FINAL FINDING OF NO SIGNIFICANT IMPACT AND FINDING OF NO PRACTICABLE ALTERNATIVE FOR THE 21 POINT ENCLOSED FIRING RANGE JOINT BASE ANDREWS-NAVAL AIR FACILITY WASHINGTON, MARYLAND

Pursuant to the President's Council on Environmental Quality regulations, Title 40 Code of Federal Regulations (CFR) Parts 1500-1508, as they implement the requirements of the National Environment Policy Act (NEPA) of 1969, 42 U.S. Code § 4321, et seq., and the Air Force Environmental Impact Analysis Process, as promulgated in 32 CFR Part 989, the U.S. Air Force conducted an assessment of the potential environmental consequences associated with implementation of the following proposed action: Construct a 21 Point Enclosed Firing Range at JBA. The Environmental Assessment (EA), attached and incorporated by reference considered all potential impacts of the proposed action and alternatives, both as a solitary action and in conjunction with other proposed activities. This Finding of No Significant Impact (FONSI) summarizes the results of the evaluation and the conclusion regarding the significance of impacts from the Proposed Action. The Finding of No Practicable Alternative (FONPA) summarizes the conclusion reached regarding the location of the Proposed Action in a wetland.

Proposed Action

The proposed action is in line with the goals of the Base's General Plan. The proposed action will entail the construction of a new live-fire range and the completion of improvements at the existing range facility. The proposed action is fully identified herein as the "21-Point Enclosed Firing Range". The purpose of the proposed action is to continue to sustain mission readiness effectively by maximizing the Base's training capabilities to meet current and emerging requirements. With regard to the mission of JBA, the proposed action will insure that contingency response capabilities that are critical to national security are not compromised. The need for the current proposed action is to provide a superior live-fire training facility that will improve operations and level of training above what is presently provided by the existing firing range facility. This need is primarily based on the deficiencies that are manifest at the existing firing range facility. The new facility will be able to handle more trainees and support a greater variety of weapons. The proposed action will occur within the southeast portion of the Main Base, at the general location of the existing firing range facility. The new facility will be designed to support weapons training requirements of the National Capital Region. Furthermore, the new building will comply with Department of Defense anti-terrorism/force protection requirements per Unified Facilities Criteria. Improvements to Building No. 2495 will be included as part of the proposed action to construct additional office space and add laundry and shower facilities. Improvements to an existing stormwater pond at this site are also proposed.

Alternatives

Three action alternatives were examined for this project; i.e., Alternatives A, B, and C. The Security Forces personnel at JBA have identified Alternative A as their "Preferred Alternative". Under the Preferred Alternative, the new live-fire range will be constructed east of the parking lot of the existing facility, to the northeast of the existing firing range. The Preferred Alternative will also entail the construction of 50 additional parking spaces. The new parking area will be constructed to the north of the existing parking lot, but will not extend into a forested wetland area or the 25-foot buffer that surrounds the wetland. Security fencing will be erected to enclose

the entire expanded site; however, the fencing will not extend into the wetland area or the wetland buffer under this alternative. Finally, improvements to Building No. 2495 at the existing facility will be included as part of the proposed action to construct additional office space and add laundry and shower facilities.

To meet the goals established in the selection standards, JBA could use alternative layouts to construct the new facilities. Action Alternative B also includes the construction of an indoor 21-point firing range (as described above) along with construction of additional parking and improvements to Building No. 2495. Alternative B differs from Alternative A in how the facilities would be laid out in the project area; i.e., the new indoor firing range would be constructed to the north of the existing parking lot and would likely encroach into the forested wetland and its buffer located north of the existing parking area. The additional customer parking area would be constructed to the east of the existing parking lot. Action Alternative C also includes the construction of an indoor 21-point firing range and improvements to Building No. 2495. Under Alternative C, the new indoor firing range would be constructed east of the parking lot of the existing facility. However, Alternative C differs from Alternatives A and B in where the additional parking area would be established. An existing parking lot located at the Leroy's Lane Landfill 5 (LF-05) site would be utilized for staff parking and overflow customer parking under Alternative C. This existing parking lot would provide the necessary 30 to 50 additional parking spaces (suitable only for personal occupancy vehicle parking).

All three action alternatives would include improvements to an existing stormwater pond. The existing firing range facility was originally designed in 1991 with a stormwater management detention pond located along the southwest edge of the project site. In the years since construction the stormwater pond has become partially clogged and mostly non-functional through lack of maintenance. The proposed rehabilitation (reconstruction) and upgrades for this stormwater pond will result in a temporary change to this manmade surface water. The proposed improvements are designed to increase the hydrologic function of this stormwater pond. Regulatory review by the Maryland Department of the Environment (MDE) will be required, as the work associated with the stormwater pond rehabilitation would exceed 5,000 square feet. The proposed work will require an application for a Nontidal Wetland and Waterway Permit with the MDE Nontidal Wetland and Waterways Division. The stormwater pond would have to be improved to receive and treat additional stormwater runoff from the implementation of the action alternatives. As such, no practicable alternative is available to rehabilitate the stormwater pond without completing the work as further described in the FONPA below.

Under the No Action Alternative, an indoor firing range would not be constructed, thereby limiting the training facilities at JBA to the outdoor firing range facility that is present at the base. If this alternative were to be implemented, there would be no improvements to the level of training available to customers of the facility.

Maryland Coastal Zone Management: In accordance with the federal Coastal Zone Management Act and the Maryland state statutes, this federal action must be consistent "to the maximum extent practicable" with the Maryland Coastal Zone Management Program (CZMP). Appendix A of the EA contains the Air Force's Consistency Statement and finds that the conceptual proposed action and alternative plans presented in the EA are consistent with Maryland's CZMP. In accordance with state statutes, the Air Force submitted a copy of the attached EA to the State of Maryland so that they can perform a coastal zone consistency evaluation. The State of Maryland determined that the proposed action is consistent with the Maryland CZMP.

Finding of No Significant Impact

Based upon my review of the facts and analyses contained in the attached EA, incorporated by reference, I conclude that implementation of the proposed action would not have a significant environmental impact, either by itself or cumulatively with other projects at JBA. Accordingly, an Environmental Impact Statement is not required. The Draft EA was released for a 30-day public comment period. Copies of agency coordination letters and comments received are included in Appendix B and Appendix E of the EA.

Finding of No Practicable Alternative

The existing firing range facility was originally designed in 1991 with a stormwater management detention pond located along the southwest edge of the site. The entire site was designed to drain to that pond. In the years since construction the existing pond has become clogged and mostly non-functional through lack of maintenance. In 2009, JBA commissioned a design for rehabilitation of the existing pond to meet current standards. The design for the new pond included provisions for expansion of the existing firing range facility. The final engineered plans for the pond reconstruction design were preliminarily approved by the MDE. Complications developed having to do with impact to existing mapped wetlands, mostly where the existing pond had failed and the bottom became wetlands. Impact to those wetlands required application for a Nontidal Wetland and Waterway Permit with the MDE Nontidal Wetland and Waterways Division. In addition, it was determined that this project is located near a Tier II stream. Tier II streams are considered to have a higher water quality than the standard stream. Accordingly, the permit application was forwarded to the Science Services Administration of MDE for review. Finally, wetland mitigation will be required because the wetland impact associated with the pond rehabilitation would exceed 5,000 square feet. Follow-up coordination with the MDE Mitigation Section will be conducted to determine the extent of design revisions that will be required to include wetland mitigation in the plan design. Therefore, there is no practicable alternative to impacting the stormwater pond wetland as the pond's enlargement and rehabilitation are part of the proposed action.

Reasonable alternatives were considered, but no other alternatives met the safety or operational requirements of JBA. Specifically, there are no other sites within the installation offering a combination of land use compatibility, adherence to the JBA General Plan, adequate space for future facility expansion, and adherence to force protection requirements. The cost of constructing an entirely new stormwater pond at a new location near the existing firing range would be prohibitive. The construction of a new stormwater pond to the north or east of the existing firing range would encroach into forested wetlands. The construction of a new stormwater pond to the southeast would encroach into the LF-05 area. The construction of a new stormwater pond to the south would require the removal of mature woodland. JBA will comply with the MDE and federal stormwater management mandates for the construction and operation of the new firing range facility, including those listed in the *Maryland Stormwater Management Guidelines for State and Federal Projects*, dated April 15, 2010, and the Energy Independence & Security Act - Section 438. This project will also apply for and comply with all applicable MDE stormwater permits and erosion and sediment control approvals, and post-construction stormwater management. Adherence to these requirements will further minimize impacts to wetlands. No adverse impact to downstream water quality from the rehabilitation of the stormwater pond is anticipated. Routine monitoring will be provided to assure that the rehabilitated stormwater pond is maintained. This FONPA is required pursuant to Executive Order 11990 (*Protection of Wetlands*).

Pursuant to Executive Order 11990, Air Force regulation 32 CFR 989.14(g), Air Force delegation of authority, and in consideration of the findings of the EA, incorporated herein, I find that there is no practicable alternative to completing the proposed action within a wetland and that the proposed action includes all practicable measures to minimize harm to wetlands.

The signing of the FONSI and the FONPA and for the 21 Point Enclosed Firing Range at Joint Base Andrews-Naval Air Facility, Washington, Maryland will complete the Environmental Impact Analysis Process under U.S. Air Force regulations.

Darryl W. Burke — 2 March 2015

DARRYL W. BURKE
Major General, USAF
Commander, Air Force District of Washington

Date

Attachment: Environmental Assessment for the 21 Point Enclosed Firing Range at Joint Base Andrews-Naval Air Facility Washington, Prince Georges County, Maryland

Final
Environmental Assessment
21 Point Enclosed Firing Range
Joint Base Andrews-Naval Air Facility
Washington, Maryland

Prepared for:
DEPARTMENT OF THE AIR FORCE
Joint Base Andrews-Naval Air Facility Washington, Maryland

October 2014

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Cover Sheet

Final Environmental Assessment of 21 Point Enclosed Firing Range Joint Base Andrews-Naval Air Facility Washington, Maryland

Responsible Agencies: U.S. Air Force, Air Force District Washington, Headquarters Air Mobility Command, and the 11th Wing, Joint Base Andrews-Naval Air Facility Washington, Maryland (JBA)

Affected Location: JBA, Prince George's County, Maryland

Proposed Action: Implementation of approved 21 point enclosed firing range facility development plans

Report Designation: Final Environmental Assessment (EA)

Written comments and inquiries regarding this document should be directed to: Ms. Anne Hodges, 11 CES/CEAO, via surface mail at 3466 North Carolina Avenue, Joint Base Andrews, MD 20762; via email to anne.hodges@afncr.af.mil; or via telephone at 301-981-1426. Your assistance in providing information is greatly appreciated.

Abstract: JBA proposes the construction of a new 28,000 square-ft, 21 point, fully enclosed indoor live-fire range in the general location of the existing JBA firing range, near the eastern side of the Main Base. Facility features will include: reinforced concrete foundation; structural steel frame with reinforced masonry walls; heating, ventilation, and air conditioning system, exhaust system, and electrical system; utilities; communications; steel deflector plates, bullet traps, and overhead baffles; sound reflection reduction and dust collection; environmental controls to support the firing of lead-based ammunition; and a control tower. The building will be designed to meet Leadership in Energy and Environmental Design Silver standards. The proposed action will also entail the construction of 50 additional parking spaces (minimum 15,000 square feet) adjacent to the new live-fire range, as well as improvements to a support services building located at the existing range and improvements to an existing stormwater pond. Mitigation will be required from the Maryland Department of the Environment, as the disturbance associated with the stormwater pond rehabilitation (reconstruction) would exceed 5,000 square feet. There is no practicable alternative to impacting the stormwater pond as the pond's enlargement and rehabilitation are part of the proposed action.

The scope of this EA includes an evaluation of alternatives for the proposed activities, where applicable, and analysis of the cumulative impacts on the natural and manmade environments. This EA has been prepared to report the evaluation conducted of the proposed action and alternatives, including the No Action Alternative. Resource areas addressed in the EA include: land use; hazardous materials and waste; cultural resources; vegetation; wildlife; sensitive species; wetlands; surface waters; groundwater; floodplains; environmental restoration program; topography; occupational safety and health; climate; air quality; and utilities.

The Draft EA was made available to agencies and the public for a 30-day comment period from September 19, 2013 to October 19, 2013 and from August 22, 2014 to September 22, 2014.

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List of Acronyms and Abbreviations

AFDW	Air Force District of Washington
AFI	Air Force Instruction
AICUZ	Air Installation Compatible Use Zone
AMSL	above mean sea level
AQCR	Air Quality Control Region
AT/FP	anti-terrorism/force protection
BASH	Bird-Aircraft Strike Hazard
bgs	below ground surface
BMPs	Best Management Practices
CAA	Clean Air Act
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CWA	Clean Water Act
CZs	Clear Zones
DNL	day-night average sound level
DoD	Department of Defense
EA	Environmental Assessment
EISA	Energy Independence and Security Act
EO	Executive Order
EPA	U.S. Environmental Protection Agency
ERP	Environmental Restoration Program
ESQD	Explosive Safety Quantity-Distance
ETL	Engineering Technical Letter
FEMA	Federal Emergency Management Agency
ft	feet
FWS	U.S. Fish and Wildlife Service
GHG	Greenhouse Gas
HAZMAT	hazardous materials
IRP	Installation Restoration Program
JBA	Joint Base Andrews
JLUS	Joint Land Use Study
LEED	Leadership in Energy and Environmental Design
LF-05	Leroy's Lane Landfill 5
MDE	Maryland Department of the Environment
MDP	Maryland Department of Planning
MDNR	Maryland Department of Natural Resources
mm	millimeter
NAAQS	National Ambient Air Quality Standards
NCPC	National Capital Planning Commission
NCR	National Capital Region
NEPA	National Environmental Policy Act
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
OSHA	Occupational Safety and Health Administration
RAC	Risk Assessment Code
RCRA	Resource Conservation and Recovery Act
SDZ	Surface Danger Zone
SIP	State Implementation Plan
USACE	U.S. Army Corps of Engineers

WSSC Washington Suburban Sanitary Commission

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1.0 Purpose and Need for Action

1.1 Introduction

This Environmental Assessment (EA) identifies and evaluates potential environmental impacts associated with the proposed construction of an indoor firing range and expansion of the parking lot and administrative building at the existing firing range at Joint Base Andrews (JBA). This EA summarizes the Proposed Action, Action Alternatives, and the No Action Alternative. The EA document has been prepared in accordance with the National Environmental Policy Act (NEPA) of 1969 and the President's Council on Environmental Quality (CEQ) regulations to implement NEPA (40 Code of Federal Regulations [CFR] Parts 1500-1508).

The Main Base at JBA encompasses 4,346 acres (ac) located approximately five miles (mi) southeast of Washington, D.C., in southern Prince George's County, Maryland (Figure 1). Suburban, residential, commercial, and industrial development generally surrounds the base, reflecting the base's proximity to Washington, D.C. and its location in what has been a continually growing metropolitan area since the base was established in the 1940s. With regard to infrastructure, the base is divided into western and eastern sections containing missions and administrative facilities; the two sections are separated by an airfield, with two active runways that are oriented north-south. The western portion of the base is the larger land area, with community facilities (including commercial services), a medical center, a large outdoor recreation/golf course facility, residential housing, and various administrative uses. The majority of the industrial uses are located in the eastern portion of the base; the project site for the proposed action is in the southeastern side of the base (Figure 2).

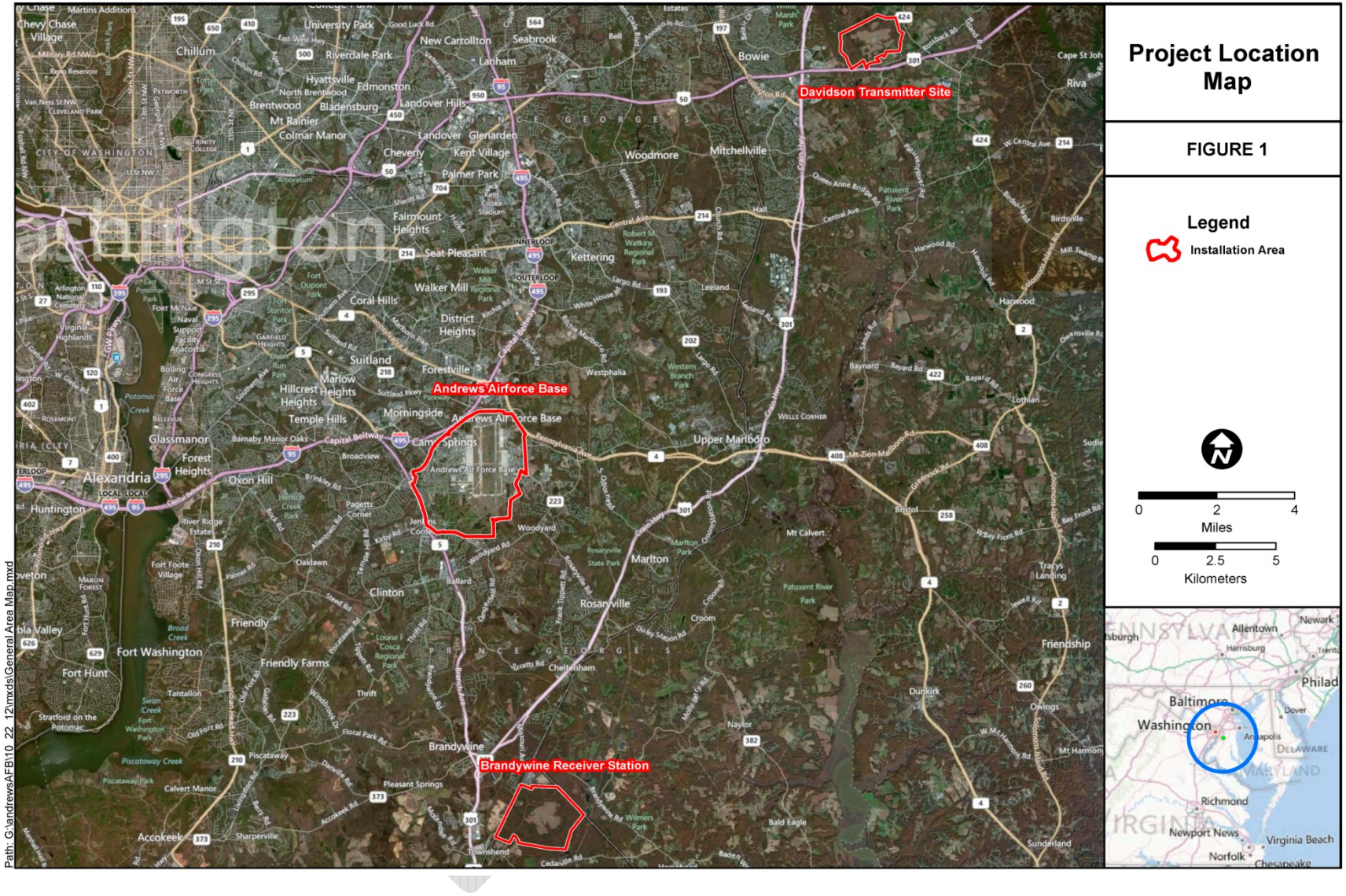
In January 2010, a General Plan Update was published for JBA. As identified in the 2010 General Plan Update, the U.S. Air Force has developed a comprehensive planning process for actions related to land use, infrastructure development, and project sitings. In line with the goals of the General Plan, one of the proposed development actions at JBA will entail the construction of a new live-fire range and the completion of improvements at the existing range facility. The proposed action is fully identified herein as the "21-Point Enclosed Firing Range". The proposed action will occur within the southeast portion of the Main Base, at the general location of the existing firing range facility.

1.2 Mission and Background

The mission of JBA is to provide contingency response capability critical to national security. In particular, this mission includes the important responsibility for JBA to provide weapons training across the National Capital Region (NCR). Weapons training is necessary to prepare combat-ready airmen and other military or Department of Defense (DoD) personnel for their jobs, and the small arms training facilities at JBA are inadequate to meet current demands. As one component of the various proposed development actions at JBA and in keeping with the overall mission of JBA, the construction of a new live-fire range and the completion of improvements at the existing range facility are proposed.

1.3 Location of the Proposed Action

The location of the proposed action is the southeast portion of the Main Base, to the immediate northeast of the intersection of East Perimeter Road and Leroys Lane (Figure 2). This lies within a designated area of Limited Development. Limited Development encompasses areas of the base with constraints that require significant mitigation measures, such as a sensitive natural area. Major sensitive natural areas on JBA include wetlands and streams (see Section 2.5 of this EA). The existing firing range facility is further described as a Small Arms Firing Range and primarily encompasses the semi-enclosed range and two building units (Building No. 2495 and Building No. 2497). A paved parking lot occurs on the north side of the existing facility.


Project Location Map
FIGURE 1
Legend
Installation Area
Davidson Transmitter Site
Andrews Airforce Base
Brandywine Receiver Station
0 2 4
Miles
0 2.5 5
Kilometers
Path: G:\andrewsAFB\10_22_12\mxds\General Area Map.mxd


Project Location Map
FIGURE 2
Legend
Installation Area
Project Proximity
0
350
700
Feet
0
75
150
Meters
Andrews Air Force Base
E Perimeter Rd
Columbine Ln
Goldenrod Ln
Dandelion Ln
Foxley Rd
Leroys Ln
Andrews Air Force Base
E Perimeter Rd
Path: G:\andrewsAFB\10_22_12\mxds\Project Location Map.mxd

A paved roadway currently provides access to the existing facility from East Perimeter Road. Mature forest, including forested wetland, surrounds the existing facility. The project site occurs within the Piscataway Creek watershed and is near the headwaters of Piscataway Creek. Piscataway Creek drains to the Patuxent River.

1.4 Purpose and Need for the Proposed Action

Military installations must ensure the long-term viability of their critical training capabilities to sustain mission readiness. The purpose of the proposed action is to continue to sustain mission readiness effectively by maximizing the base's training capabilities to meet current and emerging requirements. The purpose of the proposed action is consistent with the base's 2010 General Plan Update and the U.S. Air Force comprehensive planning goals. With regard to the mission of JBA, the proposed action will insure that contingency response capabilities that are critical to national security are not compromised.

Specifically, the purpose of the proposed action is to allow JBA to successfully:

- Optimize training operations and range utilization;
- Eliminate range scheduling conflicts;
- Improve safety conditions for trainees and instructors; and
- Have the facilities required to effectively support live-fire training and improve upon existing training instruction.

To summarize, the purpose of the proposed action is to provide a superior live-fire training facility that will improve operations and level of training above what is presently provided by the existing firing range facility. The inherent need of this action is primarily based on the deficiencies that are manifest at the existing firing range facility. Specifically, a properly sized, configured and fully contained small arms range is required to provide adequate training to military personnel who must obtain certification in various small arms and meet new U.S. Air Force standards defined by Air Force Instruction (AFI) 36-2226, Combat Arms Program (USAF 2009). The new facility will be able to handle more trainees and support a greater variety of weapons. The need for the proposed action is further defined in the DoD Form 1391 dated October 16, 2008 (JBA 2008), which was prepared for this proposed action and specifically identified the "Requirement", "Current Situation", and "Impact if not Provided" considerations and/or scenarios for the existing facility:

- Requirement: Increased range capability that meets U.S. Air Force standards as outlined in Engineering Technical Letter (ETL) 06-11 to handle the influx of personnel requiring weapons training at JBA.
- Current Situation: Currently JBA is training 6,200 personnel from the NCR in weapon qualifications training. This number is more than double from those trained in 2001. JBA has significantly increased the personnel trained since becoming aligned with AFDW. Currently JBA is the sole weapons training area for the NCR providing training for U.S. Air Force personnel stationed at Fort Meade, Fort Belvoir, Dahlgren, Pentagon and other military areas in the region. These Airmen cannot be trained by the military bases where they are stationed due to AFI 36-2226 which only allows personnel to fire U.S. Air Force weapons when trained by U.S. Air Force personnel. Daily capacity has doubled and training time has been cut in half in order to push through the increased number of personnel requiring training. Weekends and after hours have also been implemented in order to maintain training. Short notice deployments make up between 10-25% of the trainees as NCR personnel are tasked often times with only a few days notice. Additionally with the joint basing agreement for JBA, Navy personnel will also need to use the Combat Arms Training and Maintenance area for their personnel located in the NCR.
- Impact if not Provided: JBA will not be able to allow Navy personnel use of firing range facilities due to the over sized classes that are being trained daily. In addition, with current overseas operations set to continue or increase for U.S. Air Force personnel, the Combat Arms Training and Maintenance area will be unable to train all outbound Airmen requiring weapons training

resulting in untrained personnel in theater creating a potentially dangerous situation in the operation region.

As related to mission impact, JBA is the sole U.S. Air Force weapons training location for the entire NCR and provides training for personnel from more than five nearby bases or military locations. If a new firing range is not provided, JBA may not be able to continue to allow other government agencies' personnel continued use of the firing range facilities to complete their training due to insufficient facilities. Interagency/interservice agreements between JBA and other entities have been established over the years to provide Combat Arms Training and Maintenance support for Air Force Qualification Course training by receiver organizations. The training includes ammunition, weapons, and paperwork necessary to accomplish this training, as well as weapons inspection. Receiver agencies and organizations include, but are not limited to, the following:

- 33rd Field Investigation Service
- 70th Intelligence Wing
- 89th Airlift Wing
- 317th Recruiting Wing
- 459th Air Refueling Wing
- Army and Air Force Exchange Service
- Air Force Operations Group
- Air National Guard Readiness Center
- Civil Air Patrol
- Federal Aviation Administration
- Headquarters Air Force Office of Special Investigations
- Joint Personnel Recovery Agency
- Maryland State Police
- National Capital Veterinary Command
- Joint Defense Operations Center, National Capitol Region-Integrated Air Defense System
- Secretary of State Protective Detail
- U.S. Customs and Border Patrol
- U.S. Secret Service
- White House Communication

Other military units or federal and state agencies and organizations are granted permission to use the firing range facility for weapon qualification training through regulations provided in AFI 36-2226. The trainers from these units/agencies/organizations are responsible for ensuring their personnel receive proficiency firing. The numerous limitations and deficiencies that are currently associated with the existing range facility at JBA are itemized below:

- The existing facility is the prime small arms facility in the Washington, D.C. area, with trainees encompassing U.S. Air Force, Army, Navy, and Marine servicemen/servicewomen based out of JBA, Fort Meade, the Pentagon, and other federal and state agencies or organizations as mentioned above. The next closest firing range facility is located at Fort A.P. Hill, which is 2 hours away (under favorable traffic conditions) from the NCR and has limited availability for units from JBA to train.
- Approximately 6,250 people were trained at the existing facility in 2010 and over 8,100 people were trained at the existing facility in 2011. This represents an increase in training of various personnel since 2008 of approximately 30 percent.
- The existing facility has to stay open on evenings and weekends to accommodate the current high level of demand for training time; the current 'hours of operation' are approximately 20 hours a day, 7 days a week. Staff at the existing facility will accommodate requests for training time by working overtime and/or weekends; however, this effort places added stress on staff.
- At the present time, night firing can only be conducted at night at the existing facility. As a result, exceedingly long work days, with overtime hours, occur during summer months for range staff

and trainees. This is particularly difficult for those workers who come for night training and have to report for duty the next morning. However, with an indoor range facility, training for night firing can be conducted any time of the day. Workers with limiting schedules would then have more options (i.e., shooting time slots) to select from to complete their night training.

- Due to the lack of available training time at the existing facility, the 459th Air Refueling Wing from JBA is currently going to Quantico for some of their training, which the unit has to pay for.
- The existing facility does not have laundry or showers for trainees or instructors to wash away hazardous munitions dust at the end of their training session; as such, these personnel are leaving the site with waste residue still on their skin and uniforms. Per section 7.6.1.7 [*Latrines (Sanitary Facilities)*] in ETL 11-18 (*Small Arms Range Design and Construction*, dated April 19, 2011), "because instructors have daily contact with lead/heavy metals and may transfer these contaminants by casual contact, hand-washing stations, warm-water showers, changing areas, laundry facilities, and lockers should be provided for instructors to remove lead contamination. Use of these facilities at the end of each shift will prevent recurring casual contamination and potential health concerns, and prevents accidental inhalation or ingestion from residual lead." This directive benefits trainees, as well as instructors, and clearly shows the need for laundry or showering facilities.
- The existing facility does not allow a group of trainees, during the same training shift, to fire different weapons at the same time. However, with a second range, it would be possible to fire two types of weapons during the same training shift. This latter scenario would provide more flexibility in overall training operations. As an example, officers could train on their primary weapon (pistol) on one range, while enlisted personnel could simultaneously train on their primary weapon (rifle) on the second range. This scenario also benefits personnel who must qualify on multiple weapons (standards of use) to satisfy the requirements of their military occupational specialty or to meet certain national security needs that are integral to their completion of occupational duties.

Finally, to accomplish their mission under the proposed action, JBA desires to integrate the operation of the new indoor range facility with the existing facility; i.e., to essentially promote, or cultivate, the benefits that each facility will provide separately, as well as together. One component of this expansion effort is the implementation of upgrades to the existing range; and that includes adding the option of using multiple types of ammunition, including lead shot, at both ranges in the future. Note: Nontoxic ammunition does not exhibit the terminal characteristics of the ammunition used in combat and, therefore, including lead-based ammunition as an option is necessary. In conclusion, the Proposed Action is consistent with the current mission of JBA and the Air Force District of Washington (AFDW).

2.0 Proposed Action and Alternatives

2.1 Selection Standards

During the process of proposal development, a variety of factors and alternatives were considered. Criteria for the selection of the project site were identified and include the following considerations:

- Siting of facilities must comply with all current anti-terrorism/force protection (AT/FP) requirements per UFC 4-010-01 (*DoD Minimum Antiterrorism Standards for Buildings*) and *USAF Installation Force Protection Guide*.
- To the extent practicable, new facilities must not impact wetlands or floodplains (per Executive Orders 11990 (*Protection of Wetlands)* and 11988 (*Floodplain Management*).
- Facilities must be sited to minimize operational constraints and safety concerns over the long term. A suitable site for the new firing range should be within the same compound as the existing firing range for Operational Control and Safety.
- Locate firing range at a distance from residential areas, preferably in an area zoned for industrial development.
- Fully comply with ETL 11-18 (dated April 19, 2011) and AFI 36-2226 (dated February 24, 2009).

2.2 Project Area History

The general components of the existing firing range complex include an office, class rooms, firearm maintenance area, firearm storage, and firing range. The firing range is a semi-enclosed 21 point range and is further characterized by the following features:

- The partially enclosed firing range building is enclosed by structural painted scored, concrete masonry unit walls. A standing seam metal roof covers the firing line, control tower, and bullet trap. A covered walkway system connects the northern section of Building No. 2495 to the southern section of this building unit.
- The firing line is approximately 82 feet (ft) (25 meters) to the target area and is covered with baffles at angles to the shooter that block the view of the sky.
- The firing line is separated into 21 booths. Each booth is 5 ft wide and is defined by 6 inch by 6 inch end posts and a cross piece for resting a fire arm.
- The firing line is provided with radiant heating for operations during the colder temperatures.
- The range is staffed by a person in the control tower and one instructor for each seven shooters.
- The range primarily uses frangible ammunition because the facility does not have the environmental systems in place for lead ammunition. Frangible, or "soft," rounds are designed to break apart when they hit walls or other hard surfaces to prevent ricochets during close-quarters combat or range shooting. The range does accommodate some activities that utilize lead ammunition; however, these activities are limited.
- Dust from the frangible rounds that accumulates at the base of the range back-stop is collected with an auger-screw system, following which it is moved into a collection barrel by vacuum. The barrels of frangible dust are labeled as hazardous waste and taken to the Base recycling center. Brass Casings from the ammunition rounds are collected separately and recycled. The range's back-stop has a fixed life. When the life-span has been exceeded, the range has to be closed so that it can be replaced. With two firing ranges, there would be less closure time because the closures could be scheduled so that one of the ranges stays open.
- Because it is a semi-enclosed range, a perimeter fence is in place to protect people from fragments around the back and sides of the facility; however the perimeter fence does not extend to the outer bounds of the Surface Danger Zone (SDZ) area.
- The existing partially contained range is undergoing renovations to convert it to a fully contained outdoor range.
- The existing firing range facility was originally designed in 1991 with a stormwater management detention pond located along the southwest edge of the site (JBA 2013). The entire site was designed to drain to that pond. In the years since construction the existing pond has become

partially clogged and mostly non-functional through lack of maintenance. In 2009, JBA commissioned a design for reconstruction of the existing pond to meet current standards. The design for the new pond included provisions for expansion of the existing firing range facility. The final engineered plans for the pond reconstruction design were preliminarily approved by the Maryland Department of the Environment (MDE). Since the rehabilitation of the stormwater pond exceeds 5,000 square feet, review with the MDE is required and includes application for a Nontidal Wetland and Waterway Permit with the MDE Nontidal Wetland and Waterways Division. In addition, it was determined that this project is located near a Tier II stream. Tier II streams are considered to have a higher water quality than the standard stream. However, no known impacts have occurred to Tier II streams located near the project area. Accordingly, the permit application was forwarded to the Science Services Administration of MDE for review. Finally, mitigation will be required by the MDE because the activity associated with the pond reconstruction would exceed 5,000 square feet. MDE requested that follow-up coordination with the MDE Mitigation Section be conducted to determine the extent of design revisions that will be required to include mitigation in the plan design. Finally, the stormwater pond would have to be improved to receive and treat any additional stormwater runoff that would flow to the south from new construction to the north or east of the existing parking lot. Runoff from the area immediately east of the existing parking lot flows to the east toward LF-05, but it can be captured and routed to this existing stormwater pond once the pond is upgraded.

The existing facility is further characterized by the following features:

- The facility is completely enclosed with a 6 ft tall galvanized steel, chain link fence. A motorized sliding gate exists at the entrance from East Perimeter Road, with a keypad to control the electronic gate operation.
- The facility is served by water, sanitary sewer, and power. A fire hydrant exists on the site, while another hydrant exists at the intersection of the entry road and East Perimeter Road. A small lift station occurs immediately east of the existing office building. A power switch station is present on the south side of the entry drive and a separate transformer is located outside the perimeter fence.
- The facility is situated above surrounding grade. Drainage from the site is primarily by overland sheet flow. Water is transported from the site perimeter by shallow flat swales. A stormwater pond exists near the southwest corner of the facility, along East Perimeter Road. The pond captures and treats stormwater runoff from the existing facility. A design plan has been prepared to improve the pond's capacity to receive additional stormwater from upgrades being done at the existing firing range.

2.3 Proposed Action

The proposed action will be constructed in the general location of the existing firing range facility. It will entail the construction of a new 28,000 square-ft (2,600 square meters), 21 point, fully enclosed indoor live-fire range with the following features:

- Reinforced concrete foundation and a smooth steel-trowel finished reinforced concrete floor with a 2% grade from the firing line to target line;
- Structural steel frame and fully grouted reinforced masonry walls;
- Heating, ventilation, and air conditioning system, exhaust system, and electrical system;
- Utilities;
- Communications;
- Steel deflector plates, bullet traps, and overhead baffles;
- Sound reflection reduction and dust collection;
- Environmental controls to support the firing of lead-based ammunition;
- Storage space; and
- Control tower.

The design of the new firing range will incorporate baffles, side containment, and a bullet trap to prevent fired rounds from exiting the building. All of the rounds fired on the new firing range will be captured by the bullet trap. An auger or similar mechanism will be used to convey spent rounds from the bullet trap to a collection container located at one side of the firing range. When full, the container will be shipped off site for appropriate treatment or disposal using established hazardous waste procedures. The number of rounds fired in the new firing range will be similar to the number of rounds fired in the existing firing range. During calendar year 2012, 176,000 9-mm frangible rounds (DODIC AA16) and 415,000 5.56-mm frangible rounds (DODIC AA40) were fired in the existing firing range. These engineering controls are primarily installed for safety concerns, but have the added benefit of capturing the rounds and preventing the lead constituents from entering either the stormwater or groundwater.

A small portion of the lead contained in each round is atomized when the round is fired and impacts the target. Based on EPA's air emission factor document, AP-42, the amount of lead emitted is approximately 6.0x10-6 pounds per round fired [AP-42, Sections 15.1.4 and 15.1.21]. Using the emission factors presented in AP-42 and usage rates associated with the existing range, approximately 3 pounds of lead dust will be emitted to the air from the new range per year.

The firing range will be designed as an unconditioned environment (not centrally heated or cooled) with electric radiant heat at the firing line. A ventilation system will be provided to control exposure to lead in accordance with 29 CFR 1910.1025, *Lead*. The ventilation system will provide laminar airflow across the range toward the bullet trap at an air velocity of 23 meters per minute (mpm) (75 feet per minute [fpm]) at the firing line.

Air will be supplied via inline or utility set fans in the mechanical room, drawing fresh air through a wall louver and a 30% pre-filter to remove dust and pollen. The supply air will be evenly distributed via a perforated, radial air distribution plenum across the entire length of the rear wall of the range at a minimum of 5 meters (16.4 feet) behind the firing line.

Air will be exhausted via inline or utility set fans behind the bullet trap and will be filtered through 99.99% HEPA filters for maximum lead removal before introducing back to the environment. Therefore, expected lead emissions to the environment will be approximately 3x10-4 pounds per year.

The building will be designed to meet Leadership in Energy and Environmental Design (LEED) Silver standards, at a minimum.

The new facility has been designed to support weapons training requirements of the NCR. Furthermore, the new building will comply with DoD AT/FP requirements per Unified Facilities Criteria. Finally, this firing range is designated as a staging area in emergencies for local law enforcement to "arm up".

Improvements to Building No. 2495 will be included as part of the proposed action to construct additional office space and add laundry and shower facilities. As part of the new firing range, a system will be designed and put in place to capture lead-contaminated water from the laundry and shower facilities.

Finally, the new range will be built in accordance with ETL 11-18 (*Small Arms Range Design and Construction*), which address health, safety, and environmental concerns. ETL 11-18 references EPA publication number EPA-902-B-01-001 (*Best Management Practices for Lead at Outdoor Shooting Ranges*).

2.4 Description of Alternative A

Under Alternative A, the new live-fire range will be constructed east of the parking lot of the existing facility, to the northeast of the existing firing range (Figure 3). Under Alternative A, the new construction would meet LEED Silver standards, at a minimum. The alternative will also entail the construction of 50 additional parking spaces. The new parking area will be constructed to the north of the existing parking lot, but will not extend into the delineated wetland or into the 25 ft wetland buffer to the north. Constructing the new parking lot close to the training facilities is more convenient for the staff and customers. The stormwater pond in the southwest corner of the range (see Figure 3) will have to be upgraded under this alternative which will have an indirect/added benefit to the existing outdoor range in terms of providing more flexibility for use of lead shot at that range in the future. The proposed rehabilitation and upgrades for the stormwater pond located along the southwest edge of the site will result in a temporary change to this manmade surface water. The proposed improvements are designed to increase the hydrologic function of this stormwater pond. Regulatory review by the MDE will be required, as the work associated with the stormwater pond rehabilitation would exceed 5,000 square feet. Specifically, the proposed work will require an application for a Nontidal Wetland and Waterway Permit with the MDE Nontidal Wetland and Waterways Division. Follow-up coordination with the MDE will be conducted to determine the extent of design revisions that may be required.

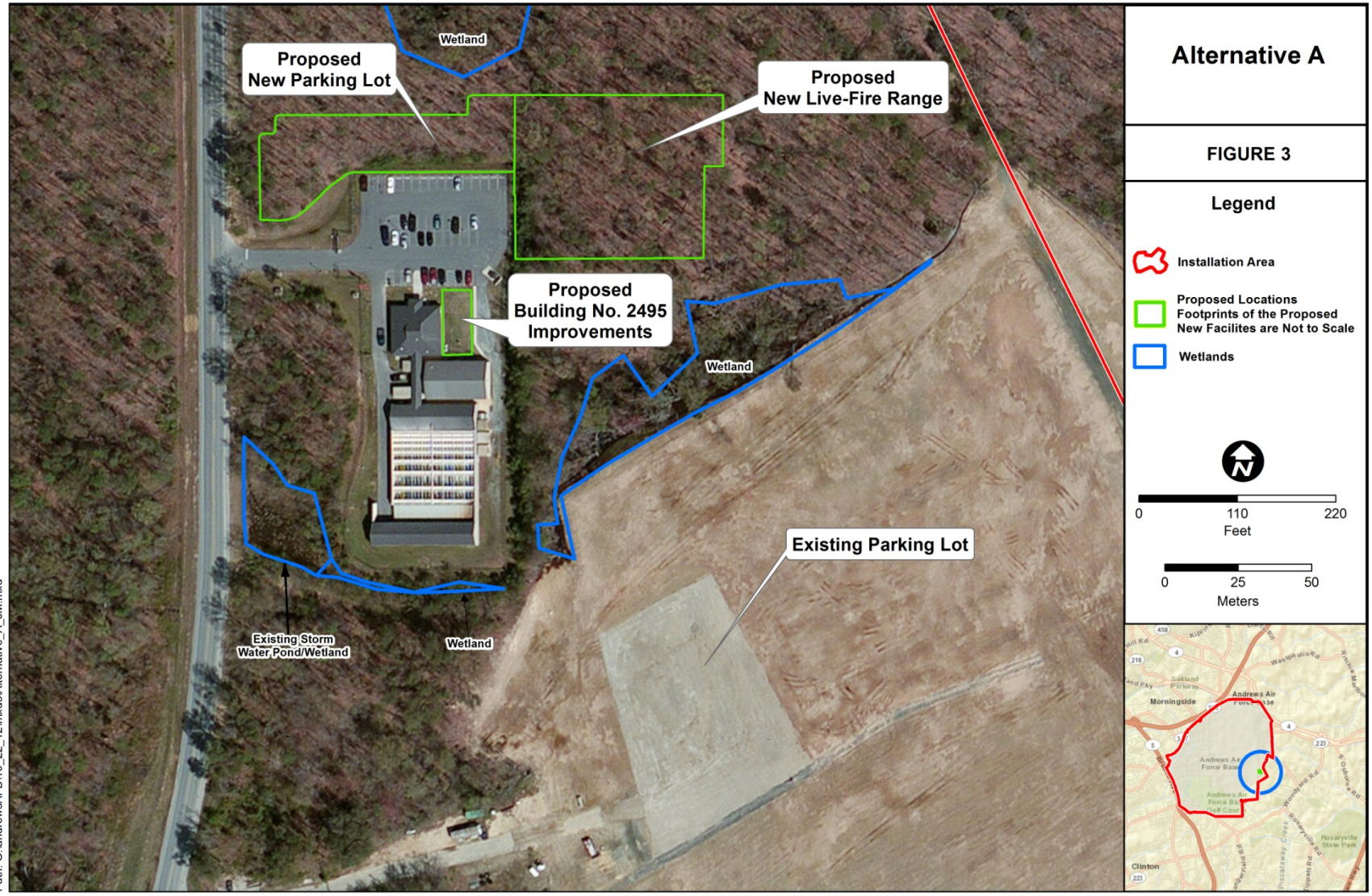
Stormwater runoff requirements for federal development projects are established under Section 438 of the Energy Independence and Security Act of 2007 (EISA). JBA will adhere to Section 438 of the EISA for the rehabilitation of the stormwater pond, as outlined in the Technical Guidance on Implementing the Stormwater Runoff Requirements for Federal Projects under Section 438. Specifically, Section 438 of the EISA requires that the sponsor of any development or redevelopment project involving a federal facility with a footprint that exceeds 5,000 square feet shall use site planning, design, construction, and maintenance strategies for the property to maintain or restore, to the maximum extent technically feasible, the predevelopment hydrology of the property with regard to the temperature, rate, volume, and duration of flow. Routine monitoring will be provided to assure that the rehabilitated stormwater pond is maintained. JBA will coordinate with MDE to assure that the Base is in compliance with MDE stormwater rules and regulations. Finally, additional security fencing will be erected to enclose the entire expanded site; the fencing will not extend into the wetlands or the wetland buffer under this alternative. The Security Forces personnel at JBA have identified Alternative A as their “Preferred Alternative”.

2.5 Description of Alternative B

Action Alternative B also includes the construction of an indoor 21-point firing range (as described above) along with construction of additional parking and improvements to Building No. 2495. Alternative B differs from Alternative A in how the facilities would be laid out in the project area (Figure 4). Under Alternative B, the new indoor firing range would be constructed to the north of the existing parking lot and would likely encroach into the forested wetland and its buffer located north of the existing parking area (Figure 4). Figure 5 shows the location and extent of the wetlands and streams (i.e., major sensitive natural areas) on the Base. The additional customer parking area would be constructed to the east of the existing parking lot. Constructing the new parking lot close to the training facilities is more convenient for the staff and customers. The stormwater pond in the southwest corner of the range (Figure 4) will have to be upgraded under this alternative which will have an indirect/added benefit to the existing outdoor range in terms of providing more flexibility for use of lead shot at that range in the future. The proposed rehabilitation and upgrades for the stormwater pond located along the southwest edge of the site will result in a temporary change to this manmade surface water. The proposed improvements are designed to increase the hydrologic function of this stormwater pond. Regulatory review by the MDE will be required, as the work associated with the stormwater pond rehabilitation would exceed 5,000 square feet. Specifically, the proposed work will require an application for a Nontidal Wetland and Waterway Permit with the MDE

Nontidal Wetland and Waterways Division. Follow-up coordination with the MDE will be conducted to determine the extent of design revisions that may be required.

Stormwater runoff requirements for federal development projects are established under Section 438 of the Energy Independence and Security Act of 2007 (EISA). JBA will adhere to Section 438 of the EISA for the rehabilitation of the stormwater pond, as outlined in the Technical Guidance on Implementing the Stormwater Runoff Requirements for Federal Projects under Section 438. Specifically, Section 438 of the EISA requires that the sponsor of any development or redevelopment project involving a federal facility with a footprint that exceeds 5,000 square feet shall use site planning, design, construction, and maintenance strategies for the property to maintain or restore, to the maximum extent technically feasible, the predevelopment hydrology of the property with regard to the temperature, rate, volume, and duration of flow. Routine monitoring will be provided to assure that the rehabilitated stormwater pond is maintained. JBA will coordinate with MDE to assure that the Base is in compliance with MDE stormwater rules and regulations. Under Alternative B, the new construction would meet LEED Silver standards, at a minimum.


Proposed
New Parking Lot
Wetland
Proposed
New Live-Fire Range
Proposed
Building No. 2495
Improvements
Wetland
Existing Parking Lot
Existing Storm
Water Pond/Wetland
Wetland
Alternative A
FIGURE 3
Legend
Installation Area
Proposed Locations
Footprints of the Proposed
New Facilites are Not to Scale
Wetlands
0
110
220
Feet
0
25
50
Meters
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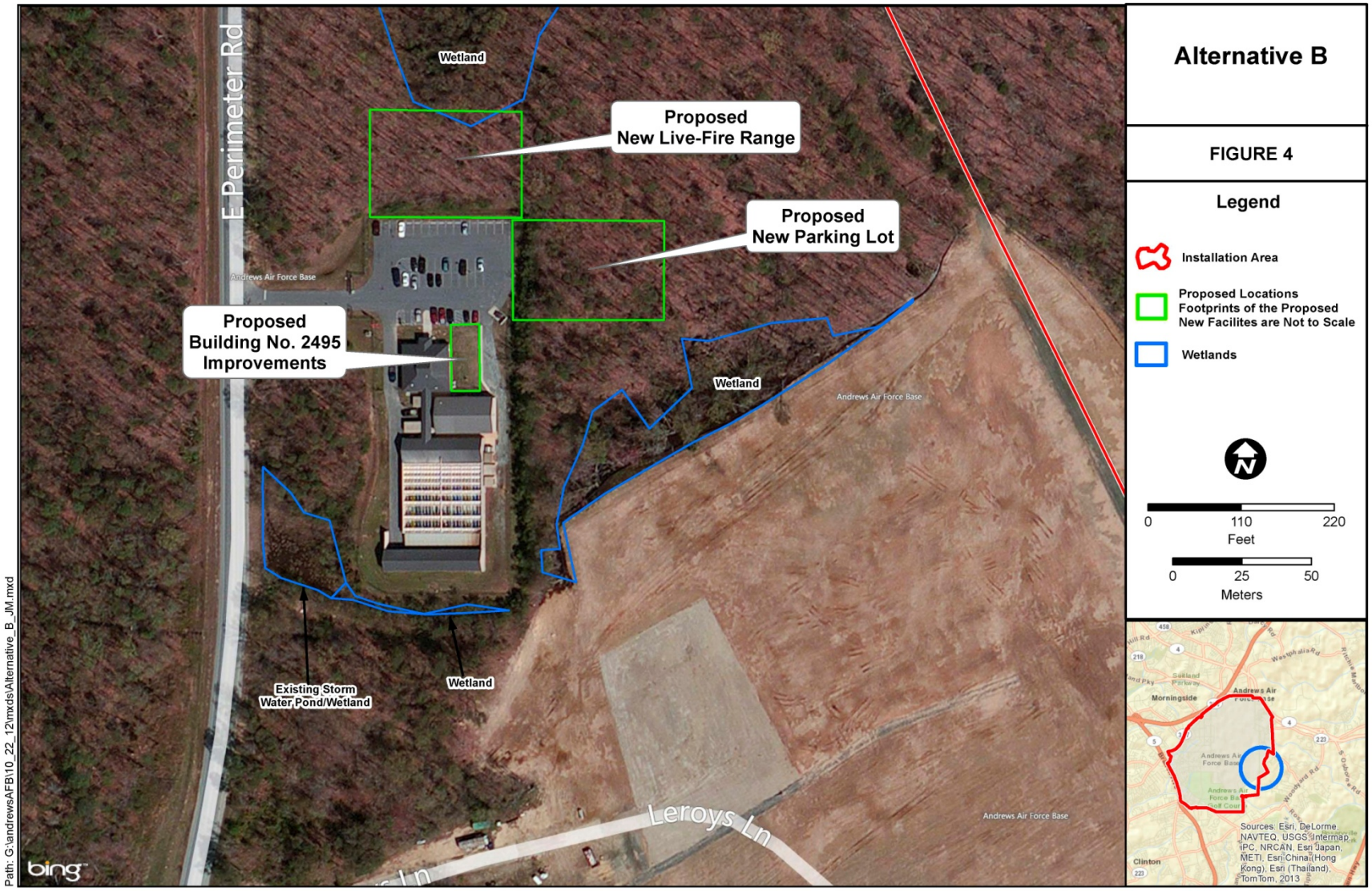
Alternative B
FIGURE 4
Legend
Installation Area
Proposed Locations Footprints of the Proposed New Facilites are Not to Scale
Wetlands
0 110 220
Feet
0 25 50
Meters
Proposed New Live-Fire Range
Proposed New Parking Lot
Proposed Building No. 2495 Improvements
Existing Storm Water Pond/Wetland
Wetland
E Perimeter Rd
Leroys Ln
Andrews Air Force Base
Sources: Esri, DeLorme, NAVTEQ, USGS, Intermap, iPC, NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), TomTom, 2013
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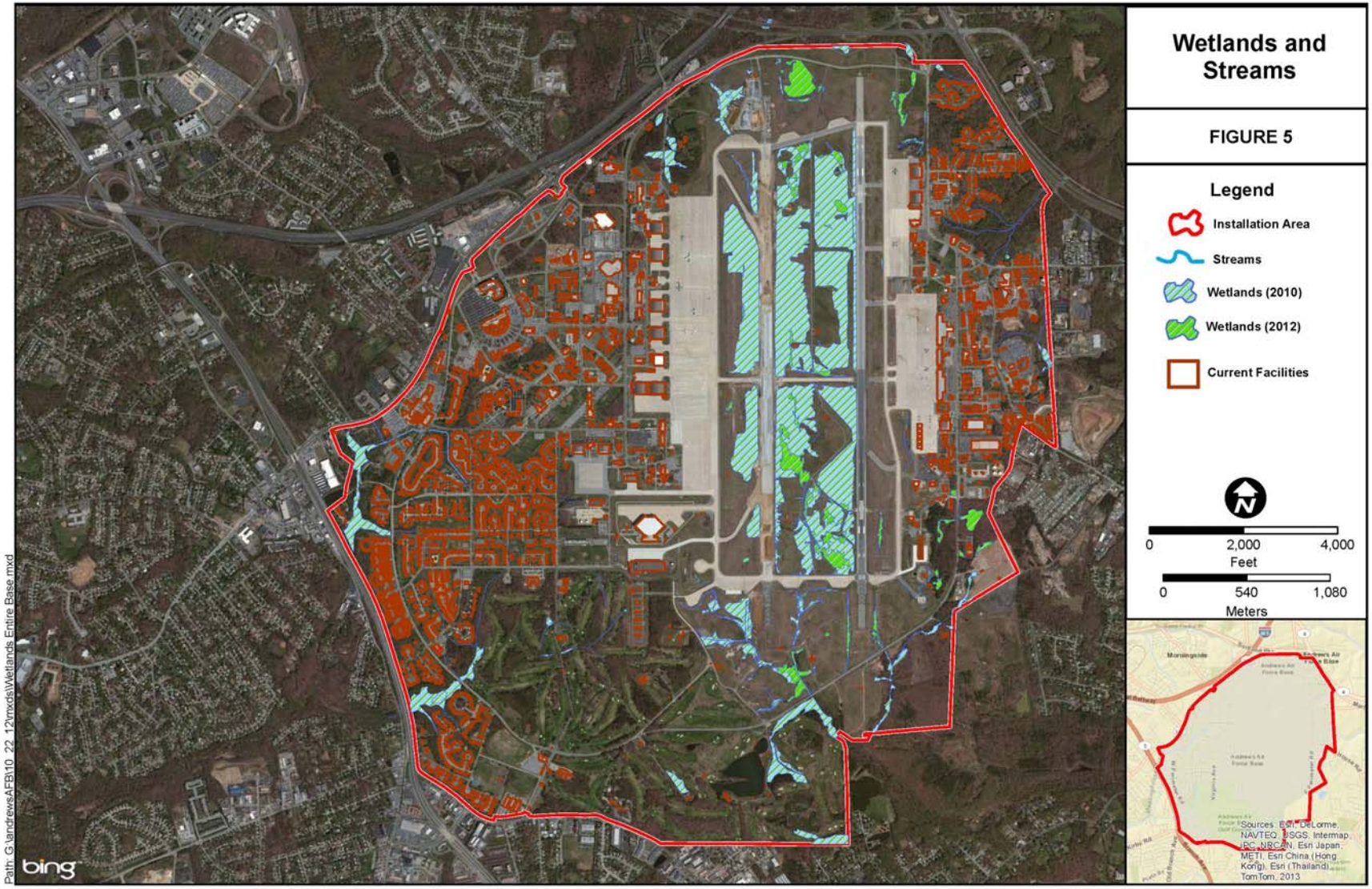
Wetlands and Streams
FIGURE 5
Legend
Installation Area
Streams
Wetlands (2010)
Wetlands (2012)
Current Facilities
0
2,000
4,000
Feet
0
540
1,080
Meters
Sources: Esri, DeLorme, NAVTEQ, USGS, Intermap, iPC, NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), TomTom, 2013
bing
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2.6 Description of Alternative C

Action Alternative C also includes the construction of an indoor 21-point firing range and improvements to Building No. 2495. Under Alternative C, the new indoor firing range would be constructed east of the parking lot of the existing facility, to the northeast of the existing firing range (Figure 6). However, Alternative C differs from Alternatives A and B in where the additional parking area would be established. An existing parking lot located at the Leroy's Lane Landfill 5 (LF-05) site would be utilized for staff parking and overflow customer parking. This existing parking lot would provide the necessary 50 additional parking spaces, but it is not as convenient for the staff and customers as the new parking lots proposed in Alternatives A and B. The asphalt at this existing lot is underlain by a landfill cap that covers the LF-05 site. The LF-05 site is located approximately 500 ft to the southeast (downslope) of the existing training facility and is accessed from Leroy's Lane. The 1 acre of asphalt surface on the LF-05 site is suitable for personal occupancy vehicle parking. This asphalt area is not suitable, however, for commercial vehicles, heavy equipment, or digging that could compromise the integrity of the landfill liner. A walkway will be constructed between the Small Arms Combat Training Compound and this parking lot. The walkway will need to be routed so that it avoids both wetland impacts and the mandatory safety zones required at shooting ranges. The proposed rehabilitation and upgrades for the stormwater pond located along the southwest edge of the site will result in a temporary change to this manmade surface water. The proposed improvements are designed to increase the hydrologic function of this stormwater pond. Regulatory review by the MDE will be required, as the work associated with the stormwater pond rehabilitation would exceed 5,000 square feet. Specifically, the proposed work will require an application for a Nontidal Wetland and Waterway Permit with the MDE Nontidal Wetland and Waterways Division. Follow-up coordination with the MDE will be conducted to determine the extent of design revisions that may be required.

Stormwater runoff requirements for federal development projects are established under Section 438 of the Energy Independence and Security Act of 2007 (EISA). JBA will adhere to Section 438 of the EISA for the rehabilitation of the stormwater pond, as outlined in the Technical Guidance on Implementing the Stormwater Runoff Requirements for Federal Projects under Section 438. Specifically, Section 438 of the EISA requires that the sponsor of any development or redevelopment project involving a federal facility with a footprint that exceeds 5,000 square feet shall use site planning, design, construction, and maintenance strategies for the property to maintain or restore, to the maximum extent technically feasible, the predevelopment hydrology of the property with regard to the temperature, rate, volume, and duration of flow. Routine monitoring will be provided to assure that the rehabilitated stormwater pond is maintained. JBA will coordinate with MDE to assure that the Base is in compliance with MDE stormwater rules and regulations.

2.7 No Action Alternative

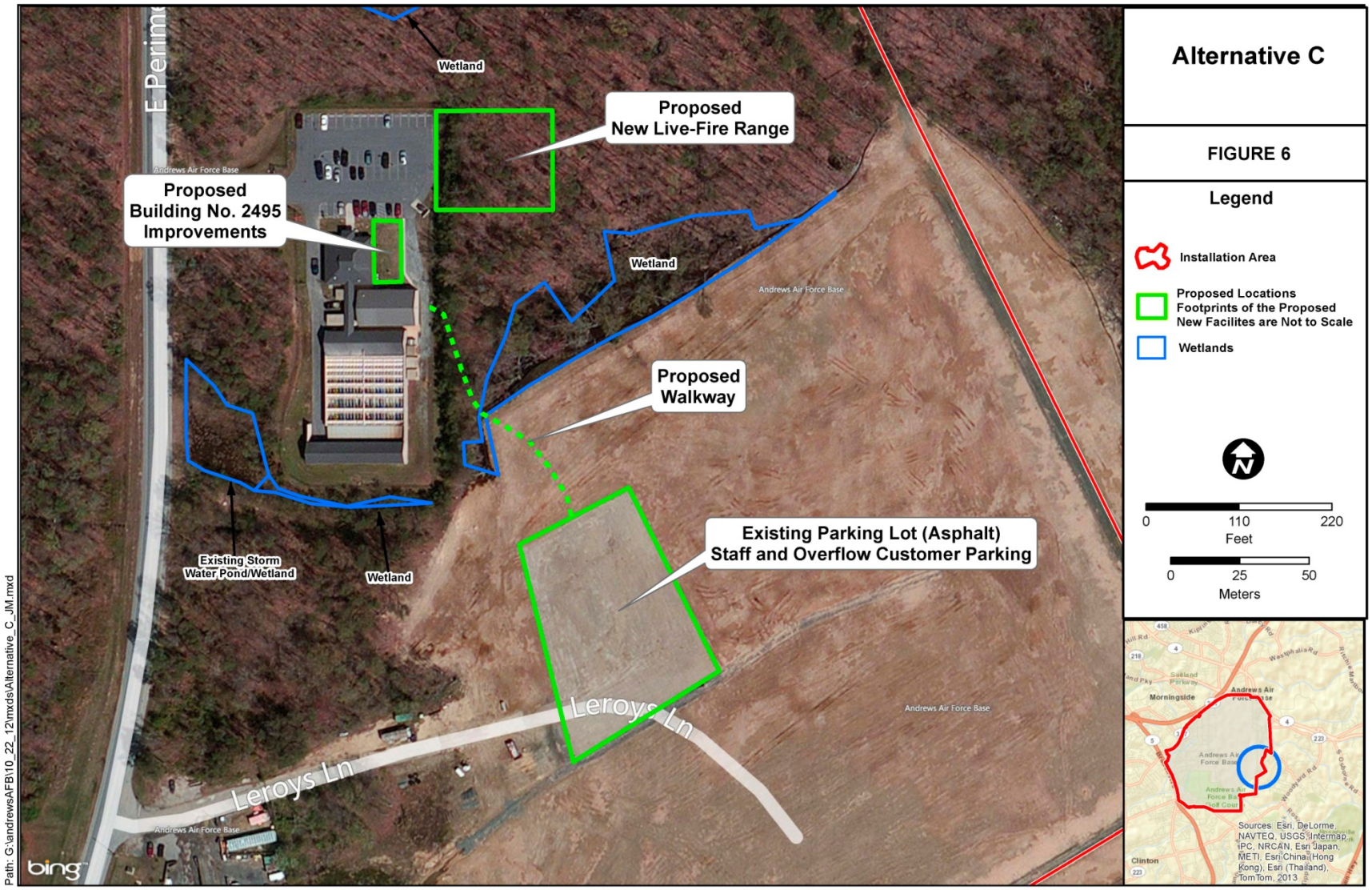
In accordance with NEPA requirements, the No Action Alternative is considered and presented herein. Under the No Action Alternative, the proposed construction of a new indoor firing range and the completion of improvements at the existing range facility would not take place and the existing facility currently supporting training functions at JBA would remain in use as at present. Training at the existing facility would continue to be conducted with the current constraints. Scheduling conflicts would continue to affect range utilization. Range deficiencies would continue to negatively impact the ability to train efficiently. Training would continue to be conducted under conditions that have become inadequate and in some cases problematic. With these considerations, the no action alternative would fail to meet the evaluation criteria listed in Section 1.4 of this EA. However, it does provide a baseline against which to measure the impacts of the current proposed action and is thus evaluated in subsequent sections of this EA, consistent with NEPA regulations.

2.8 Alternatives Considered But Not Carried Forward

Three actions were reviewed, as alternatives to the proposed action, to determine if any one of the alternative actions would optimize training operations and range utilization at the existing facility at JBA and within the NCR. The three alternative actions were considered, but not carried forward throughout the remaining sections of this EA for analysis, as explained below.

One alternative would shift a certain amount of training that currently occurs at the existing facility at JBA to the training facility at Fort A.P. Hill. There are obvious inherent problems associated with this alternative, however. There would be a more than minimal cost incurred to transport personnel/military units to the Fort A.P. Hill facility, including overtime costs. This effort would encompass at least 4 hours of travel time for the round trip excursion in addition to the 9 to 10 hours to complete a one-day training event. This alternative action would also introduce additional safety concerns; i.e., safety concerns associated with the transportation of weapons and live ammunition from JBA to Fort A.P. Hill.

A second alternative action would include the construction of an indoor firing range, as identified in the proposed action, but not include the construction of the new customer parking area. This


Alternative C
FIGURE 6
Legend
Installation Area
Proposed Locations
Footprints of the Proposed
New Facilites are Not to Scale
Wetlands
0
110
220
Feet
0
25
50
Meters
Proposed
New Live-Fire Range
Proposed
Building No. 2495
Improvements
Proposed
Walkway
Existing Parking Lot (Asphalt)
Staff and Overflow Customer Parking
Existing Storm
Water Pond/Wetland
Wetland
Wetland
Wetland
Leroys Ln
Leroys Ln
Andrews Air Force Base
Andrews Air Force Base
Andrews Air Force Base
Andrews Air Force Base
E Perimeter
bing
Sources: Esri, DeLorme, NAVTEQ, USGS, Intermap, iPC, NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), TomTom, 2013
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alternative would require the transportation of customers (trainees) to the new indoor firing range from parking areas located elsewhere on the Main Base via a bus transit system, which may not be available now or in the future at JBA due to budget constraints. At the present time, customers typically travel to the existing training facility with their weapons in their vehicles (government, personal, or rental vehicles) and are not allowed to carry their weapons on transit buses with other passengers. Therefore, without the additional parking area, customers visiting the new training facility would not be able to reach this destination with their weapons if their only mode of transportation was limited to the bus transit system.

The third alternative action would entail the construction of the new indoor firing range elsewhere on the Main Base. However, there is limited land on the Main Base to accomplish this alternative action, primarily due to the numerous constraints that are associated with a firing range. The new firing range would need to be constructed in an area that is separate from residential housing, office/administration areas, maintenance areas and supply depots, medical facilities, recreational areas, and expansion areas for aircraft and airfield projects. The only potentially suitable area of the Main Base that could be considered as a building site for the new firing range is located in the northeast corner of the base. However, by placing, or separating, the new range in a different geographical area from the location of the existing facility, an additional classroom building would need to be constructed at the new range to accommodate trainee instruction. This action would increase the overall cost of the project, a well as enlarging the project footprint. The existing training facility has adequate classroom space to accommodate the additional customers that would use the new indoor firing range, with the continued operation of the existing firing range. Finally, the existing training facility is sited in an appropriate section of the Main Base for the current land use and the proposed action.

2.9 Regulatory Compliance and Permit Requirements

Certain natural or environmental resources or other specific resource may be scrutinized with regard to federal, state, or local regulatory compliance and permitting requirements or protocols. Resource topics that will be discussed in the EA include the following: Air Emissions, Climate, Cultural Resources, Environmental Restoration Program, Explosives Safety, Floodplains, Groundwater, Hazardous Materials (HAZMAT) and Waste, Land Use, Occupational Safety and Health, Sensitive Species, Surface Water, Topography, Utilities, Vegetation, Wetlands, and Wildlife.

Known and/or potential stakeholders which are required to review and/or approve the proposed action, or otherwise may request to be informed of the proposed action, include the following agencies and/or entities:

- U.S. Environmental Protection Agency (EPA);
- U.S. Fish and Wildlife Service (FWS);
- U.S. Army Corps of Engineers;
- Maryland Department of the Environment (MDE);
- Maryland Department of Planning (MDP);
- Maryland Department of Transportation (MDOT);
- Maryland Historical Trust (serving as the State Historic Preservation Office);
- Maryland Department of Natural Resources (MDNR);
- Maryland-National Capital Park and Planning Commission (MNCPPC);
- Maryland Wildlife and Heritage Service (under MDNR);
- Prince George's County Planning Department (PGCPD);
- Washington Suburban Sanitary Commission (WSSC); and
- National Capital Planning Commission (NCPC).

Permits may be required from some of these stakeholders in order to fully execute the project; permit requirements are discussed in more detail in Section 3.

Finally, please see Table 5 (*Comparison of Environmental Consequences*) for a comparison of the action alternatives, in section 3.19 (*Impacts Summary and Comparison of the Environmental Effects of the Alternatives*) of this EA.

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3.0 Affected Environment

This section establishes the basis and methodology for assessing impacts to resource areas that could be affected by the Proposed Action, which is comprised of three separate Action Alternatives, and No Action Alternative. This section also describes the potential consequences of each of the action alternatives and the No Action Alternative to resource areas, specifically the consequences of these actions on the environmental components and other site specific characteristics of the project and the property. The alternatives are also evaluated against existing environmental documentation and anticipated future projects to determine the potential for cumulative impacts. Included in each section, where applicable, is a discussion of measures to mitigate impacts. The potential for significant site consequences is evaluated herein pursuant to the 'context' and 'intensity' considerations described in the CEQ regulations for implementing the procedural provisions of NEPA (40 CFR 1508.27). Finally, a discussion of issues, or resources areas, that have been eliminated from further analysis in this EA is presented.

3.1 Issues Eliminated from Further Analysis

Based on the scope of the Proposed Action, and the No Action Alternative, as well as preliminary analyses, the U.S. Air Force eliminated the following issues from further analysis.

3.1.1 Noise

The meaning of noise for this analysis is undesirable sound that interferes with speech communication and hearing, or is otherwise annoying (unwanted sound). In June 1980, the Federal Interagency Committee on Urban Noise published guidelines (FICUN 1980) relating day-night average sound level (DNL) values to compatible land uses. Since their issuance, Federal agencies have generally adopted their guidelines for noise analysis. Most agencies have identified 65 DNL as a criterion that protects those most affected by noise and that can often be achieved on a practical basis. The 2007 Air Installation Compatible Use Zone (AICUZ) Study (JBA 2007) plotted noise levels from 65 to 80 DNL for a representative day at JBA. The noise contour that covers the main runway and area in which the existing firing range is located is the 80 DNL contour. Aircraft assigned to JBA are the primary source of noise. Noise-sensitive receptors, such as sensitive wildlife areas and outdoor recreational areas, are identified to aircrews. Quiet times (2200-0700) are enforced by schedulers except when mission-essential needs arise. JBA does not operate any special-use airspace or supersonic areas. On September 11, 2008, Prince George's County and JBA began a Joint Land Use Study (JLUS) to identify issues confronting the military installation and surrounding community, as well as to develop strategies that would address these issues within the context of the county's planning programs. The JLUS study boundary includes the JBA property, the surrounding community within 0.5 mile of the base, accident potential zones, and areas impacted by high levels of noise as defined by JBA.

The proposed action will entail the construction of a fully enclosed live-fire range in the general location of the existing firing range facility. This new live-fire range will include a structural steel frame, fully grouted reinforced masonry walls, steel deflector plates, bullet traps, overhead baffles, and sound reflection reduction. With these construction components in place, the noise level during operation of the new live-fire range is not expected to be greater than the noise level at the existing firing range facility. Temporary noise impacts will occur during the construction phase of the project. Since no major ongoing construction efforts are proposed, the short-term increase in ambient noise levels from project construction would not cause significant adverse impacts on the surrounding populations, and the ambient noise level would return to its normal level following construction, therefore the U.S. Air Force eliminated noise from further consideration in the EA.

3.1.2 Transportation

The main roadway on the Main Base is Perimeter Road. This two-lane undivided road is an 8.2-mile loop that runs along the inside boundary of the base and provides circulation throughout the installation. Minor local roadways are located throughout the base and serve as access to parking lots and adjacent facilities. In general, the capacity of existing roadways is sufficient to maintain unconstrained traffic movement throughout the base during peak periods of the day. The location of the proposed action is the southeast portion of the Main Base, to the immediate northeast of the intersection of East Perimeter Road and Leroys Lane. The daily operations of the new live-fire range are not expected to adversely affect traffic (level of service) in the local area or at the existing firing range facility, including ingress/egress to these ranges from East Perimeter Road. The proposed action will also entail the construction of 50 additional parking spaces adjacent to the new live-fire range. The increased parking capacity will not adversely affect transportation at this location. With these considerations, the issue of transportation has been eliminated from further analysis in the EA.

3.1.3 Airspace and Airfield Operation

On most U.S. Air Force installations, the airfield is not only the dominant land use, but is usually the very reason for the existence of the installation. The airfield land use typically consists of the entire airfield pavement system (runway, taxiway, and apron), related open space, navigational aids, and all imaginary airfield and airspace clearance surfaces. The size and configuration of an airfield largely depend on topography, climate, meteorological factors, land availability, and weapons system characteristics. JBA has two complete runway systems, each with its own north/south runway, parallel taxiway, and apron. The two parallel taxiways, serve the west and east ramps, respectively, via a network of three connecting ladder taxiways. Facilities housing airfield operations and maintenance activities are located parallel to the west and east aprons.

The proposed action would occur entirely within an open space area to the southeast of the airfield and would not result in changes to the airfield environment or airspace operations. With these considerations, the issue of airspace and airfield operation has been eliminated from further analysis in the EA.

3.1.4 Environmental Justice

Executive Order (EO) 12898 *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* directs federal agencies to focus attention on human health and environmental conditions in minority and/or low-income communities. Potential health and safety impacts that could disproportionately affect children are considered under the guidelines established by EO 13045, *Protection of Children from Environmental Health Risks and* 9 *Safety Risks*. The Proposed Action will take place within a military installation, so the construction and operation of the new live fire range would not cause any disproportionate high or adverse health or environmental effects on minority or low-income populations pursuant to EO 12898. Specifically, the location of the Proposed Action is not adjacent to a residential neighborhood. The Proposed Action occurs within an area of “Restricted Development”; i.e., areas with some constraints that might require mitigation before development can occur. With regard to existing land use designations at JBA, the new live fire range will be surrounded by the Open Space category (forest land abuts the project site). Beyond this Open Space area, the existing land use categories include: Industrial; Airfield; and Aircraft Operations & maintenance. Base residential housing occurs over 1.5 miles to the west of the location of the Proposed Action, within an area “Unrestricted Development”; i.e., areas with no environmental constraints and are recommended for development. The nearest recreational area to the Proposed Action is the Base golf course, which is located approximately one mile to the southwest of the proposed live fire range facility.

JBA proposes to fully comply with EO 13045 by incorporating environmental health risk/and safety risk concerns in decision making processes supporting JBA policies, programs, projects, and

activities. In this regard, JBA ensures that it would identify, disclose, and respond to potential adverse social and environmental effects on children in the area affected by a proposed action. Children are present at JBA as residents and visitors (e.g., residing in on-Base family housing or lodging, using recreational facilities, attending events). Precaution will be taken for child safety through a number of measures, including but not limited to, using fencing, barriers, restricting access to certain areas, requiring adult supervision, and signage. The location of the Proposed Action, however, is not adjacent to a residential neighborhood or a recreational area, as previously explained in this response.

In conclusion, there are no environmental justice areas of low-income and/or minority or child populations located immediately adjacent to the project area, and site construction would not adversely impact low-income and/or minority or child populations. Consequently, the U.S. Air Force has eliminated environmental justice and protection of children from detailed evaluation in this EA.

3.1.5 Socioeconomics

Design and construction of the 21 Point Indoor Firing Range is expected to cost $10 million. In total this would equal less than one percent of the nearly $1.2 billion annual expenditures that JBA provides to the local economy, and would therefore constitute a negligible beneficial impact on the work force in the region during the construction period. In addition, project implementation would not result in any long-term increases in employment at JBA or otherwise. Consequently, the U.S. Air Force has determined that the socioeconomic impact from this project did not warrant further evaluation and eliminated it from further consideration in this EA.

3.1.6 Visual Resources

There is limited potential for off-sight views of the new building or parking area. Therefore, visual impacts associated with the Proposed Action would be negligible. Consequently, the U.S. Air Force has determined that the visual resource impact from this project did not warrant further evaluation and eliminated it from further consideration in this EA.

3.1.7 Geology

Much of the surficial geology at JBA is comprised of the late Tertiary Period Pliocene Epoch (about 7 million years old) upland deposits. These deposits consist of irregularly bedded cobbles, gravel, and fine sand intermixed with silt or clay, and vary in thickness from 10 ft to 20 ft. The underlying Calvert Formation is visible where streams have cut deeply through the upland deposits. This formation was deposited during the Miocene Epoch, approximately 19 million years ago, and consists of a mixture of sands, silts, clays, and shell beds. The location of the proposed action, as well as the action itself, is not expected to adversely affect the geologic condition at JBA. This presumption is based on the fact that the construction methods that will be used to erect the new live-fire range and create the additional parking spaces will be limited to standard land clearing and grading techniques which disturb only the surface soil horizons and do not extend into the deeper geologic formation. In addition, no above or below ground storage tanks are proposed to be installed at the new live-fire range. Therefore, no impacts to geology or subsurface soils are expected from the construction and operation of the new range. The issue of geology has been eliminated from further consideration in this EA.

3.1.8 Soils

Over the course of development on the Main Base, grading for construction of runways, housing, and other facilities has disturbed surface formations. Approximately half of the Main Base is urban land, which consists of areas covered by streets, buildings, parking lots, and other structures that obscure soils and prohibit soil identification. Approximately 10 percent of the Main Base remains undisturbed, mainly around the perimeter and in woodland areas among the golf courses. At the location of the proposed action within the southeast portion of the Main Base, a mixture of

impervious surfaces and woodlands exists. The existing firing range, support building, parking area, and access roadway comprise impervious surfaces, while mature forest, including forested wetlands, encompasses undeveloped land.

The two remaining dominant soil associations on the Main Base are the Sassafras-Croom and the Beltsville-Leonardtown-Chillum (Natural Resources Conservation Service [NRCS] 2012). Based on the NRCS soil classification descriptions, hydric soils and erodible soils are present at the location of the proposed action. The proposed action would result in approximately 3.5 acres of disturbance (clearing and grubbing) to the soil (JBA 2013). Wetland mitigation and stormwater management requirements are discussed further in this EA, and those topics will address issues associated with site soils. Therefore, further discussion of soils is not included in this EA.

Finally, in February of 2012, surface soil samples were collected within and adjacent to the proposed project area at Building 2495. The samples were analyzed for metals by Method 6010B. The results indicated that lead was below the 2004 background level of 98.5 milligrams/kilogram at each of the sample locations.

3.1.9 Bird-Aircraft Strike Hazard (BASH)

The primary safety concern at facilities with aircraft operations is the potential for aircraft mishaps (i.e., crashes), which may be caused by mid-air collisions with other aircraft or objects, weather difficulties, or bird-aircraft strikes. Bird-aircraft strike hazard (BASH) is defined as the threat of aircraft collision with birds and other wildlife during aircraft operations. Most birds fly close to ground level; correspondingly, most BASH incidents occur at low altitudes in the immediate vicinity of the airfield. Waterfowl present the greatest BASH potential due to their clustered flight patterns. Raptors also present a substantial hazard due to their size and soaring flight patterns.

JBA has a BASH plan that provides guidance for reducing the incidents of bird strikes in and around areas where flying operations occur. Management actions outlined in the BASH Plan include flight crew awareness, take-off/landing scheduling, landscape maintenance practices that reduce the attractiveness of certain areas to birds, and scaring birds using a variety of methods, passive measures, and devices to modify habitat. Implementation of specific portions of the BASH Plan is continuous, while other portions of the plan are implemented as required by avifauna activity. Resident (non-migrating) Canada geese are of particular concern due to their large size and growing populations. In order to respond to safety concerns, JBA has obtained a FWS Migratory Bird Depredation Permit to reduce the number of geese.

The location of the proposed action, as well as the action itself, is not expected to adversely affect the BASH Plan, or bird populations, at or over JBA. This presumption is based on the fact that the proposed action will not entail any unusual use of airspace or the placement of elevated structures that might be attractive to birds. There are approximately 710 acres of woodland on the main Base. The Proposed Action would result in the clearing of approximately 1.4 acre of woodland; i.e., the size of the footprint of the new firing range and expanded parking lot under the Preferred Alternative. Under the Proposed Action, the loss of woodland would be 0.2% of the total available forested habitat on the Base. This action will have a minimal adverse impact to woodlands and the habitat they provide to bird species. Therefore, no impact to bird populations is expected with respect to avifauna that inhabits woodlands. With these considerations, BASH has been eliminated from further analysis in the EA.

3.1.10 Clear Zones

Accident potential zones, rectangular zones extending outward from the ends of active runways at military bases, delineate those areas recognized as having the greatest risk of aircraft mishaps, most of which occur during takeoff or landing. Clear Zones (CZs) are the areas closest to the end of the runway, which is considered the most hazardous area. At JBA, CZs extend from both ends of the

runway. No CZs are located within the Project Area. Therefore, the issue of clear zones has been eliminated from further analysis in this EA.

3.2 Land Use

3.2.1 Affected Environment

Current land use at JBA is the result of a development pattern that began in the 1940s. The airfield separates the base into western and eastern halves. Facility development and supporting infrastructure have evolved over time as missions and requirements have changed. During that time, the base has maintained adequate functional relationships with relatively few land use conflicts, suggesting that land use planning principles have been followed during the installation's historical development. The land use categories at JBA presently include: administrative; aircraft operations and maintenance; airfield; community; industrial; medical; open space; outdoor recreation; residential; and water. The aircraft operations and maintenance land use has developed adjacent to the east and west flight lines, with few unrelated facilities occupying this prime real estate. The base contains a consolidated community center that is accessible to west side workers and residents. Industrial uses are consolidated in a few contiguous areas, the largest being the base supply, civil engineering, and transportation facilities on the east side. Administrative uses are split between the two halves of the base. Residential areas are located primarily along the western perimeter.

The location of the existing firing range facility is within designated industrial land use. The industrial land use category at JBA consists of 144 acre (approximately 3% of base's land area). The existing firing range facility is in an area where safety clear zones can be maintained. Furthermore, the facility is compatible with its surroundings, which primarily includes open space.

The location of the proposed action is within designated open space land use, for the new live-fire range and new parking area, and industrial land use, for the proposed improvements to the existing Building No. 2495. The open space land use category occupies approximately 784 ac, or nearly 18 percent of the base's land area. This category of land use both separates and defines the various sections of the base, and creates the natural setting for all facilities.

3.2.2 Environmental Consequences

3.2.2.1 Proposed Action

The existing firing range facility as well as the three action alternative sites for the new facility all occur within the designated Maryland Coastal Zone. Any planned construction activity at this site will require a Federal Consistency Determination. No impacts on Maryland's coastal resources would be expected from implementing the proposed action, however. A coastal program consistency determination is included in Appendix A. All development activities would be conducted in accordance with applicable laws, regulations, and policies governing use of resources within the coastal zone, which would ensure that the proposed action would occur in a manner consistent with the applicable Maryland Coastal Program enforceable policies.

Alternative A

The construction of the indoor 21-point firing range, along with construction of additional parking and improvements to Building No. 2495, complies with the allowed uses of the existing zoning category and future land uses; therefore, implementation of Alternative A is not expected to impact zoning and land use at JBA. No adverse effects on land use would be expected from the construction of the new facility as described under this alternative.

Alternative B

The construction of the indoor 21-point firing range, along with construction of additional parking and improvements to Building No. 2495, complies with the allowed uses of the existing zoning category and future land uses; therefore, implementation of Alternative B is not expected to impact zoning and

land use at JBA. No adverse effects on land use would be expected from the construction of the new facility as described under this alternative.

Alternative C
The construction of the indoor 21-point firing range, along with improvements to Building No. 2495 and use of the existing parking lot at LF-05 by firing range staff and customers, complies with the allowed uses of the existing zoning category and future land uses; therefore, implementation of Alternative C is not expected to impact zoning and land use at JBA. No adverse impacts on land use would be expected from the construction of the new facility as described under this alternative.

3.2.2.2 No Action Alternative
Under the No Action Alternative, the new live-fire range and parking area would not be built; therefore, there would be no changes to land use or zoning.

3.3 Hazardous Materials and Waste

3.3.1 Affected Environment

The U.S. Air Force maintains a comprehensive set of policies and plans to ensure JBA's assigned missions do not adversely affect the surrounding natural environment. Hazardous substances are those corrosive, toxic, flammable, and reactive materials that, when spilled or released into the environment, are dangerous to public health. A HAZMAT pharmacy is established at Building No. 3066 to serve a single point of control and accountability for HAZMAT. This pharmacy system provides JBA with a standard way to manage HAZMAT procurement and to comply with Environment, Safety, and Occupational Health requirements. Any solid, liquid, or contained gaseous material for disposal or recycle that poses significant potential harm to human health or environmental quality is a hazardous waste (Resource Conservation and Recovery Act of 1976). Up to 55 gallons of a hazardous waste may be stored at or near its point of generation, at an initial accumulation point, before it must be transferred to Building No. 3304, the designated hazardous waste storage area. Hazardous wastes are then removed and disposed of by licensed private contractors, as JBA does not currently have a hazardous waste transfer, storage, and disposal facility; nor does it treat or directly dispose of any hazardous waste.

Any activity generating waste must have their waste tested to determine if it is hazardous. If the waste is hazardous, the activity must request approval from the Civil Engineer Squadron's Asset Management Flight for an initial accumulation point. Each waste-accumulating activity must appoint a site manager to be responsible for ensuring regulatory requirements are met. In addition, hazardous waste training is required for all personnel whose duties involve actual or potential exposure to hazardous waste. All hazardous waste storage containers must be in good condition and meet applicable United Nations transportation packaging requirements. Each waste stream must also be identified and quantified, with the mixing of hazardous and nonhazardous waste prohibited. After accumulation, wastes are transported to Building No. 3304 for storage prior to disposal.

At present, frangible rounds are the primary ammunition used in the training exercises at the small arms range. Dust from the frangible rounds that accumulates at the base of the back-stop is collected with an auger-screw system, following which it is moved into a collection barrel by vacuum. The barrels of frangible dust are labeled as hazardous waste and taken to the base disposal center. Brass casings from the ammunition rounds are collected separately and recycled.

3.3.2 Environmental Consequences

3.3.2.1 Proposed Action

Alternative A

It is possible that there may be short-term, minor adverse impacts to the local environment from hazardous substances (such petroleum, oil, lubricants, etc.) that are typically used at construction sites. All contractors using HAZMAT to complete the proposed action would be required to sufficiently manage, store, transport, and dispose of hazardous wastes generated by their activities; and take all necessary precautions to prevent spills of HAZMAT in accordance with all applicable JBA environmental standards and federal, state, and local laws and regulations. Taken together, these precautions would limit the potential for adverse environmental impacts associated with HAZMAT and wastes. The new live-fire range will support the firing of lead-based ammunition at both the indoor and outdoor ranges, which will result in the generation of lead waste. During fiscal years 2012 and 2013, the existing firing range generated an average of 4,900 pounds per year of lead contaminated waste. A similar amount of lead contaminated waste will likely be generated by the new firing range. This waste will need to be collected, stored, and disposed of in accordance with state and federal laws. Specifically, the new range will use an auger or similar mechanism to convey spent rounds from the bullet trap to a collection container located at one side of the firing range. When full, the container will be shipped off site for appropriate treatment or disposal using established hazardous waste procedures. Implementation of the proposed action will result in doubling the training capability of the firing range, which will in turn result in double the amount of hazardous waste generated from spent ammunition. Adequate storage and handling capacity exists at the base to handle this additional waste. With the above considerations, no long-term adverse environmental or health impacts related to the use, disposal, or storage of HAZMAT would be expected from the construction and operation of the new firing range facility. No above or below ground storage tanks are proposed to be installed at the new live-fire range. No generator, to provide heating at the new range facility, will be proposed. Heat will be provided through electrical energy source and no backup generator will be required. Construction, demolition, and land clearing debris must be disposed of properly. MDE's Waste Diversion and Utilization Program would be contacted prior to construction in order to coordinate any waste management or handling issues.

The EPA provides guidance for the implementation of an integrated lead management program for the operation of outdoor ranges (EPA 2005). A variety of appropriate Best Management Practices (BMPs) comprise their suggested lead management program. These BMPs can be considered for the operation of indoor ranges as well. These BMPs create a four step approach to lead management:

- Step 1 - Control and contain lead bullets and bullet fragments;
- Step 2 - Prevent migration of lead to the subsurface and surrounding surface water bodies;
- Step 3 - Remove the lead from the range and recycle; and
- Step 4 - Documenting activities and keeping records.

An effective lead management program requires implementing and evaluating BMPs from each of the four steps identified above. For the proposed action under this alternative, the BMPs to be used at the new indoor range would include administrative controls (i.e., housekeeping), as well as engineering controls to capture or fix lead and prevent lead from leaching into groundwater via stormwater runoff. JBA will need to revisit and refine the lead management BMPs for the outdoor range once the new indoor range is in operation in order to determine whether or not future use of lead-based ammunition would be allowed at the outdoor range. Engineering controls and the specific actions to capture lead and prevent it from leaching into the stormwater or groundwater are discussed in Section 2.3 of this EA,

Finally, the new range will be built in accordance with ETL 11-18, which address health, safety, and environmental concerns. ETL 11-18 references EPA publication number EPA-902-B-01-001 (*Best Management Practices for Lead at Outdoor Shooting Ranges*).

Alternative B
Impacts associated with this alternative would be the same as those described for Alternative A.

Alternative C
Impacts associated with this alternative would be the same as those described for Alternative A.

3.3.2.2 No Action Alternative
No potential, adverse environmental or health effects related to the use, disposal, or storage of HAZMAT would be expected from implementing the No Action Alternative, as the construction and operation of the new firing range facility would not occur.

3.4 Cultural Resources

3.4.1 Affected Environment

Archaeological Sites: A large percentage of the JBA property has been extensively graded and recontoured. This past disturbance greatly reduces the potential for intact archaeological sites. A total of 140 acre of relatively undisturbed land within the installation has been subjected to a Phase I archaeological survey. This survey identified three historic period archaeological sites that were deemed potentially eligible for the National Register of Historic Places (NRHP). None of these sites is located near the existing firing range facility or proposed action, however.

Historic Structures: Facilities become eligible for consideration as an historic structure when they reach 50 years of age, and must be evaluated before any demolition or extensive modification can occur. On JBA, documented historic structures include the three buildings comprising Belle Chance (Building Nos. 1966, 1967, and 1968), which have been nominated to the NRHP. Another historic structure is Chapel II (Building No. 3175). Although not eligible for the NRHP, due to renovation, it is listed on the Prince George's County Register of Historic Places which does not place a restriction on future development. The cemetery surrounding the chapel does however constitute a constraint on development on JBA. A survey of all buildings greater than 50 years old and Cold War-era properties on JBA has been performed (JBA 2010). None of the aforementioned structures is located near the proposed action, and the existing classroom building at the firing range facility is not on this list.

3.4.2 Environmental Consequences

3.4.2.1 Proposed Action
There are no known concerns related to cultural resources associated with construction or operation of the new facility according to: reviews done by JBA staff to prepare U.S. Air Force Form 813 for this project (signed November 10, 2008); a letter received from the Maryland Historical Trust (signed December 26, 2012); a letter received from MDP (signed December 7, 2012); and a letter from the Maryland-National Capital Park and Planning Commission (signed December 14, 2012). Therefore, no adverse impacts would be expected under any of the three alternatives. Copies of all agency correspondence are included in Appendix B.

3.4.2.2 No Action Alternative
No effects on cultural resources would be expected from implementing the No Action Alternative.

3.5 Vegetation

3.5.1 Affected Environment

Nearly 80 percent of JBA Main Base is developed or intensely managed. Vegetation occurs largely in association with intensively managed areas (i.e., improved areas): lawns, gardens, golf course fairways, ponds, bare ground, and recreational fields. The airfield environment, including the infield of the airfield (grass areas adjacent to the taxiways ramps, aprons, hot cargo pad and compass rose) and the clear zones, is also intensively managed and is considered as improved area. The remaining patches of original vegetation (i.e., unimproved areas) are a combination of mixed hardwood forest, mixed hardwood/pine forest, oak forest, oak/hickory forest, oak/pine forest, pine forest, red maple swamp, and shallow emergent marsh.

In 2011, the JBA Arbor Plan was updated. The plan analyzed existing tree cover on the Main Base for the period from 1958 to 2009 using aerial imagery, remote sensing, and geographic information system tools. The 2011 Arbor Plan is designed to be used as a guide to landscape development, reforestation and maintenance of forest resources at JBA. It identifies priority planting areas in the form of corridors, gateways and reforestation plans, and it recommends plant materials and design guidelines to achieve the following goals:

- Help offset the loss of forest stands which has occurred over the past years
- Sustain the ecological values and the function of the forested landscape
- Integrate forest management activities with the management of base natural resources and the military mission of JBA
- Promote non-fragmented ecological communities and biodiversity while discouraging habitat that is in conflict with the mission
- Enhance the aesthetic and ecological value of the base where possible

All tree removal and/or pruning activities are required to be performed in accordance with the Arbor Plan's design and maintenance guidelines. The forest around the existing small arms range is a mixed hardwood/pine community. The overstory is comprised of Virginia pine, southern red oak, white oak, black cherry, American beech, and sweet gum.

Finally, the Maryland Forest Conservation Act (Natural Resources Article, Section 5, 1601-1612) and the Annotated Code of Maryland (COMAR) (Title 08 Subtitle 19) does not apply to JBA due to the Federal Government's sovereign immunity from state regulation granted by the Supremacy Clause and a lack of any Federal statute enacted by Congress clearly and unambiguously authorizing Maryland to regulate JBA under the Forest Conservation Act. However, during the course of project design, project planners shall identify suitable species and locations for planting trees to replace those lost by construction of the proposed 21 Point Enclosed Firing Range. This information will be included in the legally binding project submittals to the U.S. Air Force. This EA was prepared in conformance with the agreements and understandings set forth in the Memorandum of Understanding between the State of Maryland and the United States Department of Defense, dated May 8, 2013.

3.5.2 Environmental Consequences

3.5.2.1 Proposed Action

Alternative A

Permanent impacts to forest vegetation would result from clearing of mature forest for the construction of the new live-fire range and parking area under Action Alternative A. The replacement of mature trees which will be harvested under this alternative will be completed in accordance with the guidelines set forth in JBA's 2011 Arbor Plan. Land clearing debris will be disposed of properly; furthermore, it is preferred that forest vegetation and soils be composted and re-used at the site or

elsewhere on the base. Based on a preliminary disturbed area of approximately 3.5 acres, and removal of approximately 2.6 acres of existing forest cover, the requirement for reforestation is approximately 1.8 acres (JBA 2013). This requirement equates to approximately 183 2-inch caliper trees to be purchased, transported and planted in a JBA-designated reforestation area. The planting contractor will coordinate with Base Environmental Section to confirm the final location of the preferred reforestation area or areas, which may include designated gateway areas along East Perimeter Road.

Alternative B
Mature timber would be cleared for the construction of the new live-fire range and parking area under Action Alternative B. Impacts and tree replacement associated with implementation of this alternative are similar to those described above for Alternative A.

Alternative C
Fewer trees would need to be cut to implement this alternative compared to Alternatives A and B. Approximately one acre of mature timber would be cleared for the construction of the new live-fire range under Action Alternative C. Tree replacement associated with implementation of this alternative is similar to that described above for Alternative A, with the exception being a reduction in the planting number of approximately half.

3.5.2.2 No Action Alternative
Under the No Action Alternative, no construction activities would take place; therefore, there would be no impacts to vegetation.

3.6 Wildlife

3.6.1 Affected Environment

Wildlife habitat at JBA consists of a mix of upland and wetland polygons at a noisy air base surrounded by urban and suburban development. Habitat quality is not particularly high. A biological survey conducted in 1994 identified 84 species of birds in a variety of ecological communities at JBA, including open water, red maple swamp, mixed hardwood forest, old field successional, mowed field, and mowed grass. Those results, combined with additional data from 2006, identified a total of 13 species of mammals, 10 species of reptiles and amphibians, 13 species of insects, and 5 species of fish at JBA. Since the survey was not a total inventory, it is possible there are additional undocumented animal species on JBA. Documented non-game species include raptors, gulls, killdeer, flocks of migrating starlings and cowbirds, waterfowl, wading birds, and songbirds. Game species that have been documented include white-tailed deer, wild turkey, gray squirrel, eastern cottontail, Canada geese, mallard, lesser scaup, mourning dove, and northern bobwhite quail. Populations of these species are limited by the reduction and fragmentation of suitable habitat outside of JBA and isolation of habitats at JBA. Due to mission and security constraints, no public access is permitted for hunting, fishing, trapping, or other wildlife-related outdoor recreation at the Main Base. JBA has depredation permits for birds and deer; these species are managed to keep the airfield clear and minimize BASH hazards.

The wildlife within the Project Area is comprised of common, forest-dwelling species of mammals, avifauna, and herpetofauna. Staff at the small arms range report very few wildlife observations near the range. The most commonly observed species are squirrels, deer, and groundhogs. It is generally assumed by the staff that wildlife do not frequent the forest near the small arms range because the outdoor range is noisy when training is in session and also because the range is close enough to the airfield that the air cannons can be heard by the wildlife.

3.6.2 Environmental Consequences

3.6.2.1 Proposed Action

Alternative A
Short-term, minor adverse impacts to common forest-dwelling wildlife would be expected during construction of the new live-fire range and parking area; however, this effect would be temporary. Approximately 2.6 acres of forested wildlife habitat will be lost under Alternative A. It is expected that the operation of the new live-fire range would have minor, long-term adverse impacts on wildlife species due to permanent loss of forest habitat. Suitable habitat for mammalian, avian, reptile and amphibian generalist species is present in adjacent forested areas, however. Some of the habitat provided by individual trees will eventually be regained when the replacement trees installed as part of the Arbor Plan compliance program become mature.

JBA submitted, via electronic mail, a Information, Planning, and Conservation System (IPAC) project review package and a summary document of the Description of Alternatives to the U.S. Fish and Wildlife Service, Chesapeake Bay Field Office, on March 25 and April 2, 2014, respectively. These two documents were submitted to the USFWS to facilitate a determination by the agency of any potential impacts the proposed 21 Point Enclosed Firing Range project would have on migratory bird populations within the project site and immediately surrounding the project site. The USFWS, in return correspondence to JBA dated July 16, 2014 presented minimization measures for the 21 Point Enclosed Firing Range project which conform to the Migratory Bird Treaty Act (MBTA). Specifically, the USFWS recommended that land clearing activities be scheduled outside the migratory bird nesting period (March through August) to avoid adversely impacting active nests, eggs or young. The USFWS recommended that existing forested corridors be maintained, where possible, to allow for connectivity to exist between forest patches or stands. The USFWS also recommended that reforestation initiatives be implemented, where possible, to create or enhance natural habitats for bird diversity. The USFWS stated that the single, most important step that JBA personnel can take to avoid incidental take of migratory birds would be to initiate tree clearing after the annual nesting season; i.e., tree removal should occur in the fall or winter seasons. The USFWS concluded that the aforementioned minimization measures would be acceptable in reducing impacts to migratory bird species for the proposed project. JBA will comply with the recommendations presented by the USFWS in the USFWS correspondence dated July 16, 2014. A copy of the USFWS correspondence is included in Appendix B.

Migratory birds are afforded special status under the MBTA of 1918. Migratory birds could nest close to the construction area. To avoid contact with these species, construction-related ground-disturbing activities should take place from September through February to avoid the nesting season of protected birds. A qualified biologist would survey for nesting birds that are federally managed or listed as migratory by USFWS prior to construction. Surveys for migratory birds would occur two weeks prior to ground-disturbing activities. If nesting birds are discovered, appropriate actions would be taken, in conformance with the MBTA.

Alternative B
Impacts to wildlife habitat and mitigation associated with implementation of this alternative are similar to those described above for Alternative A.

Alternative C
Approximately one acre of wildlife habitat will be lost under Alternative C. Impacts and mitigation associated with implementation of this alternative are essentially less to those described above for Alternative A, as the impacted area of mature forest is smaller in size.

3.6.2.2 No Action Alternative

Under the No Action Alternative, no construction activities would take place; therefore, there would be no impacts to wildlife or their habitats within the Project Area.

3.7 Sensitive Species

3.7.1 Affected Environment

Rare, threatened, and endangered species surveys were conducted at JBA in 1993, 1996, 1997, and 2004 (2012 Integrated Natural Resources Management Plan [INRMP]; JBA 2012). The sandplain gerardia (*Agalinis acuta*) is federally listed as an endangered species and it has been identified on the base. Sandplain gerardia is an annual pale green herb that typically occurs on dry, sandy, poor-nutrient soils of sparsely vegetated sandplain environments and serpentine barrens. The plant's known habitat on JBA is protected by fencing and signage that warns of the presence of a protected species. Sandplain gerardia is not known to occur in the vicinity of the existing small arms range. Several state-listed plant species have also been reported from the base, but the distribution of these species is not known to occur in the vicinity of the small arms range (Map 4, 2012 INRMP; JBA 2012). No other federally listed species are known to occur on the Main Base.

3.7.2 Environmental Consequences

3.7.2.1 Proposed Action

There are no known populations or occurrences of federally-protected or state-listed species in the vicinity of the Project Area. Therefore, no impacts to listed plant or animal species or other rare or sensitive species would be expected from implementing the proposed action.

3.7.2.2 No Action Alternative

Under the No Action Alternative, no construction activities would take place; therefore, there would be no impacts to state or federally listed, threatened or endangered, plant or animal species or other rare or sensitive species.

3.8 Wetlands

3.8.1 Affected Environment

Wetlands are protected as a subset of the "waters of the United States" under Section 404 of the Clean Water Act (CWA), as well as EO 11990 (Protection of Wetlands) which requires federal agencies to take action to minimize the destruction, loss or degradation of wetlands, and to preserve and enhance the beneficial values of wetlands. The U.S. Army Corps of Engineers (USACE) defines wetlands as

> "those areas that are inundated or saturated with ground or surface water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted to life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas (33 CFR 328)."

As a result of federal and state regulations, as well as DoD and U.S. Air Force policy, JBA is responsible for identifying and locating jurisdictional "waters of the United States" (including wetlands), where these resources have the potential to be impacted by activities at the base. Most proposed activities within streams or wetlands (such as filling, dredging, or clearing of ditches) require either a general or individual permit from the USACE. Permitting requirements vary depending on type, location, and extent of disturbance.

Three wetland surveys have been conducted at JBA within the last 15 years. These included a wetland survey conducted in 1997 and the JBA 2004 Wetland Report, a formal jurisdictional delineation of wetlands performed in 2004 by Waller and Associates (JBA 2004). The 2004 survey

identified 87.2 acres of jurisdictional wetlands on base. All wetlands are associated with either surface water impoundments or palustrine areas (inland marshes or swamp); i.e., approximately 36 acres are palustrine forested wetlands, 31 acres are palustrine emergent wetlands, and the remaining 20.2 acres are palustrine open water habitats. JBA policy has demarcated a 25-foot buffer around wetlands for protection, in accordance with the 1989 Maryland Nontidal Wetlands Protection Act. In 2010, additional wetlands delineation work was completed at JBA with particular emphasis upon wetlands at the airfield. The extent of the wetlands in the vicinity of the existing small arms range was determined during the most recent wetlands delineation work conducted in 2012 (Figure 5). Forested wetlands at JBA are found all through the installation and include dominant canopy species such as: sweet gum, red maple, tulip poplar, and black gum. At the location of the proposed action and within the open space land use, the adjacent forested wetlands are dominated by willow oak. Other canopy species include red maple and sweet gum. The understory is generally sparse, with scattered occurrences of greenbrier.

3.8.2 Environmental Consequences

3.8.2.1 Proposed Action

Alternative A
Under Alternative A, the construction of the indoor 21-point firing range and the additional parking area would be designed specifically to avoid wetlands and wetland buffers. Therefore, implementation of this alternative would not permanently impact jurisdictional wetlands adjacent to the new firing range and parking area. In order to avoid wetland impacts under this alternative, the parking lot has been designed in a slightly irregular shape. The number of new parking spaces may need to be the minimum required under the AF's small arms range design guidelines (HQ AFCESA/CEO, 2011). This alternative would be in compliance with EO 11990 (Protection of Wetlands). In order to avoid any temporary, short-term adverse impacts on wetlands that could result from sediment transport into wetlands during construction, JBA would implement erosion and sediment control BMPs throughout construction.

The proposed rehabilitation and upgrades for the stormwater pond located along the southwest edge of the site will result in a temporary change to this manmade surface water. The proposed improvements are designed to increase the hydrologic function of this stormwater pond. Regulatory review by the MDE will be required, as the work associated with the stormwater pond rehabilitation would exceed 5,000 square feet. Specifically, the proposed work will require an application for a Nontidal Wetland and Waterway Permit with the MDE Nontidal Wetland and Waterways Division. Follow-up coordination with the MDE will be conducted to determine the extent of design revisions that may be required.

Stormwater runoff requirements for federal development projects are established under Section 438 of the Energy Independence and Security Act of 2007 (EISA). JBA will adhere to Section 438 of the EISA for the rehabilitation of the stormwater pond, as outlined in the Technical Guidance on Implementing the Stormwater Runoff Requirements for Federal Projects under Section 438. Specifically, Section 438 of the EISA requires that the sponsor of any development or redevelopment project involving a federal facility with a footprint that exceeds 5,000 square feet shall use site planning, design, construction, and maintenance strategies for the property to maintain or restore, to the maximum extent technically feasible, the predevelopment hydrology of the property with regard to the temperature, rate, volume, and duration of flow. Routine monitoring will be provided to assure that the rehabilitated stormwater pond is maintained. JBA will coordinate with MDE to assure that the Base is in compliance with MDE stormwater rules and regulations. Finally, this alternative would not require regulatory compliance and permitting under Section 10 of the Rivers and Harbors Appropriation Act of 1899 (33 United States Code 403).

Alternative B

Under Alternative B, the indoor 21-point firing range would be constructed to the north of the existing parking lot and would encroach into the forested wetland and its buffer located north of the existing parking area (Figure 4). It is anticipated that less than 0.01 acre of wetlands and approximately 0.04 acre of upland buffer would be permanently impacted from the construction of the new firing range, although those numbers could change slightly once final design is complete. The additional customer parking area would be constructed to the east of the existing parking lot and, as such, would not impact any wetlands.

Because of the nature of the proposed action under this alternative, no practicable alternative to construction within wetlands exists. The proposed action entails the construction of the new firing range to the north of the existing parking lot. The dimensions of the layout (footprint) of the new range cannot be changed (in order to avoid impacting the wetland and its buffer) without compromising the ability to construct the entire structure, as designed, at the specified location. For authorization of dredge or fill impacts to jurisdictional wetlands, JBA would obtain a CWA Section 404 Permit from the USACE and a Nontidal Wetland Permit from the MDE prior to commencement of the work. JBA would comply with all permit conditions and implement mitigation as appropriate, if required. In order to avoid any temporary, short-term adverse impacts on wetlands that could result from sediment transport into wetlands during construction, JBA would implement erosion and sediment control BMPs throughout construction.

The proposed rehabilitation and upgrades for the stormwater pond located along the southwest edge of the site will result in a temporary change to this manmade surface water. The proposed improvements are designed to increase the hydrologic function of this stormwater pond. Regulatory review by the MDE will be required, as the work associated with the stormwater pond rehabilitation would exceed 5,000 square feet. Specifically, the proposed work will require an application for a Nontidal Wetland and Waterway Permit with the MDE Nontidal Wetland and Waterways Division. Follow-up coordination with the MDE will be conducted to determine the extent of design revisions that may be required.

Stormwater runoff requirements for federal development projects are established under Section 438 of the Energy Independence and Security Act of 2007 (EISA). JBA will adhere to Section 438 of the EISA for the rehabilitation of the stormwater pond, as outlined in the Technical Guidance on Implementing the Stormwater Runoff Requirements for Federal Projects under Section 438. Specifically, Section 438 of the EISA requires that the sponsor of any development or redevelopment project involving a federal facility with a footprint that exceeds 5,000 square feet shall use site planning, design, construction, and maintenance strategies for the property to maintain or restore, to the maximum extent technically feasible, the predevelopment hydrology of the property with regard to the temperature, rate, volume, and duration of flow. Routine monitoring will be provided to assure that the rehabilitated stormwater pond is maintained. JBA will coordinate with MDE to assure that the Base is in compliance with MDE stormwater rules and regulations. Finally, this alternative would not require regulatory compliance and permitting under Section 10 of the Rivers and Harbors Appropriation Act of 1899 (33 United States Code 403).

Alternative C

Under Alternative C, the construction of the indoor 21-point firing range would not permanently impact jurisdictional wetlands adjacent to the new firing range. Implementation of this alternative would be in compliance with EO 11990.

An existing parking lot located at the LF-05 site would be utilized for staff parking and overflow customer parking under this alternative. A walkway would be constructed between the Small Arms Combat Training Compound and this parking lot. The walkway would be routed so that it avoids both wetland impacts and the mandatory safety zones required at shooting ranges. In order to avoid any

temporary, short-term adverse impacts on wetlands that could result from sediment transport into wetlands during construction, JBA would implement erosion and sediment control BMPs throughout construction.

The proposed rehabilitation and upgrades for the stormwater pond located along the southwest edge of the site will result in a temporary change to this manmade surface water. The proposed improvements are designed to increase the hydrologic function of this stormwater pond. Regulatory review by the MDE will be required, as the work associated with the stormwater pond rehabilitation would exceed 5,000 square feet. Specifically, the proposed work will require an application for a Nontidal Wetland and Waterway Permit with the MDE Nontidal Wetland and Waterways Division. Follow-up coordination with the MDE will be conducted to determine the extent of design revisions that may be required.

Stormwater runoff requirements for federal development projects are established under Section 438 of the Energy Independence and Security Act of 2007 (EISA). JBA will adhere to Section 438 of the EISA for the rehabilitation of the stormwater pond, as outlined in the Technical Guidance on Implementing the Stormwater Runoff Requirements for Federal Projects under Section 438. Specifically, Section 438 of the EISA requires that the sponsor of any development or redevelopment project involving a federal facility with a footprint that exceeds 5,000 square feet shall use site planning, design, construction, and maintenance strategies for the property to maintain or restore, to the maximum extent technically feasible, the predevelopment hydrology of the property with regard to the temperature, rate, volume, and duration of flow. Routine monitoring will be provided to assure that the rehabilitated stormwater pond is maintained. JBA will coordinate with MDE to assure that the Base is in compliance with MDE stormwater rules and regulations. Finally, this alternative would not require regulatory compliance and permitting under Section 10 of the Rivers and Harbors Appropriation Act of 1899 (33 United States Code 403).

3.8.2.2 No Action Alternative

Under the No Action Alternative, no construction activities would take place; therefore, there would be no impacts to wetlands.

3.9 Surface Waters

3.9.1 Affected Environment

JBA is located within multiple sub-basins in the Mid-Atlantic Region (JBA 2012). Most of the Main Base is in the Potomac River Sub-Region (Hydrologic Unit Code [HUC] 0207), while the eastern edge of the Main Base is in the Upper Chesapeake Sub-Region (HUC 0206). The uplands that characterize the topography of the Main Base create a watershed divide, with the western portion of the base generally draining to the Potomac River (HUC 02070010) and the eastern portion generally draining to the Patuxent River (HUC 02060006), which is located approximately seven miles east of the base. Sub-watersheds on JBA are categorized as “non-supporting” based on impervious cover which impacts downstream water quality (December 7, 2012 correspondence from MDP; Appendix B). Several streams that are fed by a shallow, unconfined surface aquifer originate on or near the Main Base. Piscataway Creek (HUC 020700100305) originates in the southeastern corner of the base. Tinkers Creek (HUC 020700100304), an intermediate order tributary of Piscataway Creek, also originates in the southeastern portion of the base and drains the majority of Main Base. These streams drain toward the west and into the Patuxent River. Surface water at the existing firing range complex and the location of the proposed action drains to the southwest to an unnamed tributary in the headwaters of Piscataway Creek. Piscataway Creek is a state Tier II High Quality Water, but it is also listed as an impaired water under Section 303(d) of the CWA by MDE for 1st through 4th order streams (as a “low priority” with an “unknown cause”).

3.9.2 Environmental Consequences

3.9.2.1 Proposed Action

Coordination with the MDE will be required during the Design Phase of this project no matter which of the alternative layouts is selected. This coordination will be required to design the project so that sufficient and appropriate water quality protections are included for this state-designated Tier II (High Quality Water) Catchment.

Alternative A

Construction activities, including grading, clearing, and excavation would result in ground surface disturbance which could cause soil erosion and subsequent transport of sediment into streams or wetland areas via stormwater unless managed properly. However, the institutional controls at the adjacent, downstream LF-05 ERP site are such that any increase in infiltration at the Small Arms Combat Range would not be desirable. LF-05 constrains any action that would affect shallow groundwater movement, as a result of infiltration of surface water (Appendix C). Land use controls, or actions, are fully described in the Land Use Control Implementation Plan (in the JBA General Plan) for the LF-05 site (JBA 2010a). Specifically, any proposed changes in land use, including construction of new facilities or additions to existing facilities at LF-05, must go through a review and approval process by the JBA Facility Review Board (which interacts with the Community Planner using the Base General Plan as a guide to land use issues). The purpose of the review is to ensure consistency with the prohibition of construction of any facility, building, or any structure that would have a negative impact on the remedy in meeting the remedial action objectives for LF-05. The land use controls will be strictly adhered to during construction and operation of this action alternative.

JBA or its contractors will need to prepare and implement an Erosion and Sediment Control Plan for the proposed action; it will need to be approved by the MDE Sediment and Stormwater Division before construction. Furthermore, JBA and its contractors will need to comply with all stormwater- and construction-related permits. Post-construction stormwater runoff would be controlled and managed in accordance with an MDE-approved stormwater management plan. With incorporation of appropriate design criteria, implementation of construction stormwater management BMPs, and maintenance of the stormwater management infrastructure, it is expected that long-term impacts to surface waters will be minor. It is also expected that any surface water discharge within the limits of construction should be no greater than predevelopment conditions.

The stormwater pond located near the southwest corner of the existing firing range would have to be improved through design changes to receive and treat the additional stormwater runoff that would flow to the south from the new parking lot that would be constructed to the north of the existing parking lot. This pond presently captures and treats stormwater runoff from the existing facility, but is in need of repair. Runoff from the area to the east of the existing parking lot flows to the east. Under this alternative, the construction of the new live-fire range east of the existing parking lot would require the treatment of stormwater (storm runoff). Two different scenarios could accomplish this task: (1) the installation of new stormwater management BMPs to adequately treat the stormwater runoff that would originate at the new firing range building that would comply with the institutional controls imposed by proximity to the LF-05 site; or (2) the capture and routing of stormwater runoff to the existing stormwater pond (located to the southwest of the existing firing range) once upgrades to this pond have been completed.

Finally, with regard to potential water quality impacts on the unnamed tributary in the headwaters of Piscataway Creek, JBA will comply with the MDE and federal stormwater management mandates for the construction and operation of the new 21 Point Enclosed Firing Range, including those listed in the *Maryland Stormwater Management Guidelines for State and Federal Projects*, dated April 15, 2010, and the Energy Independence and Security Act (EISA) Section 438. The project will also apply for and comply with all applicable MDE stormwater permits and erosion and sediment control

approvals. Adherence to these requirements will result in these activities having no significant impact to surface waters.

Alternative B
Impacts to surface water as well as quantity of stormwater runoff would be the same as those expected under Alternative A since the same amount of new impervious surface would be constructed. Erosion and sediment control BMPs associated with implementation of this alternative would be the same as those described for Alternative A. With incorporation of appropriate design criteria, implementation of construction stormwater management BMPs, and maintenance of the stormwater management infrastructure, it is expected that long-term impacts to surface waters will be minor. It is also expected that any surface water discharge within the limits of construction should be no greater than predevelopment conditions.

The stormwater pond located near the southwest corner of the existing firing range would have to be improved through design changes to receive and treat the additional stormwater runoff that would flow to the south from the new live-fire range that would be constructed to the north of the existing parking lot. Runoff from the area to the immediate east of the existing parking lot flows to the east. Under this alternative, the construction of the new live-fire range east of the existing parking lot would require the treatment of stormwater. Two different scenarios would accomplish this task: (1) the installation of new stormwater management BMPs to adequately treat the stormwater runoff that would originate at the new firing range building or (2) the capture and routing of stormwater runoff to the existing stormwater pond once upgrades to this pond have been completed. Upgrades to the existing stormwater pond would likely address potential regulatory compliance issues with the MDE.

Finally, land use controls from the Land Use Control Implementation Plan for the LF-05 site (JBA 2010a) will be strictly adhered to during construction and operation of this action alternative.

Alternative C
The construction of a new parking area is not included under this alternative; therefore, there would be less impervious surface associated with this alternative and less stormwater runoff compared to the other two alternatives. Design and construction of the new firing range will need to comply with institution controls associated with the neighboring LF-05 ERP site. Construction of the new live-fire range east of the existing parking lot would require the installation of new stormwater management BMPs to adequately treat the stormwater runoff that would originate at the new firing range building; however, the existing stormwater pond located near the southwest corner of the property would not have to be modified. However, rehab/retrofit of that stormwater pond could be accomplished under this alternative if the stormwater at the new building is captured and routed to that pond rather than toward the LF-05 site. With incorporation of appropriate design criteria, implementation of construction stormwater management BMPs, and maintenance of the stormwater management infrastructure, it is expected that long-term impacts to surface waters will be minor. It is also expected that any surface water discharge within the limits of construction should be no greater than predevelopment conditions.

Finally, land use controls from the Land Use Control Implementation Plan for the LF-05 site (JBA 2010a) will be strictly adhered to during construction and operation of this action alternative.

3.9.2.2 No Action Alternative
Under the No Action Alternative, no construction activities would take place; therefore, there would be no impacts to surface water.

3.10 Groundwater

3.10.1 Affected Environment

JBA is located within a portion of the Maryland Coastal Plain that includes several important regional water supply aquifers (JBA 2012). These aquifers are located several hundred ft below ground surface (bgs), and include, in order of descending stratigraphic sequence, the Aquia, Magothy, Patapsco, and Patuxent formations. The Aquia formation, located at a depth of 150 ft bgs, is a primary source of groundwater for Prince George's, Anne Arundel, Charles, and St. Mary's counties, and is primarily recharged by infiltration in an area northwest of the Main Base. The underlying Patapsco and Patuxent aquifers supply groundwater to consumers in Prince George's, Anne Arundel, and Charles counties. Potable water supply on base is provided by the WSSC. Groundwater underlying the Main Base occurs at or near the ground surface, with shallow groundwater occurring at depths of less than 20 ft bgs, likely under unconfined conditions. Groundwater recharge occurs primarily through precipitation. Groundwater flow is believed to be down-gradient toward local streams or downward toward deeper underlying aquifers. The LF-05 site (LF-05 on Environmental Restoration Program [ERP] / Installation Restoration Program [IRP] database) is a Comprehensive Environmental Response, Compensation, and Liability Act site that is located downslope of the Small Arms Firing Range. Remediation has been completed and there is a 13.5-acre Resource Conservation and Recovery Act (RCRA) landfill cap. The institutional controls at this landfill are such that any increase in infiltration at the Small Arms Combat Range would not be desirable. LF-05 constrains any action that would affect shallow groundwater movement. Note: The partially clogged, existing, stormwater detention pond has not affected the LF-05 site.

3.10.2 Environmental Consequences

3.10.2.1 Proposed Action

Alternative A
Implementation of this alternative would not affect the ability of the wetlands in the project vicinity to fulfill their groundwater recharge function. Therefore, implementation of this alternative would have no impact to groundwater resources. It is expected that any groundwater discharge within the limits of construction should be no greater than predevelopment conditions.

Alternative B
Implementation of this alternative would result in the loss of some wetland habitat at the site, which would in turn reduce the groundwater recharge capacity of the wetland. Therefore, implementation of this alternative would have a long-term, minor adverse impact on groundwater recharge. It is expected that any groundwater discharge within the limits of construction should be no greater than predevelopment conditions.

Alternative C
Implementation of this alternative would not affect the ability of the wetlands in the project vicinity to fulfill their groundwater recharge function. Therefore, implementation of this alternative would have no impact to groundwater resources. It is expected that any groundwater discharge within the limits of construction should be no greater than predevelopment conditions.

3.10.2.2 No Action Alternative
Under the No Action Alternative there would be no impacts to groundwater resources.

3.11 Floodplains

3.11.1 Affected Environment

Floodplains generally are areas of low, level ground on one or both sides of a stream channel that are subject to either periodic or infrequent inundation by flood waters. Floodplains are regulated by

the Federal Emergency Management Agency (FEMA) with standards outlined in 44 CFR Part 60.3. EO 11988 (Floodplain Management) requires agencies to assess the effects that their actions may have on floodplains and to consider alternatives to avoid adverse effects and incompatible development on floodplains. FEMA has not developed Flood Insurance Rate Maps for the Main Base. In 2005, JBA completed a floodplain study which indicated that there are seven floodplains located within the boundaries of the Main Base (JBA 2010). The floodplains are generally limited to small streams and the area immediately adjacent to these streams. The existing firing range complex and the location of the proposed action do not occur within the 100-year floodplain of the unnamed tributary of Piscataway Creek (Figure 4.2, 2010 General Plan Update; JBA 2010).

3.11.2 Environmental Consequences

3.11.2.1 Proposed Action

Based on JBA's 2005 floodplain study of the Main Base, the existing firing range complex and all of the alternative locations for the proposed action do not occur within the 100-year floodplain of the unnamed tributary of Piscataway Creek. EO 11988 (Floodplain Management) requires federal agencies to minimize occupancy and modifications of floodplains. Furthermore, EO 11988 specifically prohibits federal agencies from funding construction in 100-year floodplains unless there are no practical alternatives.

Alternative A

Construction of the new facility under this alternative will result in approximately 1.5 acres of additional impervious surface area. No impacts on floodplains would be expected from implementing this alternative, however, as the Project Area does not occur in or near a floodplain.

Alternative B

Construction of the new facility under this alternative will result in approximately 1.0 acre of additional impervious surface area. No impacts on floodplains would be expected from implementing this alternative, however, as the Project Area does not occur in or near a floodplain.

Alternative C

Construction of the new facility under this alternative will result in approximately 1.4 acre of additional impervious surface area. No impacts on floodplains would be expected from implementing this alternative, however, as the Project Area does not occur in or near a floodplain.

3.11.2.2 No Action Alternative

Under the No Action Alternative, no construction activities would take place; therefore, there would be no impacts to floodplains.

3.12 Environmental Restoration Program

3.12.1 Affected Environment

The ERP (formerly IRP) is part of a DoD effort to identify and correct environmental contamination resulting from past practices. As of October 2009, JBA ERP consisted of 27 sites and six areas of concern. The nearest ERP site to the existing firing range facility and the proposed action is LF-05 (Leroy's Lane Landfill 5). This landfill site essentially abuts the southeast corner of the existing firing range facility. LF-05 has been remediated and is capped with an RCRA Subtitle D single-barrier earthen cap (URS 2012). Development constraints included in the Remedial Action Completion Report for LF-05 state that there cannot be a net increase to precipitation infiltrating to groundwater in the areas upgradient of LF-05. Because the existing small arms firing range is upgradient of LF-05, stormwater at the firing range facility needs to be managed so that it is moved off of the site as quickly as possible and does not infiltrate and flow towards the landfill. More details related to constraints on activities at the small arms firing range as they relate to LF-05 are presented in Appendix C.

3.12.2 Environmental Consequences

3.12.2.1 Proposed Action

Alternative A
The construction and operation of the indoor 21-point firing range, along with construction of additional parking and improvements to Building No. 2495, would not directly impact any ERP sites within JBA. The nearest ERP site to the existing firing range and the proposed firing range is the LF-05 landfill site, which is located downgradient and southeast of the existing range. Development constraints in the Remedial Action Completion Report for LF-05 restrict the amount of groundwater that is allowed to enter the landfill site via infiltration from upgradient sources. To meet these constraints and limit the potential for indirect impact, stormwater at the new range facility will need to be routed off site as quickly as possible and not allowed to infiltrate and flow towards LF-05. This might require capture and rerouting stormwater to the existing pond in the SW corner of the range. With appropriate and effective stormwater controls in place, no adverse impacts, direct or indirect, on the LF-05 ERP site would be expected from the construction and operation of the new firing range under this alternative.

Alternative B
Implementation of this alternative will result in wetland fill, which will in turn result in less groundwater recharge; as such, there will be less downgradient migration of shallow groundwater toward the LF-05 site under this alternative. Therefore, implementation of this alternative could have a minor, long-term beneficial impact on the LF-05 ERP site. Development constraints in the Remedial Action Completion Report for LF-05 restrict the amount of groundwater that is allowed to enter the landfill site via infiltration from up gradient sources. To meet these constraints and limit the potential for indirect impacts, stormwater at the new range facility will need to be routed off site as quickly as possible and not allowed to infiltrate and flow towards LF-05. This might require capture and rerouting stormwater to the existing pond in the SW corner of the range.

Alternative C
As described above for Alternative A, it is not anticipated that there would be any impacts to ERP sites as a result of implementation of this alternative. Development constraints in the Remedial Action Completion Report for LF-05 restrict the amount of groundwater that is allowed to enter the landfill site via infiltration from up gradient sources. To meet these constraints and limit the potential for indirect impacts, stormwater at the new range facility will need to be routed off site as quickly as possible and not allowed to infiltrate and flow towards LF-05. This might require capture and rerouting stormwater to the existing pond in the SW corner of the range.

3.12.2.2 No Action Alternative
No impacts on ERP sites would result from implementing the No Action Alternative.

3.13 Topography

3.13.1 Affected Environment

JBA is near the western edge of the middle Atlantic Coastal Plain physiographic province. The Coastal Plain province is level to gently sloping with local relief generally being less than 100 ft except for moderately steep to steep stream banks. JBA is located on a level plateau between the Anacostia River on the west and the Patuxent River on the east. Land surface elevations at the Main Base vary from approximately 215 ft above mean sea level (AMSL) to about 281 ft AMSL. The site of the proposed action is generally flat; i.e., the site elevation is approximately 250 ft AMSL. The site slopes gradually toward the southeast.

3.13.2 Environmental Consequences

3.13.2.1 Proposed Action

The site of the proposed action is generally flat and has no special qualities. Site grading and construction activities will occur across the majority of the Project Area under the proposed action. This construction will alter the existing topography. However, as the Project Area is relatively flat, grading will be limited and the impacts to topography would be minor. Soil removed from the construction site may be used to raise the grade of portions of the Project Area where a change in elevation is necessary. The topographic elements of the site plan and project design for all three alternatives will need to account for constraints associated with restricted infiltration areas near the LF-05 ERP site (detailed in Appendix C).

3.13.2.2 No Action Alternative

No construction activities would take place under the No Action Alternative and, correspondingly, no effects to topography would occur.

3.14 Occupational Safety and Health

3.14.1 Affected Environment

Construction site safety and safe operations of a small arms firing range are 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 U.S. Air Force health and safety of on-site military and civilian workers is safeguarded by numerous DoD and U.S. Air Force regulations designed to comply with standards issued by the Occupational Safety and Health Administration (OSHA) and EPA. These standards specify required working training, use of personal protective equipment (including hearing protection), engineering controls, and maximum exposure limits for workplace stressors. Industrial hygiene is the responsibility of contractors and U.S. Air Force personnel. Examples of safety program practices that might apply at the small arms range include, but are not limited to, the following:

- Monitor exposure to workplace chemicals (e.g. lead, metallic particulates, HAZMAT), physical conditions (e.g. noise), and biological agents(e.g. infectious waste);
- Recommend and evaluate controls (e.g. hearing protection, ventilation) to ensure personnel are properly protected; and
- Ensure a medical surveillance program is in place.

Explosive Safety Zones

91-201, *Explosive Safety Standards*, requires that defined Explosive Safety Quantity-Distance (ESQD) arcs be maintained between explosive materials storage and handling facilities and a variety of other types of facilities. ESQD arcs are determined by the type and quantity of explosive materials stored. The following types of ammunition are currently stored at the existing firing range facility:

- 5.56 millimeter (mm) Frangible
- 7.56 mm 4 Ball / 1 Tracer
- 40 mm TP
- 9 mm Hollow Point
- Gauge Shotgun
- 9 mm Frangible
- 5.56 Ball 4/1
- 12 Gauge Frangible
- 5.56 mm, M855
- TCR M856, single round

Munitions handling and storage at JBA are conducted in accordance with Air Force Manual 91-201. However, according to the JBA General Plan (Figure 4.10, 2010 General Plan Update; JBA 2010) there are no ESQD arcs at the existing firing range or the proposed action.

Security Clear Zones
Security clear zones are designated around facilities deemed to be mission critical or essential assets. These zones are established to control access to facilities that require more security than other portions of the installation. Secured areas are typically fenced and access is restricted to authorized personnel. The presence of these security clear zones poses a limitation to development that is not strictly related to these restricted facilities. A rectangular-shaped security clear zone presently surrounds the existing Combat Arms Training Range (Figure 4.10, 2010 General Plan Update; JBA 2010). The security clear zone for the existing range is fenced and gated. A perimeter fence (6 ft tall, galvanized steel, chain link) is in place to protect people from bullet fragments around the back and sides of the facility. A motorized sliding gate exists at the entrance from East Perimeter Road, with a keypad to control the electronic gate operation.

Surface Danger Zones
Surface Danger Zones (SDZs) are buffers that are generated around small arms ranges to ensure that a minimum safe distance is present in areas where munitions are used. The SDZ associated with the existing JBA firing range has been determined according to the following guidance documents: ETL 11-18 (Tyndall AFB 2011) and AFI 36-2226. The 100 meter SDZ for the current facility extends beyond the security fence and beyond East Perimeter Road on the western side of the SDZ and into the LF-05 landfill cap on the eastern side of the SDZ. Because the SDZ extends into a public road it has been identified as a safety hazard with a Risk Assessment Code (RAC) of 3 (i.e. “Moderate Hazard”) assigned by the JBA 11th WG/SEG office. The existing JBA firing range is currently a partially contained range with projected modification to bring it to a fully contained outdoor range. A fully contained range which is incapable of allowing a fired projectile to escape its limits does not have an exterior SDZ. Therefore, modification of the existing range will shrink, and possibly eliminate the exterior SDZ. Construction of the new indoor range, which is the proposed action in this EA, will not require an exterior SDZ.

The SDZ requirement can’t be met to allow anything but frangible ammunition to be fired. The range does accommodate some activities that utilize lead and other ball ammunition; however, these activities are limited. Even firing frangible ammunition only, the SDZ arc encompasses East Perimeter Road. This is a safety hazard (RAC 3).

Fire Protection
Fire protection on JBA is a very important force protection initiative. A fire alarm system that allows for the early detection of fire and emergency situations is required to ensure the safety of JBA structures, personnel, and assets. With regard to existing conditions, JBA has two fire stations, one located on each side of the airfield. Each station houses collocated structural and crash equipment and crews. The fire station (Building No. 3464) that is located south of the corner of East Perimeter Road and Fetchet Avenue is responsible for servicing the east side of the base where the existing firing range facility is located. For fire emergencies, a fire hydrant exists on the firing range facility site, while another hydrant exists at the intersection of the entry road and East Perimeter Road.

3.14.2 Environmental Consequences

3.14.2.1 Proposed Action

Alternative A
Construction job site safety and accident prevention is an ongoing activity for any U.S. Air Force job site. Although no adverse impacts on the occupational safety and health of personnel at JBA, visitors to JBA, or the public in general would be expected from implementing the proposed action,

construction activities always have some inherent risk for worker safety. To prevent such impacts, construction contractors would be required to establish and maintain safety programs. All contractors performing construction activities would be responsible for complying with U.S. Air Force safety rules as well as OSHA regulations. They will be required to conduct construction activities in a manner that would not pose any undue risk to workers or personnel. Contractor responsibilities would include reviewing potentially hazardous workplaces, monitoring exposure to any safety issues, and ensuring that a plan is in place to respond to any foreseeable issues. Activities associated with the construction project proposed in this EA are not unique and are not anticipated to pose an unacceptable or unnecessary safety risk to JBA personnel, visitors to JBA, or the public.

The response capabilities of the fire station located on the east side of the airfield will be adequate to support both the existing range and the new range. Furthermore, the alarm system that is currently in place at JBA, as well as the locations of emergency fire hydrants on the existing facility site and at the intersection of the facility entry road and East Perimeter Road, will continue to provide adequate fire protection post-development. A vehicle for emergency transport of injured personnel is kept at the firing range at all times, and that will continue to be the case once the new range is in operation as well. If construction contractors properly implement required safety programs and the firing range is operated according to Air Force standards associated with this type of training facility, it is not anticipated that there would be any short-term or long-term adverse impacts associated with implementation of Alternative A.

Use of lead shot at the existing range may pose an ongoing hazard to traffic on perimeter road as well as construction contractors or military personnel that use the parking lot at LF-05. Once the new indoor range is constructed, the option will be available to eliminate future use of lead shot at the existing range and move all training that requires lead-based ammunition to be completed inside the new range. Should that practice be implemented, it would eliminate future safety problems associated with the SDZ extending into the Perimeter Road and/or LF-05 parking area. If lead-based ammunition continues to be used at the existing range during construction of the new range and/or once the new range is operational, then there may be on-going violations of AF policies related to SDZs. Note: The existing firing range is currently being renovated. When the renovations are complete, no SDZ will be required beyond the walls of the range. The renovations, once complete, will allow both lead and frangible small caliber rounds to be used on the existing range during construction and operation of the new firing range.

Alternative B
Occupational health and safety impacts under Alternative B are expected to be similar to those described above for Alternative A.

Alternative C
Occupational safety and health impacts related to construction and operation of an indoor range under Alternative C are expected to be similar to those described above for Alternative A. As previously stated herein, the SDZ associated with the existing partially-enclosed outdoor range extends into the parking area at LF-05. Upgrades to this range, which are currently underway, will shrink, and possibly eliminate the need for an exterior SDZ. However, it is possible that the SDZ may extend into the LF-05 parking area in the future depending upon what type of ammunition is used. Portions of the LF-05 parking lot which overlap with the SDZ may need to be blocked off from use when the outdoor range is in operation if lead-based ammunition is in use. Parking spaces that lie within the SDZ could be reserved for use by the range staff who come and go when there is no live firing in progress. Design of the facilities, including the walkway from the LF-05 parking lot to the new indoor range would need to comply with all aspects of the AF's criteria for small arms ranges (HQ AFCESA/CEO, 2011). An appropriate safety plan may need to be developed to address and mitigate safety issues if the SDZ overlaps with Perimeter Road and the LF-05 parking lot in the future.

3.14.2.2 No Action Alternative

Long-term adverse effects on occupational safety and health would be expected if the No Action Alternative was implemented. Under the No Action Alternative, the proposed construction of a new indoor firing range and the completion of improvements at the existing range facility would not take place. Scheduling conflicts would continue to affect range utilization and the safety and health of staff and trainees (i.e., added stressors). Range deficiencies would continue to negatively impact the ability to train efficiently, which could impact safety and health. Trainees would not have access to an enclosed indoor facility where they could train with lead-based ammunition, which has the potential to result in trainees that are not fully prepared for live-fire field conditions. The existing facility does not have laundry or showers for trainees or instructors to wash away hazardous munitions dust at the end of their training session; as such, these personnel are leaving the site with waste residue still on their skin and uniforms. Overall, under the No Action Alternative, training would continue to be conducted under conditions that have become inadequate, and in some cases problematic. Furthermore, with a single range there will be fewer opportunities to resolve the safety hazard associated with the SDZ extending into Perimeter Road.

3.15 Climate

3.15.1 Affected Environment

JBA's geographic location near the eastern seaboard provides for a humid subtropical climate that is influenced by an easterly airflow that produces frequent successions of high and low pressure systems. Tropical storms are a threat in this region during the hurricane season (June 1 to November 1). The inland location of JBA makes hurricane-force winds unlikely; however, flooding rains and some wind damage typically occur in association with the passage of a tropical system. Winter ice storms are common in the area, which can be particularly disruptive to road travel and flight operations. These conditions are sufficiently severe to require de-icing capability at the airfield. Based on average monthly rainfall data collected at JBA from June 1943 to January 2012, the total average annual rainfall is 42.6 inches (JBA 2012). The monthly average temperatures during this data collection period range from 36° Fahrenheit (January) to 76° Fahrenheit (July).

3.15.2 Environmental Consequences

3.15.2.1 Proposed Action

The general climate of the Project Area has no special qualities. Under all three alternatives the new facility will be built in accordance with applicable Executive Orders and Air Force directives on sustainability, with the goal of being equivalent to U.S. Green Building Council's LEED Silver standards. Implementation of the proposed action under any of the three alternatives is not expected to have any short-term or long-term adverse impact on climate.

3.15.2.2 No Action Alternative

No impacts on climate would result from implementing the No Action Alternative.

3.16 Air Quality

3.16.1 Affected Environment

Air quality at a given location is a function of several factors, including quantity and dispersion rates of pollutants, temperature, presence/absence of inversions, and topographic and geographic features. The Clean Air Act (CAA) (42 United States Code §§7401 to 7671q), as amended, provides the framework for federal, state, tribal, and local rules and regulations to protect air quality. The CAA gives the EPA the responsibility to establish the primary and secondary National Ambient Air Quality Standards (NAAQS) (40 CFR 50) that set safe concentration levels for six criteria pollutants: particulate matter measuring less than 10 and 2.5 microns in diameter (PM_{10} and $PM_{2.5}$ respectively), sulfur dioxide, carbon monoxide, nitrogen oxide, ozone, and lead. Primary NAAQS are established to protect public health, and secondary standards provide protection for public welfare,

which includes wildlife, climate, transportation, and economic values. Additionally, EPA must ensure that air quality standards are met to control pollutant emissions from mobile (e.g. vehicles) and stationary (e.g. factories) sources. The NAAQS represent the maximum levels of background pollutants that are considered safe, with an adequate margin of safety to protect public health and welfare. Short-term standards (1-, 3-, 8-, and 24-hour periods) have been established for pollutants contributing to acute health effects, while long-term standards (quarterly and annual averages) have been established for pollutants contributing to chronic health effects. Each state is responsible for compliance with the NAAQS and has the authority to adopt standards stricter than those established under the federal program.

Prince George's County, Maryland, is a non-attainment area for some air pollutants, including ozone and fine particulates ($PM_{2.5\text{-}Annual}$). Prince George's County is an attainment area for all other particulates, as well as nitrogen dioxide and sulfur dioxide, and is a maintenance area for carbon monoxide. Prince George's County is unclassified for lead (NAAQS summary; MDE 2012).

U.S. Air Force facilities at JBA operate under a State Operating Permit (Synthetic Minor), 033-00655A, which replaced the Title V Permit. The State Operating Permit requires tracking of nitrogen oxide emissions from registered boilers, heaters, and stationary emergency generators, on a monthly basis for a period of 12 consecutive months. Total emissions from both permitted and permit-exempt sources must be less than 25 tons per 12-month period. The same limit applies to total Volatile Organic Compounds and total Hazardous Air Pollutants emissions from U.S. Air Force facilities. The base's operating permit also requires preparation of an annual Certified Air Emissions Statement which inventories criteria, toxic, and greenhouse gas pollutants emitted from permitted sources. The MDE requires JBA to certify actual emissions of regulated pollutants from the facility on a calendar year basis for all permitted stationary sources: external combustion units (e.g. boilers, heaters); emergency generators; gasoline storage, dispensing, and loading operations; paint spray booths; and abrasive blasting booth. The pollutants of concern for the permitted sources include carbon dioxide, methane, and nitrous oxide.

The impact of air emissions on sensitive members of the population is a special concern. Sensitive receptor groups include children, the elderly, and the acutely and chronically ill. The locations of these groups include residences, schools (grammar schools and high schools), playgrounds, daycare centers, convalescent homes, and hospitals. There are no known groups of sensitive receptors in the vicinity of the existing JBA firing range.

Under a 1990 amendment to the CAA, commonly known as the General Conformity Rule, federal actions in nonattainment and maintenance areas are required to conform to the applicable State Implementation Plan (SIP). General conformity is demonstrated if the total net emissions expected to result from a federal action in a nonattainment or maintenance area will not:

- Cause or contribute to any new violation of any NAAQS;
- Interfere with provisions in the applicable SIP for the maintenance of any standard;
- Increase the frequency or severity of any existing violation; or
- Delay the timely attainment of a standard, interim emission reduction, or milestone, including, where applicable, emission levels specified in the applicable SIP for purposes of demonstrating reasonable further progress, attainment, or maintenance.

A federal action is exempt from the General Conformity Rule requirements if the action's total net emissions are below the *de minimis* levels or are otherwise exempt per 40 CFR 51.153. Total net emissions include direct and indirect emissions from all stationary point and area sources, construction sources, and mobile sources caused by the federal action.

JBA is part of Prince George's County, Maryland, and the Washington Metropolitan Area Air Quality Control Region (AQCR). Prince George's County is currently in attainment for nitrogen oxide, sulfur dioxide, $PM_{2.5}$ (daily only), PM_{10}, and lead. Portions of the Washington Metropolitan Area AQCR, including Prince George's County, are designated as nonattainment for 8-hour ozone (moderate) and for annual $PM_{2.5}$. The area also is designated as a maintenance area for carbon monoxide (EPA 2013).

3.16.2 Environmental Consequences

3.16.2.1 Proposed Action

Alternative A
It is possible that there may be short-term, minor adverse impacts to the local environment during construction of the new facility from dust generated during land clearing and emissions originating from construction equipment. The MDE has requirements with which a developer must comply when constructing a new facility, such as controlling fugitive dust and open burning. JBA or its contractors will need to comply with these requirements. JBA holds a Synthetic Minor Operating Permit (033-00655A) that expires January 31, 2016. The permit requirements include making an annual inventory of all significant stationary sources of air emissions for each of the criteria pollutants. Monitoring and record-keeping requirements are also included in the permit. If a boiler or other equipment that produces air emissions is installed in the new facility, a permit from MDE's Air and Radiation Management Administration will need to be obtained. It is anticipated that air emissions from the proposed action would be ***de minimis***; therefore no long-term, adverse impacts to local or regional air quality are anticipated under this alternative.

Implementation of Alternative A would result in temporary emissions during construction and minor emissions from an expanded operation over the long-term. Calculations for the air quality analysis are provided in Appendix D.

Construction
Construction is assumed to begin in spring 2015 and to take approximately 12 months to complete (five days per week and eight hours per day) spanning 2015 and 2016. Operation of construction vehicles and heavy equipment during the construction phase (demolition, site preparation, grading, and paving) would result in temporary, minor impacts to air quality. Air emissions primarily would be in the form of increased exhaust pollutants that would be minimized through good vehicle maintenance.

Windblown soil and dust could occur during the construction phase as a result of equipment movement over exposed soil areas. Generation of fugitive dust would be minimized through the use of BMPs to control dust (i.e., wetting the surfaces, and through the re-vegetation of disturbed areas as soon as possible).

Air quality data calculation tables are provided in Appendix D. To calculate construction emissions for the proposed project, the construction schedule was considered to include site mobilization and demobilization, grading, paving, exterior and interior construction, and the associated equipment necessary to perform these tasks. Conservatively, all construction activities were assumed to occur during the same calendar year. Table 1 presents emission estimates for the year during which construction would occur. The ***de minimis*** values from 40 CFR 93.153(b)(1) and (2) also are shown in Table 1. Emissions from construction equipment, construction materials delivery, and construction employee commuting have been considered using EPA and other emission factors and methods. Greenhouse gas (GHG) emissions anticipated from construction also have been estimated by using the corresponding GWP factors.

Table 1. Estimated Construction Emissions Associated with the Proposed Action

Description	Emissions (tons/yr)					
	Nitrogen Oxide (NO_x)	Volatile Organic Compounds (VOC)	Carbon Monoxide (CO)	Sulfur Dioxide (SO_2)	Particulate Matter 2.5 Microns or Less ($PM_{2.5}$)	Carbon Dioxide Equivalent (CO_2eq)
Total Emissions	7.18	6.10	8.51	0.01	1.74	54.46
De Minimis Thresholds[1]	100	50	100	100	100	--

[1] 40 CFR 93.153(b)(1) and (2) for moderate ozone nonattainment inside ozone transport region and maintenance for CO.

Operation

Operations emissions would include emissions from firing ordnance within the range, increases in traffic due to the addition of the firing range, and heating and cooling the facility. The types and quantities of ordnance annually fired at the range are assumed to be identical to those fired during calendar year 2012 in the installation's existing range. Potential emissions from firing ordnance are based on firing as many rounds per year as during 2012 and using EPA emission factors.

Over 8,100 personnel are trained per year at the installation's existing firing range and the new firing range would serve a similar number of personnel. Traffic emissions reported herein are based on training 8,100 personnel per year and using EPA and other emission factors and methods.

Most of the firing range would be unconditioned space and would not have an associated heating or cooling system. However, the pre-range area would be equipped with a split-system electric heat pump and an electric hot water heater. A split-system electric heat pump and an electric hot water heater would also be installed in the addition to Building 2495. The heat pumps would use non-ozone-depleting compounds or exempt hydrofluorocarbons as a refrigerant. There would be no air emissions associated with the operation of this equipment.

The estimated annual operations emissions for the proposed action are listed in Table 2 and data calculation tables are provided in Appendix D. *De minimis* thresholds also are shown in Table 2.

Table 2. Estimated Operating Emissions Associated with the Proposed Action

Description	Emissions (tons/yr)					
	Nitrogen Oxide (NO_x)	Volatile Organic Compounds (VOC)	Carbon Monoxide (CO)	Sulfur Dioxide (SO_2)	Particulate Matter 2.5 Microns or Less ($PM_{2.5}$)	Carbon Dioxide Equivalent (CO_2eq)
Total Emissions	1.84	2.71	20.89	7.23E-06	0.26	0.25
De Minimis Thresholds[1]	100	50	100	100	100	--

[1] 40 CFR 93.153(b)(1) and (2) for moderate ozone nonattainment inside ozone transport region and maintenance for CO.

Finally, with regard to the potential for multiple projects at JBA collectively exceeding significant emission limits for NOx or VOC and the review of the proposed action under the General Conformity Rule, the following information is presented. In accordance with 40 CFR 93, general conformity analyses are performed in response to a federal action that may adversely affect the air quality in an area that is classified as being in nonattainment or maintenance for a criteria pollutant. JBA believes that the construction of the 21 Point Enclosed Firing Range constitutes a separate and independent federal action from previous projects at JBA which have been reviewed by the Air & Radiation Management Administration. Therefore, the emissions from previous JBA projects should not be combined with the emissions from this project for the purposes of conducting a general conformity analysis.

Conclusion

The proposed action would not be expected to have any significant impact on air quality in Washington Metropolitan Area AQCR. Air emissions from construction would be temporary and below *de minimis* thresholds. A General Permit to Construct and a State Operating Permit from the MDE will not be required for the facility. Operating emissions would include emissions from firing ordnance and vehicular traffic, and would be below *de minimis* thresholds. As presented in Table 3, annual emissions (from either construction activities or operating activities) would be less than 0.1 percent of the county's current criteria pollutant emissions for any one of the nonattainment pollutants.

Table 3. Comparison of Proposed Action Emissions to Prince George's County, Maryland Emissions

Description	Emissions (tons/yr)				
	Nitrogen Oxide (NO_x)	Volatile Organic Compounds (VOC)	Carbon Monoxide (CO)	Sulfur Dioxide (SO_2)	Particulate Matter 2.5 Microns or Less ($PM_{2.5}$)
Prince George's County[1]	25,428	26,064	109,003	43,432	2,365
Proposed Action[2]	7.18	6.10	20.89	0.01	1.74
Proposed Emissions Percentage of Current Emissions	0.03%	0.02%	0.02%	0.00%	0.07%

[1] Emissions estimates for Prince George's County, Maryland are for calendar year 2008 and were obtained from EPA's NEI database.

[2] Highest project emissions are the higher of the annual emissions from construction activities or operating activities.

Currently, the JBA area is designated as *nonattainment* for eight-hour ozone (moderate) and for annual $PM_{2.5}$. The area also is designated as a *maintenance area* for carbon monoxide. Therefore, a Record of Non-Applicability for the General Conformity Rule has been prepared and is provided in Appendix D. Total emissions from the implementation of the proposed action would not impact ozone, $PM_{2.5}$, or carbon monoxide concentrations in the area.

Alternative B

Impacts associated with this alternative would be the same as those described for Alternative A.

Alternative C
Impacts associated with this alternative would be similar as those described for Alternative A.

3.16.2.2 No Action Alternative
No impacts on air quality would result from implementing the No Action Alternative.

3.17 Utilities

3.17.1 Affected Environment

Utilities on JBA generally encompass the following infrastructure systems: water, sanitary sewer, storm drainage, electrical, heating and cooling, natural gas, liquid fuels, communications, roadway and airfield pavements, and lighting. Activities associated with infrastructure modifications, repairs, new construction, and work around existing infrastructure requires a civil engineering work order or construction siting process. In accordance with AFI-32-1021 (USAF 2010), construction projects are restricted from being sited on ERP sites. However, if an ERP site is the only practical location for a proposed construction project, the installation must request a waiver to construct. A waiver is required for all proposed construction on an ERP site.

The water system at JBA must provide adequate supply and distribution to meet existing and future demands. The sanitary sewer system at JBA must provide adequate collection and treatment facilities to improve the quality of wastewater. The water and wastewater systems at JBA have adequate capacity to include the demands that would be imposed by a new/expanded firing range. The water and sanitary sewer systems at JBA were privatized in February, 2006. They are now owned and operated by Terrapin Utility Services, Inc. under a 50-year contract. Terrapin purchases water to serve the base from the WSSC.

The electrical system must provide adequate supply and distribution at JBA. The system is considered adequate if it meets the electrical energy needs of existing and future facilities. The Potomac Electric Power Company provides electrical power to JBA. Two 69 kilovolt electrical feeders from off base tie directly into the main substation (Building No. 1870). From this substation, a total of 20 primary feeder circuits distribute electricity to the rest of the base. At present, 750 amp commercial electrical service is available at Building No. 2495 with 470 amps in use.

The communications system must provide adequate supply and effective distribution of communications capabilities at JBA. The system is considered adequate if it meets the various communications system needs of existing and future facilities at the installation. The command, control, communications, and computers system on base is a combination of several networks operating on an overlapping base-wide infrastructure. In addition, the communications and telephone switching systems on base have extra capacity and can accommodate additional demand.

3.17.2 Environmental Consequences

3.17.2.1 Proposed Action
Principal utilities on JBA include the following infrastructure systems: water, sanitary sewer, storm drainage, electrical, and communications. A long-term minor adverse impact on each utility system would be expected from implementing the proposed action because of an overall increased demand on each system. The net addition to the base would be approximately 28,000 square feet of built space for the new live-fire range under all three action alternatives and approximately 15,400 and 17,000 square feet of built space for the new parking area, respectively, under Action Alternatives A and B. The water and wastewater systems at JBA have adequate capacity to include the demands that would be imposed by a new/expanded firing range. The electrical system at JBA is considered adequate to meet the electrical energy needs of existing and future facilities. The communications and telephone switching systems on the base have extra capacity and can accommodate additional

demand. Finally, the new live-fire range (building) would be constructed to meet LEED Silver standards of the U.S. Green Building Council, which would ensure that the new facility would be water and energy efficient.

3.17.2.2 No Action Alternative

No impacts on utility systems would result from implementing the No Action Alternative. Utility system demand and usage would remain unchanged from existing conditions.

3.18 Cumulative Impacts

Cumulative effects on environmental resources result from the incremental effects of an action when combined with other past, present, and reasonably foreseeable future projects in the region of influence. Cumulative effects can result from individually minor but collectively substantial, actions taken over a period of time. In accordance with NEPA, a discussion of cumulative effects that could result from projects that are proposed or anticipated in the foreseeable future is required.

As an active military installation, JBA and its tenant organizations undergo changes in mission and training requirements in response to defense policies, current threats, and tactical and technological advances. Therefore, new construction, facility improvements, infrastructure upgrades, and ongoing maintenance and repairs are required on a continual basis. Known actions proposed over the next several years at JBA are shown in Table 4 below. Although some known construction and upgrades are a part of the analysis contained in this section, some future requirements cannot be predicted. As those requirements surface, future NEPA analysis would be conducted, as necessary. Reasonably foreseeable future projects occurring concurrently elsewhere at JBA include, but are not limited to, projects identified in Table 4. All of the projects listed in this table will have short-term impacts during construction, and most will have beneficial long-term effects following construction. Figure 7, which depicts the locations of upcoming/proposed projects at JBA, is also included in this EA. This figure is accompanied by a legend (Figure 7a), which lists each project under JBA's "future development plans" as presented in the *General Plan Update* (100% Submission) January 2010 report. A summary of the anticipated cumulative impacts relative to the proposed action are presented below.

3.18.1 Biological Resources

Implementation of the majority of projects listed in Table 4 would result in minor adverse impacts on wildlife and vegetation from land clearing and conversion. Some of these projects will also have long-term adverse wetlands impacts. Adherence to wetlands permitting and mitigation regulations, as well as JBA's Arbor Plan, will off-set some of the adverse impacts. Future actions for projects listed in Table 4 will require consultation with the FWS and the MDNR for any potential impacts to listed species. In general, cumulative impacts to biological resources at the base are expected to be relatively minor as a result of implementation of these actions.

3.18.2 Water Resources

Sediment runoff from individual construction sites listed in Table 4 would be controlled through the use of BMPs according to MDE-approved erosion and sediment control plans. Although some sediment from project sites might reach surface waters, water quality would not be measurably affected by pollutant inputs from construction activities. Cumulative impacts on water resources are expected to be minor.

3.18.3 Environmental Restoration Program

Although the proposed action would be located immediately adjacent to an ERP site, the proposed action is not expected to disturb LF-05 or result in the creation of any new contaminated sites. Furthermore, the proposed action is not expected to conflict with the on-going maintenance activities associated with the closure plan for the LF-05 ERP site. The other proposed projects on the base

have to be designed and constructed in accordance with constraints imposed by the JBA ERP. Therefore, cumulative impacts to the ERP program are not anticipated.

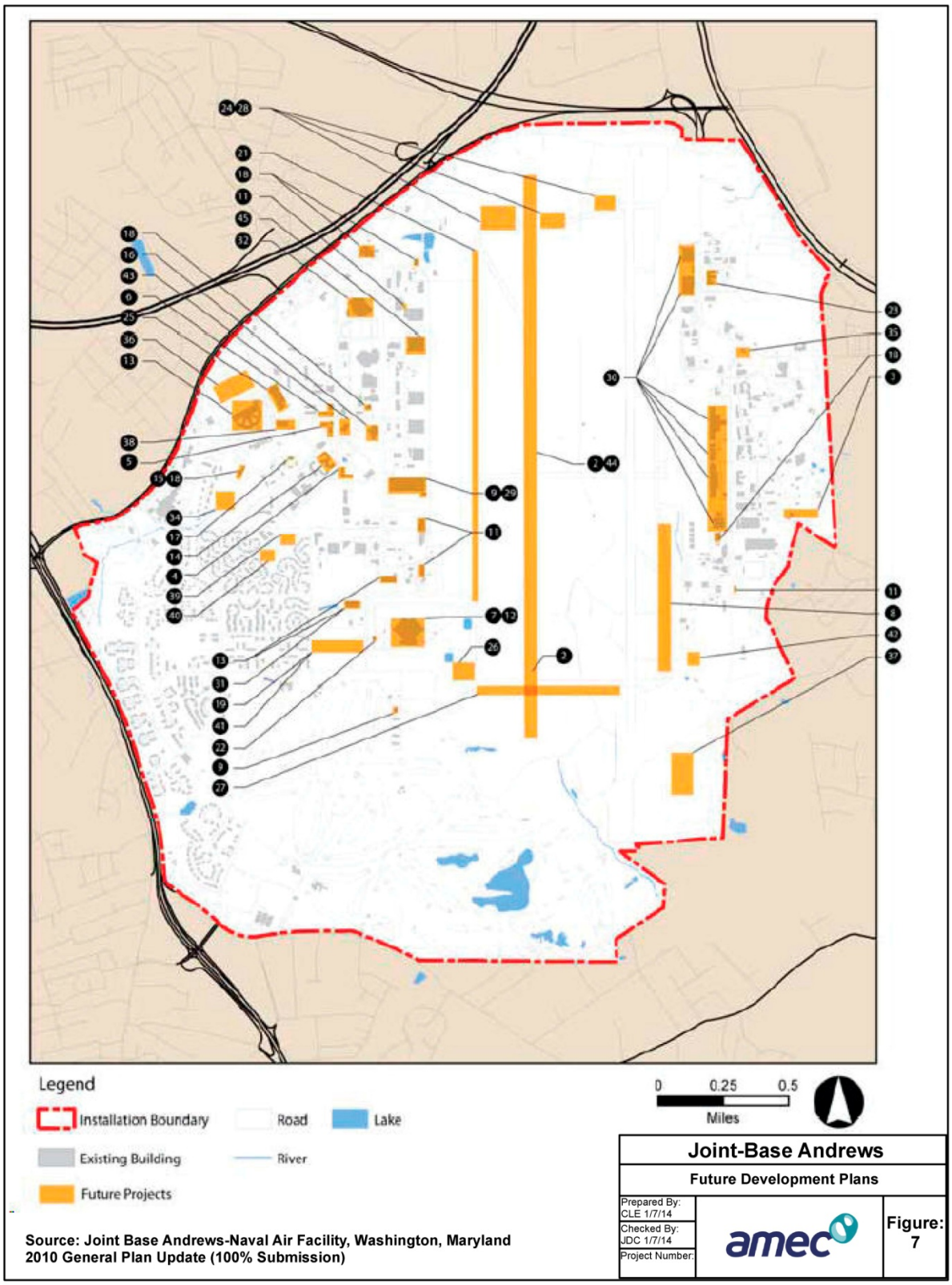
3.18.4 Safety

Although no adverse cumulative impacts on the safety of personnel at JBA, visitors to JBA, or the public in general would be expected from implementing the proposed action and the projects listed in Table 4, construction, renovation, and/or demolition activities would present some inherent risk for worker safety. To prevent such impacts, hired contractors would be required to establish and maintain safety programs. All contractors performing work site activities at JBA would be responsible for complying with U.S. Air Force safety rules as well as OSHA regulations. Contractors would be required to conduct site activities in a manner that would not pose any undue risk to workers or personnel. In summary, site activities associated with future construction, renovation, and/or demolition projects at JBA are not unique and are not anticipated to pose an unacceptable or unnecessary safety risk to JBA personnel, visitors to JBA, or the public. Adverse cumulative impacts associated with implementation of the proposed action and other proposed JBA projects are not expected.

Table 4. Summary of Proposed and Upcoming Projects at JBA

Project Name/Description	Anticipated Fiscal Year						
	2013	2014	2015	2016	2017	2018	2019
21 Point Enclosed Firing Range			-	-	-	-	
Other Projects							
Replace Child Development Center #1			-	-	-	-	
Replace West Fitness Center						-	-
Construct Helicopter Operations Facility							
Construct Security Forces Group Complex			-	-	-	-	
Upgrade Main, Pearl Harbor, VA gates		-					
Munitions Storage Area	-						
Replace Building 1988	-						
IDEA facility demolitions	-						
Facility demolition (ongoing)		-	-	-	-	-	-
Building 1845 parking lot addition	-						
Regrade shoulder on Taxiway W-1			-				
Repair West Apron			-				
ASA Phase II						-	
Construct addition to Building 1900						-	
Construct Consolidated Aircraft Supply Center						-	
Construct new BCE Complex – 11th Wing						-	
Replace USAPAT facility					-		
Taxiway Charlie Reconstruction			-	-		-	
Taxiway November Reconstruction			-	-		-	
Taxiway Sierra Reconstruction		-					
Taxiway Whiskey Reconstruction and Ext.			-	-	-	-	
Replace Pads 12, 13					-	-	
Replace airfield stormwater infrastructure			-	-	-	-	

Source: Personal Communication from Anne Hodges, 11 CES/CEAO



Source: Joint Base Andrews-Naval Air Facility, Washington, Maryland 2010 General Plan Update (100% Submission)

Map Key	Project Title
1	AFCESA Fees
2	Repair West Runway/Repair Existing Lights on Runway 1L/19R
3	Construct New Asphalt to Improve Dower House Road & Pearl Harbor Drive
4	Repair and Upgrade Dormitory Infrastructure Systems In Bldg 1624
5	Repair and Upgrade Dormitory Infrastructure Systems In Bldg 1631
6	Repair and Upgrade Dormitory Infrastructure Systems In Bldg 1657
7	Maintain/Recoat Hangar 19 Floor and Building 5016
8	Repair Taxiway Edge Lights E-E1-E2-E3-E4-E5-E6-E7-N-S-C-W1-W4/S
9	Repair/Replace Generators At BLDGS 1280/1281/4972
10	Replace HVAC Fan Coil Units at Davidsonville Communications Site Bldg 1
11	Repair/Replace Generators at Bldgs 1245/1287/1918/3014
12	(SAB) Construct Modular Office on Hangar 19 Floor Bldg 5016
13	Repair/Replace Generators at Bldgs 1288/1535/4016/5026
14	Repair/Correct American Disabilities Act Deficiencies at Bldg 1602
15	(SAB) Convert Area to Recreation Spray-N-Play Area 1354/1356
16	Construct Additional Parking Area near Sq Ops Bldg 1658
17	Construct Additional Parking Near Hangar 19 Bldgs 5016/5023
18	Construct/Install Fire Alarm Systems in Bldgs 1358/1668/1889/1937/3109
19	Establish PI-1 Clear Zone/Relocate RV/Storage Lot
20	Repair Airfield Signage
21	Re-grade Shoulder along Taxiway W-1 to Taxiway W-2
22	Replace Vehicle Gate System Near Bldg 5015
23	Replace 580 Windows And 31 Doors To 459th HQ Bldg 3755
24	Repair West Apron Phase 6b
25	Replace HVAC in Main Communications Bldg 1558
26	Repair Compass Rose
27	Repair West Apron Phase 7
28	Repair Deteriorated Concrete on Pads 12/13/14
29	Repair/Correct Interior Deluge System in Hangar 7 Bldg 1280
30	Repair/Replace Deluge Water Piping from North Hangar 10 to South Hangar 16
31	Replace Entire Roof To Horizontal Shop Bldg 5026
32	Repair/Replace Damaged Atrium Base BX Bldg1811
33	Repair Colonnade/Plaza Area-Phase I
34	AFDW/316 WG Headquarters
35	Consolidated Library/Education Center
36	Physical Fitness Center
37	BCE Complex
38	ASA Phase II
39	Consolidated Security Forces Facilities
40	Runway 01L De-Icing System

Joint-Base Andrews

Legend of Future Development Plans at JBA

Prepared By: CLE 1/7/14
Checked By: JDC 1/7/14
Project Number:

amec

Figure: 7a

Source: Joint Base Andrews-Naval Air Facility, Washington, Maryland 2010 General Plan Update (100% Submission)

3.18.5 Summary of Cumulative Impacts

When the proposed action is considered in conjunction with past, present, or reasonably foreseeable actions, no significant cumulative impacts would be expected on any resource area.

3.19 Impacts Summary and Comparison of the Environmental Effects of the Alternatives

All three alternatives of the proposed action would irreversibly and irretrievably commit fossil fuels, human resources, non-renewable construction materials, and costs required to complete the proposed scope of work. The No Action Alternative would not commit any additional resources.

There are no significant unavoidable impacts associated with the proposed action or No Action Alternative.

The environmental consequences associated with the alternatives considered are summarized in Table 5. In Table 5, short term environmental consequences would encompass any adverse or beneficial impacts that occur for the duration of the construction period, while long term environmental consequences would include impacts that persist for many years following construction.

Table 5. Comparison of Environmental Consequences

Environmental Resource	Alternative A (Preferred Alternative)		Alternative B		Alternative C		No Action Alternative	
	Short Term	Long Term	Short Term	Long Term	Short Term	Long Term	Short Term	Long Term
Land Use	No impact	No impact	No impact	No impact	No impact	No impact	No impact	No impact
Hazardous Materials and Waste	Minor adverse	No impact	Minor adverse	No impact	Minor adverse	No impact	No impact	No impact
Cultural Resources	No impact	No impact	No impact	No impact	No impact	No impact	No impact	No impact
Vegetation	Minor adverse	No impact	Minor adverse	No impact	Minor adverse	No impact	No impact	No impact
Wildlife	Minor adverse	Minor adverse	Minor adverse	Minor adverse	Minor adverse	Minor adverse	No impact	No impact
Sensitive Species	No impact	No impact	No impact	No impact	No impact	No impact	No impact	No impact
Wetlands	No impact	No impact	Minor adverse	Minor adverse	No impact	No impact	No impact	No impact
Surface Waters	Minor adverse	Minor adverse	Minor adverse	Minor adverse	Minor adverse	Minor adverse	No impact	No impact
Groundwater	No impact	No impact	Minor adverse	Minor adverse	No impact	No impact	No impact	No impact
Floodplains	No impact	No impact	No impact	No impact	No impact	No impact	No impact	No impact
Environmental Restoration Program	No impact	No impact	No impact	Minor beneficial	No impact	No impact	No impact	No impact
Topography	Minor adverse	Minor adverse	Minor adverse	Minor adverse	Minor adverse	Minor adverse	No impact	No impact
Occupational Safety and Health	No impact	No impact	No impact	No impact	No impact	No impact	No impact	No impact
Climate	No impact	No impact	No impact	No impact	No impact	No impact	No impact	No impact
Air Quality	Minor adverse	No impact	Minor adverse	No impact	Minor adverse	No impact	No impact	No impact
Utilities	Minor adverse	Minor adverse	Minor adverse	Minor adverse	Minor adverse	Minor adverse	No impact	No impact
Cumulative Impacts	Minor		Minor		Minor		None	

4.0 Public and Agency Involvement

A project kick-off meeting was held at JBA on October 24, 2012. U.S. Air Force staff and contractors in attendance discussed the range of alternatives that they thought were reasonable choices to carry forward for further analysis, and identified some alternatives as infeasible. Issues that would need to be considered in the environmental impact analysis process were identified along with personnel that would be able to provide the baseline data to be used in the analysis. Military personnel and JBA contractors present at the kick-off meeting included:

- Anne Hodges, 11 CES/CEAO
- Clive Gregory, 11 SSPTF/S4F
- Michelle Quinn, 11 CES/CEAN
- Larry Pearl, 11 SSPTF/S4C
- Mac Petrowski, 11 SSPTF/S4C
- Angela Montgomery, AFDW/A7S
- Roy Woodson, 11 CES/CEPM
- Aaron Sprouse, 11 CES/CEAN
- Sandra Ring, 11 CES/CEAO
- David Connolly, 11 CES/CEANR
- Michael Rooney, 11 CES/CEANR
- Christian Apsey, 777 AMDS/SGPB
- Rebecca Rassweiler-Richter, 777 AMDS/SGPB
- David Humphreys, 11 CES/CEAO
- Jason Landry, 11 SSPTF/S4C

The following people provided additional information that was used in the preparation of this EA:

- Todd Braun, 11 CES/CEAN
- Jugal Batra, Naval Facilities Engineering Command Wash.
- David Sumner, AFDW/A7CN
- Donna Jackson, Real Property Officer, JBA
- Lisa Carter, 11 WG/SEG
- Alan Law, 11 WG/SEW
- Kirk Kessler, 11 CES/CEPM
- Angela Montgomery, AFDW/A7S
- John Bixby, AFDW/A7SO
- Kolan Campbell, 11 CES/CEOFE
- Tech Sgt Parker, 11 SSPTF/S4C
- Tech Sgt Prince, 11 SSPTF/S4C
- Senior Airman Cline, 11 SSPTF/S4C

4.1 Agency Scoping

Agency scoping letters were sent on November 14, 2012 to federal, state, and local agencies known to have an interest in planning and development activities at JBA. The distribution list included:

Mrs. Linda C. Janey, JD
Director, Maryland State Clearinghouse
Maryland Office of Planning, Room 1104
301 West Preston Street
Baltimore, MD 21201-2365
ljaney@mdp.state.md.us

Ms. Genevieve Larouche
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Chesapeake Bay Field Office
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Ms. Fern Piret
Planning Director
Maryland-National Capital Park and Planning Commission
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National Capital Planning Commission
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The Maryland State Clearinghouse circulated the agency scoping letter to additional state agencies, some of whom provided written scoping comments. Responses received during the agency scoping period are included in Appendix B.

4.2 Public and Agency Comment

Appendix E includes the responses to comments received from state and local agencies as well as the EPA.

5.0 List of Preparers

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Production
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Cody Simpson – Graphics
Constance Harbin – Document Production
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Robert Hardy – Document Production

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6.0 References

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Appendix A
Coastal Zone Consistency Determination

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Consistency with Maryland Coastal Program Enforceable Coastal Policies

Joint Base Andrews (JBA) is within Maryland's designated coastal zone, and as such is regulated under the federal Coastal Zone Management Act and Maryland's federally-approved Coastal Zone Management Program.

The proposed "21-Point Enclosed Firing Range" project (proposed action) described in the Environmental Assessment (EA) would be fully consistent with Maryland's Enforceable Coastal Policies. No effects on Maryland's coastal resources would be expected from implementing the proposed action in the EA. All activities would be conducted in accordance with applicable laws, regulations, and policies governing erosion and sediment control and stormwater management, which would ensure that all the projects would occur in a manner consistent with the applicable Maryland Coastal Program enforceable policies. A synopsis of how the project would be consistent with the enforceable coastal policies is provided below.

Maryland's Enforceable Coastal Policies are divided into three general sections: General Policies, Coastal Resources, and Coastal Uses. The General Policies are further divided into Core Policies, Water Quality, and Flood Hazards. Compliance of the proposed action in the EA with each of the applicable enforceable policies is discussed below. Policies not applicable to the proposed action are noted.

GENERAL POLICIES

Core Policies

Policy: It is State policy to maintain that degree of purity of air resources which will protect the health, general welfare, and property of the people of the State. MDE (C9) Md. Code Ann., Envir. §§ 2-102 to - 103.

As noted in Section 3.16 of the EA, the U.S. Air Force and any contractors would comply with all applicable air pollution control regulations when implementing the proposed action in the EA. If boilers or other equipment capable of producing emissions are installed as a result of the proposed action, JBA would obtain a permit to construct from the Maryland Department of Environment (MDE) Air and Radiation Management Administration for the equipment.

Policy: The environment shall be free from noise which may jeopardize health, general welfare, or property, or which degrades the quality of life. MDE (C9) COMAR 26.02.03.02.

Section 3.1.1 of the EA provides a detailed discussion of the noise environment and expected noise-related impacts associated with the proposed action in the EA. Construction noise associated with the project would cease upon completion of construction and no significant new sources of environmental noise would be introduced.

Policy: Soil erosion shall be prevented to preserve natural resources and wildlife; control floods; prevent impairment of dams and reservoirs; maintain the navigability of rivers and harbors; protect the tax base, the public lands, and the health, safety and general welfare of the people of the State, and to enhance their living environment. MDA (C4) Md. Code Ann., Agric. § 8- 102(d).

JBA will control pre- and post-construction stormwater runoff, including erosion, sedimentation, and nonpoint source pollution, throughout the duration of the project. JBA will comply with the requirements described in the MDE document *Maryland Stormwater Management Guidelines for State and Federal Projects* and the Maryland *Stormwater Management Act of 2007* .JBA will implement environmental site design to the maximum extent practicable through the use of nonstructural Best Management Practices and other site design techniques.

Policy: Controlled hazardous substances may not be stored, treated, dumped, discharged, abandoned, or otherwise disposed anywhere other than a permitted controlled hazardous substance facility or a facility that provides an equivalent level of environmental protection. MDE (D4) Md. Code Ann., Envir. § 7-265(a).

All contractors involved with implementing the proposed action would be required to comply with JBA's Environmental Protection Standards for contracts, which includes managing, storing, transporting, and disposing of HAZMAT and wastes and taking all necessary precautions to prevent spills of HAZMAT (including oils and hazardous wastes) in accordance with all applicable federal, state, and local laws and regulations.

Water Quality Policies

Policy: No one may add, introduce, leak, spill, or emit any liquid, gaseous, solid, or other substance that will pollute any waters of the State without State authorization. MDE (A5) Md. Code Ann., Envir. §§ 4-402, 9-101, 9-322.

The EA discusses compliance with laws, regulations, and policies related to the use, storage, and disposal of hazardous wastes and materials in Section 3.3. All contractors involved with implementing the proposed action would be required to use HAZMAT; manage, store, transport, and dispose of hazardous wastes; and take all necessary precautions to prevent spills of HAZMAT (including oils and hazardous wastes) in accordance with all applicable JBA environmental standards and federal, state, and local laws and regulations. This would include any asbestos-containing materials and lead-based paint removed from facilities to be demolished and contaminated soil encountered where underground storage tanks and above ground storage tanks are removed or near Environmental Restoration Program sites.

Policy: All waters of the State shall be protected for water contact recreation, fish, and other aquatic life and wildlife. Shellfish harvesting and recreational trout waters and waters worthy of protection because of their unspoiled character shall receive additional protection. MDE (A1) COMAR 26.08.02.02.

JBA would protect the water quality of state waters by implementing erosion and sediment control measures on all construction sites and control pre- and post-construction stormwater runoff, including erosion, sedimentation, and nonpoint source pollution in accordance with the MDE document *Maryland Stormwater Management Guidelines for State and Federal Projects* and the Maryland *Stormwater Management Act of 2007*.

Additionally, all contractors would be required to manage, store, transport, and dispose of HAZMAT and wastes properly.

Policy: Any development or redevelopment of land for residential, commercial, industrial, or institutional purposes shall use small-scale non-structural stormwater management practices and site planning that mimics natural hydrologic conditions, to the maximum extent practicable. Development or redevelopment will be consistent with this policy when channel stability and 100 percent of the average annual predevelopment groundwater recharge are maintained, nonpoint source pollution is minimized, and structural stormwater management practices are used only if determined to be absolutely necessary. MDE (C9) Md. Code Ann., Envir. § 4-203; COMAR 26.17.02.01, .06.

JBA will incorporate Sustainable Design and Development and energy conservation principles into facility designs, and all construction will be designed to incorporate low-impact development practices in accordance with Executive Order (EO) 13423 (Strengthening Federal Environmental, Energy, and Transportation Management), EO 13514 (Federal Leadership in Environmental,

Energy, and Economic Performance), the Energy Policy Act of 2005, the Energy Independence and Security Act of 2007, Army Sustainable Design and Development Policy, other applicable codes, laws and EOs. The facility also would be constructed to achieve a minimum Silver rating by the U.S. Green Building Council under the Leadership in Energy and Environmental Design rating system.

Flood Hazards Policies

None of the Flood Hazards Policies are applicable to the proposed action in the EA. The proposed action would not occur in a floodplain.

COASTAL RESOURCES POLICIES

The Chesapeake and Atlantic Coastal Bays Critical Area

None of the Chesapeake and Atlantic Coastal Bays Critical Area Policies are applicable to the proposed action in the EA. The proposed action would not occur in a Chesapeake and Atlantic Coastal Bays Critical Area.

Tidal Wetlands

None of the Tidal Wetlands Policies are applicable to the proposed action in the EA. The proposed action would not occur in a tidal wetland.

Non-Tidal Wetlands

Policy: Removal, excavation, grading, dredging, dumping, or discharging of, or filling a non□tidal wetland with materials of any kind, including the driving of piles and placing of obstructions; changing existing drainage characteristics, sedimentation patterns, flow patterns, or flood retention characteristics; disturbing the water level or water table; or removing or destroying plant life that would alter the character of a non-tidal wetland is prohibited unless:

The proposed project has no practicable alternative; Adverse impacts are first avoided and then minimized based on consideration of existing topography, vegetation, fish and wildlife resources, and hydrological conditions; Comprehensive watershed management plans are considered; and the proposed project does not cause or contribute to an individual or cumulative effect that degrades:

- *Aquatic ecosystem diversity, productivity, and stability,*
- *Plankton, fish, shellfish, and wildlife,*
- *Recreational and economic values, and*
- *Public welfare;*
- *Surface water quality; or*
- *Ground water quality.*

Mitigation measures are required to replace the ecological values associated with non□tidal wetlands that are impaired by activities described above. MDE (C3) COMAR 26.23.01.01; COMAR 26.23.02.04, .06; COMAR 26.23.04.02.

Construction of the new firing range facility may require fill in a forested non-tidal wetland and its buffer, located north of the existing parking area (north of the existing firing range). The EA discusses compliance with laws, regulations, and policies related to wetlands in Section 3.8. JBA would comply with regulations concerning wetlands including Section 404 and Section 401 of the Clean Water Act. JBA will avoid impacts to the extent feasible. If impacts cannot be avoided, JBA will reduce impacts to the extent feasible. If required, JBA will mitigate for wetland impacts.

Forests

Policy: The Forest Conservation Act and its implementing regulations, as approved by NOAA, are enforceable policies. Generally, before developing an area greater than 40,000 square feet, forested

and environmentally sensitive areas must be identified and preserved whenever possible. If these areas cannot be preserved, reforestation or other mitigation is required to replace the values associated with them. This policy does not apply in the Critical Area. DNR (C5) Md. Code Ann., Nat. Res. §§ 5-1601 to -1613; COMAR 08.19.01-.06.

Policy: Forestry activities shall provide for adequate restocking, after cutting, of trees of desirable species and condition; provide for reserving, for growth and subsequent cutting, a sufficient growing stock of thrifty trees of desirable species to keep the land reasonably productive; and prevent clear-cutting, or limit the size of a tract to be clear-cut in areas where clear-cutting will seriously interfere with protection of a watershed. DNR (C5) Md. Code Ann., Nat. Res. § 5-606.

The Maryland Forest Conservation Act (Natural Resources Article, Section 5, 1601-1612) and the Annotated Code of Maryland (COMAR) (Title 08 Subtitle 19) does not apply to JBA due to the Federal Government's sovereign immunity from state regulation granted by the Supremacy Clause and a lack of any Federal statute enacted by Congress clearly and unambiguously authorizing Maryland to regulate JBA under the Forest Conservation Act. However, during the course of project design, project planners shall identify suitable species and locations for planting trees to replace those lost by construction of the proposed 21 Point Enclosed Firing Range. The trees shall be replaced in accordance with the requirements in the JBA 2011 Arbor Plan. This information will be included in the legally binding project submittals to the U.S. Air Force.

Historical and Archaeological Sites

The Historical and Archaeological Sites Policy is not applicable to the proposed action. The proposed action does not involve a submerged archaeological historic property, a cave feature or archeological site under state control, or a burial site or cemetery.

Living Aquatic Resources

The Living Aquatic Resources Policies are not applicable to the proposed action in the EA. The proposed action would not affect aquatic resources.

COASTAL USES

The Coastal Uses Policies listed below are not applicable to the proposed action.

Mineral Extraction: The proposed action does not involve mineral extraction.

Electrical Generation and Transmission: The proposed action does not involve power plant construction, electrical transmission lines, or cooling water intake structures.

Tidal Shore Erosion Control: No tidal shores occur within the footprint of the proposed action.

Oil and Natural Gas Facilities: The proposed action does not involve vessels transporting oil or above-ground oil storage sites.

Dredging and Disposal of Dredged Material: The proposed action does not involve dredging or the disposal of dredged material.

Navigation: The proposed action does not involve navigation or navigation-related facilities.

Transportation: The proposed action does not involve transportation development or improvement projects.

Agriculture The proposed action is not agriculture related.

Sewage Treatment: The proposed action does not involve the discharge of sewage effluent, a sewage treatment facility, or an on-site sewage disposal system.

Development

Some development policies are applicable to the proposed action:

Policy: Any development shall be designed to minimize erosion and keep sediment onsite. MDE (C4) COMAR 26.17.01.08.

Policy: Development must avoid and then minimize the alteration or impairment of tidal and non-tidal wetlands; minimize damage to water quality and natural habitats; minimize the cutting or clearing of trees and other woody plants; and preserve sites and structures of historical, archeological, and architectural significance and their appurtenances and environmental settings. MDE/DNR/CAC (D6) Md. Code Ann., Envir. §§ 4-402, 5-907(a), 16-102(b); Md. Code Ann., Nat. Res. §§ 5-1606(c), 8-1801(a); Md. Code Ann., Art. 66B § 8.01(b); COMAR 26.24.01.01(A).

JBA would protect the water quality of state waters by implementing erosion and sediment control measures on all construction sites and control pre- and post-construction stormwater runoff, including erosion, sedimentation, and nonpoint source pollution in accordance with the MDE document *Stormwater Management Guidelines for State and Federal Projects* and the Maryland *Stormwater Management Act of 2007*. JBA will also incorporate Sustainable Design and Development and energy conservation principles into facility design and all construction will be designed to incorporate low-impact development practices to protect water quality and natural habitats and minimize the cutting or clearing of trees and other woody plants.

Policy: Any proposed development may only be located where the water supply system, sewerage system, or solid waste acceptance facility is adequate to serve the proposed construction, taking into account all existing and approved developments in the service area and any water supply system, sewerage system, or solid waste acceptance facility described in the application and will not overload any present facility for conveying, pumping, storing, or treating water, sewage, or solid waste. MDE (C9) Md. Code Ann., Envir. §9-512.

Policy: A proposed construction project must have an allocation of water and wastewater from the county whose facilities would be affected or, in the alternative, prove access to an acceptable well and on-site sewage disposal system. The water supply system, sewerage system, and solid waste acceptance facility on which the building or development would rely must be capable of handling the needs of the proposed project in addition to those of existing and approved developments. MDE (D6) Md. Code Ann., Envir. § 9-512.

Policy: To meet the needs of existing and future development, communities must identify adequate drinking water and water resources and suitable receiving waters and land areas for stormwater management and wastewater treatment and disposal. MDE (D6) Md. Code Ann., Art. 66B § 3.05.

All areas of JBA are served by adequate utility systems.

Other development policies are not applicable to the proposed action. The proposed action does not involve:

- A residence or commercial establishment that is served or will be served by an on-site sewage disposal system or private water system.
- Grading or building in the Severn River Watershed.
- Establishment of an industrial facility.

Because the development is on JBA the following development policies do not apply to the proposed action:

- Local citizens shall be active partners in planning and implementation of development. Maryland Department of Planning (MDP) (D6) Md. Code Ann., St. Fin. & Proc. §§ 5-7A-01 to -02.

- Development shall protect existing community character and be concentrated in existing population and business centers, growth areas adjacent to these centers, or strategically selected new centers. MDP (D6) Md. Code Ann., St. Fin. & Proc. §§ 5-7A-01 to -02.
- Development shall be located near available or planned transit options. MDP (D6) Md. Code Ann., St. Fin. & Proc. §§ 5-7A-01 to -02.
- Whenever possible, communities shall be designed to be compact, contain a mixture of land uses, and be walkable. MDP (D6) Md. Code Ann., St. Fin. & Proc. §§ 5-7A-01 to -02.

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Appendix B
Agency Correspondence

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DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 11TH WING (AFDW)
ANDREWS AIR FORCE BASE, MARYLAND 20762

14 November 2012

MEMORANDUM FOR: SEE DISTRIBUTION

FROM: 11 CES/CEA
3466 North Carolina Avenue
Joint Base Andrews, MD 20762-4803

SUBJECT: Description of Proposed Action and Site Map for the proposed 21 Point Enclosed Firing Range at Joint Base Andrews

1. Joint Base Andrews-Naval Air Facility Washington, MD (JBA) is preparing an Environmental Assessment (EA) for construction and operation of a new Indoor 21 Point Enclosed Firing Range, additional customer parking, and expansion of Building 2495 (Figure 1) to include laundry, showers, and additional office space. Pursuant to the National Environmental Policy Act (NEPA) of 1969 (42 United States Code [USC] 4321-4347), Council on Environmental Quality (CEQ) Regulations for Implementing the Procedural Provisions of NEPA (40 Code of Federal Regulations [CFR] Sections 1500-1508), and 32 CFR Part 989, et seq., JBA will prepare an EA that considers the potential consequences to human health and the natural environment. The EA will examine alternative layouts of these new facilities in the vicinity of the existing Combat Arms Training compound and will include analysis of the required no-action alternative.

2. In accordance with Executive Order 12372, Intergovernmental Review of Federal Programs, we invite your agency to comment on the Proposed Action described below and provide any relevant information about resources under your jurisdiction that may be present in the project area as indicated on the new site plan in the attachments.

3. The Proposed Action consists of construction of a totally enclosed firing range to support increased training requirements. The new building will be essentially the same size as the current firing range; the additional customer parking area will accommodate approximately 50 additional cars. If constructed, the new facilities will be built in accordance with applicable Executive Orders with the goal of being equivalent to US Green Building Council's Leadership in Energy and Environmental Design (LEED) Silver level. The project area is southeast of the airfield and is constrained by its proximity to the Environmental Restoration Program (ERP) site known as Leroy's Lane Landfill (LF-05). Proximity of jurisdictional wetlands near the current range (shown on Figure 2) will be considered in developing alternative layouts for the new facilities.

4. Under the No Action alternative, the new enclosed firing range would not be built and JBA would continue to have inadequate Combat Arms training facilities; there would be no change from existing conditions.

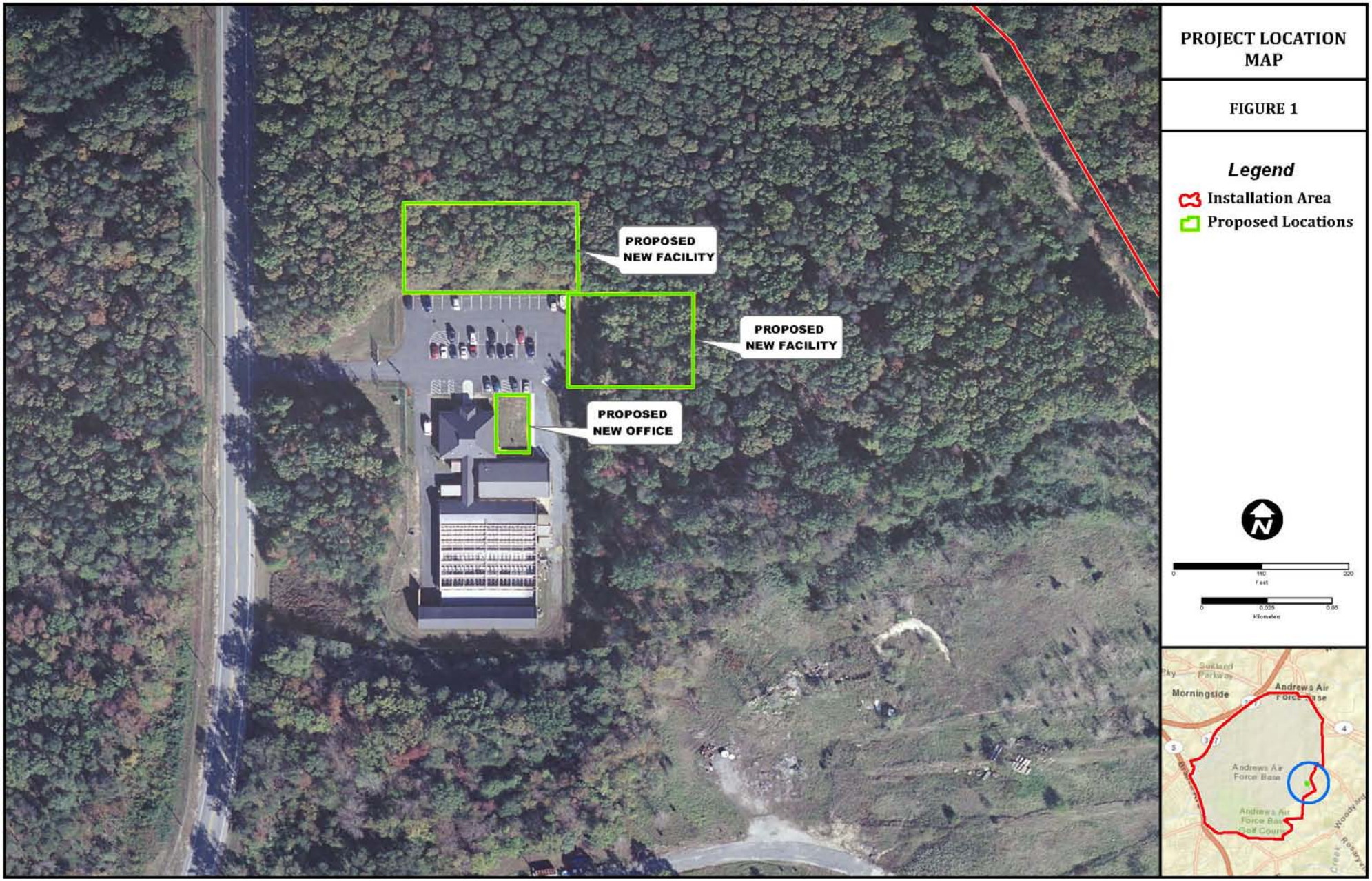
5. Enclosed is a copy of the distribution list for those federal, state, and local agencies to be contacted regarding this EA. If you think additional agencies should review and comment on this proposal, please feel free to include them in a re-distribution of this letter and the attached materials.

6. Your assistance in providing information for use in developing alternatives, describing the baseline conditions, and evaluating impacts is greatly appreciated. Please provide written comments within 15 days from the date of this letter via surface mail to Anne Hodges, 11 CES/CEAO, 3466 North Carolina Avenue, Joint Base Andrews, MD 20762 or via email to anne.hodges@afncr.af.mil.

7. If you have any questions or require additional information on the Proposed Action, please contact Ms. Anne Hodges at 301-981-1426. Your assistance in providing information is greatly appreciated.

STEVE RICHARDS
Chief of Environmental Management

Attachments:
Figure 1 – Combat Arms Training Facilities
Figure 2 – Project Vicinity with Critical Areas
Distribution List


PROPOSED NEW FACILITY
PROPOSED NEW FACILITY
PROPOSED NEW OFFICE
PROJECT LOCATION MAP
FIGURE 1
Legend
Installation Area
Proposed Locations
0
110
220
Feet
0
0.025
0.05
Kilometers
Morningside
Andrews Air Force Base
Andrews Air Force Base


Proximity To Wetlands
FIGURE 2
Legend
Installation Area
Streams
Wetlands (2010)
Wetlands (2012)
1 Mile Diameter
Current Facilities
Propsed Facilities
IRP Site LF-05
0
660
1,320
Feet
0
180
360
Meters

Distribution List

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November 15, 2012

Ms. Anne Hodges, Environmental Planner, Asset Optimization
Department of the Air Force
11 CES/CEAO
3466 North Carolina Avenue
Joint Base Andrews, MD 20762

STATE CLEARINGHOUSE REVIEW PROCESS

State Application Identifier: **MD20121115-0794**
Reviewer Comments Due By: November 26, 2012
Project Description: Scoping prior to Environmental Assessment: construct and operate new Indoor 21-Point Enclosed Firing Range; expand parking and expand Building 2495
Project Location: Prince George's County
Clearinghouse Contact: Bob Rosenbush

Dear Ms. Hodges:

Thank you for submitting your project for intergovernmental review. Participation in the Maryland Intergovernmental Review and Coordination (MIRC) process helps ensure project consistency with plans, programs, and objectives of State agencies and local governments. MIRC enhances opportunities for approval and/or funding and minimizes delays by resolving issues before project implementation.

The following agencies and/or jurisdictions have been forwarded a copy of your project for their review: the Maryland Department(s) of Natural Resources, the Environment, Transportation, Housing and Community Development; the Maryland Office(s) of Maryland Military Department; the County(ies) of Prince George's; the Regional Agency(ies) of Maryland-National Capital Park and Planning Commission in Prince George's; and the Maryland Department of Planning; including Maryland Historical Trust. They have been requested to contact your agency directly by **November 26, 2012** with any comments or concerns and to provide a copy of those comments to the State Clearinghouse for Intergovernmental Assistance. Please be assured that after **November 26, 2012** all MIRC requirements will have been met in accordance with Code of Maryland Regulations (COMAR) 34.02.01.04-.06. The project has been assigned a unique State Application Identifier that should be used on all documents and correspondence. If you need assistance or have questions, contact the State Clearinghouse staff noted above at 410-767-4490 or through e-mail at brosenbush@mdp.state.md.us. Thank you for your cooperation with the MIRC process.

Sincerely,

Linda C. Janey

Linda C. Janey, J.D., Assistant Secretary

P.S. ***Great News!!*** *Your project may be eligible to be "FastTracked" through the State permitting processes. For more information, go to: http://easy.maryland.gov/wordpress/fasttrack/ .*

LCJ:BR

cc: Beth Cole - MHT
Greg Golden - DNR
Amanda Degen - MDE
Melinda Gretsinger – MDOT
Hara Wright-Smith - DHCD
Lawrence Leone - MILT
Beverly Warfield - PGEO
12-0794_NDC.NEW.doc
Jay Mangalvedhe - MNCPPCP
Mike Paone - MDPL

MARYLAND DEPARTMENT OF THE ENVIRONMENT

1800 Washington Boulevard • Baltimore, Maryland 21230
410-537-3000 • 1-800-633-6101 • http://www.mde.state.md.us

Martin O'Malley
Governor

Anthony G. Brown
Lieutenant Governor

Robert M. Summers, Ph.D
Secretary

November 21, 2012

Ms. Anne Hodges, Environmental Planner, Asset Optimization
Department of the Air Force
11 CES/CEAO
3466 North Caroline Avenue
Joint Base Andrews, MD 20762

RE: State Application Identifier: MD20121115-0794
Project: Scoping prior to Environmental Assessment: Construct and Operate New Indoor 21-Point Enclosed Firing Range; Expand Parking and Expand Building 2495

Dear Ms. Hodges:

Thank you for the opportunity to review the above referenced project. The document was circulated throughout the Maryland Department of the Environment (MDE) for review, and the following comments are offered for your consideration.

1. If boilers or other equipment capable of producing emissions are installed as a result of this project, the applicant is requested to obtain a permit to construct from MDE's Air and Radiation Management Administration for this equipment, unless the applicant determines that a permit for this equipment is not required under State regulations pertaining to "Permits, Approvals, and Registration" (COMAR 26.11.02.). A review for toxic air pollutants should be performed. Please contact the New Source Permits Division, Air and Radiation Management Administration at (410) 537-3230 to learn about the State's requirements and the permitting processes for such devices.

2. Any above ground or underground petroleum storage tanks, which may be utilized, must be installed and maintained in accordance with applicable State and federal laws and regulations. Underground storage tanks must be registered and the installation must be conducted and performed by a contractor certified to install underground storage tanks by the Land Management Administration in accordance with COMAR 26.10. Contact the Oil Control Program at (410) 537-3442 for additional information.

3. If the proposed project involves demolition – Any above ground or underground petroleum storage tanks that may be on site must have contents and tanks along with any contamination removed. Please contact the Oil Control Program at (410) 537-3442 for additional information.

4. Any solid waste including construction, demolition and land clearing debris, generated from the subject project, must be properly disposed of at a permitted solid waste acceptance facility, or recycled if possible. Contact the Solid Waste Program at (410) 537-3315 for additional information regarding solid waste activities and contact the Waste Diversion and Utilization Program at (410) 537-3314 for additional information regarding recycling activities.

5. The Waste Diversion and Utilization Program should be contacted directly at (410) 537-3314 by those facilities which generate or propose to generate or handle hazardous wastes to ensure these activities are being conducted in compliance with applicable State and federal laws and regulations. The Program should also be contacted prior to construction activities to ensure that the treatment, storage or disposal of hazardous wastes and low-level radioactive wastes at the facility will be conducted in compliance with applicable State and federal laws and regulations.

6. Any contract specifying "lead paint abatement" must comply with Code of Maryland Regulations (COMAR) 26.16.01 - Accreditation and Training for Lead Paint Abatement Services. If a property was built before 1950 and will be used as rental housing, then compliance with COMAR 26.16.02 - Reduction of Lead Risk in Housing; and Environment Article Title 6, Subtitle 8, is required. Additional guidance regarding projects where lead paint may be encountered can be obtained by contacting the Environmental Lead Division at (410) 537-3825.

7. The proposed project may involve rehabilitation, redevelopment, revitalization, or property acquisition of commercial, industrial property. Accordingly, MDE's Brownfields Site Assessment and Voluntary Cleanup Programs (VCP) may provide valuable assistance to you in this project. These programs involve environmental site assessment in accordance with accepted industry and financial institution standards for property transfer. For specific information about these programs and eligibility, please contact the Land Restoration Program at (410) 537-3437.

8. Please see the enclosure for additional comments provided by the Science Services Administration.

Again, thank you for giving MDE the opportunity to review this project. If you have any questions or need additional information, please feel free to call me at (410) 537-4120.

Sincerely,

Amanda R. Degen
MDE Clearinghouse Coordinator
Office of Communications

cc: Bob Rosenbush, State Clearinghouse

Scoping: Indoor Firing Range Joint Base Andrews

Maryland Department of the Environment - Science Services Administration

REVIEW FINDING: R2 Contingent Upon Certain Actions (MD2012 1115-0794)

The following additional comments are intended to alert interested parties to issues regarding water quality standards. The comments address:

A. Water Quality Impairments: Section 303(d) of the federal Clean Water Act requires the State to identify impaired waters and establish Total Maximum Daily Loads (TMDLs) for the substances causing the impairments. A TMDL is the maximum amount of a substance that can be assimilated by a waterbody such that it still meets water quality standards.

Planners should be aware of existing water quality impairments identified on Maryland's 303(d) list. The Project is situated in the Piscataway Creek watershed, identified by the MD 8-digit codes, 02140203, which is currently impaired by several substances and subject to regulations regarding the Clean Water Act.

Planners may find a list of nearby impaired waters by entering the 8-digit basin code into an on-line database linked to the following URL: http://www.mde.state.md.us/programs/Water/TMDL/Integrated303dReports/Pages/303d.aspx.

This list is updated every even calendar year. Planners should review this list periodically to help ensure that local decisions consider water quality protection and restoration needs. **Briefly, the current impairments that are relevant to the Project include the following:**

Piscataway Creek (02140203):

Nutrients:	**Tidal. A TMDL is pending development.**
Sediments:	**Tidal. A TMDL is pending development.**
Bacteria:	**Non-tidal. A TMDL has been written and approved by EPA.**
Biological:	**Non-tidal. A TMDL is pending development.**

B. TMDLs: Development and implementation of any Plan should take into account consistency with TMDLs developed for the impaired waterbodies referenced above. Decisions made prior to the development of a TMDL should strive to ensure no net increase of impairing substances. TMDLs are made available on an updated basis at the following web site: http://www.mde.state.md.us/programs/Water/TMDL/CurrentStatus/Pages/Programs/WaterPrograms/TMDL/Sumittals/index.aspx

Special protections for high-quality waters in the local vicinity, which are identified pursuant to Maryland's anti-degradation policy;

C. Anti-degradation of Water Quality: Maryland requires special protections for waters of very high quality (Tier II waters). The policies and procedures that govern these special waters are commonly called "anti-degradation policies." This policy states that "proposed amendments to county plans or discharge permits for discharge to Tier II waters that will result in a new, or an increased, permitted annual discharge of pollutants and a potential impact to water quality, shall evaluate alternatives to eliminate or reduce discharges or impacts." These permitted annual discharges are not just traditional Point Sources, it can include all discharges such as Stormwater.

Piscataway Creek 1, which is located within the scope of the Project, has been designated as a Tier II stream. The location of the project is within the catchment of the High Quality Water (Tier II segment). (See Additional Comments and attached map)

For more information regarding any disturbances (i.e. Construction) within a Tier II Catchment contact Angel Valdez at 410-537-3606.

Planners should be aware of legal obligations related to Tier II waters described in the Code of Maryland Regulations (COMAR) 26.08.02.04 with respect to current and future land use plans. Information on Tier II waters can be obtained online at: http://www.dsd.state.md.us/comar/getfile.aspx?file=26.08.02.04.htm and policy implementation procedures are located at http://www.dsd.state.md.us/comar/getfile.aspx?file=26.08.02.04-1.htm

Planners should also note that since the Code of Maryland Regulations is subject to periodic updates. A list of Tier II waters pending Departmental listing in COMAR can be found, with a discussion and maps for each county, at the following website: http://www.mde.state.md.us/programs/researchcenter/EnvironmentalData/Pages/researchcenter/data/waterqualitystandards/antidegradation/index.aspx

ADDITIONAL COMMENTS

Antidegradation

Table 1: General Comments regarding Current Antidegradation Implementation Procedures.

For all land disturbing projects that do not implement a no-discharge alternative and therefore may adversely impact Tier II waters, MDE will require:	
1.	MDE approval of all design elements and practices required by mandatory implementation of Environmental Site Design (ESD) to the maximum extent practicable and applicable innovative development practices as currently required by COMAR 26.08.02.04-1(K)(2) and the 2007 Stormwater manual (see, http://www.mde.state.md.us/programs/Water/StormwaterManagementProgram/Pages/Programs/WaterPrograms/SedimentandStormwater/swm2007.aspx). MDE is also recommending ESD be employed for projects that are individually of minimal impact to Tier II resources, to account for the total cumulative effects of each project. Current precedents for this requirement/recommendation can be found in Appendix 1 to these comments).
2.	Mandatory Riparian buffers determined in consideration of slope and soil type, with a minimum of 100 ft in all areas. Buffer requirements are based on similar requirements in the Critical Areas Program and the Chesapeake Bay Riparian Buffer/Reforestation Goals and other water quality objectives). Additional buffers beyond the minimum 100' will be required on sites with slopes greater than 5% and/or with poorly infiltrating soils. See Appendix 2 for guidance.
3.	*Biological, chemical, and flow monitoring in the Tier II watershed by the applicant to determine remaining AC and any cumulative impacts of current and future developments for larger projects and/or in watersheds with little remaining forest buffering/AC.
4.	Additional practices to protect the Tier II watershed may also be required, such as enhanced sediment and erosion control practices, depending on the potential for project-specific impacts to water quality
Where 1 and 2 above cannot be fully implemented	Applicant is required to submit a detailed hydrologic study and alternatives analysis to demonstrate assimilative capacity will be maintained. If it is determined by MDE assimilative capacity still will not be maintained after the above analysis, an SEJ will be required.

Appendix 1

Anti-degradation

MARYLAND DEPARTMENT OF THE ENVIRONMENT
MDE 1800 Washington Boulevard • Baltimore MD 21230
410-537-3000 • 1-800-633-6101

Martin O'Malley
Governor

Anthony G. Brown
Lieutenant Governor

Shari T. Wilson
Secretary

Robert M. Summers, Ph.D.
Deputy Secretary

JUN - 8 2009

The Honorable Julia W. Gouge, President
Board of County Commissioners
Carroll County, Maryland
County Office Building
Room 300
225 North Center Street
Westminster MD 21157

Dear Commissioner Gouge:

The Maryland Department of the Environment (MDE) has completed a final review of the **Fall 2008 Amendment** Cycle (Cycle) to the 2007 Carroll County Water and Sewerage Plan. The Cycle consists of five amendments. Three amendments involve Hampstead: annexations Nos. 30 [Summit Street/Taylor Street] and No. 32 [Crockett Property]; and, the Hampstead Industrial Exchange, Solo Cup Lot 2, & IDA Property. For the other two amendments, one is for the Liberty Road Crossing Multi-Use water and wastewater systems – for a proposed business center near Taylorsville; and, the final amendment is for the New Windsor Agriculture Easement Properties.

During MDE's review of the Cycle, the Maryland Department of Planning (MDP) advised MDE that the Cycle is consistent with the Carroll County Comprehensive Plan (enclosed comments). You may recall that MDE had expressed water resource concerns for the three Hampstead amendments and for the Liberty Road Crossing amendment, and needed more time to complete a review of these four amendments. The review period, set to expire on March 10, 2009, was extended until June 8, 2009. The amendment for the New Windsor Agriculture Easement Properties was approved by MDE in my enclosed March 3, 2009 letter to you.

For the three Hampstead amendments, MDE's Water Supply Program (WSP) is concerned that proposed growth may exceed the Town's water supply capacity (enclosed comments). In an effort to assist Hampstead to strengthen its water supply, a new water appropriation permit has been issued by MDE. While this important action may be considered to be a short term benefit, concerns remain as to the viability of the water supply for future growth.

The Department requests that Hampstead prepare a water capacity management plan and forward it to the WSP for review by December 31, 2009. By copy of this letter, representatives of Hampstead are advised to contact the WSP by calling 410-537-3702. The Hampstead amendments are approved with the condition that water resource issues remain which may impact future growth.

For the Liberty Road Crossing amendment, MDE's Science Services Administration (SSA) has performed a screening analysis for potential impacts to the Tier II watershed above the Gillis Falls I Tier II segment. The SSA advises that their analysis indicates no probable impacts due to the size, location, and nature of the development relative to both the Tier II segment and the watershed's assimilative capacity. The SSA has determined that this project will not require further anti-degradation review.

The Department requests that the County implement environmental site design (ESD) to the maximum extent practicable for Liberty Road Crossing to minimize any potential water quality impacts associated with storm water runoff generated from impervious or other hard surfaces. Since the development is more than 150 meters from the closest stream channel, the Department has no current cause for concern regarding project impacts to riparian buffers. Implementing ESD now will help protect the watershed from any cumulative impacts associated with this and future development activities.

By copy of this letter, representatives of 2515 Liberty, LLC and the County may contact the SSA by calling 410-537-3572 to discuss the analysis, and, for specific questions regarding MDE's Sediment, Stormwater, and Dam Safety program (SSDS) and ESD, please call 410-537-3561. The Liberty Road Crossing amendment is approved.

This action completes MDE's review of the Cycle, as required by Section 9-507 of the Environment Article of the Annotated Code of Maryland. If you need further assistance on these matters, please contact Virginia F. Kearney, Deputy Director at 410-537-3512, toll-free at 800-633-6101 or by e-mail at vkearney@mde.state.md.us.

Sincerely,

Virginia F Kearney for

Jay G. Sakai, Director
Water Management Administration

Enclosures

Appendix 2

Maryland riparian buffering requirements in Tier II watersheds developed from modified USDA Forest Service recommendations*.

Adjusted Average Optimal Buffer Width Key for HQ Waters (minimum width 100 feet)				
	Slopes			
Soils	0-5%	5-15%	15-25%	>25%
ab	100	130	160	190
c	120	150	180	210
d	140	170	200	230

*Johnson, C. W. and Buffler, S. 2008. Riparian buffer design guidelines for water quality and wildlife habitat functions on agricultural landscapes in the Intermountain West, Gen. Tech. Rep. RMRS-GTR-203. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. Also Available at http://www.fs.fed.us/rm/pubs/rmrs_gtr203.pdf

Chesapeake Bay TMDL

With the completion of the Chesapeake Bay TMDL, the Chesapeake Bay Program Office (CBPO) will be able to provide loading data at a more refined scale than in the past. MDE will be able to use the CBPO data to estimate pollution allocations at the jurisdictional level (which will include Federal Facilities) to provide allocations to the Facilities. These allocations, both Wasteload (WLA) and Load Allocation (LA) could call for a reduction in both Point Sources and Nonpoint Sources. **Facilities should be aware of reductions and associated implementation required by WIPs or FIPs.**

Stormwater

The project should consider all Maryland Stormwater Management Controls. Site Designs should consider all Environmental Site Design to the Maximum Extent Practicable and "Green Building" Alternatives. Designs that reduce impervious surface and BMPs that increase runoff infiltration are highly encouraged.

Further Information:
http://www.mde.state.md.us/programs/Water/StormwaterManagementProgram/Pages/Programs/WaterPrograms/SedimentandStormwater/swm2007.aspx

Environmental Site Design (Chapter 5):
http://www.mde.state.md.us/programs/Water/StormwaterManagementProgram/MarylandStormwaterDesignManual/Documents/www.mde.state.md.us/assets/document/chapter5.pdf

Redevelopment Regulations:
http://www.dsd.state.md.us/comar/comarhtml/26/26.17.02.05.htm

December 7, 2012

Ms. Anne Hodges
Environmental Planner, Asset Optimization
Department of the Air Force
11 CES/CEAO
3466 North Carolina Avenue
Joint Base Andrews, MD 20762

STATE CLEARINGHOUSE REVIEW – ADDITIONAL REVIEWER COMMENTS RECEIVED

State Application Identifier: MD20121115-0794
Project Description: Scoping prior to Environmental Assessment (EA): construct and operate new Indoor 21-Point Enclosed Firing Range; expand parking and expand Building 2495
Project Address: southwest of airfield, near Leroy's Lane Landfill, eastern side of the Base
Project Location: Prince George's County
Clearinghouse Contact: Bob Rosenbush

Dear Ms. Hodges:

We are forwarding the enclosed comments made by the Maryland Departments of Natural Resources, and Transportation; Prince George's County, and the Maryland-National Capital Park and Planning Commission in Prince George's County regarding the referenced project for your information.

The Maryland Department of Natural Resources (DNR) stated that the project described in the EA is located in the Maryland Coastal Zone and will have foreseeable coastal effects. The Applicant should provide a Federal Consistency Determination for the proposed project. To the extent possible, green and sustainable choices should be deployed to support the LEED certification goal. These choices include ground-source heat pumps, energy efficient appliances, doors and windows, and passive solar gain which should also be considered in building design in combination with the above to provide reliable comfort to users with minimum ecological impact. Green roofs, permeable pavement, planting of trees and other vegetation proximate to the building (such as rain gardens and community vegetable gardens) could help reduce both "heat island effect" and help with on-site storm water management. All of the above also provide opportunities for green jobs and training.

The Maryland Department of Transportation commented that as far as can be determined at this time, the subject has no unacceptable impacts on the plans or programs of the Department of Transportation.

Prince George's County stated that the project site is located in the headwaters of Piscataway Creek (02140203084). The sub-watersheds in and around Joint Base Andrews are categorized as non-supporting based on impervious cover. This has a significant impact on downstream water and stream quality. However, downstream of the project site is a State- designated Stronghold Watershed. Stronghold Watersheds (12-digit watershed) are those watersheds in the State that are most important for the protection of Maryland's aquatic biodiversity as determined by DNR. In addition, the State has identified and designated a portion of the Piscataway Creek downstream of the base as Tier II water- High Quality Waters. It is expected that the implementation of environmentally-sensitive site design and low-impact development practices will mitigate much of the adverse hydrological and pollutant loading impacts from the new development. Prince George's County suggests that if opportunities arise that allow added environmental improvements, the Applicant will consider including them in this project. Often, steps can be taken to enhance biological integrity with only an incremental adjustment to the project design.

The Maryland-National Capital Park and Planning Commission in Prince George's County commented that based on the submitted information, it appears that the woodland will be removed to construct the new facility. The site may be subject to review for conformance with the Forest Conservation Act by the DNR. Additional comments will be provided in a mandatory referral review. It does not appear that there will be any impacts to cultural resources. There are no identified historic sites, resources, or archeological sites in the area of proposed construction. It does not appear that any regulated environmental features will be disturbed; however, additional information would be helpful in the Draft EA.

Should you have any questions, contact the State Clearinghouse staff person noted above at 410-767-4490 or through e-mail at brosenbush@mdp.state.md.us. Your cooperation and attention to the review process is appreciated.

Sincerely,

Linda C. Janey, J.D., Assistant Secretary

LCJ:BR

cc: Jay Mangalvedhe – M-NCPPCP
Greg Golden - DNR
Melinda Gretsinger - MDOT
Beverly Warfield – PGEO
Beth Cole - MHT

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THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION

Office of the Planning Director
Prince George's County Planning Department

14741 Governor Oden Bowie Drive
Upper Marlboro, Maryland 20772
TTY: (301) 952-4366
www.mncppc.org/pgco
301-952-3595

D12-120501
MR-12003A

December 14, 2012

Ms. Anne Hodges
Environmental Planner
Joint Base Andrews Naval Air Facility
11 CES/CEAO
3466 North Carolina Avenue
Joint Base Andrews, MD 20762

RE: Proposed Action and Site Plan for Proposed 21-Point Enclosed Firing Range at Joint Base Andrews

Dear Ms. Hodges:

The Prince George's County Planning Department appreciates the opportunity to comment on the proposed action and site plan for the proposed 21-Point Enclosed Firing Range at Joint Base Andrews (JBA). The proposal is for the construction and operation of an indoor firing range, which includes:

- Construction of a new enclosed indoor firing range.
- Expansion of the existing indoor firing range building to add office space and other facilities.
- Expansion of the parking lot serving the existing and the proposed building.

According to the information submitted, it appears that the proposed development will be within or adjacent to a wetland area. Any impacts to the United States waters on land owned by the United States of America will be subject to review by the Maryland Department of Environment, and the Army Corps of Engineers. Woodlands will be cleared as a result of the proposed development; thus, the site may be subject to the state's Forest Conservation Act.

The proposed project does not include any impacts to any cultural or historic resources within Prince George's County. JBA includes the following two properties designated as Prince George's County historic sites: 77-001-Forest Grove Methodist Church and Cemetery (Chapel 2), and 77-014-Belle Chance and Cemetery. Neither of these properties will be affected by the proposed action and site plan.

The scope of the changes is very limited. Based on the project description, the expansions are in support of increased training requirements. Expanded indoor firing range capacity is unlikely to create a change in the number of personnel within Joint Base Andrews, and therefore it can be assumed that the traffic generation potential will remain unchanged, both within the Joint Base Andrews complex, as well as beyond its borders. Therefore, it is determined that the proposed changes will not have an adverse impact on the adjacent transportation network. However, some attention must be given to the impacts during the construction duration.

Thank you again for allowing us the opportunity to comment on this Environmental Assessment. If you should have any additional questions or need additional information, please contact Fatimah Hasan, Planner Coordinator, Special Projects Section, Countywide Planning Division, at 301-952-3580, or via email at Fatimah.Hasan@ppd.mncppc.org.

Sincerely,

Fern Piret

Fern Piret
Planning Director

c: Derick Berlage, Chief, Countywide Planning Division
Maria Martin, Planning Supervisor, Special Projects Section, Countywide Planning Division
Katina Shoulars, Planning Supervisor, Environmental Planning Section, Countywide Planning Division
Howard Berger, Planning Supervisor, Historic Preservation Section, Countywide Planning Division
Tom Masog, Planner Coordinator, Transportation Planning Section, Countywide Planning Division

20120607 F USAF ARA

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 11TH WING (AFDW)
ANDREWS AIR FORCE BASE, MARYLAND 20762

14 November 2012

MEMORANDUM FOR: SEE DISTRIBUTION

FROM: 11 CES/CEA
3466 North Carolina Avenue
Joint Base Andrews, MD 20762-4803

SUBJECT: Description of Proposed Action and Site Map for the proposed 21 Point Enclosed Firing Range at Joint Base Andrews

1. Joint Base Andrews-Naval Air Facility Washington, MD (JBA) is preparing an Environmental Assessment (EA) for construction and operation of a new Indoor 21 Point Enclosed Firing Range, additional customer parking, and expansion of Building 2495 (Figure 1) to include laundry, showers, and additional office space. Pursuant to the National Environmental Policy Act (NEPA) of 1969 (42 United States Code [USC] 4321-4347), Council on Environmental Quality (CEQ) Regulations for Implementing the Procedural Provisions of NEPA (40 Code of Federal Regulations [CFR] Sections 1500-1508), and 32 CFR Part 989, et seq., JBA will prepare an EA that considers the potential consequences to human health and the natural environment. The EA will examine alternative layouts of these new facilities in the vicinity of the existing Combat Arms Training compound and will include analysis of the required no-action alternative.

2. In accordance with Executive Order 12372, Intergovernmental Review of Federal Programs, we invite your agency to comment on the Proposed Action described below and provide any relevant information about resources under your jurisdiction that may be present in the project area as indicated on the new site plan in the attachments.

3. The Proposed Action consists of construction of a totally enclosed firing range to support increased training requirements. The new building will be essentially the same size as the current firing range; the additional customer parking area will accommodate approximately 50 additional cars. If constructed, the new facilities will be built in accordance with applicable Executive Orders with the goal of being equivalent to US Green Building Council's Leadership in Energy and Environmental Design (LEED) Silver level. The project area is southeast of the airfield and is constrained by its proximity to the Environmental Restoration Program (ERP) site known as Leroy's Lane Landfill (LF-05). Proximity of jurisdictional wetlands near the current range (shown on Figure 2) will be considered in developing alternative layouts for the new facilities.

4. Under the No Action alternative, the new enclosed firing range would not be built and JBA would continue to have inadequate Combat Arms training facilities; there would be no change from existing conditions.

5. Enclosed is a copy of the distribution list for those federal, state, and local agencies to be contacted regarding this EA. If you think additional agencies should review and comment on this proposal, please feel free to include them in a re-distribution of this letter and the attached materials.

6. Your assistance in providing information for use in developing alternatives, describing the baseline conditions, and evaluating impacts is greatly appreciated. Please provide written comments within 30 days from the date of this letter via surface mail to Anne Hodges, 11 CES/CEAO, 3466 North Carolina Avenue, Joint Base Andrews, MD 20762 or via email to anne.hodges@afncr.af.mil.

7. If you have any questions or require additional information on the Proposed Action, please contact Ms. Anne Hodges at 301-981-1426. Your assistance in providing information is greatly appreciated.

The Maryland Historical Trust has determined that there are no historic properties affected by this undertaking.

Date 12/26/12

STEVE RICHARDS
Chief of Environmental Management

Attachments:
Figure 1 – Combat Arms Training Facilities
Figure 2 – Project Vicinity with Critical Areas
Distribution List

August 25, 2014

Ms. Anne Hodges
Asset Optimization
Department of the Air Force
11 CES/CEAO
3466 North Carolina Avenue
Joint Base Andrews, MD 20762

STATE CLEARINGHOUSE REVIEW PROCESS

State Application Identifier: **MD20140825-0711**
Reply Due Date: 09/24/2014
Project Description: Draft Environmental Assessment and Finding of No Significant Impact / Finding of No Practicable Alternative: Construction and Operation of a New 21 Point, Fully Enclosed Firing Range at Joint Base Andrews-Naval Air Facility (Prior: MD20130920-0701)
Project Location: Prince George's County
Clearinghouse Contact: Nasrin Rahman

Dear Ms. Hodges:

Thank you for submitting your project for intergovernmental review. Your participation in the Maryland Intergovernmental Review and Coordination (MIRC) process helps to ensure that your project will be consistent with the plans, programs, and objectives of State agencies and local governments.

We have forwarded your project to the following agencies and/or jurisdictions for their review and comments: the Maryland Department(s) of Transportation, the Environment, Natural Resources, Prince George's County, the Maryland-National Capital Park and Planning Commission in Prince George's and the Maryland Department of Planning, including the Maryland Historical Trust. A composite review and recommendation letter will be sent to you by the reply due date. Your project has been assigned a unique State Application Identifier that you should use on all documents and correspondence.

Please be assured that we will expeditiously process your project. The issues resolved through the MIRC process enhance the opportunities for project funding and minimize delays during project implementation.

If you need assistance or have questions, contact the State Clearinghouse staff noted above at 410-767-4490 or through e-mail at nasrin.rahman@maryland.gov. Thank you for your cooperation with the MIRC process.

Sincerely,
Linda C. Janey
Linda C. Janey, J.D., Assistant Secretary

P.S. ***Great News!!*** *Your project may be eligible to be "FastTracked" through the State permitting processes. For more information, go to:* http://easy.maryland.gov/wordpress/fasttrack/ .

LCJ:NR
14-0711_NRR.NEW.doc

September 26, 2014

Ms. Anne Hodges
Asset Optimization
Department of the Air Force
11 CES/CEAO
3466 North Carolina Avenue
Joint Base Andrews, MD 20762

STATE CLEARINGHOUSE RECOMMENDATION

State Application Identifier: MD20140825-0711
Applicant: Department of the Air Force
Project Description: Draft Environmental Assessment and Finding of No Significant Impact / Finding of No Practicable Alternative: Construction and Operation of a New 21 Point, Fully Enclosed Firing Range at Joint Base Andrews-Naval Air Facility (Prior: MD20130920-0701)
Project Location: Prince George's County
Approving Authority: U.S. Department of Defense DOD/USAF
Recommendation: Consistent with Qualifying Comment(s)

Dear Ms. Hodges:

In accordance with Presidential Executive Order 12372 and Code of Maryland Regulation 34.02.01.04-.06, the State Clearinghouse has coordinated the intergovernmental review of the referenced project. This letter, with attachments, constitutes the State process review and recommendation based upon comments received to date. This recommendation is valid for a period of three years from the date of this letter.

Review comments were requested from the Maryland Department(s) of Natural Resources, Transportation, the Environment, Prince George's County, Maryland National Capital Parks and Planning Commission - Prince George's County and the Maryland Department of Planning, including the Maryland Historical Trust. As of this date, the Maryland Department of Natural Resources has not submitted comments. **This recommendation is contingent upon the applicant considering and addressing any problems or conditions that may be identified by their review. Any comments received will be forwarded.**

The Maryland National Capital Parks and Planning Commission - Prince George's County, Environmental Protection Services (EPS) has no comments at this time. The Commission will provide more detailed comments at the time of Mandatory Referral Review.

The Maryland Department of Planning and the Maryland Historical Trust found this project to be consistent with their plans, programs and objectives.

The Maryland Historical Trust has determined that the project will have "no effect" on historic properties and that the federal and/or State historic preservation requirements have been met.

The Maryland Department(s) of Transportation, Environment and Prince George's County found this project to be generally consistent with their plans, programs and objectives, but included certain qualifying comments summarized below.

The Department of Transportation stated that "as far as can be determined at this time, the subject has no unacceptable impacts on plans or programs."

Prince George's County stated that the site is free of the effective FEMA floodplain, panel 245208 0060 C dated June 18, 1987. The Storm Water Management Technical Group Comprehensive Watershed Management Plan for Piscataway Creek also shows no floodplain. However, there may be smaller tributaries not studied in these plans near the site.

The Maryland Department Environment Comments are as the following:

1. Any above ground or underground petroleum storage tanks, which may be utilized, must be installed and maintained in accordance with applicable State and federal laws and regulations. Underground storage tanks must be registered and the installation must be conducted and performed by a contractor certified to install underground storage tanks by the Land Management Administration in accordance with COMAR 26.10. Contact the Oil Control Program at (410) 537-3442 for additional information.

2. If the proposed project involves demolition – Any above ground or underground petroleum storage tanks that may be on site must have contents and tanks along with any contamination removed. Please contact the Oil Control Program at (410) 537-3442 for additional information.

3. Any solid waste including construction, demolition and land clearing debris, generated from the subject project, must be properly disposed of at a permitted solid waste acceptance facility, or recycled if possible. Contact the Solid Waste Program at (410) 537-3315 for additional information regarding solid waste activities and contact the Waste Diversion and Utilization Program at (410) 537-3314 for additional information regarding recycling activities.

4. The Waste Diversion and Utilization Program should be contacted directly at (410) 537-3314 by those facilities which generate or propose to generate or handle hazardous wastes to ensure these activities are being conducted in compliance with applicable State and federal laws and regulations. The Program should also be contacted prior to construction activities to ensure that the treatment, storage or disposal of hazardous wastes and low-level radioactive wastes at the facility will be conducted in compliance with applicable State and federal laws and regulations.

5. Any contract specifying "lead paint abatement" must comply with Code of Maryland Regulations (COMAR) 26.16.01 - Accreditation and Training for Lead Paint Abatement Services. If a property was built before 1950 and will be used as rental housing, then compliance with COMAR 26.16.02 - Reduction of Lead Risk in Housing; and Environment Article Title 6, Subtitle 8, is required. Additional guidance regarding projects where lead paint may be encountered can be obtained by contacting the Environmental Lead Division at (410) 537-3825.

6. The proposed project may involve rehabilitation, redevelopment, revitalization, or property acquisition of commercial, industrial property. Accordingly, MDE's Brownfields Site Assessment and Voluntary Cleanup Programs

(VCP) may provide valuable assistance to you in this project. These programs involve environmental site assessment in accordance with accepted industry and financial institution standards for property transfer. For specific information about these programs and eligibility, please contact the Land Restoration Program at (410) 537-3437.

7. Additional comments from the Science Services Administration were email see attachment.

Any statement of consideration given to the comments(s) should be submitted to the approving authority, with a copy to the State Clearinghouse. The State Application Identifier Number must be placed on any correspondence pertaining to this project. The State Clearinghouse must be kept informed if the approving authority cannot accommodate the recommendation.

Please remember, you must comply with all applicable state and local laws and regulations. If you need assistance or have questions, contact the State Clearinghouse staff person noted above at 410-767-4490 or through e-mail at nasrin.rahman@maryland.gov. **Also please complete the attached form and return it to the State Clearinghouse as soon as the status of the project is known.** ***Any substitutions of this form must include the State Application Identifier Number.*** **This will ensure that our files are complete.**

Thank you for your cooperation with the MIRC process.

Sincerely,

Linda C. Janey

Linda C. Janey, J.D., Assistant Secretary

LCJ:NR
Enclosure(s)
cc:

Tina Quinichette - MDOT
Amanda Degen - MDE
Greg Golden - DNR
Larry Coffman - PGEO
Jay Mangalvedhe - MNCPPCP
Peter Conrad - MDPL
Beth Cole - MHT

14-0711_CRR.CLS.doc

PROJECT STATUS FORM

Please complete this form and return it to the State Clearinghouse upon receipt of notification that the project has been approved or not approved by the approving authority.

TO: **Maryland State Clearinghouse**
Maryland Department of Planning
301 West Preston Street
Room 1104
Baltimore, MD 21201-2305

DATE: _____
(Please fill in the date form completed)

FROM: _____
(Name of person completing this form.)

PHONE: ____-____-_____
(Area Code & Phone number)

RE: **State Application Identifier:** **MD20140825-0711**
Project Description: Draft Environmental Assessment and Finding of No Significant Impact / Finding of No Practicable Alternative: Construction and Operation of a New 21 Point, Fully Enclosed Firing Range at Joint Base Andrews-Naval Air Facility (Prior: MD20130920-0701)

PROJECT APPROVAL

This project/plan was: ☐ **Approved** ☐ **Approved with Modification** ☐ **Disapproved**

Name of Approving Authority: _____ **Date Approved:** _____

FUNDING APPROVAL

The funding (if applicable) has been approved for the period of:

_____, 201____ **to** _____, 201____ **as follows:**

Federal $:	**Local $:**	**State $:**	**Other $:**
_____	_____	_____	_____

OTHER

☐ *Further comment or explanation is attached*

Indoor firing Range Joint Base Andrews

Maryland Department of the Environment - Science Services Administration

REVIEW FINDING: R1 Consistent with Qualifying Comments (MD2014 0825-0711)

The following additional comments are intended to alert interested parties to issues regarding water quality standards. The comments address:

A. Water Quality Impairments: Section 303(d) of the federal Clean Water Act requires the State to identify impaired waters and establish Total Maximum Daily Loads (TMDLs) for the substances causing the impairments. A TMDL is the maximum amount of a substance that can be assimilated by a waterbody such that it still meets water quality standards.

Planners should be aware of existing water quality impairments identified on Maryland's 303(d) list. The Project is situated in the Piscataway Creek watershed, identified by the MD 8-digit codes, 02140203, which is currently impaired by several substances and subject to regulations regarding the Clean Water Act.

Planners may find a list of nearby impaired waters by entering the 8-digit basin code into an on-line database linked to the following URL: http://www.mde.state.md.us/programs/Water/TMDL/Integrated303dReports/Pages/303d.aspx.

This list is updated every even calendar year. Planners should review this list periodically to help ensure that local decisions consider water quality protection and restoration needs. **Briefly, the current impairments that are relevant to the Project include the following:**

Piscataway Creek (02140203)

Nutrients:	**Tidal. A TMDL has been written and approved by EPA. (Bay TMDL)**
Sediments:	**Tidal. A TMDL has been written and approved by EPA. (Bay TMDL)**
Bacteria:	**Non-tidal. A TMDL has been written and approved by EPA.**
Biological:	**Non-tidal. A TMDL is pending development.**

B. TMDLs: Development and implementation of any Plan should take into account consistency with TMDLs developed for the impaired waterbodies referenced above. Decisions made prior to the development of a TMDL should strive to ensure no net increase of impairing substances. TMDLs are made available on an updated basis at the following web site: http://www.mde.state.md.us/programs/Water/TMDL/CurrentStatus/Pages/Programs/WaterPrograms/TMDL/Sumittals/index.aspx

Special protections for high-quality waters in the local vicinity, which are identified pursuant to Maryland's anti-degradation policy;

C. Anti-degradation of Water Quality: Maryland requires special protections for waters of very high quality (Tier II waters). The policies and procedures that govern these special waters are commonly called "anti-degradation policies." This policy states that "proposed amendments to county plans or discharge permits for discharge to Tier II waters that will result in a new, or an increased, permitted annual discharge of pollutants and a potential impact to water quality, shall evaluate alternatives to eliminate or reduce discharges or impacts." These permitted annual discharges are not just traditional Point Sources, it can include all discharges such as Stormwater.

Piscataway Creek 1, which is located within the scope of the Project, has been designated as a Tier II stream. The location of the project is within the catchment of the High Quality Water (Tier II segment). (See Additional Comments and attached map)

For more information regarding any disturbances (i.e. Construction) within a Tier II Catchment contact Angel Valdez at 410-537-3606.

Planners should be aware of legal obligations related to Tier II waters described in the Code of Maryland Regulations (COMAR) 26.08.02.04 with respect to current and future land use plans. Information on Tier II waters can be obtained online at:
http://www.dsd.state.md.us/comar/getfile.aspx?file=26.08.02.04.htm
and policy implementation procedures are located at
http://www.dsd.state.md.us/comar/getfile.aspx?file=26.08.02.04-1.htm

Planners should also note that since the Code of Maryland Regulations is subject to periodic updates. A list of Tier II waters pending Departmental listing in COMAR can be found, with a discussion and maps for each county, at the following website:
http://www.mde.state.md.us/programs/researchcenter/EnvironmentalData/Pages/researchcenter/data/waterqualitystandards/antidegradation/index.aspx

ADDITIONAL COMMENTS

Antidegradation

Table 1: General Comments regarding Current Antidegradation Implementation Procedures.

For all land disturbing projects that do not implement a no-discharge alternative and therefore may adversely impact Tier II waters, MDE will require:	
1.	MDE approval of all design elements and practices required by mandatory implementation of Environmental Site Design (ESD) to the maximum extent practicable and applicable innovative development practices as currently required by COMAR 26.08.02.04-1(K)(2) and the 2007 Stormwater manual (see, http://www.mde.state.md.us/programs/Water/StormwaterManagementProgram/Pages/Programs/WaterPrograms/SedimentandStormwater/swm2007.aspx). MDE is also recommending ESD be employed for projects that are individually of minimal impact to Tier II resources, to account for the total cumulative effects of each project.).
2.	Mandatory Riparian buffers determined in consideration of slope and soil type, with a minimum of 100 ft in all areas. Buffer requirements are based on similar requirements in the Critical Areas Program and the Chesapeake Bay Riparian Buffer/Reforestation Goals and other water quality objectives). Additional buffers beyond the minimum 100' will be required on sites with slopes greater than 5% and/or with poorly infiltrating soils. See Table 2 for guidance.
3.	*Biological, chemical, and flow monitoring in the Tier II watershed by the applicant to determine remaining AC and any cumulative impacts of current and future developments for larger projects and/or in watersheds with little remaining forest buffering/AC.
4.	Additional practices to protect the Tier II watershed may also be required, such as enhanced sediment and erosion control practices, depending on the potential for project-specific impacts to water quality. See also 2011 Maryland Standards and Specifications for Soil Erosion and Sediment Control document located: http://www.mde.maryland.gov/programs/Water/StormwaterManagementProgram/SoilErosionandSedimentControl/Documents/2011%20MD%20Standard%20and%20Specifications%20for%20Soil%20Erosion%20and%20Sediment%20Control.pdf
Where 1 and 2 above cannot be fully implemented	Applicant is required to submit a detailed hydrologic study and alternatives analysis to demonstrate assimilative capacity will be maintained. If it is determined by MDE assimilative capacity still will not be maintained after the above analysis, an SEJ will be required.

Also, ESD is now being required for Program Open Space and School Construction projects. See http://www.bpw.state.md.us/static_files/advisories/2009-1.pdf

Maryland riparian buffering requirements in Tier II watersheds developed from modified USDA Forest Service recommendations*. These can also be found in the 2011 Maryland Standards and Specifications for Soil Erosion and Sediment Control Table A.2 on page A.5. At a minimum, projects needing a state 401 Water Quality Certification will be required to implement the expanded Tier II buffers.

Table 2: Adjusted Average Optimal Buffer Width Key for HQ Waters (minimum width 100 feet)				
	Slopes			
Soils	0-5%	5-15%	15-25%	>25%
ab	100	130	160	190
c	120	150	180	210
d	140	170	200	230

*Johnson, C. W. and Buffler, S. 2008. Riparian buffer design guidelines for water quality and wildlife habitat functions on agricultural landscapes in the Intermountain West, Gen. Tech. Rep. RMRS-GTR-203. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. Also Available at http://www.fs.fed.us/rm/pubs/rmrs_gtr203.pdf

Chesapeake Bay TMDL

With the completion of the Chesapeake Bay TMDL, the Chesapeake Bay Program Office (CBPO) will be able to provide loading data at a more refined scale than in the past. MDE will be able to use the CBPO data to estimate pollution allocations at the jurisdictional level (which will include Federal Facilities) to provide allocations to the Facilities. These allocations, both Wasteload (WLA) and Load Allocation (LA) could call for a reduction in both Point Sources and Nonpoint Sources. **Facilities should be aware of reductions and associated implementation required by WIPs or FIPs.**

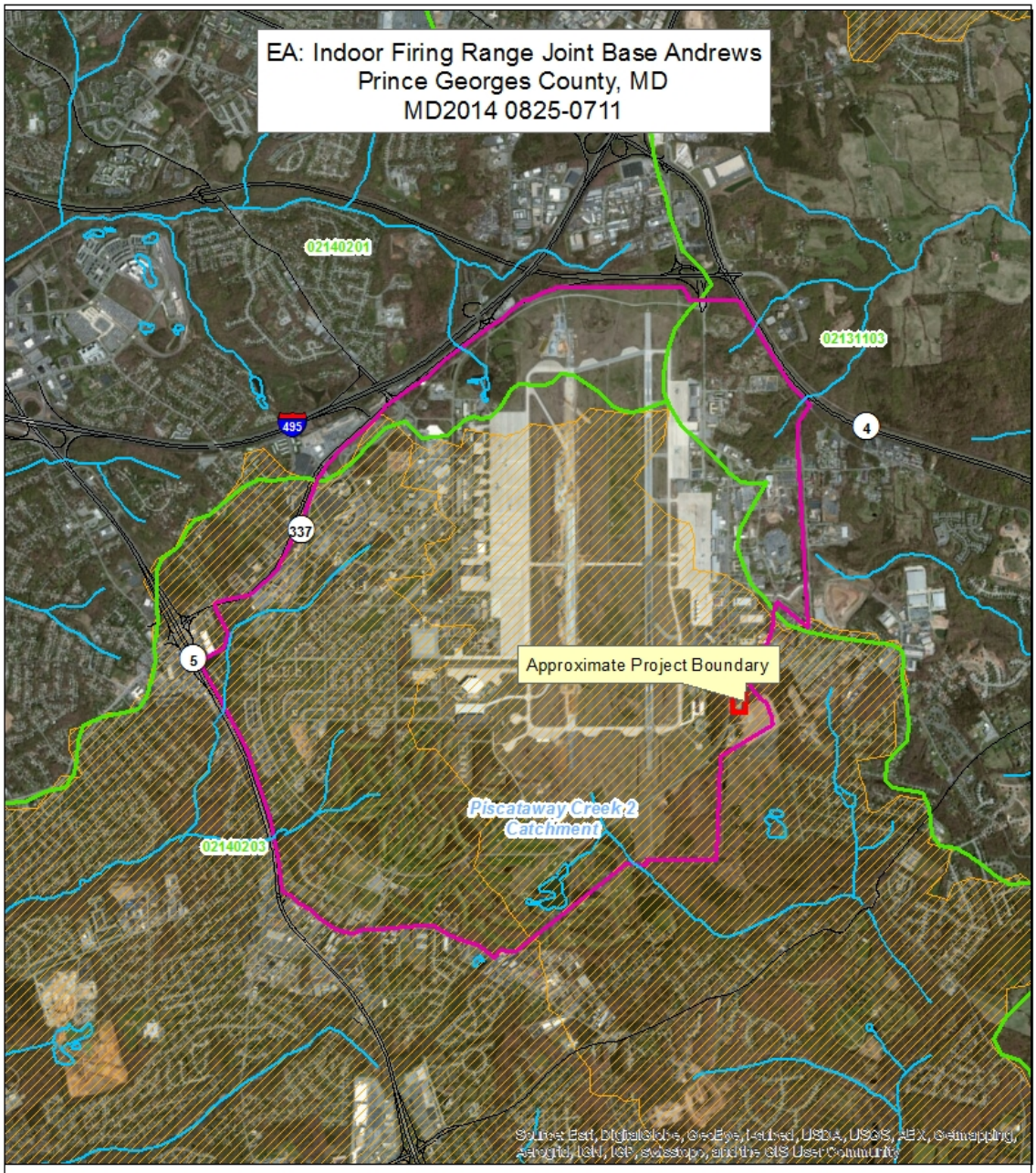
Stormwater

The project should consider all Maryland Stormwater Management Controls. Site Designs should consider all Environmental Site Design to the Maximum Extent Practicable and “Green Building” Alternatives. Designs that reduce impervious surface and BMPs that increase runoff infiltration are highly encouraged.

Further Information:
http://www.mde.state.md.us/programs/Water/StormwaterManagementProgram/Pages/Programs/WaterPrograms/SedimentandStormwater/swm2007.aspx

Environmental Site Design (Chapter 5):
http://www.mde.state.md.us/programs/Water/StormwaterManagementProgram/MarylandStormwaterDesignManual/Documents/www.mde.state.md.us/assets/document/chapter5.pdf

Redevelopment Regulations:
http://www.dsd.state.md.us/comar/comarhtml/26/26.17.02.05.htm



Legend

- Streams
- Andrews Airforce Base
- 8-digit Watershed
- Major Roads
- MD High Quality Waters

0 1,400 2,800 5,600 Feet

0 487.5 975 1,950 Meters

Map Date: 9/22/2014 **Drawn By:** MDE SSA

Data Sources:

Streams - State Highway Administration
Major Roads - State Highway Administration
Watersheds: 8-digit - MD Dept. of the Environment
Municipal Boundaries - State Highway Administration

MDE

MARYLAND

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

September 22, 2014

Ms. Anne Hodges
11th Civil Engineer Squadron
3466 North Carolina Avenue
Joint Base Andrews, MD 20762-4803

Re: Draft Environmental Assessment and Finding of No Significant Impact/Finding of No Practicable Alternative 21 Point Enclosed Firing Range, Joint Base Andrews Naval Air Facility, Washington, Maryland

Dear Ms. Hodges:

In accordance with the National Environmental Policy Act (NEPA) of 1969, Section 309 of the Clean Air Act and Council on Environmental Quality regulations implementing NEPA (40 CFR 1500-1508), the U.S. Environmental Protection Agency (EPA) has reviewed the Draft Environmental Assessment (EA) and Finding of No Practicable Alternative for the 21 Point Enclosed Firing Range and Joint Base Andrews Naval Air Facility in Washington, Maryland.

The Proposed Action will entail the construction of a new 28,000 square foot fully enclosed live-fire range and the completion of improvements at the existing range facility (Building No. 2495). The purpose of the Proposed Action is to continue to sustain mission readiness effectively by maximizing the Base's training capabilities to meet current and emerging requirements. Three action alternatives were examined for this project: Alternative A, B and C. The difference in the alternatives is how the facilities would be laid out within the project area. All three action alternatives would include improvements to an existing stormwater pond as no practicable alternative is available to rehabilitate the stormwater pond without completing the work. Alternative A has been identified by the Security Forces personnel at JBA as their Preferred Alternative. Alternative A, the Preferred Alternative, would result in a new live-fire range to be constructed east of the parking lot of the existing facility, to the northeast of the existing firing range. Construction of the indoor 21-Point Firing Range and the additional parking area would be designed specifically to avoid wetlands and wetland buffers.

The proposed rehabilitation and upgrades for the stormwater pond located along the southwest edge of the site will result in a temporary change to this manmade surface water. The proposed improvements are designed to increase the hydrologic function of the stormwater pond.

recd 10/21/14

Regulatory review by the MDE will be required as the work associated with the stormwater pond rehabilitation would exceed 5,000 square feet. The work will require an application for the Nontidal Wetland and Waterway Permit with the MDE.

EPA reviewed and commented on the previous Draft EA for the 21 Point Enclosed Firing Range at JBA-Naval Air Facility in October 2013. The note-worthy difference in the two EAs is that the current EA has included a Finding of No Practicable Alternative for the stormwater pond wetland requiring enlargement and rehabilitation. In addition, EPA appreciates that its comments were incorporated into the current EA. Two comments are included in the Technical Comments document (enclosed) to help better understand the response to previous comments. Thank you for the opportunity to review this project. EPA looks forward to receiving the Final EA. If you have questions regarding these comments, the staff contact for this project is Karen DelGrosso; she can be reached at 215-814-2765.

Sincerely,

Barbara Rudnick
NEPA Team Leader
Office of Environmental Programs

Enclosure (1)

Technical Comments

Surface Waters

As addressed in EPA's October 23, 2013 comment letter, the existing stormwater management detention pond is clogged and mostly non-functional through lack of maintenance. How then has the clogged detention pond affected surface waters especially the Tier II stream located near the project area? The current EA states that "no known impacts have occurred to Tier II streams located near the project area." How has this determination been made since the detention pond has not been functioning? How close is the Tier II stream and where exactly is it located in relation to the Proposed Action? Have water quality tests been conducted on the Tier II stream and if so when were tests conducted? This information would be helpful in showing that the Tier II stream was not impacted by the clogged detention pond.

Cumulative Impacts

Although a map was included in the EA depicting Proposed and Upcoming Projects at JBA as listed in Table 4; it would have been helpful to have the projects numbered and corresponded to on the map so that the projects could be easily identified in association with the Proposed Action.

Appendix C
Leroy's Lane Landfill Site (LF-05) External Documents

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URS

Memorandum

Date: October 12, 2012

To: Michael Rooney, JBA Contractor Support

CC: David Connolly, Chief ERP, JBA

From: Jeremy Cox, URS, 801-904-4065
Tom Wright, URS, 801-904-4030
Rick Cox, URS, 801-904-4096

Subject: **Assessment of Construction Impacts within LF-05 Drainage Basin**

Background

The LF-05 remedy was designed and constructed to (1) prevent infiltration of precipitation through the landfill contents, (2) control and treat contaminated on-Base groundwater through two permeable reactive barriers (PRBs) and (3) provide a barrier to prevent human or animal contact with the buried waste and debris. Minimizing impacts of surface water infiltration and groundwater elevation on landfill waste are the fundamental components of this remedy.

In order to capture and redirect precipitation falling on LF-05, a 13.5 acre (approximately) RCRA Subtitle D single-barrier earthen cap now covers the landfill. The cap consists of 12.5 vegetated acres and one asphalt acre situated over approximately two feet of granular backfill, a geosynthetic drainage layer and an impermeable geomembrane. This system wicks infiltration to a perimeter drain. The finished elevations of the cap are accordingly graded to direct surface runoff to drainage swales and culverts around the landfill perimeter. The cap includes 12 passive landfill gas vents throughout the landfill to manage gas buildup so that the integrity of the cap is not compromised.

Groundwater gradients under the cap are intercepted by a buried clay slurry wall (funnel) and directed towards two porous gravel trenches that function as PRBs (gates). This funnel and gate system requires substrate injection to treat contaminated groundwater that migrates through each gate. Monitoring wells up- and down-gradient of the gates are used to analyze the effectiveness of the injection well treatment.

This remedy was designed in 2009 with amendments in 2010 as defined in the final Interim Remedial Action Completion Report (RACR) for Groundwater (URS, May 2012) and the Draft RACR for Soil (URS, July 2012). The as-built drawings include minor field adjustments and will be included in the final RACRs.

URS Corporation
756 East Winchester Street
Suite 400
Salt Lake City, UT 84107
Tel: 801.904.4000
Fax: 801.904.4100

Discussion and Recommendations

In order to ensure the remedy is operational as designed, it is important to assess changes in land use within the LF-05 drainage basin. The LF-05 drainage basin (see hatched area on Figure 1) is a combination of surface water tributary area and the limits of groundwater gradients directed towards LF-05, plus a relatively small buffer area to account for uncertainties in these features. The drainage basin was delineated along prominent surface features (e.g., roads and buildings) to facilitate regulation of surface water drainage within this area. The surface water drainage in the vicinity of the restricted area is illustrated in Figure 2. The groundwater gradients in the vicinity of the restricted area are illustrated in Figure 3.

Any profound changes in land use within the LF-05 drainage basin would require consideration of the impacts to surface drainage and groundwater recharge within the LF-05 basin. In summary, collection and discharge of excess precipitation cannot adversely affect discharges from the LF-05 cap drainage ways; and excess water cannot be recharged to the groundwater that flows into the LF-05 footprint. In simple English, the design firm planning and constructing buildings in the LF-05 drainage basin should be required to adhere to the following constraints during construction and for the long term stormwater discharges that occur within the limits of construction:

> *Any surface water and groundwater discharge within the limits of construction should be no greater than pre-development conditions.*

This requirement serves two purposes. The first is to assure that excess flow to the tributaries of Piscataway Creek (southwest of LF-05) does not impede water flowing from the discharge pathways at LF-05. The net effect of inhibiting discharge from LF-05 over a protracted timeframe could be detrimental to vegetation and embankment slope stability. The second purpose is to limit the elevations of the groundwater table beneath LF-05 in order to minimize contact with buried waste. To achieve this goal, the current loading of precipitation to groundwater cannot be exceeded.

Design Variables for Stormwater Management

On the basis of the constraints above, the following design criteria will need to be considered by the construction contractor, based on the experience gained during the permitting and construction of LF-05):

1) Considering the above constraint on discharge to surface water, the Soil Erosion and Sediment Control (SESC) Plans implemented during construction will need controlled discharges to receiving waters in accordance with the outcome of the hydrologic analysis performed by the design contractor. This analysis should consider the receiving stream's capacity for more influent during design storm events. This analysis is necessary to mitigate the impact on receiving drains and channels into which LF-05 discharges. Similarly, long term collection and discharge of stormwater also must meet the same constraints. It is counter-productive to optimize the long term operation of the LF-05 remedy to allow retention basins or infiltration basins that create standing water and encourage groundwater recharge that will raise water levels beneath the landfill. This condition also creates a bird habitat. Instead, detention basins as opposed to retention basins, designed to receive the peak flows and total volume from a design storm then discharged in a controlled fashion to the receiving waters are consistent with optimization of the long term operations for this site. Considerations should also be given to rerouting flows to different receiving waters as needed or desired to meet the pre-development criteria.

2) With respect to groundwater recharge in the LF-05 drainage basin, the post-development rate of recharge cannot exceed the current rate. To meet this requirement, the contractor should estimate the current rates of discharge to groundwater under design storm events within the limits of construction. This analysis will consider, among other factors, the evapotranspiration that occurs prior to development and after development due to the presence of trees and wetlands, as well as the impact of increased amount of impervious areas on stormwater discharge quantity. With respect to water routing through a detention basin, compaction methods or lining would reduce the potential for infiltration.

3) If trade-offs are made in managing the stormwater discharges emanating from new construction, the net recharge to groundwater within the LF-05 drainage basin (Figure 1) must be less than the amount of pre-development recharge that currently occurs.

4) The constraints listed in this memo will be design criteria that must be taken into account when complying with the Air Force's Bird Aircraft Strike Hazard (BASH) requirements and the State of Maryland's SESC requirements.

Land use changes need not be detrimental to operation of the LF-05 remedy, provided that the Air Force approves the results of the models and supporting information that demonstrate the design criteria and operations of LF-05 are not altered. Temporary variance to the above constraints can be granted based on the Air Force's assessment of the temporal impacts.

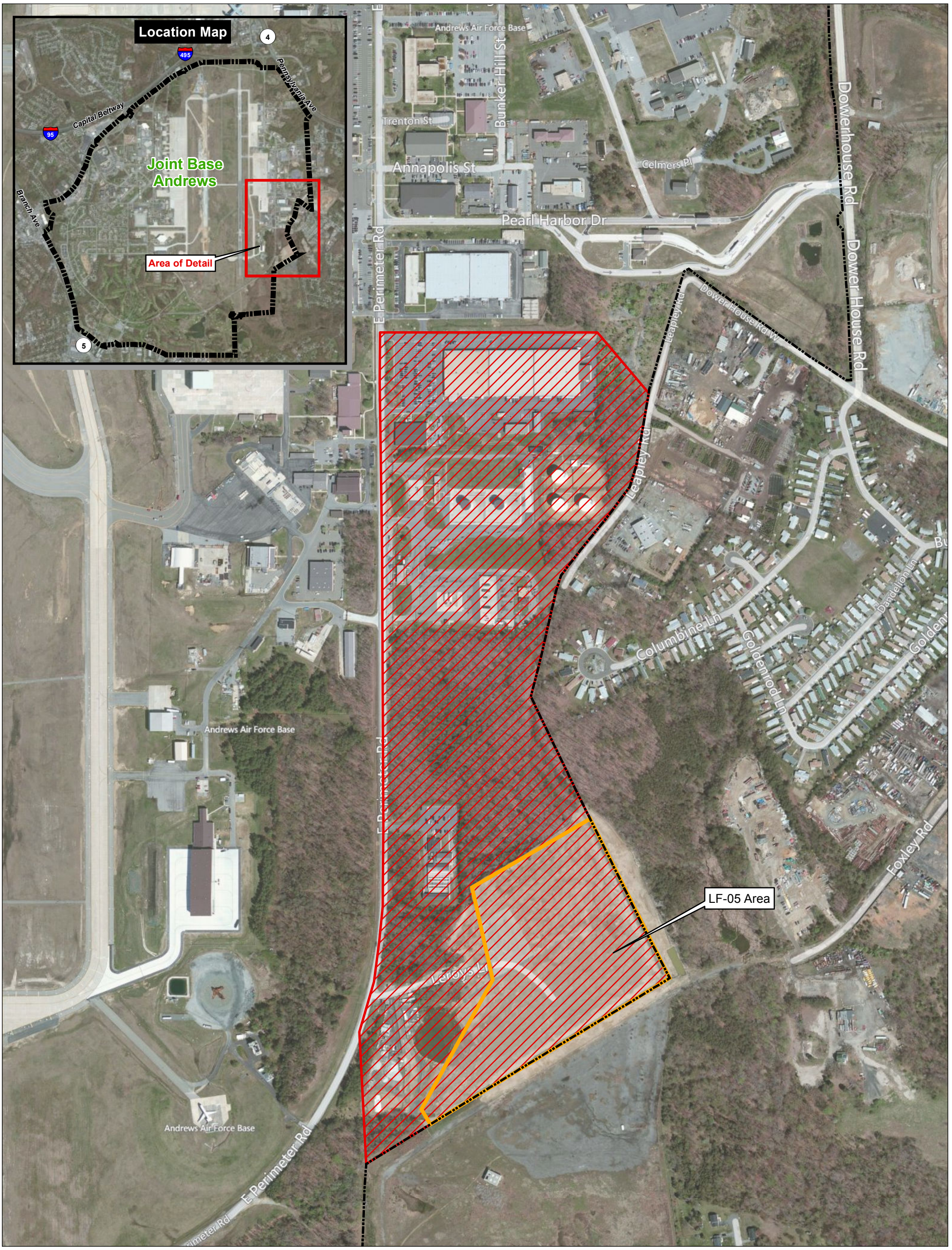
Attachments:

Figure 1 –Restricted Infiltration Area for LF-05

Figure 2 – Surface Water Drainage and Restricted Infiltration Area for LF-05

Figure 3 – Groundwater Gradients and Restricted Infiltration Area for LF-05

T:\Andrews Air Force Base\LF05_GWInfiltration.mxd



Legend

- Base Boundary
- LF-05 Site
- Zone of Restricted Infiltration

200 0 200 400 Feet

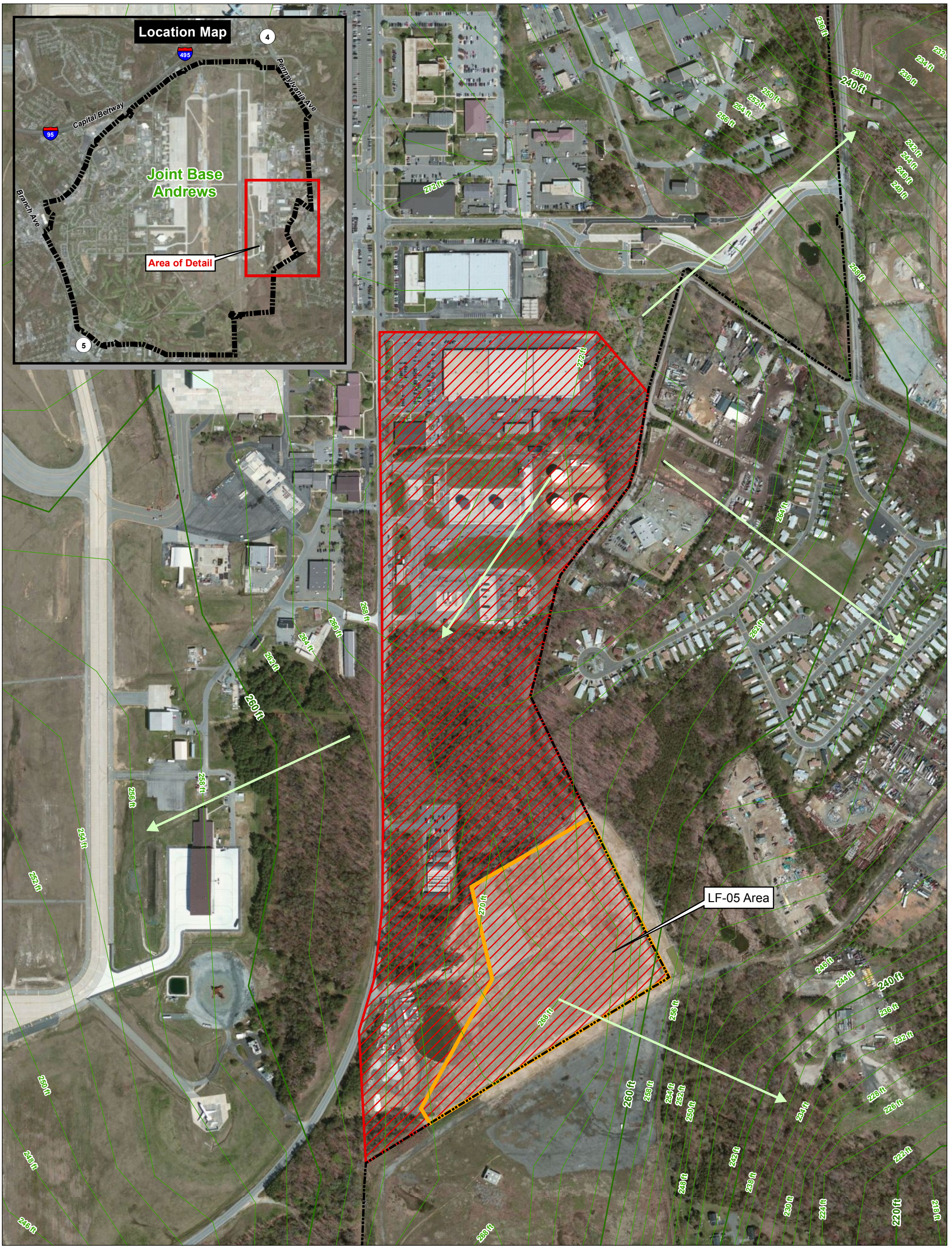
Restricted Infiltration Area for LF-05

Joint Base Andrews, MD

October 2012 Figure 1

URS

T:\Andrews Air Force Base\LF05_GWInfiltration_surface.mxd



Legend

–260– Surface Contour (URS, November 2005)
—252— (feet above mean sea level)

Approximate Surface Gradient Direction

Base Boundary

LF-05 Site

Zone of Restricted Infiltration

N

200 0 200 400 Feet

Surface Drainage and Restricted Infiltration Area for LF-05

Joint Base Andrews, MD

October 2012 Figure 2

URS

T:\Andrews Air Force Base\LF05_GWInfiltration_gwsurface.mxd

Legend

- –250– Groundwater Surface Contour (URS, November 2005)
  —252— (feet above mean sea level)
- Approximate Groundwater Flow Direction
- Base Boundary
- LF-05 Site
- Zone of Restricted Infiltration

N

200 0 200 400
Feet

Groundwater Gradients and Restricted Infiltration Area for LF-05

Joint Base Andrews, MD

October 2012 Figure 3

URS

JOINT BASE ANDREWS
GENERAL PLAN

LAND USE CONTROL
IMPLEMENTATION PLAN

SITE LF-05
Leroy's Lane Landfill

JOINT BASE ANDREWS
MARYLAND

May 2010

(Revised Oct 2012)

1.0 Introduction

This Land Use Controls[1] Implementation Plan (LUCIP) presents specific requirements for the establishment, implementation, and maintenance of land use controls (LUCs) at Joint Base Andrews, in Prince George County, Maryland. LUCs are part of the selected remedy for Joint Base Andrews in *Final Record of Decision for LF-05, Leroy's Lane Landfill, Andrews Air Force Base, Maryland* (April 2009). The Record of Decision (ROD) is a legally binding document adopted on July 21, 2009, by the U.S. Air Force (USAF) and the U.S. Environmental Protection Agency (USEPA), with the concurrence of the Maryland Department of the Environmental (MDE). The remedy was chosen in accordance with the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), as amended by the Superfund Amendments and Reauthorization Act (SARA), and to the extent practicable, the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). Joint Base Andrews, formerly Andrews Air Force Base, was listed on the National Priority List (NPL) by the USEPA on May 10, 1999 (64 Fed. Reg. 24949).

2.0 LF-05, Leroy's Lane Landfill

Site Description

As shown on Figures 2-2 and 2-3 (Final LF-05 ROD, April 2009), the LF-05 site occupies approximately 12 acres southeast of the runways at Joint Base Andrews. The LF-05 site was used as a landfill and a disposal area from the late 1950s through the 1980s for Base-generated wastes including sludge from the Base wastewater treatment operations, liquid solvents, waste oils, general refuse, construction rubble, and fly ash. In the 1950s and 1960s, sludge from the Base wastewater treatment operations was applied to the land on the eastern side of LF-05. Between 1960 and 1972 solvents, strippers, and waste fuel were disposed of at this site. Other wastes disposed of at LF-05 between the 1960s and the 1980s included but were not limited to, toluene, waste oils, brake and transmission fluid, empty cans and containers from golf course maintenance, paint cans,

[1] LUCs include any type of physical, legal, or administrative mechanism that restricts the use of, or limits access to, real property to prevent exposure to contaminants above permissible levels. The intent of using these controls is to protect human health, the environment, and the integrity of an engineering remedy by limiting the activities that may occur at a particular contaminated site. The three types of LUCs are described below:

- Physical Mechanisms or Engineering Controls (EC) include a variety of engineered remedies to contain or reduce access to existing or potential contamination, and/or physical barriers intended to limit access to property. These mechanisms are typically implemented as fences, signs, and guard stations.
- Legal Mechanisms or Institutional Controls (IC) are methods of restricting access to or use of contaminated property through legal channels, such as property deeds, local statutes, and property sale requirements. These mechanisms include restrictive covenants, negative easements, equitable servitudes, and deed notices that are meant to ensure the continued effectiveness of land use restrictions imposed as part of a remedial decision.
- Administrative Mechanisms are also ICs and include notices, adopted local land use plans and ordinances, construction permitting, or other existing land use management systems that may be used to ensure compliance with use restrictions.

For the purposes of this implementation plan, the term LUC will be used in reference to the three aforementioned mechanisms, and will include both ECs and ICs. Non-Department of Defense (DoD) organizations often use a separate designation for LUCs and ICs, but the Air Force follows the DoD terminology.

paint, carbon remover, hydraulic fluid, cleaning solvent, 1,1,1-trichloroethane (1,1,1-TCA), primer, methyl ethyl ketone (MEK), and paint thinner.

During the early 1960s through the mid-1970s, a two to three acre pit located in the southeastern portion of LF-05 was used for disposal of liquid wastes, dilute process waste, and waste oils. Municipal wastes were disposed of at LF-05 from the early 1960s through the mid-1970s (Earth Tech, 2007). Wastes were disposed of in approximately 10-feet-deep trenches, liquid waste disposal pits, and sludge disposal areas. In addition, underground storage tanks (USTs) were used to store waste oil at the site. The releases of CERCLA regulated hazardous substances, pollutants, or contaminants occurred at LF-05 as a result of these activities.

During the mid to late 1980s, the Base discontinued using the landfill. The landfill has since been covered with clean fill and is presently used as an open temporary storage area for construction materials such as lumber, sand, and concrete and plastic sewer and stormwater piping. Scrap metal from various Base-construction projects and excavated soil from a runway extension project are also found at the landfill. Two 25,000-gallon USTs were used to store waste oil at the site, were removed and disposed.

At LF-05, the current and reasonably anticipated future land use on-Base is industrial and off-Base adjacent to LF-05 is currently zoned industrial. As required by CERCLA and MDE, the risk potentially posed by groundwater as a drinking water source was evaluated, although groundwater is not currently used for drinking and drinking water wells are prohibited under Maryland regulations when public drinking water is available, as at Joint Base Andrews and surrounding areas.

In 2001, a remedial investigation (RI) was initiated to evaluate the nature and extent of contamination at LF-05. The investigation identified several contaminants that exceeded screening levels and determined to be contaminants of potential concern (COPCs), which were further evaluated in a baseline Human Health Risk Assessment (HHRA).

The contaminants of concern (COCs) identified for soil are chromium in on-Base soil; benzene, tetrachloroethene (also known as perchloroethene [PCE]), 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, toluene, and m- & p-xylene in soil at Parcel A; PCE in soil at Parcel B. The COCs identified for groundwater are chlorobenzene, vinyl chloride, and polychlorinated biphenyls (PCBs) Aroclor-1242 and Aroclor-1254 in on-Base groundwater; and chlorobenzene and vinyl chloride in off-Base groundwater.

Of all the potential receptors considered in the HHRA, unacceptable risks were identified for future on-Base and off-Base residents due to exposure to volatile organic compounds (VOCs) in groundwater and soil vapor off-Base, and to VOCs and metals in soil and VOCs and PCBs in groundwater on-Base. Remedial action is required to remediate contamination in soil on-Base, and groundwater both on-Base and off-Base within specific areas of LF-05.

An Ecological Risk Assessment (ERA) was conducted to assess the potential impact to ecological receptors exposed to the site related contaminants in environmental media (surface water, sediment, and surface soil) at LF-05. The ERA concluded that surface water associated with LF-05 is unlikely to cause adverse ecological effects. The preliminary ecological evaluation concluded that a landfill cap would mitigate any potential risk to ecological receptors due to contaminants in soil at the landfill. Contaminants in sediments adjacent to the landfill posed a potential ecological risk (CH2M Hill, 2007); therefore, additional samples were collected and analyzed and the results documented (URS, 2008c). The ecological risk analysis overall shows no threat to the environment, except for one area designated by sample location SD-15 due to sediment containing a high concentration of lead that will be addressed through remedial action.

Between 2009 and 2010, a low permeability soil-bentonite slurry wall was installed around the downgradient edge of the landfill. Permeable Reactive Barriers (PRBs), consisting of gravel-filled trenches with injection wells, were installed in two locations ((URS, 2012a). A Resource Conservation and Recovery Act Subtitle D landfill cap with an earthen cover was installed over the landfill ((URS, 2012b). Multiple oxygen-releasing compound injections occurred in PRB gate A, the most recent occurring in February 2012.

Summary of the Selected Remedy

The major components of the selected remedy at LF-05 are as follows:

- Construction of a Resource Conservation and Recovery Act (RCRA) Subtitle D Single-Barrier Cap comprising approximately 10.5 acres of vegetative cover and approximately 1.5 acres of asphalt cover, including passive landfill gas vents;

- Excavation of lead-contaminated sediment to be incorporated under the low permeability cap if the sediment is not a hazardous waste or, otherwise, to be disposed of at a RCRA-permitted facility;

- Installation of a funnel-and-gate permeable reactive barrier (PRB) system used for injection of an appropriate substrate (organic and/or inorganic) or reactant for treatment of on-Base groundwater;

- Injection of appropriate substrates and/or reactants for in-situ groundwater treatment of off-Base groundwater;

- Long-term monitoring and maintenance; and

- Institutional controls.

The selected remedy addresses groundwater, landfill waste, soil, and sediment contamination at LF-05 and fits into the overall strategy to investigate and address the

Environmental Restoration Program (ERP) sites at Joint Base Andrews. The actions described in the ROD will be performed under the authority of USAF and USEPA, in coordination with MDE.

In addition to the LUC objectives identified in the ROD, there are also requirements to access construction impacts within the LF-05 drainage basin. The LF-05 remedy was designed and constructed to (1) prevent infiltration of precipitation through the landfill contents, (2) control and treat contaminated on-Base groundwater through two permeable reactive barriers (PRBs) and (3) provide a barrier to prevent human or animal contact with the buried waste and debris. Minimizing impacts of surface water infiltration and groundwater elevation on landfill waste are the fundamental components of this remedy

3.0 LUCs Objectives for LF-05

LUCs are necessary and will remain in place on-Base indefinitely because hazardous substances will be left in place. ICs will be maintained for off-Base areas until the cleanup criteria have been achieved, but may be modified pursuant to CERCLA, the NCP, and the ROD for the site as new data are analyzed. The general areas for which LUCs will be implemented are illustrated on the Institutional Control Area Figure included in this document (October 2012).

The LUC Objectives, as outlined in the ROD (Section 2.12.2.6), are as follows:

1. Ensure no potable use of impacted shallow groundwater at the site until maximum contaminant levels (MCLs) are met and acceptable risk levels are achieved based upon cumulative risk in order to limit exposure to groundwater contaminants;

2. Ensure that excavation, construction or any similar activities occurring within the area identified within Figure 2-12 do not reduce the effectiveness of any component of the remedy;

3. Ensure that workers performing any excavation, construction or any similar activities on-Base are protected from exposure to an unacceptable risk, by implementation of a health and safety plan;

4. Ensure that a written advisory is provided to owners of property off-Base stating that safety precautions should be undertaken in the event of excavation, construction or soil disturbance to ensure that environmental conditions do not pose an unacceptable risk to workers;

5. Ensure that no activities degrade, or in any way cause, the RCRA Subtitle D Single Barrier Cap to fail to perform as specified in the ROD and the remedial design, or fail to comply with applicable or relevant and appropriate requirements (ARARs), including State of Maryland landfill closure requirements, Code of Maryland Regulations (COMAR) 26.04.07.21E, and postclosure requirements, COMAR 26.04.07.22;

6. Ensure that the remedy, including the groundwater monitoring wells and slurry walls, are protected from damage by undertaking annual inspections at a minimum;

7. Ensure that any impacted soil and groundwater exceeding relevant regulatory criteria are properly sampled, handled, and disposed of during any construction and sampling activities; and

8. Ensure no residential land use occurs until site conditions allow for unlimited use and unrestricted exposure.

The USAF is responsible for implementing, monitoring, maintaining, reporting on, and enforcing the LUCs at LF-05, on-Base. The USAF has no authority to enforce LUCs off of the Installation on private property, which requires county and state enforcement. The landfill cap and security road area illustrated in Figure 2-12 will be designated as a "restricted use" area in the Base Geographical Information System (GIS). This designation prohibits activities such as residential development or potable use of groundwater. Additionally, groundwater use is currently restricted, as documented in the Base General Plan (BGP), and procedures are in place to limit contact with groundwater through the issuance of dig permits and other protective measures. Records of groundwater contamination will be maintained in the Base GIS/environmental database. The restricted-use designation will remain in place until groundwater monitoring indicates that the RAOs have been met on-Base at LF-05.

The USAF is responsible for providing a written advisory to owners of property off-Base that safety precautions should be undertaken in the event of excavation, construction, or soil disturbance to ensure that environmental conditions do not pose an unacceptable risk to workers. The advisory will state that these owners should contact the Andrews Environmental Restoration Program in the event that they undertake any activity that requires excavation, construction, or soil disturbance. If the USAF becomes aware that either off-Base property is sold, the USAF will provide such information to the new property owner within 60 days of becoming aware of the sale. The USAF will provide informational support in response to requests from any entity developing a Health and Safety Plan for work performed on adjacent properties.

4.0 Description of LUCs Applied to LF-05

The following LUCs or actions will be applied on-Base to LF-05:

- Review and approval of any proposed changes in land use, including construction of new facilities or additions to existing facilities at LF-05 by the Joint Base Andrews Facility Review Board, which interacts with the Community Planner using the BGP as a guide to land use issues. The purpose of the review is to ensure consistency with the prohibition of construction of any facility, building,

or any structure that would have a negative impact on the remedy in meeting the remedial action objectives (RAOs);

- Inclusion of the restrictions at LF-05 in the BGP. All ERP sites and restrictions at Joint Base Andrews are identified in the BGP. Any proposed activity or construction on an ERP site requires an "ERP Waiver to Construct" memorandum, approved and signed by the USAF (Appendix A);

- Review of proposed construction activities at LF-05 by Joint Base Andrews Asset Management Flight through the following processes: Environmental Impact Analysis Process (EIAP), National Environmental Policy Act (NEPA) Design Reviews of Proposed Construction, review of routine Work Orders that involve alterations to facilities, and review of Dig Permits;

- Posting of signs at the site identifying LF-05 as a CERCLA site. The signs will state that no construction or excavation activities, and no groundwater use or withdrawal, is permitted within the area without written authorization by the USAF. Contact information for the ERP project manager will also be included on the signs;

- Restriction of access. Access to the LF-05 site is and will be limited to Base personnel and its contractors and is enclosed by a security fence controlled by Joint Base Andrews security personnel;

- Driving on the landfill cap is prohibited, with the exception of the execution of ERP activities;

- The asphalt parking area is designed for small vehicles; use shall be limited to vehicles weighing no greater than 1 ton pickup trucks.

- Continued prohibition of potable use of groundwater. Potable use of groundwater is prohibited at LF-05 and at Joint Base Andrews in total. COMAR 26.03.01.05A prohibits issuance of a permit to individual residents or businesses for private water supply wells when public water supplies are available; therefore, the installation of groundwater wells intended for potable use will not be approved at the site. Review of Work Orders and Dig Permits by Joint Base Andrews Environmental staff also will ensure that potable groundwater wells will not be installed at LF-05; and

- Assessment of construction impacts within LF-05 drainage basin. The delineated LF-05 drainage basin and design variables that must be taken into account for stormwater management are included within Appendix B.

The groundwater plume protrudes beyond the Base boundary onto private properties which are currently zoned for industrial use only. Implementation of state regulations and county ordinances by Prince George's County, which apply countywide, will be

relied upon to protect private property owners and the public from groundwater that may contain hazardous substances, pollutants or contaminants. These off-Base ICs implemented by the county include:

- Review of groundwater well permits to ensure potability of groundwater within and near the plume, in accordance with COMAR 26.04.04.09;

- Prohibit issuance of a well permit to individual residents or businesses for private water supply wells when public water supplies are available, as in the case of LF-05, in accordance with COMAR 26.03.01.05A;

- Review of plans for development, including construction of new buildings or additions to existing buildings, through the Permits and Review Division of Prince George's County Department of Environmental Resources (PGCDER), in accordance with Prince George's County Code, Subtitle 4, Sections 4-270 through 4-315; and

- Require soil sampling for VOCs to assess the need for vapor intrusion monitoring and mitigation, to be evaluated by PGCDER for buildings or additions to existing buildings proposed for construction.

Duration: The LUCs on-Base will remain in place indefinitely because hazardous substances will be left in place. The ICs off-Base will remain in place until the concentration of COCs in off-Base groundwater allows for unlimited use and unrestricted exposure.

Monitoring: A review of the environmental use restrictions and controls will be conducted annually by Joint Base Andrews. The monitoring reports will evaluate the status of the LUCs and how any LUC deficiencies or inconsistent uses have been addressed. The monitoring results will be included in a separate report or as a section of another environmental report, if appropriate, and provided to USEPA and MDE for informational purposes only. The monitoring reports will be used in preparation of the five-year reviews to evaluate the effectiveness of the remedy.

Notification: Any activity that is inconsistent with the LUC objectives or use restrictions, or any other action that may interfere with the effectiveness of the LUCs will be addressed by the USAF as soon as practicable. In no case will the process be initiated later than 10 days after the USAF becomes aware of the breach. The USAF will notify USEPA and MDE regarding how the USAF has addressed or will address the breach with in 10 days of sending USEPA and MDE notification of the breach. The LUCs can be modified as new data are analyzed; however, the USAF will not modify or terminate LUCs, implementation actions, or modify land use designations without approval by USEPA and the MDE. The USAF will seek prior concurrence before any anticipated action that may disrupt the effectiveness of the LUCs or any action that may alter or negate the need for LUCs. Joint Base Andrews shall notify USEPA and MDE 45 days in

advance of any proposed land use changes that are inconsistent with IC objectives or the selected remedy.

5.0 References

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URS, 2012a. *Final Interim Remedial Action Completion Report for Groundwater Treatment Site LF-05.* 2012

URS, 2012b. *Final Remedial Action Completion Report for Soil site LF-05.* 2012

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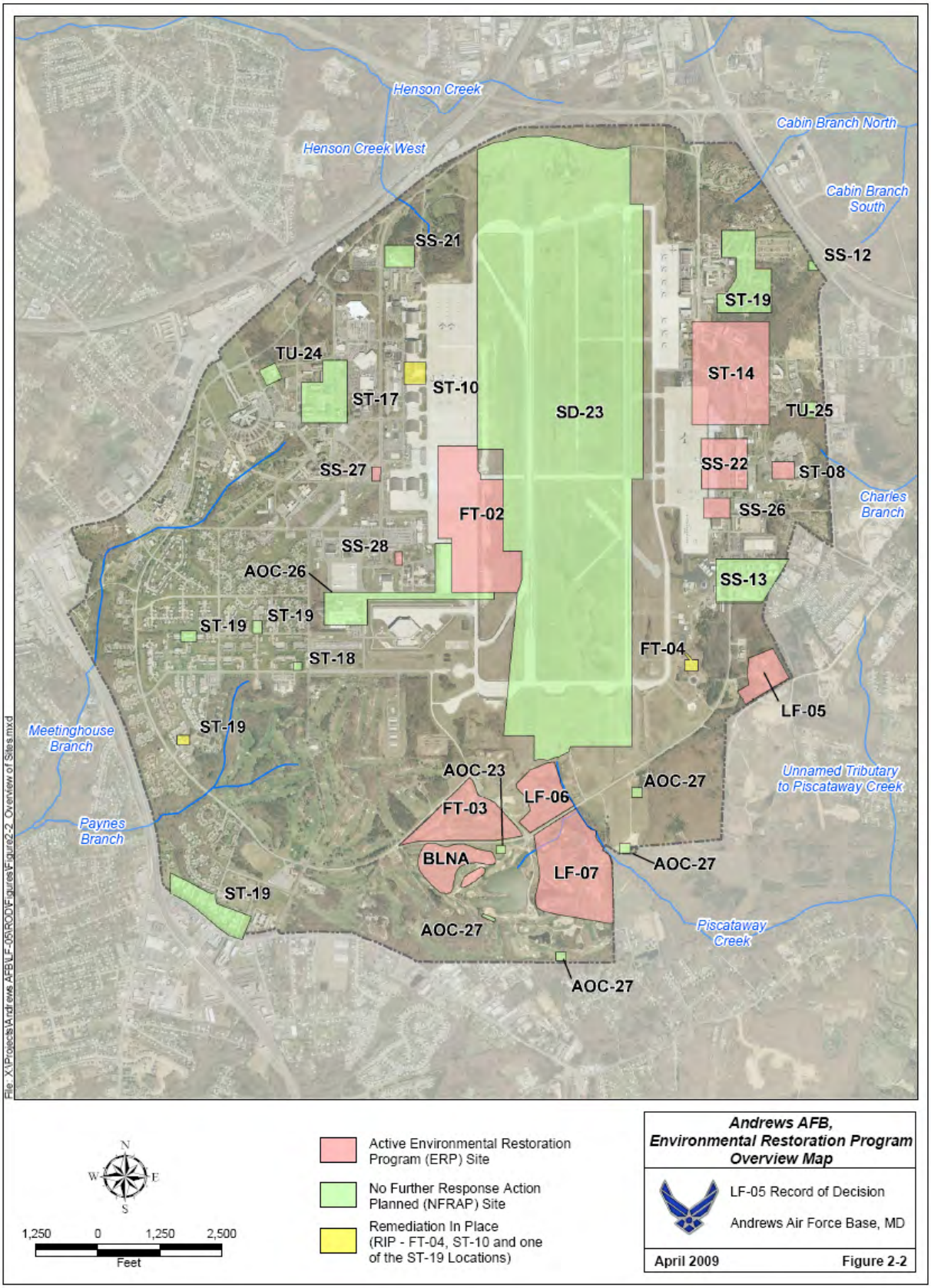
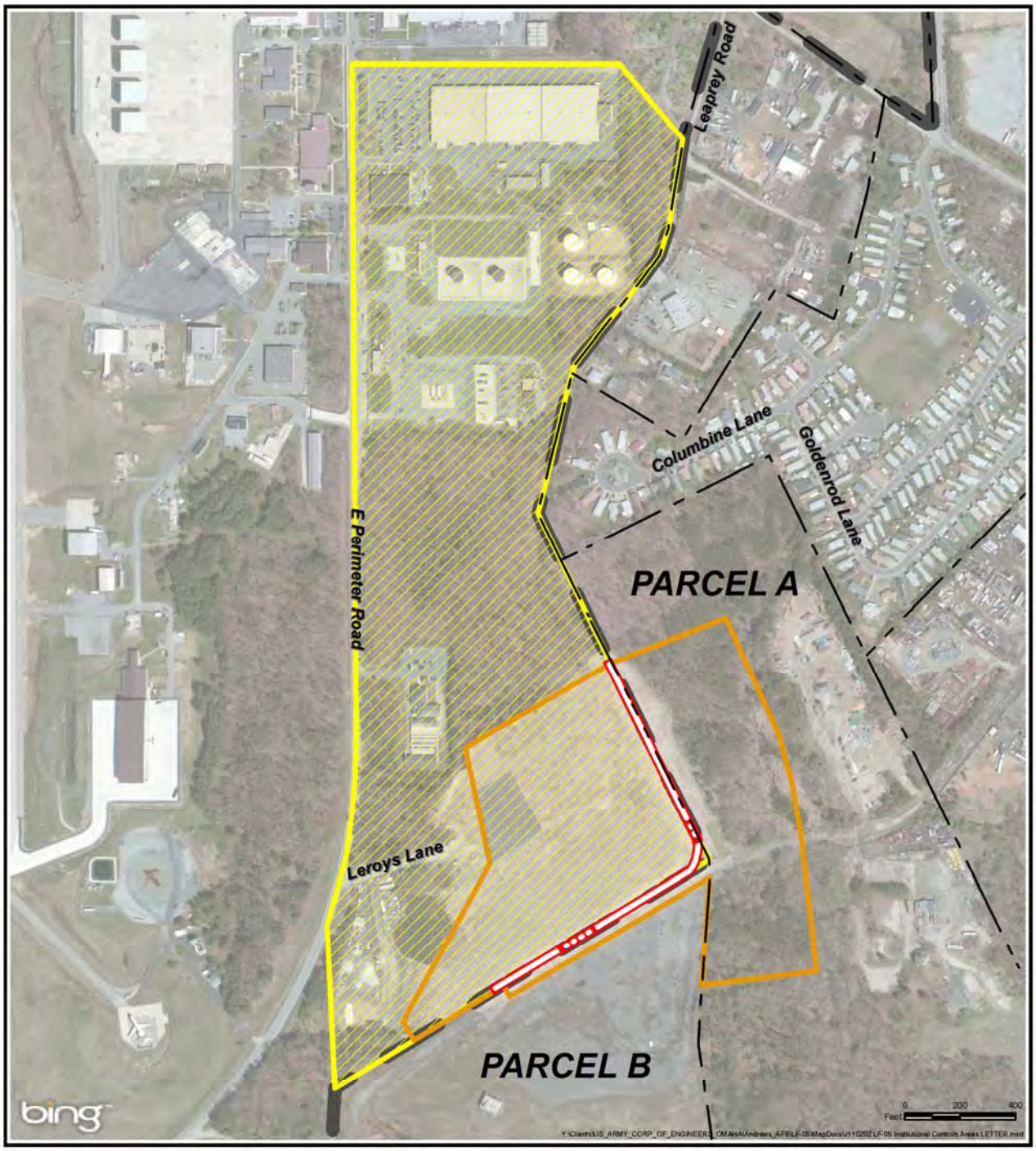
USAF, 2004. Memorandum for All AMC CESs/CC. Implementation Policy for Environmental Restoration Program (ERP) Requests for Waiver to Construct (AFI 32-1021, 24 Jan 03, Planning and Programming Military Construction (MILCON) Projects). January 2004.

FIGURES


Henson Creek
Henson Creek West
Cabin Branch North
Cabin Branch South
SS-21
SS-12
ST-19
TU-24
ST-17
ST-10
SD-23
ST-14
TU-25
SS-27
SS-22
ST-08
FT-02
SS-26
Charles Branch
SS-28
AOC-26
SS-13
ST-19
ST-19
FT-04
ST-18
LF-05
Meetinghouse Branch
ST-19
AOC-23
LF-06
AOC-27
Unnamed Tributary to Piscataway Creek
FT-03
Paynes Branch
BLNA
LF-07
AOC-27
ST-19
AOC-27
Piscataway Creek
AOC-27
File: X:\Projects\Andrews AFB\LF-05\RODFigures\Figure2-2_Overview of Sites.mxd
N
W
E
S
1,250
0
1,250
2,500
Feet
Active Environmental Restoration Program (ERP) Site
No Further Response Action Planned (NFRAP) Site
Remediation In Place (RIP - FT-04, ST-10 and one of the ST-19 Locations)
Andrews AFB, Environmental Restoration Program Overview Map
LF-05 Record of Decision
Andrews Air Force Base, MD
April 2009
Figure 2-2


East Perimeter Road
Building 2495
Leroy's Lane
Reed Pond
Hot Spot
Parcel A
Parcel B
LF-05 Landfill Boundary
Andrews AFB Boundary Fence
Parcel Boundary
125 0 125 250
Feet
Landfill 05 (LF-05) Location
LF-05 Record of Decision
Andrews Air Force Base, MD
April 2009
Figure 2-3
File: X:\Projects\MA\Andrews AFB\LF-05\RODFigures\Figure2-3_LF-05_Location.mxd



Map Projection: NAD 1983 StatePlane Maryland FIPS 1900 Feet
Esri World Topographic Basemap

- Area of Institutional Control
- Zone of Restricted Infiltration
- RCRA Subtitle D Cap with Asphalt Surface
- Slurry Wall (Funnel)
- Permiable Reactive Barrier (Gate)
- Parcel Boundary
- Installation Boundary

Institutional Control Areas For LF-05

Joint Base Andrews
Naval Air Facility, Maryland
October, 2012

U.S. AIR FORCE

Bay West

Appendix A

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR MOBILITY COMMAND

07 JAN 2004

MEMORANDUM FOR ALL AMC CESs/CC

FROM: HQ AMC/A7V/A7P
507 Symington Drive
Scott AFB IL 62225-5022

SUBJECT: Implementation Policy for Environmental Restoration Program (ERP) Requests for Waiver to Construct (AFI 32-1021, 24 Jan 03, *Planning and Programming Military Construction (MILCON) Projects*)

1. In accordance with the referenced Air Force Instruction (AFI), the current Certificate of Compliance portion of DD Form 1391c includes submittal of the subject waiver. The attached policy provides Air Mobility Command guidance on the content and processing of a Request for Waiver. Paragraph 2.3.12 of the AFI refers to the Environmental Restoration Program (ERP), and the certificate asks if the facility "is on an ERP site." ERP includes all site cleanups done by the Department of Defense, regardless of the funding source. Additionally, this policy shall apply to all construction projects, i.e., MILCON, minor construction, military family housing, commissary, AAFES, etc.

2. Installations should use discretion when applying for waivers to construct. The goal of the waiver process is to minimize impacts to human health and the environment. Minor activities proposed on ERP sites may not need a waiver if they entail negligible risk to site workers and do not interfere with ERP activities. Exercise sound technical judgment when identifying such cases and provide rationale for this determination along with DD Form 1391c.

3. This is a coordinated HQ AMC/A7C/JAV memo. If members of your staff have any questions, please contact our POC, Ms. Sharon Geil, HQ AMC/A7VQ, DSN 779-7632, e-mail: sharon.geil@scott.af.mil.

WILLIAM H. MARTIN, JR., Colonel, USAF
Chief, Environmental Programs Division
Directorate of Installations &
Mission Support

LARRY W. BRITTENHAM, Colonel, USAF
Chief, Plans & Programs Division
Directorate of Installations &
Mission Support

Attachment:
Request for Waiver Process

Request for Waiver Process

1. Effective immediately, the Environmental Flight Chief shall coordinate on site locations for all construction projects. It is AMC policy that construction projects are not normally sited on contaminated Environmental Restoration Program (ERP) sites. If an ERP site is the only practical location for a proposed construction project, the installation must request a waiver to construct on the ERP site from HQ AMC prior to proceeding with the construction process. If an ERP site is closed with unrestricted use, i.e., no institutional controls, then a waiver is not required, but the Remedial Project Manager(s) (RPM) for both Environmental Restoration Account (ERA)-eligible sites and for Environmental Cleanup (EC) sites (ERA & EC RPM) shall designate this status during the coordination process (select "The nature of the site contamination does not preclude this type of construction..." block on DD Form 1391c Certificate of Compliance). This site closure must be documented in writing by the appropriate regulatory agencies, in accordance with applicable policies.

2. During routine review of the proposed construction, the ERA & EC RPM must advise the Civil Engineer Squadron Engineering Flight of any potential conflicts with the ERP and the need to request a waiver to construct. Rejection of a proposed site for a construction project is much easier to overcome if done during the planning phase rather than during or after design. Therefore, the ERA & EC RPM should coordinate with the Engineering Flight to help locate alternative sites for proposed construction projects that do not conflict with the ERP. If the proposed construction is not relocated, the ERA & EC RPM should advise the Engineering Flight to increase the programmed amount of funding for relevant construction projects to cover costs of addressing contamination and any necessary construction design modifications at the site. Prior to requesting a waiver, the ERA & EC RPM should make the construction manager aware of potential pitfalls that may impact a construction project (Attachment 1).

3. The request for waiver to construct must be coordinated with the wing Staff Judge Advocate (JA) and Bioenvironmental Engineer (SGPB), and sent from the Base Civil Engineer to HQ AMC/A7V, with a copy to HQ AMC/A7P. In addition, the regulatory agencies should be notified of the proposed construction project. The request for waiver to construct will be reviewed by HQ AMC and either approved, disapproved (with explanation), or disapproved pending receipt of further information. After approval of a waiver to construct, the ERA & EC RPM must monitor construction activities to ensure compliance with waiver requirements. In order to receive a waiver, the following criteria must be adequately addressed:

a. Construction must not adversely impact cleanup options or schedules

b. Construction must not adversely impact migration of contaminants from the site

c. Site contaminants must be adequately characterized and delineated

4. An example waiver request is located at attachment 2. Waiver requests should include the following:

a. ERP site identification number (or analogous site identifier)

b. Description of proposed construction project, to include a description of all aspects that may mitigate the impact of building on an ERP site

c. Potential impacts on the ERP site and proposed resolutions

d. Potential conflicts with ongoing or future ERP activities and the proposed resolutions

e. Date that regulatory agencies were notified in writing of construction project (and response, if any)

f. Plans for disposition of soil, groundwater, or other contaminated media removed from the construction site

g. Contingency plan for unexpected contamination encountered during construction

h. Estimated start and completion dates for construction

i. Identify any alternative sites for the construction

5. The source of funding for addressing site contamination must be identified and programmed through the appropriate budgetary channels. ERA funds cannot be used to support MILCON or construction projects. Therefore, remediation required by construction activities is not eligible for ERA funds if, for example, monitored natural attenuation is selected as the remedial alternative for a site and now excavation is required. The excavation and disposal of contaminated soil resulting from construction activities is not eligible for ERA funding. Similarly, environmental compliance (EC) funds should not be used in support of construction projects.

Attachments:
1. Potential Construction Pitfalls
2. Example Request for Waiver to Construct

Example Request for Waiver to Construct

MEMORANDUM FOR HQ AMC/A7V

FROM: XXX CES/CC

SUBJECT: Request Waiver to Construct a Rapid Runway Repair (RRR) Project

1. Request waiver to construct a Self Help Project, Extension of the RRR training area, and all work associated with the construction located on site SS-12, an Environmental Restoration Account (ERA) funded site. The project will extend the existing RRR training area to an area of 1000 feet by 100 feet. This project makes the existing RRR site capable of supporting full RRR operations. The proposed construction schedule is provided at attachment 1.

2. Construction activities will not occur more than 3 feet below ground surface, so Environmental Restoration Program (ERP) activities at site SS-12 will not be impacted since there is no significant soil contamination. No impacts to groundwater are anticipated since the water table is at 20 feet below ground surface. We notified the State Department of Environmental Quality (SDEQ) of this project on 15 Nov 03 and received written concurrence on 29 Nov 03. Locating an alternative site for this project is not applicable because it entails expanding an existing structure.

3. Provided for your review is a copy of site map showing the area impacted by the extension (Atch 2). A site map from the Management Action Plan showing the approximate boundaries of the impacted portions of ERP site SS-12 is provided at attachment 3. The site hazard summary and list of sub-surface contamination at site SS-12 is provided at attachment 4.

4. In accordance with guidance from HQ AMC/A7V, the following stipulations for construction on/near ERP sites of known contamination will be met:

a. This project will comply with SDEQ guidance for disposal of contaminated soils/materials, should any be encountered.

b. Contaminated material identified during construction will be removed and disposed using project funds. The disposal will be treated as a Resource Conservation and Recovery Act compliance requirement of the project versus as an ERA or Environmental Compliance funding requirement.

c. Construction contractor and site workers will be informed of the potential for encountering contaminated material on the job site. Safety observers currently certified with OSHA 1910.120 Hazardous Waste Operations and Emergency Response (HazWOpER) training will be on site during all construction activities.

d. A monitoring program during construction will be established.

e. A site-specific Health and Safety Plan will be developed. The base has a current Health and Safety Plan that will be adopted for this project.

f. Procedures for decontamination of heavy equipment are established.

g. Provisions to safeguard the public (i.e., conspicuous signs, security arrangements, air monitoring, etc.) will be implemented.

h. An AF Form 103 (Digging Permit) will be coordinated through base civil engineering channels prior to project start-up.

5. This request as been coordinated with our Bioenvironmental Engineering and Judge Advocate staffs. If you have any questions concerning this request, please contact our ERA Remedial Program Manager, Mr. John Doe, at DSN 123-4567.

JOHN Q. MILITARY, Lt Col, USAF
Base Civil Engineer

Attachments:
1. Construction Schedule
2. RRR extension Map (Proposed Project Site Map)
3. Site SS-12 Site Map
4. Site SS-12 Hazards Summary

cc:
HQ AMC/A7P

Potential Construction Pitfalls

Funding and Schedules

- Changes in DOD and HQ USAF DERP policies, ERA or EC funding priorities, level of funding available and AMC funding requirements may cause ERP cleanup project priorities and schedules to slip
- Delays caused by regulatory/community review and input may cause ERP cleanup project schedules to slip
- If construction proceeds on a contaminated site, the regulators may require review of construction design documents, or impose other requirements that may impact cost and/or schedule; even during project execution
- Inclusion of environmental requirements for characterization, monitoring, and disposal may significantly increase project costs. Additionally, groundwater or rainwater that collects on the construction site may need treatment or to be disposed as hazardous waste.

Project Modifications

- Regulatory agency review and input may cancel or modify ERP cleanup projects
- Community review and input may cancel or modify ERP cleanup projects
- Development of new technologies may cancel or modify ERP cleanup projects
- Construction design may need modification, at increased cost, to accommodate, for example, precluding hazardous volatile chemicals from entering a building

Unknown Subsurface Conditions

- Site characterization is not an exact science
- Significant potential exists for unknown and unplanned subsurface contamination at an ERP site, even at sites fully characterized according to industry standards

Appendix B

URS

Memorandum

Date: October 12, 2012

To: Michael Rooney, JBA Contractor Support

CC: David Connolly, Chief ERP, JBA

From: Jeremy Cox, URS, 801-904-4065
Tom Wright, URS, 801-904-4030
Rick Cox, URS, 801-904-4096

Subject: **Assessment of Construction Impacts within LF-05 Drainage Basin**

Background

The LF-05 remedy was designed and constructed to (1) prevent infiltration of precipitation through the landfill contents, (2) control and treat contaminated on-Base groundwater through two permeable reactive barriers (PRBs) and (3) provide a barrier to prevent human or animal contact with the buried waste and debris. Minimizing impacts of surface water infiltration and groundwater elevation on landfill waste are the fundamental components of this remedy.

In order to capture and redirect precipitation falling on LF-05, a 13.5 acre (approximately) RCRA Subtitle D single-barrier earthen cap now covers the landfill. The cap consists of 12.5 vegetated acres and one asphalt acre situated over approximately two feet of granular backfill, a geosynthetic drainage layer and an impermeable geomembrane. This system wicks infiltration to a perimeter drain. The finished elevations of the cap are accordingly graded to direct surface runoff to drainage swales and culverts around the landfill perimeter. The cap includes 12 passive landfill gas vents throughout the landfill to manage gas buildup so that the integrity of the cap is not compromised.

Groundwater gradients under the cap are intercepted by a buried clay slurry wall (funnel) and directed towards two porous gravel trenches that function as PRBs (gates). This funnel and gate system requires substrate injection to treat contaminated groundwater that migrates through each gate. Monitoring wells up- and down-gradient of the gates are used to analyze the effectiveness of the injection well treatment.

This remedy was designed in 2009 with amendments in 2010 as defined in the final Interim Remedial Action Completion Report (RACR) for Groundwater (URS, May 2012) and the Draft RACR for Soil (URS, July 2012). The as-built drawings include minor field adjustments and will be included in the final RACRs.

URS Corporation
756 East Winchester Street
Suite 400
Salt Lake City, UT 84107
Tel: 801.904.4000
Fax: 801.904.4100

Discussion and Recommendations

In order to ensure the remedy is operational as designed, it is important to assess changes in land use within the LF-05 drainage basin. The LF-05 drainage basin (see hatched area on Figure 1) is a combination of surface water tributary area and the limits of groundwater gradients directed towards LF-05, plus a relatively small buffer area to account for uncertainties in these features. The drainage basin was delineated along prominent surface features (e.g., roads and buildings) to facilitate regulation of surface water drainage within this area. The surface water drainage in the vicinity of the restricted area is illustrated in Figure 2. The groundwater gradients in the vicinity of the restricted area are illustrated in Figure 3.

Any profound changes in land use within the LF-05 drainage basin would require consideration of the impacts to surface drainage and groundwater recharge within the LF-05 basin. In summary, collection and discharge of excess precipitation cannot adversely affect discharges from the LF-05 cap drainage ways; and excess water cannot be recharged to the groundwater that flows into the LF-05 footprint. In simple English, the design firm planning and constructing buildings in the LF-05 drainage basin should be required to adhere to the following constraints during construction and for the long term stormwater discharges that occur within the limits of construction:

Any surface water and groundwater discharge within the limits of construction should be no greater than pre-development conditions.

This requirement serves two purposes. The first is to assure that excess flow to the tributaries of Piscataway Creek (southwest of LF-05) does not impede water flowing from the discharge pathways at LF-05. The net effect of inhibiting discharge from LF-05 over a protracted timeframe could be detrimental to vegetation and embankment slope stability. The second purpose is to limit the elevations of the groundwater table beneath LF-05 in order to minimize contact with buried waste. To achieve this goal, the current loading of precipitation to groundwater cannot be exceeded.

Design Variables for Stormwater Management

On the basis of the constraints above, the following design criteria will need to be considered by the construction contractor, based on the experience gained during the permitting and construction of LF-05):

1) Considering the above constraint on discharge to surface water, the Soil Erosion and Sediment Control (SESC) Plans implemented during construction will need controlled discharges to receiving waters in accordance with the outcome of the hydrologic analysis performed by the design contractor. This analysis should consider the receiving stream's capacity for more influent during design storm events. This analysis is necessary to mitigate the impact on receiving drains and channels into which LF-05 discharges. Similarly, long term collection and discharge of stormwater also must meet the same constraints. It is counter-productive to optimize the long term operation of the LF-05 remedy to allow retention basins or infiltration basins that create standing water and encourage groundwater recharge that will raise water levels beneath the landfill. This condition also creates a bird habitat. Instead, detention basins as opposed to retention basins, designed to receive the peak flows and total volume from a design storm then discharged in a controlled fashion to the receiving waters are consistent with optimization of the long term operations for this site. Considerations should also be given to rerouting flows to different receiving waters as needed or desired to meet the pre-development criteria.

2) With respect to groundwater recharge in the LF-05 drainage basin, the post-development rate of recharge cannot exceed the current rate. To meet this requirement, the contractor should estimate the current rates of discharge to groundwater under design storm events within the limits of construction. This analysis will consider, among other factors, the evapotranspiration that occurs prior to development and after development due to the presence of trees and wetlands, as well as the impact of increased amount of impervious areas on stormwater discharge quantity. With respect to water routing through a detention basin, compaction methods or lining would reduce the potential for infiltration.

3) If trade-offs are made in managing the stormwater discharges emanating from new construction, the net recharge to groundwater within the LF-05 drainage basin (Figure 1) must be less than the amount of pre-development recharge that currently occurs.

4) The constraints listed in this memo will be design criteria that must be taken into account when complying with the Air Force's Bird Aircraft Strike Hazard (BASH) requirements and the State of Maryland's SESC requirements.

Land use changes need not be detrimental to operation of the LF-05 remedy, provided that the Air Force approves the results of the models and supporting information that demonstrate the design criteria and operations of LF-05 are not altered. Temporary variance to the above constraints can be granted based on the Air Force's assessment of the temporal impacts.

Attachments:

Figure 1 –Restricted Infiltration Area for LF-05

Figure 2 – Surface Water Drainage and Restricted Infiltration Area for LF-05

Figure 3 – Groundwater Gradients and Restricted Infiltration Area for LF-05

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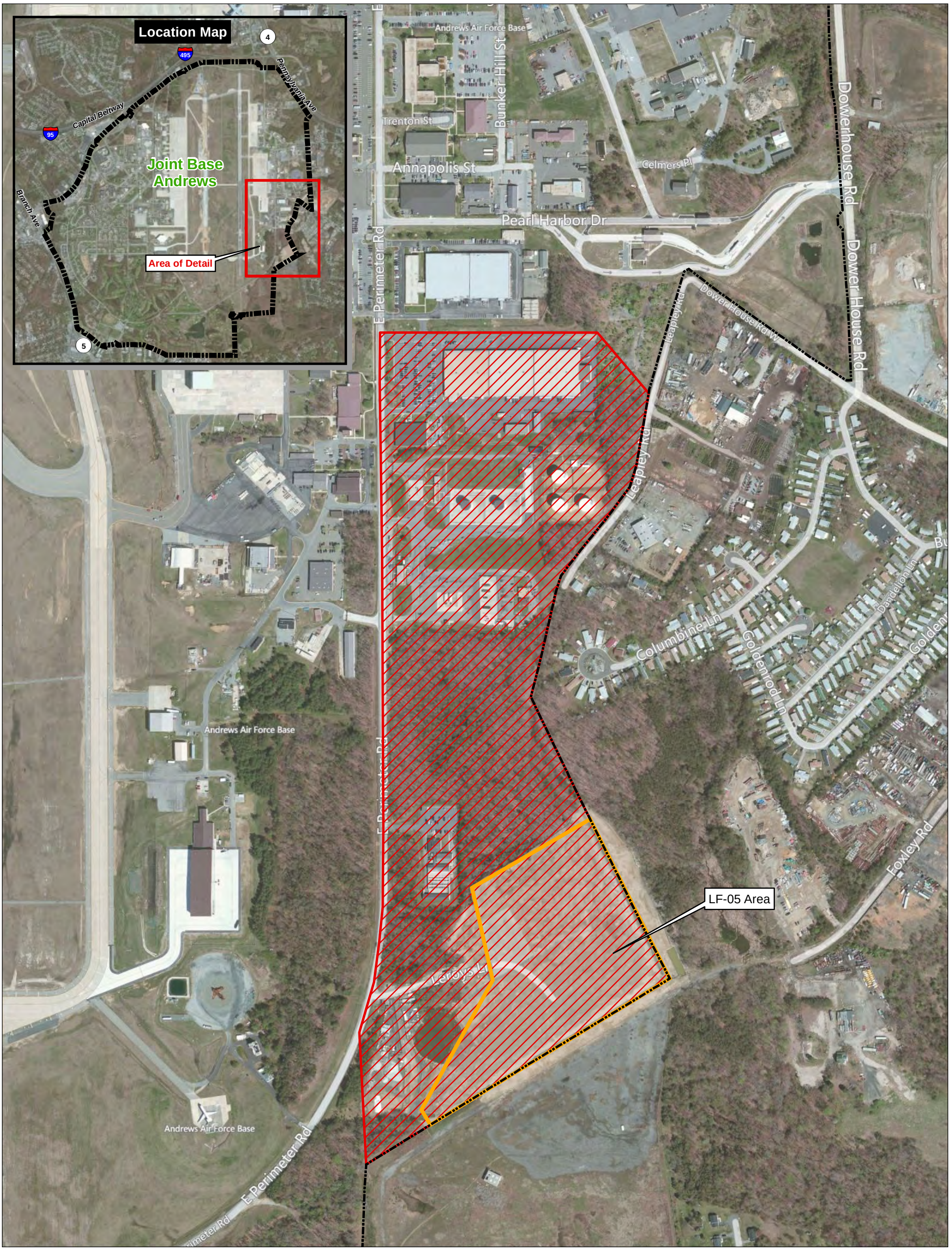

Legend

- Base Boundary
- LF-05 Site
- Zone of Restricted Infiltration

200 0 200 400 Feet

Restricted Infiltration Area for LF-05

Joint Base Andrews, MD

October 2012 Figure 1

URS

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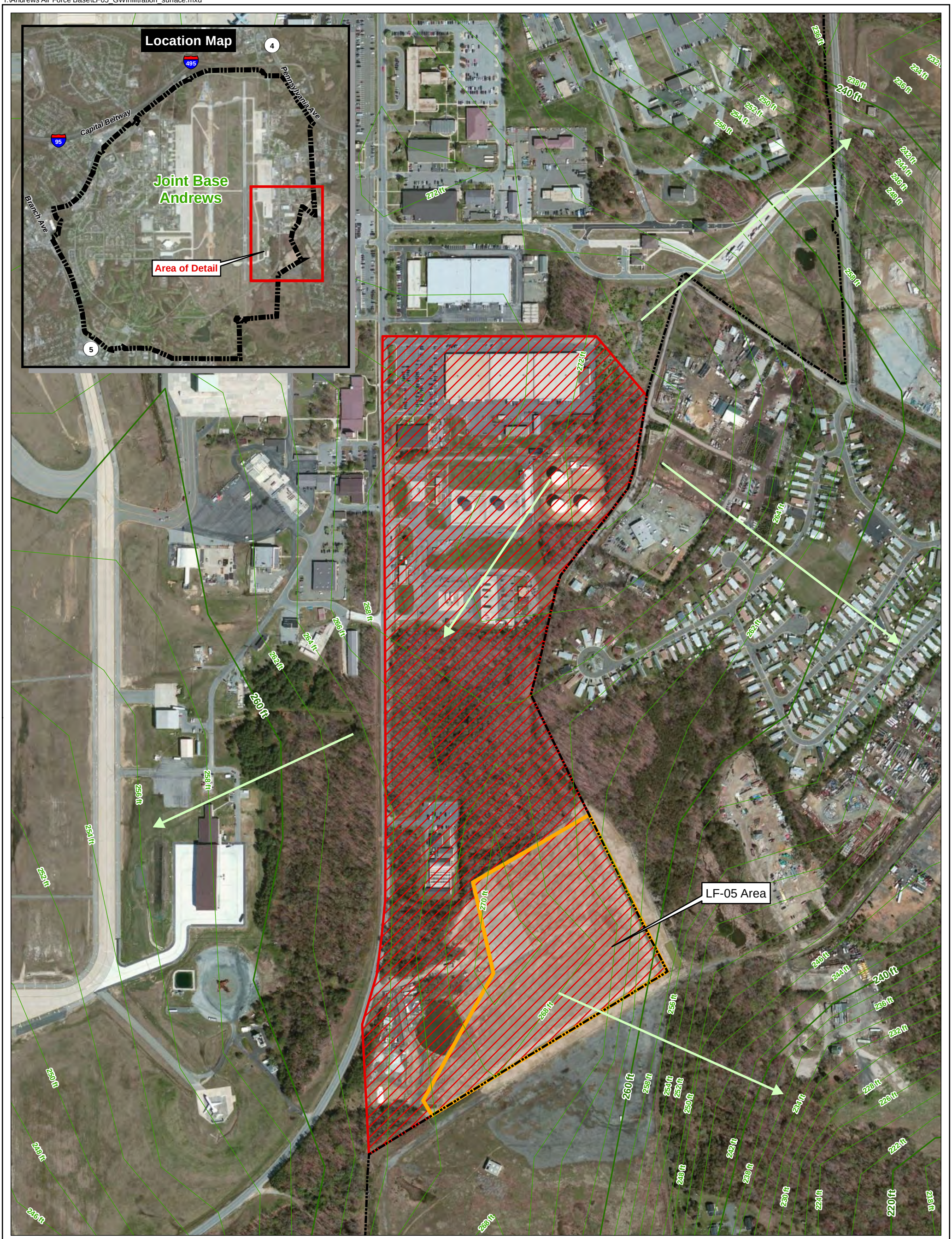

Legend

- Surface Contour (URS, November 2005) (feet above mean sea level)
- Approximate Surface Gradient Direction
- Base Boundary
- LF-05 Site
- Zone of Restricted Infiltration

N

200 0 200 400 Feet

Surface Drainage and Restricted Infiltration Area for LF-05

Joint Base Andrews, MD

October 2012 Figure 2

URS

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Legend

- Groundwater Surface Contour (URS, November 2005) (feet above mean sea level)
- Approximate Groundwater Flow Direction
- Base Boundary
- LF-05 Site
- Zone of Restricted Infiltration

200 0 200 400 Feet

Groundwater Gradients and Restricted Infiltration Area for LF-05

Joint Base Andrews, MD

October 2012 Figure 3

URS

Appendix D
Air Conformity Analysis and Record of Non-Applicability

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21 Point Enclosed Firing Range
Joint Base Andrews-Naval Air Facility Washington, Maryland

Air Conformity Analysis Tabular Data

Table 1. Proposed Facility

Activity	Area		Reference
	ft^2	acres	
New Construction			
Buildings	28,000	0.64	II-2
Sidewalks	2,180	0.05	III-32
Asphalt paving	23,859	0.55	III-31
Concrete pavement	600	0.01	III-31
Gravel drive	8,559	0.20	III-31
Total	63,198	1.45	--
Demolition			
Concrete walk	363	0.01	III-28
Concrete dumpster pad	220	0.01	III-28
Asphalt paving	200	0.00	III-28
Total	783	0.02	--
Land clearing			
Clear and grub	131,698	3.02	III-27

[1] All references are to page numbers within the project definition document, *P-93000 21 Point Enclosed Firing Range Project Definition Report*, 10 June 2013.

Table 2. Proposed Action Construction Vehicle Exhaust Emissions

Activity	Equipment List	Equipment Quantity	Days Used	Emission Factors (lb/hr)					Emissions (lb/yr)				
				NOx	VOC	CO	SO2	PM2.5	NOx	VOC	CO	SO2	PM2.5
Demolition	Loader	1	5	0.58	0.09	0.38	0.0008	0.044	23	4	15	0.0	2
	Haul truck	1	5	2.02	0.22	0.66	0.0027	0.072	81	9	26	0.1	3
Land clearing	Loader	1	60	0.58	0.09	0.38	0.0008	0.044	278	43	182	0.4	21
	Haul truck	1	60	2.02	0.22	0.66	0.0027	0.072	970	106	317	1.3	35
Backhoe excavation	Backhoe loader	1	60	0.58	0.09	0.38	0.0008	0.044	278	43	182	0.4	21
	Haul truck	1	60	2.02	0.22	0.66	0.0027	0.072	970	106	317	1.3	35
Cut and fill	Scraper	1	60	2.57	0.29	1.1	0.0027	0.11	1,234	139	528	1.3	53
	Bulldozer	1	60	2.69	0.31	1.25	0.0025	0.11	1,291	149	600	1.2	53
	Water truck	1	60	2.02	0.22	0.66	0.0027	0.072	970	106	317	1.3	35
Trenching	Trencher	1	30	0.7	0.15	0.47	0.0007	0.058	168	36	113	0.2	14
	Track loader	1	30	0.58	0.09	0.38	0.0008	0.044	139	22	91	0.2	11
Grading	Grader	1	60	1.25	0.15	0.61	0.0015	0.06	600	72	293	0.7	29
	Bulldozer	1	60	2.69	0.31	1.25	0.0025	0.11	1,291	149	600	1.2	53

Activity	Equipment List	Equipment Quantity	Days Used	Emission Factors (lb/hr)					Emissions (lb/yr)				
				NOx	VOC	CO	SO2	PM2.5	NOx	VOC	CO	SO2	PM2.5
	Water truck	1	60	2.02	0.22	0.66	0.0027	0.072	970	106	317	1.3	35
Concrete slab	Cement truck	1	5	0.059	0.0093	0.043	0.0001	0.003	2	0	2	0.0	0
Portable equipment	Generator	1	365	0.58	0.083	0.31	0.0007	0.035	1,694	242	905	2.0	102
	Air compressor	1	365	0.65	0.1	0.34	0.0007	0.047	1,898	292	993	2.0	137
Paving	Paving machine	1	30	0.9	0.16	0.54	0.00009	0.064	216	38	130	0.0	15
	Roller	1	30	0.69	0.1	0.41	0.0008	0.049	166	24	98	0.2	12
Painting	Air compressor	1	30	0.65	0.1	0.34	0.0007	0.047	156	24	82	0.2	11
Vehicle Emissions (lb/yr)		1							13,394	1,709	6,108	15.3	675
Vehicle Emissions (tons/yr)		1							6.70	0.85	3.05	0.01	0.34

[1] Emission factors from OFFROAD Model Mobile Source Emission Factors (2012), South Coast Air Quality Management District.
[2] Assumed usage of 8 hours per day.

Table 3. Construction Worker Trip Emissions

Building Size (ft^2)	Trip Generation Factor (trips/day)	Work Days	Emission Factor (lb/trip)				Emissions (lb/yr)			
			NOx	VOC	CO	PM2.5	NOx	VOC	CO	PM2.5
28,000	8.96	240	0.45	0.67	5.07	0.062	968	1,441	10,903	133
Contruction Worker Trip Emissions (tons/yr)							0.48	0.72	5.45	0.07

[1] Trip factor from Table 4.8 of the El Dorado County APCD-CEQA Guide (trips/day = 0.32/1,000 ft2 of building size)
[2] Emission factors interpolated from Table 4.9, year 2013.
[3] 20 work days per month for 12 months.

Table 4. PM2.5 from Land Clearing

Parameter	Value
Area to be cleared (acres)	3.02
Emission factor (tons/acre-month)	0.22
No. of months	2
PM2.5 emissions (tons/yr)	1.33

[1] Emission factor obtained from Table A-4 of the URBEMIS2007, Version 9.2, User's Guide.
[2] Activity assumed to occur 20 days per month, 8 hours per day.

Table 5. PM2.5 from Demolition

Parameter	Value
Area to be demolished (ft^2)	783
Emission factor for structure demolition (lb/ft^2)	0.00051
Emission factor for debris removal (lb/ft^2)	0.0094
PM2.5 emissions (lb/yr)	7.76
PM2.5 emissions (tons/yr)	0.00

[1] Emission factors obtained from EPA-450/2-92-004.

Table 6. VOC Emissions from Paving

Activity	Area (acres)	Duration (days)	Emission Factor (lb/acre-day)	VOC Emissions	
				(lb/yr)	(ton/yr)
Off gas emissions	0.55	30	2.62	43	0.02

[1] Asphalt paving VOC emission factor obtained from Table 4.6 of the El Dorado County APCD-CEQA guide.

Table 7. VOC Emissions from Painting

Activity	Area (ft^2)	Duration (days)	Emission Factor (lb/ft^2-day)	VOC Emissions	
				(lb/yr)	(ton/yr)
Coating	28,000	30	1.63	9,001	4.50

[1] Emission factor obtained from Table 4.7 of the El Dorado County APCD-CEQA Guide.

Table 8. Greenhouse Gas Emissions for Construction

Pollutant	Emission Factor (g/gal)	Fuel Burned (gal/yr)	Emissions (tons/yr)
CO2	10,150	4,824	54.0
CH4	0.58	4,824	0.0031
N2O	0.26	4,824	0.0014
CO2 Equivalent			54.5

[1] Emission factors from California Climate Action Registry General Reporting Protocol for diesel fuel, Table C.3 for CO2 and Table C.6 for N2O and CH4.

[2] Estimate 402 total gallons of fuel burned per month by construction equipment (Table 4.1, El Dorado County APCD CEQA Guide).

[3] CH4 global warming potential = 25, N2O = 298.

Table 9. Total Construction Emissions

Activity	Emissions (tons/yr)					
	NOx	VOC	CO	SO2	PM2.5	CO2 Equivalent
Construction vehicle exhaust	6.70	0.85	3.05	0.01	0.34	--
Construction worker trips	0.48	0.72	5.45	--	0.07	--
PM2.5 from land clearing	--	--	--	--	1.33	--

Activity	Emissions (tons/yr)					
	NOx	VOC	CO	SO2	PM2.5	CO2 Equivalent
PM2.5 from demolition	--	--	--	--	0.00	--
VOC from paving	--	0.02	--	--	--	--
VOC from painting	--	4.50	--	--	--	--
GHG from construction equipment	--	--	--	--	--	54.46
Totals	7.18	6.10	8.51	0.01	1.74	54.46

Table 10. Ammunition Usage at New Firing Range

Ammunition DODIC	Ammunition Description	Usage (rounds/yr)
AA16	9 mm Frangible	176,323
AA40	5.56 mm Frangible	414,630

[1] Usage associated with new firing range assumed to be the same as usage at existing firing range. Data for calendar year 2012.

Table 11. Emission Factors for DODIC AA16 – 9 mm round

Pollutant	Emission Factor (lb/round)
NOx	1.50E-05
CO	3.10E-04
SO2	8.20E-08
PM2.5	2.00E-05
CO2	2.00E-04
CH4	1.40E-06

[1] No emission factors are available for the DODIC AA16. Emission factors for DODIC A363 - 9 mm ball were assumed to be equivalent. These emission factors were obtained from AP-42, Section 15.1.21, Table 15.1.21-1.

Table 12. Emission Factors for DODIC AA40 – 5.56 mm round

Pollutant	Emission Factor (lb/round)
NOx	8.50E-05
CO	1.60E-03
PM-2.5	2.80E-05
CO2	8.70E-04
CH4	9.70E-06

[1] No emission factors are available for the DODIC AA40. Emission factors for DODIC A059 - 5.56 mm ball were assumed to be equivalent. These emission factors were obtained from AP-42, Section 15.1.4, Table 15.1.4-1.

Table 13. Emissions from Ordnance Usage During Operation of Firing Range

Ordnance	Emissions (lb/yr)						
	NOx	CO	SO2	PM2.5	CO2	CH4	CO2eq
AA16	2.64	54.7	0.014	3.53	35.3	0.25	41.4
AA40	35.2	663	--	11.6	361	4.02	461
Total Emissions	37.9	718	0.014	15.1	396	4.27	503
Total Emissions (tons/yr)	1.89E-02	3.59E-01	7.23E-06	7.57E-03	1.98E-01	2.13E-03	2.51E-01

Table 14. Emissions from Users Commuting During Operation of Firing Range

Personnel Trained (trips/yr)	Emission Factor (lb/trip)				Emissions (lb/yr)			
	NOx	VOC	CO	PM2.5	NOx	VOC	CO	PM2.5
8,100	0.45	0.67	5.07	0.062	3,645	5,427	41,067	502
Emissions (tons/yr)					1.82	2.71	20.53	0.25

[1] Emission factors interpolated from Table 4.9 of the El Dorado County APCD-CEQA Guide, year 2013.

Table 15. Total Operating Emissions

Activity	Emissions (tons/yr)					
	NOx	VOC	CO	SO2	PM2.5	CO2 Equivalent
Ordnance Usage	0.02	--	0.36	7.23E-06	0.01	0.25
User Commutes	1.82	2.71	20.53	--	0.25	--
Totals	1.84	2.71	20.89	7.23E-06	0.26	0.25

Table 16. Comparison of Project Emissions to Prince George's County Emissions

Activity	Emissions (tons/yr)				
	NOx	VOC	CO	SO2	PM2.5
Prince George's County	25,428	26,064	109,003	43,432	2,365
Highest Project Emissions	7.18	6.10	20.89	0.01	1.74
Proposed Emissions Percentage of Current Emissions	0.03%	0.02%	0.02%	0.00%	0.07%

[1] Emissions estimates for Prince George's County, Maryland are for calendar year 2008 and were obtained from EPA's NEI database.

[2] Highest project emissions are the higher of the annual emissions from construction activities or operating activities.

GENERAL CONFORMITY – RECORD OF NON-APPLICABILITY (RONA)

for

Construction of 21 Point Enclosed Firing Range at Joint Base Andrews-Naval Air Facility Washington, Camp Springs, Prince George's County, Maryland

General Conformity under the Clean Air Act, Section 176 has been evaluated for this project according to the requirements of 40 CFR 93, Subpart B. The requirements of this rule are not applicable to this action because the emissions of $PM_{2.5}$, NO_x, SO_2, and CO are below the *de minimis* level of 100 tpy and VOC are below the *de minimis* level of 50 tpy, and these emissions do not make up 10% of the region's emission inventory and are not regionally significant. Emission estimates and supporting documentation are included in the Final Environmental Assessment.

SIGNED _____ Date _____
Steve Richards, Chief of Environmental Management
11 CES/CEIE

Appendix E
Agency Comments and Responses

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Responses to Comments from the Maryland Department of Natural Resources

The following comments from the Maryland Department of Natural Resources (DNR) were included in October 22, 2013 correspondence from the Maryland Department of Planning (MDP) to Joint Base Andrews-Naval Air Facility Washington (JBA) for the review of the Environmental Assessment (EA) and Finding of No Significant Impact / Finding of No Practicable Alternative (FONSI / FONPA) for the following Proposed Action (project): Construct a 21 Point Enclosed Firing Range.

Comment

DNR strongly disagrees with the assertion that the Forest Conservation Act (FCA) does not apply for this project at JBA as described on page 3-8 of the draft EA. Federal Consistency, a federal law requirement of the CZMA, requires that federal actions be consistent to the maximum extent practicable with Maryland's enforceable policies, which include FCA policies. This project impacts over 40,000 square feet (28,000 square feet for indoor firing range building and minimum 15,000 square feet parking area) as well as forest interior dwelling species that are likely present in this stand of mature forest.

Response

Noted. During the course of project design, project planners shall identify suitable species and locations for planting trees to replace those lost by construction of the proposed 21 Point Enclosed Firing Range. This information will be included in the legally binding project submittals to the Air Force.

Comment

DNR is also concerned with the likely water quality impacts on the unnamed tributary in the headwaters of Piscataway Creek.

Response

JBA will comply with the Maryland Department of the Environment (MDE) and federal stormwater management mandates for the construction and operation of the new 21 Point Enclosed Firing Range, including those listed in the *Maryland Stormwater Management Guidelines for State and Federal Projects*, dated April 15, 2010, and the Energy Independence & Security Act (EISA) Section 438. This project will also apply for and comply with all applicable MDE stormwater permits and erosion and sediment control approvals. Adherence to these requirements will result in these activities having no significant impact to geological or water resources.

Comment

In addition, while the draft EA mentions coordination with MDE with respect of water quality, there is no mention of coordinating with DNR, which has also shares responsibility with protecting Maryland water resources.

Response

JBA will comply with the MDE and federal stormwater management mandates for the construction and operation of the new 21 Point Enclosed Firing Range, including those listed in the *Maryland Stormwater Management Guidelines for State and Federal Projects*, dated April 15, 2010, and the Energy Independence & Security Act (EISA) Section 438.

Comment

Finally, DNR encourages the Air Force to consider other alternative designs that could minimize both forest and wetland impacts by using areas that appear to be open field near the existing firing range. Because of these and other potential issues yet identified, coordination with DNR and other affected State agencies is strongly recommended.

Response

The areas that appear to be open field are buffer areas within the restricted area of Leroy's Lane Landfill 5. Alternative C analyzes use of an existing paved surface at the Leroy's Lane Landfill 5 for staff parking and overflow customer parking.

Response to Comment from the Maryland Department of the Environment

The following comment from Ms. Amanda Degen, Maryland Department of the Environment (MDE) Clearinghouse Coordinator, Office of Communications was included in October 22, 2013 correspondence from the MDE to Ms. Anne Hodges (Environmental Planner) of JBA for the review of the EA and the FONSI / FONPA for the following Proposed Action (project): Construct a 21 Point Enclosed Firing Range.

Comment

Additionally, the Air & Radiation Management Administration have requested additional information.

1. Though no individual construction project is projected to exceed the significant emission limit for NOx or VOC, total emissions from four (4) previous projects, in addition to this project, is likely to exceed 25 tpy. Thus, any reference to general conformity throughout the document needs to be re-examined and the emissions, including emissions from the four (4) previous projects, recalculated. Submit the revised calculations for review; do they exceed the ***de minimis*** values?

Response

In accordance with Part 93 of Title 40 of the Code of Federal Regulations (40 CFR 93), general conformity analyses are performed in response to a federal action that may adversely affect the air quality in an area that is classified as being in nonattainment or maintenance for a criteria pollutant. JBA believes that the construction of the 21 Point Enclosed Firing Range constitutes a separate and independent federal action from the four previous projects referenced in the comment received from the Air & Radiation Management Administration. Therefore, the emissions from the four previous projects should not be combined with the emissions from this project for the purposes of conducting a general conformity analysis. Furthermore, JBA's interpretation of the general conformity regulations suggests that the ***de minimis*** thresholds applicable to JBA are 100 tons per year (tpy) for NOx and 50 tpy for VOC [40 CFR 93.153(b)(1)] rather than the 25 tpy thresholds identified in the comment.

JBA believes that the previously submitted emissions calculations present an accurate assessment of the applicability of general conformity regulations to the proposed federal action to construct the 21 Point Enclosed Firing Range. Revised calculations will not be submitted for review.

Response to Comments from the Maryland National Capital Park and Planning Commission - Prince George's County Planning Department

The following comments from Ms. Fern Piret, Planning Director of the Prince George's County Planning Department were included in October 24, 2013 correspondence from the Office of the Planning Director to Ms. Anne Hodges of JBA, for the review of the EA and the FONSI / FONPA for the following Proposed Action (project): Construct a 21 Point Enclosed Firing Range.

Comment

The proposed development will include impacts to a wetland area. Any impacts to United States waters on land owned by the United States of America will be subject to review by the Maryland Department of Environment and the Army Corps of Engineers.

Response

If wetland impacts are required to implement the Proposed Action, JBA will coordinate with federal and state regulatory agencies to review wetland impacts and permitting requirements.

Comment

It would be useful to designate more clearly on the maps the existing stormwater pond that needs to be upgraded.

Response

The project figures have been revised to better illustrate the location of the stormwater pond. Please see the attached Figure 1 (“Existing Storm Water Pond”).

Comment

Woodlands will be cleared as a result of the proposed development; thus, the site will be subject to review by the Maryland Department of Natural Resources' Forest Service for conformance with the Federal Clean Water Act.

Response

JBA will comply with the MDE and federal stormwater management mandates for the construction and operation of the new 21 Point Enclosed Firing Range, including those listed in the *Maryland Stormwater Management Guidelines for State and Federal Projects*, dated April 15, 2010, and the Energy Independence & Security Act (EISA) Section 438. This project will also apply for and comply with all applicable MDE stormwater permits and erosion and sediment control approvals.

The Maryland Forest Conservation Act (Natural Resources Article, Section 5, 1601-1612) and the Annotated Code of Maryland (COMAR) (Title 08 Subtitle 19) does not apply to JBA due to the Federal Government’s sovereign immunity from state regulation granted by the Supremacy Clause and a lack of any Federal statute enacted by Congress clearly and unambiguously authorizing Maryland to regulate JBA under the Forest Conservation Act. However, during the course of project design, project planners shall identify suitable species and locations for planting trees to replace those lost by construction of the proposed 21 Point Enclosed Firing Range. The trees shall be replaced in accordance with the requirements in the JBA 2011 Arbor Plan. This information will be included in the legally binding project submittals to the Air Force.

Responses to Comments from U.S. Environmental Protection Agency

The following comments from Ms. Barbara Rudnick, NEPA Team Leader, Office of Environmental Programs were included in October 23, 2013 correspondence from the U.S. Environmental Protection Agency to Ms. Anne Hodges of JBA, for the review of the EA and the FONSI / FONPA for the following Proposed Action (project): Construct a 21 Point Enclosed Firing Range.

Location of the Proposed Action

Comment No. 1

Page 1-1 states the location of the proposed action lies within the designated area of Limited Development. "Limited Development encompasses areas of the base with constraints that require significant mitigation measures, such as a sensitive natural area." Please identify the sensitive natural areas within the project area.

Response

The major sensitive natural areas on JBA primarily include wetlands and streams. Figure 5 in the Environmental Assessment (EA) report shows the location and extent of the wetlands and streams on the Base.

Hazardous Materials/Waste

Comment No. 2

Page 1-6 states, "The existing facility does not have laundry or showers for trainees or instructors to wash away hazardous munitions dust at the end of their training session; as such, these personnel are leaving the site with waste residue still on their skin and uniforms." In addition, "Use of these facilities at the end of each shift will prevent recurring casual contamination and potential health concerns, and prevents accidental inhalation or ingestion from residual lead."

If the existing range does not have measures in place to contain hazardous munitions dust, then it can be assumed that dust is carried off of the range site. Please discuss the condition of the existing fire range and the area surrounding the site. Are there any procedures in place to ensure that the facility is not a threat to the environment or human health? Discuss if the bullets are recovered? Are there berms/catch basins for the bullets? Are there air vents in the range to capture dust (assuming there is partial coverage)? If so, how much of the dust is captured and how much is released into the air. If there are no capture devices in the existing range, can they be incorporated when undergoing improvements?

Response

The existing firing range is a semi-enclosed structure surrounded by woodland and an impervious area for parking. The range primarily uses frangible ammunition because the facility does not have the environmental systems in place for lead ammunition. Frangible, or "soft," rounds are designed to break apart when they hit walls or other hard surfaces to prevent ricochets during close-quarters combat or range shooting. The range does accommodate some activities that utilize lead ammunition; however, these activities are limited. Dust from the frangible rounds that accumulates at the base of the range back-stop is collected with an auger-screw system, following which it is moved into a collection barrel by vacuum. The barrels of frangible dust are labeled as hazardous waste and taken to the Base recycling center. Brass Casings from the ammunition rounds are collected separately and recycled. The range’s back-stop has a fixed life. When the life-span has been

exceeded, the range has to be closed so that it can be replaced. With two firing ranges, there would be less closure time because the closures could be scheduled so that one of the ranges stays open.

The existing firing range is open to the environment. With regard to the new firing range and the renovations to the existing firing range, a ventilation system will be provided to control exposure to lead in accordance with 29 CFR 1910.1025, *Lead*. The ventilation system will provide laminar airflow across the range toward the bullet trap at an air velocity of 23 meters per minute (mpm) (75 feet per minute [fpm]) at the firing line.

Air will be supplied via inline or utility set fans in the mechanical room, drawing fresh air through a wall louver and a 30% pre-filter to remove dust and pollen. The supply air will be evenly distributed via a perforated, radial air distribution plenum across the entire length of the rear wall of the range at a minimum of 5 meters (16.4 feet) behind the firing line.

Air will be exhausted via inline or utility set fans behind the bullet trap and will be filtered through 99.99% HEPA filters for maximum lead removal before introducing back to the environment.

All of the rounds fired on the new firing range will be captured by the bullet trap. An auger or similar mechanism will be used to convey spent rounds from the bullet trap to a collection container located at one side of the firing range. When full, the container will be shipped off site for appropriate treatment or disposal using established hazardous waste procedures.

The new range will be built in accordance with Air Force Engineering Technical Letter (ETL) 11-18: Small Arms Range Design and Construction, which address health, safety, and environmental concerns. ETL 11-18 references EPA publication number EPA-902-B-01-001, Best Management Practices for Lead at Outdoor Shooting Ranges.

Comment No. 3

Page 2-2 lists a number of features that the Proposed Action would be constructed with. One specific feature is: "Environmental controls to support the firing of lead-based ammunition." Please identify and describe the environmental controls to be used in the proposed firing range. Will the new firing range be designed to capture dust? Discuss the potential number of bullets to be fired and how many are expected to be retrieved? How often will the retrieval process be conducted (i.e., once a day, week, etc.).

Response

The design of the new firing range incorporates baffles, side containment, and a bullet trap to prevent fired rounds from exiting the building. In the draft EA, we have assumed that the number of rounds fired in the new firing range will be similar to the number of rounds fired in the existing firing range. During calendar year 2012, 176,000 9-mm frangible rounds (DODIC AA16) and 415,000 5.56-mm frangible rounds (DODIC AA40) were fired in the existing firing range.

The firing range will be designed as an unconditioned environment (not centrally heated or cooled) with electric radiant heat at the firing line. A ventilation system will be provided to control exposure to lead in accordance with 29 CFR 1910.1025, *Lead*. The ventilation system will provide laminar airflow across the range toward the bullet trap at an air velocity of 23 mpm (75 fpm) at the firing line.

Air will be supplied via inline or utility set fans in the mechanical room, drawing fresh air through a wall louver and a 30% pre-filter to remove dust and pollen. The supply air will be evenly distributed via a perforated, radial air distribution plenum across the entire length of the rear wall of the range at a minimum of 5 meters (16.4 feet) behind the firing line.

Air will be exhausted via inline or utility set fans behind the bullet trap and will be filtered through 99.99% HEPA filters for maximum lead removal before introducing back to the environment.

All of the rounds fired on the new firing range will be captured by the bullet trap. An auger or similar mechanism will be used to convey spent rounds from the bullet trap to a collection container located at one side of the firing range. When full, the container will be shipped off site for appropriate treatment or disposal using established hazardous waste procedures.

The new range will be built in accordance with Air Force Engineering Technical Letter (ETL) 11-18: Small Arms Range Design and Construction, which address health, safety, and environmental concerns. ETL 11-18 references EPA publication number EPA-902-B-01-001, Best Management Practices for Lead at Outdoor Shooting Ranges.

Comment No. 4

Page 3-6 states, "The new live-fire range will support the firing of lead-based ammunition at both the indoor and outdoor ranges, which will result in the generation of lead waste." In addition, "Implementation of the proposed action will result in doubling the training capability of the firing range, which will in turn result in double the amount of hazardous waste generated from spent ammunition." What is the estimated quantity of hazardous waste that has been generated from the existing range and what is the proposed hazardous waste to be generated from the new firing range? How will the ranges be cleaned? What is the ammunition recovery process?

Response

During fiscal years 2012 and 2013, the existing firing range generated an average of 4,900 pounds per year of lead contaminated waste. A similar amount of lead contaminated waste will likely be generated by the new firing range. The new range will use an auger or similar mechanism to convey spent rounds from the bullet trap to a collection container located at one side of the firing range. When full, the container will be shipped off site for appropriate treatment or disposal using established hazardous waste procedures.

Comment No. 5

The text continues, "If any storage tanks (above or below ground) are included in the final design of the project, they will need to be registered, installed, and managed in accordance with applicable local, state, and federal laws." Is there space in the project area for the storage tanks? If so, where would the tanks be located in relation to the Proposed Action? Are there restrictions to ground disturbance/depth of disturbance? Please discuss in the context of groundwater and LF-05.

Response

No above or below ground storage tanks are proposed to be installed at the new live-fire range. No generator, to provide heating at the new range facility, will be proposed. Heat will be provided through electrical energy source and no backup generator will be required.

Comment No. 6

Page 3-6 states, "For the proposed action under this alternative, the BMPs to be used at the new indoor range would include administrative controls (i.e., housekeeping), as well as engineering controls to capture or fix lead and prevent lead from leaching into groundwater via stormwater runoff." Please describe the engineering controls to be used to capture or fix lead from leaching into groundwater.

Response

The design of the new firing range incorporates baffles, side containment, and a bullet trap to prevent fired rounds from exiting the building. These engineering controls are primarily installed for safety concerns, but have the added benefit of capturing the rounds and preventing the lead constituents from entering either the stormwater or groundwater.

A small portion of the lead contained in each round is atomized when the round is fired and impacts the target. Based on EPA's air emission factor document, AP-42, the amount of lead emitted is approximately 6.0x10-6 pounds per round fired [AP-42, Sections 15.1.4 and 15.1.21]. Using the emission factors presented in AP-42 and usage rates associated with the existing range, approximately 3 pounds of lead dust will be emitted to the air from the new range per year.

The firing range will be designed as an unconditioned environment (not centrally heated or cooled) with electric radiant heat at the firing line. A ventilation system will be provided to control exposure to lead in accordance with 29 CFR 1910.1025, Lead. The ventilation system will provide laminar airflow across the range toward the bullet trap at an air velocity of 23 meters per minute (mpm) (75 feet per minute [fpm]) at the firing line.

Air will be supplied via inline or utility set fans in the mechanical room, drawing fresh air through a wall louver and a 30% pre-filter to remove dust and pollen. The supply air will be evenly distributed via a perforated, radial air distribution plenum across the entire length of the rear wall of the range at a minimum of 5 meters (16.4 feet) behind the firing line.

Air will be exhausted via inline or utility set fans behind the bullet trap and will be filtered through 99.99% HEPA filters for maximum lead removal before introducing back to the environment. Therefore, expected lead emissions to the environment will be approximately 3x10-4 pounds per year.

The new range will be built in accordance with Air Force Engineering Technical Letter (ETL) 11-18: Small Arms Range Design and Construction, which address health, safety, and environmental concerns. ETL 11-18 references EPA publication number EPA-902-B-01-001, Best Management Practices for Lead at Outdoor Shooting Ranges.

Comment No. 7

Page 1-6 states, "One component of this expansion effort is the implementation of upgrades to the existing range; and that includes adding the option of using multiple types of ammunition, including lead shot, at both ranges in the future." Explain the need for lead-based ammunition and whether other ammunition options, particularly nontoxic shot, have been considered so as to avoid release of toxic lead into the environment and reduce effects to human health.

Response

Nontoxic ammunition does not exhibit the terminal characteristics of the ammunition used in combat and, therefore, including lead-based ammunition as an option is needed.

Soils

Comment No. 8

Page 3-3 states, "The proposed action would result in approximately 3.5 acres of disturbance (clearing and grubbing) to the soil (JBA 2013). Wetland mitigation and stormwater management

requirements are discussed further in this EA, and those topics will address issues associated with site soils." Unfortunately, wetland mitigation and stormwater management requirements do not address the question of soil contamination from toxic bullets. Please discuss the condition of the soils. Have the soils been tested prior to disturbance? If not, will the soils be tested?

Response

In February of 2012, surface soil samples were collected within and adjacent to the proposed project area at Building 2495. The samples were analyzed for metals by Method 6010B. The results indicated that lead was below the 2004 background level of 98.5 mg/kg at each of the eight sample locations.

Comment No. 9

As stated on page 3-3, Geology, "The location of the proposed action, as well as the action itself, is not expected to adversely affect the geologic condition at JBA. This presumption is based on the fact that the construction methods that will be used to erect the new live-fire range and create the additional parking spaces will be limited to standard land clearing and grading techniques which disturb only the surface soil horizons and do not extend into the deeper geologic formation." If the storage tanks are needed, please identify potential sites and describe the area as well as discuss the environmental conditions of area (particularly soils) and potential impact from tanks.

Response

No above or below ground storage tanks are proposed to be installed at the new live-fire range. Therefore, no impacts to geology are expected from the construction and operation of the new range. Furthermore, no impacts to subsurface soils are expected from the implementation of the Proposed Action.

Biological Resources

Comment No. 10

Page 3-4 states, "The location of the proposed action, as well as the action itself, is not expected to adversely affect the BASH Plan, or bird populations, at or over JBA. This presumption is based on the fact that the proposed action will not entail an unusual use of airspace or the placement of elevated structures that might be attractive to birds." From the perspective of BASH and attractive structures, the avian population may not be affected. However, "The project will involve permanent destruction of woodland, thereby reducing bird habitat on the base." Thus, with the loss of woodlands on the base, how will this affect avian species and migratory birds? What is the bird population on the base? Please explain impact to birds as a result of woodland loss.

Response

There are approximately 710 acres of woodland on the main Base. The Proposed Action would result in the clearing of approximately 1.4 acre of woodland; i.e., the size of the footprint of the new firing range and expanded parking lot under the Preferred Alternative. Under the Proposed Action, the loss of woodland would be 0.2% of the total available forested habitat on the Base. This action will have a minimal adverse impact to woodlands and the habitat they provide to bird species. Therefore, no impact to bird populations is expected with respect to avifauna that inhabits woodlands.

JBA submitted, via electronic mail, a Information, Planning, and Conservation System (IPAC) project review package and a summary document of the Description of Alternatives to the U.S. Fish and Wildlife Service, Chesapeake Bay Field Office, on March 25 and April 2, 2014, respectively. These two documents were submitted to the USFWS to facilitate a determination by the agency of any potential impacts the proposed 21 Point Enclosed Firing Range project would have on migratory bird populations within the project site and immediately surrounding the project site. The USFWS, in return correspondence to JBA dated July 16, 2014, presented minimization measures for the 21 Point Enclosed Firing Range project which conform to the Migratory Bird Treaty Act (MBTA). Specifically, the USFWS recommended that land clearing activities be scheduled outside the migratory bird nesting period (March through August) to avoid adversely impacting active nests, eggs or young. The USFWS recommended that existing forested corridors be maintained, where possible, to allow for connectivity to exist between forest patches or stands. The USFWS also recommended that reforestation initiatives be implemented, where possible, to create or enhance natural habitats for bird diversity. The USFWS stated that the single, most important step that JBA personnel can take to avoid incidental take of migratory birds would be to initiate tree clearing after the annual nesting season; i.e., tree removal should occur in the fall or winter seasons. The USFWS concluded that the aforementioned minimization measures would be acceptable in reducing impacts to migratory bird species for the proposed project. A copy of the USFWS correspondence to JBA is included in Appendix B.

Comment No. 11

Page 3-8 states, "All tree removal and/or pruning activities are required to be performed in accordance with the Arbor Plan's design and maintenance guidelines. The forest around the existing small arms range is a mixed hardwood/pine community. The overstory is comprised of Virginia pine, southern red oak, white oak, black cherry, American beech, and sweet gum." Quantify the size of woodland within the project area and immediately surrounding the project area as well as tree loss. Discuss mitigation options for tree loss.

Response

The size of the woodland within the project area is approximately 1.4 acre; i.e., the size of the footprint of the new firing range and expanded parking lot. The size of the woodland immediately surrounding the project area is approximately 105 acres. The tree loss will primarily include mature timber and understory saplings of Virginia pine, southern red oak, white oak, black cherry, American beech, and sweet gum. Mitigation will entail reforestation of approximately 1.8 acres of uplands on the Base and include the planting of approximately 183 two-inch caliper trees, to be purchased, transported and planted in a JBA-designated reforestation area. The planting contractor will coordinate with Base Environmental Section to confirm the final location of the preferred reforestation area or areas, which may include designated gateway areas along East Perimeter Road.

The Maryland Forest Conservation Act (Natural Resources Article, Section 5, 1601-1612) and the Annotated Code of Maryland (COMAR) (Title 08 Subtitle 19) does not apply to JBA due to the Federal Government’s sovereign immunity from state regulation granted by the Supremacy Clause and a lack of any Federal statute enacted by Congress clearly and unambiguously authorizing Maryland to regulate JBA under the Forest Conservation Act. However, during the course of project design, project planners shall identify suitable species and locations for planting trees to replace those lost by construction of the proposed 21 Point Enclosed Firing Range. The trees shall be replaced in accordance with the requirements in the JBA 2011 Arbor Plan. This information will be included in the legally binding project submittals to the U.S. Air Force.

Surface Waters

Comment No. 12

Page 2-1 states, "The existing firing range facility was originally designed in 1991 with a stormwater management detention pond located along the southwest edge of the site (JBA 2013). The entire site was designed to drain to that pond. In the years since construction the existing pond has become clogged and mostly non-functional through lack of maintenance." How has the clogged detention pond affected surface waters especially the Tier II stream located near project area? What monitoring/maintenance practices will be in place to ensure that the reconstructed detention pond will be kept operational?

Response

No known impacts have occurred to surface waters or Tier II streams located near the project area. JBA will comply with the Maryland Department of the Environment (MDE) and federal stormwater management mandates for the construction and operation of the new 21 Point Enclosed Firing Range, including those listed in the *Maryland Stormwater Management Guidelines for State and Federal Projects*, dated April 15, 2010, and the Energy Independence & Security Act (EISA) Section 438. This project will also apply for and comply with all applicable MDE stormwater permits and erosion and sediment control approvals. Adherence to these requirements will result in these activities having no adverse impact to water resources. No adverse impact to downstream water quality from the reconstruction of the detention pond is anticipated. Periodic oversight will be provided to assure that the detention pond is kept operational.

Comment No. 13

As page 3-15 states, "The institutional controls at this landfill are such that any increase in infiltration at the Small Arms Combat Range would not be desirable. LF-05 constrains any action that would affect shallow groundwater movement." Has the clogged detention pond affected the LF-05 site? If so, explain how.

Response

The partially clogged detention pond has not affected the LF-05 site.

Comment No. 14

Page 1-6 states, "... because instructors have daily contact with lead/heavy metals and may transfer these contaminants by casual contact, hand-washing stations, warm-water showers, changing areas, laundry facilities, and lockers should be provided for instructors to remove lead contamination." Please describe how contaminated water will be captured and decontaminated. Will there be a separate collection drain and storage of contaminated water?

Response

As part of the new firing range, a system will be designed and put in place to capture contaminated water.

Environmental Justice/Protection of Children

Comment No. 15

Page 3-2 states, "There are no environmental justice areas of low-income and/or minority or child

populations located immediately adjacent to the project area, and site construction would not adversely impact low-income and/or minority or child populations. Consequently, the U.S. Air Force has eliminated environmental justice (EJ) and protection of children from detailed evaluation in this EA." Although there may not be low-income and/or minority or child populations adjacent to project area, the EA should identify where the EJ communities are located in relation to the Proposed Action as well as identify areas where children may reside or utilize (day care, etc.). This information would support your conclusion.

Response

Executive Order (EO) 12898 “Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations” mandates that federal agencies identify and address, as appropriate, disproportionately high and adverse human health or environmental effects of their programs on minority and low-income populations. EO 13045 “Protection of Children from Environmental Health Risks and Safety Risks” provides a similar mandate for environmental health and safety risks that may disproportionately affect children (62 Federal Register 19883-19888). A disproportionate environmental, safety and health impact occurs when the risk or rate for a minority, low-income or vulnerable population such as children to be exposed to an environmental hazard exceeds the risk or rate of the general population and, as available, to another appropriate comparison group.

The Proposed Action will take place within a military installation, so the construction and operation of the new live fire range would not cause any disproportionate high or adverse health or environmental effects on minority or low-income populations pursuant to EO 1289. Specifically, the location of the Proposed Action is not adjacent to a residential neighborhood. The Proposed Action occurs within an area of “Restricted Development”; i.e., areas with some constraints that might require mitigation before development can occur. With regard to existing land use designations at JBA, the new live fire range will be surrounded by the Open Space category (forest land abuts the project site). Beyond this Open Space area, the existing land use categories include: Industrial; Airfield; and Aircraft Operations & maintenance. Base residential housing occurs over 1.5 miles to the west of the location of the Proposed Action, within an area “Unrestricted Development”; i.e., areas with no environmental constraints and are recommended for development. The nearest recreational area to the Proposed Action is the Base golf course, which is located approximately one mile to the southwest of the proposed live fire range facility.

JBA proposes to fully comply with EO 13045 by incorporating environmental health risk/and safety risk concerns in decision making processes supporting JBA policies, programs, projects, and activities. In this regard, JBA ensures that it would identify, disclose, and respond to potential adverse social and environmental effects on children in the area affected by a proposed action. Children are present at JBA as residents and visitors (e.g., residing in on-Base family housing or lodging, using recreational facilities, attending events). Precaution will be taken for child safety through a number of measures, including but not limited to, using fencing, barriers, restricting access to certain areas, requiring adult supervision, and signage. The location of the Proposed Action, however, is not adjacent to a residential neighborhood or a recreational area, as previously explained in this response.

Occupational Health and Safety

Comment No. 16

Page 3-20 states, "If lead-based ammunition continues to be used at the existing range during construction of the new range and/or once the new range is operational, then there may be on-going violations of AF policies related to SDZs." To avoid violations of AF policies related to SDZ, should

there then be a restriction on use of lead-based ammunition at the existing range until the new range is complete and operational. Stronger restrictions should be implemented and addressed in the Final EA.

Response

The existing firing range is currently being renovated. When the renovations are complete, no SDZ will be required beyond the walls of the range. The renovations, once complete, will allow both lead and frangible small caliber rounds to be used on the existing range during construction and operation of the proposed 21 point enclosed firing range.

Cumulative Impacts

Comment No. 17

Page 3-27 lists within Table 4 a Summary of Proposed and Upcoming Projects at JBA. It would be more useful if the projects listed were depicted on a map to show their proximity to the Proposed Action.

Response

Figure 7, which depicts the locations of upcoming/proposed projects at JBA, will be included in the EA report. The figure is accompanied by a legend (Figure 7a), which lists each project under JBA's future development plans as presented in the *General Plan Update* (100% Submission) January 2010 report.

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 11TH WING (AFDW)
ANDREWS AIR FORCE BASE, MARYLAND 20762

October 31, 2014

Ms. Barbara Rudnick
Office of Environmental Programs
United States Environmental Protection Agency
Region III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

Dear Ms. Rudnick:

Joint Base Andrews-Naval Air Facility Washington (JBA) in consultation with AMEC Environment & Infrastructure, Inc. (AMEC) submitted an Environmental Assessment (EA) and Finding of No Significant Impact / Finding of No Practicable Alternative (FONSI / FONPA) to the Maryland Department of Planning (MDP) for review. The Proposed Action (project) is to Construct a 21 Point Enclosed Firing Range at JBA. The United States Environmental Protection Agency (USEPA) responded in September 22, 2014 correspondence to Ms. Anne Hodges, JBA; specifically, that the USEPA requested additional information to assess the impacts to the environment and natural resources from the Proposed Action. The questions and concerns were included in a Technical Comments document which was enclosed in the September 22, 2014 correspondence from the USEPA. The responses to these comments are presented in the attached comment/response document.

Thank you for your participation in the environmental assessment process. If you would like an electronic copy of the final document, please contact Ms. Anne Hodges at 301-981-1426, or via email at anne.m.hodges2.civ@mail.mil.

Sincerely,

STEVE RICHARDS
Chief of Environmental Management

Enclosure

Technical Comments and Responses

The following comments from Ms. Barbara Rudnick, NEPA Team Leader, Office of Environmental Programs were included in September 22, 2014 correspondence from the United States Environmental Protection Agency to Ms. Anne Hodges of JBA, for the review of the EA and the FONSI / FONPA for the following Proposed Action (project): Construct a 21 Point Enclosed Firing Range.

Surface Waters

Comment

As addressed in EPA's October 23, 2013 comment letter, the existing stormwater management detention pond is clogged and mostly non-functional through lack of maintenance. How then has the clogged detention pond affected surface waters especially the Tier II stream located near the project area? The current EA states that "no known impacts have occurred to Tier II streams located near the project area." How has this determination been made since the detention pond has not been functioning? How close is the Tier II stream and where exactly is it located in relation to the Proposed Action? Have water quality tests been conducted on the Tier II stream and if so when were tests conducted? This information would be helpful in showing that the Tier II stream was not impacted by the clogged detention pond.

Response

The Maryland Department of the Environment (MDE) Tier II High Quality Waters map depicts one mapped stream segment (Piscataway Creek 1) approximately four miles to the south of the Proposed Action at JBA (see Figure 1). As such, the Tier II waters of Piscataway Creek are not "near" the project site, but considerably further downstream of the Base. Two other mapped stream segments (Mataponi Creek UT 1 and Turkey Branch 1) occur further downstream from the Base. Although the detention pond has not functioned properly, it is presumed that any particulate matter, inorganic or organic compounds, or other substances that have been discharged from the pond would have been assimilated before reaching any downstream portions of the reach that are mapped as Tier II stream segments.

Although no impacts to water quality are known to have occurred to Tier II stream segments located downstream as a result of the operation of the existing range, JBA will comply with the MDE and federal stormwater management mandates for the construction and operation of the new 21 Point Enclosed Firing Range. These mandates include those listed in the Maryland Stormwater Management Guidelines for State and Federal Projects, dated April 15, 2010, and the Energy Independence & Security Act (EISA) Section 438. This project will also obtain and comply with all applicable MDE stormwater permits and erosion and sediment control approvals. Adherence to these requirements will result in these new activities having no adverse impact to surface waters occurring downstream of the Proposed Action. No adverse impact to downstream water quality from the reconstruction of the detention pond is anticipated. In fact, the restoration and upgrade of this device will likely improve downstream water quality. Periodic maintenance will be provided to assure that the detention pond is kept operational.

Cumulative Impacts

Comment

Although a map was included in the EA depicting Proposed and Upcoming Projects at JBA as listed in Table 4; it would have been helpful to have the projects numbered and corresponded to on the map so that the projects could be easily identified in association with the Proposed Action.

Response

JBA appreciates the request for clarity regarding the graphic exhibit depicting the proposed and upcoming projects on the Base. As such, this comment is duly noted by JBA.

Maryland Department of the Environment Tier II High Quality Waters Map

FIGURE 1

Legend

- Tier II StreamSegments
- Firing Range Proposed Location
- Installation Area

N

0 0.85 1.7
Miles

0 1 2
Kilometers