and property.

Air Quality Evaluation Criteria

The environmental consequences to local and regional air quality conditions near a proposed Federal action are determined based upon the increases or decreases in regulated air pollutant emissions, and upon existing conditions and ambient air quality. The evaluation criteria are dependent on whether the Proposed Action is located in an attainment, nonattainment, or maintenance area for criteria pollutants. Other evaluation criteria include whether Major New Source Review (NSR) air quality construction permitting is triggered or Title V operating permitting is triggered. Major New Source Review air quality

permitting is divided into Nonattainment Major NSR for nonattainment pollutants and PSD permitting for attainment pollutants. All of these evaluation criteria are discussed below.

Attainment Area Pollutants. The attainment area pollutants for the location of this Proposed Action are CO, NO_2 (measured as NO_x) SO_2, Pb, and PM_{10}. The impact in NAAQS "attainment" areas would be considered significant if the net increases in these 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.
- Stationary plus mobile source emissions representing an increase of 250 tpy for any attainment criteria pollutant (NO_x, CO, PM_{10}, SO_2)[1].

Although the 250 tpy stationary plus mobile source threshold is not a regulatory driven threshold, it is being applied as a conservative measure of significance in attainment areas. The rationale for this conservative threshold is that it is consistent with the threshold for a PSD major source in attainment areas.

Nonattainment or Maintenance Area Pollutants. The nonattainment area pollutants for the location of this Proposed Action are 8-hour O_3 and $PM_{2.5}$. Effects on air quality in NAAQS "nonattainment" areas are considered significant if the net changes in these project-related pollutant emissions result in any of the following scenarios:

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

For Federal actions in nonattainment or maintenance areas, the General Conformity Rule applies. With respect to the General Conformity Rule, effects on air quality may be considered significant if the proposed Federal action 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 redesignated as a maintenance area. In addition, if a facility has a specific general conformity budget listed in the SIP, a proposed action that results in an exceedance of that budget would be considered a significant effect on air quality. Scott AFB is not specifically listed in the Illinois SIP as having a specific SIP budget.

Table 4-1 presents the General Conformity *de minimis* thresholds, by regulated pollutant. As shown in this table, *de minimis* thresholds vary depending on the severity of the nonattainment area classification.

Note that stationary emission sources subject to NSR air permitting, including minor NSR, are not required to be counted towards the General Conformity *de minimis* thresholds. The reasoning for this is that by meeting the criteria and going through the approval process with the appropriate Federal, state, or local air quality permitting authority, these emission sources are demonstrating that they are in conformity with the SIP. Below is a discussion of what level of stationary source emissions would have significant air permitting impacts.

[1] The Pb threshold would be 250 tons per year but because emissions sources at an AFB have such low lead emissions, a comparison to this threshold was not considered necessary.

Table 4-1. Conformity *de minimis* Emissions Thresholds

Pollutant	Status	Classification	*de minimis* Limit (tpy)
Ozone (measured as NO_x or VOCs)	Nonattainment	Extreme Severe Serious Moderate/marginal (inside ozone transport region) All others	10 25 50 50 (VOCs)/100 (NO_x) 100
	Maintenance	Inside ozone transport region Outside ozone transport region	50 (VOCs)/100 (NO_x) 100
CO	Nonattainment/ maintenance	All	100
PM_{10}	Nonattainment	Serious Moderate No Special Classification	70 100 100
	Maintenance	All	100
$PM_{2.5}$ (measured directly, or as SO_2, or NO_x, or VOC as significant precursors)	Nonattainment/ maintenance	All	100
SO_2	Nonattainment/ maintenance	All	100
NO_x	Nonattainment/ maintenance	All	100
VOC	Nonattainment/ maintenance	All	100
Pb	Nonattainment/ maintenance	All	25

Source: 40 CFR 93.153, as of 9 January 2012

Nonattainment Major NSR Permits. The following factors were considered in determining the significance of air quality impacts with respect to Nonattainment Major NSR permitting requirements:

- If the net increase in stationary source emissions qualify as a Nonattainment Major NSR major source. This major source threshold varies from 10 tpy to 100 tpy for nonattainment pollutants depending on the severity of the nonattainment classification and the pollutant (40 CFR 51.165).

PSD and Title V Permits. The following factors were considered in determining the significance of air quality impacts with respect to PSD permitting requirements prior to construction:

- If the net increase in stationary source emissions qualify as a PSD major source. This includes 250 tpy emissions per attainment pollutant (40 CFR 52.21(b)(1) and 40 CFR 52.21(a)(2), or 75,000 tpy emissions of GHGs.

- If the net increase in stationary source emissions qualify as a significant modification to an existing PSD major stationary source, (i.e., change that adds 10 to 40 tpy of criteria pollutants to the PSD major source's potential to emit depending on the pollutant, or adding 75,000 tpy of GHGs).
- If the Proposed Action occurs within 10 kilometers of a Class I area and if it 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] and 40 CFR 52.21[a][2]).

The following factor was considered in determining the significance of air quality impacts with respect to Title V operating permit requirements (40 CFR 71.2 and 40 CFR 71.3):

- If the increase in stationary source emissions under the Proposed Action qualify as a Title V major source by itself, or the resulting stationary source emissions after the change exceed the Title V thresholds. This includes the potential to emit 100 tpy for criteria pollutants (lower thresholds apply in nonattainment areas and depend on the pollutant and severity of nonattainment), or 10 tpy of any individual HAP, or 25 tpy of all HAPs combined, or 100,000 tpy of GHGs.

Only operational emissions increases were evaluated for PSD and Title V permitting impacts as construction activity emissions are typically not subject to the above significance criteria for these permit programs.

Geological Resources Evaluation Criteria

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 effects of a proposed action on geological resources. Generally, adverse effects can be avoided or minimized if proper construction techniques, erosion-control measures, and structural engineering design are incorporated into project development. A proposed action could have a significant effect with respect to geological resources if any the following were to occur:

- Alteration of the lithology, stratigraphy, and geological structure that control groundwater quality, distribution of aquifers and confining beds, and groundwater availability
- Changes to the soil composition, structure, or function within the environment.

Water Resources Evaluation Criteria

Evaluation criteria for effects on water resources are based on water availability, quality, and use; existence of floodplains; and associated regulations. A proposed action could have a significant effect with respect to water resources if any the following were to occur:

- Substantially reduce water availability or supply to existing users
- Overdraft groundwater basins
- Exceed safe annual yield of water supply sources
- Substantially affect water quality adversely
- Endanger public health by creating or worsening health hazard conditions
- Threaten or damage unique hydrologic characteristics
- Violate established laws or regulations adopted to protect water resources.

The potential effect of flood hazards on a proposed action is important if such an action occurs in an area with a high probability of flooding.

Biological Resources Evaluation Criteria

The significance of effects on biological resources is based on the following:

- The importance (i.e., legal, commercial, recreational, ecological, or scientific) of the resource
- The proportion of the resource that would be affected relative to its occurrence in the region
- The sensitivity of the resource to proposed activities
- The duration of ecological ramifications
- The "taking" of threatened or endangered species
- Jeopardizing threatened or endangered species habitat.

Effects on biological resources would be significant if species or habitats of high concern are adversely affected over relatively large areas. Effects would also be considered significant if disturbances cause reductions in population size or distribution of a species of high concern.

Ground disturbance and noise associated with construction can directly or indirectly cause adverse effects on biological resources. Direct effects from ground disturbance are evaluated by identifying the types and locations of potential ground-disturbing activities in correlation to important biological resources. Habitat removal and damage or degradation of habitats might be adverse effects associated with ground-disturbing activities.

Cultural Resources Evaluation Criteria

Under Section 106 of the NHPA, "An adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association." Specifically, adverse effects on historic properties can include any of the following:

- 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 that alter its setting
- Neglecting the resource to the extent that it deteriorates or is destroyed
- 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.

For the analysis of the potential effects of the Proposed Action on archaeological resources, the APE includes both direct impacts from ground-disturbing activity, and indirect impacts resulting from undertakings outside of sites locations. Impacts on cultural resources include potential effects on buildings, sites, structures, districts, and objects eligible for or included in the NRHP; cultural items as defined in the NAGPRA; archaeological resources as defined by the Archaeological Resources Protection Act of 1979; and archaeological artifact collections and associated records as defined by 36 CFR part 79.

Under NEPA, impacts on cultural resources are assessed as short-term or long-term; direct or indirect; and minor, moderate, or significant. Under Section 106 of the NHPA, the Proposed Action might have no effect, no adverse effect, or an adverse effect on historic properties.

Socioeconomics and Environmental Justice Evaluation Criteria

Construction expenditures are assessed in terms of direct effects on the local economy and related effects on other socioeconomic resources (e.g., housing). The magnitude of potential impacts can vary greatly, depending on the location of a proposed action. For example, implementation of an action that creates ten employment positions might go unnoticed in an urban area, but could have considerable impacts in a rural region. If potential socioeconomic changes were to result in substantial shifts in population trends or a decrease in regional spending or earning patterns, those effects would be considered adverse. A proposed action could have a significant effect with respect to the socioeconomic conditions in the surrounding ROI if the following were to occur:

- Change the local business volume, employment, personal income, or population that exceeds the ROI's historical annual change
- Adversely affect social services or social conditions, including property values, school enrollment, county or municipal expenditures, or crime rates
- Disproportionately impact minority populations or low-income populations.

Infrastructure Evaluation Criteria

Effects on infrastructure are evaluated based on their potential for disruption or improvement of existing levels of service and additional needs for energy and water consumption, sanitary sewer and wastewater systems, and transportation patterns and circulation. Impacts might arise from physical changes to circulation, construction activities, introduction of construction-related traffic on local roads or changes in daily or peak-hour traffic volumes, and energy needs created by either direct or indirect workforce and population changes related to installation activities. An effect might be considered adverse if a proposed action exceeded capacity of a utility. A proposed action could have a significant effect with respect to infrastructure if the following were to occur:

- Exceeded capacity of a utility
- A long-term interruption of the utility
- A violation of a permit condition
- A violation of an approved plan for that utility.

Hazardous Materials and Wastes Evaluation Criteria

A proposed action could have a significant effect with respect to hazardous materials and wastes if the following were to occur:

- Noncompliance with applicable Federal and state regulations as a result of the proposed action
- Disturbance or creation of contaminated sites resulting in adverse effects on human health or the environment
- Established management policies, procedures, and handling capacities could not accommodate the proposed activities, impacting fuel management.

Safety Evaluation Criteria

Any increase in safety risks would be considered an adverse effect on safety. A proposed action could have a significant effect with respect to health and safety if the following were to occur:

- Substantially increase risks associated with the safety of construction personnel, contractors, or the local community
- Substantially hinder the ability to respond to an emergency
- Introduce a new health or safety risk for which the installation is not prepared or does not have adequate management and response plans in place.

4.2 Environmental Consequences of the No Action Alternative

Under the No Action Alternative, Scott AFB would not implement the selected projects, which would result in the continuation of existing conditions as described in **Section 3**. No direct changes in environmental effects would be expected on the noise environment, land use, air quality, geological resources, water resources, biological resources, cultural resources, socioeconomics and environmental justice, infrastructure, hazardous materials and wastes, or safety. Although under the No Action Alternative the selected projects would not be implemented, it is anticipated that future development would still occur, but those development projects would be analyzed through the preparation of project-specific NEPA documentation, as appropriate.

4.3 General Environmental Consequences of the Proposed Action by Resource Area

4.3.1 Noise

Construction Noise. No significant effects from construction noise would occur from the Proposed Action. Implementation of the selected projects would be expected to result in short-term, minor, adverse effects on the noise environment from equipment that would be used during demolition, construction, infrastructure improvement, or natural infrastructure management activities. The projects identified in **Tables 2-1** through **2-4** would be implemented at different times and locations over the next 5 years. It is possible that several projects would occur simultaneously but would not be expected to result in adverse effects.

Projects under the Proposed Action would require grading, paving, demolition, and building construction. All of the projects under the Proposed Action would occur on Scott AFB; some of the projects would be adjacent to military housing areas.

Under the Proposed Action, the majority of projects are proposed in the western region of the installation, which consists primarily administrative and maintenance facilities. Some of the projects are proposed in the northern region of the installation, which consists of outdoor recreation and open space land use. Populations several hundred feet from the construction site could experience noise levels of approximately 66–72 dBA. Workforce populations adjacent to the project site could experience noise levels of approximately 82–94 dBA.

Individual equipment used for demolition and construction activities would be expected to result in noise levels comparable to those shown in **Table 3-2**. Noise from demolition and construction activities varies depending on the type of equipment being used, the area that the action would occur in, and the distance from the noise source. To predict how these activities would impact adjacent populations, noise from the

probable equipment was estimated. For example, as shown in **Table 3-2**, construction and demolition (i.e., clearing and grading) usually involves several pieces of equipment (e.g., bulldozers and trucks) that can be used simultaneously. Under the Proposed Action, the cumulative noise from the equipment, during the busiest day, was estimated to determine the total impact of noise from construction and demolition activities at a given distance. Examples of expected cumulative demolition and construction noise during daytime hours at specified distances are shown in **Table 4-2**. These sound levels were estimated by adding the noise from several pieces of equipment and then calculating the decrease in noise levels at various distances from the source of the noise.

Table 4-2. Estimated Noise Levels from Construction and Demolition Activities

Distance from Noise Source	Estimated Noise Level
50 feet	90–94 dBA
100 feet	84–88 dBA
150 feet	81–85 dBA
200 feet	78–82 dBA
400 feet	72–76 dBA
800 feet	66–70 dBA
1,200 feet	< 64 dBA

Given the extent of the projects associated with the Proposed Action and the proximity to residents on the installation, short-term, minor, adverse effects from construction noise would be expected. However, noise generation would last only for the duration of demolition and construction activities and could be minimized through measures such as the restriction of these activities to normal working hours (i.e., between 7:00 a.m. and 5:00 p.m.), and the use of equipment exhaust mufflers. The short-term increase in noise levels resulting from the Proposed Action would not cause significant adverse effects on the surrounding populations.

Operational Impacts. Vehicle traffic would not increase under the Proposed Action; however, Projects C2 and C6 would shift traffic to areas that do not currently experience high traffic volume. Therefore, these projects could result in long-term, negligible, non-significant, adverse effects on the noise environment due to increased vehicle traffic.

4.3.2 Land Use

No significant effects on land use would occur from the Proposed Action. The Proposed Action could result in short-term, minor and long-term, moderate adverse effects on land use. The Proposed Action would occur entirely on Scott AFB property and the projects listed in **Tables 2-1** through **2-4** are proposed to be sited in a manner compatible with installation land uses. However, Project C6 is partially sited within the southern runway CZ. If constructed at a site within the CZ, Project C6 would result in long-term, moderate, adverse effects on land use because most development is prohibited in the CZ. The proposed projects would comply with and be consistent with existing installation land use plans and policies as identified in the Scott AFB IDP and associated ADPs. Therefore, the proposed projects would result in no effects or minor, adverse effects on land use. Most adverse effects would be short-term and prevented by changing the land use to the appropriate category to match the intended use of the proposed project. Some projects would be constructed within ERP sites or QD arcs, and the appropriate land use restrictions would be adhered to. **Section 3.2.2** contains a summary of land use restrictions at the

locations of the selected projects. Beneficial effects on land use would result from efficient use of installation land, particularly through demolition of old, inadequate, underutilized facilities.

4.3.3 Air Quality

Emission Estimates. Short-term, minor, adverse effects on air quality would be expected from the implementation of the Proposed Action; however, these effects would not be significant. The construction and demolition activities associated with the Proposed Action would generate air pollutant emissions from site-disturbing activities such as grading, filling, compacting, and trenching and the operation of construction and demolition equipment and haul trucks transporting construction supplies, excavation material, and demolition debris. Construction and demolition activities would also generate particulate emissions as fugitive dust from ground-disturbing activities and from the combustion of fuels in construction and demolition equipment. Fugitive dust emissions would be greatest during the initial site preparation activities and would vary from day to day depending on the work phase, level of activity, and prevailing weather conditions. The quantity of uncontrolled fugitive dust emissions from a construction and demolition site is proportional to the area of land being worked and the level of activity.

Construction and demolition activities would incorporate environmental protection measures (e.g., frequent use of water for dust-generating activities) to minimize fugitive particular matter emissions. Additionally, the work vehicles are assumed to be well-maintained and could use diesel particle filters to reduce emissions. Construction and demolition workers commuting daily to and from the job site in their personal vehicles would also result in criteria pollutant air emissions.

Long-term, minor, adverse and beneficial effects on air quality would be expected from the Proposed Action; however, these effects would not be significant. The use of new boilers, furnaces, and emergency generators at the buildings proposed for construction would increase air emissions from Scott AFB. However, the demolition of older and less energy-efficient buildings would remove older and more emissions intensive boilers, furnaces, and emergency generators from the installation and decrease air emissions. Overall, the Proposed Action would not result in long-term effects on air emissions at Scott AFB because the air emissions from new construction would be offset by the reduction in air emissions from demolition.

Scott AFB would obtain all necessary air quality construction permits as required by Title 35 of Illinois Administrative Code, Part 201 for the Proposed Action. An Illinois air quality minor source construction permit would be obtained for all boilers and furnaces with a heat input capacity of more than 10 million British thermal units per hour. Additionally, a construction permit would be obtained for all stationary internal combustion engines with a rated power output greater than 1,118 kilowatts (1,500 horsepower). Impacts on the Scott AFB Federally Enforceable State Operating Permit would also be evaluated and incorporated where necessary.

Air emissions from the Proposed Action are summarized in **Table 4-3** by the year in which they would be produced. Further information and details on the individual air quality effects from the selected projects is included in **Section 4.4**. **Appendix D** contains a summary of the calculations and the assumptions used to estimate the air emissions.

General Conformity. As stated in **Section 3.3.2**, St. Clair County has been designated as unclassified/attainment for all criteria pollutants except 8-hour O_3 and $PM_{2.5}$. O_3 is classified as moderate nonattainment, and $PM_{2.5}$ is classified as nonattainment. Based on this designation, the General Conformity Rule requirements are potentially applicable for O_3 and $PM_{2.5}$. **Table 4-4** compares the estimated annual emissions from the Proposed Action to the *de minimis* threshold limits established for the St. Clair County. For all years, air emissions from the Proposed Action are well below *de minimis* threshold limits; therefore, a General Conformity determination is not required.

Table 4-3. Estimated Annual Air Emissions Resulting from the Proposed Action

Project	NO_x tpy	VOC tpy	CO tpy	SO_2 tpy	PM_{10} tpy	$PM_{2.5}$ tpy	CO_2 tpy
Project C1	3.026	0.501	2.453	0.237	10.987	1.325	432.383
Project I1	0.130	0.021	0.131	0.011	0.174	0.026	23.467
Project NI2	0.024	0.005	0.035	0.002	0.005	0.002	5.959
Total 2012 Emissions	**3.180**	**0.527**	**2.619**	**0.250**	**11.166**	**1.353**	**461.809**
Project D1	0.057	0.008	0.054	0.004	0.005	0.004	10.485
Project C2	5.593	1.162	5.173	0.433	3.174	0.746	865.018
Project I2	0.393	0.261	1.397	0.027	6.129	0.670	153.345
Total 2013 Emissions	**6.043**	**1.431**	**6.624**	**0.464**	**9.308**	**1.420**	**1,028.850**
Project C2 (Generators)	1.561	0.044	0.415	0.493	0.049	0.049	80.483
Project C4	5.823	1.344	5.796	0.452	4.109	0.880	920.540
Total 2014 Stationary Source Emissions	**1.561**	**0.044**	**0.415**	**0.493**	**0.049**	**0.049**	**80.483**
Total 2014 Emissions	**7.384**	**1.388**	**6.211**	**0.945**	**4.158**	**0.929**	**1,001.020**
Project C2 (Generators)	1.561	0.044	0.415	0.493	0.049	0.049	80.483
Project C4 (Generator)	0.780	0.022	0.207	0.246	0.024	0.024	40.241
Project C3	5.475	1.071	4.826	0.424	2.916	0.698	835.168
Total 2015 Stationary Source Emissions	**2.341**	**0.066**	**0.622**	**0.739**	**0.073**	**0.073**	**120.724**
Total 2015 Emissions	**7.816**	**1.137**	**5.448**	**1.163**	**2.989**	**0.771**	**955.892**
Project C2 (Generators)	1.561	0.044	0.415	0.493	0.049	0.049	80.483
Project C4 (Generator)	0.780	0.022	0.207	0.246	0.024	0.024	40.241
Project D2	1.317	0.177	1.074	0.104	0.886	0.172	204.281
Project NI1	0.123	0.075	0.556	0.007	2.142	0.225	72.181
Total 2016 Stationary Source Emissions	**2.341**	**0.066**	**0.622**	**0.739**	**0.073**	**0.073**	**120.724**
Total 2016 Emissions	**3.781**	**0.318**	**2.252**	**0.850**	**3.101**	**0.470**	**397.186**
Project C2 (Generators)	1.561	0.044	0.415	0.493	0.049	0.049	80.483
Project C4 (Generator)	0.780	0.022	0.207	0.246	0.024	0.024	40.241
Project D3	1.818	0.275	1.772	0.142	2.481	0.362	319.133
Project C5	5.198	0.832	4.069	0.402	1.647	0.521	767.903
Project C6	6.013	1.529	6.297	0.467	6.112	1.114	965.716
Project I3	0.442	0.159	1.019	0.032	5.357	0.574	139.160
Total 2017 Stationary Source Emissions	**2.341**	**0.066**	**0.622**	**0.739**	**0.073**	**0.073**	**120.724**
Total 2017 Emissions	**15.812**	**2.861**	**13.779**	**1.782**	**15.670**	**2.644**	**2,312.636**
Project C2 (Generators)	1.561	0.044	0.415	0.493	0.049	0.049	80.483

Project	NO_x tpy	VOC tpy	CO tpy	SO_2 tpy	PM_{10} tpy	$PM_{2.5}$ tpy	CO_2 tpy
Project C4 (Generator)	0.780	0.022	0.207	0.246	0.024	0.024	40.241
Project C5 (Generators)	3.902	0.110	1.037	1.232	0.122	0.122	201.207
Total 2018 and Later Emissions (Stationary Sources Only)	**6.243**	**0.176**	**1.659**	**1.971**	**0.195**	**0.195**	**321.931**
Stationary Source Significance Criteria	**100**	**40**	**100**	**100**	**100**	**100**	**75,000 and 100,000**
Stationary Source plus Mobile Source Significance Criteria	**NA[1]**	**NA[1]**	**250**	**250**	**250**	**NA[1]**	**NA[2]**

Notes: Project NI3 would not result in air emissions.
Unless otherwise noted, emissions from each project are from mobile sources for construction/demolition.
NA[1] = Not applicable due to nonattainment pollutant. See **Table 4-4**.
NA[2] = Not applicable for CO_2 emissions.

Table 4-4. Comparison of Emissions from the Proposed Action to the General Conformity Rule *de minimis* Limits

Year	NO_x (tpy)	VOC (tpy)	$PM_{2.5}$ (tpy)
2012 Emissions	3.180	0.527	1.353
2013 Emissions	6.043	1.431	1.420
2014 Emissions	7.384	1.388	0.929
2015 Emissions	7.816	1.137	0.771
2016 Emissions	3.781	0.318	0.470
2017 Emissions	15.812	2.861	2.644
2018 and Later Emissions	6.243	0.176	0.195
General Conformity Rule *de minimis* Limits for St. Clair County	100	100	100

Note: These emission estimates include sources potentially subject to NSR permitting that would not be required to be counted toward the General Conformity *de minimis* thresholds.

Nonattainment NSR, PSD, and Title V Air Permitting. Nonattainment NSR permitting would apply for O_3 (measured as NO_x and VOC) and $PM_{2.5}$ air emissions from stationary sources. As noted in **Table 4-3**, NO_x, VOC, and $PM_{2.5}$ air emissions from the most significant stationary sources (e.g., generators for Projects C2, C4, and C5) would be less than 100 tpy, which is the nonattainment major source threshold for these nonattainment pollutants under nonattainment NSR permitting. In addition, because Scott AFB is a major source for VOCs, with potential emissions of 225 tpy, stationary source emission increases from the Proposed Action are below the NSR significant emission rate of 40 tpy for VOC. As such, no effects from nonattainment NSR permitting would occur.

For PSD permitting, emissions of attainment pollutants from stationary sources would increase Scott AFB's potential to emit; however, the increase would not be enough for the installation to reach the PSD major source threshold of 250 tpy for each PSD pollutant. As shown in **Table 3-6**, the current potential to

emit for Scott AFB ranges from approximately 4 tpy to 225 tpy based on criteria pollutant, and Scott AFB's actual air emissions are well under these limits. In conclusion, PSD permitting is not expected to be triggered for the Proposed Action. In addition, Title V permitting also is not expected to be triggered as the potential to emit would not reach 100 tons per year for any criteria pollutant. Refer to the Greenhouse Gas Emissions section with regard to GHG emission impacts on Title V applicability.

Greenhouse Gas Emissions. The Proposed Action would contribute directly to emissions of GHGs from the combustion of fossil fuels. Because CO_2 emissions account for approximately 92 percent of all GHG emissions in the United States, they are used for analyses of GHG emissions in this assessment. The U.S. Department of Energy, Energy Information Administration estimates that in 2009 gross CO_2 emissions in the State of Illinois were 226 million metric tons and in 2009 gross CO_2 emissions in the entire United States were 5,425.6 million metric tons (DOE/EIA 2011). **Table 4-5** summarizes the anticipated amount of CO_2 emissions by year from the Proposed Action. For all years, the Proposed Action would represent a negligible contribution (less than 0.001 percent) towards statewide GHG inventories and an extremely negligible contribution (less than 0.00004 percent) toward national GHG inventories.

Table 4-5. Estimated CO_2 Emissions from the Proposed Action

Year	CO_2 (tpy)
2012 Emissions	461.809
2013 Emissions	1,028.850
2014 Emissions	1,001.020
2015 Emissions	955.892
2016 Emissions	397.186
2017 Emissions	2,312.636
2018 and Later Emissions	321.931

The calculated increases in GHG emissions from the Proposed Action construction and demolition activities are a maximum of 2,192 tons in 2017. The maximum annual increase in GHG emissions from the most significant stationary sources is 322 tons in 2018. The overall increases in potential GHG emissions from stationary sources has not been calculated, but is expected to be well below 75,000 tons per year which is the PSD and Title V permitting thresholds for GHGs. The resulting installation-wide stationary GHG emissions including existing sources and the Proposed Action is expected to be below the 100,000 tons per year Title V major source threshold for GHGs; however, Scott AFB should calculate installation-wide potential GHG stationary source emissions to confirm that this is true.

4.3.4 Geological Resources

The Proposed Action would not result in significant effects on geological resources. The following subsections describe the non-significant effects on geological resources that would result from the Proposed Action. An erosion-and-sediment control plan (ESCP) would be prepared for projects that would disturb more than 1 acre of land. Projects of this size have more potential to result in adverse effects as a result of soil erosion and sedimentation, and the ESCP would minimize these potentially adverse effects. No effects on geology would be expected with implementation of the Proposed Action.

Topography. Long-term, negligible, adverse effects would be expected on the natural topography as a result of demolition, site preparation (i.e., grading, excavating, and recontouring), and construction under the Proposed Action. These impacts are considered negligible as Scott AFB is fairly level in elevation and only minor, if any, grading would be anticipated.

Geology. No impacts on geology would be anticipated from implementing the Proposed Action. No geological resources would be disturbed.

Soils. Long-term, minor to moderate, adverse effects on soils would be expected from implementation of the Proposed Action. The primary effects would be soil compaction, disturbance, and erosion. Implementation of environmental protection measures would minimize these impacts. Compaction of soils would result in disturbance and modification of soil structure. Soil productivity, which is the capacity of the soil to produce vegetative biomass, would decline in disturbed areas and be eliminated in those areas within the footprint of buildings, pavements, and roadways. Loss of soil structure due to compaction from foot and vehicle traffic could result in changes in drainage patterns but could be managed with soil decompaction methods.

Site-specific soil testing should be conducted prior to implementing projects to determine if limitations exist and to determine appropriate environmental protection measures to offset potential adverse effects; therefore, no significant adverse impacts on the soils would be anticipated. Environmental protection measures could include installing silt fencing and sediment traps, applying water to disturbed soil, and revegetating disturbed areas as soon as possible after the disturbance, as appropriate. In the event of a spill, the installation's SPCC Plan would be followed to quickly contain and clean up a spill (see **Section 3.10**). There remains the possibility that a spill or leak could occur, but implementation of environmental protection measures identified in the SPCC plan would minimize the potential for and extent of associated contamination. An SPCC plan would be followed to quickly contain any leaks or spills generated from construction vehicles. No impacts on prime farmland soils would be anticipated.

Sediment. Short-term, minor to moderate, adverse effects would occur during log jam removal in Silver Creek due to sediment removal, increased particle suspension in water (i.e., turbidity), and potential increases in downstream culvert maintenance from sediment deposition during log jam removal activities. Long-term, minor, adverse effects could include deposition of sediment further downstream in Silver Creek, thereby altering stream channel morphology.

Geologic Hazards. Adverse effects on humans and property could occur in the event of earthquake activity. Any new construction under the Proposed Action would be designed consistent with requirements established in UFC 3-310-03 (*Seismic Design for Buildings*) and EO 12699 (*Seismic Safety*), which would reduce the potential for adverse effects on humans associated with structural failure during or following a seismic event.

4.3.5 Water Resources

No significant effects on water resources would occur from the Proposed Action. Short- and long-term, minor, adverse effects on water resources would be expected from the Proposed Action. The Proposed Action would increase the amount of impervious surface at Scott AFB, compact soil and alter natural drainage flows, and remove vegetation. Adverse effects would be minimized by implementing environmental protection measures and following an approved ESCP. Under the CWA Final Rule described in **Section 3.5.1**, projects that would disturb more than 1 acre of land would be required to use BMPs to ensure that soil disturbed during construction activities does not pollute nearby water bodies. The following projects associated with the Proposed Action meet this criterion:

- Project D2—Demolish James Gym, Buildings 1984 and 1985, tennis courts, and outdoor pool
- Project D3—Demolish 21 Buildings in Support of the Base Civil Engineering and Contracting Complex
- Project C1—Construct Explosive Ordnance Proficiency Range
- Project C2—Construct New DISA Facility
- Project C3—Construct New Fitness Facility
- Project C4—Construct US TRANSCOM Mission Planning Center
- Project C5—Construct Joint Cyber Facility
- Project C6— Construct Consolidated Base Civil Engineering and Contracting Complex
- Project I2—Construct Communication Infrastructure for DISA and other future development at the Cardinal Creek MFH neighborhood
- Project I3—Construct Aircraft Deicing Pad
- Project NI1—Airfield Tree Violations.

Projects I2, NI2, and NI3 would occur in the 100-year floodplain, but these projects would not create impervious surfaces. Although the 100-year floodplain would not impact these projects, Projects I2, NI2, and NI3 would require a FONSI/FONPA. Some of the buildings proposed for demolition under Project D3 (519, 533, 542, 546, 549 and 552) are within or immediately adjacent to the 100-year floodplain (FEMA 2003). Demolition of these facilities would represent a long-term, minor, beneficial effect.

Projects NI2 and NI3 could entail construction in a wetland, depending on the final locations for associated areas of disturbance. As such, these projects would require a FONSI/FONPA. Effects on wetlands from these projects would not be significant and proper implementation of environmental protection measures and construction BMPs would minimize impacts. While mitigation measures would not be required, effects on adjacent wetlands and other water resources would be avoided through design, siting, and proper implementation of appropriate environmental protection measures and BMPs. Proper implementation of these measures and BMPs would ensure that no effects on surrounding wetlands or other waters of the United States would occur. Correspondence with regulatory and resource agencies, possibly including the U.S. Army Corps of Engineers and the USFWS, prior to commencing any ground-breaking construction activities would be completed and permits would be obtained, as necessary. **Appendix E** contains the *Installation Development Environmental Assessment Management Requirements and Environmental Protection Measures for Wetlands and other Waters of the United States*, which describes laws, regulations, protocols, BMP, and other environmental protection measures that would be implemented within and adjacent to waters of the United States and other wetland areas.

Several of the projects associated with the Proposed Action would decrease impervious surfaces and storm flow once fully implemented, which would be beneficial to water resources if vegetation is reestablished. These projects would include all of the demolition projects.

Implementation of some of the selected projects would require an NPDES construction permit for storm water discharges. An NPDES construction permit would be required for small construction projects that disturb at least 1 acre of land, or if disturbance is less than 1 acre but is part of a larger common plan of development disturbing greater than or equal to 1 but less than 5 acres. Projects potentially requiring an NPDES permit are the same as those meeting the CWA Final Rule criterion identified above.

4.3.6 Biological Resources

The Proposed Action would not result in significant effects on biological resources. The following subsections describe the non-significant effects on biological resources that would result from the Proposed Action.

Vegetation. The Proposed Action would result in short- and long-term, negligible to minor, adverse effects on vegetation at Scott AFB. The majority of the selected projects would occur in the improved areas of Scott AFB, which primarily would affect non-forested upland and urban upland communities. The majority of vegetation near the selected projects is modified, landscaped, and mowed regularly.

Short- and long-term, negligible, adverse effects on vegetation would be expected from temporary disturbances during construction, demolition, and infrastructure improvement activities (e.g. trampling and removal) and from the permanent removal of vegetation from the construction of new buildings, infrastructure, and natural infrastructure management projects. All trees and vegetation impacted from the Proposed Action would be replaced or relocated as applicable. All ground disturbed separate from site improvements would be reseeded with appropriate species. Scott AFB would consider 10 U.S.C. 2665, Sale of Certain Interests in Land; Logs, as applicable, when disposing of removed vegetation.

Long-term, minor, adverse effects on vegetation would be expected from Projects C1 (Explosive Ordnance Range) and NI1 (Airfield Tree Violations) due to permanent tree removal. All trees and vegetation impacted from these projects would be replaced or relocated, as applicable.

Wildlife. The Proposed Action would result in short-term, negligible to minor, adverse effects on wildlife due to disturbances from noise, demolition and construction activities, and heavy equipment use. High noise events could cause wildlife to engage in escape or avoidance behaviors, resulting in short-term, negligible, adverse effects. The permanent loss of non-forested upland and urban upland communities would have minimal impacts on residential wildlife, because this area does not currently provide quality habitat and because of the high level of human activity. Most wildlife species in the proposed project vicinities would be expected to quickly recover once the disturbances from noise, demolition and construction, and heavy equipment use have ceased. Additionally, Scott AFB is heavily developed and aircraft operations are frequent, so wildlife currently inhabiting the project sites would be habituated to noise disturbances.

Some dead trees provide habitat for wildlife species (e.g., birds and bats), which would be lost through the removal of trees associated with projects such as Project NI1 (Airfield Tree Violations). Most cavity nesters or other birds use these trees as nesting substrate are anticipated to be migratory birds as listed in 50 CFR 10.13 and would be protected under the MBTA (16 U.S.C. 703–712) as amended, and EO 13186, *Responsibilities of Federal Agencies to Protect Migratory Birds*. The MBTA and EO 13186 require Federal agencies to minimize or avoid impacts on migratory birds. Environmental protection measures are recommended for the reduction or avoidance of impacts on potential cavity nesters if trees are removed under the Proposed Action. These environmental protection measures are described for migratory birds in the following subsection.

Aside from the Silver Creek bottomland riparian forest corridor along the eastern boundary of the installation, very little high quality wildlife habitat is present on Scott AFB. Only Project C1 (Explosive Ordnance Proficiency Range), Project NI2 (Remove Log Jam from Silver Creek), and Project NI3 (Improve Foraging Habitat for Indiana Bat) would occur within the bottomland forest. Projects NI2 and NI3 would cause short-term, minor, adverse effects on wildlife species, while the operation of Project C1 would cause long-term effects.

Protected and Sensitive Species. Most of the selected projects under the Proposed Action are within the developed portions of the installation and would not have any effect on Federal- or state-listed species or sensitive habitat. Although the federally endangered Indiana bat currently is only known to roost within the Silver Creek bottomland riparian forest on installation (SAFB 2010c), any tree with appropriate structural characteristics (diameter at breast height is greater than 5 inches with exfoliating bark) could potentially be occupied by this species (Kurta 2005).

The selected projects associated with the Proposed Action involving tree-clearing activities, such as Project NI1 (Airfield Tree Violations) and Project NI3 (Improve Indiana Bat Foraging Habitat), could potentially result in the direct loss of individuals. Direct, adverse effects on the Indiana bat would be avoided by Scott AFB's seasonal tree cutting restrictions. All trees would be removed or trimmed between October 15 to March 31, when Indiana bats are occupying swarming and hibernation habitat and are not present on installation (USFWS 2007). All trees and vegetation impacted by the Proposed Action would be replaced or relocated, as applicable. Replacement plantings would include tree species preferred by Indiana bat (USFWS 2011b). The Scott AFB Endangered Species Management Plan for the Indiana Bat outlines additional recommendations to assist in managing forests to protect the Indiana bat (SAFB 2010c, USFWS 2011b).

Indiana bats exhibit strong site fidelity to their traditional roosting and foraging areas and have been documented returning to the same trees annually to bear their young (USFWS 2007, Kurta et al. 2002). Project C1 (Explosive Ordnance Range) is proposed in proximity to Indiana bat roosting and foraging habitat (SAFB 2010c). Noise associated with the operation of the proposed Explosive Ordnance Proficiency Range might be sufficient in magnitude to result in individuals fleeing roost trees and lead to a subsequent reduction in reproductive output.

In Illinois, Gardner et al. (1991) found that forested stream corridors and impounded bodies of water were preferred foraging habitats for pregnant and lactating Indiana bats, which flew up to 1.5 miles from upland roosts to forage. The selected projects in proximity to aquatic resources (i.e., creeks and wetlands) such as Projects C1 (Explosive Ordnance Range), NI2 (Remove Log Jam from Silver Creek), and NI3 (Improve Indiana Bat Foraging Habitat) have the potential to adversely affect the Indiana bat by diminishing its aquatic prey base, if sedimentation occurs. Mitigation measures are not required; however, adverse effects on these resources would be avoided through design and environmental protection measures described in **Section 4.3.5**.

Scott AFB has conducted consultation with the USFWS under Section 7 of the ESA for any project with the potential to impact the Indiana bat or its habitat. These projects included Project C1, NI1, NI2, and NI3. The USFWS provided concurrence that these projects are not likely to adversely affect the Indiana bat. **Appendix H** contains documentation of the USFWS consultation.

Scott AFB lacks suitable habitat for the bald eagle; therefore, the occurrence of an individual on the installation is unlikely. However, because the bald eagle remains protected under the MBTA and the Bald and Golden Eagle Protection Act, Scott AFB would follow any applicable National Bald Eagle Management Guidelines as published by the USFWS in May 2007.

Some habitats on the installation support use by state-listed bird species, such as the little blue heron and the snowy egret. These species have been documented using open water and wetland habitats on Scott AFB. Short-term, negligible to minor, adverse effects on state-listed species would be expected from the Proposed Action as a result of noise from construction and natural infrastructure management activities. It should be noted, however, that the impetus of many of the natural infrastructure management activities is to have long-term, beneficial effects on wildlife habitat despite some short-term, adverse effects.

The MBTA and EO 13186 require Federal agencies to minimize or avoid impacts on migratory birds listed in 50 CFR 10.13. If design and implementation of a Federal action cannot avoid measurable adverse impacts on migratory birds, EO 13186 requires the responsible agency to consult with the USFWS and obtain a Migratory Bird Depredation Permit. Demolition, construction, infrastructure improvement, and natural infrastructure management activities associated with the Proposed Action would be conducted in a manner to avoid adverse effects on migratory birds to the extent practicable.

While mitigation measures are not required, the following environmental protection measures are recommended for reduction or avoidance of impacts on migratory birds that could occur within the project areas:

- Any groundbreaking construction activities or tree cutting activities would be performed before migratory birds return to Scott AFB or after all young have fledged to avoid incidental take.
- If construction is scheduled to start during the period when migratory birds are present, a site-specific survey for nesting migratory birds would be performed immediately prior to construction.
- If nesting birds are found during the survey, buffer areas would be established around nests. Construction would be deferred in buffer areas until birds have left the nest. Confirmation that all young have fledged would be made by a qualified biologist.

4.3.7 Cultural Resources

The Proposed Action would not result in significant effects on cultural resources. The following subsections describe the non-significant effects on cultural resources that would result from the Proposed Action.

Archaeological Resources. No effects on archaeological resources would be expected from the Proposed Action. The Illinois Historic Preservation Agency (SHPO) has stated through previous consultations that undertakings within three areas of the installation should be the subject of future consultation for archaeological resources (SAFB 2006a). The only project under the Proposed Action in any of these areas is Project NI2, Remove Log Jam from Silver Creek. Scott AFB does not believe that this project would adversely affect historic properties and would seek SHPO concurrence regarding this project, as applicable. If any unanticipated discoveries of archaeological materials are made, work would be temporarily halted and the procedures outlined in the ICRMP would be followed.

Historic Buildings and Structures. Less than significant adverse effects would be expected from the demolition of a contributing property to the Scott Field Historic District (Building 48) under Project D1. The demolition of this historic property would constitute an adverse effect under Section 106 of the NHPA; however, a Section 106 MOA outlining agreed-upon measures to resolve these adverse effects is already in place with the SHPO for the demolition of Building 48. The Scott Field Historic District is the largest and most important historic property at Scott AFB. There would be no projects that would affect the alignment of roads, landscaping, or streetscaping in the historic district. **Appendix G** contains documentation on NRHP eligibility evaluations, SHPO concurrences, and MOAs for selected projects.

Traditional Cultural Properties. There are no TCPs at Scott AFB. It is USAF policy to identify sites sacred or important to Native Americans early in the planning process through consultation with federally recognized Tribes. The consultation process would assist the USAF in identifying any potential TCPs at Scott AFB that currently are not known.

4.3.8 Socioeconomics and Environmental Justice

No significant effects on socioeconomics and environmental justice would occur from the Proposed Action. Short-term, moderate, beneficial effects on the local economy would be expected under the Proposed Action due to expenditures from the implementation of the selected construction, demolition, infrastructure improvement, and natural infrastructure management projects under the Proposed Action. The St. Louis, MO-IL MSA contains approximately 83,000 construction workers, which collectively should be able to easily meet the demands of the Proposed Action. Short-term increases in local business volume and employment within the ROI would be expected under the Proposed Action. The use of local construction workers would produce increases in local sales volumes, payroll taxes, and the purchases of goods and services resulting in short-term, indirect, minor, and beneficial increases in the local economy. The Proposed Action would not increase or decrease the number of persons employed or stationed at Scott AFB; therefore, no significant effects on demographics or social services and conditions would be expected.

Implementation of the selected projects would occur entirely on Scott AFB. Possible adverse effects from construction activities could include increased traffic and noise levels and decreased air quality, but these effects would be short-term, intermittent, and minimal, and would likely affect on-installation residents more than off-installation populations. Therefore, disproportionate impacts on minority or low-income populations would not be expected.

4.3.9 Infrastructure

The Proposed Action would not result in significant effects on the installation's infrastructure. The following subsections describe the non-significant effects on infrastructure that would result from the Proposed Action.

Long-term, beneficial effects would be realized from implementing improved infrastructure projects and the consolidation of functions. In addition, all new construction would be designed to achieve LEED Silver certification. This would promote the minimizing of buildings' electricity/energy and water consumption as well as the optimization of construction waste management and storm water management techniques.

Airfield. No short-term effects would be expected; however, long-term, minor, beneficial effects would be expected from implementing the Proposed Action. The removal of airfield tree height violations (Project NI1) and the construction of the proposed Aircraft Deicing Pad (Project I3) would improve airfield operations. All other selected projects would be expected to have no impacts on the airfield.

Transportation. Short-term, minor, direct, adverse effects on the transportation network would be expected from implementing the Proposed Action due to increased traffic and parking lot use associated with demolition and construction equipment and contractor vehicles. The construction and demolition phases of the Proposed Action would require delivery of materials to, and removal of debris from, demolition and construction sites. Construction traffic would compose a small percentage of the total existing traffic on the installation. Many of the heavy construction vehicles would be driven to the site and kept on site for the duration of construction and demolition activities, resulting in relatively few additional trips. The proposed installation development activities would occur at different times and locations on Scott AFB over a 5-year period, which would further reduce construction traffic. Any potential increases in traffic volume associated with the proposed demolition and construction activities would be temporary.

Long-term, minor, adverse effects on traffic can be expected due to possible localized traffic increases from consolidation, and hence increased concentration, of communication functions. The number of total installation occupants and overall parking capacity would not be expected to be affected.

Electrical Supply. Short-term, negligible, direct, adverse effects on the electrical system would be expected during demolition and construction activities associated with the Proposed Action. Short-term electrical interruptions could be experienced when buildings are disconnected from or connected to the Scott AFB electrical distribution system. However, the discontinuation of electrical services would be temporary and coordinated with area users prior to disconnection.

Long-term, negligible, indirect, beneficial effects on electrical systems would be expected from the Proposed Action by demolishing old buildings with outdated electrical systems and constructing new buildings with updated electrical systems.

Long-term, minor, direct, adverse effects on the electrical system would be expected due to the increase in electrical demand from the increased building space for the selected projects. However, all of the proposed construction aims for LEED Silver certification, which would increase energy efficiency (reducing electricity demand) and potentially influence the source (green renewable) of electricity.

Central Heating. Scott AFB's central heating plant has been decommissioned and no central heating service is currently provided. Each proposed building would be heated via an individual natural gas heating system.

Liquid Fuel Supply. No short-term effects on the liquid fuel system would be expected from the Proposed Action. Long-term, negligible, beneficial effects on the liquid fuel supply would be expected as a result of the Proposed Action due to the removal of several storage tanks at buildings proposed for demolition that no longer have to be filled, monitored, or maintained.

Natural Gas. Short-term, negligible, direct, adverse effects on the natural gas system would be expected during demolition and construction associated with the proposed selected projects. Short-term interruptions could be experienced when buildings are disconnected from or connected to the Scott AFB natural gas system. The discontinuation of natural gas services would be temporary and coordinated with area users prior to disconnection.

Long-term, minor, adverse effects would be expected from an increase in building space that needs to be heated; however, this would be offset to some degree because the LEED Silver Certification of the proposed construction projects would make heating these buildings efficient. The Proposed Action would result in a minor increase in natural gas demands at the installation.

Water Supply. Short-term, negligible, adverse effects on the water supply systems would be expected from the Proposed Action. Short-term interruptions could be experienced when buildings are disconnected from or connected to the Scott AFB water supply system. Water necessary for construction would be obtained from the Scott AFB water supply system. Construction water needs would be limited and have little effect on the installation's water supply system. Water supply is available in all areas associated with the Proposed Action except for Project NI2. However, disruption of components of the water supply system would be temporary and coordinated with area users prior to starting the work.

The proposed LEED Silver construction design would have long-term, beneficial effects because it would increase water efficiency and reduce potable water usage.

Sanitary Sewer and Wastewater Treatment. Short-term, negligible, adverse effects on the sanitary sewer and wastewater systems would be expected from the Proposed Action. Short-term interruptions could be experienced when buildings are disconnected from or connected to the sanitary sewer and wastewater systems. Sanitary sewer service is available in all areas of the Proposed Action except for Project NI2. However, disruption of components of the sanitary sewer and wastewater system would be temporary and coordinated with area users prior to starting the work.

A long-term, negligible, beneficial effect on sanitary sewer systems and wastewater treatment might be expected due to the increase in water use efficiency associated with LEED certification.

Storm Water Systems. Short-term, negligible, adverse effects would be expected from implementation of the Proposed Action due to temporary disturbance of the storm water systems.

Long-term, minor, direct, adverse effects on the Scott AFB storm water system would be expected as a result of a net increase in impervious surfaces associated with the Proposed Action. However, long-term, minor, direct, beneficial effects are possible because storm water design associated with the LEED Silver certification might improve storm water management. The LEED certification points system incorporates sustainable storm water management techniques (i.e., rate reduction, quantity reduction, and treatment increase). Under the Illinois Environmental Protection Agency, all construction sites disturbing more than 1 acre and industrial sites are required to obtain and meet the requirements of the NPDES permit coverage.

Communications. Short-term, negligible, adverse effects on the communications systems at Scott AFB would be expected from the Proposed Action. Short-term interruptions could be experienced when buildings are disconnected from and connected to the communications systems. However, work on the communications systems would be temporary and coordinated with area users prior to the start of work activities.

Long-term, minor, direct, beneficial effects would be expected due to communication upgrades associated with Projects C5 and I2.

Solid Waste Management. Short-term, minor, direct, adverse effects would result from increased construction and demolition debris production associated with the Proposed Action. Solid waste generated from the proposed construction and demolition activities would consist of building materials such as solid pieces of concrete, metals (e.g., conduit, piping, and wiring), and lumber. Contractors would be required to recycle construction and demolition debris to the maximum extent practicable in accordance with installation policy, thereby diverting it from landfills. In addition, the LEED certification process awards credits for sustainable construction waste management (e.g., landfill diversion and reuse). The contractor would dispose of nonrecyclable construction and demolition debris at an offsite permitted landfill facility, which would have a long-term, negligible, adverse effect on solid waste management by permanently using landfill capacity

The proposed demolition, construction, and infrastructure improvement projects would result in a short-term, adverse effect as a result of increased solid waste generation. As indicated in **Table 4-6**, approximately 13,986 tons would be generated over the next 5 years from implementing the Proposed Action (USEPA 2009). Clean demolition and construction debris (e.g., concrete, asphalt) would be ground, recycled, and used for fill and roadwork rather than disposed of in a landfill, which would meet some LEED requirements for construction.

The long-term quantity of solid waste generated would be similar to existing levels because the number of personnel and types of activities would remain the same.

Table 4-6. Anticipated Generation of Construction and Demolition Debris

Proposed Projects Addressed in this IDEA	Project Size (ft^2)	Multiplier (pounds/ft^2)	Total Waste Generated	
			Pounds	U.S. Tons
Demolition	158,174	158	24,991,492	12,495
Construction	659,209	4.34	2,860,967	1,430
Pavement Construction	121,500	1	121,500	61
			Total	**13,986**

Source: USEPA 2009

Pollution Prevention. It is anticipated that the Proposed Action would not affect the Pollution Prevention Program at Scott AFB. The installation's pollution prevention plans discussed in **Section 3.10.2** aim to minimize waste and meet the requirements of the CWA during the proposed construction and demolition activities. Quantities of hazardous materials and chemical purchases, off-installation transport of hazardous waste, disposal of solid waste, and energy consumption would continue. Operation of new facilities under the Proposed Action would require procurement of products containing hazardous materials, generation of hazardous waste, and consumption of energy consistent with the existing conditions.

4.3.10 Hazardous Materials and Waste

The Proposed Action would not result in significant effects on hazardous materials and waste. The following subsections describe the non-significant effects on hazardous materials and waste that would result from the Proposed Action.

Hazardous Materials and Petroleum Products. Short-term, minor, adverse effects on hazardous materials and petroleum products would be expected. Several buildings that store hazardous materials and petroleum products would be demolished under the Proposed Action. The hazardous materials and petroleum products from these facilities would be excessed or transferred to the new facilities prior to demolition. Construction and demolition activities would require the use of certain hazardous materials such as paints, welding gases, solvents, preservatives, and sealants. It is anticipated that the quantity of hazardous materials used during construction and demolition activities would be minimal and their use would be of short duration. Contractors would be responsible for the management of hazardous materials and petroleum products, which would be handled in accordance with Federal, state, and USAF regulations. In accordance with AFI 32-7086, contractors would report the use of hazardous materials to the Scott AFB HAZMAT pharmacy including pertinent information (e.g., MSDS) in an effort to control any potential effects on hazardous materials. Contractors would use environmental protection measures to prevent releases and ensure that any releases do not result in contamination.

Long-term, negligible, beneficial effects on hazardous materials and petroleum products could occur with respect to storage conditions because the older buildings would be replaced with new facilities that have modern hazardous material and petroleum product storage areas. Hazardous materials and petroleum products stored and used during operation of the proposed facilities would be similar in type and quantity to current conditions.

Hazardous and Petroleum Wastes. Short-term, minor, adverse effects on hazardous and petroleum wastes would be expected. Several buildings that store hazardous and petroleum wastes would be demolished under the Proposed Action. The hazardous and petroleum wastes from these facilities would

be disposed of offsite or transferred to the new facilities prior to demolition. The quantity of hazardous and petroleum wastes generated from construction and demolition activities would be minor and would not be expected to exceed the capacities of existing hazardous and petroleum waste facilities. Contractors would be responsible for the disposal of hazardous wastes in accordance with Federal, state, and local regulations. Contractors would also be required to follow the Scott AFB Hazardous Waste Management Plan.

Long-term, negligible, beneficial effects on hazardous and petroleum wastes could occur with respect to storage conditions because the older buildings would be replaced with new facilities that have modern hazardous and petroleum waste storage areas. Hazardous and petroleum wastes generated and stored during operation of the proposed facilities would be similar in type and quantity to current conditions.

Storage Tanks. Short-term, minor, adverse effects on storage tanks would be expected because the selected demolition project areas currently include five storage tanks. These storage tanks would be emptied of their contents and either moved to the new facilities or replaced with new storage tanks.

The Proposed Action would result in long-term, negligible, adverse effects from the addition of a storage tank for the aircraft deicing pad. If the storage tanks from the structures proposed to be demolished are replaced, the result would be a long-term, negligible, beneficial effect due to replacing older storage tanks with modern storage tanks.

Runway and Aircraft Deicer. No short-term effects would be expected to result from the Proposed Action. The Proposed Action would result in long-term, minor, adverse effects on deicer due to increased quantities of deicer for the new aircraft deicer pad.

Asbestos-Containing Material. Short-term, minor, adverse effects associated with ACMs could be expected. Buildings scheduled for demolition could contain ACM and, therefore, would need to be surveyed for asbestos by a certified contractor prior to commencement of demolition activities. Demolition plans would be reviewed by Scott AFB civil engineering personnel to ensure appropriate measures were taken to reduce potential exposure to, and release of, asbestos. All friable ACM discovered would be removed prior to demolition and disposed of at a USEPA-approved landfill. Contractors would be required to adhere to all Federal, state, and local regulations in addition to the Scott AFB management plans.

USAF regulations restrict the use of ACM for new construction. AFI 32-1023 requires that a substitution study be conducted whenever the use of an ACM in construction, maintenance, or repair is considered. If it is determined that the ACM is superior in cost and performance characteristics, and has minimal actual or potential health hazards, then the ACM should be used. In all other cases non-ACM should be used.

Long-term, negligible, adverse effects would be expected due to the additional disposal of ACM in USEPA-approved landfills. However, long-term, negligible, beneficial effects would be expected from less exposure to and maintenance of ACM due to elimination of the older buildings.

Lead-Based Paint. Short-term, minor, adverse effects associated with LBP could be expected. An LBP survey of all priority facilities at Scott AFB has not been completed. Several of the buildings proposed for demolition could contain LBP and, therefore, would need to be surveyed by a certified contractor prior to demolition activities. Facilities containing LBP can be demolished without removing the LBP; however, all LBP-contaminated construction debris would be disposed of at a USEPA-approved landfill. Contractors would be required to adhere to all Federal, state, and local regulations in addition to Scott AFB management plans.

Long-term, negligible, adverse effects would be expected due to the additional disposal of LBP in USEPA-approved landfills. However, long-term, negligible, beneficial effects would be expected from less exposure to and maintenance of LBP due to elimination of the older buildings.

Polychlorinated Biphenyls. Short-term, minor, adverse effects associated with PCBs could be expected. Any potential PCB-containing equipment not labeled PCB-free or missing date-of-manufacture labels discovered within the facilities proposed for demolition would be removed and handled in accordance with Federal and state regulations and the installation's Hazardous Waste Management Plan. PCB-containing materials would be transported off-installation and disposed of at a hazardous waste disposal facility.

Long-term, negligible, beneficial effects would be expected from the removal of PCB-containing equipment due to demolition of older buildings.

ERP sites involving PCBs are addressed in the ERP subsection.

Pesticides. No effects associated with pesticides would be expected. The Proposed Action would not require any significant change in the quantities of pesticides used or significantly alter pesticide application areas. Future pesticide applications at the proposed project sites would be conducted according to Federal, state, and local regulations and the installation's Integrated Pest Management Plan.

Radon. Long-term, negligible, adverse effects from radon would be expected due to implementation of the Proposed Action. Based on the moderate potential for elevated indoor radon levels in St. Clair County, some of the proposed structures might require radon removal systems. Radon testing at the project sites could be used to determine the presence of radon and the need for a radon removal system.

Environmental Restoration Program. Short-term, minor to moderate, adverse effects would be expected. Some of the proposed projects are on or adjacent to active ERP sites; therefore, there is a potential for workers to encounter contamination during construction and demolition activities. If contaminated groundwater or soil from nearby ERP sites is encountered during construction or demolition activities, the handling, storage, transportation, and disposal of hazardous substances would be conducted in accordance with applicable Federal, state, and local regulations; USAF regulations; and Scott AFB management procedures.

Approval of new construction within ERP sites must be obtained from the FUB and coordinated with the 375 CES/CEA. In addition, an *ERP Waiver to Construct* must be reviewed and approved by HQ AMC in order to construct on an ERP site. Prior to commencement of construction and demolition activities at or within the vicinity of active ERP sites, a health and safety plan should be prepared in accordance with OSHA regulations. Workers performing soil-removal activities within ERP sites would be required to obtain OSHA 40-hour Hazardous Waste Operations and Emergency Response training. In addition, supervisors would be required to obtain an OSHA Site Supervisor Certification. Project planning would include protection of existing ERP infrastructure, such as monitoring wells, to avoid disruption of clean-up activities and minimize potential impacts on ERP infrastructure. Remediation of the ERP sites would increase worker exposure to hazardous wastes and would increase the quantity of hazardous wastes being disposed from the installation.

Long-term, moderate, beneficial effects would be expected due to the elevated ERP priority that would result from developing on ERP sites.

4.3.11 Safety

The Proposed Action would not result in significant effects on safety. The following subsections describe the non-significant effects on safety that would result from the Proposed Action.

Construction Safety. Short-term, minor, adverse effects could occur from the implementation of the Proposed Action. The short-term risk associated with demolition and construction contractors would slightly increase at Scott AFB during the normal workday as demolition and construction activity levels would increase. However, all demolition and construction contractors are required to follow and implement OSHA standards to establish and maintain safety procedures. Projects associated with the Proposed Action would not pose new or unacceptable safety risks to installation personnel or activities at the installation. The proposed projects would enable Scott AFB to meet future mission objectives at the installation and conduct or meet mission requirements in a safe operating environment. No long-term effects on safety would be expected.

Construction workers could encounter soil or groundwater contamination as a result of an ERP site or previously unknown soil or groundwater contamination. Projects that are near or within ERP sites increase the potential for construction workers to encounter contamination. Prior to commencement of construction and demolition activities at or within the vicinity of active ERP sites, a health and safety plan should be prepared in accordance with OSHA regulations. Workers performing soil-removal activities within ERP sites would be required to obtain OSHA 40-hour Hazardous Waste Operations and Emergency Response training. In addition, supervisors would be required to obtain an OSHA Site Supervisor Certification.

Most of the buildings set for demolition were built before 1978 and would be expected to contain ACM and LBP. Long-term, beneficial effects on safety would be experienced from the removal of ACM and LBP materials thus reducing exposure to personnel. Short-term, adverse effects could be experienced, but adherence to all Federal, state, and local regulations and Scott AFB management plans would result in negligible effects on safety during demolition, construction, and infrastructure improvement activities.

Demolition, construction, and infrastructure improvement activities would be accomplished in accordance with Federal, state, and local regulations to minimize safety hazards associated with hazardous materials, wastes, and substances. These hazards are discussed in more detail in **Section 4.3.10**.

Explosives and Munitions Safety. Short-term, minor, adverse effects could occur during demolition and construction activities within existing QD arcs. Contractors working within a QD arc could be exposed to an increased risk of potential explosions. Through coordination with the installation Safety Office, no handling or transportation of materials would occur within QD arcs while construction workers are within these areas. This would minimize explosive safety risks to construction workers. Any construction activities within the existing munitions storage or EOD areas should be monitored for potential unexploded ordnance. All proposed projects located within QD arcs would be mission-necessary and consistent with current land uses inside established QD arcs.

4.4 Detailed Environmental Consequences of the Proposed Action

4.4.1 Selected Demolition Projects

4.4.1.1 D1. Demolish Old Service Station, Building 48

Project D1 would not result in significant effects. The following subsections break down by resource areas the non-significant effects that would result from Project D1.

Noise. Short-term, minor, adverse effects on the noise environment would be expected as a result of the demolition of Building 48. The noise emanating from demolition equipment would be localized, short-term, and intermittent during machinery operations. **Table 3-2** shows the predicted noise levels for various pieces of construction equipment operating at 50 feet from the source, and **Table 4-2** shows estimated noise levels that would be expected at varying distances from a demolition site. Heavy equipment would be operated periodically during demolition; therefore, noise levels from the equipment would fluctuate throughout the day. The proposed demolition site is within a developed portion of Scott AFB that is used for maintenance and administrative purposes. Populations potentially affected by increased noise levels would primarily include USAF personnel in surrounding buildings. These personnel would be approximately 100 feet or more from the demolition site where expected noise levels experienced by persons outside would be 84–88 dBA. Residential populations potentially affected by noise would be at least 300 feet southwest of the demolition site in the Georgian housing area. The closest residents to this housing area would experience noise levels of slightly less than 78–82 dBA during demolition activities.

No change in operations would be expected as a result of the demolition of Building 48; therefore, no long-term effects on the ambient noise environment are anticipated.

Land Use. Long-term, minor, beneficial effects would be expected from the demolition of Building 48. Demolition activities would have beneficial effects on the installation's organizational functions by removing this old, outdated, and unnecessary facility and creating space for future projects. The land made available by demolition of Building 48 would reduce the amount of undisturbed land required for the development of future maintenance uses, and would contribute to the goal of reducing the physical plant footprint on the installation according to the "20/20 by 2020" initiative. Demolition of Building 48 is consistent with the Scott AFB IDP, which identifies Project D1 as one of the main future projects in the core district area (SAFB 2011a). The demolition of Building 48, which is within the Maintenance land use category, would make 910 ft^2 of land available for the construction of new maintenance facilities. Present land use and future land use in the area, which is designated as Industrial (updated land use category comparable to Maintenance), would not change and would be compatible with adjacent land that consists of Maintenance/Industrial, Administrative, and Community/Community Service.

Air Quality. Short-term, negligible to minor, adverse effects on air quality would be expected from the demolition of Building 48. Demolition activities would result in temporary effects on local and regional air quality, primarily from site-disturbing activities, the operation of demolition equipment and haul trucks transporting debris, and workers commuting to the job site. Appropriate fugitive dust-control measures would be employed during demolition activities to suppress emissions. All emissions associated with demolition activities would be temporary in nature. It is not expected that emissions from the demolition of Building 48 would contribute to or affect local or regional attainment status with respect to the NAAQS. Emissions from the demolition of Building 48 are summarized in **Table 4-7**. Emissions estimation spreadsheets and a summary of methodology used are included in **Appendix D**.

No long-term effects on air quality would be expected from the demolition of Building 48. Because Building 48 currently is vacant and awaiting demolition, air emissions are no longer produced at this building. No long-term air emissions sources (e.g., boilers, furnaces, electrical generators) would be eliminated from the demolition of Building 48.

Geological Resources. Project D1 would be expected to result in short-term, minor to moderate, adverse, effects, and long-term, beneficial effects on soils. Soils previously were disturbed in this area when building was constructed. Short-term effects could involve vegetation removal and compaction of surrounding soils under the weight of construction equipment, which could result in increased soil erosion

Table 4-7. Estimated Air Emissions Resulting from Project D1

Activity	NO_x tpy	VOC tpy	CO tpy	SO_2 tpy	PM_{10} tpy	$PM_{2.5}$ tpy	CO_2 tpy
Construction Combustion	0.053	0.003	0.020	0.004	0.003	0.003	6.174
Construction Fugitive Dust	-	-	-	-	-	-	-
Haul Truck On-Road	0.001	0.001	0.004	0.000	0.002	0.000	0.367
Construction Commuter	0.003	0.003	0.030	0.000	0.000	0.000	3.944
Total D1 Emissions	**0.057**	**0.008**	**0.054**	**0.004**	**0.005**	**0.004**	**10.485**
Percent of MSLI AQCR Inventory	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.00001*

Note: * Percent of State of Illinois CO_2 emissions.

and transport in storm water runoff during construction activities. Adverse effects would be minimized with implementation of environmental protection measures including wetting of soils, and implementation of erosion and storm water management practices to contain soil and runoff on site. Berming along nearby water bodies would decrease the amount of potential sedimentation in adjacent water bodies. Wetting of soils would occur on a daily basis as needed to prevent erosion and generation of dust.

Short-term, minor to moderate, adverse effects on soils could occur from the disturbance of potentially contaminated soils and removal of the pavement surrounding the building that currently serves as a barrier between the contaminated and clean soils. Three ERP sites (TU-23, TU-24, and TU-25) are associated with Building 48 and there is also the potential to encounter contaminated soil. Project planning should include the potential need for sampling and subsequent remediation within the project area to account for the discovery of contaminated soil. The handling, storage, transportation, and disposal of hazardous substances would be conducted in accordance with applicable Federal, state, and local regulations; USAF regulations; and Scott AFB management procedures. This area would be repaved to contain soil and groundwater contamination. No long-term effects would be expected.

No impacts on sediments or geology would be anticipated.

Water Resources. Short-term, negligible, adverse effects on water resources would be expected from Project D1. Short-term, adverse effects would involve soil erosion and sedimentation of receiving water bodies from the removal of vegetation. These impacts would be minimized with implementation of BMPs in accordance with the CWA Final Rule (see **Section 3.5.1**) including wetting of soils, and implementation of erosion and storm water management practices to contain soil and runoff on site. Under the conditions of the Scott AFB industrial storm water permit, a Notice of Intent must be filed with the Illinois Environmental Protection Agency for construction activities disturbing more than 1 acre. This project does not fall under that category. Additionally, implementation of environmental protection measures in accordance with the Scott AFB SWPPP is required to minimize the potential for exposed soils or other contaminants from construction activities to reach nearby surface waters. Such environmental protection measures could include the use of silt fences, covering of soil stockpiles, use of secondary containment for the temporary storage of hazardous liquids, detention/retention ponds, and establishment of buffer areas, as appropriate.

It is possible that demolition equipment could leak fuels or hazardous materials or spills could occur during demolition activities. In the event of a spill or leak of fuel or other contaminants, there could be adverse effects on the receiving water bodies. All fuels and other potentially hazardous materials would be contained and stored appropriately. In the event of a spill, procedures identified in the installation's SPCC Plan would be followed to quickly contain and clean up a spill. See sections on *Hazardous Materials and Wastes* for further information. There remains the possibility that a spill or leak could occur but implementation of the environmental protection measures identified in the SPCC Plan would minimize the potential for and extent of contamination.

Initially, the decrease in impervious surfaces associated with removal of the structure would be expected to reduce the volume and velocity of storm water runoff and the associated potential for erosion and offsite transport of sediments. However, this area would be repaved to contain soil and groundwater contamination and no long-term effects on water resources would be expected.

Demolition activities would not occur within or adjacent to floodplains and no effects on floodplains would be expected. Demolition would not require trenching to the depth of groundwater. No wetlands are at the site of the project; therefore, no effects on wetlands would be expected. Demolition activities would stay within existing footprints and would follow environmental protection measures requirements as required. Adherence to an ESCP and SWPPP would prevent surface water degradation. Assuming appropriate environmental protection measures are implemented during demolition activities, no adverse effects on receiving wetlands would be expected.

Biological Resources. Short-term, negligible, adverse effects on vegetation would be expected from Project D1 due to temporary disturbances (e.g. trampling and limited removal) on adjoining lands and from use of heavy equipment during activities. Project D1 would affect urban upland and non-forested upland communities. Affected vegetation would consist primarily of manicured lawns and associated landscaping. All trees and vegetation associated with Project D1 would be replaced or relocated as applicable and the area reseeded with appropriate species.

Short-term, negligible, adverse effects on wildlife would be expected from Project D1 due to temporary disturbances from noise, demolition activities, and heavy equipment use. High noise events could cause wildlife to engage in escape or avoidance behaviors. Project D1 would affect urban upland and non-forested upland communities where human disturbance is common. Therefore, wildlife in the vicinity would be expected to be habituated to frequent disturbances. Most wildlife species in the vicinity of demolition activities would be expected to quickly recover once the demolition noise and disturbances have ceased. Therefore, no long-term, adverse effects on wildlife would be expected.

Scott AFB would monitor facilities slated for demolition for bat species that establish maternity colonies in anthropogenic structures, such as big brown (*Eptesicus fuscus*), little brown (*Myotis lucifugus*) and evening bats (*Nycticeius humeralis*) if such activities are slated for May through July, when non-volant juveniles could be present. Project D1 is across the airfield and more than 6,000 feet from occupied Indiana bat habitat along Silver Creek and Cardinal and Scott lakes, where state-listed bird species have been observed in the past. Project D1 would affect urban upland and non-forested upland communities where human disturbance is common. No protected and sensitive species have been observed in the vicinity; therefore, no adverse effects on protected and sensitive species would be expected.

Cultural Resources. The demolition of Building 48 would result in adverse effects on cultural resources under NEPA and would be classified as an adverse effect under Section 106 of the NRHP. These effects are reduced below the threshold of significance under NEPA because of the completion of SHPO consultations and an MOA between Scott AFB and the SHPO is in place to mitigate the adverse effects on the former service station (Building 48). The MOA calls for documentation of Building 48 to Illinois Historic American Buildings Survey Level III Standards as mitigation of the adverse effects of

demolition. (See **Appendix G** for a copy of the MOA). Through implementation of the MOA, Scott AFB's responsibilities under Section 106 would be fulfilled for this activity. The Historic American Building Survey is anticipated to be completed during the Fall of 2012. No effects on archaeological sites or TCPs would be anticipated because the building is in a highly developed area with previously disturbed ground.

Socioeconomics and Environmental Justice. Short-term, negligible to minor, beneficial effects on socioeconomic resources would be expected from the demolition of Building 48 and possible remediation of surrounding soil and groundwater. It is assumed that equipment and supplies necessary to complete the demolition and remediation activities would primarily be obtained locally, and local contractors would primarily be used. The demand for workers as part of the demolition would be minor and would not outstrip the local supply of workers as there are more than 83,000 construction workers in the St. Louis, MO-IL MSA. Proposed activities would occur entirely on Scott AFB and, therefore, would have little potential to adversely affect off-installation residents. It is possible that residents of the Georgian housing area, which is approximately 500 feet to the southwest of Building 48, could experience short-term intermittent noise associated with the proposed demolition activities. However, this noise would not be a disproportionate adverse effect, and no other environmental justice issues would be anticipated. No long-term effects on socioeconomic resources are expected to result from the proposed demolition of Building 48 and possible remediation activities.

Infrastructure. Short-term, negligible, adverse effects would be expected as a result of the generation of demolition debris. This is a short-term, adverse effect as debris would only be generated during the demolition activities. Debris that is not recycled would be landfilled, which would be considered a long-term, irreversible, adverse effect. Additional long-term, negligible, beneficial effects would be realized from the removal of outdated utilities; however, because Building 48 is already vacant, the reduction in utility demand would be minimal.

Hazardous Materials and Waste. Short-term, minor, adverse effects associated with hazardous materials and waste would be expected as a result of this project. Project D1 would result in a short-term increase in the use of hazardous materials and petroleum products and the generation of hazardous and petroleum wastes. Contractors would be responsible for the management of these materials, which would be handled in accordance with the Scott AFB Hazardous Materials Management Process; Scott AFB Hazardous Waste Management Plan; and Federal, state, and USAF regulations. Contractors must report the use of hazardous materials to the HAZMAT Pharmacy, including pertinent information (e.g., MSDS). Three ERP sites (TU-23, TU-24, and TU-25) are associated with Building 48 and soil and groundwater contamination has been confirmed. The surrounding pavement acts as a barrier between the contaminated soil and groundwater and the environment. Remedial action could be necessary prior to demolition and the existing monitoring wells would need to be protected from damage during demolition activities. Because of its age, Building 48 could contain ACM and LBP (SAFB 2011c). Sampling for these materials would occur prior to any demolition activities so that these materials can be properly characterized, handled, and disposed of in accordance with the Scott AFB Lead-Based Paint Management Plan (SAFB undated), Hazardous Waste Management Plan (SAFB 2008b), and USAF policy.

Long-term, minor, beneficial effects would be expected due to the elevated priority of the contamination due to the proposed demolition. In addition, the elimination of the older building would result in less exposure to, and maintenance of, ACM and LBP. No long-term, adverse effects on hazardous materials management or hazardous waste generation would be expected as a result of the proposed demolition of Building 48.

Safety. Short-term, minor, adverse effects could occur during demolition activities. Demolition activities pose an increased risk of demolition-related accidents, but this level of risk would be managed by adherence to established Federal, state, and local safety regulations. Workers would be required to wear

protective gear such as ear protection, steel-toed boots, hard hats, gloves, and other appropriate safety gear. Demolition areas would be fenced and appropriately marked with signs. Demolition equipment and associated trucks transporting material to and from demolition sites would be directed to roads and streets that have a lesser volume of traffic. Therefore, no long-term, adverse effects on safety would be expected.

Because of the age of Building 48, it should be assumed to contain ACM and LBP. These materials require appropriate characterization, removal, handling, and disposal during demolition activities by qualified personnel. Long-term, beneficial effects on safety would also be experienced from the removal of ACM and LBP materials thus reducing exposure to personnel.

Three ERP sites (TU-23, TU-24, and TU-25) are associated with Building 48 and soil and groundwater contamination have been confirmed. There is a potential for demolition workers to encounter contamination during demolition activities. If contamination is encountered, it would be handled, stored, transported, and disposed of in accordance with the installation's Hazardous Waste Management Plan and all applicable Federal, state, and local regulations and policies. See **Section 4.4.1.1**, Hazardous Materials and Wastes, for more information regarding the potential for contamination at this location.

4.4.1.2 D2. Demolish James Gym (Building 1987), Buildings 1984, 1985, and 1986, and outdoor pool (Facility 6303)

Project D2 would not result in significant effects. The following subsections break down by resource areas the non-significant effects that would result from Project D2.

Noise. Short-term, minor, adverse effects on the noise environment would be expected as a result of the demolition of Buildings 1984, 1985, 1986, and 1987 and Facility 6303. The noise emanating from demolition equipment would be localized, short-term, and intermittent during machinery operations. Heavy equipment would be operated periodically during demolition; therefore, noise levels from the equipment would fluctuate throughout the day. The proposed demolition site is currently occupied by facilities used for community and outdoor recreation purposes. The populations potentially affected by increased noise levels would primarily include USAF personnel in surrounding buildings. These personnel would be approximately 75 feet (Building 1989) and 275 feet (Building 1990) away from the demolition site. In addition, persons using the running track would be approximately 275 feet to the west of the site. Expected intermittent noise levels experienced by people outside at 75 feet and 275 feet would be slightly less than 90–94 dBA and 78–82 dBA, respectively.

No change in operations would be expected as a result of the demolition of these buildings; therefore, no long-term effects on the ambient noise environment are anticipated.

Land Use. Long-term, minor, beneficial effects would be expected from demolition of Buildings 1984, 1985, 1986, and 1987 and Facility 6303. Demolition activities would have beneficial effects on the installation's organizational functions by removing old, outdated, inadequate facilities and creating space for construction of a new modern fitness center (Project C4). The construction of new facilities where land has been made available by demolition reduces the amount of undisturbed land required for future development, in this case by 72,596 ft^2. Project D2 is consistent with the Scott AFB IDP, which identifies demolition of Building 1987 as one of the main future projects in the core district area and demolition of the remainder of the buildings/facilities have been identified on the Capital Improvements Plan facility reduction list (SAFB 2011a). Building 1987 is within the Community land use category, and the other buildings/facilities are within the Outdoor Recreation land use category. The future land use of the demolition areas is proposed to be Community Service (updated land use category comparable to Community). Project D2 would not require a land use change, and the present and future land use

categories would be compatible with the surrounding Outdoor Recreation and Community/Community Service land uses.

Air Quality. Short-term, minor, adverse effects on air quality would be expected from the demolition of the James Gym and the associated athletic facilities proposed for demolition under Project D2. Demolition activities would result in temporary effects on local and regional air quality, primarily from site-disturbing activities, the operation of demolition equipment and haul trucks transporting debris, and workers commuting to the job site. Appropriate fugitive dust-control measures would be employed during demolition activities to suppress emissions. All emissions associated with demolition activities would be temporary in nature. It is not expected that emissions from Project D2 would contribute to or affect local or regional attainment status with the NAAQS. Emissions from the demolition of the James Gym and associated athletic facilities are summarized in **Table 4-8**. Emissions estimation spreadsheets and a summary of methodology used are included in **Appendix D**.

Table 4-8. Estimated Air Emissions Resulting from Project D2

Activity	NO_x tpy	VOC tpy	CO tpy	SO_2 tpy	PM_{10} tpy	$PM_{2.5}$ tpy	CO_2 tpy
Construction Combustion	1.182	0.070	0.467	0.096	0.071	0.069	137.633
Construction Fugitive Dust	-	-	-	-	0.691	0.069	-
Haul Truck On-Road	0.101	0.073	0.297	0.008	0.120	0.031	25.560
Construction Commuter	0.034	0.034	0.310	0.000	0.003	0.002	41.088
Total D2 Emissions	**1.317**	**0.177**	**1.074**	**0.104**	**0.886**	**0.172**	**204.281**
Percent of MSLI AQCR Inventory	0.001	< 0.001	< 0.001	< 0.001	0.001	0.001	0.00008*

Note: * Percent of State of Illinois CO_2 emissions.

Long-term, minor, beneficial effects on air quality would be expected from the demolition of the James Gym and the associated athletic facilities. Any long-term air emissions sources (e.g., boilers, furnaces, electrical generators) at these facilities would be deactivated and removed during the demolition process. The deactivation and removal of these air emissions sources would contribute to reducing the total air emissions produced at Scott AFB.

Geological Resources. Effects from implementing Project D2 would be similar to, but less than, those stated for Project D1 as no soil contamination is present. Effects would be short-term, minor, adverse, and long-term beneficial. Demolition of the James Gym and associated athletic facilities would result in short-term, negligible, adverse effects on soils from compaction, soil erosion, and sedimentation. However, environmental protection measures and an ESCP would be implemented to minimize effects. Long-term, beneficial effects on soils would be expected if the area was revegetated with native vegetation or grasses, which would decrease rates of erosion and sedimentation and promote soil productivity. No impacts on sediments or geology would be anticipated.

Water Resources. Effects from demolishing the James Gym (Building 1987), Buildings 1984, 1985, and 1986, and outdoor pool (Facility 6303) would be similar to the effects from Project D1. Short-term, negligible, adverse effects would be expected to occur during demolition activities as sedimentation, and storm water runoff volume and velocity might increase. Additionally, construction equipment leaks or spills could be transported to receiving water bodies during storm events. Environmental protection measures would minimize adverse effects. If vegetation were reestablished, long-term, minor, beneficial effects would be expected as sedimentation and impervious surface area decrease. Storm water runoff

velocity and volume would decrease, which would contribute to an increase in groundwater recharge. James Gym (Building 1987), Buildings 1984, 1985, and 1986, and outdoor pool (Facility 6303) are not within or adjacent to any floodplains or surface waters so these resources would not be affected. No wetlands are present on the project site; therefore, no direct impacts on wetlands would be expected from this proposed demolition project. In the event of a spill, SPCC Plan procedures would be implemented to contain and clean up the spill.

Biological Resources. Short-term, negligible, adverse effects on vegetation would be expected from Project D2 due to temporary disturbances (e.g., trampling and limited removal) on adjoining lands and from use of heavy equipment during activities. Project D2 would affect urban upland and non-forested upland communities. Affected vegetation would consist primarily of manicured lawns and associated landscaping. All trees and vegetation associated with Project D2 would be replaced or relocated as applicable and the area reseeded with appropriate species.

Short-term, negligible, adverse effects on wildlife would be expected from Project D2 due to temporary disturbances from noise, demolition activities, and heavy equipment use. High noise events could cause wildlife to engage in escape or avoidance behaviors. Project D2 would affect urban upland and non-forested upland communities where human disturbance is common. Therefore, wildlife in the vicinity would be expected to be habituated to frequent disturbances. Most wildlife species in the vicinity of demolition activities would be expected to quickly recover once the demolition noise and disturbances have ceased. Therefore, no long-term, adverse effects on wildlife would be expected.

Scott AFB would monitor facilities slated for demolition for bat species that establish maternity colonies in anthropogenic structures, such as big brown (*Eptesicus fuscus*), little brown (*Myotis lucifugus*) and evening bats (*Nycticeius humeralis*) if such activities are slated for May through July, when non-volant juveniles could be present. Project D2 is across the airfield and more than 6,000 feet from occupied Indiana bat habitat along Silver Creek and Cardinal and Scott lakes, where state-listed bird species have been observed in the past. Project D2 would affect urban upland and non-forested upland communities where human disturbance is common. No protected and sensitive species have been observed in the vicinity; therefore, no adverse effects on protected and sensitive species would be expected.

Cultural Resources. No effects on cultural resources would be expected from the demolition of these four buildings and one facility, all constructed between 1973 and 1979. None of these properties will be 50 years or older by 2017 and these buildings and facilities are not located in or near the Scott Field Historic District or near any other NRHP-listed or eligible properties. No effects on archaeological sites or TCPs would be anticipated because the building is in a highly developed area with previously disturbed ground and not in one of the survey units identified by the SHPO.

Socioeconomics and Environmental Justice. Short-term, minor, beneficial effects on socioeconomic resources would be expected from the demolition of Buildings 1984, 1985, 1986, and 1987 and Facility 6303. It is assumed that equipment and supplies necessary to complete the demolition activities would be obtained locally, and local contractors would be used. The demand for workers as part of the demolition would be minor and would not outstrip the local supply of workers as there are more than 83,000 construction workers in the St. Louis, MO-IL MSA. Proposed activities would occur entirely on Scott AFB in a non-residential portion of the installation, and would have little potential to adversely affect on- and off-installation residents. Therefore, no environmental justice issues would be anticipated. No long-term effects on socioeconomic resources are expected to result from the proposed demolition of Buildings 1984, 1985, 1986, and 1987 and Facility 6303.

Infrastructure. Short-term, minor, adverse effects would be expected as a result of demolition debris. Debris that is not recycled would be landfilled, which would be considered a long-term, irreversible, adverse effect.

Removal of these facilities would result in a slight decrease in demand for certain utilities. Long-term, beneficial effects would be realized from the removal of outdated utilities (e.g., electrical and heating units). Long-term, beneficial effects on storm water systems would be expected from the decrease in impervious surfaces.

Hazardous Materials and Waste. Short-term, negligible, adverse effects associated with hazardous materials and waste would be expected from Project D2. Project D2 would result in a short-term increase in the use of hazardous materials and petroleum products and the generation of hazardous and petroleum wastes. Contractors would be responsible for the management of these materials, which would be handled in accordance with the Scott AFB Hazardous Materials Management Process, Scott AFB Hazardous Waste Management Plan, and Federal, state, and USAF regulations. Contractors must report the use of hazardous materials to the HAZMAT Pharmacy, including pertinent information (e.g., MSDS). There are no storage tanks associated with this project, but there are some hazardous materials stored in Building 1985. These materials would be excessed or transferred to the proposed New Fitness Facility. Because of their age, some of the buildings and facilities proposed for demolition could contain ACM, LBP, and PCBs (SAFB 2011c). Sampling for these materials would occur prior to any demolition activities so that these materials can be properly characterized, handled, and disposed of in accordance with the Scott AFB Lead-Based Paint Management Plan (SAFB undated), Hazardous Waste Management Plan (SAFB 2008b), and USAF policy.

No long-term effects on hazardous materials and wastes would be expected from Project D2 other than the elimination of the older building and facilities would result in potentially less exposure to, and maintenance of, ACM, LBP, and PCBs.

Safety. Short-term, minor, adverse effects associated with safety could occur during demolition activities. Demolition activities pose an increased risk of demolition-related accidents, but this level of risk would be managed by adherence to established Federal, state, and local safety regulations. Workers would be required to wear protective gear such as ear protection, steel-toed boots, hard hats, gloves, and other appropriate safety gear. Demolition areas would be fenced and appropriately marked with signs. Demolition equipment and associated trucks transporting material to and from demolition sites would be directed to roads and streets that have a lesser volume of traffic.

Because of the age of some building and facilities, some should be assumed to contain ACM and LBP. These materials require appropriate characterization, removal, handling, and disposal during demolition activities by qualified personnel. Long-term, beneficial effects on safety would also be experienced from the removal of ACM and LBP materials thus reducing exposure to personnel.

4.4.1.3 D3. Demolish 21 Buildings in Support of the Base Civil Engineering and Contracting Complex

Project D3 would not result in significant effects. The following subsections break down by resource areas the non-significant effects that would result from Project D3.

Noise. Short-term, minor, adverse effects on the noise environment would be expected as a result of the demolition of 21 buildings in support of the Base Civil Engineering and Contracting Complex. The noise emanating from demolition equipment would be localized, short-term, and intermittent during machinery operations. Heavy equipment would be operated periodically during demolition; therefore noise levels from the equipment would fluctuate throughout the day. The proposed demolition sites are within a developed portion of Scott AFB that is used for maintenance and administrative purposes. Populations potentially affected by increased noise levels would include mainly USAF personnel in surrounding buildings approximately 50 feet or more from the demolition site. Expected noise levels experienced by people outside at 50 feet would be 90–94 dBA. Residential populations potentially affected by noise

would be approximately 100 feet or more to the west and southwest of the demolition site in the Georgian housing area. The closest residents of this housing area would experience noise levels of slightly less than 84–88 dBA during demolition activities.

Due to the removal of 21 buildings and their functions, it is anticipated that the ambient noise environment in the vicinity of the demolished buildings would decrease slightly. Therefore, long-term, negligible, beneficial effects on the noise environment are anticipated.

Land Use. Long-term, minor, beneficial effects would be expected from demolition of 21 buildings in support of the Base Civil Engineering and Contracting Complex. Demolition activities would have beneficial effects on the installation's organizational functions by removing old, outdated facilities and allowing for consolidation of all civil engineering and contracting personnel in a new modern facility (Project C6). The land made available by demolition of the 21 buildings would also increase the amount of available land for future development by 84,668 ft^2. Project D3 is consistent with the Capital Improvements Plan facility reduction list, which includes most of the 21 buildings proposed to be demolished under Project D3 (SAFB 2011a). The 21 buildings proposed for demolition are currently within the Maintenance and Administration land use categories, and these categories would not change, except that the Maintenance category is referred to as Industrial. Project D3 would not require a land use change and would be compatible with the surrounding Maintenance/Industrial and Administration land uses.

Air Quality. Short-term, minor, adverse effects on air quality would be expected from the demolition of the 21 buildings identified for Project D3. Demolition activities would result in temporary effects on local and regional air quality, primarily from site-disturbing activities, the operation of demolition equipment and haul trucks transporting debris, and workers commuting to the job site. Appropriate fugitive dust-control measures would be employed during demolition activities to suppress emissions. All emissions associated with demolition activities would be temporary in nature. It is not expected that emissions from Project D3 would contribute to or affect local or regional attainment status with the NAAQS. Emissions from the demolition of the 21 buildings identified for Project D3 are summarized in **Table 4-9**. Emissions estimation spreadsheets and a summary of methodology used are included in **Appendix D**.

Table 4-9. Estimated Air Emissions Resulting from Project D3

Activity	NO_x tpy	VOC tpy	CO tpy	SO_2 tpy	PM_{10} tpy	$PM_{2.5}$ tpy	CO_2 tpy
Construction Combustion	1.600	0.095	0.632	0.130	0.097	0.094	186.392
Construction Fugitive Dust	-	-	-	-	4.017	0.402	-
Haul Truck On-Road	0.135	0.097	0.396	0.011	0.160	0.042	34.129
Construction Commuter	0.083	0.082	0.744	0.001	0.008	0.005	98.611
Total D3 Emissions	**1.818**	**0.275**	**1.772**	**0.142**	**2.481**	**0.362**	**319.133**
Percent of MSLI AQCR Inventory	**0.001%**	**0.000%**	**0.000%**	**0.000%**	**0.002%**	**0.001%**	**0.00013%**

Note: * Percent of State of Illinois CO_2 emissions.

Long-term, minor, beneficial effects on air quality would be expected from the demolition of the 21 buildings identified for Project D3. Any long-term air emissions sources (e.g. boilers, furnaces, electrical generators) at these buildings would be deactivated and removed during the demolition process. The deactivation and removal of these air emissions sources would contribute to reducing the total air emissions produced at Scott AFB.

Geological Resources. Project D3 would result in effects similar to those described for Project D1 and they would be short-term, minor to moderate, adverse, and long-term, beneficial. Environmental protection measures and an ESCP would be implemented to minimize impacts.

Several ERP sites are present within the area proposed for demolition associated with Project D3. See **Section 3.10** for a detailed discussion of ERP sites. Prior to any demolition associated with this Project D3, any areas of soil, pavement, or building surfaces that appear to have been contaminated by hazardous or petroleum wastes would be sampled to determine the extent of contamination and remediated in accordance with Federal, state, and installation regulations. If results of the sampling indicated the presence of contamination, remediation efforts would take place prior to commencement of demolition activities. The handling, storage, transportation, and disposal of hazardous substances would be conducted in accordance with applicable Federal, state, and local regulations; USAF regulations; and Scott AFB management procedures. No effects on sediments or geology would be anticipated.

Long-term, beneficial effects could occur from the remediation of contaminated soils and if the sites are revegetated with native vegetation or grasses, as appropriate. Revegetation would result in a decrease in rates of erosion and sedimentation, and would promote soil productivity.

Water Resources. Effects on water resources from demolishing 21 Buildings in Support of the Base Civil Engineering and Contracting Complex would be similar to the effects described for Projects D1 and D2. Short-term, negligible, adverse effects would be expected to occur during demolition activities as sedimentation, and storm water runoff volume and velocity might increase. Additionally, construction equipment leaks or spills could be transported to receiving water bodies during storm events. Environmental protection measures would minimize adverse effects. If vegetation were reestablished, long-term, minor, beneficial effects would be expected as sedimentation and impervious surface area decrease. Storm water runoff velocity and volume would decrease, which would contribute to an increase in groundwater recharge.

No wetlands are present on the project site; therefore, no direct impacts on wetlands would be expected from this proposed demolition project. Buildings 519, 533, 542, 546, 549 and 552 are within or immediately adjacent to the 100-year floodplain; therefore, the demolition of these facilities would represent a long-term, minor, beneficial effect (FEMA 2003). In the event of a spill SPCC Plan procedures would be implemented to contain and clean up the spill.

Biological Resources. Short-term, negligible, adverse effects on vegetation would be expected from Project D3 due to temporary disturbances (e.g. trampling and limited removal) on adjoining lands and from use of heavy equipment during activities. Project D3 would affect urban upland and non-forested upland communities. Affected vegetation would consist primarily of manicured lawns and associated landscaping. All trees and vegetation associated with Project D3 would be replaced or relocated as applicable and the area reseeded with appropriate species.

Short-term, negligible, adverse effects on wildlife would be expected from Project D3 due to temporary disturbances from noise, demolition activities, and heavy equipment use. High noise events could cause wildlife to engage in escape or avoidance behaviors. Project D3 would affect urban upland and non-forested upland communities where human disturbance is common. Therefore, wildlife in the vicinity would be expected to be habituated to frequent disturbances. Most wildlife species in the vicinity of demolition activities would be expected to quickly recover once the demolition noise and disturbances have ceased. Therefore, no long-term, adverse effects on wildlife would be expected.

Scott AFB would monitor facilities slated for demolition for bat species that establish maternity colonies in anthropogenic structures, such as big brown (*Eptesicus fuscus*), little brown (*Myotis lucifugus*), and evening bats (*Nycticeius humeralis*), if such activities are slated for May through July, when non-volant

juveniles could be present. Project D3 is across the airfield and more than 6,000 feet from occupied Indiana bat habitat along Silver Creek and Cardinal and Scott lakes, where state-listed bird species have been observed in the past. Project D3 would affect urban upland and non-forested upland communities where human disturbance is common. No protected and sensitive species have been observed in the vicinity; therefore, no adverse effects on protected and sensitive species would be expected.

Cultural Resources. None of the 21 buildings proposed for demolition under this project are historic properties contributing to the Scott Field Historic District. These 21 buildings are south of Hangar Drive, with the closest approximately 50 feet from the southern boundary of the Scott Field Historic District. Fourteen of these buildings will not be 50 years or older by 2017 and none are eligible for Cold War associations under Criterion Consideration G. The remaining 7 buildings (i.e., 512, 520, 528, 530, 531, 533, and 543) were built prior to 1967 and all have been evaluated as not eligible. Although these 21 proposed demolitions are outside of the historic district boundaries, they are very close to the southern edge of the Scott Field Historic District. The demolitions could cause short-term, negligible to minor, adverse effects on properties on the southern edge of the historic district during the demolition period, including increased dust, noise, and vibration. These short-term impacts on the historic district from the demolition of these 21 buildings likely would not be classified as adverse under Section 106. **Table 4-10** provides a summary of the NRHP status of the 21 buildings proposed for demolition under Project D3.

The Scott Field Historic District has a campus-like setting and feeling created by the uniformity of landscaping and streetscapes throughout the district. The southwestern corner of the historic district is composed of multi-family residences (i.e., the Georgian Housing Area); the southeastern corner of the historic district and the areas to the south, outside of the district, where the 21 buildings are proposed for demolition are located, have larger administrative buildings, such as warehouses and offices, surrounded by parking lots. Uniform landscaping and streetscaping is not found outside of the historic district. The proposed demolition of the 21 buildings to the south of the historic district would not significantly affect the viewshed to or from the historic district and likely would not be classified as an adverse effect to the setting or feeling of the historic district.

No effects on archaeological sites or TCP would be anticipated because the buildings are in a highly developed area of the installation with previously disturbed ground and not in one of the survey units identified by the SHPO as requiring future consultation.

Socioeconomics and Environmental Justice. Short-term, minor, beneficial effects on socioeconomic resources would be expected from the demolition of 21 buildings and possible remediation of surrounding soil and groundwater. It is assumed that equipment and supplies necessary to complete the demolition and remediation activities would be obtained primarily locally, and local contractors would primarily be used. The demand for workers as part of the demolition would be minor and would not outstrip the local supply of workers as there are more than 83,000 construction workers in the St. Louis, MO-IL MSA. Proposed activities would occur entirely on Scott AFB and, therefore, would have little potential to adversely affect off-installation residents. It is possible that residents of the Georgian housing area, which ranges from 300 feet to 1,100 feet west of the demolition sites under Project D3, could experience short-term intermittent noise associated with the proposed demolition activities. However, this noise would not be a disproportionate adverse effect, and no other environmental justice issues would be anticipated. No long-term effects on socioeconomic resources are expected to result from the proposed demolition of 21 buildings and possible remediation activities.

Infrastructure. Short-term, minor, adverse effects on infrastructure would be expected as a result of demolition debris. Removal of these facilities would result in a decrease in demand for utilities. Long-term, beneficial effects would result from the removal of outdated utilities (e.g., electrical and heating units). Long-term, beneficial effects on storm water systems would result from the decrease in impervious surfaces.

Table 4-10. Buildings Proposed for Demolition under Project D3 with Construction Date and NRHP Status

Building Number	Building Name	Construction Date	NRHP Status
512	WHSE SUP & EQUIP BSE	1953	Evaluated Not Eligible
513	BE MAINT SHOP	1994	Not Eligible; Insufficient Age
514	BE MAINT SHOP	1994	Not Eligible; Insufficient Age
515		1996	Not Eligible; Insufficient Age
516	BE MAINT SHOP	1995	Not Eligible; Insufficient Age
517	BE PAV GRND FCLTY	1993	Not Eligible; Insufficient Age
519	BE STOR CV FCLTY	1977	Not Eligible for Cold War under Criterion Consideration G
520	BE MAINT SHOP	1944	Evaluated Not Eligible
521	BE MAINT SHOP	1989	Not Eligible for Cold War under Criterion Consideration G
522	BE MAINT SHOP	1984	Not Eligible for Cold War under Criterion Consideration G
523	BE MAINT SHOP	1993	Not Eligible; Insufficient Age
528	BSE ENGR ADMIN	1953	Evaluated Not Eligible
530	BSE ENGR ADMIN	1950	Evaluated Not Eligible
531	BSE ENGR ADMIN	1942	Evaluated Not Eligible
533	WHSE SUP & EQUIP BSE	1942	Evaluated Not Eligible
542	BE MAINT SHOP	1981	Not Eligible for Cold War under Criterion Consideration G
543	BE MAINT SHOP	1953	Evaluated Not Eligible
546	BE STOR SHED	1988	Not Eligible for Cold War under Criterion Consideration G
549	BE MAINT SHOP	1984	Not Eligible for Cold War under Criterion Consideration G
552	BE MAINT SHOP	1989	Not Eligible for Cold War under Criterion Consideration G
6354	REC PAVILION	1983	Not Eligible for Cold War under Criterion Consideration G

Hazardous Materials and Wastes. Short-term, negligible, adverse effects associated with hazardous materials and waste would be expected from this project. Project D3 would result in a short-term increase in the use of hazardous materials and petroleum products and the generation of hazardous and petroleum wastes. Contractors would be responsible for the management of these materials, which would be handled in accordance with the Scott AFB Hazardous Materials Management Process; Scott AFB Hazardous Waste Management Plan; and Federal, state, and USAF regulations. Contractors must report the use of hazardous materials to the HAZMAT Pharmacy, including pertinent information (e.g., MSDS).

Short-term, negligible, adverse effects associated with hazardous materials would be expected because Buildings 513, 515, 516, 517, 528, and 533 contain hazardous materials (SAFB 2006c). These hazardous materials would need to be excessed or transferred to the proposed Consolidated Base Civil Engineering and Contracting Complex. Short-term, negligible, adverse effects on hazardous waste management would be expected because Buildings 513, 516, 517, and 533 contain hazardous waste, which would need to be disposed of offsite (SAFB 2006c). Buildings 512, 519, 520, 528, 530, 531, 533 and 543 were all built before 1978. Because of their age, these buildings could contain ACM, LBP, and PCBs (SAFB 2011c). Sampling for these materials would occur prior to any demolition activities so that these materials can be properly characterized, handled, and disposed of in accordance with the Scott AFB Lead-Based Paint Management Plan (SAFB undated), Hazardous Waste Management Plan (SAFB 2008b), and USAF policy. In addition, this project is in the proximity of several ERP sites (SAFB 2011d). This could result in increased exposure during the Proposed Action.

Short-term, negligible, adverse effects would be expected on storage tanks because Buildings 515, 516, and 528 contain ASTs (SAFB 2006c). The demolition of these buildings would require closing or transporting the ASTs to the proposed Consolidated Base Civil Engineering and Contracting Complex.

No long-term, adverse effects on hazardous waste generation would be expected as a result of the proposed demolition of the 21 buildings. Project D3 would result in long-term, negligible, beneficial effects due to the removal or closure of older storage tanks. Long-term, minor, beneficial effects would be expected due to the elevated priority of the ERP contamination due to the proposed demolition. In addition, the elimination of older buildings would result in less exposure to, and maintenance of, ACM, LBP, and PCB-containing equipment.

Safety. Short-term, minor, adverse effects associated with safety could occur during demolition activities. Demolition activities pose an increased risk of demolition-related accidents, but this level of risk would be managed by adherence to established Federal, state, and local safety regulations. Workers would be required to wear protective gear such as ear protection, steel-toed boots, hard hats, gloves, and other appropriate safety gear. Demolition areas would be fenced and appropriately marked with signs. Demolition equipment and associated trucks transporting material to and from demolition sites would be directed to roads and streets that have a lesser volume of traffic. Therefore, no long-term, adverse effects on safety would be expected.

Because of their ages, many of the buildings proposed for demolition under this project should be assumed to contain ACM and LBP. These materials require appropriate characterization, removal, handling, and disposal during demolition activities by qualified personnel. Long-term, beneficial effects on safety would also be experienced from the removal of ACM and LBP materials thus reducing exposure to personnel.

Building 519 is near several ERP sites and, therefore, demolition activities could affect the monitoring of these sites. There is a potential for workers to encounter contamination during demolition activities within ERP sites. If contamination is encountered, it would be handled, stored, transported, and disposed of in accordance with the installation's Hazardous Waste Management Plan and all applicable Federal, state, and local regulations and policies. See **Section 4.4.1.3**, Hazardous Materials and Wastes, for more information regarding the potential for contamination at this location.

4.4.2 Selected Construction Projects

4.4.2.1 C1. Construct and Operate an Explosive Ordnance Proficiency Range

Project C1 would not result in significant effects. The following subsections break down by resource areas the non-significant effects that would result from Project C1.

Noise. As previously discussed, large arms and the use of explosives create impulse noise. The USAF does not provide guidance for impulse noise. Therefore, U.S. Army regulations (Army Regulation 200-1, *Environmental Protection and Enhancement* [U.S. Army 2007]) are utilized in this EA to assess the impact on the noise environment associated with operations associated with Project C1.

Noise exposure levels are depicted visually for analytical purposes as noise contours that connect points of equal value. These noise contours are overlaid on a map of an airfield or range vicinity. The area encompassed by a specified range of noise indicated by the noise contours is a noise zone. Under U.S. Army regulations, there are four noise zones, which include the land use planning zone (LUPZ). **Table 4-11** shows the limits within the noise zones for impulse noise (e.g., large arms, artillery firing, and explosives).

Table 4-11. Impulse DNL Noise Limits for Noise Zones

Noise Zone	Impulse Noise Limit, dBC DNL
LUPZ	57–62
Noise Zone I	< 62
Noise Zone II	62–70
Noise Zone III	> 70

Source: U.S. Army 2007

LUPZ. The LUPZ is used to better predict noise impacts when levels of operations at large caliber weapons ranges are above average. This zone can provide the installation with an adequate buffer for land use planning and can reduce conflicts between the installation's noise-producing activities and the civilian community. This area is acceptable for noise-sensitive land uses.

Noise Zone I. Noise Zone I include the areas around a noise source that are less than 62 dBC DNL from large arms activity. This area is usually acceptable for all types of land use activities.

Noise Zone II. Noise Zone II consists of an area between 62 and 70 dBC DNL from large arms activity. Land within this zone should normally be limited to activities such as industrial, manufacturing, transportation, and resource production. However, if the community determines that land in Noise Zone II must be used for residential purposes, then noise level reduction features of 25 to 30 dB should be incorporated into the design and construction of new buildings.

Noise Zone III. Noise Zone III consists of the area around a noise source that is greater than 70 dBC DNL from large arms activity. The noise levels within Noise Zone III are considered so severe that noise-sensitive land uses should not be considered therein.

Per Army Regulation 200-1, DNL is the primary descriptor for military noise (U.S. Army 2007). However, the use of average noise levels like DNL over a prolonged time period generally does not adequately assess the probability of community noise complaints. Supplemental metrics, such as single event noise data may be employed to provide additional information on the effects of noise from test and training ranges. Peak sound levels from impulse activities are assessed using the guidelines shown in **Table 4-12**.

Short-term, minor, adverse effects on the noise environment would be expected as a result of the construction of the proposed explosive ordnance proficiency range. The noise emanating from construction equipment would be localized, short-term, and intermittent during machinery operations.

Table 4-12. Impulse Noise Guidelines for Peak Sound Levels

Noise Limit, dBP PK15(met)	Risk of Complaints
< 115	Low
115–130	Medium
130–140	High
> 140	Risk of physiological damage to unprotected human ears and structural damage claims.

Source: U.S. Army 2007

Heavy construction equipment would be operated periodically during construction; therefore, noise levels from the equipment would fluctuate throughout the day. The area west of the proposed range is used for airfield activities where the dominant component of the noise environment is from aircraft operations. The land north and west of proposed range is open space (wetlands) within the installation boundary; the land to the south is open space outside of the installation boundary. Populations potentially affected by noise would primarily include USAF personnel at the aircraft O&M and other airfield-related facilities along the eastern edge of the airfield. The closest facility (aircraft hangers) is approximately 1,300 feet away from the proposed construction site, and could experience noise levels of less than 64 dBA.

Long-term, minor to moderate, adverse, effects on the noise environment would be expected as a result of the operation of the proposed explosive ordnance proficiency range. In accordance with AFI 32-3001, *Explosive Ordnance Disposal Program,* the Scott AFB explosive ordnance proficiency range would meet the requirements for storage of hazardous and explosive materials, classified information, and firearms according to DOD 6055.9, *DOD Explosives Safety Standards*; Air Force Manual 91-201, *Air Force Explosives Safety Standards;* and other Federal, state, and local laws (USAF 2007). The explosive ordnance proficiency range is proposed to provide capability for 1.25-pound explosive proficiency training. Therefore, the operation of Project C1 would include predominately the detonation of a 1.25-pound C-4 explosive charge. The remaining detonations would involve explosively actuated EOD tools that use a variety of explosives, such as shotgun shells, sheet explosives, or C-4 loaded water charges. The total explosive content (e.g., the equivalent amount of trinitrotoluene [TNT]) of these materials would be 6 ounces at most per detonation (Nidzgorski 2012).

Approximately four detonations would occur during the average busy month. One of the operating days per month would be the Saturday or Sunday of the monthly Unit Training Assembly weekend (Pinkham 2011).

Average Noise Levels. Noise zones in dBC DNL were developed to analyze land use compatibility using the computerized noise modeling program BNOISE2. BNOISE2 was developed by the U.S. Army Construction Engineering Research Laboratory for the Operational Noise to assess large arms weapons and explosive noise (USACHPPM 2003). The noise zones were modeled for an average busy month of explosive ordnance proficiency training activities. The use of average busy month DNL is appropriate when the operations tempo is significantly different during certain peak periods of the year (U.S. Army 2007).

The operational scenario that was entered into the software modeling program included four detonations per month, of which 90 percent (3.6 detonations per month) were C-4 and 10 percent (0.4 detonations per month) were the explosive content (i.e., the equivalent amount of TNT) of the explosively actuated EOD tools.

As shown on **Figure 4-1**, the Project C1 noise contours of 57 dBC DNL, 62 dBC DNL, and 70 dBC DNL are plotted on a map of the project area. The vast majority of Noise Zone III (greater than 70 dBC DNL) encompasses property within the installation boundary; only approximately 2 acres of the land within Noise Zone III is outside the installation boundary directly south of the proposed range. In accordance with OSHA regulations, personnel accessing the range would wear hearing protection when the range is active, which would provide hearing protection against impacts from high noise levels. Noise Zone II (greater than 62 dBC DNL) encompasses a total of 57 acres of land outside the installation boundary to the south. The LUPZ (57–62 dBC DNL) encompasses a total of 123 acres of land outside the installation boundary to the east, south, and southwest. All of the land outside the installation boundary that is encompassed by the DNL noise zones is open space. No residences or other noise-sensitive land uses are within the DNL noise zones.

Peak Noise Levels. Noise from detonation of explosive ordnance was estimated using BNOISE2. As stated in Army Regulation 200-1, if there are multiple weapon types fired from one location, the single-event level used should be the loudest level that occurs at each receiver location. Therefore, PK15(met) noise levels were estimated using the loudest explosive proposed for use at the explosive ordnance proficiency range (i.e., 1.25 pounds of C-4 explosive).

The specific data that were entered into the BNOISE2 software program (the type of explosive [i.e., C-4], the amount of explosive charge [1.25 pounds], and weather information) are provided in **Appendix F**. Noise levels for a single detonation were estimated for the distances provided below. Peak noise levels resulting from operation of the explosive ordnance proficiency range were estimated as follows:

- Persons accessing the installation boundary approximately 575 feet (0.10 miles) south of the proposed range would likely experience noise levels of approximately 150 dBP PK15(met) from detonation activities.
- Scott AFB personnel accessing the aircraft hangers, approximately 1,312 feet (0.25 miles) west of the proposed range, would likely experience noise levels of approximately 150 dBP PK15(met) from detonation activities if they were outside the building. Since these persons would already be working on the flightline, they would wear hearing protection while outside the building.
- Persons accessing the MFH, approximately 4,660 feet (0.9 miles) southwest of the proposed range, would likely experience noise levels of approximately 133 dBP PK15(met) from detonation activities.
- Persons accessing the residences on the eastern side of Lake Road (the closest off-installation noise-sensitive receptor) approximately 9,760 feet (1.8 miles) east of the proposed range, would likely experience noise levels of approximately 119 dBP PK15(met) from detonation activities.

As shown in **Table 4-12**, peak noise levels from the proposed detonations (119–133 dBP PK15[met]) would be expected to result in a medium risk of noise complaints from populations approximately 1.8 miles from the installation. Noise from the proposed detonations could be considered "unreasonably offensive" under Chapter 40 of the St. Clair County Code of Ordinances (St. Clair County 2006). If St. Clair County determines that the proposed range violates their noise control ordinance, Scott AFB would ask to obtain a permit from the county for the creation of loud noises.

Summary. The DNL (i.e., average noise levels) was estimated to determine land use compatibility adjacent to the explosive ordnance proficiency range. The estimated DNL for the detonation activities associated with the operation of the explosive ordnance proficiency range would result in long-term, minor, adverse impacts on the noise environment. In addition, PK15(met) (i.e., single event noise levels) was assessed to provide additional information on the risk of complaints. As discussed previously, there

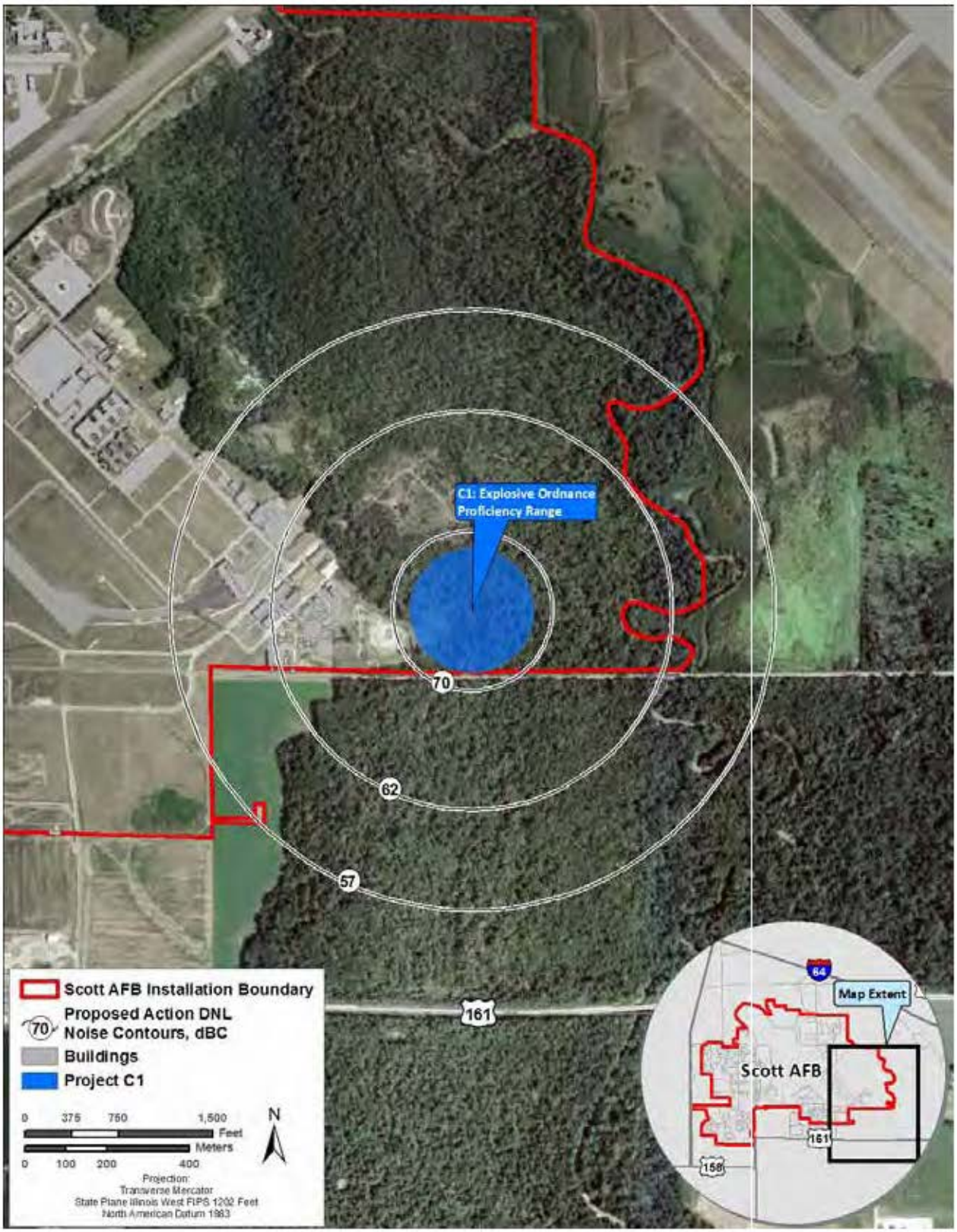


Figure 4-1. Proposed DNL Noise Contours from the Operation of the Proposed Explosive Ordnance Proficiency Range

is a medium risk of complaints from populations approximately 1.8 miles from the installation. However, noise generation from the range would be intermittent (i.e., approximately four detonations per month), would last only for the duration of the detonation, and would diminish the farther the noise sensitive receptors were from the range. During standard proficiency training (i.e., non-emergencies), detonation would be restricted to normal working hours (i.e., between 7:00 a.m. and 5:00 p.m.) (Pinkham 2011). In accordance with Title 35 of the Illinois Administrative Code and the recommendations of AR 200-1, Scott AFB could also inform the public about the installation's explosive ordnance activities prior to the first detonation (State of Illinois 2002, U.S. Army 2007).

Land Use. Long-term, minor, adverse effects on land use would be expected from the construction of the explosive ordnance proficiency range. The proficiency range would be constructed within the existing Open Space land use category, just northeast of the existing EOD training facility in the southeastern portion of the installation. Construction of the explosive ordnance proficiency range would require a land use change to the Maintenance land use category. After changing the land use category, the location of the proficiency range would be compatible with surrounding Maintenance and Open Space uses. Project C1 would not introduce a new land use to the area because explosives' training currently occurs in the vicinity.

The proficiency range is currently proposed at the location of ERP Site LF-01 where there is reported groundwater contamination. The remediation of ERP Site LF-01 will consist of the construction of a landfill cap, which is anticipated to commence in the Spring of 2012 and be complete by October 2012. As part of the remedy, land use controls will be implemented to ensure the long-term integrity of the landfill cap. The land use controls at ERP Site LF-01 will prevent the use of the site for any purpose other than open space and detonation training at the explosive ordnance proficiency range (Project C1) (Collingham, R. 2012). Construction and operation of the proficiency range would occur after completion of the landfill cap.

The proposed construction and operation of the explosive ordnance proficiency range could occur in other areas of compatible land use, likely Open Space areas in the eastern portion of the installation due to the need for a 500-foot radius CZ. However, surrounding land uses and environmental constraints such as airfield infrastructure, CZ, and imaginary surfaces; munitions, QD arcs, and other safety criteria; and AT/FP setback requirements must be considered prior to siting and construction.

Air Quality. Short-term, minor, adverse effects on air quality would be expected from the construction of the proposed Explosive Ordnance Proficiency Range. Construction activities would result in temporary effects on local and regional air quality, primarily from site-disturbing activities, the operation of construction and paving equipment and haul trucks transporting fill and building materials, and workers commuting to the job site. Appropriate fugitive dust-control measures would be employed during construction activities to suppress emissions. All emissions associated with construction activities would be temporary in nature. Emissions from the construction of the proposed Explosive Ordnance Proficiency Range are summarized in **Table 4-13**. Emissions estimation spreadsheets and a summary of methodology used are included in **Appendix D**.

Long-term, negligible, adverse effects on air quality would be expected from the operation of the proposed Explosive Ordnance Proficiency Range. Air emissions would be produced from the detonation of explosives at the proposed Explosive Ordnance Proficiency Range. The production of air emissions would depend on several factors including the frequency of detonations, the type of explosive material, the amount of explosive material, and the type of charges used. Scott AFB anticipates that most detonations would be 1.25-pound blocks of C-4 explosive detonated with electric or non-electric caps. Detonations would occur on average four times each month. Based on this type and frequency of use, only negligible air quality effects would be anticipated and quantitative air emission estimates are not

Table 4-13. Estimated Air Emissions Resulting from Project C1

Activity	NO_x tpy	VOC tpy	CO tpy	SO_2 tpy	PM_{10} tpy	$PM_{2.5}$ tpy	CO_2 tpy
Construction Combustion	2.672	0.234	1.162	0.212	0.189	0.184	303.930
Construction Fugitive Dust	-	-	-	-	10.422	1.042	-
Haul Truck On-Road	0.313	0.226	0.919	0.025	0.372	0.097	79.148
Construction Commuter	0.041	0.041	0.372	0.000	0.004	0.002	49.306
Total C1 Emissions	**3.026**	**0.501**	**2.453**	**0.237**	**10.987**	**1.325**	**432.383**
Percent of MSLI AQCR Inventory	0.002	0.001	< 0.001	< 0.001	0.007	0.004	0.00017*

Note: * Percent of State of Illinois CO_2 emissions.

necessary. It is not expected that emissions from Project C1 would contribute to or affect local or regional attainment status with respect to the NAAQS.

Geological Resources. The proposed Explosive Ordnance Proficiency Range would be expected to result in short-term, minor, and long-term, minor to moderate, adverse effects on geology and soils. Short-term impacts, occurring during construction activities, would result from disturbance of soils, clearing of vegetation, grading, paving, and excavation or trenching. Clearing of vegetation would increase erosion and sedimentation potential.

As a result of constructing the barricades, holding areas, and access roads, long-term minor to moderate, adverse effects would occur as soils would be compacted, and soil structure disturbed and modified. Soil productivity, which is the capacity of the soil to produce vegetative biomass, would decline in disturbed areas and be eliminated in those areas within the footprint of roadways. Localized surface soil structure would be permanently altered once charges have detonated. Unless the soil is periodically compacted after explosives have been detonated, the soil would be less compacted, which could contribute to an increase in erosion caused by wind and water eroding bare, susceptible soils. Loss of soil structure due to compaction from foot and vehicle traffic could result in changes in drainage patterns. Soil erosion and sediment control measures would be included in site plans to minimize long-term erosion and sediment production at each site. Use of storm water control measures that favor reinfiltration would minimize the potential for erosion and sediment production as a result of future storm events.

The Wakeland silt loam is the only soil mapped at the site of the proposed Explosive Ordnance Proficiency Range. The soil was analyzed for building construction limitations associated with shallow excavations and local roads, and was considered to be very limited due to flooding, depth to the saturated zone, and frost action. Frost action involves cycles of freezing and thawing of water in surface pores, cracks, and other openings, which can result in heaving of surfaces to produce uneven support of a pavement. Environmental protection measures should be implemented to lessen these constraints, and site-specific soil testing should be conducted prior to project implementation.

In addition, the Wakeland silt loam is a prime farmland soil if drained and either protected from flooding or not frequently flooded during the growing season. However, because this site is a former sanitary landfill, the soil has been previously disturbed and modified, and no agricultural use of this land occurs or is planned to occur. Therefore, the areas where these soils occur are not available for use in agriculture and would not be considered prime farmland.

The proposed site for the Explosive Ordnance Proficiency Range is on ERP Site LF-01, the Scott AFB landfill. Soils at the site are contaminated with VOC, semi-VOC, heavy metals, PCBs, pesticides, and

herbicides. The landfill is proposed to be capped in October 2012 (SAFB 2011d). Prior to construction activities, soils would be sampled to determine the extent of contamination and remediated in accordance with Federal, state, and installation regulations. If results of the sampling indicated the presence of contamination, remediation efforts would take place prior to commencement of construction activities. The handling, storage, transportation, and disposal of hazardous substances would be conducted in accordance with applicable Federal, state, and local regulations; USAF regulations; and Scott AFB management procedures. No effects on sediments or geology would be anticipated.

Structures would be constructed consistent with building code requirements for development in a region with a seismic rating of approximately 20 to 30 percent g. This would minimize potential for adverse effects on human life associated with earthquakes and development in the area.

Water Resources. Short- and long-term, minor, adverse effects on water resources would be expected from Project C1. This location is in proximity to the 100-year floodplain, wetlands, and potentially sensitive habitats; however, construction would not disturb such. Short-term effects could occur from the removal of vegetation and grading and excavation of soil for construction of the facility and installation of barricades, holding areas, fences, and access roads. Long-term, minor, adverse effects on water resources would occur from the compaction of soils due to foot and vehicle traffic, which could result in a decrease in soil permeability and water infiltration rates and potential subsequent alteration of drainage patterns.

Disturbance of soil and removal of vegetation associated with development could result in erosion of disturbed soils and transport of sediment and other pollutants into nearby water bodies during storm water flow events. Maintaining onsite storm water infiltration during construction activities would allow groundwater to recharge and minimize storm water runoff. Long-term, minor, adverse impacts would occur from an increase in soil compaction and impervious surfaces, which would lead to increased erosion and sedimentation rates, and would contribute to increased storm water runoff volume and velocity. This project would disturb less than one acre of land, so an NPDES construction permit would not be required.

While mitigation measures are not required, effects on adjacent wetlands and other water resources would be avoided through design, siting, and proper implementation of environmental protection measures to ensure no effects on surrounding wetlands or other waters of the United States. These environmental protection measures include flagging the wetland boundary, installing silt fencing, establishing a wetland buffer, and following policies and procedures as detailed in the ESCPs, SWPPPs, and SPCCs. Any necessary agency coordination and required permits would be obtained prior to commencing any construction activities. Effects on wetlands and other waters of the United States would not be significant.

In the event of a spill or leak of fuel or other contaminants, there could be adverse effects on the receiving water bodies. All fuels and other potentially hazardous materials would be contained and stored appropriately. In the event of a spill, procedures identified in the installation's SPCC Plan would be followed to quickly contain and clean up a spill. Environmental protection measures identified in the SPCC Plan would minimize the potential for and extent of associated contamination.

Biological Resources. Long-term, negligible, adverse effects on vegetation would be expected from the construction of Project C1. Adverse effects resulting from the permanent loss of vegetation associated with Project C1 would be negligible. There are few opportunities for historic native plant communities to occur on Scott AFB and there have been no observations made of any sensitive vegetative species occurring on the installation. All trees and vegetation impacted from construction activities would be replaced or relocated as applicable. All ground disturbed during construction activities that does not include site improvements would be reseeded with appropriate species.

Project C1 would have short-term, negligible to minor, indirect, adverse effects on wildlife due to temporary disturbances from noise, construction activities, and heavy equipment use. Project C1 would primarily affect wildlife species associated with the floodplain and adjacent riparian forest. Most wildlife species near Project C1 would recover quickly once the construction noise and disturbances have ceased. Additionally, Scott AFB is heavily developed and aircraft operations are frequent, so wildlife inhabiting the Project C1 site should be habituated to noise disturbances.

Project C1 would have long-term, negligible to minor, adverse effects on wildlife due to the permanent loss of habitat. Project C1 is in proximity to the 100-year floodplain of Silver Creek; however, much of this area has been previously disturbed and is not considered to be high-value habitat. Therefore, the loss of habitat associated with Project C1 would be expected to be minor. All trees and vegetation impacted from construction activities would be replaced or relocated as applicable. Operation of the proposed explosive ordnance proficiency range might have long-term, minor, direct, adverse impacts on wildlife species associated with the Silver Creek riparian corridor due to noise disturbances.

Project C1 would have short-term, negligible to minor, indirect, adverse effects on Indiana bats due to temporary disturbances from noise and heavy equipment use associated with construction activities. Indiana bats near Project C1 would recover quickly once the construction noise and disturbances have ceased. Additionally, Scott AFB is heavily developed and aircraft operations are frequent, so Indiana bats inhabiting the Project C1 site should be habituated to noise disturbances.

Project C1 would have long-term, moderate, adverse effects on the Indiana bat due to noise disturbances associated with the operation of the proposed facility. These disturbances would likely occur during daylight hours at variable distances from occupied roost trees (see **Figure 4-1** for noise impacts). Indiana bats roosting at greater distances from the disturbance could initially be startled by the noise in the distance. Indiana bat habitat in the Silver Creek riparian corridor lies between Scott AFB and the MidAmerica Airport. These areas are heavily developed and aircraft operations are frequent so Indiana bats currently inhabiting the installation would be habituated to some types and thresholds of noise disturbance. Studies at the Indianapolis International Airport showed that an Indiana bat maternity colony persisted in an area subjected to high noise levels associated with aircraft overflights (Ritzi et al. 2005, Sparks et al. 2005). However, at lesser distances and increasing noise or vibration levels, Indiana bats could be startled causing them to flee from their roost, which could increase the risks of mortality, predation, and abandonment of non-volant young. Indiana bats can change roosting areas by temporarily or permanently abandoning their current roost tree and seek areas further away from the active disturbance area (USFWS 2002).

Scott AFB already has conducted consultation with the USFWS under Section 7 of the ESA for Project C1. The USFWS provided concurrence that this project is not likely to adversely affect the Indiana bat. **Appendix H** contains documentation of the USFWS consultation.

Erosion and runoff from construction activities could increase the amount of sedimentation to wetlands and streams and could potentially impact the production of insects associated with aquatic habitats, and wildlife species that use this prey base. Adverse effects on aquatic resources would be avoided through design and environmental protection measures (see **Section 4.3.6**). These measures would minimize movement of sediment to streams that could provide insect prey for wildlife species.

Cultural Resources. No impacts on cultural resources under NEPA or effects on historic properties under NHPA would be expected from the proposed Explosive Ordnance Proficiency Range. The proposed project area is in a lightly developed area at the south end of the airfield, across from the Scott Field Historic District at a distance of approximately 1.5 miles. It is not near any historic buildings or structures evaluated NRHP-eligible or buildings 50 years of age or older that are unevaluated for NRHP

eligibility. This area was previously surveyed and is not within one of the survey units identified by the SHPO as requiring consultation. If an unanticipated discovery of archaeological materials is made, work would be temporarily halted and the procedures outlined in the ICRMP would be followed.

Socioeconomics and Environmental Justice. Short-term, negligible to minor, beneficial effects on socioeconomic resources would be expected from the construction of the explosive ordnance proficiency range and possible remediation of surrounding soil and groundwater. It is assumed that equipment and supplies necessary to complete the construction activities would be obtained primarily locally, and local contractors would primarily be used. The demand for workers as part of the construction would be minor and would not outstrip the local supply of workers as there are more than 83,000 construction workers in the St. Louis, MO-IL MSA. The proposed construction and remediation activities would occur entirely on Scott AFB in a non-residential portion of the installation, and would have little potential to adversely affect on- or off-installation residents. Therefore, no environmental justice issues would be anticipated. No long-term effects on socioeconomic resources are expected to result from the construction of the proposed explosive ordnance proficiency range and possible remediation of surrounding soil and groundwater contamination from the former base landfill (ERP Site LF-01).

Infrastructure. Short-term, adverse effects would be expected as a result of debris generated during construction activities. Construction debris is generally composed of clean materials, and most of this waste would be recycled. However, debris that is not recycled would be landfilled, which would be considered a long-term, irreversible, adverse effect.

Long-term, negligible, adverse effects would be expected because utility demand would increase very slightly in terms of electricity for lighting. This change in utility demand would be negligible when compared with total installation usage.

Hazardous Materials and Waste. Short-term, negligible, adverse effects associated with hazardous materials and waste would be expected from this project. Project C1 would result in a short-term increase in the use of hazardous materials and petroleum products and the generation of hazardous and petroleum wastes. Contractors would be responsible for the management of these materials, which would be handled in accordance with the Scott AFB Hazardous Materials Management Process; Scott AFB Hazardous Waste Management Plan; and Federal, state, and USAF regulations. Contractors must report the use of hazardous materials to the HAZMAT Pharmacy, including pertinent information (e.g., MSDS). Short-term, minor, adverse effects would be expected on the ERP because ERP Site LF-01 is in the proximity of the proposed construction and would increase exposure to contractors during the construction. The remediation of ERP Site LF-01 will consist of the construction of a landfill cap, which is anticipated to commence in the Spring of 2012 and be complete by October 2012. Construction and operation of the proficiency range would occur after completion of the landfill cap.

Long-term, minor, adverse effects would be expected from the eventual accumulation of spent ordnance at the range. If ERP Site LF-01 is not fully remediated, engineering controls would need to be implemented to ensure that soil contamination from ERP Site LF-01 is not impacted and spread from the ordnance explosions. Long-term, minor, beneficial effects would be expected due to the elevated priority of the ERP contamination due to proposed construction.

Safety. Short-term, negligible to minor, adverse effects associated with safety could occur during construction activities. Construction activities pose an increased risk of construction-related accidents, but this level of risk would be managed by adherence to established Federal, state, and local safety regulations. Workers would be required to wear protective gear such as ear protection, steel-toed boots, hard hats, gloves, and other appropriate safety gear. Construction areas would be fenced and appropriately marked with signs. Construction equipment and associated trucks transporting material to

and from construction sites would be directed to roads and streets that have a lesser volume of traffic. Therefore, no long-term, adverse effects on safety would be expected.

The proposed Explosive Ordnance Proficiency Range is within ERP Site LF-01 and, therefore, construction activities could affect the monitoring of that site. There is a potential for workers to encounter contamination during construction activities within ERP sites. If contamination is encountered, it would be handled, stored, transported, and disposed of in accordance with the installation's Hazardous Waste Management Plan and all applicable Federal, state, and local regulations and policies. See **Section 4.4.2.1**, Hazardous Materials and Wastes, for more information regarding the potential for contamination at this location.

Construction of the proposed Explosive Ordnance Proficiency Range would have long-term, beneficial impacts on safety. Construction of the proposed range would include appropriate barricades, holding areas, fences, and access roads.

Construction activities associated with the proposed Explosive Ordnance Proficiency Range would occur within a QD arc associated with the EOD area. To avoid potential impacts on construction workers and the installation mission, this project should be coordinated with the installation Safety Office.

4.4.2.2 C2. Construct New DISA Facility

Project C2 would not result in significant effects. The following subsections break down by resource areas the non-significant effects that would result from Project C2.

Noise. Short-term, minor, adverse effects on the noise environment would be expected as a result of the construction of this facility. The noise emanating from construction equipment would be localized, short-term, and intermittent during machinery operations. Heavy construction equipment would be operated periodically during construction; therefore, noise levels from the equipment would fluctuate throughout the day. This area of Scott AFB consists of open space and is not currently used. Populations potentially affected by increased noise levels would include primarily the USAF personnel in the maintenance buildings approximately 150 feet to the south and the users of the golf course approximately 1,000 feet to the north and west of the proposed construction site. Expected noise levels experienced by people outside at 150 feet would be 81–85 dBA and at 1,000 feet would be 64–66 dBA.

Project C2 would consolidate functions currently occurring in three buildings in other parts of the installation into the new DISA Facility in the undeveloped former Cardinal Creek MFH neighborhood in the northern portion of the installation. Operation of the facility would shift vehicle traffic from existing developed areas, and consolidate it in a portion of the installation that does not currently experience high traffic volume. Therefore, long-term, negligible, adverse effects on the noise environment could result from increased vehicle traffic.

Land Use. Short-term, minor, adverse and long-term, negligible, beneficial effects on land use would be expected from construction of the new DISA Facility in the former Cardinal Creek MFH neighborhood. The construction of this facility would be within the Open Space land use category, but would require a land use change to the Administration category. This project and associated land use change would be consistent with the Scott AFB IDP, which identifies the future land use of the former Cardinal Creek MFH neighborhood as Administration in preparation that the area be redeveloped. Project C2 is also identified as one of the main future development projects in the administrative district area (SAFB 2011a). After changing the land use, the location of the new DISA Facility would be compatible with future land use at its proposed location and with surrounding Administration areas. Project C2 is at ERP site SS-25. There are currently no land use controls at ERP Site SS-25 (i.e., the former Cardinal Creek MFH neighborhood) but soil disturbance at ERP Site SS-25 is restricted. Because soil disturbance

would be required at ERP Site SS-25 in order to construct the proposed DISA Facility, the top 6 to 18 inches of soil, (depending on the actual location of the disturbance), would have to be removed and disposed of at a licensed landfill. Construction of the new DISA Facility would have beneficial effects on the installation's organizational functions by consolidating functions currently occurring in three older, undersized buildings into one modern building with sufficient space.

The proposed construction and operation of the DISA Facility could occur in other compatible areas of the Administration land use category, but environmental constraints such as airfield infrastructure, CZ, and imaginary surfaces; munitions, QD arcs, and other safety criteria; and AT/FP setback requirements must be considered prior to siting and construction.

Air Quality. Short-term, minor, adverse effects on air quality would be expected from the construction of the proposed DISA Facility. Construction activities would result in temporary effects on local and regional air quality, primarily from site-disturbing activities, the operation of construction and paving equipment and haul trucks transporting excavation material and building materials to and from the work site, and workers commuting to the job site. Appropriate fugitive dust-control measures would be employed during construction activities to suppress emissions. All emissions associated with construction activities would be temporary in nature.

Long-term, minor, adverse effects on air quality would be expected from the use of natural gas boilers to provide comfort heating to the proposed facility and the use of two emergency electrical generators. While these operating emissions would increase the overall air emissions from Scott AFB, the added emissions would be offset by a reduction in air emissions from the demolition of older buildings that use more emissions intensive heating systems and emergency electrical generators. It is not expected that emissions from Project C2 would contribute to or affect local or regional attainment status with respect to the NAAQS. Emissions from the construction and operation of the proposed DISA Facility are summarized in **Table 4-14**. Emissions estimation spreadsheets and a summary of methodology used are included in **Appendix D**.

Table 4-14. Estimated Air Emissions Resulting from Project C2

Activity	NO_x tpy	VOC tpy	CO tpy	SO_2 tpy	PM_{10} tpy	$PM_{2.5}$ tpy	CO_2 tpy
Construction Combustion	4.829	0.574	2.128	0.382	0.347	0.336	547.434
Construction Fugitive Dust	-	-	-	-	2.064	0.206	-
Haul Truck On-Road	0.631	0.456	1.855	0.050	0.751	0.195	159.806
Construction Commuter	0.132	0.132	1.190	0.002	0.013	0.008	157.778
Emergency Generators	1.561	0.044	0.415	0.493	0.049	0.049	80.483
Total C2 Emissions	**7.153**	**1.206**	**5.588**	**0.927**	**3.224**	**0.794**	**945.501**
Percent of MSLI AQCR Inventory	0.005	0.001	0.001	< 0.001	0.002	0.003	0.00038*

Note: * Percent of State of Illinois CO_2 emissions.

Geological Resources. Impacts on soil would be similar for Project C2 as those discussed for Project C1, but to a lesser extent as no continuous disturbance to soil would occur. Therefore, effects would be short- and long-term, minor, and adverse. The soil was analyzed for building construction limitations associated with small commercial buildings. Of the soils mapped at the site, three (the Bethalto silt loam, Winfield silt loam [5 to 10 percent slopes], and the Wakeland silt loam) are considered very limited due

to depth to the saturated zone, shrink-swell potential, slope, and flooding. The fourth soil, the Winfield silt loam, 2 to 5 percent slopes, is rated somewhat limited due to shrink-swell potential (USDA-NRCS 2011). Environmental protection measures should be implemented to lessen these constraints, and site-specific soil testing should be conducted prior to project implementation.

All soils mapped at the site are normally considered prime farmland. The Bethalto silt loam is a prime farmland, the Winfield silt loam (2 to 5 percent slope) is a prime farmland, the Winfield silt loam (5 to 10 percent slope) is a farmland of statewide importance, and the Wakefield silt loam is a prime farmland if drained and either protected from flooding or not frequently flooded during the growing season. However, because this site is a former MFH neighborhood, this land has been previously disturbed and modified, and no agricultural use of this land occurs or is planned to occur. Therefore, the areas where these soils occur are not available for use in agriculture and would not be considered prime farmland.

Project C2 overlaps with ERP Site SS-25. Further remediation consisting of removal of the contaminated soil would be necessary prior to the implementation of Project C2.

Section 438 of the EISA would be adhered to so that pre- and post-development hydrology would be equal (**Section 3.5**). The site would be constructed with storm water controls favoring methods that allow for storm water to reenter the groundwater system rather than leaving the site as surface flow. Use of storm water control measures that favor reinfiltration in this way would minimize the potential for erosion and sediment production as a result of future storm events.

Water Resources. Short- and long-term, minor, adverse effects on water resources would be expected from Project C2. Adverse effects would occur from the removal of vegetation and excavation of soil for construction of the facility and installation of utilities, resulting in increased sedimentation and storm water runoff velocity. Long-term, minor, adverse effects on water resources would occur from the compaction of soils due to foot and vehicle traffic could result in a decrease in soil permeability and water infiltration rates, and potential subsequent alteration of drainage patterns. A decrease in soil permeability and water infiltration associated with compaction can reduce the rate and volume of groundwater recharge in the affected area. Decreased soil permeability would alter natural storm water flow regimes. While the reduction in soil permeability and water infiltration rates as a result of soil compaction is an adverse effect, the reduction of recharge area and rate of recharge for the groundwater basins would be negligible when compared with the total recharge area that is available.

According to the 2009 Wetland Delineation, no wetlands are on or adjacent to the site of Project C2, although the site is near Cardinal Creek. While mitigation measures would not be required, impacts on the stream and other water resources would be avoided through design, siting, and proper implementation of environmental protection measures to ensure no effects on surrounding waters. Project C2 is not within the 100-year floodplain.

In the event of a spill or leak of fuel or other contaminants, there might be adverse effects on the receiving water bodies. All fuels and other potentially hazardous materials would be contained and stored appropriately. In the event of a spill, procedures identified in the installation's SPCC Plan would be followed to quickly contain and clean up a spill. Environmental protection measures identified in the SPCC Plan would minimize the potential for and extent of associated contamination.

Biological Resources. Construction for Project C2 would have short-term, negligible, adverse effects on vegetation. Project C2 is in a previously disturbed area of Scott AFB and would primarily affect urban upland communities composed of nonnative, regularly mowed grasses and scattered landscaping trees and shrubs. There are few opportunities for historic native plant communities to occur on Scott AFB and there have been no observations made of any sensitive vegetative species occurring on the installation.

All trees and vegetation impacted from construction activities would be replaced or relocated as applicable. All ground disturbed during construction activities that does not include site improvements will be reseeded with appropriate species.

Project C2 would have short-term, negligible to minor, indirect, adverse effects on wildlife due to temporary disturbances from noise, construction activities, and heavy equipment use. Project C2 is in an improved area of Scott AFB and would primarily affect urban upland communities where human disturbance is common. Therefore, wildlife in the vicinity would be expected to be habituated to frequent disturbances. Most wildlife species near Project C2 would quickly recover once the construction noise and disturbances have ceased. Project C2 would have long-term, negligible to minor, adverse effects on wildlife due to the permanent loss of habitat. Project C2 is located within the developed portion of the installation and would not have any effect on Federal- or state-listed species or suitable habitat.

Erosion and runoff from construction activities could increase the amount of sedimentation to wetlands and streams and could impact the production of insects associated with aquatic habitats, and wildlife species that use this prey base. Adverse effects on aquatic resources would be avoided through design and environmental protection measures s (see **Section 4.3.6**). These measures would minimize movement of sediment to streams that could provide insect prey for wildlife species.

Cultural Resources. No impacts on cultural resources under NEPA or effects on historic properties under NHPA would be expected from the proposed construction of the new DISA Facility. The proposed project area is not near any historic buildings or structures evaluated NRHP-eligible or buildings 50 years of age or older that are unevaluated for NRHP eligibility. This proposed project is not within one of the survey units identified by the SHPO for future consultation. If an unanticipated discovery of archaeological materials is made, work would be temporarily halted and the procedures outlined in the ICRMP would be followed.

Socioeconomics and Environmental Justice. Short-term, minor, beneficial effects on socioeconomic resources would be expected from the construction of the new DISA facility and remediation of contaminated soil at the site. It is assumed that equipment and supplies necessary to complete the construction and clean-up activities would be obtained primarily locally, and local contractors would primarily be used. The demand for workers as part of the construction would be minor and would not outstrip the local supply of workers as there are more than 83,000 construction workers in the St. Louis, MO-IL MSA. The proposed construction and remediation activities would occur entirely on Scott AFB in a non-residential portion of the installation, and would have little potential to adversely affect on- or off-installation residents. While the traffic routes used by future personnel to access the new DISA facility have not been determined, long-term operation of the facility could increase off-installation traffic patterns leading to the Cardinal Creek Gate in the northern portion of Scott AFB. However, the area north of the Cardinal Creek Gate is generally undeveloped and does not have any residential developments. Therefore, no environmental justice issues would be anticipated. No long-term effects on socioeconomic resources are expected to result from the construction of the new DISA facility and remediation of soil at the proposed site.

Infrastructure. Short-term, adverse effects on infrastructure would be expected as a result of debris generated during construction activities. Construction debris is generally composed of clean materials, and most of this waste would be recycled. However, debris that is not recycled would be landfilled, which would be considered a long-term, irreversible, adverse effect.

Long-term, negligible, adverse effects would be expected because utility demand would increase slightly due to the increased installation footprint. However, this change in utility demand would be negligible

when compared with total installation usage. In addition, the building would be designed in order to achieve LEED Silver certification; therefore, state-of-the-art energy efficiency would be expected.

This project would increase the impervious surface areas and would be expected to result in long-term, minor, direct, adverse effects on storm water management. However, the proposed project might use sustainable storm water management techniques to achieve LEED Silver certification.

The function of this building would consolidate the functions of three older underutilized buildings and, hence negligible, long-term, adverse effects might occur by altering traffic patterns.

Hazardous Materials and Waste. Short-term, negligible, adverse effects associated with hazardous materials and waste would be expected from this project. Project C2 would result in a short-term increase in the use of hazardous materials and petroleum products and the generation of hazardous and petroleum wastes. Contractors would be responsible for the management of these materials, which would be handled in accordance with the Scott AFB Hazardous Materials Management Process; Scott AFB Hazardous Waste Management Plan; and Federal, state, and USAF regulations. Contractors must report the use of hazardous materials to the HAZMAT Pharmacy, including pertinent information (e.g., MSDS). Short-term, moderate, adverse effects would be expected from the construction of the new DISA Facility due to its potential to disrupt ERP Site SS-25, which has pesticide-contaminated soil. Appropriate remedial action and soil disposal practices would need to be considered prior to and during construction.

No long-term, adverse effects associated with hazardous materials and wastes would be anticipated from operation of the proposed DISA Facility, and the installation's waste streams would not be altered. Long-term, minor, beneficial effects would be expected by the elevated priority of ERP Site SS-25 due to proposed construction.

Safety. Short-term, negligible to minor, adverse effects associated with safety could occur during construction activities. Construction activities pose an increased risk of construction-related accidents, but this level of risk would be managed by adherence to established Federal, state, and local safety regulations. Workers would be required to wear protective gear such as ear protection, steel-toed boots, hard hats, gloves, and other appropriate safety gear. Construction areas would be fenced and appropriately marked with signs. Construction equipment and associated trucks transporting material to and from construction sites would be directed to roads and streets that have a lesser volume of traffic. Therefore, no long-term, adverse effects on safety would be expected.

The proposed DISA Facility is located within ERP Site SS-25 and, therefore, construction activities could affect the monitoring of that site. There is a potential for workers to encounter contamination during construction activities within ERP sites. If contamination is encountered, it would be handled, stored, transported, and disposed of in accordance with the installation's Hazardous Waste Management Plan and all applicable Federal, state, and local regulations and policies.

4.4.2.3 C3. Construct New Fitness Facility

Project C3 would not result in significant effects. The following subsections break down by resource areas the non-significant effects that would result from Project C3.

Noise. Short-term, minor, adverse effects on the noise environment would be expected as a result of the construction of this facility. The noise emanating from construction equipment would be localized, short-term, and intermittent during machinery operations. Heavy construction equipment would be operated periodically during construction; therefore noise levels from the equipment would fluctuate throughout the day. The proposed site of the new fitness facility is currently occupied by similar facilities used for community and outdoor recreation purposes. The populations potentially affected by increased

noise levels would primarily include USAF personnel in surrounding buildings approximately 75 feet to the south (Building 1989) and 275 feet to the south (Building 1990), and persons using the running track approximately 275 to the west. Expected noise levels experienced by people outside at 75 feet and 275 feet would be slightly less than 90–94 dBA and 78–82 dBA, respectively.

No change in operations would be expected because construction of the new fitness facility would be replacing existing fitness/recreation facilities. Therefore, no long-term effects on the noise environment are anticipated.

Land Use. Long-term, minor, adverse effects on land use would be expected from construction and operation of the new fitness facility. The construction of this facility would be within the Outdoor Recreation and Community land use category. While a fitness facility is compatible with Outdoor Recreation, it would more accurately be categorized as Community. Therefore, construction of a new fitness facility at the proposed site might require a land use change to the Community category. Project C3 would be consistent with the Scott AFB IDP, which identifies future land use at the proposed site as Community Service and Project C3 as one of the main future development projects (SAFB 2011a). The location and use of the new fitness facility would also be compatible with future surrounding land uses of Community (Service and Commercial) and Outdoor Recreation areas, as well as nearby Housing (Unaccompanied and Accompanied) and Administrative areas.

The proposed construction and operation of the fitness facility could occur in other compatible areas of the Community or Outdoor Recreation land use categories, but environmental constraints such as noise zones; airfield infrastructure, CZs, and imaginary surfaces; munitions, QD arcs, and other safety criteria; and AT/FP setback requirements must be considered prior to siting and construction.

Air Quality. Short-term, minor, adverse effects on air quality would be expected from the construction of the proposed Fitness Facility. Construction activities would result in temporary effects on local and regional air quality, primarily from site-disturbing activities, the operation of construction and paving equipment and haul trucks transporting excavation material and building materials to and from the work site, and workers commuting to the job site. Appropriate fugitive dust-control measures would be employed during construction activities to suppress emissions. All emissions associated with construction activities would be temporary in nature. Emissions from the construction of the proposed Fitness Facility are summarized in **Table 4-15**. Emissions estimation spreadsheets and a summary of methodology used are included in **Appendix D**.

Table 4-15. Estimated Air Emissions Resulting from Project C3

Activity	NO_x tpy	VOC tpy	CO tpy	SO_2 tpy	PM_{10} tpy	$PM_{2.5}$ tpy	CO_2 tpy
Construction Combustion	4.829	0.568	2.128	0.382	0.347	0.336	547.434
Construction Fugitive Dust	-	-	-	-	1.947	0.195	-
Haul Truck On-Road	0.513	0.371	1.508	0.040	0.610	0.159	129.956
Construction Commuter	0.132	0.132	1.190	0.002	0.013	0.008	157.778
Total C3 Emissions	**5.475**	**1.071**	**4.826**	**0.424**	**2.916**	**0.698**	**835.168**
Percent of MSLI AQCR Inventory	0.004	0.001	0.001	< 0.001	0.002	0.002	0.00034*

Note: * Percent of State of Illinois CO_2 emissions.

Long-term, minor, adverse effects on air quality would be expected from the use of natural gas boilers to provide comfort heating to the proposed facility. While these operating emissions would increase the overall air emissions from Scott AFB, the added emissions would be offset by a reduction in air emissions from the demolition of older buildings that use more emissions-intensive heating systems. It is not expected that emissions from Project C3 would contribute to or affect local or regional attainment status with respect to the NAAQS.

Geological Resources. Effects on soil would be similar to those effects discussed for Project C2 and would be short- and long-term, minor, and adverse. The Mascoutah silty clay loam is the only soil mapped within the construction area for Project C3. The soil was analyzed for building construction limitations associated with small commercial buildings and is considered very limited due to ponding, depth to the saturated zone, and shrink-swell potential (USDA-NRCS 2011). Environmental protection measures should be implemented to lessen these constraints, and site-specific soil testing should be conducted prior to project implementation.

In addition, the Mascoutah silty clay loam is normally considered to be prime farmland if drained. However, because this site has been previously disturbed and modified, and no agricultural use of this land occurs or is planned to occur, the soil mapped at the site is not available for use in agriculture and would not be considered prime farmland.

Water Resources. Effects on water resources would be comparable to the effects from Project C2 and would be short- and long-term, minor, and adverse. Short-term, minor, adverse effects would occur from compacting, grading, and removing vegetation, resulting in increased soil erosion, sedimentation, and storm water runoff volume and velocity. Adverse effects would occur from the removal of vegetation and excavation of soil for construction of the facility and installation of utilities, resulting in increased sedimentation and storm water runoff velocity. Long-term, minor, adverse effects on water resources would occur from the compaction of soils due to foot and vehicle traffic, which could result in a decrease in soil permeability and water infiltration rates and subsequent alteration of drainage patterns. A decrease in soil permeability and water infiltration associated with compaction can reduce the rate and volume of groundwater recharge in the affected area. Decreased soil permeability would alter natural storm water flow regimes.

No wetlands are present on the project site; therefore, no direct impacts on wetlands would be expected from this proposed construction project. In the event of a spill, SPCC Plan procedures would be implemented to contain and clean up the spill. This project would disturb greater than one acre of land, and an NPDES construction permit would be required. Project C3 is not within the 100-year floodplain.

Biological Resources. Construction for Project C3 would have short-term, negligible, adverse effects on vegetation. Project C3 is in a previously disturbed area of Scott AFB and would primarily affect urban upland communities comprised of nonnative regularly mowed grasses and scattered landscaping trees and shrubs. There are few opportunities for historic native plant communities to occur on Scott AFB and there have been no observations made of any sensitive vegetative species occurring on the installation. All trees and vegetation impacted from construction activities would be replaced or relocated as applicable. All ground disturbed during construction activities that does not include site improvements will be reseeded with appropriate species.

Project C3 would have short-term, negligible to minor, indirect, adverse effects on wildlife due to temporary disturbances from noise, construction activities, and heavy equipment use. Project C3 is in an improved area of Scott AFB and would primarily affect urban upland communities where human disturbance is common. Therefore, wildlife in the vicinity would be expected to be habituated to frequent disturbances. Most wildlife species near Project C3 would quickly recover once the construction noise

and disturbances have ceased. Project C3 would have long-term, negligible to minor, adverse effects on wildlife due to the permanent loss of habitat. Project C3 is within the developed portion of the installation and would not have any effect on Federal or state-listed species or suitable habitat.

Cultural Resources. No impacts on cultural resources under NEPA or effects on historic properties under NHPA would be expected from the proposed construction of the new Fitness Facility. The proposed project area is not near any historic buildings or structures evaluated NRHP-eligible or buildings 50 years of age or older that are unevaluated for NRHP eligibility. The area of this proposed project is not within one of the survey units identified by the SHPO for future consultation. If an unanticipated discovery of archaeological materials is made, work would be temporarily halted and the procedures outlined in the ICRMP would be followed.

Socioeconomics and Environmental Justice. Short-term, minor, beneficial effects on socioeconomic resources would be expected from the construction of the new fitness facility. It is assumed that equipment and supplies necessary to complete the construction activities would be obtained locally, and local contractors would be used. The demand for workers as part of the construction would be minor and would not outstrip the local supply of workers as there are more than 83,000 construction workers in the St. Louis, MO-IL MSA. Proposed activities would occur entirely on Scott AFB in a non-residential portion of the installation, and would have little potential to adversely affect on- or off-installation residents. Therefore, no environmental justice issues would be anticipated. No long-term effects on socioeconomic resources are expected to result from the proposed construction of the new fitness facility.

Infrastructure. Short-term, negligible, adverse effects would be expected as a result of construction debris from this project. Construction debris is generally composed of clean materials, and most of this would be recycled. However, construction debris that is not recycled would be landfilled resulting in long-term, negligible, irreversible, adverse effects.

Long-term, negligible, adverse effects would be expected because utility demand would increase slightly due to the increased installation footprint. However, this change in utility demand would be negligible when compared with total installation usage. In addition, the building would be designed in order to achieve LEED Silver certification; therefore, state-of-the-art energy efficiency would be expected.

This project would increase the impervious surface areas and is expected to result in long-term, minor, direct, adverse effects on storm water management. However, the proposed project might use sustainable storm water management techniques to achieve LEED Silver certification.

Hazardous Materials and Waste. Short-term, negligible, adverse effects associated with hazardous materials and waste would be expected from this project. Project C3 would result in a short-term increase in the use of hazardous materials and petroleum products and the generation of hazardous and petroleum wastes. Contractors would be responsible for the management of these materials, which would be handled in accordance with the Scott AFB Hazardous Materials Management Process; Scott AFB Hazardous Waste Management Plan; and Federal, state, and USAF regulations. Contractors must report the use of hazardous materials to the HAZMAT Pharmacy, including pertinent information (e.g., MSDS).

No long-term, adverse effects on hazardous materials and wastes would be anticipated from operation of the proposed Fitness Facility, and the installation's waste streams would not be altered.

Safety. Short-term, negligible to minor, adverse effects associated with safety could occur during construction activities. Construction activities pose an increased risk of construction-related accidents, but this level of risk would be managed by adherence to established Federal, state, and local safety regulations. Workers would be required to wear protective gear such as ear protection, steel-toed boots, hard hats, gloves, and other appropriate safety gear. Construction areas would be fenced and

appropriately marked with signs. Construction equipment and associated trucks transporting material to and from construction sites would be directed to roads and streets that have a lesser volume of traffic. Therefore, no long-term, adverse effects on safety would be expected.

4.4.2.4 C4. Construct US TRANSCOM Mission Planning Center

Project C4 would not result in significant effects. The following subsections break down by resource areas the non-significant effects that would result from Project C4.

Noise. Short-term, minor, adverse effects on the noise environment would be expected as a result of the construction of this facility. The noise emanating from construction equipment would be localized, short-term, and intermittent during machinery operations. Heavy construction equipment would be operated periodically during construction; therefore noise levels from the equipment would fluctuate throughout the day. The proposed site of the US TRANSCOM Mission Planning Center is currently undeveloped and is within an area used for administrative and community purposes. Populations potentially affected by increased noise levels would primarily include USAF personnel in surrounding community buildings approximately 150 feet or more to the west, and in administrative buildings approximately 250 feet or more to the north, east, and south. Expected intermittent noise levels for personnel outside would be 81–85 dBA at 150 feet, and would be slightly less than 78–82 dBA at 250 feet.

No changes in operations would be expected as a result of the construction of this building; therefore, no long-term effects on the noise environment would be anticipated.

Land Use. No effects on land use would be expected from construction of the US TRANSCOM Mission Planning Center. The construction of this facility would be within the Administration land use category in the core planning district. Therefore, present and future land uses would be compatible, and no changes in the Administration land use functions would be expected. Furthermore, construction of this facility is consistent with the Scott AFB IDP, which identifies Project C4 as one of the main future development projects in the core district area (SAFB 2011a).

The proposed construction and operation of the US TRANSCOM Mission Planning Center could occur in other compatible areas of the Administration land use category, but environmental constraints such as airfield infrastructure, CZs, and imaginary surfaces; munitions, QD arcs, and other safety criteria; and AT/FP setback requirements must be considered prior to siting and construction.

Air Quality. Short-term, minor, adverse effects on air quality would be expected from the construction of the proposed US TRANSCOM Mission Planning Center. Construction activities would result in temporary effects on local and regional air quality, primarily from site-disturbing activities, the operation of construction and paving equipment and haul trucks transporting excavation material and building materials to and from the work site, and workers commuting to the job site. Appropriate fugitive dust-control measures would be employed during construction activities to suppress emissions. All emissions associated with construction activities would be temporary in nature.

Long-term, minor, adverse effects on air quality would be expected from the use of natural gas boilers to provide comfort heating to the proposed facility and the use of one emergency electrical generator. While these operating emissions would increase the overall air emissions from Scott AFB, the added emissions would be offset by a reduction in air emissions from the demolition of older buildings that use more emissions intensive heating systems and emergency electrical generators. It is not expected that emissions from Project C4 would contribute to or affect local or regional attainment status with respect to the NAAQS. Emissions from the construction of the proposed US TRANSCOM Mission Planning

Center are summarized in **Table 4-16**. Emissions estimation spreadsheets and a summary of methodology used are included in **Appendix D**.

Table 4-16. Estimated Air Emissions Resulting from Project C4

Activity	NO_x tpy	VOC tpy	CO tpy	SO_2 tpy	PM_{10} tpy	$PM_{2.5}$ tpy	CO_2 tpy
Construction Combustion	4.850	0.604	2.136	0.384	0.348	0.337	549.905
Construction Fugitive Dust	-	-	-	-	2.749	0.275	-
Haul Truck On-Road	0.841	0.608	2.471	0.066	1.000	0.260	212.857
Construction Commuter	0.132	0.132	1.190	0.002	0.013	0.008	157.778
Emergency Generator	0.780	0.022	0.207	0.246	0.024	0.024	40.241
Total C4 Emissions	**6.603**	**1.366**	**6.004**	**0.698**	**4.134**	**0.904**	**960.781**
Percent of MSLI AQCR Inventory	0.005	0.001	0.001	< 0.001	0.003	0.003	0.00039*

Note: * Percent of State of Illinois CO_2 emissions.

Geological Resources. Effects associated with implementing Project C4 would be similar to those discussed for Project C2, and would be short- and long-term, minor, and adverse. The Mascoutah silty clay loam is the only soil mapped at the site proposed for Project C4. The soil was analyzed for building construction limitations associated with small commercial buildings. The soil is considered very limited due to ponding, depth to the saturated zone, and shrink-swell potential (USDA-NRCS 2011). Environmental protection measures should be implemented to lessen these constraints, and site-specific soil testing should be conducted prior to project implementation.

The Mascoutah silty clay loam is normally considered to be prime farmland if drained. However, this land is not available for agriculture because it is currently developed or considered to be urban or built-up land, which by definition cannot be prime farmland. According to the U.S. Department of Agriculture, urban or built-up land consists of land cover or land uses including residential, commercial, industrial, and public administrative sites within urban and built-up areas (USDA-NRCS 1999). Therefore, the areas where prime farmland soils are mapped at the site of the Proposed Action would not be considered prime farmland.

Water Resources. Effects on water resources would be comparable to the effects from Project C2 and would be short- and long-term, minor, and adverse. Short-term, minor, adverse effects would occur from compacting, grading, and removing vegetation, resulting in increased soil erosion, sedimentation, and storm water runoff volume and velocity. Adverse effects would occur from the removal of vegetation and excavation of soil for construction of the facility and installation of utilities, resulting in increased sedimentation and storm water runoff velocity. Long-term, minor, adverse effects on water resources would occur from the compaction of soils due to foot and vehicle traffic could result in a decrease in soil permeability and water infiltration rates, and potential subsequent alteration of drainage patterns. A decrease in soil permeability and water infiltration associated with compaction can reduce the rate and volume of groundwater recharge in the affected area. Decreased soil permeability would alter natural storm water flow regimes.

No wetlands are present on the project site; therefore, no direct impacts on wetlands would be expected from this proposed construction project. In the event of a spill, SPCC Plan procedures would be

implemented to contain and clean up the spill. This project would disturb greater than one acre of land, and an NPDES construction permit would be required. Project C4 is not within the 100-year floodplain.

Biological Resources. Construction for Project C4 would have short-term, negligible, adverse effects on vegetation. Project C4 is in a previously disturbed area of Scott AFB and would primarily affect urban upland communities composed of nonnative, regularly mowed grasses and scattered landscaping trees and shrubs. There are few opportunities for historic native plant communities to occur on Scott AFB and there have been no observations made of any sensitive vegetative species occurring on the installation. All trees and vegetation impacted from construction activities would be replaced or relocated as applicable. All ground disturbed during construction activities that does not include site improvements will be reseeded with appropriate species.

Project C4 would have short-term, negligible to minor, indirect, adverse effects on wildlife due to temporary disturbances from noise, construction activities, and heavy equipment use. Project C4 is in an improved area of Scott AFB and would primarily affect urban upland communities where human disturbance is common. Therefore, wildlife in the vicinity would be expected to be habituated to frequent disturbances. Most wildlife species near Project C4 would quickly recover once the construction noise and disturbances have ceased. Project C4 would have long-term, negligible to minor, adverse effects on wildlife due to the permanent loss of habitat. Project C4 is within the developed portion of the installation and would not have any effect on Federal- or state-listed species or suitable habitat.

Cultural Resources. No impacts on cultural resources under NEPA or effects on historic properties under NHPA would be expected from the proposed construction of the US TRANSCOM Mission Planning Center. The proposed project area is approximately 1,000 feet from the west boundary of the Scott Field Historic District with intervening existing development. The proposed construction would have no effects on the historic properties contributing to the historic district or the district itself. Furthermore it would not affect any buildings 50 years of age or older that are unevaluated for NRHP eligibility. The proposed project is not within one of the survey units identified by the SHPO as requiring consultation. If an unanticipated discovery of archaeological materials is made, work would be temporarily halted and the procedures outlined in the ICRMP would be followed.

Socioeconomics and Environmental Justice. Short-term, minor, beneficial effects on socioeconomic resources would be expected from the construction of the US TRANSCOM Mission Planning Center. It is assumed that equipment and supplies necessary to complete the construction activities would be obtained locally, and local contractors would be used. The demand for workers as part of the construction would be minor and would not outstrip the local supply of workers as there are more than 83,000 construction workers in the St. Louis, MO-IL MSA. The proposed construction activities would occur entirely on Scott AFB in a non-residential portion of the installation, and would have little potential to adversely affect on- or off-installation residents. Therefore, no environmental justice issues would be anticipated. No long-term effects on socioeconomic resources are expected to result from the construction of the proposed US TRANSCOM Mission Planning Center.

Infrastructure. Short-term, adverse effects would be expected as a result of debris generated during construction activities. Construction debris is generally composed of clean materials, and most of this waste would be recycled. However, debris that is not recycled would be landfilled, which would be considered a long-term, irreversible, adverse effect.

Long-term, negligible, adverse effects would be expected because utility demand would increase slightly due to the increased installation footprint. However, this change in utility demand would be negligible when compared with total installation usage. In addition, the building would be designed in order to achieve LEED Silver certification so state-of-the-art energy efficiency would be expected.

This project would increase the impervious surface areas and is expected to result in long-term, negligible, direct, adverse effects on storm water management. However, the proposed project might use sustainable storm water management techniques to achieve LEED Silver certification.

The function of this building would consolidate the functions of several older underutilized buildings and hence long-term, negligible, adverse effects might occur by altering traffic patterns.

This project would not result in adverse effects on parking because a parking lot is planned for construction for the employees that would work in the proposed US TRANSCOM Mission Planning Center.

Hazardous Materials and Waste. Short-term, negligible, adverse effects associated with hazardous materials and waste would be expected from this project. Project C4 would result in a short-term increase in the use of hazardous materials and petroleum products and the generation of hazardous and petroleum wastes. Contractors would be responsible for the management of these materials, which would be handled in accordance with the Scott AFB Hazardous Materials Management Process; Scott AFB Hazardous Waste Management Plan; and Federal, state, and USAF regulations. Contractors must report the use of hazardous materials to the HAZMAT Pharmacy, including pertinent information (e.g., MSDS).

No long-term effects on hazardous materials and wastes would be anticipated from operation of the proposed US TRANSCOM Mission Planning Center, and the installation's waste streams would not be altered.

Safety. Short-term, negligible to minor, adverse effects associated with safety could occur during construction activities. Construction activities pose an increased risk of construction-related accidents, but this level of risk would be managed by adherence to established Federal, state, and local safety regulations. Workers would be required to wear protective gear such as ear protection, steel-toed boots, hard hats, gloves, and other appropriate safety gear. Construction areas would be fenced and appropriately marked with signs. Construction equipment and associated trucks transporting material to and from construction sites would be directed to roads and streets that have a lesser volume of traffic. Therefore, no long-term, adverse effects on safety would be expected.

4.4.2.5 C5. Construct Joint Cyber Facility

Project C5 would not result in significant effects. The following subsections break down by resource areas the non-significant effects that would result from Project C5.

Noise. Short-term, minor, adverse effects on the noise environment would be expected as a result of the construction of this facility. The noise emanating from construction equipment would be localized, short-term, and intermittent during machinery operations. Heavy construction equipment would be operated periodically during construction; therefore, noise levels from the equipment would fluctuate throughout the day. The proposed site of the Joint Cyber Facility is currently occupied by unaccompanied housing uses (visiting airmen and officers' quarters). Populations potentially affected by increased noise levels would primarily include USAF personnel in administrative buildings approximately 150 feet or more and persons residing in the northern portion of the Colonial housing area approximately 475 feet from the proposed construction site. Expected noise levels experienced by personnel outside of administrative buildings at 150 feet would be 81–85 dBA, and those outside in the northern portion of the Colonial housing area at 475 feet would be less than 72–76 dBA.

No changes in operations would be expected as a result of the construction of this building; therefore, no long-term effects on the noise environment would be anticipated.

Land Use. Long-term, minor, adverse effects on land use would be expected from the construction and operation of the Joint Cyber Facility. The facility would be constructed within the existing Housing Unaccompanied land use category in northern portion of the core district area. Construction of this project would require a land use change to the Administration category. After changing the land use category, this project would have no effect on land use. Project C5 would be consistent with the Scott AFB IDP, which identifies future land use at this site as Administrative and Project C5 as one of the main future development projects (SAFB 2011a). The location and use of the Joint Cyber Facility would be compatible with future Administration land use at its proposed location and with surrounding Administration and Community Service areas.

The proposed construction and operation of the Joint Cyber Facility could occur in other compatible areas of the Administration land use category, but environmental constraints such as airfield infrastructure, CZs, and imaginary surfaces; munitions, QD arcs, and other safety criteria; and AT/FP setback requirements must be considered prior to siting and construction.

Air Quality. Short-term, minor, adverse effects on air quality would be expected from the construction of the proposed Joint Cyber Facility. Construction activities would result in temporary effects on local and regional air quality, primarily from site-disturbing activities, the operation of construction and paving equipment and haul trucks transporting excavation material and building materials to and from the work site, and workers commuting to the job site. Appropriate fugitive dust-control measures would be employed during construction activities to suppress emissions. All emissions associated with construction activities would be temporary in nature.

Long-term, minor, adverse effects on air quality would be expected from the use of natural gas boilers to provide comfort heating to the proposed facility and the use of five emergency electrical generators. While these operating emissions would increase the overall air emissions from Scott AFB, the added emissions would be offset by a reduction in air emissions from the demolition of older buildings that use more emissions intensive heating systems and emergency electrical generators. It is not expected that emissions from Project C5 would contribute to or affect local or regional attainment status with respect to the NAAQS. Emissions from the construction of the proposed Joint Cyber Facility are summarized in **Table 4-17**. Emissions estimation spreadsheets and a summary of methodology used are included in **Appendix D**.

Table 4-17. Estimated Air Emissions Resulting from Project C5

Activity	NO_x tpy	VOC tpy	CO tpy	SO_2 tpy	PM_{10} tpy	$PM_{2.5}$ tpy	CO_2 tpy
Construction Combustion	4.807	0.513	2.119	0.380	0.345	0.335	544.622
Construction Fugitive Dust	-	-	-	-	0.981	0.098	-
Haul Truck On-Road	0.259	0.187	0.760	0.020	0.308	0.080	65.503
Construction Commuter	0.132	0.132	1.190	0.002	0.013	0.008	157.778
Emergency Generators	3.902	0.110	1.037	1.232	0.122	0.122	201.207
Total C5 Emissions	**9.100**	**0.942**	**5.106**	**1.634**	**1.769**	**0.643**	**969.110**
Percent of MSLI AQCR Inventory	0.007	0.001	0.001	0.001	0.001	0.002	0.00039*

Note: * Percent of State of Illinois CO_2 emissions.

Geological Resources. Effects associated with implementing Project C5 would be similar to those discussed for Project C2, and would be short- and long-term, minor, and adverse. The soil was analyzed for building construction limitations associated with small commercial buildings. The soil is considered very limited due to ponding, depth to the saturated zone, and shrink-swell potential (USDA-NRCS 2011). Environmental protection measures should be implemented to lessen these constraints, and site-specific soil surveys should be conducted prior to project implementation.

The Mascoutah silty clay loam is normally considered to be prime farmland if drained. However, this land is not available for agriculture because it is currently developed or considered to be urban or built-up land, which by definition cannot be prime farmland. According to the U.S. Department of Agriculture, urban or built-up land consists of land cover or land uses, including residential, commercial, industrial, and public administrative sites within urban and built-up areas (USDA-NRCS 1999). Therefore, the areas where prime farmland soils are mapped at the site of the Proposed Action would not be considered prime farmland.

Water Resources. Effects on water resources would be comparable to the effects from Project C2 and would be short- and long-term, minor, and adverse. Short-term, minor, adverse effects would occur from compacting, grading, and removing vegetation, resulting in increased soil erosion, sedimentation, and storm water runoff volume and velocity. Adverse effects would occur from the removal of vegetation and excavation of soil for construction of the facility and installation of utilities, resulting in increased sedimentation and storm water runoff velocity. Long-term, minor, adverse effects on water resources would occur from the compaction of soils due to foot and vehicle traffic could result in a decrease in soil permeability and water infiltration rates, and potential subsequent alteration of drainage patterns. A decrease in soil permeability and water infiltration associated with compaction can reduce the rate and volume of groundwater recharge in the affected area. Decreased soil permeability would alter natural storm water flow regimes.

No wetlands are present on the project site; therefore, no direct impacts on wetlands would be expected from this proposed construction project. In the event of a spill, SPCC Plan procedures would be implemented to contain and clean up the spill. This project would disturb greater than one acre of land, and an NPDES construction permit would be required. Project C5 is not within the 100-year floodplain.

Biological Resources. Construction for Project C5 would have short-term, negligible, adverse effects on vegetation. Project C5 is in a previously disturbed area of Scott AFB and would primarily affect urban upland communities composed of nonnative, regularly mowed grasses and scattered landscaping trees and shrubs. There are few opportunities for historic native plant communities to occur on Scott AFB and there have been no observations made of any sensitive vegetative species occurring on the installation. All trees and vegetation impacted from construction activities would be replaced or relocated as applicable. All ground disturbed during construction activities that does not include site improvements will be reseeded with appropriate species.

Project C5 would have short-term, negligible to minor, adverse effects on wildlife due to temporary disturbances from noise, construction activities, and heavy equipment use. Project C5 is in an improved area of Scott AFB and would primarily affect urban upland communities where human disturbance is common. Therefore, wildlife in the vicinity would be expected to be habituated to frequent disturbances. Most wildlife species near Project C5 would quickly recover once the construction noise and disturbances have ceased. Project C5 would have long-term, negligible to minor, adverse effects on wildlife due to the permanent loss of habitat. Project C5 is within the developed portion of the installation and would not have any effect on Federal- or state-listed species or suitable habitat.

Cultural Resources. Negligible, adverse impacts on cultural resources under NEPA and no effects under Section 106 would be expected from the proposed construction of the Joint Cyber Facility. The new construction is at the same location of existing buildings (Buildings 1508, 1509, 1510, 1511, 1512, and 1513) that will be demolished under proposed demolition Project D5. The proposed project area is approximately 250 feet from the northwest corner of the Scott Field Historic District and would not have any effect on the historic district or its contributing properties. The overall size and massing of the new building would be similar to the existing buildings.

The proposed project is not within one of the survey units identified by the SHPO for future consultation. If an unanticipated discovery of archaeological materials is made, work would be temporarily halted and the procedures outlined in the ICRMP would be followed.

Socioeconomics and Environmental Justice. Short-term, minor, beneficial effects on socioeconomic resources would be expected from the construction of the Joint Cyber Facility. It is assumed that equipment and supplies necessary to complete the construction activities would be obtained locally, and local contractors would be used. The demand for workers as part of the construction would be minor and would not outstrip the local supply of workers as there are more than 83,000 construction workers in the St. Louis, MO-IL MSA. Proposed activities would occur entirely on Scott AFB and, therefore, would have little potential to adversely affect off-installation residents. It is possible that residents of the Visiting Officer Quarters, which is directly north of the proposed Joint Cyber Facility site, could experience short-term intermittent noise during construction. However, this noise would not be a disproportionate adverse effect, and no other environmental justice issues would be anticipated. No long-term effects on socioeconomic resources are expected to result from the proposed construction of the proposed Joint Cyber Facility.

Infrastructure. Short-term, adverse effects would be expected as a result of debris generated during construction activities. Construction debris is generally composed of clean materials, and most of this waste would be recycled. However, debris that is not recycled would be landfilled, resulting in a long-term, negligible, irreversible, adverse effect.

Long-term, negligible, adverse effects would be expected because utility demand would increase slightly due to the increased installation footprint. However, this change in utility demand would be negligible when compared with total installation usage. In addition, the building would be designed to achieve LEED Silver certification; therefore, state-of-the-art energy efficiency would be expected.

This project would increase the impervious surface areas and is expected to result in long-term, negligible, direct, adverse effects on storm water management. However, the proposed project might use sustainable storm water management techniques to achieve LEED Silver certification.

Long-term, direct, minor, beneficial effects would be expected to communications due to the new, consolidated communication infrastructure.

Hazardous Materials and Waste. Short-term, negligible, adverse effects associated with hazardous materials and waste would be expected from this project. Project C5 would result in a short-term increase in the use of hazardous materials and petroleum products and the generation of hazardous and petroleum wastes. Contractors would be responsible for the management of these materials, which would be handled in accordance with the Scott AFB Hazardous Materials Management Process; Scott AFB Hazardous Waste Management Plan; and Federal, state, and USAF regulations. Contractors must report the use of hazardous materials to the HAZMAT Pharmacy, including pertinent information (e.g., MSDS).

No long-term effects on hazardous materials and wastes would be anticipated from operation of the proposed Joint Cyber Facility, and the installation's waste streams would not be altered.

Safety. Short-term, negligible to minor, adverse effects associated with safety could occur during construction activities. Construction activities pose an increased risk of construction-related accidents, but this level of risk would be managed by adherence to established Federal, state, and local safety regulations. Workers would be required to wear protective gear such as ear protection, steel-toed boots, hard hats, gloves, and other appropriate safety gear. Construction areas would be fenced and appropriately marked with signs. Construction equipment and associated trucks transporting material to and from construction sites would be directed to roads and streets that have a lesser volume of traffic. Therefore, no long-term, adverse effects on safety would be expected.

4.4.2.6 C6. Construct Consolidated Base Civil Engineering and Contracting Complex

Project C6 would not result in significant effects. The following subsections break down by resource areas the non-significant effects that would result from Project C6.

Noise. Short-term, minor, adverse effects on the noise environment would be expected as a result of the construction of this facility. The noise emanating from construction equipment would be localized, short-term, and intermittent during machinery operations. Heavy construction equipment would be operated periodically during construction; therefore noise levels from the equipment would fluctuate throughout the day. This exact location of the Consolidated Base Civil Engineering and Contracting Complex has not been determined; however, it is proposed to be constructed near Building 4130 in the south-central portion of the installation. This area of Scott AFB is used for maintenance purposes. Populations potentially affected by increased noise levels would primarily include USAF personnel in maintenance buildings to the north and west. The closest administrative buildings are approximately 75 feet away from the proposed construction area; USAF personnel at these facilities could experience intermittent noise levels of slightly less than 90–94 dBA. Residential populations potentially affected by noise would be approximately 550 feet or more to the southwest of the construction area in the Patriot's Landing housing area. The closest residents would experience noise levels of less than 72–76 dBA if they are outside.

Project C6 would consolidate functions currently occurring in 26 buildings within and south of the historic district into the proposed facility in a lightly developed area in the southern portion of Scott AFB. Therefore, operation of the facility would shift vehicle traffic from existing developed areas, and consolidate it in a portion of the installation that does not currently experience high traffic volume. Therefore, long-term, negligible, adverse effects on the noise environment could result from increased vehicle traffic.

Land Use. Long-term, moderate, adverse effects on land use would be expected from the construction and operation of the Consolidated Base Civil Engineering and Contracting Complex. The proposed site of the facility is partially within the southern runway CZ (see **Figure 2-2**). Business, professional, and government services and similar land uses are prohibited in CZs (USAF 1999). Air Force Handbook (AFH) 32-7084, *AICUZ Program Manager's Guide*, states that the USAF must not plan, locate, or construct a new use or facility within the boundaries of the CZ. Development within the CZs is highly discouraged, and the only land uses that are acceptable must be passive, low people density uses (e.g., agriculture, grazing, permanent open space), or essential navigational aids and operational facilities (USAF 1999). Therefore, moderate adverse effects on land use would result if the Consolidated Base Civil Engineering and Contracting Complex is constructed and operated at the proposed site. However, the exact placement of the facility has not yet been determined, and it is recommended that the facility site plan be modified to remove it from the CZ.

Project C6 would be constructed in the Maintenance land use category, and the future land use of the Consolidated Base Civil Engineering and Contracting Complex is proposed to be Industrial. Project C6 would not require a land use change. The present and future land use categories at the proposed site and surrounding area would be compatible with the Consolidated Base Civil Engineering and Contracting Complex; however Project C6 is not compatible with the south runway CZ that it overlaps.

Short-term, minor, adverse effects on land use could be expected from the construction of the Consolidated Base Civil Engineering and Contracting Complex. Construction of the facility could generate dust or smoke in the CZ. AFH 32-7084 states that any land use releasing any substance into the air, such as steam, dust, and smoke, which impairs visibility or otherwise interferes with aircraft operations is specifically prohibited in the CZ (USAF 1999). Dust could be minimized during construction by implementing environmental protection measures such as spraying water on ground surfaces to control dust emissions.

The proposed construction and operation of the Consolidated Base Civil Engineering and Contracting Complex could occur in other compatible areas of the Maintenance land use category, but environmental constraints such as airfield infrastructure, CZs, and imaginary surfaces; munitions, QD arcs, and other safety criteria; and AT/FP setback requirements must be considered prior to siting and construction.

Air Quality. Short-term, minor, adverse effects on air quality would be expected from the construction of the proposed Consolidated Base Civil Engineering and Contracting Complex. Construction activities would result in temporary effects on local and regional air quality, primarily from site-disturbing activities, the operation of construction and paving equipment and haul trucks transporting excavation material and building materials to and from the work site, and workers commuting to the job site. Appropriate fugitive dust-control measures would be employed during construction activities to suppress emissions. All emissions associated with construction activities would be temporary in nature. Emissions from the construction of the proposed Consolidated Base Civil Engineering and Contracting Complex are summarized in **Table 4-18**. Emissions estimation spreadsheets and a summary of methodology used are included in **Appendix D**.

Table 4-18. Estimated Air Emissions Resulting from Project C6

Activity	NO_x tpy	VOC tpy	CO tpy	SO_2 tpy	PM_{10} tpy	$PM_{2.5}$ tpy	CO_2 tpy
Construction Combustion	4.873	0.669	2.145	0.386	0.349	0.339	552.717
Construction Fugitive Dust	-	-	-	-	4.552	0.455	-
Haul Truck On-Road	1.008	0.729	2.962	0.079	1.199	0.312	255.221
Construction Commuter	0.132	0.132	1.190	0.002	0.013	0.008	157.778
Total C6 Emissions	**6.013**	**1.529**	**6.297**	**0.467**	**6.112**	**1.114**	**965.716**
Percent of MSLI AQCR Inventory	0.005	0.002	0.001	< 0.001	0.004	0.004	0.00039*

Note: * Percent of State of Illinois CO_2 emissions.

Long-term, minor, adverse effects on air quality would be expected from the use of natural gas boilers to provide comfort heating to the proposed facility. While these operating emissions would increase the overall air emissions from Scott AFB, the added emissions would be offset by a reduction in air emissions from the demolition of older buildings that use more emissions intensive heating systems. It is not

expected that emissions from Project C6 would contribute to or affect local or regional attainment status with respect to the NAAQS.

Geological Resources. Effects on soil would be similar to those described for Project C2, and would be short- and long-term, minor, and adverse. Two soils are mapped at the site including the Edwardsville silt loam and the Mascoutah silty clay loam. The Edwardsville silt loam is somewhat limited for construction due to depth to the saturated zone and shrink-swell potential. The Mascoutah silty clay loam is very limited for ponding, depth to the saturated zone, and shrink-swell potential.

The Edwardsville silt loam is normally considered a prime farmland soil, and the Mascoutah silty clay loam is normally considered a prime farmland if drained. However, this land is not available for agriculture because it is currently developed or considered to be urban or built-up land, which by definition cannot be prime farmland. According to the U.S. Department of Agriculture, urban or built-up land consists of land cover or land uses including residential, commercial, industrial, and public administrative sites within urban and built-up areas (USDA-NRCS 1999). Therefore, the areas where prime farmland soils are mapped at the site of the Proposed Action would not be considered prime farmland.

Water Resources. Effects on water resources would be comparable to the effects from Project C2 and would be short- and long-term, minor, and adverse. Short-term, minor, adverse effects would occur from compacting, grading, and removing vegetation, resulting in increased soil erosion, sedimentation, and storm water runoff volume and velocity. Adverse effects would occur from the removal of vegetation and excavation of soil for construction of the facility and installation of utilities, resulting in increased sedimentation and storm water runoff velocity. Long-term, minor, adverse effects on water resources would occur from the compaction of soils due to foot and vehicle traffic, which could result in a decrease in soil permeability and water infiltration rates, and potential subsequent alteration of drainage patterns. A decrease in soil permeability and water infiltration associated with compaction can reduce the rate and volume of groundwater recharge in the affected area. Decreased soil permeability would alter natural storm water flow regimes.

No wetlands are present on the project site; therefore, no direct impacts on wetlands would be expected from this proposed construction project. In the event of a spill, SPCC Plan procedures would be implemented to contain and clean up the spill. This project would disturb greater than one acre of land, and an NPDES construction permit would be required. Project C6 is not within the 100-year floodplain.

Biological Resources. Construction for Project C6 would have short-term, negligible, adverse effects on vegetation. Project C6 is in a previously disturbed area of Scott AFB and would primarily affect urban upland communities composed of nonnative, regularly mowed grasses and scattered landscaping trees and shrubs. There are few opportunities for historic native plant communities to occur on Scott AFB and there have been no observations made of any sensitive vegetative species occurring on the installation. All trees and vegetation impacted from construction activities would be replaced or relocated as applicable. All ground disturbed during construction activities that does not include site improvements will be reseeded with appropriate species.

Project C6 would have short-term, negligible to minor, indirect, adverse effects on wildlife due to temporary disturbances from noise, construction activities, and heavy equipment use. Project C6 is located in an improved area of Scott AFB and would primarily affect urban upland communities where human disturbance is common. Therefore, wildlife in the vicinity would be expected to be habituated to frequent disturbances. Most wildlife species near Project C6 would quickly recover once the construction noise and disturbances have ceased. Project C6 would have long-term, negligible to minor, adverse effects on wildlife due to the permanent loss of habitat. Project C6 is within the developed portion of the installation and would not have any effect on Federal- or state-listed species or suitable habitat.

Cultural Resources. No impacts on cultural resources under NEPA or effects on historic properties under NHPA would be expected from the proposed construction of the Consolidated Base Civil Engineering and Contracting Complex. The proposed project area is approximately 1.17 miles from the southeast corner of the Scott Field Historic District. The construction is too distant to affect historic properties contributing to the historic district or the district itself. Additionally, no unevaluated buildings constructed prior to 1967 are in the general vicinity of the proposed project location. The area of this proposed project is not within one of the survey units identified by the SHPO for future consultation. If an unanticipated discovery of archaeological materials is made, work would be temporarily halted and the procedures outlined in the ICRMP would be followed.

Socioeconomics and Environmental Justice. Short-term, minor, beneficial effects on socioeconomic resources would be expected from the construction of the Consolidated Base Civil Engineering and Contracting Complex. It is assumed that equipment and supplies necessary to complete the construction activities would be obtained locally, and local contractors would be used. The demand for workers as part of the construction would be minor and would not outstrip the local supply of workers as there are more than 83,000 construction workers in the St. Louis, MO-IL MSA. Proposed activities would occur entirely on Scott AFB and, therefore, would have little potential to adversely affect off-installation residents apart from the possibility that residents of Lincoln's Landing, an off-installation privatized housing area that is approximately 350 feet south of the proposed Consolidated Base Civil Engineering and Contracting Complex site, could experience short-term intermittent noise during construction. However, this noise would not be a disproportionate adverse effect. No other environmental justice issues would be anticipated. No long-term effects on socioeconomic resources are expected to result from the proposed construction of the new fitness facility.

Infrastructure. Short-term, adverse effects would be expected as a result of debris generated during construction activities. Construction debris is generally composed of clean materials, and most of this waste would be recycled. However, debris that is not recycled would be landfilled, which would be considered a long-term, irreversible, adverse effect.

Long-term, negligible, adverse effects would be expected because utility demand would increase slightly due to the increased installation footprint. However, this change in utility demand would be negligible when compared with total installation usage. In addition, the building would be designed to achieve LEED Silver certification; therefore, state-of-the-art energy efficiency would be expected.

This project would increase the impervious surface areas and would be expected to result in long-term, minor, direct, adverse effects on storm water management. However, the proposed project might use sustainable storm water management techniques to achieve LEED Silver certification.

The function of this building would consolidate the civil engineering functions currently spread throughout 26 older underutilized buildings and hence long-term, minor, adverse effects might occur by altering traffic patterns.

Hazardous Materials and Waste. Short-term, negligible, adverse effects associated with hazardous materials and waste would be expected from this project. Project C6 would result in a short-term increase in the use of hazardous materials and petroleum products and the generation of hazardous and petroleum wastes. Contractors would be responsible for the management of these materials, which would be handled in accordance with the Scott AFB Hazardous Materials Management Process, Scott AFB Hazardous Waste Management Plan, and Federal, state, and USAF regulations. Contractors must report the use of hazardous materials to the HAZMAT Pharmacy, including pertinent information (e.g., MSDS). Short-term, minor, adverse effects on ERP sites would be expected from the construction of the proposed Consolidated Base Civil Engineering and Contracting Complex due to its proximity to ERP Site SS-15 and the resulting increased risk of exposure during construction.

Long-term, negligible, adverse effects on hazardous materials and wastes would be anticipated because the proposed Consolidated Base Civil Engineering and Contracting Complex would result in additional management and storage of hazardous materials and wastes at the installation. Long-term, minor, beneficial effects on ERP sites would be expected by the elevated priority of ERP Site SS-15 due to proposed construction.

Safety. Short-term, negligible to minor, adverse effects associated with safety could occur during construction activities. Construction activities pose an increased risk of construction-related accidents, but this level of risk would be managed by adherence to established Federal, state, and local safety regulations. Workers would be required to wear protective gear such as ear protection, steel-toed boots, hard hats, gloves, and other appropriate safety gear. Construction areas would be fenced and appropriately marked with signs. Construction equipment and associated trucks transporting material to and from construction sites would be directed to roads and streets that have a lesser volume of traffic. Therefore, no long-term, adverse effects on safety would be expected.

The proposed Consolidated Base Civil Engineering and Contracting Complex would be located within ERP Site SS-15 and, therefore, construction activities could affect the monitoring of that site. There is a potential for workers to encounter contamination during construction activities within ERP sites. If contamination is encountered, it would be handled, stored, transported, and disposed of in accordance with the installation's Hazardous Waste Management Plan and all applicable Federal, state, and local regulations and policies. See **Section 4.4.2.6**, Hazardous Materials and Wastes, for more information regarding the potential for contamination at this location.

4.4.3 Selected Infrastructure Improvement Projects

4.4.3.1 I1. Construct Civil Engineering Open Storage Yard

Project I1 would not result in significant effects. The following subsections break down by resource areas the non-significant effects that would result from Project I1.

Noise. Short-term, minor, adverse effects on the noise environment would be expected as a result of the construction of the proposed storage yard. The noise emanating from construction equipment would be localized, short-term, and intermittent during machinery operations. Heavy construction equipment would be operated periodically during construction; therefore, noise levels from the equipment would fluctuate throughout the day. This area of Scott AFB is used for maintenance purposes; populations potentially affected by increased noise levels would primarily include USAF personnel in adjacent Civil Engineering buildings, as well as maintenance buildings approximately 175 feet or more from the proposed construction site. Expected noise levels directly adjacent to the construction site could intermittently reach 90–94 dBA, while noise levels experienced at 175 feet would be slightly more than 78–82 dBA. Residential populations potentially would not be affected by noise from Project I1.

No change in operations would be expected as a result of the construction of this storage yard; therefore, no long-term effects on the noise environment are anticipated.

Land Use. Short-term, minor, adverse effects on land use would be expected from the construction of the proposed Civil Engineering Open Storage Yard and access road. Project I1 is at ERP Site SS-25. There are currently no formal land use controls at ERP Site SS-25 (i.e., the former Cardinal Creek MFH neighborhood), but soil disturbance at ERP Site SS-25 is restricted. Because soil disturbance would be required at ERP Site SS-25 in order to construct the proposed storage yard, the top 6 to 18 inches of soil, (depending on the actual location of the disturbance), would have to be removed and disposed of at a licensed landfill. The new storage yard and access road would support and enhance the existing Maintenance land use category as it would provide a bigger work space for the 126th ARW, and better

access to the Civil Engineering facilities (Buildings 5046, 5048, and 5540). The location and use of the Civil Engineering Open Storage Yard and access road would be compatible with existing and future land uses within the surrounding Maintenance land use.

Air Quality. Short-term, negligible to minor, adverse effects on air quality would be expected from the construction of the Civil Engineering Open Storage Yard. Construction activities would result in temporary effects on local and regional air quality, primarily from site-disturbing activities, the operation of construction equipment and paving equipment and haul trucks transporting fill material and excavated soil, and workers commuting to the job site. Appropriate fugitive dust-control measures would be employed during construction activities to suppress emissions. All emissions associated with construction activities would be temporary in nature. It is not expected that emissions from Project I1 would contribute to or affect local or regional attainment status with respect to the NAAQS. Emissions from the construction of the Civil Engineering Open Storage Yard are summarized in **Table 4-19**. Emissions estimation spreadsheets and a summary of methodology used are included in **Appendix D**. No long-term air emissions would be produced as a result of Project I1.

Table 4-19. Estimated Air Emissions Resulting from Project I1

Activity	NO_x tpy	VOC tpy	CO tpy	SO_2 tpy	PM_{10} tpy	$PM_{2.5}$ tpy	CO_2 tpy
Construction Combustion	0.112	0.006	0.045	0.010	0.007	0.007	13.719
Construction Fugitive Dust	-	-	-	-	0.152	0.015	-
Haul Truck On-Road	0.013	0.009	0.037	0.001	0.015	0.004	3.174
Construction Commuter	0.006	0.005	0.050	0.000	0.001	0.000	6.574
Total I1 Emissions	**0.130**	**0.021**	**0.131**	**0.011**	**0.174**	**0.026**	**23.467**
Percent of MSLI AQCR Inventory	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.00001*

Note: * Percent of State of Illinois CO_2 emissions.

Geological Resources. Effects from Project I1 would be short- and long-term, minor, adverse on soils. No impacts on sediments or geology would be anticipated. Short-term, minor, adverse effects would result from grading, recontouring, paving of soils, and removal of vegetation. Construction vehicles would compress soils, decreasing permeability and rates of storm water runoff infiltration. Clearing of vegetation would increase erosion and sedimentation potential. An ESCP would be developed and implemented both during and following site development to contain soil and runoff on site, and would reduce potential for adverse effects associated with erosion and sedimentation, and transport of sediments in runoff. Sedimentation would likely occur in the Cardinal Creek, which is to the south of the project site, if environmental protection measures and ESCPs are not properly implemented.

Because the soils mapped have been determined to be very limited for road development, site-specific soil testing should be conducted prior to implementing Project I1. Based on site-specific soil characteristics, engineering design and environmental protection measures would be developed to address and minimize identified limitations. During construction, it is possible that a spill or leak of vehicle or other fluids could occur. In the event of a spill, the installation's SPCC Plan would be followed to quickly contain and clean up a spill. Please see **Section 3.10**. There remains the possibility that a spill or leak could occur, but implementation of the Environmental protection measures identified in the SPCC plan would minimize the potential for and extent of associated contamination.

Some of the soils mapped at the site are normally considered prime farmland soils. The Bethalto silt loam is a prime farmland, and the Wakeland silt loam is a prime farmland soil if drained and either protected from flooding or not frequently flooded during the growing season. However, this land is not available

for agriculture because it is currently developed or considered to be urban or built-up land, which by definition cannot be prime farmland. According to the U.S. Department of Agriculture, urban or built-up land consists of land cover or land uses including residential, commercial, industrial, and public administrative sites within urban and built-up areas (USDA-NRCS 1999). Therefore, the areas where prime farmland soils are mapped at the site of the Proposed Action would not be considered prime farmland.

Project I1 would partially overlap with ERP Site SS-25. Further remediation consisting of removal of the contaminated soil could be necessary prior to the implementation of Project I1.

Long-term, minor adverse effects could occur from the increase in impervious surfaces. Although the current storage yard would be revegetated (see Project D6), the proposed storage yard and access road would require more surface area than the current facility, resulting in an increase in total permanent impervious surfaces. Increased impervious surfaces could result in increased soil erosion and sedimentation. As a result of implementing Project I1, soils would be compacted, and surface soil structure disturbed and modified. Loss of soil structure due to compaction from foot and vehicle traffic could result in changes in drainage patterns. Soil erosion- and sediment-control measures would be included in site plans to minimize long-term erosion and sediment production at the site. The site would be constructed with storm water controls favoring methods that allow for storm water to reenter the groundwater system rather than leaving the site as surface flow, as directed by Section 438 the EISA. Use of storm water-control measures that favor reinfiltration in this way would minimize the potential for erosion and sediment production as a result of future storm events.

Water Resources. Short- and long-term, minor, adverse effects on water resources would be expected from Project I1. Short-term effects would occur from compacting, grading, and removing vegetation, resulting in increased soil erosion, sedimentation, and storm water runoff volume and velocity. An approved ESCP would be followed during construction, and construction environmental protection measures in accordance with the CWA Final Rule (see **Section 3.5.1**) would be implemented to retain runoff and promote recharge of groundwater. No mitigation measures would be required because no significant impacts would occur.

Long-term, minor, adverse impacts would occur from an increase in soil compaction and impervious surfaces, which would lead to increased erosion and sedimentation rates and would contribute to increased storm water runoff volume and velocity. A decrease in soil permeability and water infiltration associated with compaction and additional impervious surfaces would reduce the rate and volume of groundwater recharge in the affected area. Decreased soil permeability would alter natural storm water flow regimes. While the reduction in soil permeability and water infiltration rates as a result of soil compaction and additional impervious surface is an adverse effect, the reduction of recharge area and rate of recharge for the groundwater basins would be negligible when compared with the total recharge area that is available.

The proposed construction area is just north of Cardinal Creek and immediately adjacent to the 100-year floodplain. While mitigation measures would not be required, effects on adjacent water resources would be avoided through design, siting, and proper implementation of appropriate environmental protection measures and BMPs. This project would disturb greater than 1 acre of land, and an NPDES construction permit would be required.

No wetlands are present on the project site; therefore, no direct effects on wetlands would be expected from this proposed infrastructure improvement project. In the event of a spill, SPCC Plan procedures would be implemented to contain and clean up the spill.

Biological Resources. Long-term, minor, adverse effects on vegetation would be expected from the permanent removal of vegetation associated with Project I1. Project I1 is in the immediate vicinity of the former Cardinal Creek MFH area and the 126 ARW Campus, which has been previously disturbed. All trees and vegetation impacted from construction activities would be replaced or relocated, as applicable. All ground disturbed during construction activities that does not include site improvements would be reseeded with appropriate ground cover.

Short-term, negligible, adverse effects on wildlife would be expected due to temporary disturbances from noise, construction activities, and heavy equipment use associated with Project I1. Project I1 is in an improved area of Scott AFB and would primarily affect urban upland communities where human disturbance is common. Therefore, wildlife in the vicinity would be expected to be habituated to frequent disturbances. Most wildlife species near Project I1 would quickly recover once the construction noise and disturbances have ceased. Project I1 would have long-term, negligible to minor, adverse effects on wildlife due to the permanent loss of habitat.

Project I1 is in the general vicinity of Cardinal and Scott lakes, where Federal- and state-listed species have been observed. Indiana bats have been captured commuting and foraging in the area (SAFB 2010c) and state-listed bird species have been observed at Scott Lake (SAFB 2005a). However, the Project I1 site is in a developed area where disturbance is common and species in the vicinity would be expected to be habituated to frequent disturbances; therefore, Project I1 would not have any effect on Federal- or state-listed species or suitable habitat.

Cultural Resources. No impacts on cultural resources would be expected from the proposed construction of the Civil Engineering Open Storage Yard. The area of this proposed project is not within one of the survey units identified by the SHPO for future consultation. Therefore, no effects would be expected to known archaeological sites and no previously unknown sites are anticipated to be discovered. If an unanticipated discovery of archaeological materials is made, work would be temporarily halted and the procedures outlined in the ICRMP would be followed. No NRHP-eligible or listed properties are in the vicinity of the proposed project.

Socioeconomics and Environmental Justice. Short-term, negligible, beneficial effects on socioeconomic resources would be expected from the construction of the civil engineering open storage yard. It is assumed that equipment and supplies necessary to complete the proposed activities would be obtained locally, and local contractors would be used. The demand for workers as part of the construction would be minor and would not outstrip the local supply of workers as there are more than 83,000 construction workers in the St. Louis, MO-IL MSA. The proposed construction activities would occur entirely on Scott AFB in a non-residential portion of the installation, and it would have little potential to adversely affect on- or off-installation residents. Therefore, no environmental justice issues would be anticipated. No long-term effects on socioeconomic resources are expected to result from the proposed construction of the civil engineering open storage yard.

Infrastructure. Short-term, negligible, adverse effects would result from construction debris associated with this proposed project. Construction debris that is not recycled would be taken to a landfill and would be considered a long-term, irreversible, adverse effect.

Long-term, negligible, direct, adverse effects on storm water management would be expected due to the increase in impervious surface. No structures would be constructed, so utilities would not be affected.

Hazardous Materials and Waste. Short-term, negligible, adverse effects associated with hazardous materials and waste would be expected from this project. Project I1 would result in a short-term increase in the use of hazardous materials and petroleum products and the generation of hazardous and petroleum wastes. Contractors would be responsible for the management of these materials, which would be

handled in accordance with the Scott AFB Hazardous Materials Management Process; Scott AFB Hazardous Waste Management Plan; and Federal, state, and USAF regulations. Contractors must report the use of hazardous materials to the HAZMAT Pharmacy, including pertinent information (e.g., Material MSDS). Short-term, minor, adverse effects would be expected from the construction of Civil Engineering Open Storage Yard due to its proximity and potential to disrupt ERP Site SS-25.

No long-term, adverse effects on hazardous materials and wastes would be anticipated from operation of the proposed Civil Engineering Open Storage Yard, and the installation's waste streams would not be altered. Long-term, minor, beneficial effects would be expected due to the elevated priority of ERP Site SS-25 due to proposed construction.

Safety. Short-term, negligible to minor, adverse effects associated with safety could occur during construction activities. Construction activities pose an increased risk of construction-related accidents, but this level of risk would be managed by adherence to established Federal, state, and local safety regulations. Workers would be required to wear protective gear such as ear protection, steel-toed boots, hard hats, gloves, and other appropriate safety gear. Construction areas would be fenced and appropriately marked with signs. Construction equipment and associated trucks transporting material to and from construction sites would be directed to roads and streets that have a lesser volume of traffic. Therefore, no long-term, adverse effects on safety would be expected.

The proposed Civil Engineering Open Storage Yard would be located within ERP Site SS-25 and, therefore, construction activities could affect the monitoring of that site. There is a potential for workers to encounter contamination during construction activities within ERP sites. If contamination is encountered, it would be handled, stored, transported, and disposed of in accordance with the installation's Hazardous Waste Management Plan and all applicable Federal, state, and local regulations and policies. See **Section 4.4.3.1**, Hazardous Materials and Wastes, for more information regarding the potential for contamination at this location.

4.4.3.2 I2. Construct Communication Infrastructure for DISA and other future development at Cardinal Creek MFH neighborhood

Project I2 would not result in significant effects. The following subsections break down by resource areas the non-significant effects that would result from Project I2.

Noise. Short-term, minor, adverse effects on the noise environment would be expected as a result of the construction of communication infrastructure in the former Cardinal Creek MFH neighborhood. The noise emanating from construction equipment would be localized, short-term, and intermittent during machinery operations. Heavy construction equipment would be operated periodically during construction; therefore, noise levels from the equipment would fluctuate throughout the day. This area of Scott AFB consists of open space and is not currently used. While the specific communications infrastructure locations have not been disclosed, populations potentially affected by increased noise levels would likely include users of the golf course to the west and Scott Lake recreation area to the east, and USAF personnel at maintenance buildings to the south. The people at these locations would range from directly adjacent to the construction site to approximately 200 feet away, and could experience noise levels ranging from 78–82 dBA to more than 90–94 dBA. However, it is likely that work areas surrounding construction activities would be fenced and access would be limited; therefore, people would be farther away and experience lower noise levels.

No changes in operations would be expected as a result of this project; therefore, no long-term effects on the noise environment are anticipated.

Land Use. Short-term, minor, adverse and long-term, minor, beneficial effects on land use would be expected from the construction of communication infrastructure for DISA and other future development at the former Cardinal Creek MFH neighborhood. Portions of Project I2 would extend through ERP Site SS-25. There are currently no formal land use controls at ERP Site SS-25 (i.e., the former Cardinal Creek MFH neighborhood), but soil disturbance at ERP Site SS-25 is restricted. Because soil disturbance would be required at ERP Site SS-25 in order to construct the proposed communication infrastructure, the top 6 to18 inches of soil, (depending on the actual location of the disturbance), would have to be removed and disposed of at a licensed landfill. The construction of communication infrastructure at the former Cardinal Creek MFH neighborhood would be compatible with the existing Open Space land use category. Project I2 would prepare the Cardinal Creek MFH neighborhood for future redevelopment, which is consistent with the Scott AFB IDP that identifies this area as one of the main future developable areas at the installation (SAFB 2011a). As further support for the future development of the former Cardinal Creek MFH neighborhood, the future land use in this area has been identified as Administration.

Air Quality. Short-term, minor, adverse effects on air quality would be expected from the construction of the communications infrastructure proposed under Project I2. Construction activities would result in temporary effects on local and regional air quality, primarily from site-disturbing activities, the operation of construction equipment and haul trucks transporting fill material and excavated soil, and workers commuting to the job site. Appropriate fugitive dust-control measures would be employed during construction activities to suppress emissions. All emissions associated with construction activities would be temporary in nature. It is not expected that emissions from Project I2 would contribute to or affect local or regional attainment status with respect to the NAAQS. Emissions from the construction of the communications infrastructure are summarized in **Table 4-20**. Emissions estimation spreadsheets and a summary of methodology used are included in **Appendix D**. No long-term air emissions would be produced as a result of Project I2.

Table 4-20. Estimated Air Emissions Resulting from Project I2

Activity	NO_x tpy	VOC tpy	CO tpy	SO_2 tpy	PM_{10} tpy	$PM_{2.5}$ tpy	CO_2 tpy
Construction Combustion	0.062	0.004	0.024	0.005	0.004	0.004	7.412
Construction Fugitive Dust	-	-	-	-	5.804	0.580	-
Haul Truck On-Road	0.265	0.191	0.778	0.021	0.315	0.082	67.043
Construction Commuter	0.066	0.066	0.595	0.001	0.006	0.004	78.889
Total I2 Emissions	**0.393**	**0.261**	**1.397**	**0.027**	**6.129**	**0.670**	**153.345**
Percent of MSLI AQCR Inventory	< 0.001	< 0.001	< 0.001	< 0.001	0.004	0.002	0.00006*

Note: * Percent of State of Illinois CO_2 emissions.

Geological Resources. Effects on geology and soils from implementing Project I2 would be similar to those described for Project I1. Effects would be short-term, negligible to minor, adverse, and long-term, negligible, adverse. Soils have been previously disturbed at this location. Environmental protection measures and an ESCP would be instituted to protect soils from erosion and sedimentation. A site-specific soil testing should be conducted prior to initiating construction activities to identify the extent and breadth of soil construction limitations.

Soils potentially impacted at this site include the Menfro silt loam, Winfield silt loam (0 to 2 percent slopes), Winfield silt loam (5 to 10 percent slopes), Wakeland silt loam, Edwardsville silt loam, and the

Bethalto silt loam. Site-specific soil testing should be conducted prior to implementing Project I2 because the soils mapped have been determined to be very limited to somewhat limited for excavations. Based on site-specific soil characteristics, engineering design and environmental protection measures would be developed to address and minimize identified limitations.

In addition to construction limitations, Project I2 would partially overlap with ERP Site SS-25. Further remediation consisting of removal of the contaminated soil could be necessary prior to the implementation of Project I2.

Prior to the construction of communications infrastructure at the proposed site for Project I2, any soil that appears to have been contaminated by hazardous or petroleum wastes would be sampled to determine the extent of contamination and remediated in accordance with Federal, state, and installation regulations. If results of the sampling indicated the presence of contamination, remediation efforts would take place prior to commencement of demolition activities. The handling, storage, transportation, and disposal of hazardous substances would be conducted in accordance with applicable Federal, state, and local regulations; USAF regulations; and Scott AFB management procedures. No effects on sediments or geology would be anticipated.

Long-term, negligible, adverse effects on soil could occur from the disturbance and compaction of soils within the utility right-of-way. Long-term, beneficial effects could occur from the remediation of contaminated soils and if the contaminated sites are revegetated with native vegetation, where possible. Revegetation would result in a decrease in rates of erosion and sedimentation, and would promote soil productivity.

Water Resources. Project I2 would entail extensive trenching across large portions of the installation including under Cardinal Creek and portions of the airfield. Ground disturbance from the proposed duct banks, upgrades to existing duct banks, and construction of manholes would be expected to result in short-term, minor, adverse, effects on water resources. Short-term, minor, adverse impacts would occur from an increase in soil disturbance, which would lead to increased erosion and sedimentation rates and would contribute to increased storm water runoff volume and velocity. Some trenching would extend through the 100-year floodplain near Cardinal Creek; therefore, this project would require a FONSI/FONPA. No long-term effects would be expected from Project I2. Rates of erosion, sedimentation, runoff volume, and runoff velocity would return to conditions prior to construction once construction is complete.

Erosion and sedimentation controls, and storm water management practices consistent with the SWPPP would be implemented to retain runoff on site during construction activities. The SWPPP and BMPs in accordance with the CWA Final Rule (see **Section 3.5.1**) would minimize the potential for adverse effects on offsite or downstream water resources. Because stream crossings would be undertaken by trenching under the water body or wetland, no 401/404 permitting would be anticipated.

No wetlands are present on the project site; therefore, no direct effects on wetlands would be expected from this proposed infrastructure improvement project. In the event of a spill, SPCC Plan procedures would be implemented to contain and clean up the spill.

Biological Resources. Long-term, minor, adverse effects on vegetation would be expected from the permanent removal of vegetation associated with Project I2. Project I2 is in the immediate vicinity of the former Cardinal Creek MFH area and the 126 ARW Campus, which has been previously disturbed. All trees and vegetation impacted from construction activities would be replaced or relocated, as applicable. All ground disturbed during construction activities that does not include site improvements would be reseeded with appropriate ground cover.

Short-term, negligible, adverse effects on wildlife would be expected due to temporary disturbances from noise, construction activities, and heavy equipment use associated with Project I2. Project I2 is in an improved area of Scott AFB and would primarily affect urban upland communities where human disturbance is common. Therefore, wildlife in the vicinity would be expected to be habituated to frequent disturbances. Most wildlife species near Project I2 would quickly recover once the construction noise and disturbances have ceased. Project I2 would have long-term, negligible to minor, adverse effects on wildlife due to the permanent loss of habitat.

Project I2 is in the general vicinity of Cardinal and Scott lakes, where Federal- and state-listed species have been observed. Indiana bats have been captured commuting and foraging in the area (SAFB 2010c) and state-listed bird species have been observed at Scott Lake (SAFB 2005a). However, the Project I2 site is in a developed area where disturbance is common and species in the vicinity would be expected to be habituated to frequent disturbances; therefore, Project I2 would not have any effect on Federal- or state-listed species or suitable habitat.

Cultural Resources. No impacts on cultural resources would be expected from the construction of the proposed communication infrastructure. The proposed project would be infrastructure below ground and, therefore, would not affect any historic buildings or structures although none are present. The area of this proposed project is not within one of the survey units identified by the SHPO for future consultation. If an unanticipated discovery of archaeological materials is made, work would be temporarily halted and the procedures outlined in the ICRMP would be followed.

Socioeconomics and Environmental Justice. Short-term, minor, beneficial effects on socioeconomic resources would be expected from the construction of communication infrastructure at the former Cardinal Creek MFH neighborhood. It is assumed that equipment and supplies necessary to complete the proposed activities would be obtained locally, and local contractors would be used. The demand for workers as part of the construction would be minor and would not outstrip the local supply of workers as there are more than 83,000 construction workers in the St. Louis, MO-IL MSA. The proposed construction activities would occur entirely on Scott AFB in a non-residential portion of the installation, and it would have little potential to adversely affect on- or off-installation residents. No environmental justice issues would be anticipated. No long-term effects on socioeconomic resources are expected to result from the proposed construction of communication infrastructure at the former Cardinal Creek MFH neighborhood.

Infrastructure. Short-term, negligible, adverse effects on solid waste management would be expected to occur from the proposed construction activities associated with this project. Construction debris that is not recycled would be taken to the landfill and would be considered a long-term, irreversible, adverse effect. Long-term, minor, direct, beneficial effects on communications would be expected to result from the upgrades.

Hazardous Materials and Waste. Short-term, negligible, adverse effects associated with hazardous materials and waste would be expected from this project. Project I2 would result in a short-term increase in the use of hazardous materials and petroleum products and the generation of hazardous and petroleum wastes. Contractors would be responsible for the management of these materials, which would be handled in accordance with the Scott AFB Hazardous Materials Management Process; Scott AFB Hazardous Waste Management Plan; and Federal, state, and USAF regulations. Contractors must report the use of hazardous materials to the HAZMAT Pharmacy, including pertinent information (e.g., MSDS). Short-term, minor, adverse effects on ERP sites would be expected from the construction of the proposed communication infrastructure due to its proximity to and potential to disrupt ERP Site SS-25.

No long-term, adverse effects associated with hazardous materials and wastes would be anticipated from operation of the proposed communication infrastructure, and the installation's waste streams would not be altered.

Long-term, minor, beneficial effects on ERP sites would be expected due to the elevated priority of ERP Site SS-25 due to proposed construction.

Safety. Short-term, negligible to minor, adverse effects associated with safety could occur during construction activities. Construction activities pose an increased risk of construction-related accidents, but this level of risk would be managed by adherence to established Federal, state, and local safety regulations. Workers would be required to wear protective gear such as ear protection, steel-toed boots, hard hats, gloves, and other appropriate safety gear. Construction areas would be fenced and appropriately marked with signs. Construction equipment and associated trucks transporting material to and from construction sites would be directed to roads and streets that have a lesser volume of traffic. Therefore, no long-term, adverse effects on safety would be expected.

The portions of the proposed communication infrastructure would be located within ERP Site SS-25 and, therefore, ground-disturbing activities could affect the monitoring of that site. There is a potential for workers to encounter contamination during construction activities within ERP sites. If contamination is encountered, it would be handled, stored, transported, and disposed of in accordance with the installation's Hazardous Waste Management Plan and all applicable Federal, state, and local regulations and policies. See **Section 4.4.3.2**, Hazardous Materials and Wastes, for more information regarding the potential for contamination at this location.

Construction activities associated with the proposed communication infrastructure project would occur within a QD arc associated with the flightline area. To avoid potential impacts on construction workers and the installation mission, this project should be coordinated with Airfield Management.

4.4.3.3 I3. Construct Aircraft Deicing Pad

Project I3 would not result in significant effects. The following subsections break down by resource areas the non-significant effects that would result from Project I3.

Noise. Short-term, minor, adverse effects on the noise environment would be expected as a result of the construction of the proposed aircraft deicing pad. The noise emanating from construction equipment would be localized, short-term, and intermittent during machinery operations. Heavy construction equipment would be operated periodically during construction; therefore, noise levels from the equipment would fluctuate throughout the day. This area of Scott AFB is used for airfield activities where the dominant component of the noise environment is from aircraft operations. Populations potentially affected by noise would primarily include USAF personnel at the aircraft operations and maintenance and other airfield-related facilities along the western edge of the airfield. The closest facility (Building 450) is approximately 550 feet away from the construction site, and could experience noise levels of less than 72–76 dBA.

Project I3 would allow for aircraft deicing in a new location and would also increase aircraft parking capacity. No long-term effects on the noise environment are anticipated because the proposed construction area is already dominated by noise from existing aircraft operations. The aircraft movement resulting from transiting to and from the proposed deicing pad would not be significant.

Land Use. Short-term, minor, adverse effects on land use would be expected from the construction of an aircraft deicing pad. Due to its location at the airfield, this project would occur inside the 65 to 69 dBA DNL noise zone; however, airfield-related uses are permitted within and compatible with this noise zone.

The project could result in minor inconveniences as airfield activities on the adjacent parking apron to the west and Apron F to the east might need to be scheduled around repair work; however, the construction work would be short-term in nature. In addition, the proposed site of the aircraft deicing pad is within a 249-foot QD arc that is active when aircraft with hazardous cargo are parked at the parking apron to the west and within the 1,434-foot QD arc for the hazardous cargo parking arm/disarm area and site used for parking suspicious vehicles (SAFB 2010b). Based on the conditions associated with each QD arc, construction activities and some uses of the proposed deicing pad could have use restrictions applied when one of the QD arcs is active.

Long-term, minor, beneficial effects on land use would be expected from the operation of an aircraft deicing pad. The proposed aircraft deicing pad would be within the Airfield land use category at Scott AFB, and the future land use is not expected to change. The project would support and enhance the current Airfield land use, and allow aircraft deicing to occur in an environmentally compliant manner. When not being used for deicing purposes, the proposed pad could be used as additional aircraft parking, thereby increasing the aircraft parking capacity at Scott AFB. Present and future land uses would be compatible and no changes in land use functions would be expected.

The proposed aircraft deicing pad could be constructed in other compatible areas of the Airfield land use category, but environmental constraints such as airfield infrastructure, CZs, and imaginary surfaces; munitions, QD arcs, and other safety criteria; and AT/FP setback requirements must be considered prior to siting and construction.

Air Quality. Short-term, minor, adverse effects on air quality would be expected from the construction of the proposed Aircraft Deicing Pad. Construction activities would result in temporary effects on local and regional air quality, primarily from site-disturbing activities, the operation of construction and paving equipment and haul trucks transporting fill material and excavated soil, and workers commuting to the job site. Appropriate fugitive dust-control measures would be employed during construction activities to suppress emissions. All emissions associated with construction activities would be temporary in nature. It is not expected that emissions from Project I3 would contribute to or affect local or regional attainment status with respect to the NAAQS. Emissions from the construction of the proposed Aircraft Deicing Pad are summarized in **Table 4-21**. Emissions estimation spreadsheets and a summary of methodology used are included in **Appendix D**.

Table 4-21. Estimated Air Emissions Resulting from Project I3

Activity	NO_x tpy	VOC tpy	CO tpy	SO_2 tpy	PM_{10} tpy	$PM_{2.5}$ tpy	CO_2 tpy
Construction Combustion	0.268	0.016	0.109	0.023	0.016	0.016	33.061
Construction Fugitive Dust	-	-	-	-	5.207	0.521	-
Haul Truck On-Road	0.107	0.078	0.316	0.008	0.128	0.033	27.209
Construction Commuter	0.066	0.066	0.595	0.001	0.006	0.004	78.889
Total I3 Emissions	**0.442**	**0.159**	**1.019**	**0.032**	**5.357**	**0.574**	**139.160**
Percent of MSLI AQCR Inventory	< 0.001	< 0.001	< 0.001	< 0.001	0.003	0.002	0.00006*

Note: * Percent of State of Illinois CO_2 emissions.

No long-term effects on air quality would be expected from the proposed Aircraft Deicing Pad. The proposed Aircraft Deicing Pad would supplement the existing aircraft deicing pads at the 126 ARW parking apron and at the adjoining MidAmerica Airport. No appreciable increase in aircraft deicing

material is proposed under the Proposed Action; therefore, no changes in the total air emissions from deicing operations would occur.

Geological Resources. Construction of an aircraft-deicing pad would result in short- and long-term, minor, adverse effects on soils. Short-term effects would occur during construction activities as vegetation is removed and soils are disturbed. Vegetation would be restored once construction activities have ceased, where possible. Erosion and sedimentation potential would be greatest in areas where the soil is bare. An ESCP would be developed and implemented to minimize impacts from erosion and sedimentation.

Use of construction equipment and USTs presents the possibility for short-term and long-term, adverse, effects from unintended spills or leaks of equipment or deicing fluids. An SPCC Plan would be developed to contain spills quickly; however, the possibility remains that a spill or leak could occur. Implementation of the environmental protection measures identified in the SPCC plan would minimize the potential for and extent of associated contamination.

The Mascoutah silty clay loam is the only soil mapped at the site of the proposed Aircraft-Deicing Pad. The soil was analyzed for building construction limitations associated with excavations and roads, and was considered to be very limited due to ponding, depth to the saturated zone, unstable excavation walls, frost action, low strength, and shrink-swell potential. The approximate depth to the water table is 6 inches.

The Mascoutah silty clay loam is normally considered a prime farmland if drained. However, this land is not available for agriculture because it is currently developed as an airfield and cannot be prime farmland. According to the U.S. Department of Agriculture, urban or built-up land consists of land cover or land uses including highways, railroads, and other transportation facilities if they are surrounded by urban or built-up areas (USDA-NRCS 1999). Therefore, the areas where prime farmland soils are mapped at the site of the Proposed Action would not be considered prime farmland.

Water Resources. Short- and long-term, minor, adverse effects on water resources would occur from Project I3. Short-term effects would occur from compacting, grading, and removing vegetation, resulting in increased soil erosion, sedimentation, and storm water runoff volume and velocity. Erosion and sedimentation controls and storm water management practices consistent with the SWPPP would be implemented to retain runoff on site during construction activities. Following the SWPPP and construction BMPs in accordance with the CWA Final Rule (see **Section 3.5.1**) would minimize the potential for adverse effects on downstream water resources. No mitigation measures would be required because no significant impacts would occur. This project would disturb greater than 1 acre of land, and an NPDES construction permit would be required.

Long-term, minor, adverse impacts would occur from an increase in soil compaction and impervious surfaces, which would lead to increased erosion and sedimentation rates and would contribute to increased storm water runoff volume and velocity. A decrease in soil permeability and water infiltration associated with compaction and additional impervious surfaces would reduce the rate and volume of groundwater recharge in the affected area. Decreased soil permeability would alter natural storm water flow regimes. While the reduction in soil permeability and water infiltration rates as a result of soil compaction and additional impervious surface is an adverse effect, the reduction of recharge area and rate of recharge for the groundwater basins would be negligible when compared with the total recharge area that is available.

No wetlands are present on the project site; therefore, no direct effects on wetlands would be expected from this proposed infrastructure improvement project. In the event of a spill, SPCC Plan procedures would be implemented to contain and clean up the spill. Project I3 is not within the 100-year floodplain.

Biological Resources. Long-term, minor, adverse effects on vegetation would be expected from the permanent removal of vegetation associated with Project I3. Project I3 is proposed for a grassy area in a highly developed portion of the installation at the airfield. All ground disturbed during construction activities that does not include improvements would be reseeded with appropriate ground cover.

Short-term, negligible, adverse effects on wildlife would be expected due to temporary disturbances from noise, construction activities, and heavy equipment use associated with Project I3. High noise events could cause wildlife to engage in escape or avoidance behaviors; however, Project I3 is proposed at the airfield and limited wildlife is present at this area of the installation. Most wildlife species near Project I3 would quickly recover once the construction noise and disturbances have ceased.

No adverse effects on protected and sensitive species are expected from Project I3. Project I3 is proposed for a grassy area at the airfield, and there have been no observations of any Federal- or state-listed species in the general vicinity of Project I3. Therefore, no impacts on protected and sensitive species would occur.

Cultural Resources. No impacts on cultural resources would be expected from the proposed construction of the aircraft deicing pad. The area of this proposed project is not within one of the survey units identified by the SHPO for future consultation. If an unanticipated discovery of archaeological materials is made, work would be temporarily halted and the procedures outlined in the ICRMP would be followed. The aboveground nature of the proposed project would consist of paving and lighting and therefore no effects on historic buildings or structures would be expected.

Socioeconomics and Environmental Justice. Short-term, minor, beneficial effects on socioeconomic resources would be expected from the construction of an aircraft deicing pad. It is assumed that equipment and supplies necessary to complete the proposed activities would be obtained locally, and local contractors would be used. The demand for workers as part of the construction would be minor and would not outstrip the local supply of workers as there are more than 83,000 construction workers in the St. Louis, MO-IL MSA. The proposed construction activities would occur entirely on Scott AFB in a non-residential portion of the installation, and it would have little potential to adversely affect on- or off-installation residents. Therefore, no environmental justice issues would be anticipated. No long-term effects on socioeconomic resources are expected to result from the proposed construction of an aircraft deicing pad.

Infrastructure. Short-term, negligible, adverse effects on solid waste management would be expected to occur from the proposed construction activities associated with this project. Construction debris that is not recycled would be taken to the landfill and would be considered a long-term, irreversible, adverse effect.

Long-term, minor, direct effects would be expected on storm water management due to the increase in impervious surface from the construction of the Aircraft Deicing Pad. The accompanying permanent lighting system would increase electrical utility consumption but to a negligible extent when compared to the consumption of the entire installation. Negligible pollution prevention effects are expected due to the underground deicing fluid storage tank and runoff system. Long-term, minor, direct, beneficial effects would be expected for airfield traffic due to the additional aircraft deicing pad.

Hazardous Materials and Waste. Short-term, negligible, adverse effects associated with hazardous materials and waste would be expected from this project. Project I3 would result in a short-term increase in the use of hazardous materials and petroleum products and the generation of hazardous and petroleum wastes. Contractors would be responsible for the management of these materials, which would be handled in accordance with the Scott AFB Hazardous Materials Management Process; Scott AFB

Hazardous Waste Management Plan; and Federal, state, and USAF regulations. Contractors must report the use of hazardous materials to the HAZMAT Pharmacy, including pertinent information (e.g., MSDS).

Long-term, minor, adverse effects would be expected from the operation of the proposed Aircraft Deicing Pad due to the additional hazardous materials management associated with the deicing fluid and UST proposed for installation. All hazardous materials and wastes associated with the operation of the proposed Aircraft Deicing Pad would be in compliance with the Scott AFB Hazardous Materials Management Process, Scott AFB Hazardous Waste Management Plan, and Federal, state, and USAF regulations.

Safety. Short-term, negligible to minor, adverse effects associated with safety could occur during construction activities. Construction activities pose an increased risk of construction-related accidents, but this level of risk would be managed by adherence to established Federal, state, and local safety regulations. Workers would be required to wear protective gear such as ear protection, steel-toed boots, hard hats, gloves, and other appropriate safety gear. Construction areas would be fenced and appropriately marked with signs. Construction equipment and associated trucks transporting material to and from construction sites would be directed to roads and streets that have a lesser volume of traffic. Therefore, no long-term, adverse effects on safety would be expected.

Construction activities associated with the proposed aircraft deicing pad would occur within a QD arc associated with the flightline area. To avoid potential impacts on construction workers and the installation mission, this project should be coordinated with Airfield Management.

4.4.4 Selected Natural Infrastructure Management Projects

4.4.4.1 NI1. Airfield Tree Violations

Project NI1 would not result in significant effects. The following subsections break down by resource areas the non-significant effects that would result from Project NI1.

Noise. Short-term, minor, adverse effects on the noise environment would be expected as a result of removing trees to avoid conflicts with the adjacent airfield. The noise emanating from the proposed project would be localized, short-term, and intermittent during equipment and machinery operations. Heavy equipment would be operated periodically during the project, which would limit the duration of increased noise levels. The trees proposed to be removed or trimmed under Project NI1 are on the golf course between Golf Course Road and the airfield, and select trees outside of this area that are blocking the view of the runway from the airfield control tower. In addition to the golf course, these areas of Scott AFB consist of open space that acts as a buffer between the airfield to the west-southwest and non-airfield installation land uses to the east-northeast. Based on the specific locations of the trees being cut, the primary population potentially affected by noise would be users of the golf course. However, it is likely that the affected holes of the golf course would be closed during tree removal activities; therefore, affected populations would be at least 100 feet away. At 100 feet, noise levels of 84–88 dBA could be experienced; however, it is likely that populations would be farther away from work activities.

No changes in operations would be expected as a result of the proposed tree removal; therefore, no long-term effects on the noise environment are anticipated.

Land Use. Short-term, minor, adverse effects on land use would be expected from the removal of approximately 225 trees from east side of the runaway between Golf Course Road and the airfield, and select trees outside of this area that are blocking the view of the runway from the airfield control tower. The project would require minor inconveniences as some airfield activities would need to be scheduled around tree removal work; however, the work would be short-term in nature. Due to its location adjacent

to the Airfield, Project NI1 would occur within the CZ and established noise zones; however, vegetation maintenance is permitted and compatible within these zones. Tree removal would also occur within a QD arc. Based on the conditions associated with the QD arc, tree-removal activities could be restricted.

Long-term, minor, beneficial effects on land use would be expected from the tree removal. While the exact locations of individual tree removal have not been identified, Project NI1 is anticipated to be within the Open Space, Airfield, and Outdoor Recreation land use categories. The project is compatible with these current land uses, and would support and enhance the adjacent Airfield land use by preventing safety conflicts due to airfield obstructions and reduced views of the runway. Furthermore, implementation of Project NI1 would meet the Joint Use Agreement signed between the Secretary of the Air Force and St. Clair County. It is assumed that the new trees proposed to be planted under Project NI1 would be in a compatible land use area.

Air Quality. Short-term, negligible to minor, adverse effects on air quality would be expected from the proposed removal of 255 trees at Scott AFB. Tree-removal activities would result in temporary effects on local and regional air quality primarily from site-disturbing activities, the operation of tree removal equipment and haul trucks transporting fill material and tree waste, and workers commuting to the job site. Appropriate fugitive dust-control measures would be employed during work activities to suppress emissions. All emissions associated with tree-removal activities would be temporary in nature. It is not expected that emissions from Project NI1 would contribute to or affect local or regional attainment status with respect to the NAAQS. Emissions from the tree removal are summarized in **Table 4-22**. Emissions estimation spreadsheets and a summary of methodology used are included in **Appendix D**. No long-term air emissions would be produced as a result of Project NI1.

Table 4-22. Estimated Air Emissions Resulting from Project NI1

Activity	NO_x tpy	VOC tpy	CO tpy	SO_2 tpy	PM_{10} tpy	$PM_{2.5}$ tpy	CO_2 tpy
Construction Combustion	0.042	0.003	0.016	0.003	0.003	0.002	4.942
Construction Fugitive Dust	-	-	-	-	2.097	0.210	-
Haul Truck On-Road	0.032	0.023	0.094	0.003	0.038	0.010	8.073
Construction Commuter	0.050	0.049	0.446	0.001	0.005	0.003	59.167
Total NI1 Emissions	**0.123**	**0.075**	**0.556**	**0.007**	**2.142**	**0.225**	**72.181**
Percent of MSLI AQCR Inventory	< 0.001	< 0.001	< 0.001	< 0.001	0.001	0.001	0.00003*

Note: * Percent of State of Illinois CO_2 emissions.

Geological Resources. Removal of trees within the airfield would result in short- and long-term, minor, adverse, effects on soils. Soils would be disturbed by construction equipment required to remove selected trees from the airfield. Once trees have been removed and ground stabilization activities have ceased, effects would be anticipated to be long-term and minor from decreased soil productivity and the compaction of soils from the use of construction equipment. In areas where trees would be replaced by grasses, soil formation would not occur as quickly as is presently occurring, as there would be less organic material (e.g., leaves) deposited and decomposing to become humus. No impacts on sediments or geology would be anticipated. Environmental protection measures and an ESCP would be developed and followed to ensure onsite infiltration of storm water runoff and minimize the increase in erosion and sedimentation.

Water Resources. Short-term, minor, adverse effects on water resources would be expected from soil erosion and sedimentation of receiving water bodies from the direct removal of trees and vegetation. Adverse effects would be minimized by implementing BMPs in accordance with the CWA Final Rule (see **Section 3.5.1**). No mitigation measures would be required because no significant impacts would occur. Long-term, minor, beneficial effects on water resources would result from the replacement planting of trees throughout the installation. This project might disturb greater than 1 acre of land, and an NPDES construction permit might be required.

No wetlands are present on the project site; therefore, no direct effects on wetlands would be expected from this proposed natural infrastructure management project. In the event of a spill, SPCC Plan procedures would be implemented to contain and clean up the spill. Project NI1 is not within the 100-year floodplain.

Biological Resources. Long-term, minor, adverse effects on vegetation would be expected from the permanent removal of vegetation associated with Project NI1. Replacement trees would be planted to offset the reduction of trees, and these new trees would be planted in areas that do not interfere with the airfield and CZ.

Short-term, negligible, adverse effects on wildlife are expected due to temporary disturbances from noise and heavy equipment use associated with tree cutting. Loud noise events might cause wildlife to engage in escape or avoidance behaviors. Project NI1 would occur within 500 feet of the runway centerline, an area which is developed and highly disturbed. Therefore, wildlife in the vicinity would be expected to quickly recover once the noise and disturbances have ceased. Long-term, minor, adverse effects on wildlife species would be expected from permanent removal of habitat associated with Project NI1. New trees would be planted in areas that do not interfere with the airfield to benefit wildlife.

Indiana bats roost underneath the exfoliating bark of both dead and live trees (USFWS 2007). In order to avoid direct, adverse effects on Indiana bats, Project NI1 would be conducted during the periods when Indiana bats and state-listed species (i.e., little blue heron and snowy egret) are not present on the installation (October 15 through March 31).

Long-term, minor, adverse effects on Indiana bats would be expected from the permanent removal of habitat associated with Project NI1. New trees would be planted in areas that do not interfere with the airfield to offset the loss of trees. These replacement trees would provide replacement habitat for the Indiana bats. Replacement plantings would include tree species preferred by Indiana bats (USFWS 2011b). Scott AFB already has conducted consultation with the USFWS under Section 7 of the ESA for Project NI1. The USFWS provided concurrence that this project is not likely to adversely affect the Indiana bat. **Appendix H** contains documentation of the USFWS consultation.

Cultural Resources. No impacts on cultural resources would be expected from the proposed removal of approximately 255 trees along Golf Course Road between the golf course and the airfield. The proposed project is not in one of the aforementioned survey units identified by SHPO for future consultation. If an unanticipated discovery of archaeological materials is made, work would be temporarily halted and the procedures outlined in the ICRMP would be followed. The Cardinal Creek Golf Course appears on the real property list as being constructed in 1951. The golf clubhouse (Building 1192) was built in 1952 and has been evaluated as not eligible. The project is not in the vicinity of any other NRHP-listed or NRHP-eligible historic properties.

Socioeconomics and Environmental Justice. Short-term, negligible, beneficial effects on socioeconomic resources would be expected from the removal of approximately 225 trees due to airfield violations. It is assumed that equipment and supplies necessary to complete the proposed activities would be obtained

primarily locally, and local contractors would primarily be used. The demand for workers as part of the tree removal would be negligible and would not outstrip the local supply of workers in the region. The proposed tree removal would occur entirely on Scott AFB in a non-residential portion of the installation, and it would have no potential to adversely affect on- or off-installation residents. Therefore, no environmental justice issues would be anticipated. No long-term effects on socioeconomic resources are expected to result from the proposed tree removal.

Infrastructure. Short-term, negligible, direct, adverse effects would be expected on waste management due to the removal and disposal of the trees; however, it is assumed that all of the removed vegetation would be chipped and used as mulch within the installation. Long-term, minor, direct, beneficial effects would be expected on the airfield as a result of removing the trees that are in violation.

Hazardous Materials and Waste. Short-term, negligible, adverse effects associated with hazardous materials and waste would be expected from this project. Project NI1 would result in a short-term increase in the use of hazardous materials and petroleum products and the generation of hazardous and petroleum wastes from the operation of chain-saws and tree-removal equipment. Contractors would be responsible for the management of these materials, which would be handled in accordance with the Scott AFB Hazardous Materials Management Process; Scott AFB Hazardous Waste Management Plan; and Federal, state, and USAF regulations. Contractors must report the use of hazardous materials to the HAZMAT Pharmacy, including pertinent information (e.g., MSDS).

No long-term effects of the proposed project are anticipated to impact hazardous materials or wastes.

Safety. Short-term, negligible to minor, adverse effects associated with safety could occur during tree-removal activities. Construction activities pose an increased risk of construction-related accidents, but this level of risk would be managed by adherence to established Federal, state, and local safety regulations. Workers would be required to wear protective gear such as ear protection, steel-toed boots, hard hats, gloves, and other appropriate safety gear. Construction areas would be fenced and appropriately marked with signs. Construction equipment and associated trucks transporting material to and from construction sites would be directed to roads and streets that have a lesser volume of traffic. Therefore, no long-term, adverse effects on safety would be expected.

Activities associated with the proposed tree removal project would occur within a CZ and QD arc associated with the flightline area. To avoid potential impacts on construction workers and the installation mission, this project should be coordinated with Airfield Management.

4.4.4.2 NI2. Remove Log Jam from Silver Creek

Project NI2 would not result in significant effects. The following subsections break down by resource areas the non-significant effects that would result from Project NI2.

Noise. No significant changes would be expected as a result of removing a log jam from Silver Creek. The noise emanating from the proposed project would be localized, short-term, and intermittent during equipment and machinery operations. Heavy construction equipment would be operated periodically during the project, which would limit the duration of increased noise levels. This area of Scott AFB consists of open space between the Scott AFB airfield to the west and the MidAmerica Airport to the east. Populations potentially affected by noise would be at least 2,500 feet away, so increases in noise levels from construction would be minor in comparison with the existing airport environments near these populations.

No changes in operations would be expected as a result of removing a log jam from Silver Creek; therefore, no long-term effects on the noise environment are anticipated.

Land Use. No effects on land use would be expected from the removal of a log jam from Silver Creek. Project NI2 would be compatible with the existing Open Space land use category. Removal of the log jam is consistent with the INRMP, which proposed this project to meet the natural resources management goal of maintaining, protecting, and restoring hydrological processes in streams, floodplains, and wetlands; and the natural resources management objective of reducing pollutant sources that potentially impact Silver Creek (SAFB 2011b).

Air Quality. Short-term, negligible, adverse effects on air quality would be expected from the proposed removal of the log jam in Silver Creek. Removal of the log jam would result in temporary effects on local and regional air quality primarily from site-disturbing activities, the operation of excavation equipment and haul trucks transporting fill material and excavation waste, and workers commuting to the job site. Appropriate fugitive dust-control measures would be employed during work activities to suppress emissions. All emissions associated with removal activities would be temporary in nature. It is not expected that emissions from Project NI2 would contribute to or affect local or regional attainment status with respect to the NAAQS. Emissions from the removal of the log jam are summarized in **Table 4-23**. Emissions estimation spreadsheets and a summary of methodology used are included in **Appendix D**. No long-term air emissions would be produced as a result of Project NI2.

Table 4-23. Estimated Air Emissions Resulting from Project NI2

Activity	NO_x tpy	VOC tpy	CO tpy	SO_2 tpy	PM_{10} tpy	$PM_{2.5}$ tpy	CO_2 tpy
Construction Combustion	0.021	0.001	0.008	0.002	0.001	0.001	2.471
Construction Fugitive Dust	-	-	-	-	0.002	0.000	-
Haul Truck On-Road	0.001	0.001	0.002	0.000	0.001	0.000	0.202
Construction Commuter	0.003	0.003	0.025	0.000	0.000	0.000	3.287
Total NI2 Emissions	**0.024**	**0.005**	**0.035**	**0.002**	**0.005**	**0.002**	**5.959**
Percent of MSLI AQCR Inventory	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.00001*

Note: * Percent of State of Illinois CO_2 emissions.

Geological Resources. Effects from removal of sediments within Silver Creek would be short-term, minor to moderate, adverse, and long-term negligible. Short-term effects would occur due to disturbance of sediment during log jam removal activities, when suspension of sediment particles in the water column would increase (i.e., increased turbidity). Long-term, negligible effects on sediment would occur as particles would not accumulate as much or at as high of a rate in the area of the log jam. Removal of the log jam would likely allow small sediment particles (i.e., silts and clays) to remain suspended in the water column for a longer duration, and would result in deposition of sediment further downstream (see **Section 3.5**). In addition, Silver Creek would be able to flow more quickly once the log jam is removed, and therefore larger sediment particles (such as sands and pebble-sized particles) could be suspended in the water column and deposited downstream.

Effects on soils would be short- and long-term, minor, and adverse. Short-term effects on soil would arise from the potential removal of vegetation to allow construction vehicle access. Vegetation removal would result in soil disturbance and increased erosion and sedimentation potential. Adverse effects would be

minimized with implementation of environmental protection measures, including wetting of soils, and implementation of erosion and storm water management practices to contain soil and runoff on site.

Long-term effects on soils would occur as the area of inundation created by the log jam would decrease or be removed entirely, and sediment deposited along the banks and floodplain of Silver Creek at the site of the log jam would decrease. Floodwaters depositing sediment increase the productivity of floodplain soils because the sediment is often rich in organic matter such as decomposing plant and animal material. Because the sediment supplied to the creek banks would decrease, soil productivity would subsequently decrease along the banks adjacent to the log jam. This decrease is anticipated to be slight and therefore only minor, adverse effects are anticipated. No impacts on geology would occur.

Water Resources. Short-term, minor, adverse and long-term, minor, beneficial effects on water resources would be expected from removing the log jam from Silver Creek. Short-term adverse effects would include increased soil erosion and sedimentation of the receiving water body from the removal of vegetation for project staging. Adverse effects would be minimized with the implementation of BMPs in accordance with the CWA Final Rule (see **Section 3.5.1**). Additionally, implementation of environmental protection measures in accordance with the Scott AFB SWPPP would minimize the potential for exposed soils or other contaminants from construction activities to reach nearby surface waters. Such environmental protection measures could include the use of silt fences, covering of soil stockpiles, use of secondary containment for the temporary storage of hazardous liquids, detention/retention ponds, and establishment of buffer areas, as appropriate. No mitigation measures would be required because no significant impacts would occur.

Project NI2 is within the 100-year floodplain and in proximity to wetlands and potentially sensitive habitats. As such, this project would require a FONSI/FONPA. Depending upon the specific location of this project, the disturbance area might fall within the wetland areas. Short-term effects could occur from the removal of vegetation and excavation of soil to remove the log jam and to construct temporary access roads. If grading would be conducted, drainage patterns could be altered. Long-term, minor, adverse effects on water resources would occur from the compaction of soils due to foot and vehicle traffic, which could result in a decrease in soil permeability and water infiltration rates and potential subsequent alteration of drainage patterns.

Removal of the log jam would result in short-term, minor, adverse effects from the increase in sediment movement immediately after debris is removed. Long-term, minor, beneficial effect on water resources would include less turbid water and decreased sedimentation.

Biological Resources. Implementation of Project NI2 would have short-term, negligible, adverse effects on vegetation because minimal vegetation removal would be required to access the log jam. Vegetation would be allowed to regenerate once removal activities have ceased. Long-term, negligible to minor, adverse effects on vegetation might occur due to changes in hydrology following the removal of the log jam.

Short-term, negligible, adverse effects on wildlife are expected due to temporary disturbances from noise and heavy equipment use associated with project activities. Loud noise events could cause wildlife to engage in escape or avoidance behaviors. The area of disturbance for Project NI2 would be relatively small and most wildlife species in the vicinity would be expected to quickly recover once the noise and disturbances have ceased. Additionally, Scott AFB is highly developed and aircraft operations are frequent, so most wildlife inhabiting the site would be habituated to noise disturbances.

Short-term, minor, adverse effects on wildlife species would be expected from habitat removal associated with Project NI2. The log jam on Silver Creek currently provides structure and cover for fish and other

aquatic organisms. New log jams would form in areas downstream to provide habitat for aquatic wildlife species.

Indiana bats roost underneath the exfoliating bark of both dead and live trees (USFWS 2007) and loud noise events can cause Indiana bats to abandon roost trees. In order to avoid direct, adverse effects on Indiana bats, Project NI2 would be conducted during the periods when Federal- and state-listed species are not present on the installation (October 15 through March 31).

Scott AFB already has conducted consultation with the USFWS under Section 7 of the ESA for Project NI2. The USFWS provided concurrence that this project is not likely to adversely affect the Indiana bat. **Appendix H** contains documentation of the USFWS consultation.

Cultural Resources. No impacts on cultural resources would be expected from the removal of a log jam on Silver Creek; however, Project NI2 would occur on a portion of Scott AFB where the SHPO has stated through previous consultations that undertakings are the subject of future consultation for archaeological resources (SAFB 2006a). Scott AFB does not believe that this project would adversely affect historic properties and would seek SHPO concurrence regarding this project, as applicable. If an unanticipated discovery of archaeological materials is made, work would be temporarily halted and the procedures outlined in the ICRMP would be followed. No historic buildings or structures are in the vicinity of the proposed project.

Socioeconomics and Environmental Justice. Short-term, negligible, beneficial effects on socioeconomic resources would be expected from the removal of a log jam from Silver Creek. It is assumed that equipment and supplies necessary to complete the proposed activities would be obtained primarily locally, and local contractors would primarily be used. The demand for workers as part of the log jam removal would be negligible and would not outstrip the local supply of workers in the region. Proposed activities would occur entirely on Scott AFB in a non-residential portion of the installation, and it would have no potential to adversely affect on- or off-installation residents. Therefore, no environmental justice issues would be anticipated. No long-term effects on socioeconomic resources are expected to result from the proposed removal of a log jam from Silver Creek.

Infrastructure. Short-term, negligible, direct, adverse effects would be expected on waste management due to the removal and disposal of the trees; however, the removed vegetation might be chipped and used as mulch within the installation.

Long-term, negligible, beneficial effects would be expected on storm water management due to the removal of the log jam from Silver Creek.

Hazardous Materials and Waste. Short-term, negligible, adverse effects associated with hazardous materials and waste would be expected from this project. Project NI2 would result in a short-term increase in the use of hazardous materials and petroleum products and the generation of hazardous and petroleum wastes. Contractors would be responsible for the management of these materials, which would be handled in accordance with the Scott AFB Hazardous Materials Management Process; Scott AFB Hazardous Waste Management Plan; and Federal, state, and USAF regulations. Contractors must report the use of hazardous materials to the HAZMAT Pharmacy, including pertinent information (e.g., MSDS).

No long-term effects of the proposed project are anticipated to impact hazardous materials or wastes.

Safety. Short-term, negligible to minor, adverse effects associated with safety could occur during log-removal activities. Construction activities pose an increased risk of construction-related accidents, but this level of risk would be managed by adherence to established Federal, state, and local safety

regulations. Workers would be required to wear protective gear such as ear protection, steel-toed boots, hard hats, gloves, and other appropriate safety gear. Construction equipment and associated trucks transporting material to and from project sites would be directed to roads and streets that have a lesser volume of traffic. Therefore, no long-term, adverse effects on safety would be expected.

4.4.4.3 NI3. Improve Foraging Habitat for Indiana Bat

Project NI3 would not result in significant effects. The following subsections break down by resource areas the non-significant effects that would result from Project NI3.

Noise. Short-term, minor, adverse effects on the noise environment would be expected as a result of conducting periodic Indiana bat foraging habitat improvement projects. The noise emanating from the proposed project would be localized, short-term, and intermittent during equipment and machinery operations. Heavy equipment would be operated periodically during the project, which would limit the duration of increased noise levels. While the specific locations of habitat improvement projects proposed under Project NI3 have not been determined, it is anticipated that these projects would occur within the forested riparian woodlands along Silver Creek in the eastern portion of the installation as Indiana bat is known to forage in this area (SAFB 2010a). This area of Scott AFB consists of open space between the Scott AFB airfield to the west and the MidAmerica Airport to the east. Based on the actual location of the habitat improvement projects, populations potentially affected by noise could range from approximately 200 feet away to more than 4,000 feet away. At 200 feet, noise levels of 78–82 dBA could be experienced. However, it is likely that populations would be farther away from the proposed project locations, so decreased noise levels would be experienced.

While no changes in operations would be expected as a result of Project NI3, habitat improvement projects would occur on a long-term periodic basis. Therefore, long-term, minor, adverse effects on the noise environment are also anticipated.

Land Use. No effects on land use would be expected from the periodic improvement of Indiana bat foraging habitat. While the specific locations of habitat improvement projects proposed under Project NI3 have not been determined, it is anticipated that these projects would occur within the forested riparian woodlands along Silver Creek in the eastern portion of the installation as Indiana bat is known to forage in this area (SAFB 2011a). Project NI3 would be compatible with the existing Open Space land use category, and would not require changing this land use category. There are QD arcs in the west-central and southwestern portions of this Open Space area, and an ERP site in the southwestern portion. Habitat improvement projects such as Project NI3 would not be restricted in QD arcs or ERP sites. Project NI3 is consistent with the INRMP, which identifies enhancement and protection of Indiana bat foraging habitat as a natural resources management objective and project (SAFB 2011b).

Air Quality. No effects on air quality would be expected from Project NI3. Project NI3 is a programmatic endeavor to improve foraging habitat for the Indiana bat. This project does not entail ground disturbance or the use of equipment that would produce short- or long-term air emissions. Tree cutting would be limited, and air emissions produced from the operation of chainsaws and stump-grinders is expected to be minimal; therefore, quantitative air quality estimations have not been conducted for this project.

Geological Resources. Project NI3 would result in effects similar to, but slightly less than, those discussed for Project NI1, and would be short-term, minor, adverse, and long-term, negligible. Tree removal would locally disturb soil and increase the potential for erosion and sedimentation; however, planting of the shagbark hickory or other preferred roosting tree species would stabilize soils and locally

decrease soil erosion and sedimentation potential. No impacts on sediments or geology would be anticipated.

Water Resources. Short-term, minor, adverse effects on water resources would be expected from soil erosion and sedimentation of receiving water bodies from the direct removal of trees and disturbance of vegetation. Adverse effects would be minimized by implementing BMPs in accordance with the CWA Final Rule (see **Section 3.5.1**). No mitigation measures would be required because no significant impacts would occur. In the event of a spill of a hazardous material, SPCC Plan procedures would be implemented to contain and clean up the spill. While the exact location for Project NI3 has not been determined, there is the potential that it could occur within the 100-year floodplain and in proximity to wetlands and potentially sensitive habitats. As such, this project would require a FONSI/FONPA.

Long-term, minor, beneficial effects on water resources would result from the replacement planting of trees throughout the installation. This size and nature of the project area for this effort has not been determined; therefore, it is not certain if an NPDES permit would be required.

Biological Resources. Project NI3 would have short-term, negligible, adverse effects on vegetation as select trees would be cut in order to provide foraging habitat for the Indiana bat.

Indiana bats roost underneath the exfoliating bark of both dead and live trees (USFWS 2007). In order to avoid direct, adverse effects on Indiana bats, Project NI3 would be conducted during the periods when Federal- and state-listed species are not present on the installation (October 15 through March 31). Short-term, minor, adverse effects on Indiana bats would be expected from the permanent removal of habitat associated with Project NI3. Long term, minor to moderate, beneficial effects on Indiana bats are anticipated from Project NI3. The overall goal of Project NI3 is to enhance both foraging and roosting habitat for Indiana bats at Scott AFB.

Scott AFB already has conducted consultation with the USFWS under Section 7 of the ESA for Project NI3. The USFWS provided concurrence that this project is not likely to adversely affect the Indiana bat. **Appendix H** contains documentation of the USFWS consultation.

Cultural Resources. No impacts on cultural resources would be expected from the proposed project to improve foraging habitat for the Indiana bat. The nature of the proposed project does not have the potential to affect any historic properties, either buried archaeological materials or historic buildings and structures.

Socioeconomics and Environmental Justice. Long-term, negligible, beneficial effects on socioeconomic resources would be expected from conducting periodic improvement to Indiana bat foraging habitat. It is assumed that equipment and supplies necessary to complete the proposed activities would be obtained primarily locally, and local contractors would primarily be used. The demand for workers as part of the habitat improvement would be negligible and would not outstrip the local supply of workers in the region. While the specific locations of proposed habitat improvements have not been determined, Project NI3 would occur entirely on Scott AFB and would likely have little potential to adversely affect on- or off-installation residents. Therefore, no other socioeconomic or environmental justice issues would be anticipated to result from conducting the proposed improvements to Indiana bat foraging habitat.

Infrastructure. No short-term effects on infrastructure would be expected from this project. Long-term, negligible, direct, adverse effects would be expected on waste management due to periodic tree thinning; however, it is assumed that the removed vegetation would be chipped and used as mulch within the installation.

Hazardous Materials and Waste. Short-term, negligible, adverse effects associated with hazardous materials and waste would be expected from this project. Project NI3 would result in a short-term increase in the use of hazardous materials and petroleum products and the generation of hazardous and petroleum wastes. Contractors would be responsible for the management of these materials, which would be handled in accordance with the Scott AFB Hazardous Materials Management Process; Scott AFB Hazardous Waste Management Plan; and Federal, state, and USAF regulations. Contractors must report the use of hazardous materials to the HAZMAT Pharmacy, including pertinent information (e.g., MSDS). Short-term, minor, adverse effects on ERP sites would be expected from the proposed project due to its proximity to ERP Site SS-25.

Long-term, minor, beneficial effects on ERP sites would be expected by the elevated priority of ERP Site SS-25 due to construction.

Safety. Short-term, negligible to minor, adverse effects associated with safety could occur during tree thinning and planting activities. Construction activities pose an increased risk of construction-related accidents, but this level of risk would be managed by adherence to established Federal, state, and local safety regulations. Workers would be required to wear protective gear such as ear protection, steel-toed boots, hard hats, gloves, and other appropriate safety gear. Construction equipment and associated trucks transporting material to and from construction sites would be directed to roads and streets that have a lesser volume of traffic. Therefore, no long-term, adverse effects on safety would be expected.

The proposed tree thinning and planting project could be located within ERP Site SS-25 and, therefore, ground-disturbing activities could affect the monitoring of this site. There is a potential for workers to encounter contamination during construction activities within ERP sites. If contamination is encountered, it would be handled, stored, transported, and disposed of in accordance with the installation's Hazardous Waste Management Plan and all applicable Federal, state, and local regulations and policies.

Activities associated with the proposed tree thinning and planting project could occur within a QD arc. To avoid potential impacts on construction workers and the installation mission, this project should be coordinated with the appropriate installation organization.

5. Cumulative Effects, Best Management Practices, and Adverse Effects

5.1 Cumulative Effects

CEQ regulations stipulate that the cumulative effects analysis in an EA should consider the potential environmental effects resulting from "the incremental impacts of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions" (40 CFR 1508.7). CEQ guidance in considering cumulative effects affirms this requirement, stating that the first steps in assessing cumulative effects involve defining the scope of the other actions and their interrelationship with a proposed action. The scope must consider other projects that coincide with the location and timetable of a proposed action and other actions. Cumulative effects analyses must also evaluate the nature of interactions among these actions (CEQ 1997).

5.1.1 Projects Identified with the Potential for Cumulative Effects

The scope of the cumulative effects analysis involves both timeframe and geographic extent in which effects could be expected to occur, and a description of what resources could potentially be cumulatively affected. For the purposes of this analysis, the temporal span of the Proposed Action is 5 years (i.e., 2012 to 2017). For most resources, the spatial area for consideration of cumulative effects is Scott AFB, though a larger area is considered for some resources. An effort was undertaken to identify projects at Scott AFB and in the areas surrounding the installation for evaluation in the context of the cumulative effects analysis. This was further developed through review of public documents and information gained from the coordination with various applicable agencies.

5.1.1.1 Past Actions at Scott AFB

Past activities are those actions that occurred within the geographic scope of cumulative effects that have shaped the current environmental conditions of the project area. Scott AFB was initially constructed in 1917 and is one of the oldest continuous-service USAF installations. Scott AFB, formerly Scott Field, was originally used as a flight training field. The installation's boundaries have increase more than five times in size since its initial construction, and the facilities and infrastructure have undergone several major periods of construction and reconstruction to accommodate student training loads and new missions and commands (SAFB 2006a). For many resource areas, such as biological resources and hazardous materials and waste, the effects of past actions are now part of the existing environment and are included in the description of the affected environment.

In 2006, the 126 ARW prepared an EA and FONSI analyzing eight construction and demolition projects spanning 5 years (SAFB 2006d). In 2007, HQ AMC and 375 AMW prepared an IDEA and FONSI analyzing 25 demolition projects, 17 facilities construction and renovation projects, and 7 infrastructure projects, all spanning 5 years (SAFB 2007a). The 126 ARW EA and the 2007 IDEA identified short-term effects, minor, adverse effects localized to construction areas on the noise environment, air quality, safety, geological resources, water resources, biological resources, and hazardous materials and wastes (SAFB 2006d, SAFB 2007a). Short-term, indirect, minor, beneficial effects on socioeconomics would also occur on the local community from construction costs; however, expenditures associated with construction have no long-lasting community benefits. Long-term, direct, minor, beneficial effects on land use, safety, and infrastructure would be expected from the construction of new facilities and demolition of existing facilities on the installation. Short-term, minor adverse and long-term minor beneficial effects would be expected as a result of the removal of ACM and LBP in older buildings. No short- or long-term effects on floodplains, wetlands, threatened and endangered species, archaeological resources, or historic architectural resources were identified. Construction, demolition, and infrastructure

upgrades are a continuously occurring activity at Scott AFB. The 126 ARW projects added a maximum of 1.75 acres of impervious surfaces (SAFB 2006d), and the 2007 IDEA added a maximum of 3.2 acres of impervious surfaces (SAFB 2007a). Old buildings were removed, existing facilities were repaired and expanded, and new facilities were constructed, resulting in better land use function and organization.

5.1.1.2 Present and Reasonably Foreseeable Future Actions at Scott AFB

Many installation development projects are planned and reasonably foreseeable at Scott AFB. **Appendix A** is a compilation of all demolition (**Table A-1**), construction (**Table A-2**), infrastructure improvement (**Table A-3**), and natural infrastructure management projects (**Table A-4**) that could be completed during the lifespan of this IDEA, as funding becomes available. These projects are reasonably foreseeable, and so they are included in this cumulative effects analysis. **Table 5-1** summarizes the areas of disturbance and changes in impervious surfaces from the Proposed Action and all other present and reasonably foreseeable future installation development activities that have been identified to date.

Table 5-1. Projects Areas and Changes in Impervious Surface for all Present and Reasonably Foreseeable Future Actions (including the Proposed Action)

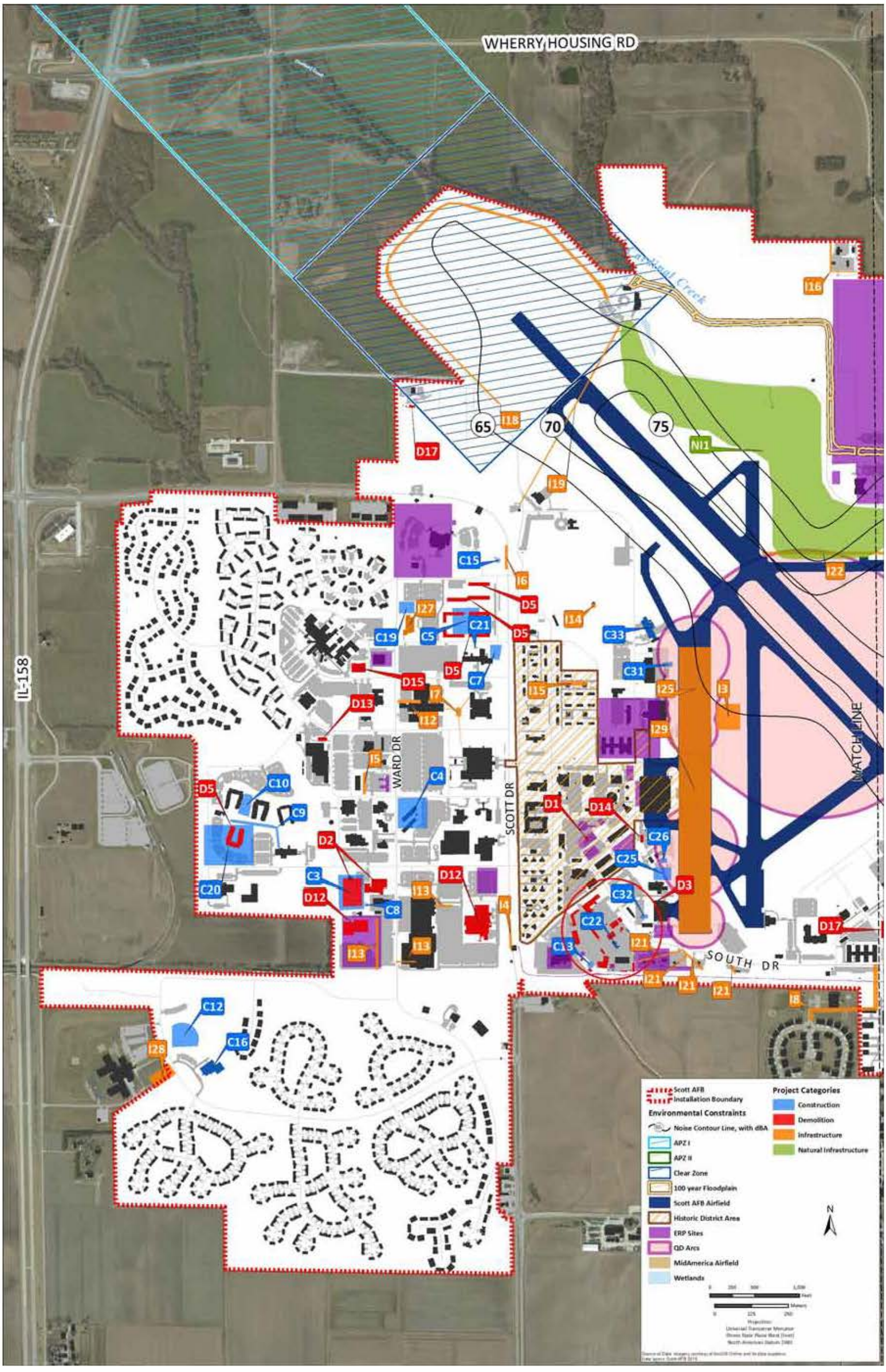
Project Type	Total Project Area (ft^2)	Change in Impervious Surfaces (ft^2)
Proposed Action [1]	3,311,643	+325,100
All Other Demolition Projects [2]	562,367	–486,226
All Other Construction Projects [3]	767,457	+339,326
All Other Infrastructure Improvement Projects [4]	974,873	+87,338
Total of All Projects	**5,616,340**	**+265,538**

Notes: Changes in impervious surfaces are not necessarily equivalent to the project area square footage because some facilities proposed for demolition are multiple stories, and many new facilities would be multiple stories. Furthermore, some infrastructure improvement and natural infrastructure management projects would disturb area but not add impervious surfaces.

1. See **Table 2-5**. The natural infrastructure management projects analyzed in detail as part of this Proposed Action are the only present and reasonably foreseeable projects categorized as such.
2. See **Table A-1**.
3. See **Table A-2**.
4. See **Table A-3**.

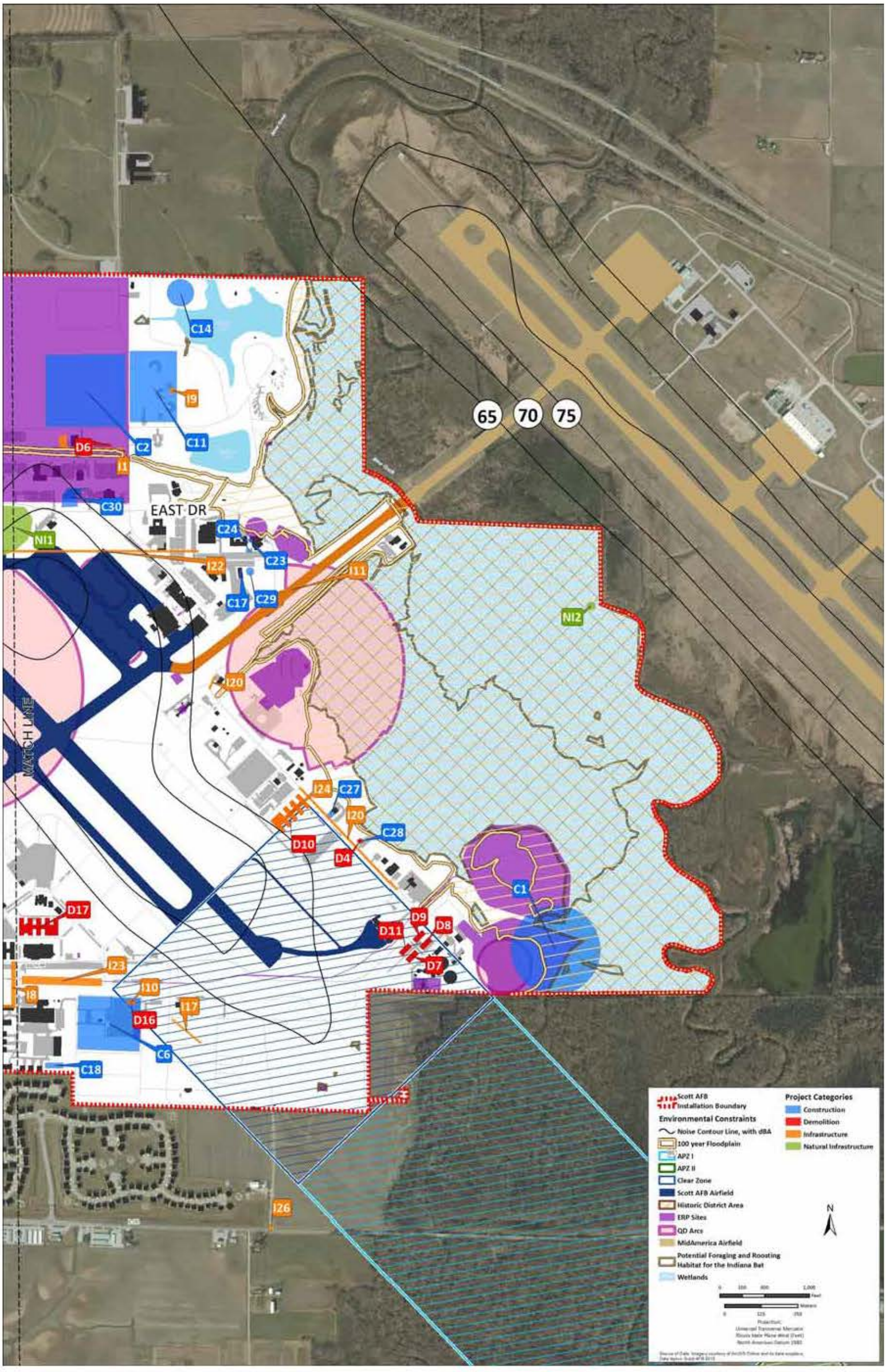
Figures 5-1 and **5-2** show the proposed project locations as currently planned. Some of these projects are in the early planning stages, so the final siting has not been completed for all projects. **Table 5-2** summarizes in tabular form the potential environmental consequences associated with the installation development projects that are identified in **Appendix A** but not analyzed as a selected project in **Section 4** of this IDEA as a part of the Proposed Action.

All demolition and construction activities generally would be expected to result in some increased noise, increased air emissions, potential for erosion and transport of sediment into surface water bodies, generation of small amounts of hazardous materials and wastes, and generation of construction and demolition waste. All demolition and construction activities generally would be expected to result in short-term job creation and materials procurement. These types of short-term, construction-related effects would occur regardless of project location and are not constraints to development. In the absence of unique constraints, the potential for environmental effects of a demolition or construction project smaller in scope than those analyzed as selected projects in this EA would be expected to result in less than significant environmental effects.



Notes: Project numbers and associated descriptions are shown in **Tables A-1** through **A-4**. Project I2 has been omitted from this figure due to its sensitivity. All buildings shaded in red within the circle labeled D3 (except those labeled otherwise) are proposed for demolition under Project D3.

Figure 5-1. Possible Locations and Environmental Constraints Associated with All Projects (West)



Note: Project numbers and associated descriptions are shown in **Tables A-1** through **A-4**. Project I2 has been omitted from this figure due to its sensitivity.

Figure 5-2. Possible Locations and Environmental Constraints Associated with All Projects (East)

Table 5-2. Potential Environmental Consequences Associated with Constraints to Development from All Other Proposed Projects Listed in Appendix A

Project Identification Number and Title	Noise	Land Use	Air Quality	Geological Resources	Water Resources	Wetlands	Biological Resources	Cultural Resources	Socioeconomics and Environmental Justice	Infrastructure	Hazardous Materials and Wastes	Safety
Other Demolition Projects												
D4. Demolish Building 3285	♦	+	♦	+	+	-	♦	-	+	-	-	♦
D5. Demolish Buildings 1508, 1509, 1510, 1512, 1513, and 1810	♦	+	♦	+	+	-	♦	-	+	+	-	♦
D6. Demolish Carport, Building 5540	♦	+	♦	+	+	-	♦	-	+	-	♦ / + ERP	♦ ERP
D7. Demolish Warehouse, Building 3270	♦	+ CZ	♦	+	+	-	♦	- (1)	+	+	-	♦ / + CZ
D8. Demolish Warehouse, Building 3272	♦	+ CZ	♦	+	+	-	♦	- (1)	+	+	-	♦ / + CZ
D9. Demolish Warehouse, Building 3275	♦	+ CZ	♦	+	+	-	♦	- (1)	+	+	-	♦ / + CZ
D10. Demolish Building 3189	♦	+ CZ	♦	+	+	-	♦	-	+	+	-	♦ / + CZ
D11. Demolish Building 3273	♦	+ CZ	♦	+	+	-	♦	- (1)	+	+	-	♦ / + CZ

Legend:

-	No effects or negligible effects	♦	Potential minor adverse effects
+	Potential minor beneficial effects	■	Potential moderate adverse effects

Key:

CZ	Clear Zone	HAZ	Change in quantity or storage for hazardous materials or wastes
ERP	Environmental Restoration Program	QD	Quantity-distance arc
ESCP	Erosion- and sediment-control plan	(1)	Signed Programmatic Agreement in place for these demolitions (SAFB 1986)

Project Identification Number and Title	Noise	Land Use	Air Quality	Geological Resources	Water Resources	Wetlands	Biological Resources	Cultural Resources	Socioeconomics and Environmental Justice	Infrastructure	Hazardous Materials and Wastes	Safety
Other Demolition Projects (continued)												
D12. Demolish Buildings 1961 and 1990	♦	+	♦	+	+	-	♦	-	+	+	♦ / + ERP	♦ ERP
D13. Demolish Burger King, Building 1649	♦	+	♦	+	+	-	♦	-	+	-	-	♦
D14. Demolish Building 502	♦	+	♦	+	+	-	♦	-	+	-	-	♦
D15. Demolish Building 1533	♦	+	♦	+	+	-	♦	-	+	+	-	♦
D16. Demolish Building 4130	♦	+ CZ	♦	+	+	-	♦	-	+	-	-	♦ CZ
D17. Demolish Buildings 859 and 1089	♦	+	♦	+	+	-	♦	-	+	+	-	♦
Other Construction Projects												
C7. Construct Addition to Building 1521	♦	-	♦	♦ ESCP	♦	-	♦	-	+	♦	-	♦
C8. Construct Automobile Detailing Station	♦	-	♦	♦ ESCP	♦	-	♦	-	+	♦	-	♦
C9. Construct Covered Walkways Between Dormitories and Building 1800	♦	-	♦	♦ ESCP	♦	-	♦	-	+	♦	-	♦ / +

Legend:

-	No effects or negligible effects	♦	Potential minor adverse effects
+	Potential minor beneficial effects	■	Potential moderate adverse effects

Key:

CZ	Clear Zone	HAZ	Change in quantity or storage for hazardous materials or wastes
ERP	Environmental Restoration Program	QD	Quantity-distance arc
ESCP	Erosion- and sediment-control plan	(1)	Signed Programmatic Agreement in place for these demolitions (SAFB 1986)

Project Identification Number and Title	Noise	Land Use	Air Quality	Geological Resources	Water Resources	Wetlands	Biological Resources	Cultural Resources	Socioeconomics and Environmental Justice	Infrastructure	Hazardous Materials and Wastes	Safety
Other Construction Projects (continued)												
C10. Construct Dormitory Pavilion Between Buildings 1820 and 1830	♦	-	-	♦ ESCP	♦	-	-	-	+	-	-	♦
C11. Construct Family Camp	♦	♦	♦	♦ ESCP	♦	-	♦	-	+	♦	-	♦
C12. Construct New Ball Field at Youth Center Site (Building 4780)	♦	♦	♦	-	-	-	♦	-	+	-	-	-
C13. Construct New Paint Shop	♦	-	♦	♦ ESCP	♦	-	♦	-	+	♦	♦ HAZ	♦
C14. Construct New Paintball Park	♦	-	-	-	-	-	♦	-	+	-	-	♦
C15. Construct Park with C-141 Starlifter Display	♦	-	-	-	-	-	-	-	+	-	-	♦
C16. Construct Addition to the Youth Center (Building 4780)	♦	-	♦	♦ ESCP	♦	-	♦	-	+	♦	-	♦
C17. Construct Dumpster Enclosures	-	-	-	-	-	-	-	-	+	-	-	♦
C18. Construct Medical Warehouse	♦	-	♦	♦ ESCP	♦	-	♦	-	+	♦	-	♦

Legend:

-	No effects or negligible effects	♦	Potential minor adverse effects
+	Potential minor beneficial effects	■	Potential moderate adverse effects

Key:

CZ	Clear Zone	HAZ	Change in quantity or storage for hazardous materials or wastes
ERP	Environmental Restoration Program	QD	Quantity-distance arc
ESCP	Erosion- and sediment-control plan	(1)	Signed Programmatic Agreement in place for these demolitions (SAFB 1986)

Project Identification Number and Title	Noise	Land Use	Air Quality	Geological Resources	Water Resources	Wetlands	Biological Resources	Cultural Resources	Socioeconomics and Environmental Justice	Infrastructure	Hazardous Materials and Wastes	Safety
Other Construction Projects (continued)												
C19. Construct New AFGLSC Facility	♦	-	♦	♦ ESCP	♦	-	♦	-	+	♦	-	♦
C20. Construct New VQ Complex	♦	-	♦	♦ ESCP	♦	-	♦	-	+	♦	-	♦
C21. Construct Storage Facility for Building 1521	♦	-	-	-	-	-	-	-	+	-	-	♦
C22. Construct Addition to Building 517	♦	-	♦	♦ ESCP	♦	-	♦	-	+	♦	-	♦
C23. Construct Breezeway	♦	-	♦	♦ ESCP	♦	-	-	-	+	-	-	♦
C24. Construct Wing Headquarters Facility	♦	-	♦	♦ ESCP	♦	-	♦	-	+	♦	-	♦
C25. Construct Distribution and Deployment Processing Center	♦	♦ QD	♦	♦ ESCP	♦	-	♦	-	+	♦	-	♦ QD
C26. Construct Explosive Ordnance Disposal Storage Facility	♦	♦ QD	♦	♦ ESCP	♦	-	♦	-	+	-	+	♦ QD
C27. Doom Bay Addition and Brick Installation	♦	-	♦	♦ ESCP	♦	-	♦	-	+	♦	-	♦

Legend:

-	No effects or negligible effects	♦	Potential minor adverse effects
+	Potential minor beneficial effects	■	Potential moderate adverse effects

Key:

CZ	Clear Zone	HAZ	Change in quantity or storage for hazardous materials or wastes
ERP	Environmental Restoration Program	QD	Quantity-distance arc
ESCP	Erosion- and sediment-control plan	(1)	Signed Programmatic Agreement in place for these demolitions (SAFB 1986)

Project Identification Number and Title	Noise	Land Use	Air Quality	Geological Resources	Water Resources	Wetlands	Biological Resources	Cultural Resources	Socioeconomics and Environmental Justice	Infrastructure	Hazardous Materials and Wastes	Safety
Other Construction Projects (continued)												
C28. Construct New CATM Building	♦	-	♦	♦ ESCP	♦	-	♦	-	+	♦	-	♦
C29. Construct Wing Support Facility	♦	-	♦	♦ ESCP	♦	-	♦	-	+	♦	-	♦
C30. Construct Addition to and Renovate Building 5008	♦	-	♦	♦ ESCP	♦	-	♦	-	+	♦	♦ / + ERP	♦ ERP
C31. Construct Canopy near Building 464	♦	- QD	-	-	-	-	-	-	+	-	-	- QD
C32. Construct Addition and Upgrade Hazardous Materials Storage Building	♦	-	♦	♦ ESCP	♦	-	♦	-	+	♦	+	♦
C33. Construct Addition to Building 460	♦	♦ QD	♦	♦ ESCP	♦	-	♦	-	+	♦	-	♦ QD
Other Infrastructure Projects												
I4. Construct Cable Duct to Belleville Marquee	♦	-	-	♦ ESCP	-	-	-	-	+	+	-	♦
I5. Construct Cable Duct to Building 1670	♦	-	-	♦ ESCP	-	-	♦	-	+	+	-	♦
I6. Construct Cable Duct to Shiloh Marquee	♦	-	-	♦ ESCP	-	-	♦	-	+	+	-	♦

Legend:

-	No effects or negligible effects	♦	Potential minor adverse effects
+	Potential minor beneficial effects	■	Potential moderate adverse effects

Key:

CZ	Clear Zone	HAZ	Change in quantity or storage for hazardous materials or wastes
ERP	Environmental Restoration Program	QD	Quantity-distance arc
ESCP	Erosion- and sediment-control plan	(1)	Signed Programmatic Agreement in place for these demolitions (SAFB 1986)

Project Identification Number and Title	Noise	Land Use	Air Quality	Geological Resources	Water Resources	Wetlands	Biological Resources	Cultural Resources	Socioeconomics and Environmental Justice	Infrastructure	Hazardous Materials and Wastes	Safety
Other Infrastructure Projects (continued)												
I7. Construct Emergency Power Plant	+	-	+	♦ ESCP	-	-	♦	-	+	+	-	♦
I8. Construct Pedestrian Walkway Gate from Lincoln's Landing	♦	-	♦	♦ ESCP	♦	-	♦	-	+	+	-	- / +
I9. Construct Water Storage Tower	♦	-	♦	♦ ESCP	♦	-	♦	-	+	+	-	♦
I10. Install Fencing and Gravel at Building 4130	-	-	-	-	♦	-	♦	-	+	-	-	♦ CZ
I11. Reconstruct a segment of Taxiway Golf	♦	+	♦	-	♦	-	♦	-	+	+	-	♦ QD
I12. Construct Cable Duct to Building 1700	♦	-	-	♦ ESCP	-	-	-	-	+	+	-	♦
I13. Construct Cable Duct to Buildings 1980, 1981, and 1989	♦	-	-	♦ ESCP	-	-	-	-	+	+	♦ / + ERP	♦ ERP
I14. Construct Cable Duct to Building 196	♦	-	-	♦ ESCP	-	-	-	-	+	+	-	♦
I15. Construct Cable Duct to Building 217	♦	-	-	♦ ESCP	-	-	-	-	+	+	-	♦

Legend:

-	No effects or negligible effects	♦	Potential minor adverse effects
+	Potential minor beneficial effects	■	Potential moderate adverse effects

Key:

CZ	Clear Zone	HAZ	Change in quantity or storage for hazardous materials or wastes
ERP	Environmental Restoration Program	QD	Quantity-distance arc
ESCP	Erosion- and sediment-control plan	(1)	Signed Programmatic Agreement in place for these demolitions (SAFB 1986)

Project Identification Number and Title	Noise	Land Use	Air Quality	Geological Resources	Water Resources	Wetlands	Biological Resources	Cultural Resources	Socioeconomics and Environmental Justice	Infrastructure	Hazardous Materials and Wastes	Safety
Other Infrastructure Projects (continued)												
I16. Construct Cable Duct to Building 5498	♦	-	-	♦ ESCP	-	-	-	-	+	+	-	♦
I17. Construct Cable Duct to Buildings 4130	♦	-	-	♦ ESCP	-	-	-	-	+	+	-	♦ CZ
I18. Move Existing Jogging Path Outside CZ	-	+	♦	♦ ESCP	♦	-	♦	-	+	-	-	- / + CZ
I19. Replace Golf Course Clubhouse Electrical Feeders	♦	-	-	♦ ESCP	-	-	-	-	+	+	-	♦
I20. Construct Cable Duct to Building 3165, 3171, 3183, 3285, and 3286	♦	-	-	♦ ESCP	-	-	-	-	+	+	-	♦ QD/CZ
I21. Construct Cable Duct to Buildings 544, 545, 560, 565, and 570	♦	-	-	♦ ESCP	-	-	-	-	+	+	♦ / + ERP	♦ ERP
I22. Replace Cable Duct to Between 126 ARW and 932 AW Campuses	♦	-	-	♦ ESCP	-	-	-	-	+	+	-	♦
I23. Construct New Recreational Vehicle Lot	♦	-	♦	♦ ESCP	♦	-	-	-	+	+	-	♦

Legend:

-	No effects or negligible effects	♦	Potential minor adverse effects
+	Potential minor beneficial effects	■	Potential moderate adverse effects

Key:

CZ	Clear Zone	HAZ	Change in quantity or storage for hazardous materials or wastes
ERP	Environmental Restoration Program	QD	Quantity-distance arc
ESCP	Erosion- and sediment-control plan	(1)	Signed Programmatic Agreement in place for these demolitions (SAFB 1986)

Project Identification Number and Title	Noise	Land Use	Air Quality	Geological Resources	Water Resources	Wetlands	Biological Resources	Cultural Resources	Socioeconomics and Environmental Justice	Infrastructure	Hazardous Materials and Wastes	Safety
Other Infrastructure Projects (continued)												
I24. Fix Erosion Problems at Building 3189	♦	-	♦	+	+	-	-	- / +	+	+	-	♦ CZ
I25. Upgrade Airfield Lighting Vault Ductbank	♦	-	-	♦ ESCP	-	-	-	-	+	+	-	♦ QD
I26. Construct Left-Turn Lane near Mascoutah Gate	♦	-	♦	♦ ESCP	♦	-	-	-	+	+	-	♦ / +
I27. Install New Irrigation System at Building 1515	-	-	-	♦ ESCP	♦	-	-	-	+	+	-	♦
I28. Install Pedestrian Gate near Building 6032	♦	-	♦	♦ ESCP	♦	-	-	-	+	+	-	-
I29. Scott West Ramp Repairs	♦	+	♦	-	♦	-	-	-	+	+	-	♦ QD

Legend:

-	No effects or negligible effects	♦	Potential minor adverse effects
+	Potential minor beneficial effects	■	Potential moderate adverse effects

Key:

CZ	Clear Zone	HAZ	Change in quantity or storage for hazardous materials or wastes
ERP	Environmental Restoration Program	QD	Quantity-distance arc
ESCP	Erosion- and sediment-control plan	(1)	Signed Programmatic Agreement in place for these demolitions (SAFB 1986)

5.1.1.3 Actions Outside Scott AFB

Land uses surrounding Scott AFB are primarily agricultural or undeveloped with some office buildings and commercial areas. The St. Clair County Public Building Commission recently announced plans to construct a new warehouse in 2012 at MidAmerica Airport, which shares runway use with the 375 AMW and adjoins Scott AFB on the northeast (MidAmerica Airport 2011). The new refrigerated warehouse (36,448 ft^2) will be leased by the international cooperative North Bay Produce, Inc. to help expand their current market for year-round fresh produce. Construction activities and day-to-day operations of the planned warehouse would have limited potential to result in cumulative effects because of its distance from Proposed Action.

The 375 AMW anticipates preparing an EA for the construction of a new Cardinal Creek Gate. This project entails the construction of a new installation access gate at the northern terminus of Pryor Drive at Wherry Housing Road (see **Figure 5-3**). The new Cardinal Creek Gate would replace the existing one-lane Cardinal Creek Gate and would include the construction of a 2,260-ft^2 entry-control building, a 11,721-ft^2 truck-inspection facility, a 4,004-ft^2 cargo-transfer facility, and a 204-ft^2 overwatch building. Infrastructure at the new Cardinal Creek Gate would include modern identification checking stations, bathrooms, indoor workstations, weapons storage areas, cameras, a canopy, X-ray equipment, an attached kennel for military working dogs, a cargo transfer station with full search capabilities, and a truck-inspection facility. The gate would be constructed because the State of Illinois plans to construct a new interchange to connect Scott AFB with I-64, and the proposed gate would serve as the primary access point for vehicles entering/exiting the installation via the proposed interchange. Construction of the new Cardinal Creek Gate would help to alleviate traffic congestion currently experienced at the Shiloh and Belleville gates and would accommodate potential traffic increases from planned future development on the northern portion of Scott AFB and the adjoining properties to the north of the installation. The new Cardinal Creek Gate would also replace the existing truck inspection facilities at the Mascoutah Gate with modern facilities that meet all AT/FP requirements. Scott AFB's existing truck-inspection facility does not have sufficient standoff distance from the Lincoln's Landing housing area and requires an indirect access route for truck traffic using I-64.

Construction of the new Cardinal Creek Gate might require Scott AFB to acquire up to 100 acres of land from St. Clair County and to demolish two vacant schools and associated pavements on the land to be acquired (101,975 ft^2 of facilities, 133,548 ft^2 of pavements). Acquisition of this land would require the completion of an Environmental Baseline Survey to document any potential environmental liabilities. Construction of the Cardinal Creek Gate has the potential to disturb archaeological sites, cultural resources, and wetland areas.

A separate EA is being prepared by the Illinois Department of Transportation to evaluate the proposed Scott AFB/I-64 interchange. St. Clair County, in cooperation with MidAmerica Airport, Scott AFB, the Federal Aviation Administration, the Federal Highway Administration, and the Illinois Department of Transportation, plans to construct a new I-64/Rieder Road interchange (see **Figure 5-3**). The new interchange would provide a more direct link from the interstate to Scott AFB, provide additional airport access, relieve congestion, complement and support future economic development, and improve safety in the project corridor (Kaskaskia 2011). An EA and Phase I Environmental Site Assessment are underway. This project would not have significant effects on biological resources or wetlands. Several potential archaeological sites have been identified near and within the project footprint, and the Illinois Department of Transportation is in the process of investigating these sites, as appropriate. If funding becomes available, construction for this project could begin in 2013.

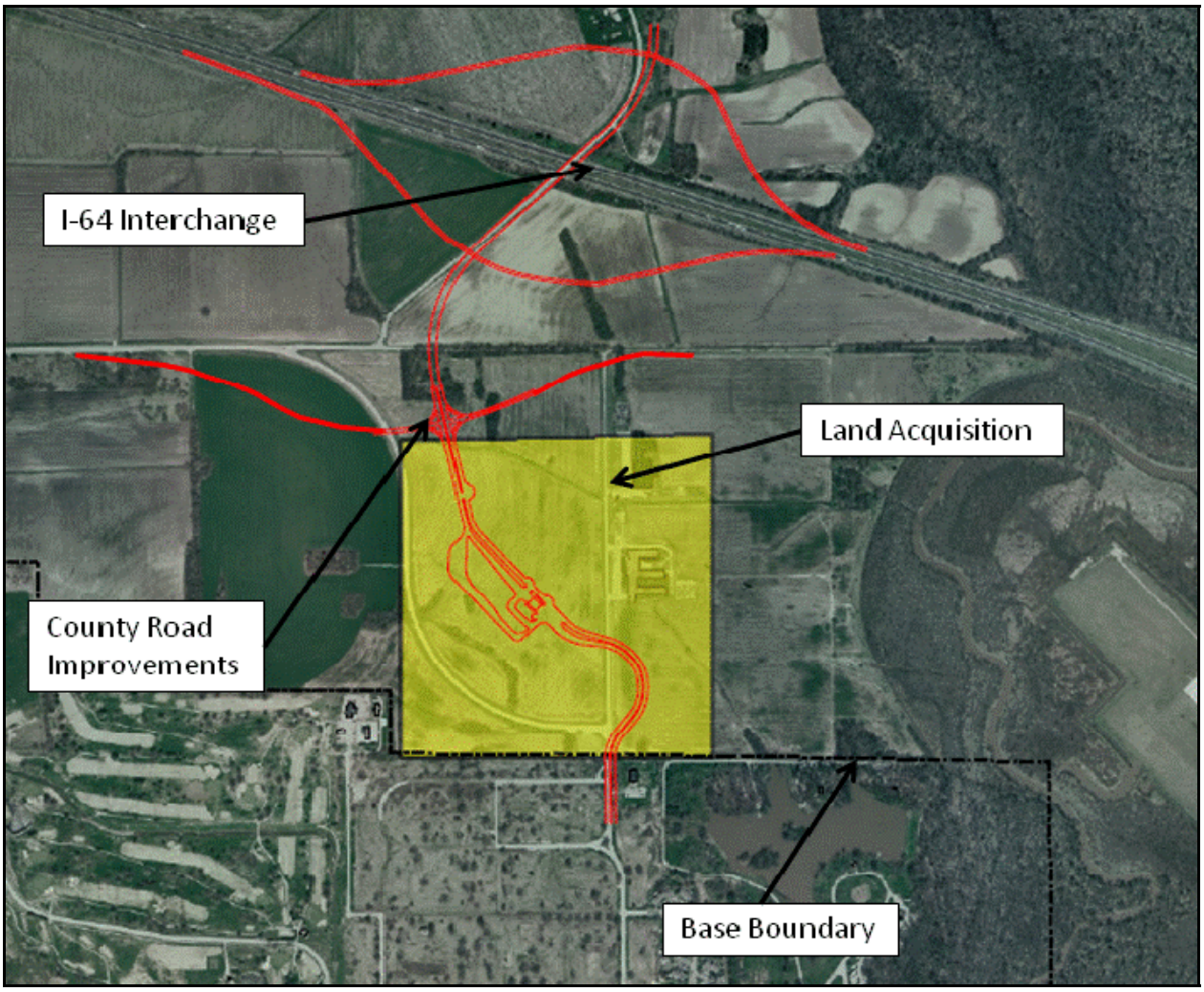


Figure 5-3. Possible Location for the New Cardinal Creek Gate and the Proposed Interchange with I-64

5.1.2 Cumulative Effects Analysis

A cumulative effects analysis must be conducted within the context of the resource areas. The magnitude and context of the effect on a resource area depends on whether the cumulative effects exceed the capacity of a resource to sustain itself and remain productive (CEQ 1997). The following discusses potential cumulative effects that could occur as a result of implementing the Proposed Action and other past, present, and reasonably foreseeable future actions. No significant adverse cumulative effects were identified in the cumulative effects analysis.

Noise

Military training and development activities have occurred at Scott AFB since 1917. Aircraft activities are the dominant noise source. Construction and demolition activities occurring at the same time and in the same vicinity could have short-term, minor, adverse cumulative effects on the noise environment. Most installation development activities would occur at different times and different locations over the next 5 years. Construction activities would result in short-term, localized increased noise levels.

Project C1 (see **Section 4.4.2.1**) would have long-term, minor, effects on the noise environment from explosive noise. Other planned installation development projects could generate noise from new mechanical equipment or changes in vehicle traffic accessing different facilities. Project C30, an addition to Building 5008, Squadron Operations, is within the 65-dBA noise contour. Construction of facilities within the 65-dBA noise contour is generally discouraged. However, because Building 5008 is already within the 65-dBA noise contour, personnel are accustomed to working within those noise levels. Noise reduction measures could be used to reduce interior noise levels below 65 dBA. Minor, long-term, adverse effects would be expected. Project I7 would replace 12 existing emergency generators (producing a total of 5.3 MW) with 2 emergency generators (producing a total of 6 MW). Replacing 12 older units with 2 new units would be expected to reduce noise levels in the vicinity of Buildings 1575, 1600, 1601, 1603, and 1700. Cumulatively, aircraft activities would remain the dominant noise source at Scott AFB. Cumulative effects on noise would not be significant.

Land Use

Military training and development activities have occurred at Scott AFB since 1917. Land use at Scott AFB is guided by the IDP (SAFB 2011a) to ensure safe, compatible development. Cumulatively, implementation of all installation development projects would be expected to result in long-term, beneficial effects on land use. Demolition projects would remove old, outdated facilities and make land available in previously disturbed areas for new construction. Cumulative installation development activities would be compatible with existing and future land uses.

Several planned demolition, construction, infrastructure, and natural infrastructure management projects are sited in areas with safety concerns, including airfield infrastructure, CZs, and imaginary surfaces; munitions and QD arcs; and ERP sites. Refer to the *Safety* and *Hazardous Materials and Wastes* cumulative effects subsections for discussions on safety. From a land use perspective, development activities that would violate existing USAF plans or policies would be incompatible and adverse. Project C6 (see **Section 4.4.2.6**) could result in long-term, minor to moderate, adverse effects if that proposed facility is partially in the runway CZ. Long-term, minor to moderate, beneficial, cumulative effects on land use would be expected from removing structures within the runway CZs (Projects D7, D8, D9, D10, D11, D16, I18, and NI1 from the listing provided in **Appendix A**). Several infrastructure projects are planned within the runway CZs (Projects I10, I17, I19, and I24), but these would have no effects on land use, providing they would not violate obstacle clearance criteria. Some proposed construction activities would occur within QD arcs (Projects C1, I2, NI1, C25, C26, C31, I3, I22, I25, I29, and NI3); none of these projects conflict with land use planning criteria. Project C33 (construct addition to Building 460, Fire Department Facility) is adjacent to a QD arc; it is recommended that the planned addition be sited fully outside the arc. Any ground-disturbing activities in and around ERP sites has the potential to encounter contaminated soil or groundwater. Projects D1, D3, D6, D12, C1, C2, C6, C11, C30, I1, I2, I13, I9, I16, I21, and NI3 would occur on or near ERP sites, none of which currently have Land Use Controls (SAFB 2011d). ERP sites could have Land Use Controls in the future, which would need to be incorporated into the project design.

There are several projects planned that would occur partially or fully off-installation, including Project I8, Project I26, Project I28, and the Cardinal Creek Gate. Environmental Baseline Surveys will be completed for projects occurring on lands off of Scott AFB and that require land acquisition.

Air Quality

Historically, air quality in the MSLI AQCR has been adversely affected by anthropogenic sources. Scott AFB is within a moderate O_3 nonattainment area and a $PM_{2.5}$ nonattainment area. All other criteria pollutants are in attainment or unclassified. Construction and demolition activities occurring at the same

time and in the same vicinity could have short-term, minor, adverse cumulative effects on air quality. To provide a cumulative air quality analysis, the estimated emissions for implementation of all planned installation development projects are shown in **Table 5-3**. Significance criteria for attainment pollutants are a comparison of stationary source emissions plus mobile source emissions to 250 tpy. Significance criteria for nonattainment pollutants are a comparison of estimated annual emissions to the General Conformity Rule *de minimis* thresholds. Construction- and demolition-related emissions would last only during those activities and cumulatively would not be significant. Stationary source emissions from the "Other Projects" have not been quantitatively estimated in this IDEA due to the preliminary design stage for many projects. However, stationary source emissions would not have significant cumulative effects on air quality as they would not trigger Title V or PSD permitting requirements.

Considering facility demolition and construction cumulatively, there would be an increase in the amount of facility space on Scott AFB. New facilities would use boilers, furnaces, and emergency generators, all of which would be sources of air emissions. However, the demolition of older and less energy efficient buildings would remove older and more emissive boilers, furnaces, and emergency generators from the installation and decrease air emissions. It is anticipated that long-term, minor, beneficial cumulative effects on air quality could occur from removing older equipment during demolition and replacing it with newer, cleaner, efficient equipment. Project I7 would replace 12 existing emergency generators (producing a total of 5.3 MW) with 2 emergency generators (producing a total of 6 MW). Replacing 12 older units with 2 new units would be expected to reduce NO_x emissions by 89 percent in units of grams per kilowatt hour (Collingham 2011). All required permits would be obtained prior to construction. Impacts on the Scott AFB Federally Enforceable State Operating Permit would also be evaluated and incorporated where necessary.

The Proposed Action and other development activities would cumulatively generate GHG emissions during construction activities. These installation development activities would generate an estimated 3,261 tpy of CO_2, which is 2,958 metric tpy of CO_2, in 2017, the highest anticipated year. Estimated gross CO_2 emissions in the State of Illinois were 226 million metric tons in 2009 (DOE/EIA 2011). Cumulative estimated CO_2 emissions in 2017 would represent 0.001 percent of the State of Illinois's 2009 CO_2 emissions. Although the current installation-wide GHG emissions are not available, it is anticipated that when combined with the maximum annual GHG emissions from installation development activities, Scott AFB's GHG emissions would remain under GHG major source thresholds. GHG emissions cumulatively would not be significant for the installation development activities at Scott AFB.

Geological Resources

Soils at Scott AFB have undergone modifications as a result of development and military activities. Individually, all construction and demolition activities could have short-term, negligible to minor, adverse effects as a result of vegetation removal, compaction of surrounding soils, and increased soil erosion and sedimentation. Considered cumulatively, planned installation development activities have the potential for short-term, minor, adverse effects and long-term, minor, adverse effects on topography, soil, and sediments. Construction and demolition activities occurring at the same time and in the same vicinity could have short-term, minor, adverse cumulative effects on soil resources, but implementation of erosion- and sediment-control environmental protection measures would be expected to limit potentially adverse cumulative effects.

Demolition of facilities would partially offset potentially long-term, adverse, cumulative effects from construction of facilities by providing areas of previously disturbed soil requiring minimal grading. Site plans are not available for all projects since most are in the early planning stages. Based on the planned demolition and construction footprints, and the infrastructure improvement and natural infrastructure management project sizes, it is estimated that cumulatively, the Proposed Action and all other installation

Table 5-3. Estimated Annual Air Emissions Resulting from the Selected and Other Installation Development Projects

Project	NO_x tpy	VOC tpy	CO tpy	SO_2 tpy	PM_{10} tpy	$PM_{2.5}$ tpy	CO_2 tpy
Total 2012 Selected Projects Emissions	3.180	0.527	2.619	0.250	11.166	1.353	461.809
Total 2012 Other Project Emissions	14.109	4.809	21.278	1.092	28.781	4.274	2,766.936
Total 2012 Emissions	**17.289**	**5.336**	**23.897**	**1.342**	**39.947**	**5.627**	**3,228.745**
Total 2013 Selected Projects Emissions	6.043	1.431	6.624	0.464	9.308	1.420	1,028.85
Total 2013 Other Project Emissions	10.249	3.407	14.662	0.793	17.863	2.781	1,941.165
Total 2013 Emissions	**16.292**	**4.838**	**21.286**	**1.257**	**27.171**	**4.201**	**2,970.015**
Total 2014 Selected Projects Emissions	7.384	1.388	6.211	0.945	4.158	0.929	1,001.020
Total 2014 Other Project Emissions	9.151	1.726	8.862	0.714	11.455	1.830	1,473.808
Total 2014 Emissions	**16.535**	**3.114**	**15.073**	**1.659**	**15.613**	**2.759**	**2,474.828**
Total 2015 Selected Projects Emissions	7.816	1.137	5.448	1.163	2.989	0.771	955.892
Total 2015 Other Project Emissions	5.850	1.044	5.078	0.452	2.943	0.710	904.751
Total 2015 Emissions	**13.666**	**2.181**	**10.526**	**1.615**	**5.932**	**1.481**	**1,860.643**
Total 2016 Selected Projects Emissions	3.781	0.318	2.252	0.850	3.101	0.470	397.186
Total 2016 Other Project Emissions	8.253	1.654	7.896	0.654	47.852	5.413	1,318.542
Total 2016 Emissions	**12.034**	**1.972**	**10.148**	**1.504**	**50.953**	**5.883**	**1,715.728**
Total 2017 Selected Projects Emissions	15.812	2.861	13.779	1.782	15.670	2.644	2,312.646
Total 2017 Other Project Emissions	6.529	0.965	5.070	0.510	2.802	0.732	948.433
Total 2017 Emissions	**22.341**	**3.826**	**18.849**	**2.292**	**18.472**	**3.376**	**3,261.079**
Total 2018 and Later Emissions	**6.243**	**0.176**	**1.659**	**1.971**	**0.195**	**0.195**	**321.931**
General Conformity Rule *de minimis* Limits	100	100	NA	NA	NA	100	NA
Stationary Source plus Mobile Source Significance Criteria	NA	NA	250	250	250	NA	NA

Key: NA = Not applicable.

Note: Total year emissions are the sum of mobile and stationary source emissions. These emission estimates include sources potentially subject to NSR permitting that would not be required to be counted toward the General Conformity *de minimis* limits.

development activities have the potential to disturb as much as 7.8 million ft^2 (approximately 178 acres) of soil over the next 5 years. This estimate was calculated by approximating that the area disturbed would be twice the building footprint for demolition and construction activities and equal to the project size for infrastructure improvement and natural infrastructure management projects.

Any ground-disturbing activities in and around ERP sites has the potential to encounter contaminated soil or groundwater. Projects D1, D3, D6, D12, C1, C2, C6, C11, C30, I1, I2, I13, I9, I16, I21, and NI3 would occur on or near ERP sites. Prior to construction activities in areas of possible contamination, soils would be sampled to determine the extent of contamination, and remediated in accordance with Federal, state, and installation regulations. If results of the sampling indicated the presence of contamination, remediation efforts would take place prior to commencement of construction activities. The handling, storage, transportation, and disposal of hazardous substances would be conducted in accordance with applicable Federal, state, and local regulations; USAF regulations; and Scott AFB management procedures. Long-term, beneficial, cumulative effects would occur from the removal of contaminated soils.

The Proposed Action would have no effects on geology, so no cumulative effects would be expected. All new facilities would be designed in accordance with UFC 3-310-03 and EO 12699, which would cumulatively reduce potential adverse effects following a seismic event. New facilities are proposed in areas of Scott AFB that are disturbed by previous development or are immediately surrounded by existing facilities or infrastructure; these areas are not considered available for agricultural use. Facilities proposed on Wakeland (drained), Bethalto, Winfield, Mascoutah (drained), or Edwardsville soils would have no effect on prime farmland, though these series are normally considered prime farmland. Cumulatively, no effects on prime farmland would occur.

Water Resources

Installation development activities have had minor effects on groundwater and surface water quality. Shallow aquifers at Scott AFB meet potable resource groundwater criteria. Nutrients and siltation from agricultural operations are the primary nonpoint sources of water pollution into surface water bodies (SAFB 2011b). In accordance with EO 11990 and EO 11988, construction of new facilities in wetlands or the 100-year floodplain is avoided in order to protect the functional uses of those resources unless there is no practicable alternative.

Individual projects disturbing more than 1 acre would require an NPDES permit and the use of environmental protection measures identified in an ESCP and an SWPPP. Construction and demolition activities occurring at the same time and in the same vicinity could have short-term, minor, adverse cumulative effects on water resources. Adherence to the NPDES construction permits (for projects over 1 acre) would minimize the potential for short-term, adverse, cumulative effects on water quality. Environmental protection measures would be used to control erosion and sedimentation and minimize storm water from leaving the construction site, reducing the potential for short-term, adverse, cumulative effects.

Demolition of facilities would partially offset potentially long-term, adverse, cumulative effects from construction of facilities and infrastructure by reducing the overall creation of impervious surfaces. Site plans are not available for all projects since most are in the early planning stages. Individual construction projects disturbing more than 5,000 ft^2 would be subject to EISA Section 438, which requires that predevelopment site hydrology be maintained or restored to the greatest extent possible following construction. Based on the planned demolition and construction footprints, and the infrastructure improvement and natural infrastructure management project sizes, it is estimated that cumulatively, the Proposed Action and all other installation development activities have the potential to create 265,538 ft^2 (6.1 acres) of impervious surfaces over the next 5 years (see **Table 5-1** for summary and **Appendix A** for

individual project sizes). Adherence to EISA Section 438 would minimize the potential for long-term, adverse, cumulative effects on water quality. Post-construction hydrological conditions would be expected to remain comparable to preconstruction hydrological conditions, which would reduce the potential for long-term, adverse, cumulative effects on water quality and flood conditions. Overall, long-term, cumulative effects could be beneficial because demolition would create pervious surfaces and larger construction projects, though creating impervious surfaces, would incorporate storm water management to ensure post-construction hydrology is not adversely affected.

Any ground-disturbing activities in and around ERP sites has the potential to encounter contaminated soil or groundwater. Projects D1, D3, D6, D12, C1, C2, C6, C11, C30, I1, I2, I13, I9, I16, I21, and NI3 would occur on or near ERP sites. Groundwater monitoring wells have been installed around ERP sites and need to be protected from damage during construction and demolition activities. Prior to construction activities in areas of possible contamination, groundwater would be sampled to determine the extent of contamination, and remediated in accordance with Federal, state, and installation regulations. The handling, storage, transportation, and disposal of hazardous substances would be conducted in accordance with applicable Federal, state, and local regulations; USAF regulations; and Scott AFB management procedures.

As discussed in **Section 4.3.5**, the Proposed Action could directly affect wetlands (Projects NI2 and NI3) and floodplains (Projects D3, I2, NI2, and NI3). None of the other planned installation development projects would directly affect wetlands or floodplains, but there are several projects that are sited near wetlands or floodplains (see **Table 5-4**). Adverse effects on wetlands and floodplains would be avoided through design, siting, and proper implementation of appropriate environmental protection measures and BMPs. Correspondence with regulatory and resource agencies, possibly including the U.S. Army Corps of Engineers and the USFWS, prior to commencing any ground-breaking construction activities would be completed and permits would be obtained, as necessary. Cumulatively, multiple development projects occurring in or near wetlands and floodplains could be considered a long-term, minor, adverse effect, but effects would not be significant considering the scope of these projects and the use of appropriate impact minimization measures.

Biological Resources

Natural vegetative communities have been highly modified by past development and military operations. Eighty percent of the installation is landscaped and urban. The installation supports a high diversity of wildlife, including the federally endangered Indiana bat. Scott AFB has an INRMP that is a reference and planning document for managing the installation's natural resources while maintaining mission readiness (SAFB 2011b). Scott AFB also has an Endangered Species Management Plan for the federally endangered Indiana bat (*Myotis sodalist*) (SAFB 2010c).

Considered cumulatively, planned installation development activities have the potential for short-term, minor, adverse effects and long-term, minor, adverse effects on vegetation and wildlife. The majority of all planned installation development projects would occur in the improved areas of Scott AFB, which would primarily affect non-forested upland and urban upland communities that are modified, landscaped, and mowed regularly. The permanent removal of modified and landscaped areas would be a long-term, negligible, adverse, cumulative effect. Demolition of facilities would partially offset potentially long-term, adverse, cumulative effects from construction of facilities by providing previously developed areas that require less vegetation removal. Projects that result in the permanent removal of trees, including C1 (888 ft^2 footprint) and NI1 (2,150,000 ft^2 footprint, approximately 255 trees removed or trimmed), would contribute to long-term, minor, adverse, cumulative effects on vegetation, wildlife, and possibly Indiana bat. Projects C1 and NI1 are analyzed in detail in **Sections 4.4.2.1** and **4.4.4.1**. All trees and affected vegetation would be replaced or relocated, if possible. Cumulative effects from vegetation removal would not be significant.

Table 5-4. Potential Indirect Cumulative Effects on Wetlands and Floodplains at Scott AFB

Project Identification Number and Title	Project Size (ft^2)	Change in Impervious Surfaces (ft^2)	Potential Long-term Effect on Wetlands	Potential Long-term Effect on Floodplains
D4. Demolish Building 3285	3,500	–3,500	105 feet away Negligible, beneficial	105 feet away Negligible, beneficial
D6. Demolish Carport, Building 5540	2,304	–2,304	62 feet away Negligible, beneficial	62 feet away Negligible, beneficial
C11. Construct Family Camp	297,200	+89,160	99 feet away Negligible, adverse with environmental protection measures s	--
C13. Construct New Paint Shop	21,800	+12,800	--	25 feet away Negligible, adverse
C14. Construct New Paintball Park	800	+800	74 feet away Negligible, adverse	--
C23. Construct Breezeway	614	+614	--	105 feet away Negligible, adverse
C28. Construct New CATM Building	18,406	+18,406	105 feet away Negligible, adverse with environmental protection measures	105 feet away Negligible, adverse
I4. Construct Cable Duct to Belleville Marquee	750	550	--	50 feet away Negligible, adverse
I11. Reconstruct a segment of Taxiway Golf	36,000	0	160 feet away No effect	160 feet away No effect
I20. Construct Cable Duct to Building 3165, 3171, 3183, 3285, and 3286	4,250	+4,000	185 feet away Negligible, adverse	123 feet away Negligible, adverse
I21. Construct Cable Duct to Buildings 544, 545, 560, 565, and 570	2,000	+1,850	--	25 feet away Negligible, adverse

Note: Distances between projects and wetlands and floodplains are approximate.

Construction and demolition activities occurring at the same time and in the same vicinity could have short-term, minor, adverse cumulative effects on wildlife as a result of noise. Construction-related noise emissions would only last during those activities and would not be cumulatively significant. Installation development projects could generate noise from new mechanical equipment or changes in vehicle traffic accessing different facilities; these changes in noise would have negligible long-term, cumulative effects on wildlife because wildlife inhabiting the installation are accustomed to noise disturbances in developed areas. Cumulative effects on wildlife would not be significant.

There are several planned projects that are proposed in areas of Scott AFB where the Indiana bat is known to roost (Project NI1, NI2, and NI3) or in close proximity to roosting and foraging habitat (Project C1).

These projects are analyzed in detail in **Sections 4.4.4.1** and **4.4.4.3**. Other planned installation development projects are sited in highly modified areas of Scott AFB where sensitive species would not be expected to occur. Cumulative effects on threatened and endangered species are not expected. Scott AFB already has conducted consultation with the USFWS under Section 7 of the ESA for Projects C1, NI1, NI2, and NI3. The USFWS provided concurrence that these projects are not likely to adversely affect the Indiana bat. **Appendix H** contains documentation of the USFWS consultation.

Cultural Resources

Scott AFB has and continues to meet its stewardship responsibilities toward cultural resources under Section 110 of the NHPA. Through systematic archaeological surveys, Scott AFB has identified areas with little or no archaeological potential and areas that warrant attention respective to future undertakings. Scott AFB has an extensive NRHP-listed historic district, the Scott Field Historic District, with over 100 contributing buildings reflecting the rich military aviation history of the installation through the built environment. Additionally, Scott AFB has identified and evaluated more recent Cold War-era buildings and structures for exceptional significance and continues to reevaluate as these buildings and structures approach 50 years of age.

The Proposed Action would be expected to have long-term, negligible to minor adverse impacts to cultural resources (see **Section 4.3.7**). Scott AFB has three areas identified through previous archaeological surveys as holding low to moderate potential for buried cultural materials. None of the proposed projects listed in **Table 5-2** are in the vicinity of these three areas. The Scott Field Historic District is the most significant historic property at Scott AFB. Some of the Proposed Action and future planned activities involve demolition and construction activities that have the potential to negatively impact NRHP-listed buildings in the historic district. Overall and cumulative expected impacts would range from negligible to moderate negative impacts under NEPA and be considered an adverse effect to historic properties under Section 106. The greater of these effects and overall project impacts could be reduced below the threshold of significance through implementation of measures developed in consultation with the SHPO and consulting parties to resolve these adverse effects.

Taken collectively and considering past and future effects to cultural resources at Scott AFB, the Proposed Action and future planned activities would be expected not to have a significant impact to cultural resources under NEPA.

Socioeconomics and Environmental Justice

Scott AFB contributes substantially to the local economy; it is the largest employer in southwest Illinois (SAFB 2010g). Cumulatively, installation development activities would have short-term, minor to moderate, beneficial effects on the local community through the procurement of goods and services. Construction-related expenditures would not generate any long-lasting cumulative benefits.

Implementation of the projects identified in this cumulative effects discussion would occur mostly on Scott AFB. Disproportionate impacts on minority or low-income populations would not occur.

Transportation and Infrastructure

Scott AFB has well-developed infrastructure systems that are maintained and improved as needed. Many of the planned installation development activities planned over the next 5 years would provide necessary maintenance and increase capacity. Individually, installation development activities could have short-term, negligible, adverse effects during construction, demolition, or installation activities on

infrastructure systems (e.g., power supply or communications connections could be temporarily lost while new facilities are connected).

Numerous infrastructure improvement projects are planned that would improve reliability and safety of utilities and communications system to support the population and military mission, These include constructing cable ducts and duct bank systems to improve communications capabilities (Projects I2, I4, I5, I6, I12, I13, I14, I15, I16, I17, I21, I22), constructing an emergency power plant to meet backup power requirements (Project I7), constructing a water storage tower to provide additional water storage capacity (Project I9), repairing a portion of Taxiway Golf and Scott West Ramp to improve airfield safety and operability (Projects I11 and I29), constructing a left-turn lane near Mascoutah Gate (Project I26), installing a pedestrian gate from community areas onto the installation (Projects I8 and I28), and installing a new irrigation system (Project I27). Implementation of planned installation development projects would have long-term, minor to moderate, beneficial, cumulative effects on the airfield, transportation systems, electrical supply, water supply, and communications systems.

Considering facility demolition and construction cumulatively, there would be an increase in the amount of facility space and impervious surfaces on Scott AFB. An increase in facility space and impervious surfaces could be expected to require slightly increased use of electrical supply, natural gas, water supply, sanitary sewer and wastewater treatment, storm water, and communications systems, though there would be no or negligible increases in personnel associated with the installation development projects. However, older and less efficient buildings would be removed, and newer facilities would be designed with LEED Silver Certification, offsetting long-term, minor, adverse, cumulative effects on utility systems.

Construction of the new Cardinal Creek Gate and the I-64/Rieder Road interchange would result in major, long-term, beneficial effects on the transportation network at Scott AFB. The new gate would allow direct access to aircraft operations and maintenance activities on the east side of the installation. Additionally, it would provide a more direct route for vehicles transporting petroleum and hazardous materials, which are currently routed past residential areas through Mascoutah Gate (Kaskaskia 2011).

Implementation of all planned installation development projects would result in short- and long-term adverse effects as a result of increased solid waste generation. As indicated in **Table 5-5**, approximately 60,122 tons of construction and demolition debris would be generated over the next 5 years. Demolition waste is managed by individual contracts, but it is anticipated that much of the clean demolition and construction debris could be recycled instead of disposed of in a landfill or rubble fill. Construction and demolition waste is a short-term, adverse effect in that it would only be generated during those activities, but the disposal of construction and demolition waste in a landfill would be a permanent effect.

Hazardous Materials and Wastes

Hazardous wastes and materials and 45 ERP sites occur at Scott AFB as a result of its historic use as a military installation. Scott AFB has an Integrated Pollution Prevention Management Action Plan, Hazardous Waste Management Plan, SPCC Plan, Asbestos Management Plan, Lead-Based Paint Management Plan, and Integrated Pest Management Plan that guide the use, handling, storage, and disposal of regulated materials in accordance with USAF, Federal, state, and local laws and regulations.

Individual installation development projects would require the use of small quantities of hazardous materials and generate small quantities of hazardous wastes, resulting in short-term, negligible, adverse effects. Construction and demolition activities occurring at the same time and in the same vicinity could have short-term, negligible to minor, adverse cumulative effects on hazardous materials and waste

Table 5-5. Cumulative Anticipated Generation of Construction and Demolition Debris

Project Type	Project Size (ft^2)	Multiplier (pounds/ft^2)	Total Waste Generated	
			Pounds	U.S. Tons
Proposed Action [1]	--	--	38,846,887	13,986
All Other Demolition Projects [2]	562,367	158	88,853,986	44,427
All Other Construction Projects [2]	767,457	4.34	3,330,763	1,665
All Other Infrastructure Improvement Pavement Projects [2]	87,338	1	87,338	44
			Total	**60,122**

Source: USEPA 2009
Notes:
1. See **Table 4-6** (from anticipated C&D waste generation table in infrastructure subsection).
2. See **Table 5-1** for project areas.

management. Adherence to construction site management plans for hazardous materials and wastes would limit potentially adverse cumulative effects. Some installation development projects could increase the use or storage of hazardous or petroleum materials, such as the new paint shop (Project C13) and new emergency power plant (Project I7). It is anticipated that increased hazardous or petroleum material used and wastes generated would be managed by existing Scott AFB management plans and practices. Cumulatively, long-term effects would not be significant.

Buildings constructed prior to 1980 should be assumed to contain asbestos. Buildings constructed prior to 1978 should be assumed to contain LBP. Buildings constructed prior to 1979 could have PCB-containing equipment. The risk of exposure to ACM, LBP, or PCBs during demolition activities would be a short-term, adverse effect. The appropriate identification, handling, removal, and disposal of those ACM and LBP would occur in accordance with Scott AFB management plans and USAF, Federal, state, and local laws and regulations. PCB-containing materials must be disposed of at a hazardous waste disposal facility. Cumulatively, long-term, beneficial effects would be expected from the removal of ACM, LBP, and PCBs from Scott AFB.

Any ground-disturbing activities in and around ERP sites has the potential to encounter contaminated soil or groundwater. Projects D1, D3, D6, D12, C1, C2, C6, C30, I1, I2, I13, I21, and NI3 would occur on ERP sites, and Projects C11, I9, and I16 would occur near ERP sites. Existing groundwater monitoring wells have been installed around ERP sites and would need to be protected from damage during construction and demolition activities. The risk of exposure to soil or groundwater contamination during ground-disturbing activities would be a short-term, adverse effect; the increased risk would not necessarily be considered an adverse cumulative effect when considering all installation development projects together. Prior to construction activities in areas of possible contamination, soils and groundwater would be sampled to determine the extent of contamination, and remediated in accordance with Federal, state, and installation regulations. If results of the sampling indicated the presence of contamination, remediation efforts would take place prior to commencement of construction activities. The handling, storage, transportation, and disposal of hazardous substances would be conducted in accordance with applicable Federal, state, and local regulations; USAF regulations; and Scott AFB management procedures. Long-term, beneficial, cumulative effects would be expected due to elevating priority status for ERP sites in the vicinity of proposed projects.

Safety

Scott AFB complies with all applicable USAF AFOSH and OSHA regulations and munitions safety criteria to provide a safe working environment while supporting military readiness and training activities. Individual installation development projects could pose an increased risk for a safety mishap during construction and demolition activities. Construction and demolition activities occurring at the same time and in the same vicinity could have short-term, minor, adverse cumulative effects by increasing local construction traffic accessing sites, increasing maintenance and repair activities, and creating highly noisy environs that could mask verbal or mechanical warning signals. Adherence to USAF AFOSH and OSHA regulations would minimize the potential for adverse effects on construction workers. Cumulative effects on construction safety would be short-term and negligible to minor.

Installation development activities in some areas of Scott AFB inherently pose a greater risk because of operational or environmental safety issues, including munitions and QD arcs and ERP sites. Some proposed construction activities would occur within QD arcs (Projects C1, I2, NI1, C25, C26, C31, I3, I22, I25, I29, and NI3). Project C33 (construct addition to Building 460, Fire Department Facility) is adjacent to a QD arc; it is recommended that the planned addition be sited fully outside the arc. Construction activities within QD arcs must be coordinated with appropriate airfield or weapons safety personnel to ensure the safety of construction workers. Planned infrastructure improvements within QD arcs would have no long term effects. Some facilities are planned within QD arcs. In accordance with AFMAN 91-201, new construction of nonexplosives facilities within an explosive CZ would require preparation and approval of an explosives site plan.

Any ground-disturbing activities in and around ERP sites have the potential to encounter contaminated soil or groundwater. Projects D1, D3, D6, D12, C1, C2, C6, C11, C30, I1, I2, I13, I9, I16, I21, and NI3 would occur on or near ERP sites. Prior to construction activities in areas of possible contamination, soils and groundwater would be sampled to determine the extent of contamination and remediated in accordance with Federal, state, and installation regulations. If results of the sampling indicated the presence of contamination, remediation efforts would take place prior to commencement of construction activities. The handling, storage, transportation, and disposal of hazardous substances would be conducted in accordance with applicable Federal, state, and local regulations; USAF regulations; and Scott AFB management procedures. Long-term, beneficial, cumulative effects on safety would occur from the remediation or removal of contaminated soils and groundwater.

Construction of the new Cardinal Creek Gate would have long-term, beneficial effects on safety by providing a new, upgraded, entry control point to Scott AFB. The new gate would also have truck inspection facilities and replace truck inspection and routing through the Mascoutah Gate. Cumulatively, the gate would contribute to long-term benefits by improving access to the east side of Scott AFB with improved installation security.

5.2 Reasonable and Prudent Measures and Best Management Practices

The Proposed Action would not result in significant adverse effects on the land or the surrounding area. However, BMPs, environmental protection measures, and other minimization measures would be implemented to eliminate or reduce the impacts of non-significant adverse effects.

General environmental protection measures that would be included, as applicable, as parts of installation development projects are summarized as follows:

- Clearing and grubbing would be timed with construction to minimize the exposure of cleared surfaces. Such activities would not be conducted during periods of wet weather. Construction

activities would be staged to allow for the stabilization of disturbed soils. These environmental protection measures s would minimize adverse effects associated with soil and water resources.

- Fugitive dust-control techniques such as watering and stockpiling would be used to minimize adverse effects. All such techniques would comply with applicable regulations. These environmental protection measures would minimize adverse effects associated with air quality, soil, and water resources.
- Soil erosion-control measures, such as soil erosion-control mats, silt fences, straw bales, diversion ditches, riprap channels, water bars, water spreaders, vegetative buffer strips, and hardened stream crossings, would be used as appropriate. These environmental protection measures would minimize adverse effects associated with soil and water resources.
- Storm water management would be used as appropriate during construction to minimize off-site runoff. Following construction, storm water management systems would ensure that predevelopment site hydrology is maintained or restored to the maximum extent technically feasible with respect to temperature, rate, volume, and duration of flow. These environmental protection measures would minimize adverse effects associated with water resources.
- Minimize the disturbance of environmental resources and topography by integrating existing vegetation, trees, and topography into site design. These environmental protection measures would minimize adverse effects associated with soil and biological resources.
- Tree removal and trimming would be limited to the period between 15 October to 31 March, when Indiana bats are occupying swarming and hibernation habitat and are not present on installation (USFWS 2007).
- Any groundbreaking construction activities should be performed before migratory birds return to Scott AFB or after all young have fledged to avoid incidental take.
- If construction is scheduled to start during the period when migratory birds are present, a site-specific survey for nesting migratory birds should be performed immediately prior to construction.
- If nesting birds are found during the survey, buffer areas should be established around nests. Construction should be deferred in buffer areas until birds have left the nest. Confirmation that all young have fledged should be made by a qualified biologist.
- Where feasible, minimize areas of impervious surface through shared parking, decked or structured parking, increased building height, or other measures as appropriate. These environmental protection measures would minimize adverse effects associated with soil and water resources.
- Provisions would be taken to prevent pollutants from reaching the soil, groundwater, or surface water. During project activities, contractors would be required to perform daily inspections of equipment, maintain appropriate spill-containment materials on site, and store all fuels and other materials in appropriate containers. Equipment maintenance activities would not be conducted on construction sites. These environmental protection measures would minimize adverse effects associated with soil, water resources, and hazardous materials and waste.
- Physical barriers and “no trespassing” signs would be placed around the demolition and construction sites to deter children and unauthorized personnel. All construction vehicles and equipment would be locked or otherwise secured when not in use. These environmental protection measures would minimize adverse effects associated with health and safety.

- Construction equipment would be used only as necessary during the daylight hours and would be maintained to the manufacturer's specifications to minimize noise impacts. These environmental protection measures would minimize adverse effects associated with health and safety.

Construction impacts are short-term environmental effects resulting from the Proposed Action. Construction effects might involve temporary changes in noise levels, air quality, water quality, land use, and community access.

5.3 Unavoidable Adverse Effects

Unavoidable adverse effects would result from implementation of the Proposed Action. As discussed in detail in **Section 4**, the Proposed Action would result in short-term, adverse effects associated with construction activities, including increased noise, increased air emissions, minor interruptions to traffic flow, use and generation of small amounts of hazardous materials and wastes, and generation of construction and demolition waste. None of these effects would be significant.

Projects D3, I2, NI2, and NI3 of the Proposed Action would occur in the 100-year floodplain, but these projects would not create impervious surfaces. Short-term adverse effects associated with construction in Projects I2, NI2, and NI3 would be negligible to minor. Demolition of buildings within the 100-year floodplain under Project D3 would represent a long-term, minor, beneficial effect.

The Proposed Action could potentially impact wetlands (Projects NI2 and NI3). The 375 AMW has determined there are no practicable alternatives for these projects. Short-term, adverse effects during the project to the Remove Log Jam from Silver Creek (Project NI2) could occur, but long-term effects are expected to be beneficial.

5.4 Compatibility of the Proposed Action and Alternatives with the Objectives of Federal, Regional, State, and Local Land Use Plans, Policies, and Controls

Effects on the ground surface as a result of the Proposed Action would occur within the boundaries of Scott AFB. Project C6 (see **Section 4.4.2.6**) could result in long-term, minor to moderate, adverse effects if that proposed facility is partially in the runway CZ. All other proposed installation development activities would not result in any significant or incompatible land use changes on or off the installation. Other proposed projects have been sited according to existing land use zones. Consequently, other construction activities would not be in conflict with installation land use policies or objectives.

5.5 Relationship Between the Short-term Use of the Environment and Long-term Productivity

Short-term uses of the biophysical components of human environment include direct construction-related disturbances and direct effects associated with an increase activity that occurs over a period of less than 5 years. Long-term uses of human environment are those effects occurring over a period of more than 5 years, including permanent resource loss.

The Proposed Action would not result in an intensification of land use in the surrounding area. Development of the Proposed Action would not represent a significant loss of open space. The long-term beneficial effects of implementing the Proposed Action and other planned installation development activities would support the ongoing and future training missions and other readiness training and operational assignments.

HQ AMC plans to reduce their overall building footprint by 6.6 million ft^2 by 2020. The planned demolition activities at Scott AFB over the next 5 years would contribute to that goal by removing excess, obsolete, and underused infrastructure capacity and focusing time and funding on maintaining only infrastructure that is needed. This is a long-term benefit for HQ AMC and the USAF.

5.6 Irreversible and Irretrievable Commitments of Resources

The irreversible environmental changes that would result from implementation of the Proposed Action involve the consumption of material resources, energy resources, and human resources. The use of these resources is considered to be permanent. 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 timeframe (e.g., energy and minerals).

Floodplains. The Proposed Action would place Projects D3, I2, NI2, and NI3 in the 100-year floodplain, but these projects would not create impervious surfaces. Although the Proposed Action would have an irreversible and irretrievable impact on floodplains, the Proposed Action would only impact a small portion of the 100-year floodplain area. Additionally, the demolition of buildings within the 100-year floodplain under Project D3 would represent a long-term, minor, beneficial effect. The Proposed Action would not have significant effects associated with floodplains.

Wetlands. Projects NI2 and NI3 of the Proposed Action would affect wetlands, but these projects do involve irreversible or irretrievable commitments of resources. The Proposed Action would not have significant effects on wetlands.

Biological Habitat. The Proposed Action would result in the minimal loss of vegetation and wildlife habitat. This loss would not be significant.

Material Resources. Material resources used for the Proposed Action include building materials (for renovation or construction of facilities), concrete and asphalt (for parking lots and roads), and various material supplies (for infrastructure) and would be irreversibly lost. Most of the materials that would be consumed are not in short supply, would not limit other unrelated construction activities, and would not be considered significant.

Energy Resources. No significant effects would be expected on energy resources used as a result of the Proposed Action, though any energy resources consumed would be irretrievably lost. These include petroleum-based products (e.g., gasoline and diesel fuel) and electricity. During construction, gasoline and diesel fuel would be used for the operation of construction vehicles. During operation, gasoline or diesel fuel would be used for the operation of privately owned and government-owned vehicles. Electricity would be used by operational activities. Consumption of these energy resources would not place a significant demand on their availability in the region.

Human Resources. The use of human resources for construction and operation is considered an irretrievable loss, only in that it would preclude such personnel from engaging in other work activities. However, the use of human resources for the Proposed Action and alternatives represent employment opportunities, and is considered beneficial.

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7. References

AMC 1999 — Air Mobility Command (AMC). 1999. *Air Mobility Command Civil Engineering Squadron Design Guide.* June 1999. Available online: <http://www.wbdg.org/ccb/AF/AFDG/civilengineersquadron.pdf>. Accessed on 12 February 2012.

BLS 2011a — Bureau of Labor Statistics (BLS). 2011. "Local Area Unemployment Statistics." Illinois, St. Louis, MO-IL Metropolitan Statistical Area, and St. Clair County. U.S. Department of Labor. Available online: <http://www.bls.gov/lau/#tables>. Accessed 11 January 2012.

BLS 2011b — BLS. 2011. National Unemployment Rate. Seasonally adjusted. Available online: <http://data.bls.gov/timeseries/LNS14000000>. Accessed 11 January 2012.

CEQ 1997 — Council on Environmental Quality (CEQ). 1997. *Considering Cumulative Effects under the National Environmental Policy Act.* January 1997.

City of Mascoutah 2008 — City of Mascoutah. 2008. *Mascoutah Comprehensive Plan Update*. Approved 19 May 2008. Available online: <http://mascoutah.com/index.asp?Type=B_BASIC&SEC={F5F15A10-6BAC-4ECF-B2A2-7388CA0EC66C}>. Accessed 22 November 2011.

City of Mascoutah 2011 — City of Mascoutah. 2011. *Zoning Map*. January 2011. Available online: <http://mascoutah.com/vertical/Sites/%7B7ED10D62-EFE6-4093-97A2-CC9EFA1D45BB%7D/uploads/%7BCB6F44E3-EA05-4465-A943-35ED7B9A43F0%7D.PDF>. Accessed 22 November 2011.

City of O'Fallon 2006 — City of O'Fallon. 2006. *O'Fallon, Illinois Comprehensive Plan*. July 2006 Update.

City of O'Fallon 2011 — City of O'Fallon. 2011. *Zoning Map*. January 2011. Available online: <http://www.ofallon.org/Public_Documents/OFallonIL_PlanZoning/ordinances/Zoning%20Map%202011%2010800map.pdf>. Accessed 22 November 2011.

Collingham 2011 — Collingham, Brian. 2011. Email communication to Mr. David Boyes and Mr. Timothy Didlake (HDR) from Mr. Brian Collingham (Scott AFB) providing details regarding an electrical generator upgrade project.

Collingham, B. 2012 — Collingham, Brian. 2012. Email communication from Mr. Brian Collingham (Scott AFB) to Mr. David Boyes and Mr. Timothy Didlake (HDR) regarding the estimated current value and the estimated cost to renovate the buildings proposed for demolition. Email received on 20 March 2012.

Collingham, R. 2012 — Collingham, Richelle. 2012. Communication from Ms. Richelle Collingham (Scott AFB) to HDR regarding land use controls and the anticipated remediation plan and schedule for the former landfill ERP site. This information was provided as a comment on the Preliminary Draft IDEA in January 2012.

DOD 2008 Department of Defense (DOD). 2008. *Unified Facilities Criteria (UFC) Airfield and Heliport Planning and Design. UFC 3-260-01*. Issued 17 November 2008.

DOD 2009 DOD. 2009. *Unified Facilities Criteria (UFC) DOD Facilities Pricing Guide. UFC 3-701-09.* Issued 15 September 2009.

DOD 2010 DOD. 2010. Memorandum from Dorothy Robyn (Office of the Under Secretary of Defense) regarding DOD Implementation of Storm Water Requirements under Section 439 of the Energy Independence and Security Act. 19 January 2010.

DOD 2012 DOD. 2012. *Unified Facilities Criteria (UFC) DoD Minimum Antiterrorism Standards for Buildings.* UFC 4-010-01. Issued 9 February 2012. Available online: <http://www.wbdg.org/ccb/DOD/UFC/ufc_4_010_01.pdf>. Accessed on 28 February 2012.

DOE/EIA 2011 U.S. Department of Energy, Energy Information Administration (DOE/EIA). 2011. *Table 1. State Emissions by Year (Million Metric Tons of Carbon Dioxide).* Available online <http://www.eia.gov/environment/emissions/state/state_emissions.cfm>. Data Released October 2011. Data accessed 22 November 2011.

FAA 2012 Federal Aviation Administration (FAA). 2012. *FAA Federal Aviation Regulation 14 CFR Part 77 – Objects affecting navigable airspace*. Available online: <http://www.flightsimaviation.com/data/FARS/part_77.html>. Data accessed on 20 March 2012.

FEMA 2003 Federal Emergency Management Agency (FEMA). 2003. National Flood Insurance Rate Map, St. Clair County, Illinois, and Incorporated Areas (Panel 240 of 555, Map Number 17163C0240D). November 2003.

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

Gannett Fleming 2007 Gannett Fleming. 2007. *Scott Air Force Base Base-wide Traffic and Safety Engineering Study*. June 2007.

Gardner et al. 1991 Gardner, James E., James D. Gardner, and Joyce E. Hoffmann. 1991. *Summer Roost Selection and Roosting Behavior of Myotis sodalis (Indiana bat) in Illinois.* Final Report. Illinois Natural History Survey, Illinois Department of Conservation. Champaign, IL.

HQ AMC 2010 Headquarters Air Mobility Command (HQ AMC). 2010. HQ AMC/A7 Space Utilization 20/20 by 2020 Plan. 22 December 2010.

IEPA 2007 Illinois Environmental Protection Agency (IEPA). 2010. Modification of NPDES Permit No. IL0026859. Permit issued March 16, 2005 and valid through July 31, 2010. Permit modified March 29, 2007.

IEPA 2009a IEPA. 2009. General NPDES Permit For Storm Water Discharges from Industrial Activities. Permit effective 1 May 2009 and expiring on 30 April 2014.

IEPA 2009b — IEPA. 2009. General NPDES Permit For Discharges from Small Municipal Separate Storm Sewer Systems. Permit effective 1 April 2009 and expiring on 31 March 2014.

IEPA 2009c — IEPA. 2009. Letter from Mr. Michael Haggitt (IEPA) to Mr. John Patterson (Scott AFB) regarding remedial action at Building 48. 15 December 2009.

Illinois State Geological Survey 2009 — Illinois Division of Geological Survey. 2009. Physiographic Regions of Illinois: Illinois Department of Natural Resources, Division of Geological Survey, Champaign, Illinois.

Kaskaskia 2011 — Kaskaskia Engineering Group, LLC. 2011. Meeting agenda, with project history and summary, for the Rieder Road/I-64 Interchange Project (09-0016). 18 July 2011.

Kurta 2005 — Kurta, A. 2005. *Roosting Ecology and Behavior of Indiana bats (Myotis sodalis) in Summer*. Pages 29 through 42 in K.C. Vories and A. Harrington (eds.), *Proceedings of the Indiana bat and Coal Mining: a Technical Interactive Forum*. Office of Surface Mining, U.S. Department of the Interior, Alton, IL. Available online: <http://www.mcrcc.osmre.gov?PDF/Forums/Bat%Indiana/TOC.pdf>. Accessed 5 November 2011.

Kurta et al. 2002 — Kurta, A., S.W. Murray, and D.H. Miller. 2002. "Roost Selection and Movements Across the Summer Landscape." Part of A. Kurta and J. Kennedy (eds.), *The Indiana Bat: Biology and Management of an Endangered Species.* Bat Conservation International, Austin, TX.

Mankowski 2010 — Mankowski, A., editor. 2010. Endangered and Threatened Species of Illinois: Status and Distribution, Volume 4 - 2009 and 2010 Changes to the Illinois List of Endangered and Threatened Species. Illinois Endangered Species Protection Board, Springfield, Illinois. iii + 38 pp.

Martin et al. 2002 — Martin, C.O., R.A. Fisher, J.E. Hoffman, and S.R. Hill. 2002. *Environmental Assessment of selected fauna and their habitats at Scott Air Force Base, Illinois: Bat surveys, seasonal avian inventories, and botanical survey of forested areas. General Technical Report.* 43 pp.

MetroTransit 2011 — MetroTransit. 2011. MetroTransit Home Page. Available online: <http://www.metrostlouis.org/Default.aspx>. Accessed 22 June 2011.

MidAmerica Airport 2011 — MidAmerica Airport. 2011. St. Clair County Public Building Commission Approves Perishable Warehouse Partnership and Tenant [Press Release]. October 27, 2011. Available online: *<http://www.co.st-clair.il.us/NewsHighlights/Press+Release.htm>*. Accessed 28 November 2011.

MidAmerica St. Louis Airport 2011 — MidAmerica St. Louis Airport. 2011. *MidAmerica Home*. Available online: <http://www.flymidamerica.com/>. Accessed 21 June 2011.

Nidzgorski 2012 — Nidzgorski, TSgt Steven. 2012. Correspondence between TSgt Steven Nidzgorski (Scott AFB 375 CES/CEDL) and Ms. Elaine Dubin (HDR) regarding the amount of explosive content that would be used at the Scott AFB explosive ordnance proficiency range. 12 January 2012.

Pinkham 2011 — Pinkham, David. 2011. Correspondence between MSgt David Pinkham (932 CES/CED) and Mr. David Boyes (HDR) regarding construction and operation of the proposed explosive ordnance proficiency range. 28 November 2011.

Ritzi et al. 2005 — Ritzi, C.M., B.L. Everson, and J.O. Whitaker, Jr. 2005. "Use of bat boxes by a maternity colony of Indiana bats (Myotis sodalis)." *Northeastern Naturalist* 12(2): 217- 220.

SAFB undated — Scott Air Force Base (SAFB). Undated. *Integrated Lead Based Paint Management Plan, Scott Air Force Base, "Core Lead-Based Paint Management Plan."*

SAFB 1986 — SAFB. 1986. Programmatic Memorandum of Agreement Among the United States Department of Defense, the Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers Concerning the Demolition of World War II Temporary Buildings. 1986.

SAFB 1992 — SAFB. 1992. *Archeological Assessment of Scott Air Force Base, St. Clair County, Illinois.* 1992

SAFB 2000 — SAFB. 2000. *Scott Air Force Base Architectural Compatibility Plan*. January 2000. Available online: < http://www.wbdg.org/ccb/AF/AFDG/scott_acp.pdf>. Accessed on 13 February 2012.

SAFB 2004a — SAFB. 2004. *Draft Environmental Assessment for the Joint Use Agreement, St. Clair County, Scott AFB, Illinois.* December 2004.

SAFB 2004b — SAFB. 2004. *Storm Water Pollution Prevention Plan, Scott Air Force Base*. June 2004.

SAFB 2005a — SAFB. 2005. *Final Threatened and Endangered Species Habitat Survey*. July 2005.

SAFB 2005b — SAFB. 2005. *Airfield Pavement Evaluation Scott AFB, Illinois*. September 2005.

SAFB 2006a — SAFB. 2006. *Scott Air Force Base, Illinois, Integrated Cultural Resources Management Plan*. February 2006.

SAFB 2006b — SAFB. 2006. *Airfield Pavement Condition Assessment Report*. August 2006.

SAFB 2006c — SAFB. 2006. *Hazardous Material Emergency Planning and Response Plan Scott AFB, Illinois.* April 2006.

SAFB 2006d — SAFB. 2006. *Environmental Assessment of Proposed Construction, Demolition, and Other Actions at the 126th Air Refueling Wing Illinois Air National Guard Scott Air Force Base, Illinois.* June 2006.

SAFB 2007a SAFB. 2007. *Final Installation Development Environmental Assessment at Scott Air Force Base, Illinois.* May 2007.

SAFB 2007b SAFB. 2007. Survey for the Federally Endangered Indiana Bat at Scott Air Force Base, St. Clair County, Illinois. October 2010.

SAFB 2007c SAFB. 2007. *Scott Air Force Base, Illinois, Parking Study Draft Final.* August 2007.

SAFB 2007d SAFB. 2007. *Scott Air Force Base, Illinois, Natural Infrastructure Assessment Report*. February 2007.

SAFB 2007e SAFB. 2007. *Integrated Contingency Plan for Oil Spill Prevention and Response. Emergency Response Action Plan Summary for Scott Air Force Base, Illinois*. August 2007.

SAFB 2007f SAFB. 2007. *Base Pest Management Plan, Scott Air Force Base, Illinois.*

SAFB 2008a SAFB. 2008. *Scott Air Force Base Mid America St. Louis Airport Joint Land Use Study*. November 2008.

SAFB 2008b SAFB. 2008. *Hazardous Waste Management Plan Scott Air Force Base, Illinois*. October 2008.

SAFB 2009 SAFB. 2009. *Final 2009 Floodplain Analysis for Scott AFB*. November 2009.

SAFB 2010a SAFB. 2010. 375 Air Mobility Wing Fact Sheet. 25 January 2010.

SAFB 2010b SAFB. 2010. *Explosive Safety Base Layout Scott AFB, IL*. 28 September 2010.

SAFB 2010c SAFB. 2010. *Final Endangered Species Management Plan for the Federally Endangered Indiana Bat* (Myotis sodalist*) at Scott Air Force Base in St. Clair County, Illinois*. February 2010.

SAFB 2010d SAFB. 2010. *Final Air Emissions Inventory Calendar Year 2007*. January 2010.

SAFB 2010e SAFB. 2010. *Final 2009 Wetland Delineation Report Scott Air Force Base, St. Clair County, Illinois*. September 2010.

SAFB 2010f SAFB. 2010. *Final Natural Forest Inventory Report Scott Air Force Base, St. Clair County, Illinois*. October 2010.

SAFB 2010g SAFB. 2010. Stakeholder's Report 375th Air Mobility Wing Scott Air Force Base, Illinois. Fiscal Year 2010.

SAFB 2010h SAFB. 2010. *Renewable Energy Screening Analysis at Scott Air Force Base, Illinois*. July 2010.

SAFB 2010i SAFB. 2010. *Air Installation Compatible Use Zone (AICUZ) Study*. March 2010.

SAFB 2010j — SAFB. 2010. Traffic count data recorded at Scott AFB access gates. Data recorded during March 2010. Data provided to HDR by Mr. Brian Collingham (Scott AFB) on 17 January 2012.

SAFB 2011a — SAFB. 2011. *Installation Development Plan.* Air Mobility Command Scott Air Force Base. Final Submittal. August 2011.

SAFB 2011b — SAFB. 2011. *Final Integrated Natural Resources Management Plan for Scott Air Force Base, St. Clair County, Illinois*. December 2011.

SAFB 2011c — SAFB. 2011. Information regarding the year that all buildings and facilities at Scott AFB were constructed.

SAFB 2011d — SAFB. 2011. *Scott AFB Environmental Restoration Program Site Summaries*. June 2011.

SAFB 2011e — SAFB. 2011. *National Register of Historic Places Evaluation of Historic Buildings, Structures, and Cemeteries at Scott Air Force Base, St. Clair County, Illinois.* December 2011.

SAFB 2012 — SAFB. 2012. ERP Site List for Scott AFB. Printed by Mr. William Howland on 12 January 2012 and supplied to HDR on 13 January 2012 by Mr. Brian Collingham (Scott AFB).

Smith 2010 — Smith, Bill. 2010. Personal communication from Mr. Bill Smith (Scott AFB) to Mr. David Boyes (HDR) and Mr. Timothy Didlake (HDR) during the IDEA Kick-off Site Visit. Date of conversation 18 November 2010.

Sparks et al. 2005 — Sparks, D.W., C.M. Ritzi, J.E. Duchamp, and J.O. Whitaker, Jr. 2005. "Foraging habitat of the Indiana bat (Myotis sodalis) at an urban-rural interface." *Journal of Mammalogy* 86(4): 713-718.

St. Clair County 2006 — St. Clair County. 2006. *Revised Code of Ordinances of St. Clair County, Illinois.* 1 March 2006.

St. Clair County 2011 — St. Clair County. 2011. *St. Clair County Comprehensive Plan* (Draft). 3 August 2011. Prepared by Woolpert. Available online: <http://www.co.st-clair.il.us/Departments/Building+and+Zoning/Comprehensive+Plan.htm>. Accessed 22 November 2011.

State of Illinois 2002 — State of Illinois. 2002. *Illinois Administrative Code, Title 35: Environmental Protection Subtitle H: Noise Chapter I: Pollution Control Board.*

State of Illinois 2011 — State of Illinois. 2011. *Title 35: Environmental Protection; Subtitle B: Air Pollution; Chapter I: Pollution Control Board; Subchapter 1: Air Quality Standards and Episodes; Part 243: Air Quality Standards; Subpart B: Standards and Measurement Methods*. Available online < http://www.ipcb.state.il.us/documents/dsweb/Get/Document-11994/>. Accessed 19 November 2011.

U.S. Army 2007 — U.S. Army. 2007. *Army Regulation 200-1, Environmental Protection and Enhancement*. 13 December 2007.

USACHPPM 2003 — U.S. Army Center for Health Promotion and Preventive Medicine (USACHPPM). 2003. *BNoise2 Large Arms Noise Assessment Model.* Version 1.3. Developed by USACHPPM Construction Engineering Research Laboratory. 3 July 2003.

U.S. Census Bureau 1990 — U.S. Bureau of the Census (U.S. Census Bureau). 1990. P001. Persons. 1990 Census of Population and Housing. 1990 Summary Tape File 1 (STF 1). Available online: <http://factfinder.census.gov/home/saff/main.html?_lang=en>. Accessed 17 November 2011.

U.S. Census Bureau 2000 — U.S. Census Bureau. 2000. P-1. Total Population. Census 2000 Summary File 1 (SF 1). Accessed via American FactFinder. Available online: <http://factfinder.census.gov/home/saff/main.html?_lang=en>. Accessed 18 November 2011.

U.S. Census Bureau 2009 — U.S. Census Bureau. 2009. B17001. Poverty Status in the Past 12 Months by Sex by Age; B17010. Poverty Status in the Past 12 Months of Families by Family Type by Presence of Related Children Under 18 Years by Age of Related Children; B19013. Median Household Income in the Past 12 Months (in 2009 Inflation-Adjusted Dollars); B19301. Per Capita Income in the Past 12 Months (in 2009 Inflation-Adjusted Dollars); B23001. Sex by Age by Employment Status for the Population 16 Years and Over; and C24030. Sex by Industry for the Civilian Employed Population 16 Years And Over. 2005-2009 American Community Survey. Accessed via American FactFinder. Available online: <http://factfinder.census.gov/home/saff/main.html?_lang=en>. Accessed 20 November 2011.

U.S. Census Bureau 2010a — U.S. Census Bureau. 2010. DP01. Profile of General Population and Housing Characteristics: 2010. Accessed via American FactFinder 2. Available online: <http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml>. Accessed 18 November 2011.

U.S. Census Bureau 2010b — U.S. Census Bureau. 2010. DP03. Selected Economic Characteristics. 2010 American Community Survey 1-Year Estimates. Accessed via American FactFinder 2. Available online: <http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml>. Accessed 18 November 2011.

USAF 1996 — U.S. Air Force (USAF). 1996. *Facility Requirements*. Air Force Handbook 32-1084. 1 September 1996.

USAF 1998 — USAF. 1998. *Land Use Planning*. Air Force Pamphlet 32-1010 (AFPAM32-1010). 1 November 1998. Available online: <http://www.e-publishing.af.mil/shared/media/epubs/AFPAM32-1010.pdf>. Accessed 21 November 2011.

USAF 1999 — USAF. 1999. *AICUZ Program Manager's Guide*. Air Force Handbook 32-7084. 1 March 1999. Available online: <http://www.e-publishing.af.mil/shared/media/epubs/AFH32-7084.pdf>.

USAF 2007 — USAF. 2007. *Explosive Ordnance Disposal (EOD) Program*. Air Force Instruction (AFI) 32-3001. 10 October 2007.

USAF 2011 — USAF. 2011. *Explosive Safety Standards*. Air Force Manual 91-201. 12 January 2011.

USAF 2012 — USAF. 2012. *Fitness Program*. Air Force Instruction (AFI) 36-2905. 3 January 2012.

USDA-NRCS 1999 — U.S. Department of Agriculture Natural Resource Conservation Service (USDA-NRCS). 1999. "How Our Land is Used." Available online: <http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/technical/nra/nri/?&cid=nrcs143_013791>. Accessed 22 November 2011.

USDA-NRCS 2004 — USDA-NRCS. 2004. "Lower Kaskaskia Watershed." Available online: <http://www.il.nrcs.usda.gov/programs/csp/csp_lwrkask.html>. Accessed 23 August 2006.

USDA-NRCS 2011 — USDA-NRCS. 2011. "Web Soil Survey." Available online: <http://webbsoilsurvey.nrcs.usda.gov/app/websoilsurvey.aspx>. Accessed 22 November 2011.

USEPA 1971 — U.S. Environmental Protection Agency (USEPA). 1971. *Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances*. 31 December 1971.

USEPA 1974 — USEPA. 1974. *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety*. Publication No. 550/9-74-004, Washington D.C. March 1974.

USEPA 1981 — USEPA. 1981. "Noise and its Measurement." January 1981. Available online: <http://nonoise.org/epa/Roll19/roll19doc49.pdf>. Accessed 3 March 2010.

USEPA 2002a — USEPA. 2002. *Part 81 – Designation of Areas for Air Quality Planning Purposes – Table of Contents, Subpart B – Designation of Air Quality Control Regions, Sec. 81.18 Metropolitan St. Louis Interstate Air Quality Control Region*. Available online: <http://edocket.access.gpo.gov/cfr_2002/julqtr/40cfr81.18.htm>. Accessed on 19 November 2011.

USEPA 2002b — USEPA. 2002. *Part 81 - Designation of Areas for Air Quality Planning Purposes - Table of Contents, Subpart C – Section 107 Attainment Status Designations, Sec. 81.314, Illinois*. Available online: <http://edocket.access.gpo.gov/cfr_2002/julqtr/40cfr81.314.htm >. Accessed 19 November 2011.

USEPA 2008 — USEPA. 2008. *National Emissions Inventory Browser*. Emissions for the counties of the MSLI AQCR. Available online: <http://neibrowser.epa.gov/eis-public-web/home.html>. Data accessed 9 January 2012.

USEPA 2009 USEPA. 2009. *Estimating 2003 Building-Related Construction and Demolition Materials Amounts*. March 2009.

USEPA 2011a USEPA. 2011. *National Ambient Air Quality Standards*. Last updated on October 2011. Available online: <http://www.epa.gov/air/criteria.html>. Accessed 24 January 2012.

USEPA 2011b USEPA. 2011. *8-Hour Ozone Nonattainment State/Area/County Report*. Last updated 30 August 2011. Available online: <http://www.epa.gov/oar/oaqps/greenbk/gncs.html#ILLINOIS>. Accessed 19 November 2011.

USEPA 2011c USEPA. 2011. *Particulate Matter ($PM_{2.5}$)1997 Standard Nonattainment State/Area/County Report*. Last updated 30 August 2011. Available online: <http://www.epa.gov/oar/oaqps/greenbk/qncs.html>. Accessed 19 November 2011.

USEPA 2011d USEPA. 2011. *Mandatory Class I Areas*. Available online: <http://www.epa.gov/ttn/oarpg/t1/fr_notices/classimp.gif>. Accessed 19 November 2011.

USEPA 2011e USEPA. 2011. *Map of Radon Zones for Illinois.* Available online: <http://www.epa.gov/radon/states/illinois.html>. Accessed 29 November 2011.

USFWS 2002 United States Fish and Wildlife Service (USFWS). 2002. *Biological Opinion on the Application for an Incidental Take Permit for the Federally Endangered Indiana Bat (Myotis sodalis) for the Six Points Road Interchange and Associated Development in Hendricks and Marion Counties, Indiana.*

USFWS 2007 USFWS. 2007. Indiana Bat (*Myotis sodalis*) Draft Recovery Plan: First Revision. U.S. Fish and Wildlife Service, Fort Snelling, MN. 45 pp. Available online: <http://www.fws.gov/midwest/Endangered/mammals/inba/pdf/inba_fnldrftrecpln_apr07.pdf >. Accessed 7 November 2011.

USFWS 2011a USFWS. 2011. Endangered Species Program Page (Search by County). Available online: <http://www.fws.gov/midwest/endangered/lists/illinois-cty.html>. Accessed 10 November 2011.

USFWS 2011b USFWS. 2011. Guidance on developing and implementing an Indiana bat conservation plan. July 2011.

USGS 2009 U.S. Geological Survey (USGS). 2009. Illinois Seismic Hazard Map. Available online: <http://earthquake.usgs.gov/earthquakes/states/illinois/hazards.php>. Accessed 22 November 2011

Village of Shiloh 2009 Village of Shiloh. 2009. Village of Shiloh Zoning Map 2009 and Comprehensive Plan/Land Use Map.

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APPENDIX A

INVENTORY OF INSTALLATION DEVELOPMENT PROJECTS

Table A-1. Selected and Other Proposed Demolition Projects

Project Identification Number and Title	Installation Project Number	FY	Land Use	Description	Potential Constraints	Project Area (ft^2)	Change in Impervious Surface (ft^2)
Selected Demolition Projects							
D1. Demolish Old Service Station, Building 48	VDYD090158	2013	Maintenance	Demolish Building 48, Old Service Station. This project does not include the demolition of surrounding pavements, which serve as a barrier between storm water and soil contamination.	Cultural Resources, Historic District, ERP	910	-910
D2. Demolish James Gym (Building 1987), Buildings 1984, 1985, and 1986,and outdoor pool (Facility 6303)	VDYD080130B	2015	Community and Outdoor Recreation	Demolish James Gym (Building 1987), Buildings 1984, 1985, and 1986, and outdoor pool (Facility 6303) in support of the construction of a modern fitness center.	None	72,596	-63,410
D3. Demolish 21 Buildings in Support of the Base Civil Engineering and Contracting Complex	VDYD111242	2017 /8	Maintenance and Administrative	Demolish Buildings 512, 513, 514, 515, 516, 517, 519, 520, 521, 522, 523, 528, 530, 531, 533, 542, 543, 546, 549, 552, and 6354 as these buildings would be vacant following the construction of the proposed Base Civil Engineering and Contracting Complex.	ERP	84,668	-84,668
Other Demolition Projects							
D4. Demolish Building 3285	TBD	2012	Maintenance	Demolish Building 3285, CATM Facility.	None	3,500	-3,500

Project Identification Number and Title	Installation Project Number	FY	Land Use	Description	Potential Constraints	Project Area (ft^2)	Change in Impervious Surface (ft^2)
Other Demolition Projects (continued)							
D5. Demolish Buildings 1508, 1509, 1510, 1512, 1513, and 1810	VDYD101154	2012	Housing	Demolish Buildings 1508, 1509, 1510, 1512, 1513, and1810 as part the construction of a new VQ complex and Joint Cyber Facility.	None	210,420	-210,420
D6. Demolish Carport, Building 5540	VDYD102004	2012	Maintenance	Demolish Carport (Building 5540) as part of the construction of a civil engineering open storage yard.	ERP	2,304	-2,304
D7. Demolish Warehouse, Building 3270	VDYD090155	2013	Maintenance	Demolish Building 3270, Warehouse Document Staging.	Clear Zone	9,132	-9,132
D8. Demolish Warehouse, Building 3272	VDYD090156	2013	Maintenance	Demolish Building 3272, Warehouse Document Staging.	Clear Zone	9,054	-9,054
D9. Demolish Warehouse, Building 3275	VDYD090157	2013	Maintenance	Demolish Building 3275, Warehouse Document Staging.	Clear Zone	9,581	-9,581
D10. Demolish Building 3189	VDVY597032	2013	Administrative	Demolish Building 3189 as part of the construction of the new DISA facility.	Clear Zone, Noise	68,376	-68,376
D11. Demolish Building 3273	VDVY121074	2013	Maintenance	Demolish Building 3273.	Clear Zone	8,838	-8,838
D12. Demolish Buildings 1961 and 1990	VDYD101207	2014	Administrative	Demolish Buildings 1961 and 1990 to support the construction of the new US TRANSCOM Mission Planning Center.	ERP	152,281	-76,140

Project Identification Number and Title	Installation Project Number	FY	Land Use	Description	Potential Constraints	Project Area (ft^2)	Change in Impervious Surface (ft^2)
Other Demolition Projects (continued)							
D13. Demolish Burger King, Building 1649	VDYD090160	2015	Community	Demolish Building 1649, Burger King Restaurant.	None	3,464	-3,464
D14. Demolish Building 502	VDYD050109	2015	Aircraft O & M	Demolish Building 502 as part of the construction of the Distribution and Deployment Processing Center.	None	3,372	-3,372
D15. Demolish Building 1533	TBD	2015	Administrative	Demolish Building 1533.	None	15,802	-15,802
D16. Demolish Building 4130	TBD	2016	Maintenance	Demolish Building 4130.	Clear Zone	4,018	-4,018
D17. Demolish Buildings 859 and 1089	VDYD101053	2017	Administrative	Demolish Buildings 859 and 1089 as part of the construction the Joint Cyber Facility.	None	62,225	-62,225
					Total Square Feet	**720,541**	**-635,214**

Key:

CATM = Combat Arms Training & Maintenance
DISA = Defense Information System Agency
ERP = Environmental Restoration Program
ft^2 = square feet
FY = Fiscal Year
O & M = Operation and Maintenance
NHPA = National Historic Preservation Act
TBD = To Be Determined
US TRANSCOM = U.S. Transportation Command
VQ = Visiting Quarters

Table A-2. Selected and Other Proposed Construction Projects

Project Identification Number and Title	Installation Project Number	FY	Land Use	Description	Potential Constraints	Project Area (ft^2)	Change in Impervious Surface (ft^2)
Selected Construction Projects							
C1. Construct and Operate Explosive Ordnance Proficiency Range	VDYD101141	2012	Open Space	Construct and operate an explosive ordnance proficiency range with appropriate barricades, holding areas, fences, and access roads.	ERP, QD, Proximate Sensitive Habitats	888	+888
C2. Construct New DISA Facility	VDYD597032	2013	Open Space	Construct a multi-story masonry facility with necessary parking and infrastructure to replace the current outdated DISA Facility.	ERP, Visual Alternation	164,048	+54,682
C3. Construct New Fitness Facility	VDYD080130B	2015	Community and Outdoor Recreation	Construct modern fitness facilities with associated parking and pavements.	None	103,166	+51,583
C4. Construct US TRANSCOM Mission Planning Center	VDYD101207	2014	Administrative	Construct new multi-story US TRANSCOM Mission Planning Center with necessary parking and infrastructure.	Parking	218,507	+72,835
C5. Construct Joint Cyber Facility	VDYD101053	2017	Housing Accompanied	Construct a Joint Cyber Facility to provide consolidated and modern office space for base communication staff.	Land-use category	52,000	+52,000
C6. Construct Consolidated Base Civil Engineering and Contracting Complex	VDYD111242	2017/ 8	Maintenance	Construct a Base Civil Engineering and Contracting Complex to consolidate functions currently spread across 26 different buildings into one new facility.	ERP, Clear Zone	120,600	+120,600

Project Identification Number and Title	Installation Project Number	FY	Land Use	Description	Potential Constraints	Project Area (ft^2)	Change in Impervious Surface (ft^2)
Other Construction Projects							
C7. Construct Addition to Building 1521	VDYD111207	2012	Administrative	Construct an addition to Building 1521, the Weather Squadron Facility.	None	1,580	+1,580
C8. Construct Automobile Detailing Station	VDVY111110	2012	Community	Construct a covered automobile detailing station at the carwash with two vacuum islands with carpet cleaners, electrical service, and lighting.	None	1,600	No change
C9. Construct Covered Walkways Between Dormitories and Building 1800	VDYD080193	2012	Housing Unaccompanied	Construct covered walkways between Buildings 1810, 1820, 1830, and the Dining Facility (Building 1800).	None	11,785	No change
C10. Construct Dormitory Pavilion Between Buildings 1820 and 1830	VDYD080334	2012	Housing Unaccompanied	Construct a covered pavilion between Belleville Hall (Building 1820) and Mascoutah Hall (Building 1830).	None	225	+225
C11. Construct Family Camp	NA	2012	Housing Accompanied	Construct Family Camp at the former temporary lodging facilities.	None	297,200	+89,160
C12. Construct New Ball Field at Youth Center Site (Building 4780)	VDYD708129	2012	Community	Construct new baseball field at Youth Center.	None	31,415	No change
C13. Construct New Paint Shop	NA	2012	Maintenance	Construct New Paint Shop near the Civil Engineering Pavilion and repair and provide additional parking.	None	21,800	+12,800

Project Identification Number and Title	Installation Project Number	FY	Land Use	Description	Potential Constraints	Project Area (ft^2)	Change in Impervious Surface (ft^2)
Other Construction Projects (continued)							
C14. Construct New Paintball Park	NA	2012	Community	Construct a new paintball park with a pavilion, storage shed, fencing, and lighting.	Cultural Resources	800	+800
C15. Construct Park with C-141 Starlifter Display	TBD	2012	Administrative	Construct a park with a C-141 Starlifter static display.	Parking	25,000	25,000
C16. Construct Addition to the Youth Center (Building 4780)	VDYD101151 and VDYD090107	2012 and 2015	Community	Construct a two-story addition to the Youth Center (Building 4780) that includes multi-purpose rooms, classrooms, computer rooms, and storage areas.	None	3,014	+1,507
C17. Construct Dumpster Enclosures	VDYD18	2013	Administrative	Construct dumpster enclosures at Buildings 3650 and 3652, Wing Headquarters and the Civil Engineering Facilities.	None	800	+800
C18. Construct Medical Warehouse	TBD	2013	Maintenance	Construct Medical Warehouse to replace storage facilities at Building 3272.	None	7,793	+7,793
C19. Construct New AFGLSC Facility	VDYD090173	2013	Administrative	Construct new AFGLSC adjacent to Building 1515.	None	91,493	+91,493
C20. Construct New VQ Complex	VDYD101154	2013	Housing Unaccompanied	Construct a 284-person, six-story VQ Complex.	None	169,110	+ 28,185
C21. Construct Storage Facility for Building 1521	VDYD101096	2013	Administrative	Construct a concrete, modular storage facility for Building 1521.	None	600	+600

Project Identification Number and Title	Installation Project Number	FY	Land Use	Description	Potential Constraints	Project Area (ft^2)	Change in Impervious Surface (ft^2)
Other Construction Projects (continued)							
C22. Construct Addition to Building 517	TBD	2014	Maintenance	Construct addition to Building 517.	None	4,620	+4,620
C23. Construct Breezeway	VDVD111202	2014	Administrative	Construct a breezeway between Buildings 3650 (932 AW HQ) and 3651.	None	614	+614
C24. Construct Wing Headquarters Facility	VDYD22	2014	Administrative	Construct Wing Headquarters Facility for 932 AW.	None	9,719	+4,860
C25. Construct Distribution and Deployment Processing Center	VDYD050109	2015	Industrial	Construct a one-story distribution and deployment processing center.	QD	27,437	+27,437
C26. Construct Explosive Ordnance Disposal Storage Facility	VDYD111208	2015	Maintenance	Construct an Explosive Ordnance Disposal Storage Facility.	QD	1,800	+1,800
C27. Doom Bay Addition and Brick Installation	VDYD030284	2015	Maintenance	Construct addition to the Doom Bay Building (Building 3192) to provide storage for vital equipment.	None	2,400	+2,400
C28. Construct New CATM Building	VDYD111256	2016	Maintenance	Construct new CATM building to replace Building 3185.	None	18,406	+18,406
C29. Construct Wing Support Facility	VDYD111204	2016	Administrative	Construct a Wing Support Facility for the 932 AW.	None	2,500	+2,500

Project Identification Number and Title	Installation Project Number	FY	Land Use	Description	Potential Constraints	Project Area (ft^2)	Change in Impervious Surface (ft^2)
Other Construction Projects (continued)							
C30. Construct Addition to and Renovate Building 5008	VDYD099088	2016	Administrative	Construct an addition to and renovate Building 5008, the Squadron Operations Facility.	Noise, ERP	30,000	+11,000
C31. Construct Canopy near Building 464	VDYD080330	2017	Maintenance	Construct a canopy above the fuel pumps near Building 464.	QD	900	+900
C32. Construct Addition and Upgrade Hazardous Materials Storage Building	VDYD06555	2017	Maintenance	Construct addition to and upgrade the hazardous materials storage building (Building 555) to provide sufficient and consolidated hazardous materials storage.	None	3,000	+3,000
C33. Construct Addition to Building 460	VDYD21	2017	Maintenance	Construct an addition to Building 460, Fire Department Facility.	QD	1,846	+1,846
					Total Square Feet	**1,426,666**	**+691,914**

Key:
AFGLSC = Air Force Global Logistics Support Center
AW = Air Wing
CATM = Combat Arms Training & Maintenance
DISA = Defense Information System Agency
ERP = Environmental Restoration Program
ft^2 = square feet
FY = Fiscal Year
HQ = Headquarters
NA = Not Applicable
QD = quantity-distance
TBD = To Be Determined
US TRANSCOM = U.S. Transportation Command
VQ = Visiting Quarters

Table A-3. Selected and Other Proposed Infrastructure Improvement Projects

Project Identification Number and Title	Installation Project Number	FY	Land Use	Description	Potential Constraints	Project Area (ft^2)	Change in Impervious Surface (ft^2)
Selected Infrastructure Improvement Projects							
I1. Construct Civil Engineering Open Storage Yard	VDYD102004	2012	Maintenance	Construct civil engineering open storage yard near Building 5540. The project would also include the construction of an asphalt-paved roadway to provide access from Pryor Drive.	ERP	31,500	+31,500
I2. Construct Communication Infrastructure for DISA and other future development at the Cardinal Creek MFH neighborhood	TBD	2013	Airfield and Administrative	Construct and upgrade communications duct bank system to service the proposed DISA facility and for other future development at the former Cardinal Creek MFH neighborhood. Due to the sensitivity of this information, the location of the communication duct banks is not shown on **Figures 2-1** and **2-2**.	Floodplain, ERP, QD	221,760	No change
I3. Construct Aircraft Deicing Pad	VDYD070134	2017	Airfield	Construct a concrete aircraft deicing pad that includes an underground storage tank, a drainage system, and permanent lighting.	QD	90,000	+90,000
Other Infrastructure Improvement Projects							
I4. Construct Cable Duct to Belleville Marquee	VDYD1100253	2012	Administration	Construct new cable duct bank to Belleville Marquee.	None	750	+550

Project Identification Number and Title	Installation Project Number	FY	Land Use	Description	Potential Constraints	Project Area (ft^2)	Change in Impervious Surface (ft^2)
Other Infrastructure Improvement Projects (continued)							
I5. Construct Cable Duct to Building 1670	VDYD1000642	2012	Community	Construct new cable duct bank to Building 1670.	None	150	+125
I6. Construct Cable Duct to Shiloh Marquee	VDYD1100253	2012	Open Space	Construct new cable duct bank to Shiloh Marquee.	None	500	+400
I7. Construct Emergency Power Plant	TBD	2012	Administration	Construct an emergency power plant that will house two new 3-megawatt emergency generators for Buildings 1575, 1600, 1601, 1603, and 1700. Twelve existing emergency generators will be removed and replaced by the proposed generators.	None	5,500	+3,250
I8. Construct Pedestrian Walkway Gate from Lincoln's Landing	VDYD080220	2012	Community	Construct a pedestrian walkway gate between Lincoln's Landing MFH area and the installation near Building 4020.	None	7,200	+7,200
I9. Construct Water Storage Tower	TBD	2012	Community	Construct a 500,000-gallon water storage tower near the intersection of Pryor Drive and Gunn Avenue to provide additional water storage capacity to the installation.	None	1,963	+1,963
I10. Install Fencing and Gravel at Building 4130	VDYD101070	2012	Administrative	Install fenced area with lighting at Building 4130.	Clear Zone	10,000	No change

Project Identification Number and Title	Installation Project Number	FY	Land Use	Description	Potential Constraints	Project Area (ft^2)	Change in Impervious Surface (ft^2)
Other Infrastructure Improvement Projects (continued)							
I11. Reconstruct a segment of Taxiway Golf	VDYD070141	2012	Airfield	Reconstruct a portion of Taxiway Golf to support KC-10, C-17, and C-40 aircraft at maximum loads.	Noise, QD	36,000	No change
I12. Construct Cable Duct to Building 1700	VDYD0700100	2012 and 2013	Administration	Construct new cable duct bank to Building 1700 to provide redundant capability.	None	2,000	+1,600
I13. Construct Cable Duct to Buildings 1980, 1981, and 1989	VDYD0700003	2012 or 2013	Community	Construct new cable duct bank to Buildings 1980, 1981, and 1989.	ERP	1,200	+1,000
I14. Construct Cable Duct to Building 196	TBD	2013	Outdoor Recreation	Construct new cable duct bank to Building 196.	None	1,500	+1,200
I15. Construct Cable Duct to Building 217	VDYD0800028	2013	Housing Accompanied	Construct new cable duct bank to Building 217.	Historic District	200	+150
I16. Construct Cable Duct to Building 5498	TBD	2013	Various	Construct new cable duct bank to Building 5498.	None	800	+500
I17. Construct Cable Duct to Buildings 4130	TBD	2013	Maintenance	Construct new cable duct bank to Buildings 4130.	Clear Zone	550	+500
I18. Move Existing Jogging Path Outside Clear Zone	VDYD030467	2013	Community	Reroute jogging path outside of airfield restricted areas.	Clear Zone, Noise	1,000	No change

Project Identification Number and Title	Installation Project Number	FY	Land Use	Description	Potential Constraints	Project Area (ft^2)	Change in Impervious Surface (ft^2)
Other Infrastructure Improvement Projects (continued)							
I19. Replace Golf Course Clubhouse Electrical Feeders	VDYD040126	2013	Various	Replace golf course clubhouse electrical feeders.	None	16,110	No change
I20. Construct Cable Duct to Building 3165, 3171, 3183, 3285, and 3286	VDYD0900191	2013 and 2014	Maintenance	Construct new cable duct bank to Buildings 3165, 3171, 3183, 3285, and 3286.	None	4,250	+4,000
I21. Construct Cable Duct to Buildings 544, 545, 560, 565, and 570	VDYD100003	2013 and 2014	Maintenance	Construct new cable duct bank to Buildings 560, 545, 544, 565, and 570.	ERP	2,000	+1,850
I22. Replace Cable Duct to Between 126 ARW and 932 AW Campuses	VDYD1200001	2013 and 2014	Administrative, Maintenance, Open Space	Replace Cable 01/09 between 126 ARW and 932 AW campuses.	QD	3,500	+3,350
I23. Construct New RV Lot	VDYD090252	2014	Maintenance	Construct new parking lot for the storage of RV vehicles.	None	50,000	+50,000
I24. Fix Erosion Problems at Building 3189	VDYD090116	2014	Administrative	Install plastic underground piping system to channel storm water away from Building 3189. Piping would be connected to the installation's storm water drainage system or a soak pit.	Clear Zone, Noise	50,000	No change
I25. Upgrade Airfield Lighting Vault Ductbank	VDYD010124	2014	Airfield	Replace ductbank and circuit conducts for airfield lighting.	QD	7,000 LF	No change

Project Identification Number and Title	Installation Project Number	FY	Land Use	Description	Potential Constraints	Project Area (ft^2)	Change in Impervious Surface (ft^2)
Other Infrastructure Improvement Projects (continued)							
I26. Construct Left-Turn Lane near Mascoutah Gate	VDYD090121	2015	Off-Installation	Construct a left-turn lane for eastbound Illinois Route 161 traffic entering the installation at the Mascoutah Road Gate. The turn-lane would be approximately 300 feet in length and 12 feet wide.	None	3,600	+3,600
I27. Install New Irrigation System at Building 1515	VDYD090278	2016	Administrative	Install a new irrigation system at Building 1515.	None	20,000	No change
I28. Install Pedestrian Gate near Building 6032	VDYD090318	2016	Community	Install a pedestrian gate from the Scott School to installation property.	None	6,100	+6,100
I29. Scott West Ramp Repairs	VDYD111051	2016	Airfield	Repair major concrete failures on the aircraft parking aprons.	QD	750,000	No change
					Total Square Feet	**1,318,133**	**+208,838**

Key:
ARW = Air Refueling Wing
AW = Air Wing
DISA = Defense Information System Agency
ERP = Environmental Restoration Program
ft^2 = square feet
FY = Fiscal Year
LF = linear feet
MFH = Military Family Housing
RV = Recreational Vehicle
QD = quantity-distance
TBD = To Be Determined

Table A-4. All Proposed Natural Infrastructure Management Projects

Project Identification Number and Title	Installation Project Number	FY	Land Use	Description	Potential Constraints	Project Area (ft^2)	Change in Impervious Surface (ft^2)
All Natural Infrastructure Management Projects							
NI1. Airfield Tree Violations	VDYD070142	2016	Airfield	Remove or trim approximately 255 trees from the installation to avoid conflicts with the airfield. The majority of the trees are located at the golf course between Golf Course Road and the airfield.	Clear Zone, Noise, QD, T & E Species	2,150,000	No change
NI2. Remove Log Jam from Silver Creek	TBD	2012	Open Space	Remove log jam from Silver Creek, which is resulting in the accumulation of logs, silt, and debris. Minimal vegetation removal might be required to allow vehicular access to the log jam.	Wetlands, Floodplains, Cultural Resources, T & E Species	1,000	No change
NI3. Improve Foraging Habitat for Indiana Bat	TBD	2012 through 2017	Open Space	Improve foraging habitat for Indiana bat by establishing management zones and conducting periodic tree thinning and planting. Because the habitat of the Indiana bat has not been determined on-installation, this project is not shown on **Figures 2-1** and **2-2**.	Wetlands, Floodplains, QD, ERP, Cultural Resources, T & E Species	TBD	No change
					Total Square Feet	**2,151,000**	**No change**

Key:
ERP = Environmental Restoration Program
ft^2 = square feet
FY = Fiscal Year
QD = quantity-distance
T & E = Threatened and Endangered
TBD = to be determined

APPENDIX B

INTERAGENCY AND INTERGOVERNMENTAL COORDINATION FOR ENVIRONMENTAL PLANNING (IICEP), NATIVE AMERICAN TRIBAL CONSULTATION, AND PUBLIC INVOLVEMENT CORRESPONDENCE

IICEP Distribution List and IICEP Letter

The Draft IDEA and Draft FONSI/FONPA were made available to these agencies for a 45-day review period beginning on 26 April 2012 and ending on 11 June 2012. The IICEP distribution letter and comments received are included on the following pages.

Ms. Emily Fultz, A.I.C.P.
Director of Economic Development & Planning
101 South Illinois Street
Belleville, IL 62220

U.S. Army Corps of Engineers
Attn: Ms. Susan L. Horneman
St. Louis District
1222 Spruce Street
St. Louis, MO 63103-2822

USEPA Region 5
NEPA Implementation Section
Mr. Ken Westlake
77 W. Jackson Blvd.
Mail Code B-19J
Chicago, IL 60604

Illinois Department of Natural Resources
Mr. Steve Hamer
Division of Environment and Ecosystems
1 Natural Resources Way
Springfield, IL 62702-1271

Illinois Environmental Protection Agency
Mr. Jerry Kuhn
1021 North Grand Avenue East
Springfield, IL 62794-9276

Illinois Historic Preservation Agency
Attn: Review and Compliance
1 Old State Capitol Plaza
Springfield, IL 62701-1512

Mr. Elliot Liebson
Economic Development Coordinator
City of Mascoutah
3 West Main Street
Mascoutah, IL 62258

Mr. Ted K. Shekell, AICP
Planning Director
255 South Lincoln
O'Fallon, IL 62269

Mr. Norm Etling, P.E.
Village Engineer
1 Park Drive
Shiloh, IL 62269

St. Clair County
Mr. Mike Mitchell
Building and Zoning Dept.
#10 Public Square, 5th Floor
Belleville, IL 62220

St. Clair County Economic Development Department
Mr. Terry Beach
19 Public Square, Suite 200
Belleville, IL 62220

U.S. Fish and Wildlife Service
Mike Redmer, Biologist
1250 South Grove Avenue, Suite 103
Barrington, IL 60010

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IICEP Distribution Letter

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR MOBILITY COMMAND

MEMORANDUM FOR DISTRIBUTION

FROM: AMC/A7P
507 Symington Drive
Scott AFB, IL 62225-5022

SUBJECT: Environmental Assessment of Installation Development at Scott Air Force Base (AFB), Illinois

1. Headquarters Air Mobility Command, on behalf of the 375th Air Mobility Wing at Scott AFB, Illinois, has initiated an Environmental Assessment of Installation Development (IDEA) addressing selected projects from those programmed and reasonably foreseeable installation development projects identified for the next 5 fiscal years (FYs), FY 2012 to FY 2017. Scott AFB seeks to improve its understanding of the potential environmental consequences associated with the continuing process of installation development by evaluating selected projects in a single Environmental Assessment. The projects analyzed in this IDEA fall under four categories: demolition, construction, infrastructure improvement, and natural infrastructure management.

2. In accordance with Executive Order 12372, *Intergovernmental Review of Federal Programs*, we request your participation and solicit comments on the attached Draft Environmental Assessment for the Proposed Action. Also enclosed is a copy of the distribution list of other Federal, state, and local agencies to be contacted regarding this Proposal Action. If you feel there are any additional individuals who should review and comment on the proposal, please feel free to include them in your distribution of this letter and the attached materials.

3. Please provide any comments or information within 45 days of receipt of this correspondence to HQ/AMC/A7PI, 507 Symington Drive, Scott AFB, Illinois 62225-5022.

4. If your staff has any questions, our point of contact is Ms. Jean Reynolds, HQ AMC/A7PL, (618) 229-0843, or email to jean.reynolds@us.af.mil.

BRIAN C. MURPHY, Colonel, USAF
Chief, Program Division
Directorate of Installation & Mission Support

Attachment:
Draft Environmental Assessment

DISTRIBUTION:
See Attached

UNRIVALED GLOBAL REACH FOR AMERICA...ALWAYS!

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Comments received on the Draft IDEA from agencies

From the USEPA

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

JUN 0 7 2012

REPLY TO THE ATTENTION OF:

E-19J

Christine Spargur
375th Air Mobility Wing
Office of Public Affairs
101 Heritage Drive
Scott AFB, Illinois 62225

Re: Draft Environmental Assessment for Installation Development at Scott Air Force Base, St. Clair County, Illinois

Dear Ms. Spargur:

The U.S. Environmental Protection Agency has reviewed the referenced draft Environmental Assessment (EA) prepared by the 375th Air Mobility Wing (375 AMW) pursuant to our authorities under the National Environmental Policy Act (NEPA), Council on Environmental Quality regulations (40 CFR Parts 1500-1508), Section 309 of the Clean Air Act, and Section 404 of the Clean Water Act.

The proposed project involves analyses of eighty-two separate projects, including seventeen demolition projects, thirty-three construction projects, twenty-nine infrastructure projects, and three natural infrastructure projects. Some examples of proposed projects include building demolition, building construction, construction of Indiana bat habitat, and construction of a C-4 explosive ordnance proficiency range. Basic analyses of environmental impacts for all proposed projects are found in Appendix A, and detailed analyses of on-base environmental conditions are found throughout the EA.

Based on our review, we have comments relating to reuse/recycling/disposal of demolition debris, green infrastructure, construction in floodplains, and noise, as stated below:

Reuse/Recycling/Disposal of Demolition Debris

We recommend demolition debris be reused or recycled when possible. Best management practices should be used when disposing of non-recyclable debris, including hazardous materials such as lead paint and asbestos.

Green Infrastructure

We encourage Federal agencies to lead the way to better environmental stewardship. Various statutes and executive orders, such as the Energy Independence and Security Act provide examples of how Federal agencies can do so.

We commend 375 AMW for explaining in great detail how the proposed projects will implement green infrastructure. For all applicable projects, we recommend that 375 AMW minimize any increases in non-permeable surfaces, with a goal of no net increase. Installation of green stormwater control structures such as rain gardens, swales, and/or vegetated buffers near non-permeable surfaces such as roofs and parking lots can dramatically reduce the volume of storm water discharges to create a no net increase in the volume of stormwater discharges. Cisterns and rain barrels also serve to perform similar functions. Green stormwater management is oftentimes less expensive that traditional (gray) stormwater management. Please see the enclosure titled "what is green infrastructure?" for more information on green infrastructure.

Construction in Floodplains

Some projects are proposed to be constructed in a 100-year floodplain. Special effort should be made not to construct any buildings or other structures within the 100-year floodplain that will be impacted during a flood event. If unavoidable, such structures should be built on a platform that is raised in elevation above the elevation that signifies a 100-year flood event. Please note that, due to climate change events, what was once considered a 100-year flood may now be more intense, and occur at greater frequencies. 375 AMW may wish to re-analyze flood maps and determine if any structures should be relocated or built at higher elevations.

Noise

We have identified project C1 (explosive ordnance proficiency range), as currently designed/located, to cause noise impacts to base personnel, sensitive on-base populations (children and youth), and off-base citizens. Noise from construction is a short-term issue that should be addressed, but will be intermittent and have no long term effects/impacts.

Operation of this range raises noise issues. According the EA, there should not be any civilian receptors within the listed affected zones. The overall major concerns pertain to the personnel exposed to and working within the vicinity of the facility, and to vehicular traffic that may pass by when detonation is occurring, which has the potential for sensitive receptors to be affected by noise and/or vibration. We recommend that the noise and vibration be dealt with at the source to

prevent the noise from propagating to a receptor. There are many methods of noise attenuation and control available, by attenuating, absorbing and dampening the noise closest to the source (the facility in which the detonations are occurring). If the source or facility enclosing the source cannot be altered, then the sound path can be modified. Below is the hierarchy of sound control methods and examples, including controls and guidelines:

- Source Control:
  - Modify source to reduce vibration, isolate equipment/source.
- Sound Path Control:
  - Enclosures, surface treatments (acoustical treatments preventing reverberant) noise,
  - use of barriers (natural barrier for outdoor noise (tree line, berms, etc.)).
- Protect noise receiver:
  - Remove person,
  - Maximum distance,
  - Shielding and barriers,
  - Use of absorbing materials, porous materials are best to lower sound pressure level by converting sound energy to heat energy due to friction.
  - Identify all flanking paths (route of sound waves to source):
    - Leaks in barrier or enclosures,
    - Structure-borne transmission, noise is exemplified by vibration or reverberation.

In Figure 2-1, a clearer depiction of the contour lines and boundaries with differentiation between USAF recommended limit zones and Federal Aviation Administration (FAA) (MidAmerica Airport runway) limit zones would be helpful in determining the potential for environmental noise impacts. If possible, the EA should identify the types of land use within each contour and the possible receptors that would be or are present in each zone. This would be helpful in determining the cumulative impacts of noise from both construction and operation of the facility.

The EA did not discuss the estimated or calculated noise level and peak/maximum exposure limit for the nearest sensitive receptors. A discussion on the topic would be helpful, including whether or not noise levels are anticipated to exceed the action level at those receptors. We are also concerned about the level of noise exposure that personnel will be subjected to while in close proximity to the range. The EA should discuss types of hearing protection to be used, and the noise reduction rating of the hearing protection.

The EA indicated that there are no residences or other noise-sensitive receptors near the installation boundary. Effort should be made to ensure noise-sensitive receptors are denied access to those areas during detonations. It should be noted that hearing loss can occur at 120

decibels for instantaneous noises, and National Institute for Occupational Safety and Health recommends noise remain below 80 decibels. Page F-6 indicates that instantaneous noise at the installation boundary may be as high as 138.5 decibels during detonations.

Additionally, there was no discussion in the EA as to whether or not habitat or wildlife will be impacted by noise and/or vibrations from detonations. Noise and/or vibrations can affect species, habitat, and mating and nesting behavior. Times, duration and seasons should be taken into account when the facility becomes operational.

We are available to discuss these comments to the draft EA at your convenience. Please feel free to contact Mike Sedlacek of my staff at 312-886-1765, or by email at sedlacek.michael@epa.gov to discuss these comments.

Sincerely,

Kenneth A. Westlake, Chief
NEPA Implementation Section
Office of Enforcement and Compliance Assurance

Encl: What is Green Infrastructure?

cc: Jerry Kuhn, Illinois Environmental Protection Agency
Steve Hamer, Illinois Department of Natural Resources

what is green infrastructure?

EPA

Water: Green Infrastructure

You are here: Water » Water Infrastructure » Green Infrastructure » What is Green Infrastructure?

What is Green Infrastructure?

Green infrastructure uses vegetation, soils, and natural processes to manage water and create healthier urban environments. At the scale of a city or county, green infrastructure refers to the patchwork of natural areas that provides habitat, flood protection, cleaner air, and cleaner water. At the scale of a neighborhood or site, green infrastructure refers to stormwater management systems that mimic nature by soaking up and storing water.

Here we review the range of green infrastructure elements that can be woven throughout a watershed, from the smaller scale elements that can be integrated into sites to the larger scale elements that span entire watersheds.

- Downspout Disconnection
- Rainwater Harvesting
- Rain Gardens
- Rain Barrels
- Bioswales
- Permeable Pavements
- Green Alleys and Streets
- Green Parking
- Green Roofs
- Urban Tree Canopy
- Land Conservation

This page provides links to non-EPA web sites that provide additional information. You will leave the EPA gov domain and enter another page with more information. EPA cannot attest to the accuracy of information on that non-EPA page. Providing links to a non-EPA Web site is not an endorsement of the other site or the information it contains by EPA or any of its employees. Also, be aware that the privacy protection provided by the EPA gov domain (see Privacy and Security Notice) may not be available at the external site.

Downspout Disconnection

Downspout disconnection refers to the rerouting of rooftop drainage pipes to drain rainwater to rain barrels, cisterns, or permeable areas instead of the storm sewer. Downspout disconnection stores stormwater and/or allows stormwater to infiltrate into the soil. This simple practice may have particularly great benefits in cities with combined sewer systems.

Factsheets

- Toronto Homeowners' Guide to Rainbarrel, Downspout Disconnection
- Water Environment Research Foundation

Benefits

- Demonstration of Downspout Disconnection Effectiveness
- Ontario Centre for Municipal Best Practices: Best Practice Summary Report

Examples

- Los Angeles Downspout Disconnection Program
- Milwaukee Downspout Disconnection
- Portland Downspout Disconnection Program

Web Sites

- Mid-America Regional Council
- Blue Water Baltimore

Rainwater Harvesting

Rainwater harvesting systems collect and store rainfall for later use. When designed appropriately, rainwater harvesting systems store and reduce runoff and provide a source of water. These systems may be particularly attractive in arid regions, where they can reduce demands on increasingly limited water supplies.

Factsheets

- Portland Stormwater Solutions: Rain Barrels
- Portland Stormwater Solutions: Rain Cisterns
- Build It Green (PDF) (3 pp, 43K, About PDF)

Benefits

- Capturing Rainwater to Replace Irrigation Water for Landscapes (PDF) (4 pp, 3MB, About PDF)
- Reducing Malls's Water Use Through Rainwater Harvesting (PDF) (4 pp, 1.9MB, About PDF)

Examples

- Technicians for Sustainability: Water Harvesting
- New York City Rain Barrel Giveaway Program

Web Sites

- Rainwater Harvesting at North Carolina State University
- American Rainwater Catchment Systems Association

Rain Gardens

Rain gardens (also known as bioretention or biofiltration cells) are shallow, vegetated basins that collect and absorb runoff from rooftops, sidewalks, and streets. Rain gardens mimic natural hydrology by infiltrating and evapotranspiring runoff. Rain gardens are versatile features that can be installed in almost any unpaved space.

Factsheets

- EPA Stormwater Menu of Best Management Practices (BMPs)

Benefits

- Bioretention/Rain Gardens Website

- EPA Stormwater Technology Fact Sheet (PDF) (8 pp, 257K, About PDF)

- Urban Design Tools: Bioretention

Examples
- Burnsville, MN Stormwater Retrofit Study

Web Sites
- Rain Gardens for the Rays
- Rain Garden Network
- Rain Garden Design Templates

Planter Boxes

Planter boxes are urban rain gardens with vertical walls and open or closed bottoms that collect and absorb runoff from sidewalks, parking lots, and streets. Planter boxes are ideal for space-limited sites in dense urban areas and as a streetscaping element.

Factsheets
- Portland Stormwater Solutions: Infiltration Planters
- Portland Stormwater Solutions: Flow-Through Planters

Benefits
- Performance Assessment of Three Types of Rainwater Detention Structures (PDF) (74 pp, 5MB, About PDF)
- See Rain Gardens and Green Streets

Examples
- Michigan Avenue Streetscape
- Philadelphia Water Department

Web Sites
- See Rain Gardens and Green Streets

Bioswales

Bioswales are vegetated, mulched, or xeriscaped channels that provide treatment and retention as they move stormwater from one place to another. Vegetated swales slow, infiltrate, and filter stormwater flows. As linear features, vegetated swales are particularly suitable along streets and parking lots.

Factsheets
- EPA Stormwater Menu of BMPs
- EPA Stormwater Technology Fact Sheet (PDF) (7 pp, 81K, About PDF)
- Florida Field Guide to Low Impact Development (PDF) (7 pp, 238K, About PDF)

Benefits
- Performance of Engineered Soil and Trees in a Parking Lot Bioswale (PDF) (7 pp, 4.7MB, About PDF)
- Water Quality Benefits of Grass Swales in Managing Highway Runoff (PDF) (10 pp, 218K, About PDF)

Examples
- Wisconsin Department of Natural Resources Technical Standard (PDF) (14 pp, [illegible], About PDF)

Web Sites
- University of New Hampshire Stormwater Center
- See Rain Gardens and Green Streets

Permeable Pavements

Permeable pavements are paved surfaces that infiltrate, treat, and/or store rainwater where it falls. Permeable pavements may be constructed from pervious concrete, porous asphalt, permeable interlocking pavers, and several other materials. These pavements are particularly cost effective where land values are high and where flooding or icing is a problem.

Factsheets
- EPA Stormwater Menu of BMPs: Pervious Concrete
- EPA Stormwater Menu of BMPs: Porous Asphalt
- EPA Stormwater Menu of BMPs: Pavers

Benefits
- Long-Term Stormwater Quantity and Quality Performance of Permeable Pavement Systems (PDF) (15 pp, 290K, About PDF)
- Reducing Urban Heat Islands: Cool Pavements (PDF) (28 pp, [illegible], About PDF)

Examples
- Use of pervious concrete eliminates over $250,000 in construction costs
- Minnesota city engineers storm drains, uses pervious concrete

Web Sites
- National Ready Mix Concrete Association: Pervious Concrete

- Interlocking Concrete Pavement Institute
- National Asphalt Pavement Association: Porous Asphalt

Green Streets and Alleys

Green streets and alleys integrate green infrastructure elements into the street and/or alley design design to store, infiltrate, and evapotranspire stormwater. Permeable pavement, bioswales, planter boxes, and trees are among the many green infrastructure features that may be woven into street or alley design.

Factsheets

- EPA's Green Streets: A Conceptual Guide (PDF) (
- Sustainable Complete Streets (PDF) (3 pp,
- Portland Green Streets Fact Sheet

Examples

- Seattle Public Utilities Natural Drainage Projects
- Syracuse Green Street: Concord Place (PDF) (2 pp, 220K,
- Los Angeles Green Street: Elmer Ave
- The Chicago Green Alley Handbook (PDF) (24 pp, 5.7MB,

Benefits

- Portland Vegetated Curb Extension Flow Test Report
- Demonstrating the Benefits of Green Streets for Active Aging (PDF) (31 pp, 2.6MB,

Web Sites

- Low Impact Development Center: Green Streets
- Green Street Initiatives Around the United States
- Creating a Successful Green Street Program

Green Parking

Many of the green infrastructure elements described above can be seamlessly integrated into parking lot designs. Permeable pavements can be installed in sections of a lot and rain gardens and bioswales can be included in medians and along a parking lot perimeter. Benefits include urban heat island mitigation and a more walkable built environment.

Factsheets

- EPA Stormwater Menu of BMPs
- Minnesota Urban Small Sites BMP Manual (PDF) (6 pp, 2.1MB,
- EPA Green Parking Lot Resource Guide

Examples

- Ipswich River Watershed Demonstration Project
- Toronto Design Guidelines for Greening Surface Parking Lots (PDF) (40 pp, 9.6MB,

Benefits

- EPA Case Study: Bioretention Applications (PDF) (2 pp, 1MB,
- Reducing Urban Heat Islands: Cool Pavements (PDF) (56 pp, 3.2MB,

Web Sites

- EPA Region/Imperial Stormwater Parking Lot (40 pp, 9.6MB,
- Nonpoint Education for Municipal Officials (NEMO) Planning for Stormwater Parking Lots

Green Roofs

Green roofs are covered with growing media and vegetation that enable rainfall infiltration and evapotranspiration of stored water. Green roofs are particularly cost effective in dense urban areas where land values are high and on large industrial or office buildings where stormwater management costs may be high.

Factsheets

- EPA Stormwater Menu of BMPs
- Charles River Watershed Association (PDF) (3 pp, 442K,
- Portland University

Examples

- King County Green Roof Case Study Report (PDF) (31 pp, 1MB,

Benefits

- EPA's Green Roofs for Stormwater Runoff Control (61 pp, 2.8MB,
- Green Roofs as Urban Ecosystems
- The Monetary Value of the Soil Benefits of Green Roofs

Web Sites

- Green Roofs for Healthy Cities

PDF)

- Green Roof and Wall Projects Database
- Portland Ecoroof Program

Urban Tree Canopy

Many cities set tree canopy goals to restore some of the benefits provided by trees. Trees reduce and slow stormwater by intercepting precipitation in their leaves and branches. Homeowners, businesses, and cities can all participate in the planting and maintenance of trees throughout the urban environment.

Factsheets

- EPA Stormwater Menu of BMPs (PDF) (2 pp, 128K, About PDF)
- NEMO Fact Sheet: Control Stormwater Runoff with Trees (PDF) (2 pp, 129K, About PDF)

Examples

- Chicago Trees Initiative
- Philadelphia Water Department: Stormwater Tree Trench

Benefits

- Sustainable Cities Institute: Benefits of the Urban Forest
- US Forest Service: Urban Forest Data

Web Sites

- Watershed Forestry Resource Guide
- i-Tree: Tools for Assessing and Managing Community Forests
- US Forest Service: Urban and Community Forestry

Land Conservation

Protecting open spaces and sensitive natural areas within and adjacent to cities can mitigate the water quality and flooding impacts of urban stormwater while providing recreational opportunities for city residents. Natural areas that are particularly important in addressing water quality and flooding include riparian areas, wetlands, and steep hillsides.

Factsheets

- Using Smart Growth Techniques as Stormwater Best Management Practices
- EPA's Protecting Water Resources with Higher Density Development

Examples

- Green Seams: Flood Management in Milwaukee
- Alachua County Green Infrastructure Investment Program (PDF) (4 pp, 330K, About PDF)

Benefits

- The Conservation Fund: Benefits of Green Infrastructure
- Greenways & Blueways

Web Sites

- EPA Healthy Watersheds Initiative
- The Conservation Fund
- The Trust for Public Land

Last updated on Wednesday, February 15, 2012 http://water.epa.gov/infrastructure/greeninfrastructure/gi_what.cfm

Bioretention at North Carolina State University BAE

Overview Design Specs. Research Publications Links

NC COOPERATIVE EXTENSION

NC STATE UNIVERSITY

Stormwater Engineering Group

Bioretention Sizing | Underdrain Design | Soil Media | Vegetation | Construction | Maintenance

Bioretention Sizing

As a general guideline, the state of Maryland suggests that a bioretention area occupy between 5 and 7 percent of the drainage area. The following 3-step process can be used to determine the specific footprint required. View the Rain Garden Design Factsheet (2001) for detailed guidance. Other references in the Urban Waterways Series include: Bioretention Performance, Design, and Construction and Maintenance (2003) and Coldwater Stream Design Guidance for Stormwater Wetlands, Wet Ponds, and Bioretention (2007). Another design reference is the NCDENR BMP Manual Chapter on Bioretention.

1. Determine runoff depth using the following equation from the Natural Resources Conservation Service:
   - **Runoff Depth in Inches = (P-0.2*S)^2 / (P+0.8*S)**
   - P = Precipitation (typically use 1 inch)
   - S = 1,000 / CN - 10
   - CN = Curve Number (see table below)

2. Calculate runoff volume to be treated
   - **Runoff Volume (ft³) = Watershed Area (ft²) * Runoff Depth (ft)**
   - Remember to convert runoff depth from inches to feet (1 foot = 12 inches)

3. Calculate required surface area
   - **Bioretention Surface Area (ft²) = Runoff Volume (ft³) / Avg. Depth of Water (ft)**
   - Average depth of water is typically 9 inches, but depends upon the height of the overflow structure

Land Use / Cover	Soil Group A	Soil Group B	Soil Group C	Soil Group D
100% Impervious (parking lots, rooftops, paved sidewalks)	98	98	98	98
Open space (lawns and golf courses) with grass cover <50%	68	79	86	89
Open space with grass cover 50% to 75%	49	69	79	84
Open space with grass cover >75%	39	61	74	80
Woods in fair hydrologic condition	36	60	73	79

Source: USDA. 1986. *Urban Hydrology for Small Watersheds*. Washington, D.C.: U.S. Department of Agriculture. Technical Release No. 55.

Benefits of using Green Infrastructure

EPA

Water: Green Infrastructure/ Low Impact Development

You are here: Water > Pollution Prevention & Control > Green Infrastructure/ Low Impact Development > Fact Sheet: Reducing Stormwater Costs through Low Impact Development (LID) Strategies and Practices

Fact Sheet: Reducing Stormwater Costs through Low Impact Development (LID) Strategies and Practices

This fact sheet provides additional information about EPA's report Reducing Stormwater Costs through Low Impact Development (LID) Strategies and Practices, EPA publication number 841-F-07-006, December 2007.

PDF Version (3 pp, 178K, about PDF)

- Background
- Cost Analysis
- Findings
- Conclusions
- Availability

Parking lot runoff is allowed to infiltrate through a vegetated bioretention area

Background

Stormwater has been identified as a major source of pollution for all waterbody types in the United States, and the impacts of stormwater pollution are not static; they usually increase with land development and urbanization. The addition of impervious surfaces, soil compaction, and tree and vegetation removal result in alterations to the movement of water through the environment. As interception, evapotranspiration, and infiltration are reduced and precipitation is converted to overland flow, these modifications affect not only the characteristics of the developed site but also the watershed in which the development is located.

Low Impact Development (LID) is a stormwater management strategy that seeks to mitigate the impacts of increased runoff and stormwater pollution. LID comprises a set of site design approaches and small-scale stormwater management practices that promote the use of natural systems for infiltration, evapotranspiration, and reuse of rainwater. These practices can effectively remove nutrients, pathogens, and metals from stormwater, and they reduce the volume and intensity of stormwater flows.

Cost Analysis

This report is an effort to compare the projected or known costs of LID practices with those of conventional development approaches. Traditional approaches to stormwater management typically involve hard infrastructure, such as curbs, gutters, and piping. LID-based designs, in contrast, are designed to use natural drainage features or engineered swales and vegetated conveyance for runoff conveyance and treatment. In terms of costs, LID techniques can reduce the amount of materials needed for paving roads and driveways and for installing curbs and gutters. Other LID techniques can eliminate or reduce the need for curbs and gutters, thereby reducing infrastructure costs. Also, by infiltrating or evaporating runoff, LID techniques can reduce the size and cost of flood-control structures. Note that in some circumstances LID techniques might result in higher costs because of more expensive plant material, site preparation, soil amendments, underdrains and connections to municipal stormwater systems, as well as increased project management costs. Other considerations include land required to implement a management practice and differences in maintenance requirements. Finally, in some circumstances LID practices can offset the costs associated with regulatory requirements for stormwater control.

Findings

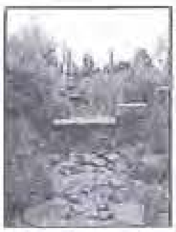
Seventeen case studies were evaluated for this report. In general, the case studies demonstrated that LID practices can reduce project costs and improve environmental performance. Although not all the benefits of the projects highlighted in the case studies were monetized, with a few exceptions, LID practices were shown to be both fiscally and environmentally beneficial or cost-neutral. In a few case studies, initial project costs were higher than those for conventional designs; in most cases, however, significant savings were realized due to reduced costs for site grading and preparation, stormwater infrastructure, site paving, and landscaping. Total capital cost savings ranged from 15 to 80 percent when LID methods were used, with a few exceptions in which LID project costs were higher than conventional stormwater management costs. (Table 1)

Table 1. Cost Comparisons Between Conventional and LID Approaches

*

Project *	Conventional Development Cost	LID Cost	Cost Difference†	Percent Difference†
2nd Avenue SEA Street	$868,803	$651,548	$217,255	25%
Auburn Hills	$2,360,385	$1,598,989	$761,396	32%
Bellingham City Hall	$27,600	$5,600	$22,000	80%
Bellingham Bloedel Donovan Park	$52,800	$12,800	$40,000	76%
Gap Creek	$4,620,600	$3,942,100	$678,500	15%
Garden Valley	$324,400	$260,700	$63,700	20%
Kensington Estates	$765,700	$1,502,900	-$737,200	-96%
Laurel Springs	$1,654,021	$1,149,552	$504,469	30%
Mill Creek‡	$12,510	$9,099	$3,411	27%
Prairie Glen	$1,004,848	$599,536	$405,312	40%
Somerset	$2,456,843	$1,671,461	$785,382	32%
Tellabs Corporate Campus	$3,162,160	$2,700,650	$461,510	15%

* Some of the case study results do not lend themselves to display in the format of this table (Central Park Commercial Redesign, Crown Street, Poplar Street Apartments, Prairie Crossing, Portland Downspout Disconnection, and Toronto Green Roofs). † Negative values denote increased cost for the LID design over conventional development costs. ‡ Mill Creek costs are reported on a per-lot basis.



A rain garden manages runoff from impervious surfaces such as roofs and paved areas.

In all cases, LID provided other benefits that were not monetized and factored into the project bottom line. These benefits include improved aesthetics, expanded recreational opportunities, increased property values due to the desirability of the lots and their proximity to open space, increased total number of units developed, increased marketing potential, and faster sales. The case studies also provided other environmental benefits such as reduced runoff volumes and pollutant loadings to downstream waters, and reduced incidences of combined sewer overflows.

Conclusions

This report summarizes 17 case studies of developments that include LID practices and concludes that applying LID techniques can reduce project costs and improve environmental performance. In most cases, LID practices were shown to be both fiscally and environmentally beneficial to communities. In a few cases, LID project costs were higher than those for conventional stormwater management projects. However, in the vast majority of cases, significant savings were realized due to reduced costs for site grading and preparation, stormwater infrastructure, site paving, and landscaping. Total capital cost savings ranged from 15 to 80 percent when LID methods were used, with a few exceptions in which LID project costs were higher than conventional stormwater management costs.

Green roofs capture rainfall, provide evapotranspiration, and offer energy savings. This is a photo of a green roof on the EPA Region 8 building in Denver, CO.

EPA has identified several additional areas that will require further study. First, in all cases, there were benefits that this study did not monetize and did not factor into the project's bottom line. These benefits include improved aesthetics, expanded recreational opportunities, increased property values due to the desirability of the lots and their proximity to open space, increased total number of units developed, increased marketing potential, and faster sales. Second, more research is also needed to quantify the environmental benefits that can be achieved through the use of LID techniques and the costs that can be avoided. Examples of environmental benefits include reduced runoff volumes and pollutant loadings to downstream waters, and reduced incidences of combined sewer overflows. Finally, more research is needed to monetize the cost reductions that can be achieved through improved environmental performance, reductions in long-term operation and maintenance costs, and/or reductions in the life cycle costs of replacing or rehabilitating infrastructure.

Availability

This full report is available for download at [redacted] www.epa.gov/owow/NPS/lid/costs07/documents/reducingstormwatercosts.pdf

EPA

Water: Green Infrastructure/ Low Impact Development

You are here: Water » Pollution Prevention & Control » Green Infrastructure/ Low Impact Development » Questions and Answers: Reducing Stormwater Costs through Low Impact Development (LID) Strategies and Practices

Questions and Answers: Reducing Stormwater Costs through Low Impact Development (LID) Strategies and Practices

This question-and-answer sheet provides additional information about EPA's report Reducing Stormwater Costs through Low Impact Development (LID) Strategies and Practices, EPA publication number 841-F-07-006, December 2007.

PDF Version (2 pp, 36K, About PDF)

Q: What is low impact development (LID)?

A: LID comprises a set of site design approaches and small-scale stormwater management practices that are designed to reduce runoff and associated pollutants from the site at which they are generated. By means of infiltration, evapotranspiration, and reuse of rainwater, LID techniques manage water and water pollutants at the source and thereby prevent or reduce the impact of development on rivers, streams, lakes, coastal waters, and ground water.

Q: Why is LID important?

A: LID is needed to reduce the water quality impacts caused by land development and construction. Roofs, pavement, and other impervious surfaces displace vegetation and blanket the soil, causing less stormwater to soak into the ground and more to run off the land surface. Small tributaries and even larger streams cannot accommodate the increased water volume and flow that occur immediately following rainfall and snowmelt events, leading to eroded streambanks, incised channels, streams choked with sediment, destroyed aquatic life and aquatic habitat, and increased flooding and property damage. In addition, stormwater carries a broad mix of toxic chemicals, bacteria, sediments, fertilizers, oil and grease to nearby streams.

Traditional development and stormwater management approaches are usually not designed to address all of these water quality concerns. Instead, many storm drainage systems are designed to remove water from the site as quickly as possible. Use of LID in stormwater management results in flow and pollutant reduction needed to reduce the impacts on our receiving streams.

Q: How does LID work?

A: LID is based on the premise that a natural approach to stormwater management is best. In forests and other natural areas, most rainfall percolates through the soil, is absorbed by vegetation, or evaporates to the atmosphere. LID is a means of enabling developed areas to simulate nature to preserve predevelopment flow conditions.

When the natural landscape is replaced with roads, parking lots, roofs, and other impervious surfaces, rainfall can no longer soak into the ground. This results in a tremendous increase in polluted runoff. Rather than employing the traditional stormwater management approach that uses miles of costly pipes and acres of stormwater ponds to deal with this additional runoff, LID uses natural vegetation and small-scale treatment systems to treat and infiltrate stormwater runoff close to where it originates. Reducing the amount of stormwater runoff generated in the first place reduces impacts on streams carrying stormwater.

Q: How does LID relate to green infrastructure?

A: The term LID is one of many used to describe the practices and techniques employed to provide advanced stormwater management, green infrastructure, conservation

design, and sustainable stormwater management are other common terms. However labeled, each of the identified practices seeks to maintain and use vegetation and open space, optimize natural hydrologic processes to reduce stormwater volumes and discharge rates, and use multiple treatment mechanisms to remove a large range of pollutants.

Q: Can LID apply to redevelopment and infill development?

A: LID approaches can be used to reduce the impacts of development and redevelopment activities on water resources. In the case of new development, LID is typically used to achieve or pursue the goal of maintaining or closely replicating the predevelopment hydrology of the site. In areas where development has already occurred, LID can be used as a retrofit practice to reduce runoff volumes, pollutant loadings, and the overall impacts of existing development on the affected receiving waters.

Q: What was the range of cost savings seen in the case studies?

A: The case studies presented in this report show that LID practices can be both fiscally and environmentally beneficial to communities. Site-specific factors influence project outcomes, but in general, for projects where open space was preserved and cluster development designs were employed, infrastructure costs were lower. In most cases, significant savings were realized due to reduced costs for site grading and preparation, stormwater infrastructure, site paving, and landscaping. Total capital cost savings ranged from 15 to 80 percent when LID methods were used, with a few exceptions in which LID project costs were higher than conventional stormwater management costs.

Q: What types of LID practices are considered in this report?

A: This report examined projects that included bioretention, cluster building, reduced impervious area, swales, permeable pavement, vegetated landscaping, wetlands, and green roofs. Note that typical, real-world LID designs usually incorporate more than one type of the aforementioned practices or techniques to provide integrated treatment of runoff from a site.

Q: Why did EPA produce this report?

A: LID as a stormwater management approach is still relatively new, and quantitative data on the costs and benefits of LID are just beginning to emerge. EPA researched and assembled 17 case studies that examine cost savings and additional costs associated with low impact designs compared to traditional stormwater management designs. These case studies indicate that cost savings can be realized, as described above.

Q: How can I use this report?

A: This report can serve as a primer to those new to the field of low impact site design because it provides background information about the benefits of LID along with case studies showing cost comparisons between traditional stormwater management and LID designs.

For developers and planners interested in implementing or promoting LID projects in the community, this report provides a breakdown of site development costs for both traditional and low impact scenarios, which can be useful when presenting new designs to stakeholder groups who are not familiar with the costs and benefits of LID.

Q: Where can I get more information?

A: You can find more information at EPA's Green Infrastructure Web site at: www.epa.gov/npdes/greeninfrastructure (0ROKE3k) and at EPA's LID Web site: www.epa.gov/owow/nps/lid/.

United States
Environmental Protection Agency

Office of Water (4203)
Washington, DC 20460

EPA-841-B-00-005B
October 2000

Field Evaluation of Permeable Pavements for Stormwater Management

Olympia, Washington

Key Concepts:

- Structural Controls
- Volume Reduction
- Space Savings

LOW-IMPACT DEVELOPMENT CENTER

Introduction

This study demonstrates the potential of permeable pavement systems to restore soil infiltration functions in the urban landscape. It is based on the results of a project that included installing and monitoring several porous pavement systems in a parking area. The project's objectives were to

- Review existing information on permeable pavements
- Construct full-scale test sites
- Evaluate the long-term performance of these systems

The report outlines the difficulties encountered, costs of installing and maintaining the systems, performance based on existing soil systems, special benefits of filling the open cells with grass as opposed to gravel, and other water quality benefits.

Project Benefits:

- Elimination of Stormwater Ponds
- Demonstration of Water Quality Benefits
- Lower Maintenance

Project Area

The demonstration site was in an office parking lot in Olympia, Washington. Two adjacent parking stalls were constructed using four types of permeable pavement systems that consisted of a combination of grass and gravel, as shown in Figure 1. The designs were

1. A flexible system consisting of a plastic network of cells with grass infill and virtually no impervious area coverage.
2. A flexible system consisting of a plastic network of cells similar to design 1 but filled with gravel.
3. A system consisting of impervious blocks with the space between the blocks filled with grass. (Total surface aren is 60 percent impervious).
4. A system consisting of impervious blocks with the space between the blocks filled with gravel. (Total surface area is 90 percent impervious).

A control stall was constructed out of traditional asphalt. A system of pipes, gutters, and automatic sampling gauges was installed to collect and measure the quantity and chemistry of surface runoff and subsurface infiltrate. Figure 2 shows a schematic of the test facility.

Figure 1. Different types of permeable pavement. From top left: reinforced gravel and grass pavement, reinforced grass pavement, 60% impervious concrete blocks with grass, 90% impervious blocks with gravel.

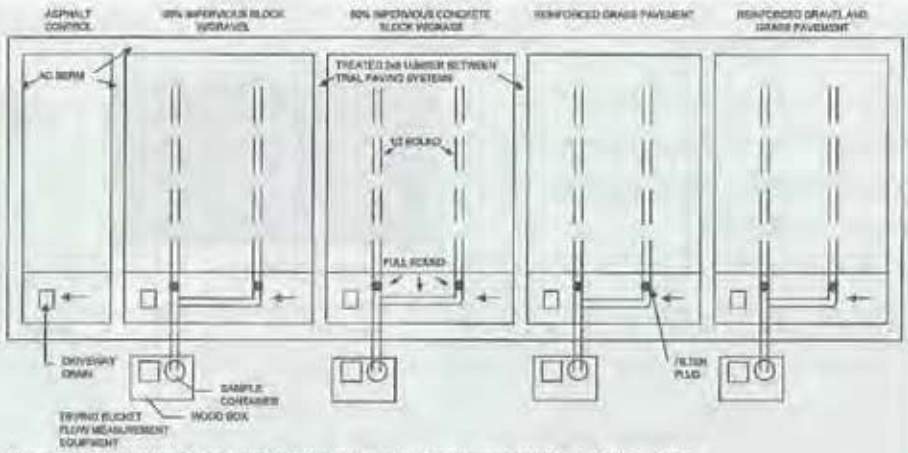


Figure 2. Schematic of the test facility showing treatments and runoff collection devices.

Project Summary and Benefits

The results of this study showed the following relationships:

- The use of permeable pavement systems dramatically reduced surface runoff volume and attenuated the peak discharge, as shown in Figure 3.
- Although there were significant structural differences between the systems, the hydrologic benefits were consistent.
- Storm characteristics and weather conditions influenced the hydrologic responses of the systems.
- Permeable pavement system types vary widely in cost and are more expensive than typical asphalt pavements. Cost comparisons between permeable pavement installations and conventional ponds or underground vaults are limited. However, the elimination of conventional systems and reduced life cycle and maintenance costs can result in significant cost savings over the long term.
- A significant contribution of permeable pavements is the ability to reduce *effective impervious area*, which has a direct connection with downstream drainage systems. This strategy of hydrologic and hydraulic disconnectivity can be used to control runoff timing, reduce runoff volume, and provide water quality benefits.

Contact Information

Derek Booth, Director
Center for Urban Water Resources Management
Box 352700
Roberts Annex 100
(206) 543-7923
dbooth@u.washington.edu

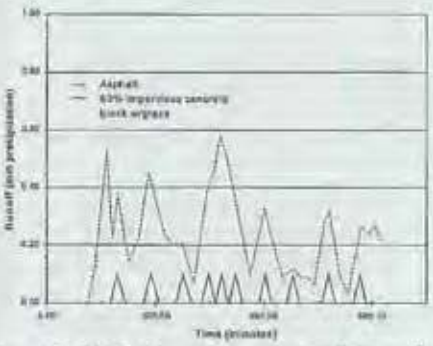


Figure 3. Runoff volumes from asphalt and permeable pavements.

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217) 782-3397
PAT QUINN, GOVERNOR JOHN J. KIM, INTERIM DIRECTOR

May 9, 2012

Mr. Brian C. Murphy, Colonel, USAF
Chief, Program Division
Directorate of Installation & Mission Support
Department of the Air Force
Headquarters Air Mobility Command
507 Symington Drive
Scott AFB, IL 62225-5022

RE: Environmental Assessment of Installation Development at Scott Air Force Base, Illinois

Dear Colonel Murphy:

Thank you for the opportunity to review the Draft Environmental Assessment of Installation Development at Scott Air Force Base.

The Agency has no objections to the project, but a construction site activity stormwater NPDES permit is required for any separate contract of the demolition or construction projects identified in the subject report. You may contact Al Keller 217-782-0610, with questions.

In addition, asbestos and lead paint should be addressed before actual repairs are performed to ensure proper abatement is done if needed. If abatement is needed, notification will be required 10 working days prior to the project start date. Contact Alan Grimmett for all questions on this matter at 217-557-1438.

Solid and hazardous waste must be properly disposed of or recycled.

Sincerely,

Lisa Bonnett

Lisa Bonnett
Deputy Director

4302 N. Main St., Rockford, IL 61103 (815)987-7760
595 S. State, Elgin, IL 60123 (847)608-3131
2125 S. First St., Champaign, IL 61820 (217)278-5800
2009 Mall St., Collinsville, IL 62234 (618)346-5120

9511 Harrison St., Des Plaines, IL 60016 (847)294-4000
5407 N. University St., Arbor 113, Peoria, IL 61614 (309)693-5462
2309 W. Main St., Suite 116, Marion, IL 62959 (618)993-7200
100 W. Randolph, Suite 11-300, Chicago, IL 60601 (312)814-6026

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Marion Illinois Sub-Office (ES)
8588 Route 148
Marion, IL 62959
(618) 997-3344

June 1, 2012

Colonel Brian C. Murphy
HQ/AMC/A7PI
507 Symington Drive
Scott AFB, Illinois 62225-5022

Dear Colonel Murphy:

We have received and reviewed the April 2012, Environmental Assessment (EA), Draft Finding of No Significant Impact (FONSI) and Finding of No Practicable Alternative (FONPA) for installation development at Scott Air Force Base (AFB) in St Clair County, Illinois. These comments are prepared under the authority of and in accordance with the provisions of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.); the Endangered Species Act of 1973, as amended; and, the National Environmental Policy Act.

The proposed installation development includes three demolition projects, six construction projects, three infrastructure improvement projects, and three natural infrastructure management projects. Alternatives considered for installation development included no action and the preferred alternative described above.

Information in the EA indicates that the federally endangered Indiana bat (*Myotis sodalis*) has been documented on Scott AFB and that no other federally listed species are known to occur on Scott AFB. Any project with the potential to impact the Indiana bat or any federally listed threatened or endangered species would require consultation with the U.S. Fish and Wildlife Service (Service). Four of the selected projects are identified as having the potential to impact the Indiana bat. The projects include C1 (Construct and Operate Explosive Ordnance Proficiency Range), NI1 (Airfield Tree Violations), NI2 (Remove Log Jam from Silver Creek) and NI3 (Improve Foraging Habitat for Indiana Bat). Consultation for Construction Project C1 has already been conducted and the Service concurred that the proposed project is not likely to adversely affect the Indiana bat. The Service agrees that consultation should be conducted for projects NI1, NI2, and NI3. In addition, should any of the other projects be modified or new information indicate listed or proposed species may be affected, consultation or additional coordination with this office, as appropriate, should be initiated.

Although the bald eagle has been removed from the threatened and endangered species list, it continues to be protected under the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act (BGEPA). The Service developed the National Bald Eagle Management

Guidelines to provide landowners, land managers, and others with information and recommendations regarding how to minimize potential project impacts to bald eagles, particularly where such impacts may constitute "disturbance," which is prohibited by the BGEPA. We recommend that the National Bald Eagle Management Guidelines be incorporated into the EA to minimize potential project impacts to bald eagles. A copy of the guidelines is available at:
http://www.fws.gov/migratorybirds/CurrentBirdIssues/Management/BaldEagle/NationalBaldEagleManagementGuidelines.pdf

Information in the EA indicates that wetland impacts would be reduced to the maximum extent practicable through project design and implementation of environmental protection measures. Two of the selected projects, NI2 (Remove Log Jam from Silver Creek) and NI3 (Improve Foraging Habitat for Indiana Bat), have the potential for minor, direct, adverse impacts on wetlands; however, the effects will be minor and will be minimized with proper implementation of environmental protection measures and construction best management practices (BMPs). We recommend continued coordination with our office regarding any impacts to wetlands.

Thank you for the opportunity to review and comment on the EA and Draft FONSI. For additional coordination, please contact me at (618) 997-3344, ext. 345.

Sincerely,

/s/ Matthew T. Mangan

Matthew T. Mangan
Acting Assistant Field Supervisor

cc: IDNR (Kath, Shank)
USAF (Nolan)

From the Illinois SHPO

Illinois Historic
Preservation Agency

FAX (217) 782-8161

1 Old State Capitol Plaza • Springfield, Illinois 62701-1512 • www.illinois-history.gov

St. Clair County
Scott Air Force Base
Environmental Assessment of Installation Development FY 2012-2017 Base Wide
IHPA Log #017042512

July 26, 2012

Jean Reynolds
Department of the Air Force
Headquarters, Air Mobility Command/A7PL
507 Symington Dr.
Scott AFB, IL 62225-5022

Dear Ms. Reynolds:

We have reviewed the draft *Environmental Assessment of Installation Development at Scott Air Force Base, Illinois* dated April 2012 in accordance with 36 CFR Part 800.

We accept this draft report with the following conditions:

1. Building demolitions need to be submitted to this office for review. Buildings 52, 54, 56, 57, and 60 are located within the Scott Field Historic District that was listed in the National Register of Historic Places March 10, 1994 and the demolition of these structures constitutes an Adverse Effect to the historic district as per 36 CFR 800.5.

2. Upgrades, repairs, and renovation of structures within the Historic District, and other buildings that are 50 years old or older, must be submitted to this office for review.

3. Eligibility for the National Register of Historic Places must be determined for structures slated for demolition that are located outside of the Historic District.

4. New construction in or adjacent to the Historic District must be submitted to this office for design review.

5. Consultation with this office concerning archaeological sites and surveys must be initiated prior to any ground disturbing activities or archaeological investigations of known sites.

If you have any questions, please contact David J. Halpin, Cultural Resources Manager, at 217-785-4998.

Sincerely,

Anne E. Haaker

Anne E. Haaker
Deputy State Historic
Preservation Officer

c: Cindy Nolan, Department of the Air Force

A teletypewriter for the speech/hearing impaired is available at 217-524-7128. It is not a voice or fax line.

Response to the Illinois SHPO

Record of Communication

The following message was sent by email from Ms. Cindy Nolan (375 CES/CEAO) to Ms. Jean Reynolds (HQ AMC/A7PI) on 23 August 2012 summarizing a telephone conversation with the Illinois SHPO regarding their letter sent to Ms. Jean Reynolds on 26 July 2012. Note that Buildings 52, 54, 56, 57, and 60 subsequently were removed from this IDEA and are no longer proposed for demolition. In summary, the SHPO requires no further action on this IDEA.

Jean,

I called Illinois SHPO on Friday, 17 August 2012 and spoke with Mr. David Halpin. I discussed the letter from Ms. Anne E. Haaker, dated 26 July regarding the (FY12-17). I mentioned that some of the buildings, as originally listed in the report, may not be demolished. I asked if he needed something in writing from this office and he replied that Scott AFB should just continue submitting documents to their office as we have in the past (and that we do a good job!) and that no written documentation is needed nor required.

Cindy Nolan, P.G.
Conservation Management

Native American Tribal Consultation Distribution List and Letter

In accordance with Executive Order 13175, *Consultation and Coordination with Indian Tribal Governments* and its implementing instruction Department of Defense Instruction 4710.02, *DoD Interactions with Federally Recognized Tribes*, Scott AFB will endeavor to build a lasting government-to-government relationship with affiliated, federally recognized tribes.

To date, the only identified federally recognized tribes with historical ties to the area to have been consulted and with a stated interest in activities at Scott AFB are the Peoria Tribe of Indians of Oklahoma and the Osage Nation. These tribes have stated (see letters below) an interest in being consulted regarding future projects that might lead to inadvertent discoveries. Due to the nature and locations of the proposed projects in this IDEA and the extremely low potential for inadvertent discoveries from these projects, no additional consultation was pursued for this IDEA.

PEORIA TRIBE OF INDIANS OF OKLAHOMA
118 S. Eight Tribes Trail (918) 540-2535 FAX (918) 540-2538
P.O. Box 1527
MIAMI, OKLAHOMA 74355

CHIEF
John P. Froman

SECOND CHIEF
Jason Dollarhide

February 3, 2012

Cindy Nolan
375 CES/CEAN
702 Hangar Road
Scott Air Force Base, Illinois, 62225-5035

RE: Peoria Tribal Interests

Thank you for contacting the tribe regarding Scott Air Force Base lands. The Peoria Tribe of Indians of Oklahoma does have historical ties to the entire region. We are not currently aware of specific sites within the base lands; however we would ask to be consulted regarding future projects that may lead to inadvertent discoveries. Please include us on mailing lists for new projects and we look forward to discussing any project as it pertains to Native American interests.
Thank you

Contact information:

Frank Hecksher
Special Projects/NAGPRA Manager
118 S. Eight Tribes Trail
Miami, OK 74354
918-540-2535
fhecksher@peoriatribe.com

TRIBAL HISTORIC PRESERVATION OFFICE

Date: February 7, 2012 **File:** 1112-327IL-2

RE: Osage Nation Affiliation Statement for Scott Air Force Base in St. Clair County, Illinois

Cindy Nolan
375 CES/CEAN
702 Hangar Road
Scott Air Force Base, IL 62225-5035

Dear Ms. Nolan,

The Osage Nation has a connection to Scott Air Force Base lands and has a vital interest in protecting its historic and ancestral cultural resources. The Osage Nation Historic Preservation Office sincerely appreciates the opportunity to work with you in the future.

In accordance with the National Historic Preservation Act, (NHPA) [16 U.S.C. 470 §§ 470-470w-6] 1966, undertakings subject to the review process are referred to in S101 (d) (6) (A), which clarifies that historic properties may have religious and cultural significance to Indian tribes. Additionally, Section 106 of NHPA requires Federal agencies to consider the effects of their actions on historic properties (36 CFR Part 800) as does the National Environmental Policy Act (43 U.S.C. 4321 and 4331-35 and 40 CFR 1501.7(a) of 1969).

For your use, the following are enclosed: 1) current map of the Osage Ancestral Territory; 2) an overview of the history of the Osage Nation; 3) an outline of the Section 106 process; 4) a list, according to state and county, of the Osage Ancestral Territory; and 5) the ONHPO Section 106 Consultation Procedures. The Osage Nation requires that cultural resource survey personnel and reports follow the Secretary of Interior's standards and guidelines.

Should you have any questions or need any additional information please feel free to contact me at the number listed below. Thank you for consulting with the Osage Nation on this matter.

James Munkres
Archaeologist I

Enclosures (5)

627 Grandview, Pawhuska, OK 74056, (918) 287-5328, Fax (918) 287-5376

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Public Involvement Correspondence

The following Notice of Availability was published in the *Belleville News-Democrat* on 26 April 2012, announcing a public review period for the Draft EA and Draft FONSI/FONPA until 11 June 2012. Copies of the Draft IDEA and Draft FONSI/FONPA were made available in the Belleville Public Library and the Scott AFB Library and on the Scott AFB website. No public comments were received.

PUBLIC NOTICE
United States Air Force

Notice of Availability
Draft Environmental Assessment (EA) of
Installation Development at
Scott Air Force (AFB), Illinois

The Headquarters Air Mobility Command, in conjunction with Scott AFB, has completed a Draft EA that evaluates the potential effects of Installation Development at Scott AFB, Illinois.

The analysis considered in detail the potential environmental effects of the Proposed Action and the No Action Alternative. The results, as found in the EA, show that the Proposed Action would not have an adverse impact on the environment, indicating that a Finding of No Significant Impact (FONSI)/Finding of No Practicable Alternative (FONPA) would be appropriate. An Environmental Impact Statement should not be necessary to implement the Proposed Action.

Copies of the Draft EA showing the analysis are available for review at the following libraries:

Belleville Public Library
121 East Washington St.
Belleville, IL 62220

Scott AFB Library
510 Ward Drive, Building 1940
Scott AFB, IL 62225

The document is also available at:
www.scott.af.mil
Written comments on the Draft EA are invited and will be accepted for 45 days from the publication of this notice. Comments for consideration by the USAF on this document should be provided in writing to:

Public Affairs Office
375 AMW Public Affairs
Attn: Christine Spargur
101 Heritage Drive
Scott AFB, Illinois 62225
Email: Christine.Spargur@us.af.mil
Phone: 618-256-4241

CERTIFICATE OF PUBLICATION

STATE OF ILLINOIS)
COUNTY OF ST. CLAIR) ss.

This is to certify that the undersigned Jay Tebbe is the president and publisher of the NEWS-DEMOCRAT a public and English secular newspaper of general circulation, which has been regularly published daily in the City of Belleville, County of St. Clair and State of Illinois, for at least one year prior to the first publication of the notice hereinafter mentioned, and that a notice of which the annexed is a true printed copy, has been published in said newspaper **ONCE**, the publication thereof having been made in the issue of said newspaper, published on **April 26, 2012**.

JAY TEBBE
President and Publisher
By
His Authorized Agent

Publisher's fee: **$707.00**

ACCOUNT ID: 6299600
AD NUMBER: 63279401

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APPENDIX C

LIST OF FACILITIES ON SCOTT AFB AT OR APPROACHING 50 YEARS OLD BY 2017 WITH NRHP ELIGIBILITY EVALUATIONS, SHPO CONCURRENCE, AND ACHP PROGRAM COMMENTS

Table C-1. List of Facilities on Scott AFB 50 Years Old by 2017

Facility Number	Structure Name	Construction Date	National Register of Historic Places Status
2	Monument/Memorial (gatehouse)	1940	Contributing to Scott AFB Historic District
3	Wing Headquarters	1940	Contributing to Scott AFB Historic District
4	Major Command Headquarters	1940	Contributing to Scott AFB Historic District
5	Communications Facility	1939	Contributing to Scott AFB Historic District
6	Gymnasium	1939	Contributing to Scott AFB Historic District
7	Administrative Building	1923	Contributing to Scott AFB Historic District
8	Air Passenger Terminal	1939	Contributing to Scott AFB Historic District
10	Base Personnel Office	1941	Evaluated Not Eligible
12	Bus Shelter	1959	Unevaluated
21	Admin	1942	Contributing to Scott AFB Historic District
22	Garage	1942	Contributing to Scott AFB Historic District
33	Water Pump Station	1942	Contributing to Scott AFB Historic District
40	Headquarters Major Command	1931	Contributing to Scott AFB Historic District
42	Swimmers Bathhouse	1944	Contributing to Scott AFB Historic District
43	AF Office of Special Investigations	1939	Contributing to Scott AFB Historic District
46	Hazard Storage	1943	Contributing to Scott AFB Historic District
47	Heating Facility Building	1943	Contributing to Scott AFB Historic District
48	Vacant Gasoline Station	1940	Contributing to Scott AFB Historic District; Evaluated for demolition under MOA (**Appendix G**)
50	Base Personnel Office	1943	Evaluated Eligible
52	Headquarters Group	1939	Contributing to Scott AFB Historic District

Facility Number	Structure Name	Construction Date	National Register of Historic Places Status
54	Base Engineering Storage Facility	1939	Contributing to Scott AFB Historic District
56	Disaster Preparedness	1939	Contributing to Scott AFB Historic District
57	Base Engineering Storage Facility	1939	Contributing to Scott AFB Historic District
60	Base Engineering Storage Facility	1940	Contributing to Scott AFB Historic District
61	Communications Facility	1939	Contributing to Scott AFB Historic District
65	Garage, Family Housing, Detached	1940	Contributing to Scott AFB Historic District
150	Visiting Officers' Quarters (Essex House)	1939	Contributing to Scott AFB Historic District
153	Family Housing Appropriated Pre-FY50	1939	Contributing to Scott AFB Historic District
154	Family Housing Appropriated Pre-FY50	1939	Contributing to Scott AFB Historic District
155	Vehicle Operations Parking Shed	1940	Contributing to Scott AFB Historic District
156	Family Housing Appropriated Pre-FY50	1939	Contributing to Scott AFB Historic District
158	Family Housing Appropriated Pre-FY50	1939	Contributing to Scott AFB Historic District
160	Family Housing Appropriated Pre-FY50	1939	Contributing to Scott AFB Historic District
161	Garage, Family Housing, Detached	1940	Contributing to Scott AFB Historic District
162	Family Housing Appropriated Pre-FY50	1939	Contributing to Scott AFB Historic District
168	Sanitary Sewage Pump Station	1951	Unevaluated
175	Visiting Officers' Quarters	1948	Unevaluated
179	Family Housing Appropriated Pre-FY50	1939	Contributing to Scott AFB Historic District
180	Family Housing Appropriated Pre-FY50	1939	Contributing to Scott AFB Historic District
181	Family Housing Appropriated Pre-FY50	1939	Contributing to Scott AFB Historic District
182	Family Housing Appropriated Pre-FY50	1939	Contributing to Scott AFB Historic District
183	Family Housing Appropriated Pre-FY50	1939	Contributing to Scott AFB Historic District

Facility Number	Structure Name	Construction Date	National Register of Historic Places Status
184	Family Housing Appropriated Pre-FY50	1939	Contributing to Scott AFB Historic District
185	Family Housing Appropriated Pre-FY50	1940	Contributing to Scott AFB Historic District
186	Family Housing Appropriated Pre-FY50	1939	Contributing to Scott AFB Historic District
187	Family Housing Appropriated Pre-FY50	1940	Contributing to Scott AFB Historic District
189	Family Housing Appropriated Pre-FY50	1940	Contributing to Scott AFB Historic District
200	Family Housing Appropriated Pre-FY50	1939	Contributing to Scott AFB Historic District
201	Family Housing Appropriated Pre-FY50	1939	Contributing to Scott AFB Historic District
202	Family Housing Appropriated Pre-FY50	1942	Contributing to Scott AFB Historic District
204	Family Housing Appropriated Pre-FY50	1940	Contributing to Scott AFB Historic District
205	Family Housing Appropriated Pre-FY50	1940	Contributing to Scott AFB Historic District
206	Family Housing Appropriated Pre-FY50	1948	Not contributing to Scott AFB Historic District
208	Family Housing Appropriated Pre-FY50	1948	Not contributing to Scott AFB Historic District
215	Family Housing Appropriated Pre-FY50	1940	Contributing to Scott AFB Historic District
216	Family Housing Appropriated Pre-FY50	1940	Contributing to Scott AFB Historic District
217 *	Family Housing Appropriated Pre-FY50	1940	Contributing to Scott AFB Historic District
218	Family Housing Appropriated Pre-FY50	1940	Contributing to Scott AFB Historic District
219	Family Housing Appropriated Pre-FY50	1940	Contributing to Scott AFB Historic District
220	Family Housing Appropriated Pre-FY50	1940	Contributing to Scott AFB Historic District
227	Family Housing Appropriated Pre-FY50	1940	Contributing to Scott AFB Historic District
229	Family Housing Appropriated Pre-FY50	1940	Contributing to Scott AFB Historic District
231	Family Housing Appropriated Pre-FY50	1940	Contributing to Scott AFB Historic District

Facility Number	Structure Name	Construction Date	National Register of Historic Places Status
232	Sanitary Sewage Pump Station	1951	Unevaluated
302	Garage, Family Housing, Detached	1940	Contributing to Scott AFB Historic District
308	Garage, Family Housing, Detached	1940	Contributing to Scott AFB Historic District
312	Garage, Family Housing, Detached	1940	Contributing to Scott AFB Historic District
318	Garage, Family Housing, Detached	1940	Contributing to Scott AFB Historic District
382	Education Center	1951	Evaluated Not Eligible
432	Shop, Aircraft/Maintenance Organization	1963	Unevaluated
433	Squadron Operations/Hangar 1	1939	Contributing to Scott AFB Historic District
434	Engineering Shop and Maintenance	1941	Contributing to Scott AFB Historic District
435	Service Industrial Utility Vault	1941	Contributing to Scott AFB Historic District
436	Warehouse Supply and Equipment	1944	Contributing to Scott AFB Historic District
460 *	Fire Station	1964	Evaluated Not Eligible
462	Base Fire Station	1964	Evaluated Not Eligible
502 *	Fleet Terminal	1942	Evaluated Not Eligible
505	Squadron Operations	1953	Evaluated Not Eligible
506	Squadron Operations	1953	Evaluated Eligible
508	Pump Station	1953	Unevaluated
509	Squadron Operations	1952	Evaluated Not Eligible
510	Bus Shelter	1960	Unevaluated
512	Warehouse Supply and Equipment	1953	Evaluated Not Eligible
520	Base Engineering Maintenance Shop	1944	Evaluated Not Eligible
528	Base Engineering Administration	1953	Evaluated Not Eligible
530	Base Engineering Administration	1942	Evaluated Not Eligible
531	Base Engineering Administration	1942	Evaluated Not Eligible
533	Wholesale Supply and Equipment	1942	Evaluated Not Eligible
540	Base Engineering Storage Shed	1927	Evaluated Not Eligible
543	Base Engineering Maintenance Shop	1953	Evaluated Not Eligible
544 *	Electrical Power Building	1955	Evaluated Not Eligible
545 *	Pump Station	1955	Evaluated Not Eligible
612	Garage, Family Housing, Detached	1940	Contributing to Scott AFB Historic District

Facility Number	Structure Name	Construction Date	National Register of Historic Places Status
621	Family Housing Appropriated Pre-FY50	1939	Contributing to Scott AFB Historic District
622	Family Housing Appropriated Pre-FY50	1939	Contributing to Scott AFB Historic District
623	Family Housing Appropriated Pre-FY50	1939	Contributing to Scott AFB Historic District
624	Family Housing Appropriated Pre-FY50	1939	Contributing to Scott AFB Historic District
625	Family Housing Appropriated Pre-FY50	1939	Contributing to Scott AFB Historic District
626	Family Housing Appropriated Pre-FY50	1939	Contributing to Scott AFB Historic District
633	Garage, Family Housing, Detached	1940	Contributing to Scott AFB Historic District
641	Family Housing Appropriated Pre-FY50	1939	Contributing to Scott AFB Historic District
642	Family Housing Appropriated Pre-FY50	1939	Contributing to Scott AFB Historic District
643	Family Housing Appropriated Pre-FY50	1931	Contributing to Scott AFB Historic District
644	Family Housing Appropriated Pre-FY50	1931	Contributing to Scott AFB Historic District
645	Family Housing Appropriated Pre-FY50	1939	Contributing to Scott AFB Historic District
646	Family Housing Appropriated Pre-FY50	1939	Contributing to Scott AFB Historic District
650	Garage, Family Housing, Detached	1936	Contributing to Scott AFB Historic District
651	Garage, Family Housing, Detached	1936	Contributing to Scott AFB Historic District
652	Family Housing Appropriated Pre-FY50	1931	Contributing to Scott AFB Historic District
653	Family Housing Appropriated Pre-FY50	1931	Contributing to Scott AFB Historic District
655	Family Housing Appropriated Pre-FY50	1931	Contributing to Scott AFB Historic District
656	Garage, Family Housing, Detached	1936	Contributing to Scott AFB Historic District
657	Family Housing Appropriated Pre-FY50	1931	Contributing to Scott AFB Historic District
661	Family Housing Appropriated Pre-FY50	1931	Contributing to Scott AFB Historic District

Facility Number	Structure Name	Construction Date	National Register of Historic Places Status
663	Family Housing Appropriated Pre-FY50	1931	Contributing to Scott AFB Historic District
670	Family Housing Appropriated Pre-FY50	1939	Contributing to Scott AFB Historic District
671	Family Housing Appropriated Pre-FY50	1931	Contributing to Scott AFB Historic District
672	Family Housing Appropriated Pre-FY50	1939	Contributing to Scott AFB Historic District
674	Family Housing Appropriated Pre-FY50	1939	Contributing to Scott AFB Historic District
675	Family Housing Appropriated Pre-FY50	1939	Contributing to Scott AFB Historic District
676	Family Housing Appropriated Pre-FY50	1939	Contributing to Scott AFB Historic District
678	Family Housing Appropriated Pre-FY50	1939	Contributing to Scott AFB Historic District
700	Admin/Print Shop	1941	Evaluated Not Eligible
857	Sanitary Sewage Pump Station	1940	Unevaluated
859 *	Headquarters Group	1941	Evaluated Not Eligible
861	Communications Facility	1941	Evaluated Not Eligible
864	Band Center	1942	Evaluated Not Eligible
887	Bus Shelter	1961	Unevaluated
1089 *	Communications Facility	1954	Evaluated Not Eligible
1192	Golf Clubhouse	1952	Evaluated Not Eligible
1508 *	Visiting Officers' Quarters	1953	Evaluated Not Eligible
1510 *	Visiting Officers' Quarters	1953	Evaluated Not Eligible
1512 *	Visiting Airmans' Quarters	1953	Evaluated Not Eligible
1513 *	Visiting Airmans' Quarters	1953	Evaluated Not Eligible
1520	Specified Headquarters	1964	Evaluated Not Eligible
1521 *	Headquarters Specified	1953	Evaluated Not Eligible
1523	Air Conditioning Plant	1960	Evaluated Not Eligible
1530	Composite Medical Center	1958	Evaluated Not Eligible
1534	Headquarters	1953	Evaluated Not Eligible
1552	Bus Shelter	1960	Unevaluated
1620	Chapel Center	1960	Evaluated Not Eligible
1907	Headquarters/Major Command	1960	Evaluated Not Eligible
1910	Headquarters/Major Command	1960	Evaluated Not Eligible
1930	Recreation Center	1964	Evaluated Not Eligible
1940	Base Library	1965	Evaluated Not Eligible

Facility Number	Structure Name	Construction Date	National Register of Historic Places Status
1961 *	Non-AF Administrative Office	1953	Evaluated Not Eligible
3165 *	Club Rod & Gun	1941	Evaluated Not Eligible
3189 *	Non-AF Administrative Office	1941	Evaluated Not Eligible
3200	Air National Guard Hangar	1952	Evaluated Eligible
3270 *	Medical Storage Warehouse	1942	Evaluated for demolition under World War II Temporary Buildings Programmatic Agreement (SAFB 1986)
3272 *	Medical Logistics Warehouse	1942	Evaluated for demolition under World War II Temporary Buildings Programmatic Agreement (SAFB 1986)
3273 *	Headquarters/Major Command Warehouse	1942	Evaluated for demolition under World War II Temporary Buildings Programmatic Agreement (SAFB 1986)
3275 *	Medical Logistics Warehouse	1941	Evaluated for demolition under World War II Temporary Buildings Programmatic Agreement (SAFB 1986)
3290	Wastewater Treatment Building	1941	Evaluated Not Eligible
3291	Base Engineering Storage Shed	1955	Unevaluated
3307	Base Engineering Storage Shed	1950	Unevaluated
3650	Air Force Reserve Forces	1955	Evaluated Not Eligible
3671	Sanitary Sewage Pump Station	1955	Unevaluated
4205	Base Engineering Maintenance Shop	1953	Evaluated Not Eligible
4900	Instrument Landing System	1959	Unevaluated
5026	Headquarters Maintenance	1955	Evaluated Not Eligible
5484	Warehouse Supply and Equipment	1964	Evaluated Not Eligible
5540 *	Base Engineering Storage Facility	1951	Evaluated Not Eligible
5713	Chapel Center	1967	Unevaluated
6101	Perschbacher Cemetery	c. 1847	Evaluated Not Eligible
6102	Middlecoff Cemetery	c. 1835	Evaluated Not Eligible
6200	Vehicle Service Rack	1940	Unevaluated
6220	Vehicle Service Rack	1942	Unevaluated
6230	Vehicle Service Rack	1954	Unevaluated
6300	Swimming Pool Consol	1944	Contributing to Scott AFB Historic District
6301	Wading Pool	1944	Contributing to Scott AFB Historic District

Facility Number	Structure Name	Construction Date	National Register of Historic Places Status
6325	Swimming Pool (Essex)	1940	Contributing to Scott AFB Historic District
6740	Instrument Landing System	1963	Unevaluated
7900	Open Storage Base Supply	1942	Unevaluated
8010	200,000-gallon Water Tank	1939	Contributing to Scott AFB Historic District
8020	300,000-gallon Water Tank	1941	Contributing to Scott AFB Historic District
8030	Water Storage	1941	Contributing to Scott AFB Historic District

Notes:

1. All unevaluated buildings are considered to be eligible for listing on the NRHP until a determination has been made.
2. Gray shading identifies buildings to be affected by the Proposed Action (**Tables 2-1** through **2-4**).
3. * identifies buildings to be affected by projects analyzed in cumulative effects (**Table 5-2**).
4. Information compiled using SAFB 2006a, SAFB 2011c, and SAFB 2011e

APPENDIX D

SUMMARY OF AIR EMISSIONS CALCULATIONS

Air Emissions for Project D1

	NO_x (ton)	VOC (ton)	CO (ton)	SO_2 (ton)	PM_{10} (ton)	$PM_{2.5}$ (ton)	CO_2 (ton)
Combustion	0.053	0.003	0.020	0.004	0.003	0.003	6.174
Fugitive Dust	-	-	-	-	-	-	-
Haul Truck On-Road	0.001	0.001	0.004	0.000	0.002	0.000	0.367
Commuter	0.003	0.003	0.030	0.000	0.000	0.000	3.944
TOTAL	***0.057***	***0.008***	***0.054***	***0.004***	***0.005***	***0.004***	***10.485***

Note: Total $PM_{10}/_{2.5}$ fugitive dust emissions are assuming USEPA 50% control efficiencies.

CO_2 emissions converted to metric tons =	***9.510***	***metric tons***	
State of Illinois's CO_2 emissions =	***226,000,000***	***metric tons***	*(U.S. DOE/EIA 2011)*
Percent of Illinois's CO_2 emissions =	***0.00000%***		
United States' CO_2 emissions =	***5,425,600,000***	***metric tons***	*(U.S. DOE/EIA 2011)*
Percent of USA's CO_2 emissions =	***0.000000%***		

Source: U.S. Department of Energy, Energy Information Administration (U.S. DOE/EIA). 2011. *Table 1. State Emissions by Year (Million Metric Tons of Carbon Dioxide).* Available online <http://www.eia.gov/environment/emissions/state/state_emissions.cfm>. Data released October 2011. Data accessed 22 November 2011.

Since future year budgets were not readily available, actual 2008 air emissions inventories for the counties were used as an approximation of the regional inventory. Because Project D1 is several orders of magnitude below significance, the conclusion would be the same, regardless of whether future year budget data set were used.

Metropolitan St. Louis Interstate Intrastate Air Quality Control Region

	Point and Area Sources Combined					
Year	NO_x (tpy)	VOC (tpy)	CO (tpy)	SO_2 (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (tpy)
2008	130,134	96,913	538,781	215,363	154,345	29,608

Source: USEPA National Emissions Inventory (NEI) (http://neibrowser.epa.gov/eis-public-web/home.html). Site visited on 09 January 2012.

Air Emissions from Project D1

	Point and Area Sources Combined					
	NO_x (tpy)	VOC (tpy)	CO (tpy)	SO_2 (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (tpy)
Regional Emissions	130,134	96,913	538,781	215,363	154,345	29,608
Emissions	0.057	0.008	0.054	0.004	0.005	0.004
% of Regional	**0.000%**	**0.000%**	**0.000%**	**0.000%**	**0.000%**	**0.000%**

Air Emissions for Project D2

	NO_x (ton)	VOC (ton)	CO (ton)	SO_2 (ton)	PM_{10} (ton)	$PM_{2.5}$ (ton)	CO_2 (ton)
Combustion	1.182	0.070	0.467	0.096	0.071	0.069	137.633
Fugitive Dust	-	-	-	-	0.691	0.069	-
Haul Truck On-Road	0.101	0.073	0.297	0.008	0.120	0.031	25.560
Commuter	0.034	0.034	0.310	0.000	0.003	0.002	41.088
TOTAL	***1.317***	***0.177***	***1.074***	***0.104***	***0.886***	***0.172***	***204.281***

Note: Total $PM_{10}/_{2.5}$ fugitive dust emissions are assuming USEPA 50% control efficiencies.

CO_2 emissions converted to metric tons =	***185.283***	***metric tons***	
State of Illinois's CO_2 emissions =	***226,000,000***	***metric tons***	*(U.S. DOE/EIA 2011)*
Percent of Illinois's CO_2 emissions =	***0.00008%***		
United States' CO_2 emissions =	***5,425,600,000***	***metric tons***	*(U.S. DOE/EIA 2011)*
Percent of USA's CO_2 emissions =	***0.000003%***		

Source: U.S. Department of Energy, Energy Information Administration (U.S. DOE/EIA). 2011. *Table 1. State Emissions by Year (Million Metric Tons of Carbon Dioxide).* Available online <http://www.eia.gov/environment/emissions/state/state_emissions.cfm>. Data released October 2011. Data accessed 22 November 2011.

Since future year budgets were not readily available, actual 2008 air emissions inventories for the counties were used as an approximation of the regional inventory. Because Project D2 is several orders of magnitude below significance, the conclusion would be the same, regardless of whether future year budget data set were used.

Metropolitan St. Louis Interstate Intrastate Air Quality Control Region

	Point and Area Sources Combined					
Year	NO_x (tpy)	VOC (tpy)	CO (tpy)	SO_2 (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (tpy)
2008	130,134	96,913	538,781	215,363	154,345	29,608

Source: USEPA National Emissions Inventory (NEI) (http://neibrowser.epa.gov/eis-public-web/home.html). Site visited on 09 January 2012.

Air Emissions from Project D2

	Point and Area Sources Combined					
	NO_x (tpy)	VOC (tpy)	CO (tpy)	SO_2 (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (tpy)
Regional Emissions	130,134	96,913	538,781	215,363	154,345	29,608
Emissions	1.317	0.177	1.074	0.104	0.886	0.172
% of Regional	**0.001%**	**0.000%**	**0.000%**	**0.000%**	**0.001%**	**0.001%**

Air Emissions for Project D3

	NO_x (ton)	VOC (ton)	CO (ton)	SO_2 (ton)	PM_{10} (ton)	$PM_{2.5}$ (ton)	CO_2 (ton)
Combustion	1.600	0.095	0.632	0.130	0.097	0.094	186.392
Fugitive Dust	-	-	-	-	2.216	0.222	-
Haul Truck On-Road	0.135	0.097	0.396	0.011	0.160	0.042	34.129
Commuter	0.083	0.082	0.744	0.001	0.008	0.005	98.611
TOTAL	***1.818***	***0.275***	***1.772***	***0.142***	***2.481***	***0.362***	***319.133***

Note: Total $PM_{10}/_{2.5}$ fugitive dust emissions are assuming USEPA 50% control efficiencies.

CO_2 emissions converted to metric tons =	***289.454***	***metric tons***	
State of Illinois's CO_2 emissions =	***226,000,000***	***metric tons***	*(U.S. DOE/EIA 2011)*
Percent of Illinois's CO_2 emissions =	***0.00013%***		
United States' CO_2 emissions =	***5,425,600,000***	***metric tons***	*(U.S. DOE/EIA 2011)*
Percent of USA's CO_2 emissions =	***0.000005%***		

Source: U.S. Department of Energy, Energy Information Administration (U.S. DOE/EIA). 2011. *Table 1. State Emissions by Year (Million Metric Tons of Carbon Dioxide).* Available online <http://www.eia.gov/environment/emissions/state/state_emissions.cfm>. Data released October 2011. Data accessed 22 November 2011.

Since future year budgets were not readily available, actual 2008 air emissions inventories for the counties were used as an approximation of the regional inventory. Because Project D3 is several orders of magnitude below significance, the conclusion would be the same, regardless of whether future year budget data set were used.

Metropolitan St. Louis Interstate Intrastate Air Quality Control Region

	Point and Area Sources Combined					
Year	NO_x (tpy)	VOC (tpy)	CO (tpy)	SO_2 (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (tpy)
2008	130,134	96,913	538,781	215,363	154,345	29,608

Source: USEPA National Emissions Inventory (NEI) (http://neibrowser.epa.gov/eis-public-web/home.html). Site visited on 09 January 2012.

Air Emissions from Project D3

	Point and Area Sources Combined					
	NO_x (tpy)	VOC (tpy)	CO (tpy)	SO_2 (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (tpy)
Regional Emissions	130,134	96,913	538,781	215,363	154,345	29,608
Emissions	1.818	0.275	1.772	0.142	2.481	0.362
% of Regional	**0.001%**	**0.000%**	**0.000%**	**0.000%**	**0.002%**	**0.001%**

Air Emissions for Project C1

	NO_x (ton)	VOC (ton)	CO (ton)	SO_2 (ton)	PM_{10} (ton)	$PM_{2.5}$ (ton)	CO_2 (ton)
Combustion	2.672	0.234	1.162	0.212	0.189	0.184	303.930
Fugitive Dust	-	-	-	-	10.422	1.042	-
Haul Truck On-Road	0.313	0.226	0.919	0.025	0.372	0.097	79.148
Commuter	0.041	0.041	0.372	0.000	0.004	0.002	49.306
TOTAL	***3.026***	***0.501***	***2.453***	***0.237***	***10.987***	***1.325***	***432.383***

Note: Total $PM_{10}/_{2.5}$ fugitive dust emissions are assuming USEPA 50% control efficiencies.

CO_2 emissions converted to metric tons =	***392.172***	***metric tons***	
State of Illinois's CO_2 emissions =	***226,000,000***	***metric tons***	*(U.S. DOE/EIA 2011)*
Percent of Illinois's CO_2 emissions =	***0.00017%***		
United States' CO_2 emissions =	***5,425,600,000***	***metric tons***	*(U.S. DOE/EIA 2011)*
Percent of USA's CO_2 emissions =	***0.000007%***		

Source: U.S. Department of Energy, Energy Information Administration (U.S. DOE/EIA). 2011. *Table 1. State Emissions by Year (Million Metric Tons of Carbon Dioxide).* Available online <http://www.eia.gov/environment/emissions/state/state_emissions.cfm>. Data released October 2011. Data accessed 22 November 2011.

Since future year budgets were not readily available, actual 2008 air emissions inventories for the counties were used as an approximation of the regional inventory. Because Project C1 is several orders of magnitude below significance, the conclusion would be the same, regardless of whether future year budget data set were used.

Metropolitan St. Louis Interstate Intrastate Air Quality Control Region

	Point and Area Sources Combined					
Year	NO_x (tpy)	VOC (tpy)	CO (tpy)	SO_2 (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (tpy)
2008	130,134	96,913	538,781	215,363	154,345	29,608

Source: USEPA National Emissions Inventory (NEI) (http://neibrowser.epa.gov/eis-public-web/home.html). Site visited on 09 January 2012.

Air Emissions from Project C1

	Point and Area Sources Combined					
	NO_x (tpy)	VOC (tpy)	CO (tpy)	SO_2 (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (tpy)
Regional Emissions	130,134	96,913	538,781	215,363	154,345	29,608
Emissions	3.026	0.501	2.453	0.237	10.987	1.325
% of Regional	**0.002%**	**0.001%**	**0.000%**	**0.000%**	**0.007%**	**0.004%**

Air Emissions for Project C2

	NO_x (ton)	VOC (ton)	CO (ton)	SO_2 (ton)	PM_{10} (ton)	$PM_{2.5}$ (ton)	CO_2 (ton)
Combustion	4.829	0.574	2.128	0.382	0.347	0.336	547.434
Fugitive Dust	-	-	-	-	2.064	0.206	-
Haul Truck On-Road	0.631	0.456	1.855	0.050	0.751	0.195	159.806
Commuter	0.132	0.132	1.190	0.002	0.013	0.008	157.778
Emergency Generator	1.561	0.044	0.415	0.493	0.049	0.049	80.483
TOTAL	***7.154***	***1.206***	***5.587***	***0.926***	***3.222***	***0.794***	***945.501***

Note: Total $PM_{10}/_{2.5}$ fugitive dust emissions are assuming USEPA 50% control efficiencies.

CO_2 emissions converted to metric tons =	***857.569***	***metric tons***	
State of Illinois's CO_2 emissions =	***226,000,000***	***metric tons***	*(U.S. DOE/EIA 2011)*
Percent of Illinois's CO_2 emissions =	***0.00038%***		
United States' CO_2 emissions =	***5,425,600,000***	***metric tons***	*(U.S. DOE/EIA 2011)*
Percent of USA's CO_2 emissions =	***0.000016%***		

Source: U.S. Department of Energy, Energy Information Administration (U.S. DOE/EIA). 2011. *Table 1. State Emissions by Year (Million Metric Tons of Carbon Dioxide).* Available online <http://www.eia.gov/environment/emissions/state/state_emissions.cfm>. Data released October 2011. Data accessed 22 November 2011.

Since future year budgets were not readily available, actual 2008 air emissions inventories for the counties were used as an approximation of the regional inventory. Because Project C2 is several orders of magnitude below significance, the conclusion would be the same, regardless of whether future year budget data set were used.

Metropolitan St. Louis Interstate Intrastate Air Quality Control Region

	Point and Area Sources Combined					
Year	NO_x (tpy)	VOC (tpy)	CO (tpy)	SO_2 (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (tpy)
2008	130,134	96,913	538,781	215,363	154,345	29,608

Source: USEPA National Emissions Inventory (NEI) (http://neibrowser.epa.gov/eis-public-web/home.html). Site visited on 09 January 2012.

Air Emissions from Project C2

	Point and Area Sources Combined					
	NO_x (tpy)	VOC (tpy)	CO (tpy)	SO_2 (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (tpy)
Regional Emissions	130,134	96,913	538,781	215,363	154,345	29,608
Emissions	7.154	1.206	5.587	0.926	3.222	0.794
% of Regional	**0.005%**	**0.001%**	**0.001%**	**0.000%**	**0.002%**	**0.003%**

Air Emissions for Project C3

	NO_x (ton)	VOC (ton)	CO (ton)	SO_2 (ton)	PM_{10} (ton)	$PM_{2.5}$ (ton)	CO_2 (ton)
Combustion	4.829	0.568	2.128	0.382	0.347	0.336	547.434
Fugitive Dust	-	-	-	-	1.947	0.195	-
Haul Truck On-Road	0.513	0.371	1.508	0.040	0.610	0.159	129.956
Commuter	0.132	0.132	1.190	0.002	0.013	0.008	157.778
TOTAL	***5.475***	***1.071***	***4.826***	***0.424***	***2.916***	***0.698***	***835.168***

Note: Total $PM_{10}/_{2.5}$ fugitive dust emissions are assuming USEPA 50% control efficiencies.

CO_2 emissions converted to metric tons =	***757.498***	***metric tons***	
State of Illinois's CO_2 emissions =	***226,000,000***	***metric tons***	*(U.S. DOE/EIA 2011)*
Percent of Illinois's CO_2 emissions =	***0.00034%***		
United States' CO_2 emissions =	***5,425,600,000***	***metric tons***	*(U.S. DOE/EIA 2011)*
Percent of USA's CO_2 emissions =	***0.000014%***		

Source: U.S. Department of Energy, Energy Information Administration (U.S. DOE/EIA). 2011. *Table 1. State Emissions by Year (Million Metric Tons of Carbon Dioxide).* Available online <http://www.eia.gov/environment/emissions/state/state_emissions.cfm>. Data released October 2011. Data accessed 22 November 2011.

Since future year budgets were not readily available, actual 2008 air emissions inventories for the counties were used as an approximation of the regional inventory. Because Project C3 is several orders of magnitude below significance, the conclusion would be the same, regardless of whether future year budget data set were used.

Metropolitan St. Louis Interstate Intrastate Air Quality Control Region

	Point and Area Sources Combined					
Year	NO_x (tpy)	VOC (tpy)	CO (tpy)	SO_2 (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (tpy)
2008	130,134	96,913	538,781	215,363	154,345	29,608

Source: USEPA National Emissions Inventory (NEI) (http://neibrowser.epa.gov/eis-public-web/home.html). Site visited on 09 January 2012.

Air Emissions from Project C3

	Point and Area Sources Combined					
	NO_x (tpy)	VOC (tpy)	CO (tpy)	SO_2 (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (tpy)
Regional Emissions	130,134	96,913	538,781	215,363	154,345	29,608
Emissions	5.475	1.071	4.826	0.424	2.916	0.698
% of Regional	**0.004%**	**0.001%**	**0.001%**	**0.000%**	**0.002%**	**0.002%**

Air Emissions for Project C4

	NO_x (ton)	VOC (ton)	CO (ton)	SO_2 (ton)	PM_{10} (ton)	$PM_{2.5}$ (ton)	CO_2 (ton)
Combustion	4.850	0.604	2.136	0.384	0.348	0.337	549.905
Fugitive Dust	-	-	-	-	2.749	0.275	-
Haul Truck On-Road	0.841	0.608	2.471	0.066	1.000	0.260	212.857
Commuter	0.132	0.132	1.190	0.002	0.013	0.008	157.778
Emergency Generator	0.780	0.022	0.207	0.246	0.024	0.024	40.241
TOTAL	***6.604***	***1.366***	***6.004***	***0.698***	***4.134***	***0.905***	***960.781***

Note: Total $PM_{10}/_{2.5}$ fugitive dust emissions are assuming USEPA 50% control efficiencies.

CO_2 emissions converted to metric tons =	***871.429***	***metric tons***	
State of Illinois's CO_2 emissions =	***226,000,000***	***metric tons***	*(U.S. DOE/EIA 2011)*
Percent of Illinois's CO_2 emissions =	***0.00039%***		
United States' CO_2 emissions =	***5,425,600,000***	***metric tons***	*(U.S. DOE/EIA 2011)*
Percent of USA's CO_2 emissions =	***0.000016%***		

Source: U.S. Department of Energy, Energy Information Administration (U.S. DOE/EIA). 2011. *Table 1. State Emissions by Year (Million Metric Tons of Carbon Dioxide).* Available online <http://www.eia.gov/environment/emissions/state/state_emissions.cfm>. Data released October 2011. Data accessed 22 November 2011.

Since future year budgets were not readily available, actual 2008 air emissions inventories for the counties were used as an approximation of the regional inventory. Because Project C4 is several orders of magnitude below significance, the conclusion would be the same, regardless of whether future year budget data set were used.

Metropolitan St. Louis Interstate Intrastate Air Quality Control Region

	Point and Area Sources Combined					
Year	NO_x (tpy)	VOC (tpy)	CO (tpy)	SO_2 (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (tpy)
2008	130,134	96,913	538,781	215,363	154,345	29,608

Source: USEPA National Emissions Inventory (NEI) (http://neibrowser.epa.gov/eis-public-web/home.html). Site visited on 09 January 2012.

Air Emissions from Project C4

	Point and Area Sources Combined					
	NO_x (tpy)	VOC (tpy)	CO (tpy)	SO_2 (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (tpy)
Regional Emissions	130,134	96,913	538,781	215,363	154,345	29,608
Emissions	6.604	1.366	6.004	0.698	4.134	0.905
% of Regional	**0.005%**	**0.001%**	**0.001%**	**0.000%**	**0.003%**	**0.003%**

Air Emissions for Project C5

	NO_x (ton)	VOC (ton)	CO (ton)	SO_2 (ton)	PM_{10} (ton)	$PM_{2.5}$ (ton)	CO_2 (ton)
Combustion	4.807	0.513	2.119	0.380	0.345	0.335	544.622
Fugitive Dust	-	-	-	-	0.981	0.098	-
Haul Truck On-Road	0.259	0.187	0.760	0.020	0.308	0.080	65.503
Commuter	0.132	0.132	1.190	0.002	0.013	0.008	157.778
Emergency Generator	3.902	0.110	1.037	1.232	0.122	0.122	201.207
TOTAL	***9.100***	***0.942***	***5.105***	***1.634***	***1.769***	***0.643***	***969.111***

Note: Total $PM_{10}/_{2.5}$ fugitive dust emissions are assuming USEPA 50% control efficiencies.

CO_2 emissions converted to metric tons =	***878.983***	***metric tons***	
State of Illinois's CO_2 emissions =	***226,000,000***	***metric tons***	*(U.S. DOE/EIA 2011)*
Percent of Illinois's CO_2 emissions =	***0.00039%***		
United States' CO_2 emissions =	***5,425,600,000***	***metric tons***	*(U.S. DOE/EIA 2011)*
Percent of USA's CO_2 emissions =	***0.000016%***		

Source: U.S. Department of Energy, Energy Information Administration (U.S. DOE/EIA). 2011. *Table 1. State Emissions by Year (Million Metric Tons of Carbon Dioxide).* Available online <http://www.eia.gov/environment/emissions/state/state_emissions.cfm>. Data released October 2011. Data accessed 22 November 2011.

Since future year budgets were not readily available, actual 2008 air emissions inventories for the counties were used as an approximation of the regional inventory. Because Project C5 is several orders of magnitude below significance, the conclusion would be the same, regardless of whether future year budget data set were used.

Metropolitan St. Louis Interstate Intrastate Air Quality Control Region

	Point and Area Sources Combined					
Year	NO_x (tpy)	VOC (tpy)	CO (tpy)	SO_2 (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (tpy)
2008	130,134	96,913	538,781	215,363	154,345	29,608

Source: USEPA National Emissions Inventory (NEI) (http://neibrowser.epa.gov/eis-public-web/home.html). Site visited on 09 January 2012.

Air Emissions from Project C5

	Point and Area Sources Combined					
	NO_x (tpy)	VOC (tpy)	CO (tpy)	SO_2 (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (tpy)
Regional Emissions	130,134	96,913	538,781	215,363	154,345	29,608
Emissions	9.100	0.942	5.105	1.634	1.769	0.643
% of Regional	**0.007%**	**0.001%**	**0.001%**	**0.001%**	**0.001%**	**0.002%**

Air Emissions for Project C6

	NO_x (ton)	VOC (ton)	CO (ton)	SO_2 (ton)	PM_{10} (ton)	$PM_{2.5}$ (ton)	CO_2 (ton)
Combustion	4.873	0.669	2.145	0.386	0.349	0.339	552.717
Fugitive Dust	-	-	-	-	4.552	0.455	-
Haul Truck On-Road	1.008	0.729	2.962	0.079	1.199	0.312	255.221
Commuter	0.132	0.132	1.190	0.002	0.013	0.008	157.778
TOTAL	***6.013***	***1.529***	***6.297***	***0.467***	***6.112***	***1.114***	***965.716***

Note: Total $PM_{10}/_{2.5}$ fugitive dust emissions are assuming USEPA 50% control efficiencies.

CO_2 emissions converted to metric tons =	***875.904***	***metric tons***	
State of Illinois's CO_2 emissions =	***226,000,000***	***metric tons***	*(U.S. DOE/EIA 2011)*
Percent of Illinois's CO_2 emissions =	***0.00039%***		
United States' CO_2 emissions =	***5,425,600,000***	***metric tons***	*(U.S. DOE/EIA 2011)*
Percent of USA's CO_2 emissions =	***0.000016%***		

Source: U.S. Department of Energy, Energy Information Administration (U.S. DOE/EIA). 2011. *Table 1. State Emissions by Year (Million Metric Tons of Carbon Dioxide).* Available online <http://www.eia.gov/environment/emissions/state/state_emissions.cfm>. Data released October 2011. Data accessed 22 November 2011.

Since future year budgets were not readily available, actual 2008 air emissions inventories for the counties were used as an approximation of the regional inventory. Because Project C6 is several orders of magnitude below significance, the conclusion would be the same, regardless of whether future year budget data set were used.

Metropolitan St. Louis Interstate Intrastate Air Quality Control Region

	Point and Area Sources Combined					
Year	NO_x (tpy)	VOC (tpy)	CO (tpy)	SO_2 (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (tpy)
2008	130,134	96,913	538,781	215,363	154,345	29,608

Source: USEPA National Emissions Inventory (NEI) (http://neibrowser.epa.gov/eis-public-web/home.html). Site visited on 09 January 2012.

Air Emissions from Project C6

	Point and Area Sources Combined					
	NO_x (tpy)	VOC (tpy)	CO (tpy)	SO_2 (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (tpy)
Regional Emissions	130,134	96,913	538,781	215,363	154,345	29,608
Emissions	6.013	1.529	6.297	0.467	6.112	1.114
% of Regional	**0.005%**	**0.002%**	**0.001%**	**0.000%**	**0.004%**	**0.004%**

Air Emissions for Project I1

	NO_x (ton)	VOC (ton)	CO (ton)	SO_2 (ton)	PM_{10} (ton)	$PM_{2.5}$ (ton)	CO_2 (ton)
Combustion	0.112	0.006	0.045	0.010	0.007	0.007	13.719
Fugitive Dust	-	-	-	-	0.152	0.015	-
Haul Truck On-Road	0.013	0.009	0.037	0.001	0.015	0.004	3.174
Commuter	0.006	0.005	0.050	0.000	0.001	0.000	6.574
TOTAL	***0.130***	***0.021***	***0.131***	***0.011***	***0.174***	***0.026***	***23.467***

Note: Total $PM_{10}/_{2.5}$ fugitive dust emissions are assuming USEPA 50% control efficiencies.

CO_2 emissions converted to metric tons =	***21.285***	***metric tons***	
State of Illinois's CO_2 emissions =	***226,000,000***	***metric tons***	*(U.S. DOE/EIA 2011)*
Percent of Illinois's CO_2 emissions =	***0.00001%***		
United States' CO_2 emissions =	***5,425,600,000***	***metric tons***	*(U.S. DOE/EIA 2011)*
Percent of USA's CO_2 emissions =	***0.000000%***		

Source: U.S. Department of Energy, Energy Information Administration (U.S. DOE/EIA). 2011. *Table 1. State Emissions by Year (Million Metric Tons of Carbon Dioxide).* Available online <http://www.eia.gov/environment/emissions/state/state_emissions.cfm>. Data released October 2011. Data accessed 22 November 2011.

Since future year budgets were not readily available, actual 2008 air emissions inventories for the counties were used as an approximation of the regional inventory. Because Project I1 is several orders of magnitude below significance, the conclusion would be the same, regardless of whether future year budget data set were used.

Metropolitan St. Louis Interstate Intrastate Air Quality Control Region

	Point and Area Sources Combined					
Year	NO_x (tpy)	VOC (tpy)	CO (tpy)	SO_2 (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (tpy)
2008	130,134	96,913	538,781	215,363	154,345	29,608

Source: USEPA National Emissions Inventory (NEI) (http://neibrowser.epa.gov/eis-public-web/home.html). Site visited on 09 January 2012.

Air Emissions from Project I1

	Point and Area Sources Combined					
	NO_x (tpy)	VOC (tpy)	CO (tpy)	SO_2 (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (tpy)
Regional Emissions	130,134	96,913	538,781	215,363	154,345	29,608
Emissions	0.130	0.021	0.131	0.011	0.174	0.026
% of Regional	**0.000%**	**0.000%**	**0.000%**	**0.000%**	**0.000%**	**0.000%**

Air Emissions for Project I2

	NO_x (ton)	VOC (ton)	CO (ton)	SO_2 (ton)	PM_{10} (ton)	$PM_{2.5}$ (ton)	CO_2 (ton)
Combustion	0.062	0.004	0.024	0.005	0.004	0.004	7.412
Fugitive Dust	-	-	-	-	5.804	0.580	-
Haul Truck On-Road	0.265	0.191	0.778	0.021	0.315	0.082	67.043
Commuter	0.066	0.066	0.595	0.001	0.006	0.004	78.889
TOTAL	***0.393***	***0.261***	***1.397***	***0.027***	***6.129***	***0.670***	***153.345***

Note: Total $PM_{10}/_{2.5}$ fugitive dust emissions are assuming USEPA 50% control efficiencies.

CO_2 emissions converted to metric tons =	***139.084***	***metric tons***	
State of Illinois's CO_2 emissions =	***226,000,000***	***metric tons***	*(U.S. DOE/EIA 2011)*
Percent of Illinois's CO_2 emissions =	***0.00006%***		
United States' CO_2 emissions =	***5,425,600,000***	***metric tons***	*(U.S. DOE/EIA 2011)*
Percent of USA's CO_2 emissions =	***0.000003%***		

Source: U.S. Department of Energy, Energy Information Administration (U.S. DOE/EIA). 2011. *Table 1. State Emissions by Year (Million Metric Tons of Carbon Dioxide).* Available online <http://www.eia.gov/environment/emissions/state/state_emissions.cfm>. Data released October 2011. Data accessed 22 November 2011.

Since future year budgets were not readily available, actual 2008 air emissions inventories for the counties were used as an approximation of the regional inventory. Because Project I2 is several orders of magnitude below significance, the conclusion would be the same, regardless of whether future year budget data set were used.

Metropolitan St. Louis Interstate Intrastate Air Quality Control Region

	Point and Area Sources Combined					
Year	NO_x (tpy)	VOC (tpy)	CO (tpy)	SO_2 (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (tpy)
2008	130,134	96,913	538,781	215,363	154,345	29,608

Source: USEPA National Emissions Inventory (NEI) (http://neibrowser.epa.gov/eis-public-web/home.html). Site visited on 09 January 2012.

Air Emissions from Project I2

	Point and Area Sources Combined					
	NO_x (tpy)	VOC (tpy)	CO (tpy)	SO_2 (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (tpy)
Regional Emissions	130,134	96,913	538,781	215,363	154,345	29,608
Emissions	0.393	0.261	1.397	0.027	6.129	0.670
% of Regional	**0.000%**	**0.000%**	**0.000%**	**0.000%**	**0.004%**	**0.002%**

Air Emissions for Project I3

	NO_x (ton)	VOC (ton)	CO (ton)	SO_2 (ton)	PM_{10} (ton)	$PM_{2.5}$ (ton)	CO_2 (ton)
Combustion	0.268	0.016	0.109	0.023	0.016	0.016	33.061
Fugitive Dust	-	-	-	-	5.207	0.521	-
Haul Truck On-Road	0.107	0.078	0.316	0.008	0.128	0.033	27.209
Commuter	0.066	0.066	0.595	0.001	0.006	0.004	78.889
TOTAL	***0.442***	***0.159***	***1.019***	***0.032***	***5.357***	***0.574***	***139.160***

Note: Total $PM_{10}/_{2.5}$ fugitive dust emissions are assuming USEPA 50% control efficiencies.

CO_2 emissions converted to metric tons =	***126.218***	***metric tons***	
State of Illinois's CO_2 emissions =	***226,000,000***	***metric tons***	*(U.S. DOE/EIA 2011)*
Percent of Illinois's CO_2 emissions =	***0.00006%***		
United States' CO_2 emissions =	***5,425,600,000***	***metric tons***	*(U.S. DOE/EIA 2011)*
Percent of USA's CO_2 emissions =	***0.000002%***		

Source: U.S. Department of Energy, Energy Information Administration (U.S. DOE/EIA). 2011. *Table 1. State Emissions by Year (Million Metric Tons of Carbon Dioxide).* Available online <http://www.eia.gov/environment/emissions/state/state_emissions.cfm>. Data released October 2011. Data accessed 22 November 2011.

Since future year budgets were not readily available, actual 2008 air emissions inventories for the counties were used as an approximation of the regional inventory. Because Project I3 is several orders of magnitude below significance, the conclusion would be the same, regardless of whether future year budget data set were used.

Metropolitan St. Louis Interstate Intrastate Air Quality Control Region

	Point and Area Sources Combined					
Year	NO_x (tpy)	VOC (tpy)	CO (tpy)	SO_2 (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (tpy)
2008	130,134	96,913	538,781	215,363	154,345	29,608

Source: USEPA National Emissions Inventory (NEI) (http://neibrowser.epa.gov/eis-public-web/home.html). Site visited on 09 January 2012.

Air Emissions from Project I3

	Point and Area Sources Combined					
	NO_x (tpy)	VOC (tpy)	CO (tpy)	SO_2 (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (tpy)
Regional Emissions	130,134	96,913	538,781	215,363	154,345	29,608
Emissions	0.442	0.159	1.019	0.032	5.357	0.574
% of Regional	**0.000%**	**0.000%**	**0.000%**	**0.000%**	**0.003%**	**0.002%**

Air Emissions for Project NI1

	NO_x (ton)	VOC (ton)	CO (ton)	SO_2 (ton)	PM_{10} (ton)	$PM_{2.5}$ (ton)	CO_2 (ton)
Combustion	0.042	0.003	0.016	0.003	0.003	0.002	4.942
Fugitive Dust	-	-	-	-	2.097	0.210	-
Haul Truck On-Road	0.032	0.023	0.094	0.003	0.038	0.010	8.073
Commuter	0.050	0.049	0.446	0.001	0.005	0.003	59.167
TOTAL	***0.123***	***0.075***	***0.556***	***0.007***	***2.142***	***0.225***	***72.181***

Note: Total $PM_{10}/_{2.5}$ fugitive dust emissions are assuming USEPA 50% control efficiencies.

CO_2 emissions converted to metric tons =	***65.469***	***metric tons***	
State of Illinois's CO_2 emissions =	***226,000,000***	***metric tons***	*(U.S. DOE/EIA 2011)*
Percent of Illinois's CO_2 emissions =	***0.00003%***		
United States' CO_2 emissions =	***5,425,600,000***	***metric tons***	*(U.S. DOE/EIA 2011)*
Percent of USA's CO_2 emissions =	***0.000001%***		

Source: U.S. Department of Energy, Energy Information Administration (U.S. DOE/EIA). 2011. *Table 1. State Emissions by Year (Million Metric Tons of Carbon Dioxide).* Available online <http://www.eia.gov/environment/emissions/state/state_emissions.cfm>. Data released October 2011. Data accessed 22 November 2011.

Since future year budgets were not readily available, actual 2008 air emissions inventories for the counties were used as an approximation of the regional inventory. Because Project NI1 is several orders of magnitude below significance, the conclusion would be the same, regardless of whether future year budget data set were used.

Metropolitan St. Louis Interstate Intrastate Air Quality Control Region

	Point and Area Sources Combined					
Year	NO_x (tpy)	VOC (tpy)	CO (tpy)	SO_2 (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (tpy)
2008	130,134	96,913	538,781	215,363	154,345	29,608

Source: USEPA National Emissions Inventory (NEI) (http://neibrowser.epa.gov/eis-public-web/home.html). Site visited on 09 January 2012.

Air Emissions from Project NI1

	Point and Area Sources Combined					
	NO_x (tpy)	VOC (tpy)	CO (tpy)	SO_2 (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (tpy)
Regional Emissions	130,134	96,913	538,781	215,363	154,345	29,608
Emissions	0.123	0.075	0.556	0.007	2.142	0.225
% of Regional	**0.000%**	**0.000%**	**0.000%**	**0.000%**	**0.001%**	**0.001%**

Air Emissions for Project NI2

	NO_x (ton)	VOC (ton)	CO (ton)	SO_2 (ton)	PM_{10} (ton)	$PM_{2.5}$ (ton)	CO_2 (ton)
Combustion	0.021	0.001	0.008	0.002	0.001	0.001	2.471
Fugitive Dust	-	-	-	-	0.002	0.000	-
Haul Truck On-Road	0.001	0.001	0.002	0.000	0.001	0.000	0.202
Commuter	0.003	0.003	0.025	0.000	0.000	0.000	3.287
TOTAL	***0.024***	***0.005***	***0.035***	***0.002***	***0.005***	***0.002***	***5.959***

Note: Total $PM_{10}/_{2.5}$ fugitive dust emissions are assuming USEPA 50% control efficiencies.

CO_2 emissions converted to metric tons =	***5.405***	***metric tons***	
State of Illinois's CO_2 emissions =	***226,000,000***	***metric tons***	*(U.S. DOE/EIA 2011)*
Percent of Illinois's CO_2 emissions =	***0.00000%***		
United States' CO_2 emissions =	***5,425,600,000***	***metric tons***	*(U.S. DOE/EIA 2011)*
Percent of USA's CO_2 emissions =	***0.000000%***		

Source: U.S. Department of Energy, Energy Information Administration (U.S. DOE/EIA). 2011. *Table 1. State Emissions by Year (Million Metric Tons of Carbon Dioxide).* Available online <http://www.eia.gov/environment/emissions/state/state_emissions.cfm>. Data released October 2011. Data accessed 22 November 2011.

Since future year budgets were not readily available, actual 2008 air emissions inventories for the counties were used as an approximation of the regional inventory. Because Project NI2 is several orders of magnitude below significance, the conclusion would be the same, regardless of whether future year budget data set were used.

Metropolitan St. Louis Interstate Intrastate Air Quality Control Region

	Point and Area Sources Combined					
Year	NO_x (tpy)	VOC (tpy)	CO (tpy)	SO_2 (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (tpy)
2008	130,134	96,913	538,781	215,363	154,345	29,608

Source: USEPA National Emissions Inventory (NEI) (http://neibrowser.epa.gov/eis-public-web/home.html). Site visited on 09 January 2012.

Air Emissions from Project NI2

	Point and Area Sources Combined					
	NO_x (tpy)	VOC (tpy)	CO (tpy)	SO_2 (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (tpy)
Regional Emissions	130,134	96,913	538,781	215,363	154,345	29,608
Emissions	0.024	0.005	0.035	0.002	0.005	0.002
% of Regional	**0.000%**	**0.000%**	**0.000%**	**0.000%**	**0.000%**	**0.000%**

Air Emissions for Other 2012 Projects

	NO_x (ton)	VOC (ton)	CO (ton)	SO_2 (ton)	PM_{10} (ton)	$PM_{2.5}$ (ton)	CO_2 (ton)
Combustion	9.204	1.127	3.858	0.739	0.611	0.593	1,058.823
Fugitive Dust	-	-	-	-	22.879	2.288	-
Haul Truck On-Road	4.410	3.189	12.958	0.347	5.244	1.364	1,116.445
Commuter	0.496	0.494	4.462	0.006	0.047	0.030	591.668
TOTAL	***14.109***	***4.809***	***21.278***	***1.092***	***28.781***	***4.274***	***2,766.936***

Note: Total $PM_{10}/_{2.5}$ fugitive dust emissions are assuming USEPA 50% control efficiencies.

CO_2 emissions converted to metric tons =	***2,509.611***	***metric tons***	
State of Illinois's CO_2 emissions =	***226,000,000***	***metric tons***	*(U.S. DOE/EIA 2011)*
Percent of Illinois's CO_2 emissions =	***0.00111%***		
United States' CO_2 emissions =	***5,425,600,000***	***metric tons***	*(U.S. DOE/EIA 2011)*
Percent of USA's CO_2 emissions =	***0.000046%***		

Source: U.S. Department of Energy, Energy Information Administration (U.S. DOE/EIA). 2011. *Table 1. State Emissions by Year (Million Metric Tons of Carbon Dioxide).* Available online <http://www.eia.gov/environment/emissions/state/state_emissions.cfm>. Data released October 2011. Data accessed 22 November 2011.

Since future year budgets were not readily available, actual 2008 air emissions inventories for the counties were used as an approximation of the regional inventory. Because the other 2012 projects is several orders of magnitude below significance, the conclusion would be the same, regardless of whether future year budget data set were used.

Metropolitan St. Louis Interstate Intrastate Air Quality Control Region

	Point and Area Sources Combined					
Year	NO_x (tpy)	VOC (tpy)	CO (tpy)	SO_2 (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (tpy)
2008	130,134	96,913	538,781	215,363	154,345	29,608

Source: USEPA National Emissions Inventory (NEI) (http://neibrowser.epa.gov/eis-public-web/home.html). Site visited on 09 January 2012.

Air Emissions from other 2012 projects

	Point and Area Sources Combined					
	NO_x (tpy)	VOC (tpy)	CO (tpy)	SO_2 (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (tpy)
Regional Emissions	130,134	96,913	538,781	215,363	154,345	29,608
Emissions	14.109	4.809	21.278	1.092	28.781	4.274
% of Regional	**0.011%**	**0.005%**	**0.004%**	**0.001%**	**0.019%**	**0.014%**

Air Emissions for other 2013 projects

	NO_x (ton)	VOC (ton)	CO (ton)	SO_2 (ton)	PM_{10} (ton)	$PM_{2.5}$ (ton)	CO_2 (ton)
Combustion	6.951	0.932	2.967	0.555	0.475	0.461	795.413
Fugitive Dust	-	-	-	-	13.828	1.383	-
Haul Truck On-Road	2.968	2.146	8.720	0.234	3.529	0.918	751.306
Commuter	0.331	0.329	2.975	0.004	0.031	0.020	394.446
TOTAL	***10.249***	***3.407***	***14.662***	***0.793***	***17.863***	***2.781***	***1,941.165***

Note: Total $PM_{10}/_{2.5}$ fugitive dust emissions are assuming USEPA 50% control efficiencies.

CO_2 emissions converted to metric tons =	***1,760.636***	***metric tons***	
State of Illinois's CO_2 emissions =	***226,000,000***	***metric tons***	*(U.S. DOE/EIA 2011)*
Percent of Illinois's CO_2 emissions =	***0.00078%***		
United States' CO_2 emissions =	***5,425,600,000***	***metric tons***	*(U.S. DOE/EIA 2011)*
Percent of USA's CO_2 emissions =	***0.000032%***		

Source: U.S. Department of Energy, Energy Information Administration (U.S. DOE/EIA). 2011. *Table 1. State Emissions by Year (Million Metric Tons of Carbon Dioxide).* Available online <http://www.eia.gov/environment/emissions/state/state_emissions.cfm>. Data released October 2011. Data accessed 22 November 2011.

Since future year budgets were not readily available, actual 2008 air emissions inventories for the counties were used as an approximation of the regional inventory. Because the other 2013 projects is several orders of magnitude below significance, the conclusion would be the same, regardless of whether future year budget data set were used.

Metropolitan St. Louis Interstate Intrastate Air Quality Control Region

	Point and Area Sources Combined					
Year	NO_x (tpy)	VOC (tpy)	CO (tpy)	SO_2 (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (tpy)
2008	130,134	96,913	538,781	215,363	154,345	29,608

Source: USEPA National Emissions Inventory (NEI) (http://neibrowser.epa.gov/eis-public-web/home.html). Site visited on 09 January 2012.

Air Emissions from other 2013 projects

	Point and Area Sources Combined					
	NO_x (tpy)	VOC (tpy)	CO (tpy)	SO_2 (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (tpy)
Regional Emissions	130,134	96,913	538,781	215,363	154,345	29,608
Emissions	10.249	3.407	14.662	0.793	17.863	2.781
% of Regional	**0.008%**	**0.004%**	**0.003%**	**0.000%**	**0.012%**	**0.009%**

Air Emissions for Other 2014 Projects

	NO_x (ton)	VOC (ton)	CO (ton)	SO_2 (ton)	PM_{10} (ton)	$PM_{2.5}$ (ton)	CO_2 (ton)
Combustion	7.766	0.657	3.290	0.621	0.524	0.509	890.113
Fugitive Dust	-	-	-	-	9.556	0.956	-
Haul Truck On-Road	1.137	0.822	3.341	0.090	1.352	0.352	287.861
Commuter	0.248	0.247	2.231	0.003	0.023	0.015	295.834
TOTAL	***9.151***	***1.726***	***8.862***	***0.714***	***11.455***	***1.830***	***1,473.808***

Note: Total $PM_{10}/_{2.5}$ fugitive dust emissions are assuming USEPA 50% control efficiencies.

CO_2 emissions converted to metric tons =	***1,336.744***	***metric tons***	
State of Illinois's CO_2 emissions =	***226,000,000***	***metric tons***	*(U.S. DOE/EIA 2011)*
Percent of Illinois's CO_2 emissions =	***0.00059%***		
United States' CO_2 emissions =	***5,425,600,000***	***metric tons***	*(U.S. DOE/EIA 2011)*
Percent of USA's CO_2 emissions =	***0.000025%***		

Source: U.S. Department of Energy, Energy Information Administration (U.S. DOE/EIA). 2011. *Table 1. State Emissions by Year (Million Metric Tons of Carbon Dioxide).* Available online <http://www.eia.gov/environment/emissions/state/state_emissions.cfm>. Data released October 2011. Data accessed 22 November 2011.

Since future year budgets were not readily available, actual 2008 air emissions inventories for the counties were used as an approximation of the regional inventory. Because the other 2014 projects is several orders of magnitude below significance, the conclusion would be the same, regardless of whether future year budget data set were used.

Metropolitan St. Louis Interstate Intrastate Air Quality Control Region

	Point and Area Sources Combined					
Year	NO_x (tpy)	VOC (tpy)	CO (tpy)	SO_2 (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (tpy)
2008	130,134	96,913	538,781	215,363	154,345	29,608

Source: USEPA National Emissions Inventory (NEI) (http://neibrowser.epa.gov/eis-public-web/home.html). Site visited on 09 January 2012.

Air Emissions from other 2014 projects

	Point and Area Sources Combined					
	NO_x (tpy)	VOC (tpy)	CO (tpy)	SO_2 (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (tpy)
Regional Emissions	130,134	96,913	538,781	215,363	154,345	29,608
Emissions	9.151	1.726	8.862	0.714	11.455	1.830
% of Regional	**0.007%**	**0.002%**	**0.002%**	**0.000%**	**0.007%**	**0.006%**

Air Emissions for Other 2015 Projects

	NO_x (ton)	VOC (ton)	CO (ton)	SO_2 (ton)	PM_{10} (ton)	$PM_{2.5}$ (ton)	CO_2 (ton)
Combustion	5.243	0.559	2.292	0.416	0.372	0.360	595.574
Fugitive Dust	-	-	-	-	2.030	0.203	-
Haul Truck On-Road	0.442	0.320	1.299	0.035	0.526	0.137	111.954
Commuter	0.165	0.165	1.487	0.002	0.016	0.010	197.223
TOTAL	***5.850***	***1.044***	***5.078***	***0.452***	***2.943***	***0.710***	***904.751***

Note: Total $PM_{10}/_{2.5}$ fugitive dust emissions are assuming USEPA 50% control efficiencies.

CO_2 emissions converted to metric tons =	***820.609***	***metric tons***	
State of Illinois's CO_2 emissions =	***226,000,000***	***metric tons***	*(U.S. DOE/EIA 2011)*
Percent of Illinois's CO_2 emissions =	***0.00036%***		
United States' CO_2 emissions =	***5,425,600,000***	***metric tons***	*(U.S. DOE/EIA 2011)*
Percent of USA's CO_2 emissions =	***0.000015%***		

Source: U.S. Department of Energy, Energy Information Administration (U.S. DOE/EIA). 2011. *Table 1. State Emissions by Year (Million Metric Tons of Carbon Dioxide).* Available online <http://www.eia.gov/environment/emissions/state/state_emissions.cfm>. Data released October 2011. Data accessed 22 November 2011.

Since future year budgets were not readily available, actual 2008 air emissions inventories for the counties were used as an approximation of the regional inventory. Because the other 2015 projects is several orders of magnitude below significance, the conclusion would be the same, regardless of whether future year budget data set were used.

Metropolitan St. Louis Interstate Intrastate Air Quality Control Region

	Point and Area Sources Combined					
Year	NO_x (tpy)	VOC (tpy)	CO (tpy)	SO_2 (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (tpy)
2008	130,134	96,913	538,781	215,363	154,345	29,608

Source: USEPA National Emissions Inventory (NEI) (http://neibrowser.epa.gov/eis-public-web/home.html). Site visited on 09 January 2012.

Air Emissions from other 2015 projects

	Point and Area Sources Combined					
	NO_x (tpy)	VOC (tpy)	CO (tpy)	SO_2 (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (tpy)
Regional Emissions	130,134	96,913	538,781	215,363	154,345	29,608
Emissions	5.850	1.044	5.078	0.452	2.943	0.710
% of Regional	**0.004%**	**0.001%**	**0.001%**	**0.000%**	**0.002%**	**0.002%**

Air Emissions for Other 2016 Projects

	NO_x (ton)	VOC (ton)	CO (ton)	SO_2 (ton)	PM_{10} (ton)	$PM_{2.5}$ (ton)	CO_2 (ton)
Combustion	6.998	0.693	3.008	0.569	0.479	0.465	814.452
Fugitive Dust	-	-	-	-	46.098	4.610	-
Haul Truck On-Road	1.056	0.764	3.104	0.083	1.256	0.327	267.423
Commuter	0.198	0.197	1.785	0.002	0.019	0.012	236.667
TOTAL	***8.253***	***1.654***	***7.896***	***0.654***	***47.852***	***5.413***	***1,318.542***

Note: Total $PM_{10}/_{2.5}$ fugitive dust emissions are assuming USEPA 50% control efficiencies.

CO_2 emissions converted to metric tons =	***1,195.918***	***metric tons***	
State of Illinois's CO_2 emissions =	***226,000,000***	***metric tons***	*(U.S. DOE/EIA 2011)*
Percent of Illinois's CO_2 emissions =	***0.00053%***		
United States' CO_2 emissions =	***5,425,600,000***	***metric tons***	*(U.S. DOE/EIA 2011)*
Percent of USA's CO_2 emissions =	***0.000022%***		

Source: U.S. Department of Energy, Energy Information Administration (U.S. DOE/EIA). 2011. *Table 1. State Emissions by Year (Million Metric Tons of Carbon Dioxide).* Available online <http://www.eia.gov/environment/emissions/state/state_emissions.cfm>. Data released October 2011. Data accessed 22 November 2011.

Since future year budgets were not readily available, actual 2008 air emissions inventories for the counties were used as an approximation of the regional inventory. Because the other 2016 projects is several orders of magnitude below significance, the conclusion would be the same, regardless of whether future year budget data set were used.

Metropolitan St. Louis Interstate Intrastate Air Quality Control Region

	Point and Area Sources Combined					
Year	NO_x (tpy)	VOC (tpy)	CO (tpy)	SO_2 (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (tpy)
2008	130,134	96,913	538,781	215,363	154,345	29,608

Source: USEPA National Emissions Inventory (NEI) (http://neibrowser.epa.gov/eis-public-web/home.html). Site visited on 09 January 2012.

Air Emissions from other 2016 projects

	Point and Area Sources Combined					
	NO_x (tpy)	VOC (tpy)	CO (tpy)	SO_2 (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (tpy)
Regional Emissions	130,134	96,913	538,781	215,363	154,345	29,608
Emissions	8.253	1.654	7.896	0.654	47.852	5.413
% of Regional	**0.006%**	**0.002%**	**0.001%**	**0.000%**	**0.031%**	**0.018%**

Air Emissions for Other 2017 Projects

	NO_x (ton)	VOC (ton)	CO (ton)	SO_2 (ton)	PM_{10} (ton)	$PM_{2.5}$ (ton)	CO_2 (ton)
Combustion	5.952	0.512	2.572	0.473	0.414	0.402	677.933
Fugitive Dust	-	-	-	-	1.845	0.185	-
Haul Truck On-Road	0.445	0.322	1.308	0.035	0.529	0.138	112.723
Commuter	0.132	0.132	1.190	0.002	0.013	0.008	157.778
TOTAL	***6.529***	***0.965***	***5.070***	***0.510***	***2.802***	***0.732***	***948.433***

Note: Total $PM_{10}/_{2.5}$ fugitive dust emissions are assuming USEPA 50% control efficiencies.

CO_2 emissions converted to metric tons =	***860.229***	***metric tons***	
State of Illinois's CO_2 emissions =	***226,000,000***	***metric tons***	*(U.S. DOE/EIA 2011)*
Percent of Illinois's CO_2 emissions =	***0.00038%***		
United States' CO_2 emissions =	***5,425,600,000***	***metric tons***	*(U.S. DOE/EIA 2011)*
Percent of USA's CO_2 emissions =	***0.000016%***		

Source: U.S. Department of Energy, Energy Information Administration (U.S. DOE/EIA). 2011. *Table 1. State Emissions by Year (Million Metric Tons of Carbon Dioxide).* Available online <http://www.eia.gov/environment/emissions/state/state_emissions.cfm>. Data released October 2011. Data accessed 22 November 2011.

Since future year budgets were not readily available, actual 2008 air emissions inventories for the counties were used as an approximation of the regional inventory. Because the other 2017 projects is several orders of magnitude below significance, the conclusion would be the same, regardless of whether future year budget data set were used.

Metropolitan St. Louis Interstate Intrastate Air Quality Control Region

	Point and Area Sources Combined					
Year	NO_x (tpy)	VOC (tpy)	CO (tpy)	SO_2 (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (tpy)
2008	130,134	96,913	538,781	215,363	154,345	29,608

Source: USEPA National Emissions Inventory (NEI) (http://neibrowser.epa.gov/eis-public-web/home.html). Site visited on 09 January 2012.

Air Emissions from other 2017 projects

	Point and Area Sources Combined					
	NO_x (tpy)	VOC (tpy)	CO (tpy)	SO_2 (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (tpy)
Regional Emissions	130,134	96,913	538,781	215,363	154,345	29,608
Emissions	6.529	0.965	5.070	0.510	2.802	0.732
% of Regional	**0.005%**	**0.001%**	**0.001%**	**0.000%**	**0.002%**	**0.002%**

APPENDIX E

INSTALLATION DEVELOPMENT ENVIRONMENTAL ASSESSMENT MANAGEMENT REQUIREMENTS AND ENVIRONMENTAL PROTECTION MEASURES FOR WETLANDS AND OTHER WATERS OF THE UNITED STATES

INSTALLATION DEVELOPMENT ENVIRONMENTAL ASSESSMENT MANAGEMENT REQUIREMENTS AND ENVIRONMENTAL PROTECTION MEASURES FOR WETLANDS AND OTHER WATERS OF THE UNITED STATES

SCOTT AFB, ILLINOIS

AUGUST 2012

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1. Introduction

Scott Air Force Base (AFB) has prepared an Installation Development Environmental Assessment (IDEA) to implement those projects proposed in the Scott AFB Wing-approved community of plans for installation development and resource management. These plans propose demolition, construction, infrastructure improvement, and natural infrastructure management improvement projects intended to ensure that the installation can sustain its current and future national security operations and mission-readiness status. These projects include installation development projects contained in the Scott AFB Installation Development Plan, Base Comprehensive Asset Management Plan, and the community of all other existing Wing-approved development and resource management plans.

The IDEA provides a constraints-based environmental impact analysis of installation development actions projected over the next 5 years (from fiscal year 2012 through 2017). A potential constraint to installation development actions are wetlands or other waters of the United States that exist at Scott AFB. The purpose of this document is to provide management tools to avoid or minimize any direct or indirect adverse effects that could potentially occur on wetlands or other waters of the United States due to implementation of the projects addressed in the IDEA.

Adverse effects on waters of the United States could include filling, excavating, flooding, draining, clearing, or similar changes affecting wetlands or open water areas. Direct impacts on wetlands would result from disturbances that occur within the wetland. Common direct impacts on wetlands include filling, grading, removal of vegetation, construction, and changes in water levels or drainage patterns. Most disturbances that result in direct impacts on wetlands are addressed through Federal and state wetland regulatory programs. Indirect impacts on wetlands can result from disturbances that occur in areas outside of the wetland, such as adjacent uplands and other wetlands or waterways. Common indirect impacts include the influx of surface water and sediments, fragmentation of a wetland from a contiguous wetland complex, loss of recharge area, or changes in local drainage patterns.

Scott AFB has approximately 36 wetlands covering 378 acres. The majority of jurisdictional wetlands at Scott AFB are in the Silver Creek Riparian Corridor and are classified as forested emergent wetlands. Two of the selected projects analyzed in the IDEA have the potential to cause minor, direct, adverse impacts on wetlands or other jurisdictional waters of the United States (e.g., dredging or placement of fill). These projects include Project NI2 (Remove Log Jam from Silver Creek) and Project NI3 (Improve Foraging Habitat for Indiana Bat). All potential direct and indirect adverse impacts would be avoided to the maximum extent practicable through design and implementation of measures outlined in this document. Project design would be coordinated with Scott AFB.

2. Laws and Regulations

Protection of wetlands and other waters of the United States is mandated by both Federal and state laws and regulations. At the Federal level, wetlands are protected as a subset of the waters of the United States under Section 404 of the Clean Water Act (CWA), and jurisdiction is addressed by the USEPA and the U.S. Army Corps of Engineers (USACE). The term “waters of the United States” has a broad meaning under the CWA and incorporates deepwater aquatic habitats and special aquatic habitats (including wetlands). The USACE defines wetlands as “those areas that are inundated or saturated with ground or surface water at a frequency and duration to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted to life in saturated conditions. Wetlands generally include swamps, marshes, bogs, and similar areas” (33 Code of Federal Regulations [CFR] Part 329). Section 404 of the CWA establishes a program to regulate the discharge of dredge and fill material into waters of the United States, including wetlands. Scott AFB would be required to obtain a Section 404 Standard

Individual Permit or applicable Nationwide Permit from USACE if proposed projects are determined to adversely impact jurisdictional wetlands on the installation through dredging or placement of fill within jurisdictional wetlands. Jurisdictional wetlands are defined as (1) traditional navigable waters, (2) wetlands adjacent to navigable waters, (3) nonnavigable tributaries of traditional navigable waters that are relatively permanent where the tributaries typically flow year-around or have continuous flow at least seasonally (e.g., typically 3 months), or (4) wetlands that directly abut such tributaries. The USACE, pursuant to Section 404 of the CWA, requires compliance with the Section 404(b)(1) guidelines for jurisdictional wetland filling activities that are deemed "non-water-dependent." Non-water-dependent projects do not need to be located in jurisdictional wetlands or other waters to fulfill their basic project purpose. These guidelines first require avoiding impacts through selection of projects with the least environmental effect, and second, through taking the appropriate and practicable steps to minimize impacts. Lastly, wetland compensation would be required for any loss of jurisdictional wetlands, pursuant to the "no net loss" national policy for jurisdictional wetlands.

Section 401 of the CWA requires state agencies to evaluate projects that will result in the discharge into waters of the United States to determine whether the discharge will violate the state's water quality standards. Per Section 401 of CWA, any applicant for a Federal license or permit to conduct any activity including, but not limited to, the construction or operation of facilities, which could result in any discharge into the navigable waters, shall provide the licensing or permitting agency a certification from the state in which the discharge originates or will originate. Illinois relies on Section 401 water quality certification and the Interagency Wetland Policy Act of 1989 with peripheral guidance provided by the Rivers, Lakes, and Streams Act as its primary form of state-level wetlands regulations. The Section 401 program is administered by the Illinois Environmental Protection Agency and the Interagency Wetland Policy Act is administered by the Illinois Department of Natural Resources. In making certification decisions, the State of Illinois is primarily concerned with the construction and environmental disturbance requirements pertaining to soils, surface waters, and fill materials. A non-regulatory agency policy document requires that "fragile and sensitive areas such as wetlands, riparian zones, delicate flora, or land resources will be protected against compaction, vegetation loss, and unnecessary damage." If a project does not meet this and other minimum requirements of the State of Illinois, the permit is denied, and necessary conditions are communicated before re-application. A Section 401 Water Quality Certification is required for activities that require Federal permits such as a Section 404 permit. Mitigation or compensation for the impacts made on jurisdictional wetlands or other waters of the United States would be required in order to comply with the "No Net Loss" national policy.

Executive Order (EO) 11990, *Protection of Wetlands*, (24 May 1977) directs agencies to consider alternatives to avoid adverse effects and incompatible development in wetlands. Federal agencies are 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. Agencies should use economic and environmental data, agency mission statements, and any other pertinent information when deciding whether or not to build in wetlands. EO 11990 directs each agency to provide for early public review of plans for construction in wetlands. In accordance with EO 11990 and 32 CFR Part 989, a Finding of No Practicable Alternative (FONPA) must accompany the Finding of No Significant Impact (FONSI) stating why there are no practicable alternatives to development within or affecting wetland areas.

In accordance with EO 11990, construction of new facilities within areas containing wetlands is avoided where practicable. Proposed actions that could impact wetlands, even if the affected area is not within a jurisdictional wetland boundary, require an environmental impact analysis in accordance with NEPA and the USAF Environmental Impact Analysis Process at 32 CFR Part 989. The proposed action must include all practicable measures to minimize harm to wetlands.

3. Environmental Protection Measures for Wetlands and Other Waters of the United States

If a project is anticipated to affect wetlands or other waters of the United States, a sequence of actions has been identified to offset effects, known as the mitigation sequence to guide mitigation decisions and determine the type and level of mitigation required under the CWA Section 404. The sequence of steps is to avoid, minimize, and, lastly, compensate. If effects on a wetland cannot be avoided, they must be minimized. Following minimization, any unavoidable impacts must be compensated. Compensation can include restoration, creation, enhancement, or preservation of a wetland. This document focuses on techniques to avoid or minimize effects on wetlands or other waters of the United States.

3.1 Avoiding Effects on Wetlands or Other Waters of the United States

Avoidance of effects on wetlands or other waters of the United States results in the least environmental effect on these resources. Avoidance can be most effective through project design that sites a project in an area that would result in no direct or indirect effects on wetlands or other waters of the United States. In addition to avoidance through design, effects could be avoided by flagging the boundary of a wetland or water of the United States to delineate areas to avoid, and ensuring construction vehicles and workers remain outside of the flagged boundary.

3.2 Minimizing Effects on Wetlands or Other Waters of the United States

If impacts cannot be completely avoided, reduction of effects is evaluated based upon type and extent of the impact on the wetland or waters of the United States. Indirect effects could occur on wetlands or other waters of the United States that are in proximity to proposed project activities. Implementation of the following management practices where appropriate would minimize potential for indirect impacts on wetlands and other waters of the United States that are adjacent to proposed activities:

Construction Controls

- The wetlands and other waters of the United States should be clearly flagged prior to commencement of construction activities. This would prevent construction workers from entering these wetlands and potentially placing fill within the wetlands or trampling wetland vegetation.
- Construction activities should be phased so that smaller areas of land are disturbed at one period of time. This would result in less soil exposed at one time, and would reduce the potential for erosion and deposition of sediment into wetlands or other waters of the United States.
- Water quality control features such as sedimentation basins and detention or retention ponds should be installed as applicable prior to initiation of construction activities. Temporary basins and silt traps would be constructed as necessary to contain sediment and runoff on the construction area. Hay bales and silt fences should be used to minimize transport of sediments off the project area.
- All fuels and other potentially hazardous materials should be contained and stored appropriately. In the event of a spill, procedures outlined in the installation's Spill Prevention, Control, and Countermeasure Plan (SPCC) would be followed to quickly contain and clean up a spill.
- An erosion and sediment control plan should be developed prior to initiation of construction activities and adhered to during development.

- Erosion-control structures should be installed downgradient of the construction site in sloped areas adjacent to wetlands and other water bodies. The structures should be regularly maintained and removed once vegetation has been reestablished.
- A construction-grading plan should be developed to show existing and proposed topography. Grading should be conducted in a manner that would direct storm water runoff generated from construction activities away from nearby wetlands or waters of the United States, but existing drainage patterns and hydrology should be maintained. Best management practices such as installation of silt fencing along wetland buffers would aid in prevention of siltation if natural site hydrology directs storm water runoff to the wetlands.
- Access paths should be located along high ground, or docks or boardwalks should be used when necessary to cross a wetland rather than filling the wetland. Storm water runoff originating from the construction site should be diverted and sedimentation controls implemented to avoid discharging into the wetland.
- When wetland crossings cannot be avoided, the use of heavy machinery in wetlands should be minimized by installing construction barriers at the edge of the proposed area of disturbance.
- Construction activities should be restricted to drier periods during the year (summer months).
- Construction debris should be disposed of at a suitable nonwetland site.

Natural Resources Controls

- A Storm Water Pollution Prevention Plan (SWPPP) should be developed and implemented to prevent surface water degradation of wetlands within close proximity of project sites.
- Storm water runoff originating from impervious surfaces should be routed through storm water treatment facilities prior to discharging into surface waters. Existing drainageways should be preserved. Water should not be diverted away from or towards wetlands and other waters of the United States. This aids in maintaining the existing hydrology.
- A buffer surrounding wetlands and waters of the United States should be established on wetlands identified at Scott AFB. Buffers reduce adverse effects of development, most importantly in relationship to slope and vegetative cover. Maintaining dense shrubs or forested vegetation in areas with steep slopes provides the greatest protection from polluted runoff. In addition, buffer effectiveness increases with buffer width. As buffer width increases, the effectiveness of removing sediments, nutrients, bacteria, and other pollutants from surface water runoff increases.
- Removal of vegetation should be minimized. In areas where excavation is not proposed but vegetation removal is necessary, vegetation should be cut at the ground level, leaving roots intact. Disturbed areas should be seeded, sodded, or planted with indigenous material as soon as possible after construction activities are completed, as appropriate.
- The spread of noxious weeds can be controlled by avoiding activities in or adjacent to heavily infested areas, removing seed sources and propagules from the site prior to conducting activities, or limiting operations to nonseed-producing seasons. Following activities that expose the soil, mitigation can be achieved by covering the area with weed-seed free mulch or seeding the area with native species. Soil should be covered to reduce the germination of weed seeds, maintain soil moisture, and minimize erosion.

- Areas where wetland soils have been disturbed should be monitored for nuisance or invasive plant species for 5 years following construction. Two such species are purple loosestrife (*Lythrum salicaria*) and common reed (*Phragmites australis*).

4. Project-Specific Considerations

During the design phase and prior to submitting necessary permit applications for any direct wetland impacts, a more detailed analysis for avoidance and minimization of effects would be conducted for each selected project. Selected projects would be designed to avoid direct impacts on wetlands and other waters of the United States. If direct effects could not be avoided, mitigation and correspondence with regulatory and resource agencies, possibly including the USACE and the USFWS, would commence, and permitting would be obtained. Direct effects would be expected for the selected Project NI2 (Remove Log Jam from Silver Creek) and Project NI3 (Improve Foraging Habitat for Indiana Bat); avoidance, minimization of effects, and mitigation would be implemented, as necessary. Additional specifications would be developed as appropriate for each selected project. The final specifications could include specific minimization techniques and the development of management plans for storm water runoff, vegetation, grading, and any other appropriate planning documents.

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APPENDIX F

NOISE EVALUATION FOR PROJECT C1

```
CASE_BCALC_v1.x

begin_description

  #Date/Time Created: 13 Jan 2012 14:35
  #Case File Name: C:\BNOISE2\Cases\Scott EOD Range\Scott EOD case5.dat
  #BNOISE2 v1.3.2003-07-03

  #
  # Receiver Grid Selection = SCOTT EOD GRID5
  # Metric Selection = DNL (250 x 24h), C WEIGHTING
  # Activity Selection = SCOTT EOD ACTIVITY5
  # Include Terrain: False
  # Include Land-Water: False
  #

  # Installation Name: SCOTT AFB
  # Service: US AIR FORCE
  # State: IL
  # Country: USA
  # Author: ELAINE DUBIN
  # Date Created: 13 Jan 2012
  # Date Last Modified: 13 Jan 2012

end_description


begin_bcalccommands

  # This section is for diagnostic purposes only
Draw Firing Areas: .true.
Draw Target Areas: .true.
Draw Trajectories: .true.
Draw Registration Marks: .true.
Write Annotations: .true.
Calculate Contour Grid: .true.

end_bcalccommands


begin_sound_propagation_types

Propagation Directory Name: C:\BNOISE2\support\

Propagation Type: BN3.2 DAY BASE
Downwind Table: noloss
Downwind Corrections: dbase.st
Upwind Table: noloss
Upwind Corrections: dbase.st
  # Date Created: 7 Jun 1999
  # Date Last Modified: 7 Jun 1999


end_sound_propagation_types


begin_propagation_occurrence_by_azimuth

Propagation Type: BN3.2 DAY BASE
Propagation Azimuth (deg): 0
Daytime Occurrence (pct): 100
Nighttime Occurrence (pct): 100
  # Date Created: 16 Jun 1999
```

```
  # Date Last Modified: 16 Jun 1999

end_propagation_occurrence_by_azimuth

begin_receivergrid

Receiver Grid Name: SCOTT EOD GRID5
UTM Zone: 16
SW Corner Easting: 250894.00
SW Corner Northing: 4266378.00
EW Overall Size: 5000
NS Overall Size: 5000
Mesh Spacing: 100
  # Installation Name: SCOTT AFB
  # Service: US AIR FORCE
  # State: IL
  # Country: USA
  # Author: ELAINE DUBIN
  # Date Created: 13 Jan 2012
  # Date Last Modified: 13 Jan 2012

end_receivergrid

begin_maps

  #Land-Water XYW Map File Name: None
  #Terrain XYZ Map File Name: None

end_maps

begin_firingareas

Firing Area Name: SCOTT EOD FIRING5_POINT_POINT
UTM Zone: 16
East1: 253387.00
North1: 4268884.00
Percent1: 100.00
Elevation: 0.00
  # Easting: 253387.00
  # Northing: 4268884.00
  # EastWest Size: 0.00
  # NorthSouth Size: 0.00
  # Azimuth: 0.00
  # Installation Name: SCOTT AFB
  # Service: US AIR FORCE
  # State: IL
  # Country: USA
  # Author: ELAINE DUBIN
  # Date Created: 13 Jan 2012
  # Date Last Modified: 13 Jan 2012

end_firingareas

begin_targetareas

end_targetareas
```

```
begin_equivalentyields

Equivalent Yield Name: COMPOSITION C-4
Pressure Equivalent TNT Multiple: 1.3700
Impulse Equivalent TNT Multiple: 1.1900
  # Description: M.M. Swisdak NSWC TR-75-116; ANSI S2.20-1983
  # Date Created: 1 Jan 1998
  # Date Last Modified: 1 Jan 1998

Equivalent Yield Name: TNT
Pressure Equivalent TNT Multiple: 1.0000
Impulse Equivalent TNT Multiple: 1.0000
  # Description: M.M. Swisdak NSWC TR-75-116; ANSI S2.20-1983
  # Date Created: 1 Jan 1998
  # Date Last Modified: 1 Jan 1998

end_equivalentyields


begin_cselacousticefficiencies

end_cselacousticefficiencies


begin_directivityspectra

end_directivityspectra


begin_cseldirectivities

end_cseldirectivities


begin_noisesources

Noise Source Code: DC401
Weapon Class: EXPLOSIVE
  # Weapon Type: DEMOLITION
  # Weapon: C4
  # Charge Increment: M112 1.25 LBS
Explosive Charge Weight (kg): 0.5670
  # Charge Increment Description:
Equivalent Yield: COMPOSITION C-4
  # Noise Source Description:
  # Date Created: 10 Feb 2002
  # Date Last Modified: 10 Feb 2002

Noise Source Code: ETN13
Weapon Class: EXPLOSIVE
  # Weapon Type: EXPLOSIVE
  # Weapon: TNT
  # Charge Increment: 0.16 KG (0.35 LBS)
Explosive Charge Weight (kg): 0.1600
  # Charge Increment Description:
Equivalent Yield: TNT

end_noisesources


begin_activitydetails

Detail Record Number: 1
```

```
Firing Area: SCOTT EOD FIRING5_POINT_POINT
Firing Noise Source: DC401
Firing Height: 0.00
Target Area:
  # This Acitivty Detail uses no Target Area
Number of Day Shots: 43.20000076
Number of Night Shots: 0.00000000
  # Activity Detail Date:
  # Activity Detail Description: Detonations per year of 1.24lbs C-4
  # Date Created: 13 Jan 2012
  # Date Last Modified: 13 Jan 2012

Detail Record Number: 2
Firing Area: SCOTT EOD FIRING5_POINT_POINT
Firing Noise Source: ETN13
Firing Height: 0.00
Target Area:
  # This Acitivty Detail uses no Target Area
Number of Day Shots: 4.80000019
Number of Night Shots: 0.00000000
  # Activity Detail Date:
  # Activity Detail Description: Detonations per year with Explosively actuated EOD
tools
  # Date Created: 13 Jan 2012
  # Date Last Modified: 13 Jan 2012

end_activitydetails


begin_frequencyweighting

Frequency Weighting Name: C WEIGHTING
Band 0: -45.30
Band 1: -42.20
Band 2: -39.10
Band 3: -36.00
Band 4: -32.90
Band 5: -29.80
Band 6: -26.70
Band 7: -23.60
Band 8: -20.50
Band 9: -17.40
Band 10: -14.30
Band 11: -11.20
Band 12: -8.50
Band 13: -6.20
Band 14: -4.40
Band 15: -3.00
Band 16: -2.00
Band 17: -1.30
Band 18: -0.80
Band 19: -0.50
Band 20: -0.30
Band 21: -0.20
Band 22: -0.10
Band 23: 0.00
Band 24: 0.00
Band 25: 0.00
Band 26: 0.00
Band 27: 0.00
Band 28: 0.00
Band 29: 0.00
Band 30: 0.00
```

```
Band 31: 0.00
Band 32: -0.10
Band 33: -0.20
Band 34: -0.30
Band 35: -0.50
Band 36: -0.80
Band 37: -1.30
Band 38: -2.00
Band 39: -3.00
Band 40: -4.40
Band 41: -6.20
Band 42: -8.50
Band 43: -11.20

end_frequencyweighting


begin_metrics

Metric Name: DNL (250 x 24h)
Frequency Weighting: C WEIGHTING
Contour Metric: DNL
Silence Threshold: 65.00
Assessment Period (h): 6000
  # Date Created: 24 May 2000
  # Date Last Modified: 24 May 2000

end_metrics
```

BNOISE2 computerized noise modeling program results, in PK15(met), for Operation of the Explosive Ordnance Proficiency Range (Project C1).

Assumptions:

- Per MSgt David Pinkham (932 CES/CED), 1.25lb blocks of C-4 explosive were used.
- The "Day Base" weather scenario was selected in BNOISE2.
- The unweighted peak level mu+1 sigma value (15.87 percent exceeding), i.e., PK15(met) was used in the EA.

Selected Distances to Noise Receptors

*Note: BNOISE2 models distances at 20 meter (65 foot) increments. All distances were rounded to the closest 20-meter increment.

*Note: 150 dBP is the highest noise level the OneShot function can model.

Distance #1: Persons at the installation boundary, approximately 175 meters south (180°) of the proposed range. Used 180 meters per note above.

OneShot Results

A-WEIGHTED EXPOSURE LEVEL, ASEL (dB)	ANSI 12.9/4 ADJUSTED LEVEL, ASE (dB)	C-WEIGHTED EXPOSURE LEVEL, CSEL (dB)	UNWEIGHTED PEAK LEVEL, PK (dB)	PERCENT EXCEEDING (pct)	
128.5	150.0	138.5	150.0	0.13	(mu+3 sigma)
124.0	150.0	134.0	150.0	2.28	(mu+2 sigma)
119.0	150.0	129.5	150.0	15.87	(mu+1 sigma)
114.5	146.5	124.5	150.0	50.00	(mu+0 sigma)
110.0	137.5	120.0	149.5	84.13	(mu-1 sigma)
105.5	128.5	115.5	145.0	97.72	(mu-2 sigma)
117.3	147.3	127.4		<--ENERGY MEAN	
1.00	1.00	1.00	1.00	<--N NOISES	

Distance #2: Scott AFB personnel accessing the aircraft hangers, approximately 400 meters west (272°) of the proposed range.

OneShot Results

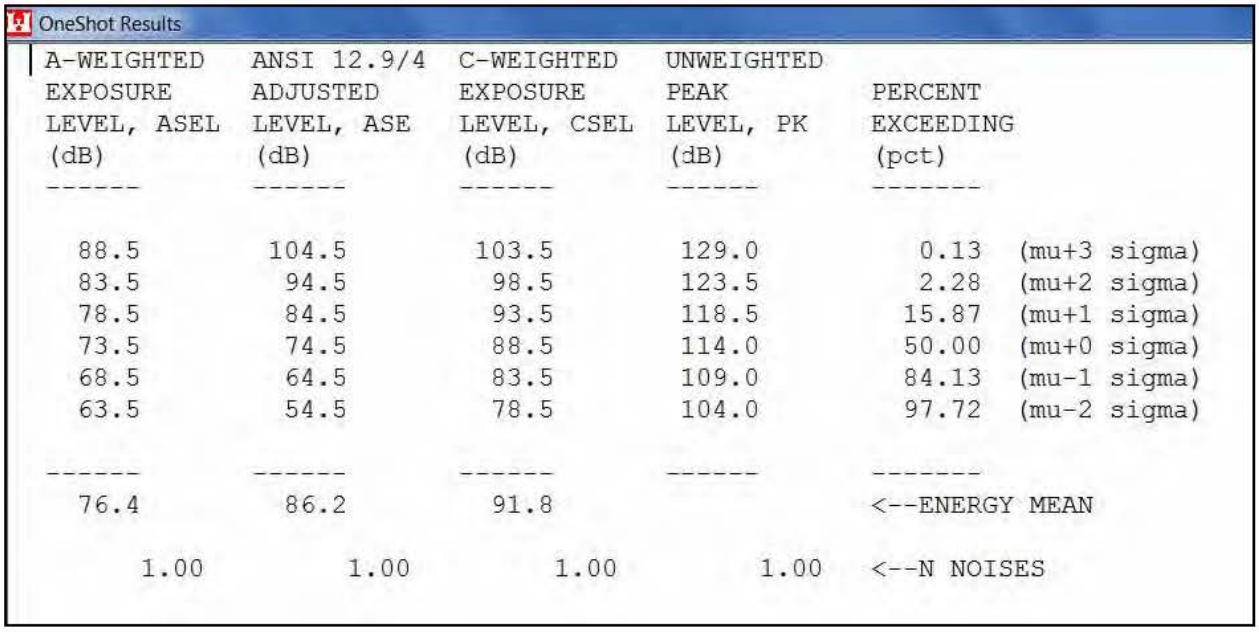
A-WEIGHTED EXPOSURE LEVEL, ASEL (dB)	ANSI 12.9/4 ADJUSTED LEVEL, ASE (dB)	C-WEIGHTED EXPOSURE LEVEL, CSEL (dB)	UNWEIGHTED PEAK LEVEL, PK (dB)	PERCENT EXCEEDING (pct)	
125.0	150.0	136.0	150.0	0.13	(mu+3 sigma)
118.5	150.0	129.0	150.0	2.28	(mu+2 sigma)
111.5	142.0	122.5	150.0	15.87	(mu+1 sigma)
105.0	128.5	115.5	144.0	50.00	(mu+0 sigma)
98.0	115.0	109.0	137.5	84.13	(mu-1 sigma)
91.5	102.0	102.5	130.5	97.72	(mu-2 sigma)
110.4	140.7	121.1		<--ENERGY MEAN	
1.00	1.00	1.00	1.00	<--N NOISES	

Distance #3: Persons accessing the Scott AFB military family housing, approximately 1,411 meters southwest (232°) of the proposed range. Used 1,420 meters per note above.

OneShot Results

A-WEIGHTED EXPOSURE LEVEL, ASEL (dB)	ANSI 12.9/4 ADJUSTED LEVEL, ASE (dB)	C-WEIGHTED EXPOSURE LEVEL, CSEL (dB)	UNWEIGHTED PEAK LEVEL, PK (dB)	PERCENT EXCEEDING (pct)	
105.5	134.0	118.5	145.0	0.13	(mu+3 sigma)
99.5	122.0	112.5	139.0	2.28	(mu+2 sigma)
93.5	110.0	106.5	133.0	15.87	(mu+1 sigma)
87.5	98.0	100.5	127.0	50.00	(mu+0 sigma)
81.5	86.5	94.5	121.0	84.13	(mu-1 sigma)
75.5	74.5	88.5	115.0	97.72	(mu-2 sigma)
91.8	114.6	104.8		<--ENERGY MEAN	
1.00	1.00	1.00	1.00	<--N NOISES	

Distance #4: Persons accessing the off-installation residential area east of Lake Road, approximately 2,975 meters southeast (151°) of the proposed range. Used 2,980 meters per note above.



OneShot Results

A-WEIGHTED EXPOSURE LEVEL, ASEL (dB)	ANSI 12.9/4 ADJUSTED LEVEL, ASE (dB)	C-WEIGHTED EXPOSURE LEVEL, CSEL (dB)	UNWEIGHTED PEAK LEVEL, PK (dB)	PERCENT EXCEEDING (pct)	
88.5	104.5	103.5	129.0	0.13	(mu+3 sigma)
83.5	94.5	98.5	123.5	2.28	(mu+2 sigma)
78.5	84.5	93.5	118.5	15.87	(mu+1 sigma)
73.5	74.5	88.5	114.0	50.00	(mu+0 sigma)
68.5	64.5	83.5	109.0	84.13	(mu-1 sigma)
63.5	54.5	78.5	104.0	97.72	(mu-2 sigma)
76.4	86.2	91.8		<--ENERGY MEAN	
1.00	1.00	1.00	1.00	<--N NOISES	

APPENDIX G

DOCUMENTATION ON NRHP ELIGIBILITY EVALUATIONS, SHPO CONCURRENCE, AND MOAS FOR SELECTED PROJECTS

MEMORANDUM OF AGREEMENT
AMONG
THE DEPARTMENT OF THE AIR FORCE
AND
THE ILLINOIS HISTORIC PRESERVATION AGENCY
CONCERNING THE DEMOLITION OF BUILDING 48
SCOTT AIR FORCE BASE
ST. CLAIR COUNTY, ILLINOIS

WHEREAS, the Department of the Air Force (DAF) intends to undertake the demolition of Building 48 at Scott Air Force Base in St. Clair County, Illinois; and

WHEREAS, DAF has consulted with the Illinois Historic Preservation Agency (IHPA) concerning the demolition of Building 48, pursuant to Section 106 of the National Preservation Act of 1966, as amended (16 U.S.C. 470f) and its implementing regulations "Protection of Historic and Cultural Properties" (36 CFR 800); and

WHEREAS, DAF and IHPA agree that Building 48 is listed on the National Register of Historic Places and the demolition of this structure is an adverse effect in accordance with 36 CFR Part 800.5(a); and

WHEREAS, both parties mutually agree that there is no prudent or feasible alternative to the project as originally proposed.

NOW, THEREFORE, DAF and IHPA agree that the following measures shall be implemented to mitigate the adverse effect of this undertaking on Building 48.

Stipulations

I. DAF will ensure that the following measures are carried out:

1. Building 48 shall be documented in accordance with the Illinois Historic American Buildings Survey Standards (IL HABS).
2. The IL HABS number for the building shall be S-2011-1.
3. Level III documentation shall be prepared by the applicant.
4. Sketch plans, drawn in computer assisted drafting (CAD) format shall be produced on archivally stable Mylar sheets.
5. Black and white digital photography of the buildings to include building site, exterior elevations, distinctive exterior architectural features and significant interior spaces and features shall be produced on archive stable photographic paper.

6. Written historic narrative of the buildings and a written architectural description of the buildings using the IL HABS designated outline format shall be completed.
7. The applicant shall award the recordation contract to the consultant of its choice, provided the consultant is qualified to perform the work and agrees to meet IL HABS Standards and guidelines
8. IHPA shall review the draft report and accept or reject the submittal within 30 days, in accordance with IL HABS Standards. Upon acceptance of the draft in writing, the applicant shall complete the final documentation and deliver one original and one electronic copy in PDF format on a gold CD to IHPA.
9. Upon IHPA's written acceptance of the draft IL HABS documentation, the applicant may commence demolition activities to the building.

Execution and implementation of this memorandum of agreement evidences that Scott AFB has afforded IHPA to comment on Building 48 demolition and satisfied its compliance responsibilities in pursuant to Section 106 of the National Preservation Act of 1966, as amended (16 U.S.C. 470f) and its implementing regulations "Protection of Historic and Cultural Properties" (36 CFR 800).

THE DEPARTMENT OF THE AIR FORCE

Date 5 DEC 2011

MICHAEL J. HORNITSCHEK, Col, USAF
Commander, 375th Air Mobility Wing

THE ILLINOIS HISTORIC PRESERVATION AGENCY

Date 12-7-11

ANNE E. HAAKER
Deputy State Historic Preservation Officer

APPENDIX H

DOCUMENTATION OF USFWS CONSULTATION UNDER SECTION 7 OF THE ENDANGERED SPECIES ACT FOR SELECTED PROJECTS

For Project C1

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 375TH AIR MOBILITY WING (AMC)

RECEIVED
APR 18 2011
By ERP

30 Mar 11

375 CES/CEAN
702 Hangar Road, Bldg 56
Scott AFB, IL 62225-5035

Ms. Joyce Collins
U.S. Fish and Wildlife Service
Marion Illinois Sub-Office
8588 Route 148
Marion, Illinois 62959

Re: Consultation Regarding Construction of the Landfill Cap and Placement of the Explosive Ordanance Disposal (EOD) Range, Scott Air Force Base (AFB)

Dear Ms. Collins:

We are requesting concurrence from the U.S. Fish and Wildlife Service (USFWS) that the proposed remediation of the old base landfill (LF-01) and subsequent redevelopment of a portion of the landfill area for use by the Scott AFB EOD unit, located in St. Clair County, IL, is *not likely to adversely affect* the Indiana bat (*Myotis sodalis*), who utilizes some areas on base for foraging and roosting during certain times of the year.

Current work at the landfill site, involving investigative work and clearing of shrubbery and trees that have grown up over the years since the landfill was active, was coordinated with Ms. Beth Whetsell and Ms. Jessica Forrest from the Illinois Department of Natural Resources during a site visit on 5 November 2008, with Ms. Aleshia Kenney from USFWS during a site visit on 4 December 2008 and through verbal communication with you on 9 September 2009. Clearing activities on the landfill cap began 22 February 2011 and were completed 25 March 2011, prior to the earliest anticipated date when the bats might return to this area. Remedial construction (i.e. capping of the landfill) is expected to begin in July 2011. These activities are located within the secured boundaries of Scott AFB, will be undertaken by government contractors, and are under the direction of the Scott AFB Environmental Restoration Program office.

Capping the former landfill will prevent migration of hazardous substances into the environment and prevent direct contact of ecological receptors to hazardous substances. Remedial construction activities will be conducted in accordance with the Scott AFB *Endangered Species Management Plan for the Federally Endangered Indiana Bat* dated February 2010. Specifically, we will minimize activities within 100 feet of known roosting areas (please note the landfill is located approximately 600 feet south of the nearest known roosting areas) and construction activities will be limited to daylight hours to avoid disturbances

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APR 04 2011
U.S. FISH & WILDLIFE SERVICE
MARION ILLINOIS ES SUB OFFICE

ENABLING COMBAT POWER

during evening hours while the bat is foraging. See Attachment A for a depiction of the landfill area and the known roosting trees for the Indiana bat.

Following completion of the remedial construction work in June 2012, we presently anticipate that the EOD unit will develop a 20 foot by 20 foot bunker on a portion of the capped landfill to conduct monthly proficiency training as required under Air Force Instruction 32-3001. Since the EOD range at Scott AFB is used for training, only non-fragmenting charges are authorized. All detonations occur within a four-sided bunker, even though only non-fragmenting charges are utilized. The planned activities at the range do not differ greatly from activities at the current EOD range located only 700 feet west of the new proposed location. Training activities at the range will are not expected to adversely affect the Indiana bat or other species on base.

In addition to potential effects on the Indiana bat addressed above, we have considered the possibility that the above activities might affect other species. We carefully reviewed (on 22 March 2011) your agency's Section 7 Consultation website for a list of species and critical habitat that "may be present" within the project area. We utilized the list for St. Clair County, Illinois. According to the list accessed on 22 March 2011, in addition to the Indiana bat, there are five Federally listed threatened or endangered species present in St. Clair County:

Species	**Federal Status**	**Preferred Habitat**	**Observed at Scott AFB?**	**Preferred Habitat Available at Scott AFB?**
Least tern *(Sterna antillarum)*	Endangered	Bare alluvial and dredged spoil islands	No	No
Pallid sturgeon *(Scaphirynchus albus)*	Endangered	Large rivers	No	No
Illinois cave amphipod *(Gammarus acherondytes)*	Endangered	Cave streams in Illinois sinkhole plain	No	No
Decurrent false aster *(Boltonia decurrens)*	Threatened	Disturbed alluvial soils	No	Some potential
Eastern prairie fringed orchid *(Platanthaera leucophaea)*	Threatened	Mesic to wet prairies	No	Some potential

The five species listed above have not been observed to be present on or within a one-mile radius of the LF-01 site at Scott AFB. Site LF-01, when capped, will be clear of large vegetation, so effects on the roosting and foraging areas for the Indiana bat are not anticipated.

Though there is some potential that habitat for the Decurrent false aster (*Boltonia decurrens*) or the Eastern prairie fringed orchid (*Platanthaera leucophaea*) may occur on or within a one-mile radius of Scott AFB, there is no preferred habitat available for these two species at the LF-01 site or its immediate vicinity.

In addition, the list of the following seventeen (17) state-designated species known or suspected to occur in St. Clair County was reviewed:

Scientific Name	Common Name	State Status	Preferred Habitat Available at Scott AFB?
Asio flammeus	Short-eared Owl	LE	Some potential
Boltonia decurrens	**Decurrent False Aster**	**LT***	Some potential
Caecidotea spatulata	Isopod	LE	No
Circus cyaneus	Northern Harrier	LE	Some potential
Egretta caerulea	Little Blue Heron	LE	Some potential
Egretta thula	Snowy Egret	LE	Some potential
Fontigens antroecetes	Hydrobiid cave snail	LE	No
Gallinula chloropus	Common Moorhen	LE	Some potential
Gammarus acherondytes	**Illinois Cave Amphipod**	**LE***	No
Ixobrychus exilis	Least Bittern	LT	Some potential
Lanius ludovicianus	Loggerhead Shrike	LE	Some potential
Myotis sodalis	**Indiana Bat**	**LE***	Yes
Nyctanassa violacea	Yellow-crowned Night-Heron	LE	Some potential
Nycticorax nycticorax	Black-crowned Night-Heron	LE	Some potential
Trifolium reflexum	Buffalo Clover	LT	Unknown
Trillium viride	Green Trillium	LE	Unknown
Tyto alba	Barn Owl	LE	Some potential

LE – Listed, Endangered
LT – Listed, Threatened.
*** Also Federally listed**

The species listed above by the State of Illinois (with the exception of the Indiana Bat, which is also Federally listed) have not been observed to be present on or within a one-mile radius of the LF-01 site at Scott AFB. As explained above, effects on the roosting and foraging areas for the Indiana bat are not anticipated. Though there is some potential that habitat for eleven of the state-listed species may occur on or within a one-mile radius of Scott AFB, individual members of the species have not been observed and there is no preferred habitat available at the LF-01 site or in its immediate vicinity.

For these reasons, we conclude that the remedial construction work and relocation of the existing Scott AFB EOD facility to a new portion of the LF-01 site, are not likely to adversely affect the Indiana bat or the other five Federally listed threatened or endangered species known to occur in St. Clair County, nor on the other sixteen state-listed species. We request your concurrence with our determination(s). Please address your concurrence to:

375 CES/CEAN
Ms Richelle Collingham
Restoration Program Manager
702 Hangar Road, Building 56
Scott AFB, IL 62225-5035

If you have any questions, please contact me at 618-256-2125

Sincerely

[signature]

RICHELLE N. COLLINGHAM
Restoration Program Manager

Attachment:
Map of proposed project/activity area

cc:
Joseph A. Kath, Endangered Species Manager, Illinois Department of Natural Resources
Paul Lake, Remedial Project Manager, Illinois Environmental Protection Agency
Keith McMullen, Illinois Section Chief, U.S. Army Corps of Engineers St. Louis District
Cindy Nolan, Conservation Manager, 375 CES/CEAN, Scott AFB
Brian Collingham, NEPA Program Manager, 375 CES/CEAN, Scott AFB
Scott AFB ERP File

Concurrence Provided
U.S. Fish & Wildlife Service
Marion, Illinois
[signature]
for Joyce Collins 4-28-21
Asst. Supervisor Date

Scott AFB Landfill and Indiana Bat Roosting Trees

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For Projects N1, NI2, and NI3

Letter sent to the USFWS

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 375TH AIR MOBILITY WING (AMC)

Ms. Joyce Collins
U.S. Fish and Wildlife Service
Marion Illinois Sub-Office
8588 Route 148
Marion, Illinois 62959

23 JUN 2012

Dear Ms. Collins:

In accordance with Section 7 of the Endangered Species Act, Scott Air Force Base (AFB) is requesting concurrence for a *not likely to adversely affect determination* for the proposed implementation of selected installation development projects at Scott AFB in St. Clair County, IL. Scott AFB issued a Draft Environmental Assessment (EA) on 26 April 2012, which evaluates selected projects from those projects proposed in the Scott AFB Wing-approved community of plans for installation development. This EA is called the Installation Development EA (IDEA).

Because it has been determined that the federally endangered Indiana bat (*Myotis sodalis*) is seasonally utilizing portions of Scott AFB, the installation has the responsiblity for managing forests and other resources in a manner that does not harm or threaten the species and its available habitat on Scott AFB. We are requesting concurrence from the U.S. Fish and Wildlife Service (USFWS) that the following proposed Natural Infrastructure Management Projects identified in the IDEA: NI1: Airfield Violations, NI2: Remove Log Jam from Silver Creek, and NI3: Improve Foraging Habitat for Indiana bat, are *not likely to adversely affect the Indiana bat* (*Myotis sodalis*).

NI1. Airfield Tree Violations. Project NI1, Airfield Tree Violations, entails the removal or trimming of approximately 255 trees from the installation for purposes of airplane safety. The need for Project NI1 is for Scott AFB's airfield to comply with UFC 3-260-01, Airport and Heliport Planning and Design, and with FAA Regulation Part 77, Objects Affecting Navigable Airspace.

The trimming/removal of trees will help avoid conflicts with the airfield criteria and meet the Joint Use Agreement signed between the Secretary of the Air Force and St. Clair County. Tree trimming/removal activities will be conducted in accordance with Scott AFB's Final Endangered Species Management Plan for the Federal Listed Endangered Indiana Bat. Specifically, tree trimming/removal would be conducted between October 15 and March 31, when Indiana bats are occupying swarming and hibernation habitat and are not present on the installation and would follow USFWS guidelines as outlined in Appendix E of the management plan. Long-term, minor, adverse effects on Indiana bats would be expected from the permanent removal of habitat associated with Project NI1. However, replacement plantings would occur at a 2:1 ratio and new trees would be beneficial to bats and planted in areas that do not interfere with the airfield to offset the loss of trees. These replacement trees would provide replacement habitat for the Indiana bats. Replacement plantings would include tree species preferred by Indiana bats. Based on the seasonal cutting restrictions and adherence to Management Recommendations for the Indiana Bat Scott AFB has determined that activities associated with Project NI1 are *not likely to adversely affect* the Indiana bat.

ENABLING COMBAT POWER

NI2. Remove Log Jam from Silver Creek. Project NI2, Remove Log Jam from Silver Creek, proposes to remove a log jam on Silver Creek, which is currently causing an accumulation of logs, silt, and debris (e.g. appliances, plastic, and other refuse). This project might also include minimal amounts of vegetation removal to allow vehicular access to the log jam from the nearby perimeter road.

The removal of the log jam will ensure that an effective flow is restored to Silver Creek thus reducing the amount of excessive woody debris within the riparian corridor, maintaining effective drainage within the northeastern portion of the installation and complying with the Scott AFB Integrated Natural Resource Management Plan (INRMP). Because Indiana bats are known to seasonally occupy riparian habitat along Silver Creek, Project NI2 would be conducted between October 15 and March 31, when Indiana bats are not present on Scott AFB. Any vegetation removal to allow access to log jam will be conducted in a prudent manner and in accordance with Scott AFB's Final Endangered Species Management Plan for the Federally Endangered Indiana Bat. Furthermore, a biological monitor familiar with the ecology of the Indiana bat will be present to advise on how best to to minimize impacts to Indiana bats during location/construction of the access to the log jam. Based on the timing of project activity, monitoring access construction, cutting restrictions and adherence to Management Recommendations for the Indiana Bat, we feel that Project NI2 is *not likely to adversely affect* the Indiana bat.

NI3. Improve Foraging Habitat for Indiana Bat. Project NI3, Improve Foraging Habitat for Indiana bat, entails establishing habitat management zones for the Indiana bat and conducting periodic habitat improvement projects. The purpose of Project NI3 is to increase long-term viability of Indiana bat habitat on Scott AFB. The need for Project NI3 is to ensure conservation of the existing 20 acres of known Indiana bat roosting habitat at Scott AFB per the Scott AFB INRMP.

This project would be conducted over a period of 5 years and would entail several components including identifying potential Indiana bat habitats, conducting tree thinning, planting Shagbark Hickory or other preferred roosting tree species, and maintaining an adaptive management program to address future issues as they occur. Specifically, any tree thinning would be conducted between October 15 and March 31, when Indiana bats are are not present on the installation and would follow USFWS guidelines as outlined in Appendix E of the management plan. Based on the seasonal cutting restrictions and adherence to Management Recommendations for the Indiana Bat, we feel that Project NI3 is *not likely to adversely affect* the Indiana bat.

For these reasons, we conclude that the following proposed Natural Infrastructure Management Projects: NI1: Airfield Violations, NI2: Remove Log Jam from Silver Creek, and NI3: Improve Foraging Habitat for Indiana bat, are *not likely to adversely affect the Indiana bat (Myotis sodalis).*

We request your concurrence with our determination(s). If you have any questions in regards to this letter, please contact me at 618-256-2492.

Sincerely,

Cindy Nolan P.G.
Conservation Manager

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Marion Illinois Sub-Office (ES)
8588 Route 148
Marion, IL 62959
(618) 997-3344

July 19, 2012

Ms. Cindy Nolan, P.G.
375 CES/CEAN
702 Hangar Rd, Bldg 56
Scott AFB, Illinois 62225-5035

Dear Ms. Nolan:

We have received and reviewed the June 15, 2012, letter requesting that the proposed implementation of selected installation development projects at Scott Air Force Base (AFB) in St Clair County, Illinois, are not likely to adversely affect the Indiana bat (*Myotis sodalis*). The proposed installation development projects include N11 (Airfield Tree Violations), N12 (Remove Log Jam from Silver Creek), and N13 (Improve Foraging Habitat for Indiana Bat). These comments are prepared under the authority of and in accordance with the provisions of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.); the Endangered Species Act of 1973, as amended; and, the National Environmental Policy Act.

N11 (Airfield Tree Violations) entails the removal or trimming of approximately 255 trees from the installation for purposes of airplane safety. Information in the letter indicates tree trimming/removal activities will be conducted in accordance with Scott AFB's Final Endangered Species Management Plan for the Federally Listed Endangered Indiana Bat and specifically, tree trimming/removal would be conducted between October 15 and March 31. In addition, replacement tree plantings would occur at a 2:1 ratio and new trees would be beneficial to bats and planted in areas that do not interfere with the airfield to offset the loss of trees. Based on this information, the Service concurs the proposed project N11 is not likely to adversely affect the Indiana bat.

N12 (Remove Log Jam from Silver Creek) involves the removal of a log jam on Silver Creek. Information in the letter indicates the proposed activity would be conducted between October 15 and March 31 when Indiana bats are not present on Scott AFB and any vegetation removal to allow access to the log jam will be conducted in accordance with Scott AFB's Final Endangered Species Management Plan for the Federally Listed Endangered Indiana Bat. Based on this information, the Service concurs the proposed project N21 is not likely to adversely affect the Indiana bat.

N13 (Improve Foraging Habitat for Indiana Bat) entails establishing habitat management zones for the Indiana bat and conducting periodic habitat improvement projects. Information in the

letter indicates the proposed project would entail several components including identifying potential Indiana bat habitats, conducting tree thinning, planting shagbark hickory or other preferred roosting tree species, and maintaining an adaptive management program to address future issues as they occur. In addition, any tree thinning would be conducted between October 15 and March 31 and would follow USFWS guidelines as outlined in Appendix E (Scott AFB Management Recommendations for the Indiana Bat) of Scott AFB's Final Endangered Species Management Plan for the Federally Listed Endangered Indiana Bat. Based on this information, the Service concurs the proposed project NI3 is not likely to adversely affect the Indiana bat.

Should any of the projects be modified or new information indicate listed or proposed species may be affected, consultation or additional coordination with this office, as appropriate, should be initiated.

Thank you for the opportunity to provide information concerning threatened and endangered species. For additional coordination, please contact me at (618) 997-3344, ext. 345.

Sincerely,

/s/ Matthew T. Mangan

Matthew T. Mangan
Acting Assistant Field Supervisor

cc: IDNR (Kath, Shank)