

**ENVIRONMENTAL ASSESSMENT
STORMWATER SYSTEM REPAIR AND UPGRADES
JOINT BASE ANDREWS-NAVAL AIR FACILITY
WASHINGTON, MARYLAND**



Prepared for:

DEPARTMENT OF THE AIR FORCE

May 2012

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**Environmental Assessment for
Stormwater System Repair and Upgrades
at
Joint Base Andrews-Naval Air Facility Washington, Maryland**



Prepared for:

**DEPARTMENT OF THE AIR FORCE
Joint Base Andrews, MD 20762**

May 2012

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Cover Sheet

Environmental Assessment for Stormwater System Repair and Upgrades at Joint Base Andrews-Naval Air Facility, Washington, Maryland

Lead Agency: Department of the Air Force

Proposed Action: Implementation of Stormwater System Repair and Upgrades

Report Designation: Environmental Assessment

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Abstract: This Environmental Assessment (EA) has been prepared to evaluate the potential environmental impacts from the United States Air Force's implementation of stormwater system repair and upgrades at Joint Base Andrews-Naval Air Facility Washington, Maryland (JBA) in Prince George's County, Maryland. Assessments of JBA's stormwater collection and drainage system from 2004 to 2010 found that the system was degraded and that several of the existing stormwater best management practices and infrastructure were failing or inadequate. JBA has identified the need to improve water quality on the base and comply with various water quality regulations. The Proposed Action includes sixteen site-specific stormwater BMP projects related to stormwater system repair and upgrades. The proposed Stormwater BMP projects can be broken out into the following general categories: dry ponds and detention ponds; shallow wetlands; infiltration/bioretenion basins; grass swales; stream restoration; check dams; and larger culverts. The purpose of the Proposed Action is to restore and improve the condition and effectiveness of the existing stormwater management system to meet the identified needs.

Under the No Action Alternative, routine maintenance of the stormwater systems would continue. JBA would continue to operate with inefficient, outdated, and damaged stormwater systems.

The potential effects on physical, biological, and socioeconomic environments were studied to determine how the Proposed Action and the No Action Alternative could affect these resources. The Proposed Action would have both adverse and beneficial impacts on environmental resources. The Proposed Action is expected to result in less than significant impacts on all resource areas. No impacts would occur on aircraft operations, geology, population and income, or cultural resources.

Short-term beneficial impacts on the local economy would occur through the generation of construction jobs. Short-term adverse impacts on soils, water quality, wetlands, groundwater, vegetation, and air quality may occur during clearing and grading for construction and repairs. Short-term minor adverse impacts on wildlife and birds are anticipated from vegetation removal and noise during construction. Increased noise levels would also have short-term minor adverse impacts on employees/visitors and recreation. Transportation may be temporarily disrupted during construction due to increased construction-related traffic.

Long-term adverse impacts may result if permanent impacts on wetlands are unavoidable at the BMP project locations, though long-term beneficial impacts to wetlands are proposed in BMP Project 2C and 3F, which propose wetland creation. BMP Project 2C would result in the removal of trees, which would have long-term adverse impacts on vegetation.

Moderate to substantial long-term beneficial impacts would occur on the following resources: health and safety, stormwater management, wetlands, and water quality. Minor long-term benefits would occur on groundwater, environmental justice, and wildlife. The Proposed Action would result in long-term beneficial impacts on the condition and effectiveness of JBA's stormwater system, helping JBA meet existing National Pollutant Discharge Elimination System (NPDES) permit conditions and Maryland Department of the Environment (MDE) water quality requirements.

The No Action Alternative would have long-term adverse impacts on soils, wetlands, surface water, stormwater management and storm drainage, and safety as the stormwater infrastructure continues to degrade and erosion and sedimentation continue to degrade water quality.

To implement to Proposed Action, various federal and state review and permit would be needed. Potential permits, approvals, and environmental protection plans include, but are not limited to, the following:

- Nontidal Wetland Permit from MDE
- Section 404 Wetland Permit from the U.S. Army Corps of Engineers
- NPDES Permit for Stormwater Associated with Construction Activities from MDE
- Stormwater Management Plan and Erosion and Sediment Control Plan approval from MDE
- Approval of any new construction within Environmental Restoration Program sites by Air Force District Washington

These permits and approvals would be obtained prior to the start of construction.

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ACRONYMS AND ABBREVIATIONS

AAFB	Andrews Air Force Base
ACHP	Advisory Council on Historic Preservation
AFB	Air Force Base
AFCEE	Air Force Center for Engineering and the Environment
AFDW	Air Force District of Washington
AFI	Air Force Instruction
amsl	Above mean sea level
AOCs	Areas of Concern
APE	Area of Potential Effects
AQCR	Air Quality Control Regions
ARMA	Air and Radiation Management Administration
AST	Aboveground storage tank
AT/FP	Anti-Terrorism/Force Protection
BASH	Bird-aircraft strike hazard
bgs	Below Ground Surface
BMPs	Best management practices
CAA	Clean Air Act
CDP	Census Designated Place
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CFR	Code of Federal Regulations
CH ₄	Methane
CMP	Corrugated Metal Pipe
CO	Carbon monoxide
CO ₂	Carbon dioxide
CO ₂ e	Carbon dioxide equivalent
COMAR	Code of Maryland Regulations
CWA	Clean Water Act
CY	Calendar Year
dB	decibel
dBA	Decibel weighted to the A-scale
DOD	Department of Defense

Acronyms and Abbreviations

EA	Environmental Assessment
EIAP	Environmental Impact Analysis Process
EO	Executive Order
EPA	Environmental Protection Agency
ERP	Environmental Restoration Program
ESA	Endangered Species Act
ESQD	Explosive Safety-Quantity Distance
FAA	Federal Aviation Administration
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FONPA	Finding of No Practicable Alternatives
FONSI	Finding of No Significant Impact
GDP	General Discharge Permit
GHG	Greenhouse Gas
HAP	Hazardous Air Pollutant
HUC	Hydrologic Unit Code
Hz	Hertz
IMP	Integrated Management Plan
INRMP	Integrated Natural Resources Management Plan
JBA	Joint Base Andrews-Naval Air Facility Washington, Maryland
JD	Jurisdictional Determination
L _{dn}	Day-Night Average Sound Level
MDE	Maryland Department of the Environment
MMRP	Military Munitions Response Program
MS4	Municipal Separate Stormwater Sewer System
µg/m ³	Microgram per cubic meter
N ₂	Nitrogen
N ₂ H ₄	Hydrazine
N ₂ O	Nitrous oxide

Acronyms and Abbreviations

NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act of 1966
NO ₂	Nitrogen dioxide
NO _x	Nitrogen oxide
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
OSHA	Occupational Safety and Health Administration
O ₃	Ozone
Pb	Lead
PM ₁₀	Particulate matter less than or equal to 10 microns
PM _{2.5}	Particulate matter less than or equal to 2.5 microns
POV	Privately owned vehicle
ppb	parts per billion
ppm	parts per million
ppt	parts per thousand
PVC	Polyvinylchloride
RCP	Reinforced Concrete Pipe
RCRA	Resource Conservation and Recovery Act
SHPO	State Historic Preservation Office
SIPs	State Implementation Plans
SO ₂	Sulfur dioxide
SPCC	Spill Prevention Control and Countermeasures Plan
SWPPP	Stormwater Pollution Prevention Plan
TAPs	Toxic Air Pollutants
TMDL	Total Maximum Daily Load
tpy	Tons per year
USACE	U.S. Army Corps of Engineers
USAF	United States Air Force
U.S.C.	United States Code
USFWS	U.S. Fish and Wildlife Service

Acronyms and Abbreviations

USGS	U.S. Geological Survey
UST	Underground Storage Tank
VOC	Volatile Organic Compound

CHAPTER ONE **PURPOSE AND NEED AND BACKGROUND
INFORMATION**

1.1 PURPOSE AND NEED FOR THE PROPOSED ACTION

Joint Base Andrews-Naval Air Facility Washington, Maryland (JBA) prepared an Environmental Assessment (EA) to evaluate the potential environmental impacts from implementation of proposed stormwater system repair and upgrades.

JBA conducted a number of studies and assessments of its stormwater collection and drainage system between 2004 and 2010. Several water quality Best Management Practice (BMP) sites were identified as needing maintenance and/or improvement. The need for additional BMPs was also identified. JBA must comply with various water quality requirements and regulations, including the Clean Water Act (CWA) National Pollutant Discharge Elimination System (NPDES) stormwater program, the *Maryland Stormwater Management Guidelines for State and Federal Projects*, the Energy Independence Security Act Section 438, Executive Order (EO) 13508, “Chesapeake Bay Protection and Restoration,” and the Chesapeake Bay Total Maximum Daily Load (TMDL) requirements. The existing condition of the stormwater system impairs JBA’s ability to successfully meet their NPDES permit conditions and comply with these State and Federal regulations.

The purpose of the Proposed Action is to restore and improve the condition and effectiveness of the existing stormwater management system by repairing, replacing and upgrading stormwater infrastructure. Implementing the Proposed Action would meet JBA’s need to improve water quality and comply with various water quality regulations.

1.2 LOCATION OF THE PROPOSED ACTION

The Proposed Action would be implemented at JBA. JBA is in southern Prince George’s County, Maryland, approximately 5 miles southeast of Washington, D.C. (Figure 1). JBA’s main base comprises 4,346 acres of land just outside (southeast) of the Washington Beltway (Interstate 95/495). The communities of Forestville, Greater Upper Marlboro, Clinton, and Camp Springs border JBA to the north, east, south and west,

respectively. The Potomac River is a little over 6 miles to the west, and the Patuxent River is approximately 7 miles to the east of JBA.

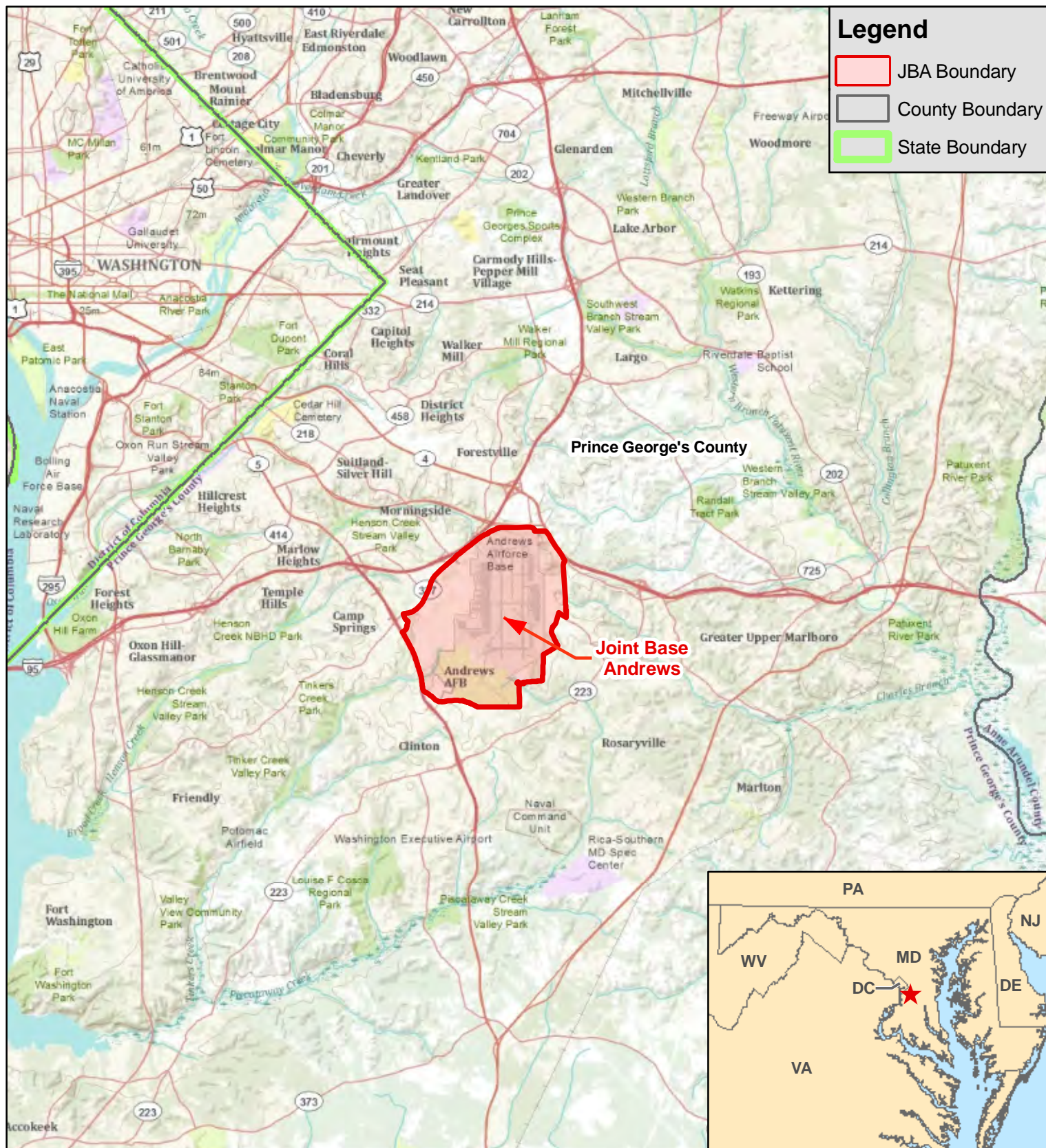
JBA is divided into western and eastern sections, separated by an airfield that runs north-south. Both sections contain mission and administrative facilities. The western portion of JBA contains the majority of its land area, including community facilities, the Malcolm Grow Medical Center, housing, and a large outdoor recreation/golf course facility. The majority of the industrial uses are located in the eastern portion of JBA surrounding the airfield.

1.3 BACKGROUND

Stormwater runoff at JBA is managed to protect the quality of surface water on and downstream of the installation. Stormwater is conveyed through oil/water separators and storm drains within industrial areas, and through swales and ditches in other areas of JBA. All surface runoff is ultimately conveyed to a network of primarily underground culverts, and is discharged from eight major storm drain outfalls. Stormwater is eventually discharged into Henson Creek, Meetinghouse, and Payne Branch to the west, Cabin Creek and Charles Branch to the east, and Piscataway Creek to the southeast. Each of these streams ultimately flows into either the Potomac or Patuxent River (USAF, 2007b).

1.4 DECISION TO BE MADE AND THE DECISION-MAKER

This EA assesses the environmental, cultural, and socioeconomic resources and potential impacts on resources under the No Action and Proposed Action alternatives. The decision to be made by the USAF concerns whether to implement the Proposed Action that would restore and upgrade JBA's existing stormwater infrastructure system.



0 1 2 4 Miles

Figure 1:
Joint Base Andrews
Site Location



US Army Corps
of Engineers
Baltimore District

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If, upon completion of this EA, it is determined that implementation of the Proposed Action would result in significant impacts, JBA would develop various mitigation measures to reduce impacts to below the level of significance, initiate the preparation of an Environmental Impact Statement, or abandon the Proposed Action. If implementation of the Proposed Action is chosen by the USAF and the EA proceeds, a Finding of No Significant Impact (FONSI)/Finding of No Practicable Alternatives (FONPA) would be signed. This EA will also be used to guide JBA in implementing the Proposed Action in a manner consistent with the USAF standards for environmental stewardship.

1.5 APPLICABLE REGULATORY REQUIREMENTS

This EA has been prepared in compliance with the National Environmental Policy Act (NEPA). NEPA is a Federal law that requires the identification and analysis of potential environmental impacts resulting from proposed Federal actions before those actions are taken. This EA has been prepared in accordance with NEPA (42 U.S.C. 4321-4347), the Council on Environmental Quality (CEQ) *Regulations for Implementing the Procedural Provisions of NEPA* (40 Code of Federal Regulation [CFR] §§ 1500-1508), and 32 CFR Part 989, et seq., *Environmental Impact Analysis Process* (EIAP [32 CFR 989], as amended; formerly known as *Air Force Instruction [AFI] 32-7061*). CEQ regulations mandate that all Federal agencies use a systematic interdisciplinary approach to environmental planning and the evaluation of actions that might affect the environment. This process evaluates potential environmental consequences associated with a Proposed Action and considers various alternatives to the Proposed Action. The intent of NEPA is to protect, restore, or enhance the environment through well-informed Federal decisions.

Air Force Policy Directive 32-70, *Environmental Quality*, states that the USAF will comply with applicable Federal, State, and local environmental laws and regulations, including NEPA. The USAF's implementing regulation for NEPA is the EIAP.

This EA serves as a means for ensuring compliance with a variety of other Federal statutes, including the Endangered Species Act, Clean Water Act, Clean Air Act, National Historic Preservation Act, various EOs, and other applicable State statutes and

regulations. Where useful to provide better understanding, key provisions of the statutes and EOs are discussed in more detail in the text of the EA.

Agency coordination was accomplished in accordance with 40 CFR 1501.6, by way of coordination letters dated February 16, 2011 which were issued to Federal, state, and local agencies. Responses to the coordination letters were received from the U.S. Fish and Wildlife Service (USFWS), the Maryland Department of Natural Resources (MDNR), Maryland Department of the Environment (MDE) and Maryland Department of Planning and are provided in Appendix C.

During the preparation of this EA, it was determined that significant or unmitigable adverse impacts would not occur as a result of the Proposed Action. Therefore, a Notice of Intent to prepare an environmental impact statement was not published. Notices of Availability (NOA) announcing the availability of the EA for public review and comment were placed in the Capital Flyer on February 17, 2012, thus starting a 30-day public review period. An NOA was also placed in the Upper Marlboro Gazette. Copies of the draft EA, Finding of No Significant Impact (FONSI), and Finding of No Practicable Alternative (FONPA) were placed in the Joint Base Andrews base library and the Upper Marlboro Branch library. Copies of the NOA and distribution letter can be found in Appendix C. Responses to the public review were received from the National Capital Planning Commission (NCPD) and the Prince George's County Department of Public Works. The letter and responses to the NCPD comments are located in Appendix C. The comments from Prince George's County Department of Public Works were noted for future reference.

1.6 SCOPE OF THE ENVIRONMENTAL REVIEW

The scope of this EA includes an evaluation of the Proposed Action and No Action alternatives and an analysis of the cumulative effects on the natural and man-made environments of JBA and surrounding areas.

This EA includes all known details of the Proposed Action projects such as structure dimensions and locations. However, the designs, specifications, and exact footprints of the site-specific BMP projects have not been finalized. In addition, the schedule for

implementation of the Proposed Action has not been decided and implementation of the projects may occur periodically over the next 5 to 10 years as funding becomes available. Therefore, future tiered NEPA documents may be needed if the plans proposed in this EA change significantly or if the environment changes over time.

1.7 INTRODUCTION TO THE ORGANIZATION OF THIS DOCUMENT

This EA is organized into nine sections. Section 1 contains the Purpose and Need, as well as project location and other background information. Section 2 contains descriptions of the Proposed Action and Alternatives. Section 3 contains general descriptions of biophysical resources and baseline conditions that could potentially be affected by the implementation of the Proposed Action and the No Action Alternative. Section 4 presents an analysis of the environmental consequences for the Proposed Action and the No Action Alternative. Section 5 lists Permits and Approvals necessary for implementation of the Proposed Action. Section 6 contains the list of preparers, Section 7 contains a list of persons and agencies consulted, and Section 8 contains a list of references used in preparation of this document.

Appendix A contains figures of 16 site-specific individual BMP projects, Appendix B contains the air quality Record of Non-Applicability, and Appendix C contains agency correspondence.

CHAPTER TWO DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

2.1 INTRODUCTION

This section describes the alternatives that were considered in addressing the purpose and need for the Proposed Action stated in Chapter 1. This section presents information on the two alternatives evaluated in this EA: the No Action Alternative, and the Proposed Action Alternative, which is implementation of stormwater system repair and upgrade projects.

2.2 HISTORY OF THE FORMULATION OF ALTERNATIVES

Several studies have been conducted at JBA to assess the effectiveness and condition of the stormwater drainage system.

In 2007, JBA, in coordination with the U.S. Army Corps of Engineers (USACE) Baltimore District, completed an Institutional Management Plan (IMP). The objective of the IMP was to focus all likely future stormwater management compliance requirements for short-term (5 years) and long-term (25 years) future development on a regional basis rather than by individual project. The IMP identified various stormwater management facilities in each of eight watersheds on JBA property. The IMP concluded that the existing stormwater management facilities, when combined with BMPs and the addition of on-site water quality facilities (i.e., low-impact development), will provide proper stormwater management for future development. Several of the BMPs listed as Proposed Action in this EA were recommended in the IMP.

Additional assessments of the stormwater collection and drainage system between 2004 and 2010 found that the system was degraded in some areas due to isolated ponding during low-intensity rainfalls, and that several of the existing BMPs and infrastructure were failing or inadequate. The 2004 infrastructure assessment (AAFB, 2004b) identified several areas dispersed throughout JBA with a high level of concern for failing drainage structures.

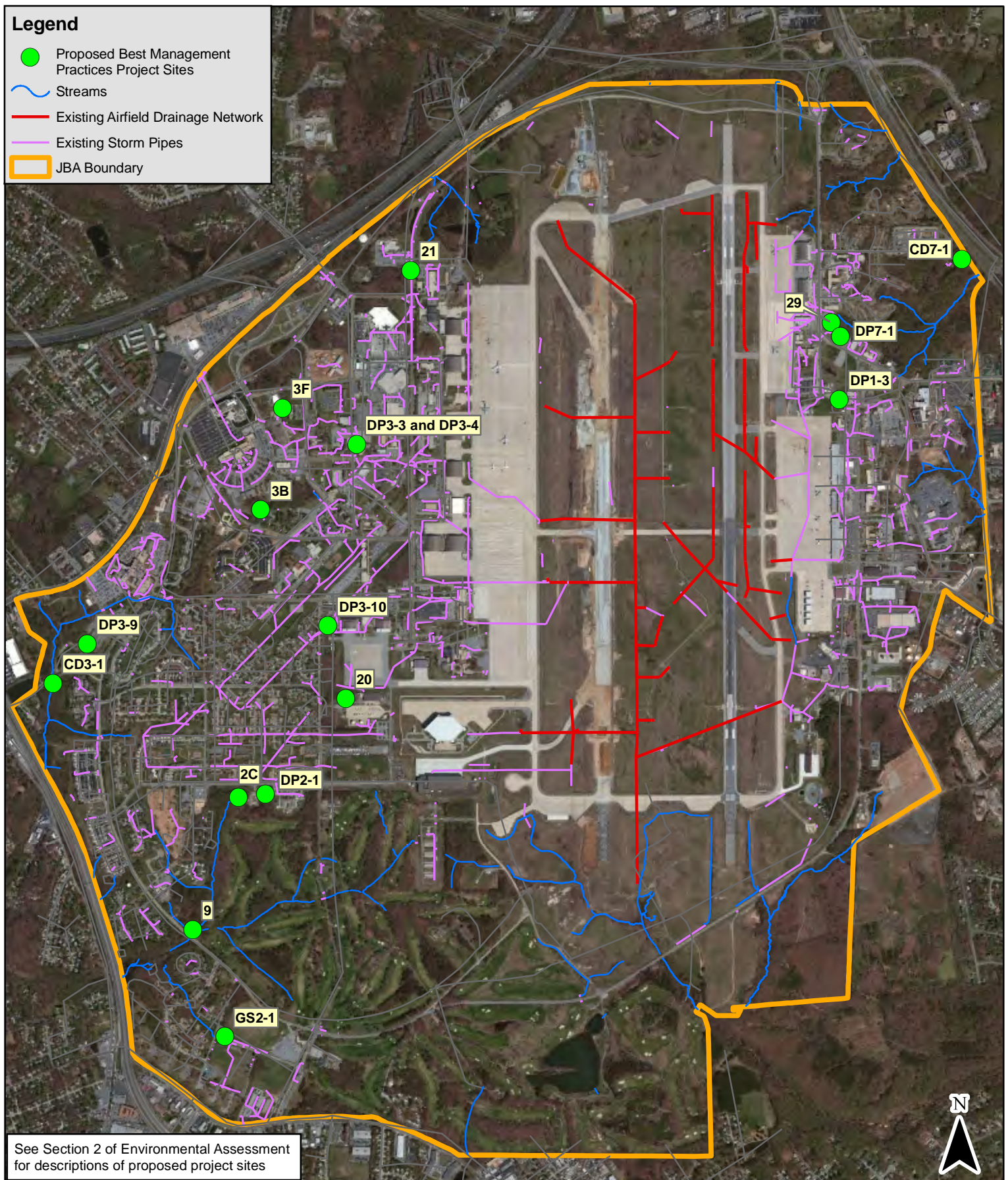
The BMP repairs and upgrades described under the Proposed Action are based on the findings and recommendations of the studies described above, including the IMP.

Over 200 different potential drainage improvements and stormwater improvement opportunities were identified and evaluated in the studies discussed above. The studies evaluated the potential improvements with respect to potential impacts, potential effectiveness, and technical issues. Only a fraction of the potential improvements were recommended for implementation. Rationale for not recommending implementation of specific measures includes, but is not limited to, environmental and natural resources impacts, duplicate water quality treatment, inconsistency with JBA's long-range development plan, lack of significant existing drainage or water quality problems, and cost effectiveness. Additional information on potential stormwater and drainage improvements that were dismissed from further consideration can be found in the above-referenced reports.

2.3 DETAILED DESCRIPTION OF THE PROPOSED ACTION

The Proposed Action includes sixteen stormwater repair and upgrade projects related to site-specific stormwater BMPs identified by various studies of the existing stormwater system. The text below describes the sixteen site-specific stormwater BMP projects in more detail. Locations of the individual proposed projects are shown on Figure 2.

The layout and design of these projects is in the planning stages; therefore, exact surveyed locations and layouts are not finalized. Should locations and final layout of the projects differ substantially from those anticipated in this EA (in location, layout, or potential environmental consequences), further environmental analysis and NEPA documentation would be completed.



Description of the Proposed Action and Alternatives

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2.3.1 Site-Specific Best Management Practices

The locations of the 16 site-specific BMPs that are proposed for retrofits, upgrades, or new BMPs are shown on Figure 2; figures of each BMP are included in Appendix A. These sites were identified as the highest priority sites to address degradation, ineffective or outdated design, or to provide for improvements to existing water quality. Table 1 lists each of the BMPs along with a brief description of the work proposed, the area of ground disturbance that would occur, and estimated duration of construction. The proposed BMPs can be broken out into the following general categories:

- Dry Ponds and Detention Ponds
- Shallow Wetlands
- Infiltration/Bioretenention Basins
- Grass Swales
- Stream Restoration
- Check Dams
- Larger Culverts

The text below provides a brief description of the types of BMPs proposed. The intent of these BMPs is primarily to reduce or eliminate sources of pollution to stormwater runoff, with the additional benefit of providing adequate capacity for conveyance of stormwater.

2.3.1.1 Dry Ponds and Detention Ponds

Dry ponds, also referred to as detention ponds, are stormwater basins that are designed to intercept a volume of stormwater runoff and temporarily impound the water for gradual release to the receiving stream or storm water system. These basins provide water quality benefits by allowing pollutants in the stormwater runoff to settle out and be taken up by the vegetation in the basin. They also provide a lower release rate (extended detention), thereby reducing erosive velocities in the downstream system.

2.3.1.2 Shallow Wetlands

These shallow, constructed wetlands are designed to maximize the removal of pollutants from stormwater runoff via several mechanisms: microbial breakdown of pollutants, plant uptake of pollutants, and stormwater retention, settling, and absorption. Shallow wetlands temporarily store runoff in shallow pools that support conditions suitable for the growth of wetland plants.

2.3.1.3 Infiltration/Bioretention Basins

An infiltration basin is a stormwater runoff impoundment designed to capture a stormwater runoff volume, hold this volume, and infiltrate it into the ground over a period of days; the basin does not retain a permanent pool of water. The vegetation in the basin increases the infiltration capacity of the basin. Bioretention facilities are planting areas installed in shallow basins in which the stormwater runoff is treated by filtering stormwater through the bed components, biological and biochemical reactions within the soil matrix and around the root zones of the plants, and infiltration into the underlying soil strata. The slowed, cleaned water is allowed to infiltrate native soils, with overflow runoff being directed to nearby stormwater drains or receiving waters.

2.3.1.4 Grass Swales

Grass swales are vegetated, open channels designed to promote the conveyance of storm water at a slower, controlled rate. These channels also act as a filter medium by removing pollutants and allowing stormwater infiltration.

2.3.1.5 Stream Restoration Measures

Stream restoration measures are designed to enable stream corridors to recover dynamic equilibrium and function at a self-sustaining level or to replace man-made infrastructure to restore the stream to a more natural state.

2.3.1.6 Check Dams

Check dams are relatively small structures constructed across a swale or channel. They are used to slow the velocity of concentrated water flows, a practice that helps reduce erosion and enhance infiltration. As stormwater runoff flows through the structure, the

check dam catches sediment from the channel itself or from the contributing drainage area.

2.3.1.7 Larger Culverts

This BMP entails replacing existing undersized culverts with larger culverts designed to effectively convey stormwater runoff.

2.3.2 Environmental Controls

Prior to commencement of construction activities, plans and documents would be prepared to identify environmental controls, including stormwater management and erosion and sediment control. The disturbed areas would be within and immediately surrounding existing stormwater BMPs, linear narrow strips of land running along existing pavements where pipes are located, and include the demolition and reconstruction of existing pavements, temporary access roads, and stockpile areas. Erosion and sediment control BMPs in accordance with Maryland Department of the Environment (MDE) regulations would be implemented to minimize impacts for all disturbances including construction staging areas. These measures may include silt fence, reseeding, sediment basins, stabilized construction entrances, and erosion control matting. Prior to construction activities, full coordination with Base Environmental Restoration Program (ERP) personnel would be required. For management of natural resources, the Integrated Natural Resources Management Plan (INRMP) (AAFB, 2007c) would be followed, and for management of cultural resources, the Integrated Cultural Resources Management Plan (AAFB, 2009b) would be followed.

Description of the Proposed Action and Alternatives

Table 1: Site-Specific BMP Projects

Project ID	Project Type	General Location	Summary of Project	Area of Ground Disturbance (square feet)	Estimated Duration of Construction
CD 3-1	Check Dam	Ground Maintenance Facility off West Perimeter	Replace oil-water separator dam, add rip-rap, remove and dispose of excess sediment and vegetation found, repair damage caused by erosion, infrastructure degradation, insufficient cleaning and maintenance, and design problems.	708	5 weeks
CD 7-1	Check Dam	Near Power Station 3787	Replace oil-water separator dam, and add rip-rap for channel protection.	455	2 weeks
DP 2-1	Dry Pond	San Antonio Blvd, west of Child Development Center	Replace riser and outfall piping, excavate to adjust storage volume, clear excess vegetation, and replace pilot channel.	22,054	5 weeks
DP 3-9	Dry Pond	North Perimeter Road	Replace riser and outfall piping, clear excess vegetation, and replace inflow from parking lot including rip-rap.	8,306	5 weeks
DP 7-1	Dry Pond	Near Building 3705	Remove excess vegetation, clear inlets, and place fill over exposed piping and sinkholes.	4,466	3 weeks
DP 3-10	Dry Pond	Skills Center on the corner of Virginia and Menoher	Clear excess vegetation, clear inlets, and replace rip-rap at inflows.	6,249	4 weeks

Description of the Proposed Action and Alternatives

Table 1: Site-Specific BMP Projects

Project ID	Project Type	General Location	Summary of Project	Area of Ground Disturbance (square feet)	Estimated Duration of Construction
DP 1-3	Dry Pond	West of Fire Station #2	Clear inlets, replace outfall weir, and place fill over exposed piping.	4,563	3 weeks
GS 2-1	Grass Swale	Southwest corner of Golf Course driving range	Clear inlets, replace check dam, and replace rip-rap at inlets.	4,396	4 weeks
2C	Detention Shallow Wetland	Southwest of the intersection of Oxford Road and San Antonio Boulevard	Proposed wetland would be an inline stormwater facility that receives flows through two 60-inch pipe culverts located underneath San Antonio Boulevard and a 30-inch pipe culvert draining from Dry Pond 2-1 near the day care center.	169,598	8 weeks
3B	Stream Restoration for the Concrete Channels	Wooded area north of California Avenue between Colorado Avenue and Arkansas Road	Construct restored stream beds in place of concrete channels to restore the stream to a more natural state.	198,652	8 weeks
3F	Shallow Wetland	Southwest of the intersection of F Street and Colorado Avenue	Remove portions of the existing concrete channel, excavate and dispose of materials generated during the construction of the shallow wetland.	23,244	5 weeks

Description of the Proposed Action and Alternatives

Table 1: Site-Specific BMP Projects

Project ID	Project Type	General Location	Summary of Project	Area of Ground Disturbance (square feet)	Estimated Duration of Construction
9	Increase Culvert Capacity	50-foot long culvert crosses West Perimeter Road between Wilmington Court and Yuma Road	Increase capacity of an existing 36-inch concrete pipe culvert to minimize upstream ponding during large storm events and reduce the risk of roadway overtopping.	13,440	6 weeks
20	Retrofit Dry Pond into Bioretention Basin	Intersection of Atlanta Avenue and Virginia Avenue within the pathfinder fence	Remove and dispose of excess sediment and vegetation, repair damage caused by excess erosion, infrastructure degradation, insufficient cleaning and maintenance, and design problems. Dry pond would be converted into a bioretention basin.	33,427	3 weeks
21	Infiltration Basin	Southeast of the intersection of Fairbanks Road and Arnold Avenue	Construction of infiltration basin.	4,845	2 weeks
29	Retrofit Stormwater Detention Pond	Near Patrick Avenue east of the parking lot and south of Building 3745	Remove and dispose of excess sediment and vegetation, repair damage caused by excess erosion, infrastructure degradation, insufficient cleaning and maintenance, and design problems.	28,434	3 weeks

Description of the Proposed Action and Alternatives

Table 1: Site-Specific BMP Projects

Project ID	Project Type	General Location	Summary of Project	Area of Ground Disturbance (square feet)	Estimated Duration of Construction
DP 3-3 and DP 3-4	Bioretention Basins	Near Chapel 3 that is at the northeast corner of the intersection of D Street and Brookley Avenue	Convert two existing dry ponds (DP3-3 and DP3-4) into bioretention basins. Construct a third bioretention basin in the island created by the drop off circle for the chapel.	16,853	7 weeks

2.4 DESCRIPTION OF THE NO ACTION ALTERNATIVE

Under the No Action Alternative, JBA would not implement the proposed Stormwater System Repair and Upgrades project. Although routine maintenance of the stormwater systems would continue, JBA would operate with inefficient, outdated, and damaged stormwater systems. These deficiencies would impair JBA's future ability to successfully meet NPDES permit conditions, the *Maryland Stormwater Management Guidelines for State and Federal Projects*, the Energy Independence Security Act Section 438, EO 13508, "Chesapeake Bay Protection and Restoration," and the Chesapeake Bay TMDL requirements, and therefore they would not be in compliance with State and Federal water quality regulations. The No Action Alternative will be used as a baseline against which the impacts of the Proposed Action can be evaluated.

2.5 COMPARISON MATRIX OF ENVIRONMENTAL EFFECTS OF ALL ALTERNATIVES

Table 2 summarizes the impacts of the No Action and Proposed Action Alternatives, which are described in more detail in Chapter 4 of this PEA.

Table 2: Comparison of Impacts between No Action and Proposed Action Alternatives

Resource	No Action	Proposed Action
Aircraft Operations	No impacts on aircraft operations.	No impacts on aircraft operations.
Geology, Topography, and Soils	No impacts on geology or topography. Long-term adverse impacts on soils would occur as erosion and sedimentation at stormwater BMPs continue and likely worsen.	No impacts on geology. Minor long-term changes in topography from the excavation/construction of dry ponds, shallow detention wetlands, and bioretention basins. Construction activities would result in short-term minor adverse impacts on soils. Potential for accidental release of contaminants would be low due to spill prevention and containment measures outlined in the Stormwater Pollution Prevention Plan (SWPPP) and the Spill Prevention Control and Countermeasures (SPCC) plan.

Description of the Proposed Action and Alternatives

Resource	No Action	Proposed Action
Surface Waters	Long-term adverse impacts on water quality within and downstream of JBA would occur as stormwater infrastructure degrades and erosion and sedimentation worsens over time. JBA would have difficulty complying with the water quality limitations set forth in its NPDES MS4 stormwater permit conditions, MDE water quality requirements, and the Chesapeake Bay TMDL requirements.	Long-term beneficial impacts on the quality of the surface waters within and downstream of JBA. The Proposed Action would assist JBA in meeting the requirements of its NPDES MS4 stormwater permit conditions, MDE water quality requirements, and the Chesapeake Bay TMDL requirements. Construction activities would result in minor short-term adverse impacts that would be minimized through the use of erosion and sediment control BMPs specified in Stormwater Management and Erosion and Sediment Control Plans.
Wetlands	Long-term adverse impacts from anticipated decrease in water quality discharged into wetland areas within and downstream of JBA.	Long-term beneficial impacts from the creation of shallow wetlands at two proposed BMP sites (2C and 3F). Long-term adverse impacts may result if permanent impacts on wetlands are unavoidable at some of the BMP project locations. Temporary minor adverse impacts on wetlands could result from construction activities, but would be mitigated through implementation of erosion and sediment control BMPs. The Proposed Action may require a Nationwide Permit or General Permit under the Clean Water Act.

Description of the Proposed Action and Alternatives

Resource	No Action	Proposed Action
Floodplains	Continued sedimentation from areas where there is inadequate or degraded water quality BMPs could result in build-up of sediments and nonpoint source pollution that could reduce the existing storage capacity of the floodplain areas. This could result in long-term adverse impacts as the floodplain elevations increase.	Some of the site-specific BMPs are within the 100-year floodplain. Minor long-term beneficial impacts on the functionality of the floodplain would occur through improved conveyance of stormwater with the BMP as well as increased infiltration with some of the BMP projects. Because of the nature of the Proposed Action, no practicable alternatives to construction within the floodplain exist.
Groundwater	No impacts on groundwater.	Minor short-term adverse impacts during construction if excavation reaches shallow groundwater; construction dewatering BMPs would help mitigate impacts. Minor long-term beneficial impact on infiltration and thus groundwater recharge through the construction of infiltration basins, stormwater detention/dry ponds, bioretention ponds, and shallow wetlands.
Air Quality and Climate Change	No impacts on air quality and climate change.	Temporary minor impacts during construction from emissions generated from heavy-duty construction vehicles. However, there would not be any new permanent stationary sources associated with the Proposed Action. Therefore, the JBA State operating permit would not be affected or need to be modified. No impact to air quality would occur from the stormwater system infrastructure after construction activities are completed. Although a regulatory threshold for Greenhouse Gas (GHG) emissions has not been established, temporary minor impacts would occur during construction. However, when compared to regional and global GHG emission estimates, the amount associated with the Proposed Action would be negligible.

Description of the Proposed Action and Alternatives

Resource	No Action	Proposed Action
Noise	Project-specific short-term adverse impacts could occur from operation of heavy equipment during maintenance and emergency repair activities, but are not anticipated outside the range of existing noise levels at JBA.	Minor temporary impacts on JBA employees and visitors due to increases in noise levels from the operation of heavy equipment during construction. However, construction noise is not anticipated to be outside the range of existing noise levels at JBA, including aircraft operations.
Stormwater Management and Storm Drainage	Long-term adverse impacts on stormwater management and conveyance of stormwater. As noted under Surface Waters in this table, JBA would have difficulty complying with the water quality limitations set forth in its NPDES MS4 permit conditions, MDE water quality requirements, and the Chesapeake Bay TMDL requirements.	Long-term beneficial impacts on stormwater management and storm drainage conveyance within and downstream of JBA through improved stormwater conveyance at site-specific BMP projects and infiltration at some the BMP projects. As noted under Surface Water in this table, the Proposed Action would help JBA meet existing NPDES MS4 permit conditions, MDE water quality requirements, and the Chesapeake Bay TMDL requirements.
Transportation	No impacts on transportation.	Temporary minor adverse impacts on traffic and transportation would occur during construction from increases in construction vehicles on roads, movement of heavy equipment, and possible lane closures.
Hazardous Materials and Hazardous Waste Management	Maintenance or emergency repair activities may include the use of hazardous materials and generation of hazardous waste (i.e., solvents, hydraulic fluid, oil, and antifreeze). With implementation of safety measures and proper procedures in JBA's SWPPP and SPCC for the handling, storage, and disposal of hazardous materials, no adverse impacts are anticipated during construction.	Construction activities may include the use of hazardous materials and generation of hazardous waste. With implementation of safety measures and proper procedures in JBA's SWPPP and SPCC for the handling, storage, and disposal of hazardous materials and wastes, no adverse impacts are anticipated during construction.
Safety and Occupational Health	No impacts on safety and occupational health.	Construction activities could result in adverse impacts on construction worker safety; however, safety training and mitigation measures would be implemented to reduce potential impacts.

Description of the Proposed Action and Alternatives

Resource	No Action	Proposed Action
Vegetation	Maintenance activities would remain at present levels, with minor short-term impacts on vegetation from mowing, regular vegetation removal from infrastructure, and during construction for repairs.	Temporary and minor adverse effects from the removal of vegetation at nearly all projects during construction. BMP Project 2C would result in the removal of trees, which would have long-term adverse impacts on vegetation. BMP projects 2C and 3F would result in construction of new wetlands and project 3B would replace existing concrete channels with a more natural stream bed and vegetated stream banks, which would have beneficial long-term impacts on vegetation. Adverse impacts would be mitigated by post-construction revegetation using native species.
Wildlife and Birds	Long-term impacts on habitat from maintenance activities would remain at present levels, and there would be no additional impacts on wildlife.	Temporary impacts on wildlife and birds are anticipated from vegetation removal and noise during construction; however, impacts are anticipated to be minor due to existing high levels of human activity and previous disturbance in areas where construction would occur. BMP projects 2C and 3F would result in construction of new wetlands, and project 3B would replace existing concrete channels with a more natural stream bed and vegetated stream banks, which would have beneficial long-term impacts on wildlife and birds.
Threatened and Endangered Species	No impacts.	No impacts on threatened or endangered species are anticipated. The proposed activities primarily occur within highly developed areas of JBA and would not disturb previous or known habitat for State or federally listed species.
Cultural Resources	No impacts.	No adverse effect on historic properties based on the nature of the Proposed Action, which primarily entails the repairs and upgrades of existing stormwater infrastructure.

Description of the Proposed Action and Alternatives

Resource	No Action	Proposed Action
Population, Employment, and Income	No impacts.	Short-term beneficial impacts from construction activities would benefit the local economy by providing employment opportunities for local construction workers and potential increase in the use of local stores and businesses for purchases. No impacts on population or income are anticipated.
Environmental Justice	No impacts	No disproportionate impacts on minority or low-income populations would occur. Beneficial long-term impacts would occur at off-site properties from a reduction in flooding potential and a reduction of pollutants such as sediment in surface waters.
Recreation	No impacts.	Temporary minor noise impacts would occur during construction; however, the noise is not anticipated to impact the ability to use and enjoy any of the recreational resources at JBA.
Cumulative Effects	No cumulative impacts for endangered species, environmental justice, population, employment and income, recreation, and cultural resources. Cumulative impacts may include flooding from increased urbanization and poor drainage, reduced water quality from erosion and sediment being transported to surface waters, and changes in hydrology.	<p>No cumulative impacts on threatened and endangered species, floodplains, environmental justice, and cultural resources.</p> <p>Long-term beneficial impacts on airfield operations, stormwater management, wetlands, wildlife, and water quality.</p> <p>Short-term beneficial impacts on employment.</p> <p>Short-term adverse impacts on soils, water quality, wetlands, groundwater, air quality, noise, transportation, vegetation, wildlife/birds, and recreation.</p> <p>Long-term adverse impacts on wetlands, vegetation, and wildlife.</p>

CHAPTER THREE AFFECTED ENVIRONMENT

3.1 INTRODUCTION

Chapter 3 describes the facility history, its mission, and the existing resources at JBA that may be affected by the Proposed Action and No Action Alternatives.

3.2 FACILITY HISTORY AND CURRENT MISSION

3.2.1 History

In 1942, President Franklin D. Roosevelt ordered that the present site of JBA be acquired and military airfield constructed. By 1943, the first permanent unit, the 463rd Base Headquarters and Air Base Squadron, arrived at the airfield. The airfield, which became operational later in the year, was known as Camp Springs Army Air Field. Camp Spring's early mission was to train fighter pilots for overseas combat duty. In 1947 when the Air Force became a separate service, the base's name changed to Andrews Air Force Base (AAFB). In the same year, the first jet-powered aircraft, an F-80 Shooting Star, was permanently assigned to AAFB. In 1950 during the Korean War, AAFB became involved in combat readiness training for B-25 medium bomber crews. JBA is best known for the transportation of senior government and military leaders. JBA also provides services for America's senior officials, international royalty, presidents, prime ministers, popes, and local and foreign military leaders (USAF, 2011a).

In 2005, the Air Force District of Washington was reactivated as the single Air Force voice for planning and implementing Air Force and joint solutions within the National Capital Region. In 2006, the 89th Medical Group at AAFB and the 11th Medical Group at Bolling Air Force Base in Washington, D.C., combined into the 79th Medical Wing at AAFB. Also in 2006, the 316th Wing became the new host unit for AAFB and its nearly 50 tenant units to include organizations from the Air Force Reserve, Air National Guard, Civil Air Patrol, and the United States Navy. After activation of the 316th, the 1st Helicopter Squadron from the 89th Airlift Wing transferred to the 316th Operations Group. Finally, in 2007 the Air Force District of Washington, as well as the 844th Communications Group, transferred from Bolling Air Force Base to AAFB (USAF, 2011a).

In 2009, AAFB, along with Naval Air Facility Washington, became a joint base known as Joint Base Andrews-Naval Air Facility Washington, Maryland or JBA. In October 2010, the 316th Wing was inactivated and the 11th Wing was re-designated the host wing at JBA. The 11th Wing is host to more than 60 organizations including the 89th Airlift Wing (which is responsible for providing safe, reliable, worldwide airlift and logistical support for the President of the United States, Vice President, Cabinet members and other high-ranking U.S. and foreign government officials), Army (Army Jet Detachment), Navy, Air Force Reserve and Air National Guard units, the Marines, the Congressional Squadron of the Civil Air Patrol, the Maryland State Police as well as the Department of Energy.

JBA is home to the Presidential Airlift Group which is responsible for the operation of the VC-25A aircraft popularly known as Air Force One. Due to its proximity to the capital and governmental facilities, JBA is frequently used by the President and Vice President of the United States, congressional delegations, foreign heads of State, and other high ranking government and diplomatic officials.

3.2.2 Mission

The USAF's current mission includes executing USAF operations and supporting Joint Force and Inter-Agency operations in the National Capital Region, as well as Combatant Commanders and Air Force Elements worldwide (USAF, 2011a). JBA supports multiple missions, and units are equipped with a wide range of fighter, aerial refueling tanker, transport aircraft, and helicopters. JBA also provides aviation support to varied military and civilian aircraft.

3.3 DESCRIPTION OF THE AFFECTED ENVIRONMENT

3.3.1 Aircraft Operations

Aircraft operations are categorized as takeoffs, landings, or closed patterns. A closed pattern occurs when the pilot of the aircraft approaches the runway as though planning to land, but then applies power to the aircraft and continues to fly as though taking off again. Each takeoff or landing constitutes one operation; since a closed pattern operation essentially consists of a landing and a takeoff, it is considered two operations. JBA supports approximately 141,000 annual aviation operations (AAFB, 2007b).

3.3.2 Earth Resources

Earth resources include geology, topography, and soils. Geologic resources of an area typically consist of surface and subsurface materials and their inherent properties. Topography refers to an area's surface features, including vertical relief. The term "soils" refers to unconsolidated materials formed from the underlying bedrock or other parent material.

3.3.2.1 Geology

The Coastal Plain of southern Maryland, on which JBA is located, is comprised of unconsolidated sedimentary geologic units that range from the Quaternary (1.5 million years ago to the present day) to Cretaceous (144 to 65 million years ago) Periods in age. These geologic units are made of unconsolidated sand, gravel, silt, clay, and organic materials that overlay bedrock. The surficial geologic deposits range in thickness from 10 to 20 feet and include irregularly bedded cobbles, gravel, and fine sand that are mixed with silt and clay. Surface formations at JBA have largely been previously disturbed by grading activities in support of facility construction (AAFB, 2007c).

3.3.2.2 Topography

JBA is on the western side of the middle Atlantic Coastal Plain Physiographic Province, which is characterized by generally level to gently sloping terrain with local relief of less than 100 feet, except in association with steep stream banks. JBA is on a plateau between the Anacostia River and the Patuxent River. Surface elevations at JBA range from about 215 feet above mean sea level (amsl) to 281 feet amsl (AAFB, 2007c). Although most of JBA is relatively flat, east of the runway hangar area the topography drops off steeply into the stream valleys.

3.3.2.3 Soils

Due to the considerable amount of development over the years at JBA, most of the naturally occurring soils are no longer present or identifiable. Approximately 50 percent of the soils have little to no horizon development, which is characteristic of land that is altered by disturbance to the extent that the original soil series cannot be identified.

Much of the originally occurring soil, particularly in and around the runways and taxiways, have been disturbed by cut and fill, with some areas having 20 or more feet of fill material. Only about 10 percent of JBA, primarily along the perimeter and areas of the golf course, is considered to be undisturbed.

The two dominant, naturally occurring soil associations at JBA are the Sassafras-Croom and the Beltsville-Leonardtown-Chillum associations. The Sassafras-Croom association is adjacent to drainages associated with Tinkers and Piscataway Creeks. This association comprises gently sloping to steep, well-drained, and primarily gravelly soils with a compact substratum. This soil type supports general farming and residential development in other areas of Prince George's County. The Beltsville-Leonardtown-Chillum association occupies most of the northern portion of JBA. This association is comprised mostly of gently to moderately sloping soils, but can also include nearly level or fairly steep areas. These soils are predominantly moderately deep, well to poorly drained soils with a compacted substratum. These soils support general farming and residential and industrial development in other areas of Prince George's County. Potential building constraints associated with naturally occurring soils include several soil types that are somewhat to very limited with regard to depth to saturation zone, flooding, shrink/swell potential, and steep slopes (USDA, 2011).

3.3.3 Water Resources

Water resources analyzed in this EA include surface waters (lakes, rivers, and streams), wetlands, floodplains, stormwater, and groundwater.

3.3.3.1 Surface Waters

The CWA and its amendments require the U.S. Environmental Protection Agency (EPA) to publish regulations addressing stormwater discharges under the NPDES permitting program. The EPA delegated authority to administer the NPDES program in Maryland to the MDE. JBA maintains coverage under MDE's General Discharge Permit (GDP) for industrial activities (GDP No. 02-SW) and under MDE's GDP for discharges by MS4 operators (No. 05-SF-5501). JBA will also be required to comply with the requirements of EPA's Chesapeake Bay Total Maximum Daily Load; EO 13508 pertaining to the

Chesapeake Bay Protection and Restoration; and Section 438 of the Energy Independence and Security Act.

The upland topography of JBA creates a watershed divide, with the western portion of JBA generally draining to the Potomac River, which is a little over 6 miles west of JBA, and the northeastern portion generally draining to the Patuxent River, which is approximately 7 miles east of JBA. Most of JBA is in the Potomac River watershed. The U.S. Geological Survey (USGS) classifies watersheds into 8-digit Hydrologic Unit Codes (HUCs); the portion of JBA in the Potomac watershed is in the USGS Middle Potomac subwatershed designated by HUC 02070010 and within the MDE-designated 8-digit watershed codes 02140201 (Potomac River U Tidal) and 02140203 (Piscataway Creek). The portion of JBA in the Patuxent River watershed is in HUC 02060006 and MDE watershed code 02131103 (Western Branch).

Several streams that are fed by a shallow, unconfined surface aquifer originate on or near JBA. Piscataway Creek, a tributary of the tidal Potomac River, originates within the southeastern corners of JBA. Tinkers Creek, an intermediate order tributary of Piscataway Creek, also originates in the southeastern portion of JBA. Additionally, Meetinghouse Branch and Paynes Branch originate in the southwestern portion of JBA and flow toward the west into the Potomac River. Cabin Creek and Charles Branch originate in the northeastern portion of JBA, and drain toward the east to Western Branch, a tributary of the Patuxent River (AAFB, 2009). Surface water features at JBA also include the 16.9-acre Base Lake in the southwest corner of the base, three ponds in the northwest portion of the base, and two other small impoundments at the south golf course. Surface waters are shown on Figure 3.

3.3.3.2 Wetlands

EO 11990 (Protection of Wetlands) directs Federal agencies to minimize the destruction, loss, and degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetland communities. In accordance with the Clean Water Act (CWA; 33 U.S.C. §1251 et seq.), projects at JBA that involve dredging or filling wetlands require Section 404 permits from the USACE and a Nontidal Wetland Permit from MDE.

Wetlands are an important natural system with diverse biological and hydrological functions. These functions include water quality improvement, groundwater recharge and discharge, pollution mitigation, nutrient recycling, unique plant and wildlife habitat provision, stormwater attenuation and storage, sediment detention, and erosion protection.

The watershed areas that include JBA contain a significant number of natural wetlands. These wetland systems have a profound effect on the hydrologic flow regime of streams and the residence time of water within the watersheds. The wetlands consist mostly of palustrine (freshwater) forested and riverine communities commonly found in areas southeast and northeast of JBA.

Emergent wetlands are found at various locations around the base; two particular areas include the golf course near the Base Lake (Freedom Lake) and at the southern end of the airfield. Scrub-shrub wetlands are found at various locations around the Base Lake (Freedom Lake) golf course, and forested wetlands are found throughout JBA.

Wetland species typically found at JBA are shown in Table 3.

Table 3: Typical wetland plant species found at JBA

Scientific Name	Common Name
<i>Juncus effusus</i>	Common rush
<i>Scirpus cyperinus</i>	Woolgrass
<i>Scirpus atrovirens</i>	Green bulrush
<i>Typha latifolia</i>	Broadleaf cattail
<i>Vernonia noveboracensis</i>	New York ironweed
<i>Thelypteris palustris</i>	Marsh fern
<i>Osmunda cinnamomea</i>	Cinnamon fern
<i>Leersia oryzoides</i>	Rice cutgrass
<i>Acer rubrum</i>	Red maple
<i>Cephalanthus occidentalis</i>	Buttonbush

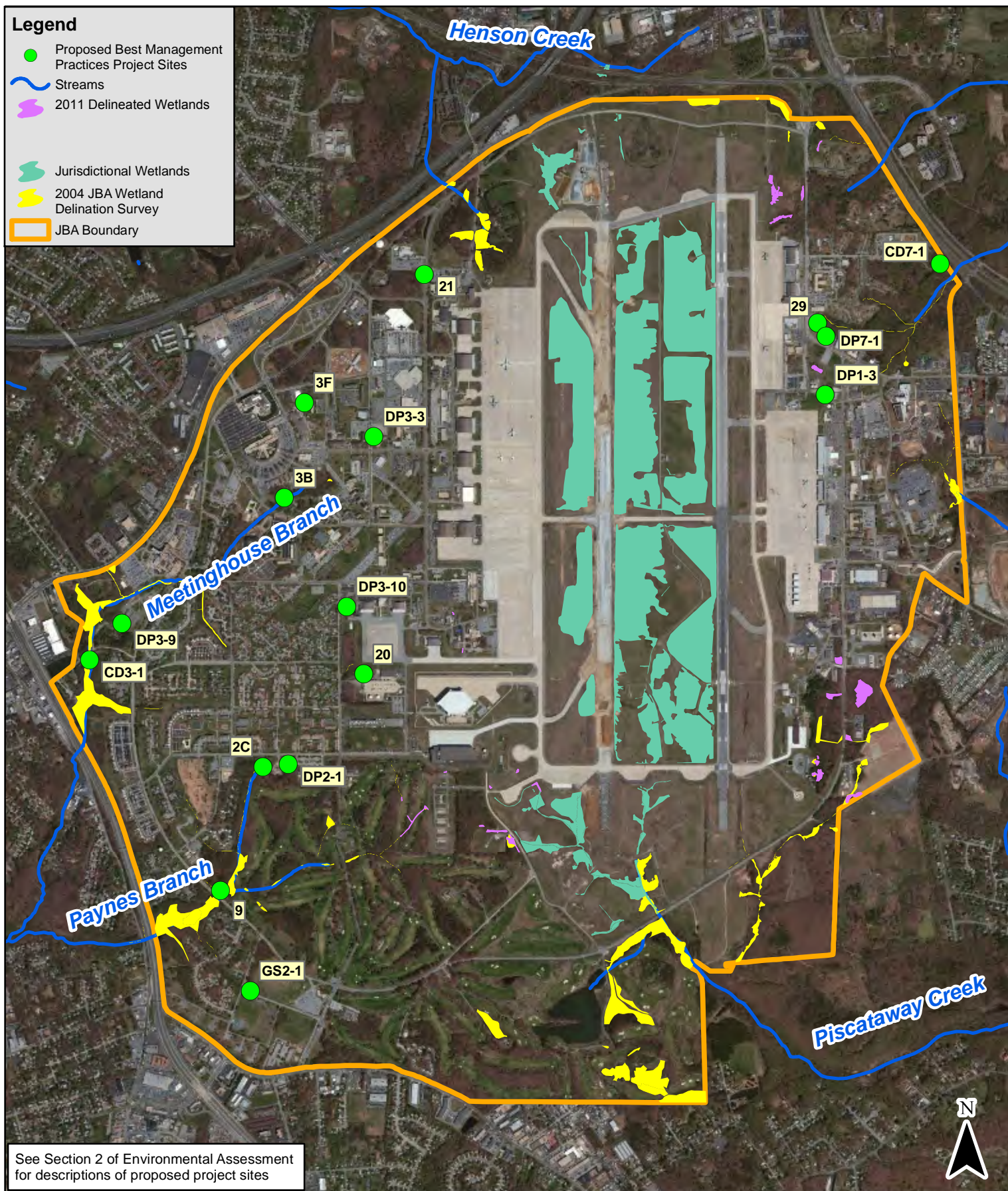
In May 2004 the 89th Airlift Wing Civil Engineer Squadron Environmental Management Flight, now the 11th Wing Civil Engineer Squadron Asset Management Flight,

completed wetland delineations on JBA (J.M. Waller and Associates, 2004). These wetland delineations revealed four main freshwater wetland community types that occur on the base: open water wetlands, emergent wetlands, scrub-shrub wetlands, and forested wetlands. JBA maintains a 25-foot protective buffer around these delineated wetlands in accordance with the 1989 Maryland Nontidal Wetlands Protection Act. The 2004 delineation identified 87.2 acres of wetlands (Figure 3), of which approximately 36 acres are forested wetlands and 31 acres are emergent wetlands. The remaining 20.2 acres are open water habitats.

Between 2009 and 2010 a wetland delineation was conducted within the West Runway Repair project area (see Figure 3). A total of 309 acres of wetlands were identified, with 1.6 acres classified as streams, 5.6 acres classified as palustrine scrub-shrub wetlands, and the remaining 302 acres classified as palustrine emergent wetlands. In March 2010 the Baltimore District USACE Regulatory Branch issued a Jurisdictional Determination (JD) for the delineation.

Project related wetland delineations have also been conducted for the Piscataway Creek stream restoration (Figure 3). A JD was issued by the Baltimore District USACE Regulatory Branch for the Piscataway Creek delineation.

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JBA manages wetlands to provide wetland protection, enhancement, and restoration, where necessary for support of fish, wildlife, or plants (AAFB, 2007c). Additionally, JBA implements the ecosystem management projects to “Maintain or restore the hydrological processes in streams, floodplains, and wetlands when feasible” as outlined in Department of Defense Issuance 4715.3, *Environmental Conservation Program*.

3.3.3.3 Floodplains

Floodplains are defined as areas adjoining inland or coastal waters that are prone to flooding. Floodplain protection is important to natural resources management at JBA because it directly affects surface water quality and the value of aquatic habitats.

EO 11988 (Floodplain Management) requires that development on Federal lands avoid to the extent possible the long- and short-term adverse impacts associated with the occupancy and modification of floodplains. Section 2 of the EO states that each agency has a responsibility to evaluate the potential effects of any actions it may take in a floodplain; to ensure that its planning programs and budget requests reflect consideration of flood hazards and floodplain management; and to prescribe procedures to implement the policies and requirements of EO 11988. Before taking an action, each agency shall determine whether the proposed action would occur in a floodplain.

The Federal Emergency Management Agency (FEMA) typically does not map floodplains on Federal property; therefore, Flood Insurance Rate Maps (FIRMs) are not available for JBA. In 2005, JBA completed a study of the 100-year floodplains (Figure 4). The floodplains are generally limited to small streams and the area immediately adjacent to these streams (89th Airlift Wing, 2005).

3.3.3.4 Groundwater

JBA is in a portion of the Maryland Coastal Plain that includes several important regional water supply aquifers. These aquifers are located several hundred feet below ground surface (bgs), and include, in order of descending stratigraphic sequence: the Aquia, Magothy, Patapsco, and Patuxent formations. Though not a major aquifer at JBA, the Aquia formation, located at a depth of 150 feet bgs, is the primary source of groundwater for much of Prince George’s, Anne Arundel, Charles, and St. Mary’s

Counties, and is recharged by infiltration in an area northwest of JBA. The Patapsco and Patuxent formations are regional aquifers that provide groundwater for Prince George's, Anne Arundel, and Charles Counties (ANG, 2005).

Shallow groundwater occurs at depths of less than 20 feet bgs, likely under unconfined conditions. Groundwater recharge occurs primarily through infiltration.

3.3.4 Air Quality

Air quality is a function of the following: types of emission sources; amount of pollutants emitted; size and topography of the air basin; and prevailing meteorological conditions. Levels of pollutants in the atmosphere are determined through analysis of meteorological and ambient air quality monitoring data gathered by the MDE.

3.3.4.1 Federal Air Quality Standards

The Clean Air Act (CAA) of 1970, 42 U.S.C. 7401 *et seq.*, amended in 1977 and 1990, is the primary Federal statute governing air pollution. The CAA established the National Ambient Air Quality Standards (NAAQS) (40 CFR Part 50) to protect human health and welfare, allowing for an adequate margin of safety (Table 4). Primary and secondary NAAQS have been established for the following principal air pollutants, known as criteria pollutants: ozone (O₃), carbon monoxide (CO), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), lead (Pb), and two types of particulate matter (PM₁₀ is coarse particulate matter [10 micrometers or less in diameter] and PM_{2.5} is fine particulate matter [2.5 micrometers or less in diameter]). Ground level O₃ results from a chemical reaction of sunlight, volatile organic compounds (VOCs), and nitrogen oxide (NO_x), which are O₃ precursors. Federal regulations designate areas that cannot attain compliance with the NAAQS as non-attainment areas; those areas that can meet the NAAQS are designated as attainment areas. Areas that have improved air quality from former non-attainment status to attainment are designated maintenance areas for a specific time period.



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Table 4: National Ambient Air Quality Standards

Pollutant	Primary Standards	
	Level (parts per million [ppm] / micrograms per cubic meter [$\mu\text{g}/\text{m}^3$] / parts per billion [ppb])	Averaging Time (see footnotes on how to attain standard without exceeding levels)
Carbon Monoxide (CO)	9 ppm ⁽¹⁾	8-hour ⁽³⁾
	35 ppm ⁽¹⁾	1-hour ⁽³⁾
Lead (Pb)	0.15 $\mu\text{g}/\text{m}^3$ ⁽²⁾	Rolling 3-Month Average
	1.5 $\mu\text{g}/\text{m}^3$ ⁽²⁾	Quarterly Average
Nitrogen Dioxide (NO ₂)	0.053 ppm ⁽²⁾ (53 ppb)	Annual (Arithmetic Average)
	100 ppb ⁽¹⁾	1-hour ⁽⁴⁾
Particulate Matter (PM ₁₀)	150 $\mu\text{g}/\text{m}^3$ ⁽²⁾	24-hour ⁽⁵⁾
Particulate Matter (PM _{2.5})	15.0 $\mu\text{g}/\text{m}^3$ ⁽²⁾	Annual ⁽⁶⁾ (Arithmetic Average)
	35 $\mu\text{g}/\text{m}^3$ ⁽²⁾	24-hour ⁽⁷⁾
Ozone (O ₃)	0.075 ppm ⁽²⁾ (2008 std)	8-hour ⁽⁸⁾
	0.08 ppm ⁽²⁾ (1997 std)	8-hour ⁽⁹⁾
	0.12 ppm ⁽²⁾	1-hour ⁽¹⁰⁾
Sulfur Dioxide (SO ₂)	0.03 ppm ⁽¹¹⁾	Annual (Arithmetic Average)
	0.14 ppm ⁽¹¹⁾	24-hour ⁽³⁾
	75 ppb ^{(1) (12)}	1-hour

⁽¹⁾ No secondary standards exist.

⁽²⁾ Same as secondary standards.

⁽³⁾ Not to be exceeded more than once per year.

⁽⁴⁾ 3-year average of the 98th percentile of the daily maximum 1-hour average at each monitor within an area.

⁽⁵⁾ Not to be exceeded more than once per year on average over 3 years.

⁽⁶⁾ 3-year average of the weighted annual mean PM_{2.5} concentrations from single or multiple community-oriented monitors.

⁽⁷⁾ 3-year average of the 98th percentile of 24-hour concentrations at each population-oriented monitor within an area ⁽⁸⁾ 3-year average of the fourth-highest daily maximum 8-hour average ozone concentrations measured at each monitor within an area over each year.

⁽⁹⁾ 3-year average of the fourth-highest daily maximum 8-hour average ozone concentrations measured at each monitor within an area over each year.

⁽¹⁰⁾ The expected number of days per calendar year with maximum hourly average concentrations above 0.12 ppm is ≤ 1 .

⁽¹¹⁾ Secondary standard is 0.5 ppm and an averaging time of 3 hours that must not be exceeded more than once per year.

⁽¹²⁾ 3-year average of the 99th percentile of the daily maximum 1-hour average at each monitor within an area.

Source: EPA 2010

3.3.4.2 State Implementation Plan

The CAA, as amended in 1990, mandates that states with regions in violation of the NAAQS must submit State Implementation Plans (SIPs) to EPA. These plans detail the steps that the state's particular regions will make to bring their air quality into compliance with the Federal standards by specific deadlines. The portion of Prince George's County that JBA is in is subject to the following SIPs: the 8-Hour O₃ NAAQS (MWCOG, 2007) and the PM_{2.5} NAAQS (MWCOG 2008).

3.3.4.3 General Conformity

Section 176(c) of the CAA requires that Federal actions in any non-attainment or maintenance areas must conform to a SIP to ensure the actions do not interfere with achieving attainment of the NAAQS. In 1993, EPA established two conformity regulations (40 CFR Parts 51 and 93) for transportation and non-transportation projects, which are incorporated by reference in the MDE Code of Maryland Regulations 26.11.26 (*Conformity*) (MDE, 2010a). If the action is not exempt under the rule, then its emissions must be analyzed to ensure conformity with the applicable SIP; this is called a Conformity Applicability Analysis. If the emissions exceed the *de minimis* level for the SIP pollutant, then a Conformity Determination must be performed.

As JBA is located in non-attainment areas, General Conformity is applicable to all of its Federal actions. Therefore, prior to physically implementing any part of a Federal activity (e.g., land disturbance, grading) the facility must demonstrate that the Federal action will not cause or contribute to a new violation of the NAAQS, increase the frequency or severity of any existing NAAQS violations, or delay attainment of any standard, interim emission reductions, or milestone.

3.3.4.4 Stationary Source Operating Permits

Air permits for stationary sources are regulated in Maryland by the MDE Air and Radiation Management Administration (ARMA) under Code of Maryland Regulations (COMAR) 26.11. Air quality permits must be obtained for new or modified sources. In 2007, ARMA issued AAFB a synthetic minor State operating permit (No. 033-00655A) for its stationary sources since it is no longer considered a major source (i.e., having a

potential to emit of more than 25 tons per year (tpy) of VOCs or NO_x, 100 tpy of any other non-attainment criteria air pollutant (including SO₂ as a precursor for PM_{2.5}), 10 tpy of a hazardous air pollutant (HAP), or 25 tpy of any combination of HAPs. The permit includes only those sources that trigger the permitting threshold (e.g., external combustion units with a heat input rating greater than or equal to one million British thermal units per hour).

3.3.4.5 Existing Conditions

Regional Air Quality

Federal regulations (40 CFR 81) designate Air Quality Control Regions (AQCRs), or airsheds, for the attainment and maintenance of the NAAQS. Prince George's County, and therefore JBA, is part of the National Capital Interstate AQCR (AQCR 47), which also includes Montgomery County and Arlington, Fairfax, Loudoun, and Prince William Counties in Virginia (EPA, 2011a). The two major pollutants of concern in Maryland are ground-level O₃ and fine particles. MDE's Ambient Air Monitoring Program publishes monthly air quality summaries to keep citizens informed. Based on the September 2010 Washington DC summary, despite the record high number of hot days, the number of bad air quality days in 2010 were the 6th lowest in 30 years, with the five other lowest years occurring after 2000. Such data implies that air quality continues to improve in the region (MDE, 2010a).

Attainment Status

The portion of Prince George's County where JBA is located is designated as a moderate non-attainment area for the 8-hour O₃ NAAQS and non-attainment for annual PM_{2.5}. The area is in attainment for all other criteria pollutants (EPA, 2011b).

Climate

JBA's geographic location near the eastern seaboard provides for a humid subtropical climate, which is influenced by an easterly airflow that produces frequent successions of high and low pressure systems. Wind speed at JBA averages 6 knots, generally coming from the northwest during the fall and from the southwest during the spring and summer periods. The region is occasionally affected by strong coastal low-pressure systems,

including nor'easters and hurricanes (SAIC, 2008). Air pollution episodes can be influenced by weather events, such as high pressure systems, cold fronts, or onshore winds caused by hurricanes; interactions of different weather features together with topography can trap pollutants in isolated or wide-spread areas. Summers in this region are warm and humid, with frequent thunderstorms, while winters are cool with surges of cold, dry continental air from the north that can produce moderate to heavy snowfall. Particulate and O₃ pollution increase during the hotter summer months. The Washington Metropolitan Area's summer air quality season is considered April-September, which is typically the last active air pollution month for O₃ due to shorter daylight hours, and decreasing sun angle and temperatures. Generally the quantity of hot days is directly proportional to the quantity of bad air quality index days (MDE, 2010b).

Current Emissions

MDE requires JBA to certify actual emissions of regulated pollutants from the facility on a calendar year (CY) basis for all permitted stationary sources. The pollutants of concern for the permitted sources in the Emission Certification Report are the aforementioned criteria pollutants including total particulate matter (PM); three greenhouse gases (carbon dioxide [CO₂], methane [CH₄], and nitrous oxide [N₂O]); non-VOC/non-particulate HAPs; and any of the 192 HAPs/toxic air pollutants (TAPs) specified by MDE. JBA provides a report to MDE for the facility's previous year emissions for the following different types of permitted sources: external combustion units (e.g., boilers, heaters); emergency generators; gasoline storage, dispensing, and loading operations; paint spray booths; and abrasive blasting booth.

Table 5 provides a summary of JBA's CY 2010 stationary emissions which include all JBA permitted sources. Table 6 provides a summary of a CY 2002 mobile emission source inventory for AAFB prior to it becoming a joint base (USAF, 2005).

Table 5: Calendar Year 2010 Criteria Pollutant and Greenhouse Gas Emissions (Tons per Year) from Permitted Sources at Joint Base Andrews

	CO	VOC	NO _x	SO _x	PM	PM ₁₀	PM _{2.5}	CO ₂	CH ₄	N ₂ O
Stationary Sources	5.47	2.55	9.79	0.27	0.58	0.54	0.53	6,930	0.13	0.12

Source: USAF, 2011d

Table 6: Calendar Year 2002 Mobile Emissions (Tons per Year) at Andrews Air Force Base

Tons Per Year	CO	VOC	NO _x	SO _x	PM ₁₀
Mobile Sources	2,128	527	650	41	107

Source: USAF, 2005

JBA has a Refrigerant Management Plan that outlines how JBA complies with Section 608 of the CAA Amendments that govern O₃ depleting substances (Environmental Support Solutions, Inc., 2005). The EPA has approved the use of certain non- O₃ depleting substances substitutes (e.g., R-134a, R-404A), which are still a concern as they have a global warming potential.

Regional Air Emissions

As a basis for comparison of JBA's emissions to Prince George's County emissions, Table 7 summarizes the most recently available county stationary and mobile emissions (EPA, 2006). Maryland's Vehicle Emissions Inspection Program helps improve air quality by requiring a biennial inspection of vehicles and repair of those vehicles that fail to meet emissions standards. This program significantly reduces vehicle emissions that contribute to Maryland's air quality problem of ground-level O₃.

Table 7: Calendar Year 2005 Stationary and Mobile Emissions (Tons per Year) for Prince George's County, Maryland

Tons Per Year	CO	VOC	NO _x	SO ₂	PM _{2.5}
Stationary Sources	17,727	12,284	16,111	63,168	6,623
Mobile Sources	187,184	15,195	19,956	816	653

Source: EPA, 2010

Climate Change

There is scientific consensus that the chemical composition of the Earth's atmosphere is being changed by human activities, such as fossil fuel combustion, deforestation, and other land use changes, resulting in the accumulation of trace greenhouse gases (GHGs) in the atmosphere. GHGs (e.g., water vapor, CO₂, CH₄, N₂O, hydrofluorocarbons) absorb the radiative energy from the sun and Earth. Water vapor occurs naturally and accounts for the largest percentage of GHGs, while CO₂ is the second-most abundant GHG. It is thought that GHGs may be contributing to an increase in the Earth's average surface temperature, which in turn is expected to affect weather patterns, average sea levels, and increased intrusion of seawater into estuaries. Other effects are changes in precipitation rates, an increase in O₃ levels due in part to changes in atmospheric photochemistry, and decreased water availability and quality (Jones & Stokes, 2007).

In the past few years, EPA has promulgated several different GHG rules. The *Mandatory Reporting of GHGs Rule* (40 CFR 98; October 30, 2009) requires facilities that exceed 25,000 metric tonnes of CO₂ equivalent (CO₂e) to report their CY 2010 CO₂e emissions by September 30, 2011 and annually thereafter by March 31. CO₂e is obtained by multiplying approved global warming potential factors by each pollutant to create a single representative value for ease of comparison. In addition, EPA issued a final rule (40 CFR Parts 51, 52, 70, and 71; June 3, 2010) called the *Prevention of Significant Deterioration and Title V Greenhouse Gas Tailoring Rule*. This "Tailoring Rule" will require Title V permits for major sources with GHG emissions of 100,000 tons per year or more of CO₂e beginning July 1, 2011. Lower thresholds could go into effect in later years. EO 13514 (*Federal Leadership in Environmental, Energy, and Economic Performance*; October 5, 2009) requires Federal agencies to set a 2020 GHG emissions reduction target based on a fiscal year 2008 baseline. The EO also requires those agencies to report fiscal year GHG emissions by January 31 for the previous year.

In addition to Federal requirements, there are a multitude of State and regional regulatory programs requiring GHG emissions reductions. In particular, Maryland's Governor signed an EO in 2007 that established the Maryland Commission on Climate

Change; Maryland also joined the Regional Greenhouse Gas Initiative. The State has committed to reducing GHG emissions by 25 percent by 2020 (based on the Greenhouse Gas Emissions Reduction Act of 2009) and by preparing a plan to meet a longer-term goal of reducing GHG emissions by up to 90 percent by 2050. Prince George's County Government launched the Green Building Initiative in 2007 that includes among other goals the reduction of energy use in County buildings by 20 percent by 2015 and to increase wind power 10 percent yearly for 5 years. In 2008, Prince George's County Council adopted emission reduction targets to reduce County geographical emissions to 80 percent below 2008 levels by 2050. Mid- and long-term goals included stopping emission increases by 2010 and achieving a 10 percent reduction every 5 years thereafter through 2050 (MDE, 2010c).

3.3.5 Noise

The EPA's Noise Control Act of 1972 (42 U.S.C. 4901 to 4918) as amended by the Quiet Communities Act of 1978, states that it is the policy of the United States to promote an environment for all Americans free from noise that jeopardizes their health or welfare.

3.3.5.1 Background

Noise is considered to be unwanted sound that interferes with normal activities or otherwise diminishes the quality of the environment. It may be intermittent or continuous, steady or impulsive. It may be stationary or transient. Stationary sources are normally related to specific land uses such as housing tracts or industrial plants. There is wide diversity in responses to noise that vary according to the type of noise, the characteristics of the sound source, the sensitivity of the receptor, the time of day, and the distance between the noise source and the receptor (USAF, 2008).

The physical characteristics of noise, or sound, include its intensity, frequency, and duration. The unit used to measure the intensity of sound is the decibel (dB). Sound measurement is further refined through the use of "A-weighting," and is shown in terms of A-weighted decibels (dBA). Sound intensity varies widely and is measured on a logarithmic scale to accommodate this wide range (USAF, 2008). The frequency of sound is measured in cycles per second, or hertz (Hz). Humans are most sensitive to

frequencies in the 1,000 to 4,000 Hz range (USAF, 2008). The most common metric for measuring noise is the Day-Night Average Sound Level (L_{dn}). L_{dn} sums the individual noise events and averages the resulting level over 24 hours. This metric adds 10 dB to those events that occur between 10:00 P.M. and 7:00 A.M. to account for the increased intrusiveness of noise events that occur at night when ambient noise levels are normally low.

The U.S. Occupational Safety and Health Administration (OSHA) regulates noise impacts on workers. OSHA regulations on noise standards ensure that workers are not exposed to noise levels higher than 115 dBA for more than 15 minutes during an 8-hour work shift. Exposure to impulsive or impact noise (loud, short duration sounds) is not to exceed 140 dB peak sound pressure level.

3.3.5.2 Existing Noise Levels at JBA

The *Air Installation Compatible Use Zone Study* for JBA (AAFB, 2007b) summarizes the noise environment on and around the installation. At JBA, aircraft operations are categorized as takeoffs, landings, or closed patterns. Each takeoff or landing constitutes one operation, and a closed pattern (takeoff and landing) is considered two operations. Under current conditions, JBA supports approximately 141,000 annual aviation operations (AAFB, 2007b). The numbers and types of aircraft activity were assessed, taking into consideration information on climatology, maintenance activities, and aircraft flight parameters, and then processed through the Air Force's BASEOPS/NOISEMAP (Moulton, 1990) computer models to calculate L_{dn} . The land area (in acres) exposed to different levels of sound is shown in Table 8.

Table 8: Acreage Exposed to Various Sound Levels Generated at JBA

L_{dn} Noise Level	Acres of Land
65 - 69	5,008
70 – 74	2,187
75 – 79	701
80 +	394
Total	8,290

Source: AAFB, 2007b

3.3.5.3 Other Ground-Based Activities at JBA

Some additional noise results from day-to-day activities associated with operations and maintenance of JBA, as well as other commercial activities around JBA. These noise sources include the operation of equipment and transportation noise from vehicular traffic, and are generally localized in industrial areas on or near the airfield, or on established roadways supporting traffic to and from the airfield. Noise resulting from aircraft operations is the dominant noise source in the airfield region.

3.3.6 Infrastructure

Infrastructure refers to the system of public works such as stormwater management and transportation systems that provide the underlying framework for a community.

3.3.6.1 Stormwater Management and Storm Drainage

Stormwater runoff at JBA is conveyed through oil/water separators and storm drains within industrial areas, and through swales and ditches in other areas of JBA. All surface runoff is ultimately conveyed to a network of underground culverts, and is discharged from eight major storm drain outfalls. Stormwater is eventually discharged into Henson Creek, Meetinghouse Creek and Payne Branch to the west, Cabin Creek, and Charles Branch to the east, and Piscataway Creek to the southeast. Each of these streams ultimately flows into either the Potomac or Patuxent Rivers (USAF, 2007b).

JBA maintains coverage under MDE's GDP for industrial activities (GDP No. 02-SW) and under MDE's GDP for discharges by small MS4 operators (No. 05-SF-5501). In order to comply with the requirements of the permits, JBA has prepared and implemented a SWPPP that includes existing and proposed BMPs to minimize the potential for contaminants to reach nearby surface waters. Although not required by the permits, JBA conducts water quality sampling at the seven streams that leave JBA after major rain events for a broad spectrum of water quality parameters.

The major point sources of pollution at JBA are contamination from aviation fuels and oil spills and unpermitted connections to the storm sewer system. To reduce the risk or impact of contamination from fuel and oil spills, JBA has employed a Spill Response Program. A Stop Discharges Plan is in place to identify and correct illicit connections.

Leaks from above ground and underground storage tanks as well as the oil/water separators are other potential point sources are addressed in JBA's SWPPP. Non-point source pollution issues at JBA include erosion and sedimentation from construction activities, increased runoff quantity from increases in impervious surfaces, and contamination of runoff by aircraft and airfield deicing fluids, fertilizers and pesticides.

Any proposed development that disturbs more than 5,000 square feet of land requires submittal of an Erosion and Sediment Control Plan to MDE, and disturbance greater than 1 acre requires coverage under the NPDES General Permit for Stormwater Discharges Associated with Construction Activity (General Construction Permit). Coverage under the General Construction Permit would be obtained by submittal of a Notice of Intent to MDE prior to construction.

3.3.6.2 *Transportation*

Transportation refers to roadway systems, mass transit, the movement or circulation of vehicles, and airfield pavement systems. Located in a highly urbanized area in Maryland just southeast of Washington D.C., JBA is accessible by major highway and local road networks. The closest rapid transit (Metrorail) stop for the area is approximately 1.1 miles northwest from JBA at Branch Avenue station. Local mass transit bus service the area with stops available at JBA's Main Gate and Virginia Gate.

Four gates provide access to and from JBA property: Main, Pearl Harbor, Virginia, and North. Another gate, the Maryland Gate, is used for distinguished visitor access. The primary access to JBA is provided through the Main Gate and Virginia Gate. The Pearl Harbor Gate provides access for commercial deliveries as well as personal vehicles. The North Gates provides access to the base with restricted hours – 2 hours in the morning and afternoon during the work week. The West Gate is not currently open to traffic, but may be utilized as a pedestrian gate in the future.

JBA has approximately 101 miles of paved roads which provide access to administrative, operations, housing, industrial, medical, recreation, and airfield areas. The overall pavement condition for roads and parking lots on JBA is adequate and the majority of the paved surfaces are in good condition. Perimeter Road is the only primary

roadway connecting the two sides of JBA. The two-lane undivided road makes an 8.4-mile loop around the perimeter of JBA.

Traffic during peak flow hours is heaviest at the Alabama Avenue/North Perimeter Road and Virginia Avenue/South Perimeter Road intersections due to the limited number of egress points on JBA property (AAFB, 2009a). Despite heavy traffic flow at the gates and signalized intersections, JBA has a very low accident rate due to adequate sight distance and road signage.

3.3.7 Hazardous Materials and Hazardous Waste

The term “hazardous materials” and “hazardous waste” refer to substances defined as hazardous by the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act (RCRA). Hazardous materials include substances that, because of their quality, concentration, or physical, chemical, or infectious characteristics, may present substantial danger to public health or the environment when released into the environment. Under 40 CFR Part 261, hazardous wastes that are regulated under RCRA are defined as solid, liquid, contained gaseous, or semisolid waste, or any combination of wastes that either exhibit one or more of the hazardous waste. Petroleum products include petroleum-based fuels, oils, and their wastes. The ERP is an Air Force program to identify, characterize, and remediate environmental contamination from past activities at Air Force installations.

Issues associated with hazardous materials and wastes typically center on waste streams, underground storage tanks (USTs), above ground storage tanks (ASTs), and the storage, transport, use, and disposal of pesticides, fuels, lubricants, and other industrial substances.

3.3.7.1 Hazardous Materials and Waste Management

Operations conducted at JBA require the use and storage of hazardous materials, primarily associated with aircraft operations. These materials include flammable and combustible liquids, acids, aerosols, batteries and petroleum products (USAF, 2007c). Most spills of hazardous materials and petroleum products at JBA result from leaking

vehicles, aircraft, and storage tanks. The 2011 SPCC for JBA provides procedures for spill reporting, containment, cleanup, and disposal of hazardous materials and petroleum products. The JBA Fire Department has responsibility for acting as the first responding unit for all spill incidents.

ASTs and USTs are used to store hazardous materials and petroleum products at JBA. Liquid fuel flows into JBA through a commercial pipeline to a commercial storage farm consisting of three contractor-owned fuel tanks on the. Fuel is then transported to JBA's bulk storage farm located immediately west of the commercial storage farm. The government-owned bulk storage farm consists of four ASTs and two USTs.

JBA is regulated as a large quantity generator of hazardous wastes by the EPA under identification number MD0570024000. Primary types of hazardous wastes generated include batteries, used fuel and oil, solvents, fluorescent bulbs, rags, fuel filters, and solvent-contaminated solids. The majority of hazardous waste is generated because of aircraft operations (USAF, 2007c).

3.3.7.2 *Environmental Restoration Program*

Historic fuel supply activities, landfills, and other support and training operations impacted portions of the ground and surface waters at JBA with metals, VOCs, semi-volatile organic compounds, polyaromatic hydrocarbons, polychlorinated biphenyls, and pesticides. JBA was formally added to the National Priorities List in June 1999.

The ERP, also known as the Installation Restoration Program, was established by the Department of Defense to protect human health and the environment by addressing sites where past activities led to releases of hazardous substances to the environment. These sites are addressed based on CERCLA, as well as the National Oil and Hazardous Substances Contingency Plan. JBA is responsible for 27 ERP sites on the Base and 6 Areas of Concern (AOCs).

JBA is responsible for the cleanup of any contamination resulting from removal of tanks (USTs/ASTs), spills, and solid waste management units as a part of the ERP. In the past, numerous cleanup actions have taken place at JBA to decrease risks to human health and the environment, including the removal of hundreds of USTs, installation of

groundwater treatment systems, and removal of residual waste. JBA is also responsible for one Military Munitions Response Program (MMRP) site and six potential MMRP sites that are under investigation.

Through the use of an ERP waiver process, new facilities may be constructed within certain ERP sites depending upon the level of contamination, clean-up efforts, and land use controls that are applied. Approval of new construction within ERP sites must be obtained by the Facilities Board, coordinated with Base CES/CEAN and approved by Air Force District Washington (AFDW) (USAF, 2008).

CERCLA sites are managed under the Partnering Program set up as a result of the EPA placing JBA on the NPL. Some AOCs would likely be regulated under the CERCLA Program. Additionally, petroleum sites exempted from regulation under CERCLA are delegated by the EPA to the State of Maryland for management under the RCRA Program.

3.3.8 Safety and Occupational Health

A safe environment is one in which there is no, or an optimally reduced, potential for death, serious bodily injury or illness, or property damage. Potential safety issues associated with activities conducted at JBA include ground and Anti-Terrorism/Force Protection (AT/FP), explosive, flight, and construction jobsite safety. Day-to-day operations and maintenance activities conducted at JBA are performed in accordance with applicable USAF safety regulations, published USAF Technical Orders, and standards prescribed by USAF Occupational Safety and Health requirements.

JBA has several restricted use areas for the storage and handling of explosive materials. Air Force Manual 91-201, *Explosives Safety Standards*, defines these Explosive Safety-Quantity Distance (ESQD) arcs as distances to be maintained between explosive storage areas and other types of facilities. The size of the ESQD arc is dependent on the type and quantity of explosive materials that are being stored. JBA has three primary ESQD arcs located on and in close proximity to the airfield. Development or construction is prohibited within ESQD arcs to maintain personnel safety and minimize damage potential to other facilities. JBA's Combat Arms Training

facility is in the southeast portion of JBA and has a surface danger zone associated with it that extends 900 feet to the south of the range's target line (USAF, 2008).

JBA has several operational constraints associated with the airfield regarding safety for JBA and adjacent communities. There is one area of safety concern surrounding the airfield where clearance/permission is required prior to entrance or work in that area. It extends 3,000 feet from the end of the runway and 1,500 feet on either side of the runway centerline and then another 5,000 feet from the end of the clear zone (USAF, 2008).

Construction jobsite safety and the prevention of accidents is an ongoing activity for any USAF jobsite. All contractors performing construction activities are responsible for complying with USAF safety and OSHA regulations, and are required to conduct construction activities in a manner that does not pose any undue risk to workers or personnel. Contractor responsibilities include review potentially hazardous workplaces, to monitor exposure to any safety issues and to ensure a plan is in place to respond accordingly to any foreseeable issues.

3.3.9 Biological Resources

Biological resources include native or naturalized plants and animals, and the habitats such as wetlands, forests, and grasslands, in which they exist.

3.3.9.1 Vegetation

Nearly 80 percent of JBA is developed or intensely managed (AAFB, 2007c). The vegetation occurs largely in association with extensively managed or "improved" areas such as lawns, gardens, golf course fairways, Base housing, along major roadways, and recreational fields, and in "semi-improved" areas such as runway borders, the runway infield, and approach clear zones. Most turf and landscape areas occur in the improved and semi-improved portions of JBA. Dominant turf species are fescue (*Festuca elatior*) and perennial ryegrass (*Lolium perenne*).

The remaining patches of original vegetation (unimproved areas) consist of shallow emergent marshland and forestland. JBA is located in the Atlantic Slope Section of the Oak-Pine Forest Region. A substantial portion of Prince George's County has been

deforested for urban and suburban development, and only small patches of the original forest remain (AAFB, 2007c). Approximately 720 acres of forest land occur at JBA, scattered around the perimeter and southern portion of JBA. Uplands consist of mixed hardwood forest, mixed hardwood/pine forest, oak forest, oak/hickory forest, oak/pine forest, pine forest, and red maple swamp. Typical understory plants found in these forested areas include mountain laurel (*Kalmia latifolia*), highbush blueberry (*Vaccinium corymbosum*), Christmas fern (*Polystichium acrostichoides*), saplings of red maple (*Acer rubrum*), blackgum (*Nyssa sylvatica*), sassafras (*Sassafras albidum*), mulberry (*Morus sp.*), pin cherry (*Prunus pensylvanica*), tulip poplar (*Liriodendron tulipifera*), oak species (*Quercus spp.*), American beech (*Fagus grandifolia*), American holly (*Ilex opaca*), and pignut hickory (*Carya glabra*). Herbaceous and vine species include roundleaf greenbrier (*Smilax rotundifolia*), the non-native invasive Japanese honeysuckle (*Lonicera japonica*), wineberry (*Rubus phoenicolasius*), and the native invasive poison ivy (*Toxicodendron radicans*) (AAFB, 2007c). However, no forests classified as being of high ecological value have been identified at JBA (MDNR, 2003).

3.3.9.2 Wildlife and Birds

During wildlife surveys conducted in 1994, a total of 84 bird species were identified at JBA. Birds associated with open water communities included the Canada goose (*Branta Canadensis*), green heron (*Butorides virescens*), and great blue heron (*Ardea herodias*). Eastern wood pewees (*Contopus virens*), Eastern towhees (*Pipilo erythrophthalmus*), and redeyed vireos (*Vireo olivaceus*) occurred in mixed hardwood forest stands, while the prothonotary warbler (*Protonotaria citrea*) and black and white warbler (*Mniotilta varia*) were identified in association with red maple swamp. American crows (*Corvus brachyrhynchos*), house finches (*Carpodacus mexicanus*), Eastern meadowlarks (*Sturnella magna*), Eastern bluebirds (*Sialia sialis*), Carolinachickadees (*Poecile carolinensis*), Carolina wrens (*Thryothorus ludovicianus*), and grasshopper sparrows (*Ammodramus savannarum*) represented some of the species associated with fields and grasslands. Various species of raptors were observed including the great horned owl (*Bubo virginianus*), Eastern screech owl (*Otus asio*), American kestrel (*Falco sparverius*), the red-shouldered hawk (*Buteo lineatus*), and red-tailed hawk (*B.*

jamaicensis) (AAFB, 2010). Migratory birds, especially waterfowl, are common at JBA due to the ponds and wetlands and the proximity of JBA to the Chesapeake Bay. Additionally, both resident and migratory populations of bald eagles (*Haliaeetus leucocephalus*), occur in the region.

Reptiles found at JBA include the Eastern garter snake (*Thamnophis sirtalis*), black rat snake (*Elaphe obsoleta*), fence lizard (*Sceloporus undulatus*) and Eastern box turtle (*Terrapene carolina*). Fish species in the Base Lake include largemouth bass (*Micropterus salmoides floridanus*), smallmouth bass (*M. dolomieu*), carp (*Cyprinus carpio*), and bluegill (*Lepomis macrochirus*) (AAFB, 2007c).

Mammals known to occur at JBA include white-tailed deer (*Odocoileus virginianus*), beaver (*Castor canadensis*), striped skunk (*Mephitis mephitis*), raccoon (*Procyon lotor*), Virginia opossum (*Didelphis marsupialis*), Eastern gray squirrel (*Sciurus carolinensis*) and Eastern cottontail (*Sylvilagus floridanus*). Several bat species are also known to be present at JBA.

Andrews is an area of high bird-aircraft strike hazard (BASH) potential, as the base is located in the Atlantic flyway near several wildlife refuges. The *Bird/Wildlife Aircraft Strike Hazard Plan* provides guidance to minimize wildlife-aircraft strikes (AAFB, 2006). BASH management practices attempt to preclude the development of wildlife populations in the airfield; deterrence methods such as vegetation management, a sound system that includes air cannon and predator calls, and a trained dog and handler to disrupt flocks on the ground are used before lethal means, which are implemented following JBA's migratory bird permit conditions.

3.3.9.3 Threatened and Endangered Species

Sensitive and protected biological resources include plant and animal species that are federally (USFWS) or State (Maryland Department of Natural Resources [MDNR]) listed for protection.

Under the Endangered Species Act (ESA) (16 U.S.C. 1536), an “endangered species” is defined as any species in danger of extinction throughout all or a significant portion of its range. A “threatened species” is defined as any species likely to become an

endangered species in the foreseeable future. Protection and management of Maryland State-protected species under the Nongame and Endangered Species Conservation Act (Annotated Code of Maryland 10-2A-01) is overseen by MDNR. The Act is supported by regulations (Code of Maryland Regulations 08.03.08) which contain the official State Threatened and Endangered Species list.

According to the JBA INRMP, rare, threatened, and endangered species surveys were conducted in 1994, 1996-1997, 2004, and 2006 (AAFB, 2007c). From these surveys, 21 rare, threatened, or endangered plant species are reported as having occurrence on JBA property. Of those 21 species, only six were recorded within the main Base. Table 9 lists these six species, their State or Federal status, and if they were observed during the surveys.

Table 9: Rare, Threatened, and Endangered Species Known to Occur at JBA

Common Name	Scientific Name	Status	Observed in 1993	Observed in 1996-1997	Observed in 2004	Observed in 2006
Sandplain gerardia	<i>Agalinis acuta</i>	FE	Yes	No	No	No
Carolina foxtail	<i>Alopecurus carolinianus</i>	S1	Yes	Yes	No	No
Curtiss' three-awn	<i>Aristida curtissii</i>	SU	Yes	Yes	No	No
Spiral pondweed	<i>Potamogeton spirillus</i>	S1	Yes	No	No	No
Blunt-leaved gerardia	<i>Agalinis obtusifolia</i>	SE	Yes	No	Yes	No
Swollen bladderwort	<i>Utricularia inflata</i>	S3	Yes	Yes	No	No
Tall nut-rush	<i>Scleria triglomerata</i>	S1, S2	Yes	No	No	No

FE = Federal Endangered

SE = State Endangered

SU = State Uncertain (possibly rare in Maryland)

S1 = Highly State Rare

S2 = State Rare

Sources: AAFB, 2007c; Maryland Wildlife and Heritage Division, 2001a

Federally Listed Species

The only federally listed species currently present at JBA is the sandplain gerardia; the only known population of the sandplain gerardia is located south of the flightline near the 13th tee of the golf course (Figure 5). The habitat is currently protected by fencing and signage that warns of the presence of a protected species.

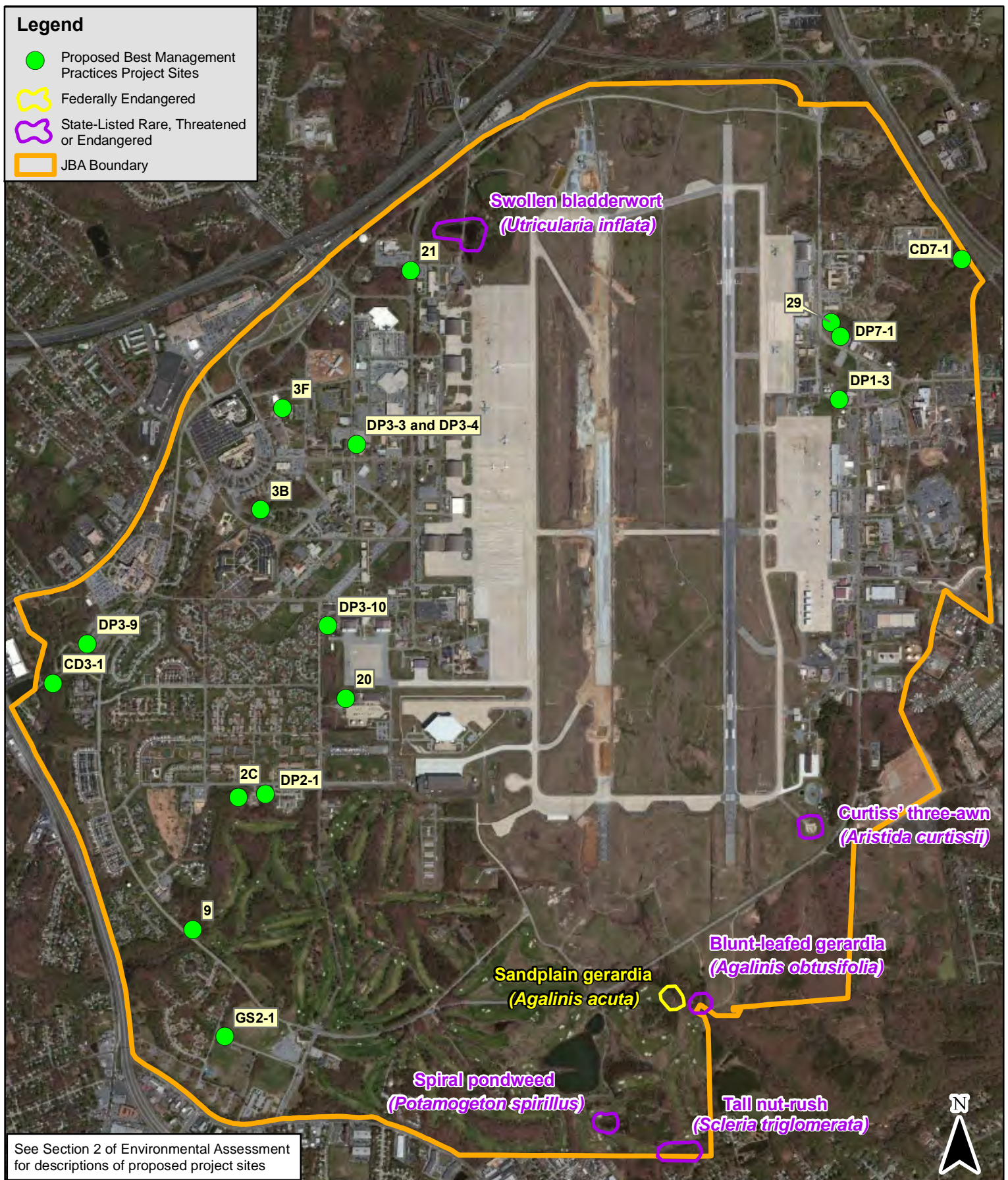
State Listed Species

Five of the six State listed species have been observed in the past at JBA; none of these species was identified in the most recent survey in 2006. The Curtiss' three-awn was observed at the edge of the airfield near South Perimeter Road; spiral pondweed on west pond southeast of Base Lake; blunt-leafed gerardia south of the flightline and east of the old landfill; swollen bladderwort at the western branch of the Bell Chance Pond; and the tall nutrush near the southeastern portion of JBA near South Perimeter Road. State-listed species are shown on Figure 5.

3.3.10 Cultural Resources

The National Historic Preservation Act (NHPA) of 1966, (Public Law [P.L.] 89-665; 16 U.S.C. 470 et seq.) as amended, outlines Federal policy to protect historic properties and promote historic preservation in cooperation with states, Tribal Governments, local governments, and other consulting parties. The NHPA established the National Register of Historic Places (NRHP) and designated the State Historic Preservation Office (SHPO) as the entity responsible for administering State-level programs. The NHPA also created the Advisory Council on Historic Preservation (ACHP), the Federal agency responsible for overseeing the Section 106 process and providing commentary on Federal activities, programs, and policies that affect historic properties.

Section 106 of the NHPA and its implementing regulations (36 CFR 800) outlines the procedures for Federal agencies to follow to take into account the effect of their actions on historic properties. The Section 106 process applies to any Federal undertaking that has the potential to affect historic properties, defined in the NHPA as those properties that are listing in or eligible for listing in the NRHP. Although buildings and archaeological sites are most readily recognizable as historic properties, a diverse range of resources are listed in the NRHP, including roads, landscapes, and vehicles.



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Under Section 106, Federal agencies are responsible for identifying historic properties within the Area of Potential Effects (APE) for an undertaking, assessing the effects of the undertaking on those historic properties, if present, and considering ways to avoid, minimize, and mitigate any adverse effects. Because Section 106 of the NHPA is a process by which the Federal government assesses the effects of its undertakings on historic properties, it is the primary regulatory framework that is used in the NEPA process to determine impacts on cultural resources.

3.3.10.1 Area of Potential Effects

For both above-ground and archaeological resources, the APE was determined to consist of the 4,346-acre contiguous JBA property, accounting for all areas on JBA where effects to historic properties, if present, could occur (Figure 6).

3.3.10.2 Historical Properties

The NHPA defines historic property as one that is listed in or eligible for listing in the NRHP. One above-ground historic property has been identified within the APE: Belle Chance (PG:77-14) (determined NRHP eligible) (Figure 6). The Belle Chance property (PG:77-14) includes a 1912 dwelling, two auxiliary buildings, a cemetery and one historic archaeological site (18PR447). The two-and-a-half-story Spanish Colonial Revival dwelling (JBA Building #1966) is a rare example of early residential concrete construction and was found significant under NRHP Criterion C. A one-story concrete storage building (JBA Building #1967) and a one-story concrete garage (JBA Building #1968) are contributing resources to the Belle Chance property. The Estate was acquired by the government during World War II through a “Declaration of Taking” for the construction of Camp Springs Army Air Field in 1942. Most of the existing residential and commercial buildings were incorporated into JBA facilities or demolished. Belle Chance and the surrounding grounds were utilized as the base Commander’s primary residence. Although the structures were transferred to a housing privatization contractor in 2007, the land that comprises Belle Chance remains within the larger JBA boundary, and under Federal ownership.

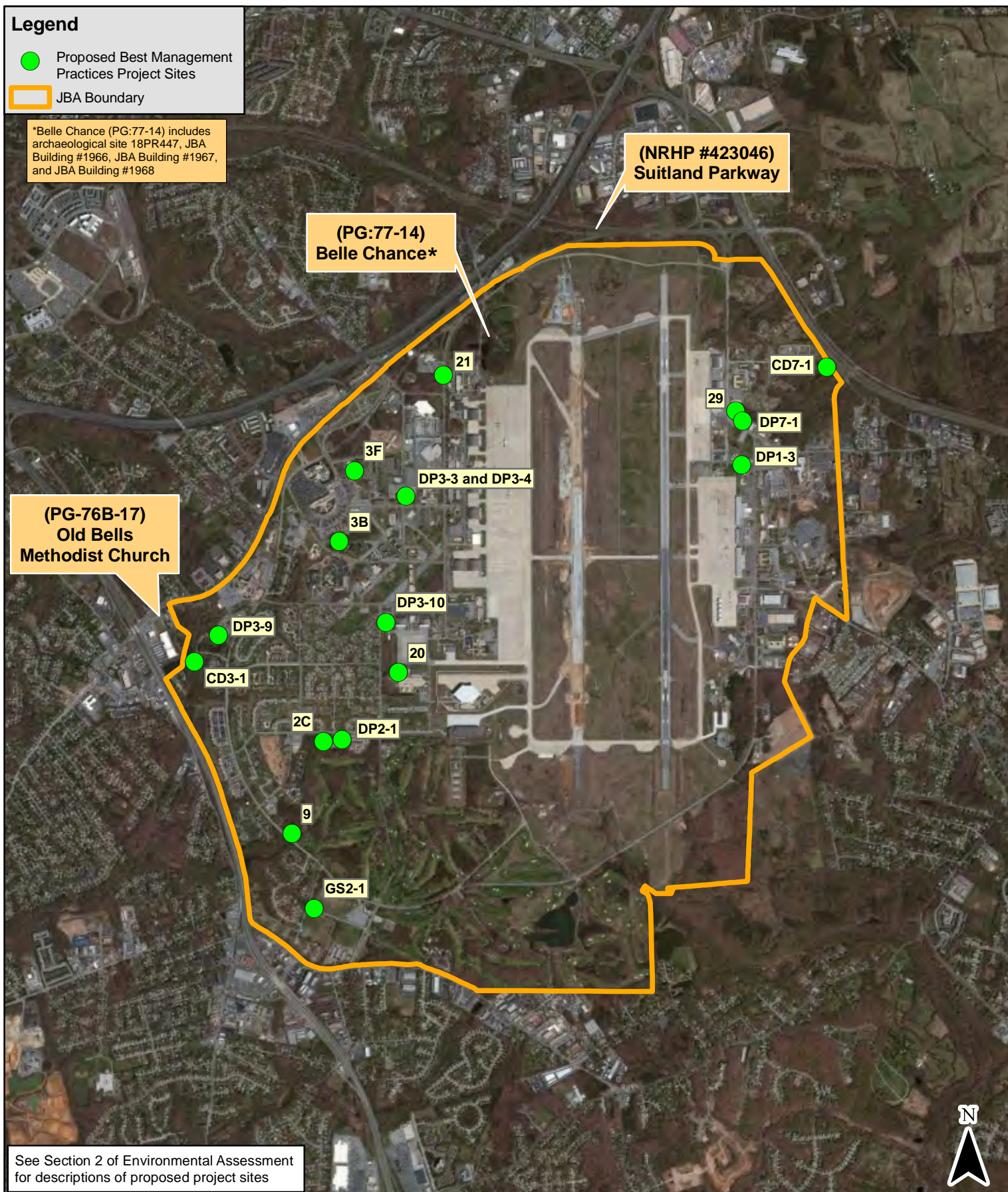
A proposed improvement in proximity to Belle Chance is the construction of an infiltration basin approximately 900 feet southeast of Belle Chance (Project 21, Figure 6).

Two historic properties are located immediately outside of the APE: the Old Bells Methodist Church (NRHP eligible), and the Suitland Parkway (NRHP listed). The Old Bells Methodist Church, located at 6016 Allentown Road, sits outside the western boundary of JBA. In 1997 MHT provided their opinion that the circa 1910 building was eligible for inclusion in the NRHP under Criterion C as an example of rural church architecture. MHT also recommended further research be conducted to determine the property's potential significance under Criterion A, within the contexts of Methodism during the early twentieth century and the role of the rural church in community life. The proposed improvements in proximity to Old Bells Methodist Church include the replacement of the oil-water separator dam and application of rip-rap for channel protection (Project CD3-1, Figure 6).

The 9.35-mile Suitland Parkway runs along JBA's northern boundary. Conceived in 1937 and completed in 1944, the Parkway was constructed to improve road connections between the military installations of Bolling Air Force Base, Andrews Air Force Base and Washington D.C. Suitland Parkway was listed in the NRHP in 1995 under Criterion A and C for its role in World War II era transportation and for its significance in landscape design. There are no proposed improvements within the immediate vicinity of Suitland Parkway.

3.3.10.3 Archaeological Resources

The late eighteenth- to early nineteenth-century historic component of archaeological site 18PR447 has been determined eligible for listing in the NRHP and is part of the NRHP eligible Belle Chance property. The 2009 Integrated Cultural Resource Management Plan indicates that additional archaeological components of the Belle Chance property are likely to exist beyond the current survey limits, including the remnants of barns and other typical buildings, structures and remains associated with an eighteenth-century tobacco plantation.



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Planned activities with the potential to affect archaeological resources include the removal of existing vegetation and sediment; excavation of drainage ditches and concrete channeling; and the construction of a bioretention basin.

3.3.11 Land Use

Land use classifications reflect either natural or human activities occurring at a given location. Land use resulting from human activities includes residential, commercial, industrial, airfield, recreational, agriculture, and other developed areas. Natural uses include resource production, such as forestry and agriculture, and resource protection, such as conservation areas, wildlands, and parks. There are 10 general current land use classifications within the 4,390 acres of the main base. The approximate acreages of the existing land uses are summarized in Table 10 (AAFB, 2010).

Table 10: Existing Land Use Acreages

Land Use	Acres	Percentage
Administration	127	2.9
Aircraft Operation and Maintenance	366	8.3
Airfield	1,525	34.7
Community	136	3.1
Industrial	144	3.3
Medical	47	1.1
Open Space	784	17.8
Outdoor Recreation	731	16.7
Residential	508	11.6
Water	22	0.5
Total	4,390	100.0

Source: AAFB, 2010

JBA is divided into western and eastern sections, separated by the airfield that runs north to south. The western section of the main base contains the majority of the land area, including a large outdoor recreation/golf course facility, all of the community facilities, and the Malcolm Grow Medical Center. Headquarters of the 11 WG, AFDW, and the 89 AW are the predominant administrative uses on the west side, with key

partner unit headquarters on the east side. The majority of the industrial uses are located on the eastern portion of the base. Commercial services are specifically lacking on the east side of the base, and personnel that work on the east side of the base often travel to the west side to obtain commercial services. Residential areas are located primarily along the western perimeter.

3.3.12 Social and Economic Environment

Socioeconomic resources are defined as the basic attributes associated with the human environment, particularly population and economic activity. Population is described by the change in magnitude, characteristics, and distribution of people. Economic activity typically encompasses employment, personal income, and business growth.

3.3.12.1 Population

Table 11 compares the differences in population in the Prince George's County between the 2000 Census, the 2005 Census, and the most recent population estimates from 2010. Prince George's County was growing at a slightly slower rate (5.6 percent) than the State (5.7 percent) and slightly faster than the nation (5.3 percent) from 2000 to 2005. From 2005 to 2010, Prince George's County grew at a slower rate (2.0 percent) than both the State (3.1 percent) and the nation (4.2 percent).

Table 11: Population of Prince George's County 2000 – 2010

Location	2000	2005	2010	Percent change 2000 to 2005	Percent change 2005 to 2010
Prince George's County	801,515	846,123	863,420	5.6	2.0
Maryland	5,296,486	5,600,388	5,773,552	5.7	3.1
United States	281,421,906	296,410,404	308,745,538	5.3	4.2

Source: U.S. Census Bureau, 2010; Cubit, 2011

The closest communities to JBA include the Town of Morningside to the northwest, Camp Springs Census Designated Place (CDP) to the west, Clinton CDP to the south, and Rosaryville CDP to the east. Additionally, a new community development project is

proposed to be located immediately northeast of JBA; although the housing development has already started, the entire community is not anticipated to be completed until 2026 (MNCPPC, 2009).

3.3.12.2 Employment and Income

This section includes 2009 U.S. Census data on the employment, unemployment, income, and poverty characteristics of the JBA region, and data compiled by the Maryland Department of Labor, Licensing and Regulation. The section also includes employment statistics for JBA itself.

In 2010 the average unemployment rate in Maryland was 7.5 percent and 7.4 percent in Prince George's County (MDLLR, 2011). Overall, the unemployment rates in Maryland and Prince George's County have been increasing since 2007 (MDLLR, 2011).

Table 12 shows the 2009 income and poverty rates in the United States, Maryland, and Prince George's County. Prince George's County and Maryland both have a lower percentage of families below the poverty level. The Per Capita Income for Prince George's County was higher than the USA as a whole, but slightly lower than the Maryland average.

Table 12: Income and Poverty Statistics for 2009

Location	Median Household Income	Per Capita Income	Percent of Families Below Poverty Level
Prince George's County	\$70,753	\$30,917	4.9
Maryland	\$69,475	\$34,236	5.5
United States	\$51,425	\$27,041	9.9

Source: U.S. Census Bureau, 2009

In 2008, the total population living and working at JBA was 16,679. This includes Air Force Active Duty, Guard, Reserves, and civilians. Of this total, active duty personnel total 7,547, or 45 percent, while civilians total approximately 9,132 (AAFB, 2010). In addition, the base supports a military retiree population of approximately 25,000 persons within the greater Washington, D.C., metropolitan areas (AAFB, 2010). The fiscal year 2008 expenditure included \$2.2 million from construction, \$150.5 million from

services, \$1.1 million from commissary, \$4.1 million for health and education, and \$1.4 million other. The total annual economic impact generated by JBA activities was \$1.1 billion (AAFB, 2008).

3.3.12.3 Recreation

JBA has a number of indoor and outdoor recreational opportunities on Base. Shops, restaurants, a bowling center, a movie theater, a library, and a gym are all located in the northwest quadrant of JBA (USAF, 2011b). Open fields and forestland in the northeast and southwest portions of JBA are designated as recreational land use. The majority of semi-improved and improved recreational areas are located south and southwest of the airfield, including the West and East Golf Courses, and Constitution Park, picnic areas, over 25 playgrounds, Base Lake Recreational Area, and Camp Spring Lake (USAF, 2008; USAF, 2011b).

Outdoor recreation activities on base include camping, hiking, picnicking, and fishing. Recreation facilities include athletic fields for baseball, soccer, volleyball, football, and track, golf courses, swimming pools, tennis courts, playgrounds, and bikeways (USAF, 2008).

3.3.12.4 Environmental Justice

EO 12898, *Federal Action to Address Environmental Justice in Minority Populations and Low Income Populations*, (and the February 11, 1994, Presidential Memorandum providing guidance for this EO) requires Federal agencies to develop strategies for protecting minority and low-income populations from disproportionate and adverse effects of Federal programs and activities. The EO is “intended to promote non-discrimination in Federal programs substantially affecting human health and the environment.”

Another EO which addresses environmental justice is EO 13045, *Protection of Children from Environmental Health Risks and Safety Risks*. This EO directs Federal agencies to identify and assess environmental health and safety risks that may disproportionately affect children under the age of 18. These risks are defined as “risks to health or to

safety that are attributable to products or substances that the child is likely to come in contact with or ingest.”

As defined by the “Environmental Justice Guidance Under NEPA” (CEQ, 1997), “minority populations” includes persons who identify themselves as Asian or Pacific Islander, Native American or Alaskan Native, black (not of Hispanic origin), or Hispanic. Race refers to Census respondents’ self-identification of racial background. Hispanic origin refers to ethnicity and language, not race, and may include persons whose heritage is Puerto Rican, Cuban, Mexican, Central or South American.

A minority population exists where the percentage of minorities in an affected area either exceeds 50 percent or is meaningfully greater than in the general population. Low-income populations are identified using the Census Bureau’s statistical poverty threshold, which is based on income and family size. The Census Bureau defines a “poverty area” as a census tract with 20 percent or more of its residents below the poverty threshold and an “extreme poverty area” as one with 40 percent or more below the poverty level. The 2011 Census poverty thresholds defines the poverty level as \$11,136 of annual income, or less, for an individual, and \$22,314 of annual income, or less, for a family of four.

Prince George’s County is on the higher end of income measures in the region, with a 2009 median household income of \$70,753, higher than the average for both Maryland and the USA. Unemployment levels for 2010 are similar to State but lower than National averages. As shown in Table 12, per capita income for Prince George’s County was slightly lower than Maryland but higher than the National average (US Census Bureau, 2009). In 2009, the County had a lower percent of families below poverty level than both Maryland and the USA (see Table 12). The area is not considered to be a low-income or poverty area.

The population of Prince George’s County is mostly minority with, 63.5 percent of the population in 2010 identified as Black/African American, a significantly higher percent than both the Maryland (29.0) and National average (12.2). Hispanics and whites each

make up 14.9 percent of the county population. Nursing homes, hospitals, and schools are all located within 5 miles of JBA. The closest hospital, Southern Maryland Hospital Center in Clinton, Maryland, is approximately 5 miles south JBA. Several schools, including Benjamin D. Foulois Middle School, Francis T. Evans Elementary School, James Madison Middle School, and Stephen Decatur Middle School are located approximately 2 miles from JBA. Various parks and recreational centers are also located within 2 miles of JBA.

CHAPTER FOUR ENVIRONMENTAL CONSEQUENCES

4.1 INTRODUCTION

Chapter 4 presents the potential impacts that the alternatives described in Chapter 2 may have on the existing resources at JBA described in Chapter 3. This document describes environmental consequences of the No Action Alternative and the Proposed Action.

A major focus of Chapter 4 is to determine if any of the project-related environmental impacts could be classified as significant. Under NEPA (42 U.S.C. 4321 et seq.), significant impacts are those that have the potential to significantly affect the quality of the human environment.

The assessment of potential impacts and the determination of their significance are based on the requirements in 40 CFR 1508.27. Three levels of impact can be identified:

- No Impact – No impact is predicted
- No Significant Impact – An impact is predicted, but the impact does not meet the intensity/context significance criteria for the specified resource
- Significant Impact – An impact is predicted that meets the intensity/context significance criteria for the specified resource

Impacts can be described in a variety of ways, such as:

- Type (beneficial or adverse)
- Context (site-specific, local, or regional)
- Intensity (negligible, minor, moderate, or substantial)
- Duration (short- or long-term)

The levels of these impacts and their specific definitions vary based on the resource that is being evaluated. For example, the scale at which an impact may occur (local, regional, etc.) would be different for wetland impacts than for economic resources.

4.2 CHANGE IN CURRENT MISSION

As described in Section 3.2.2, JBA's current mission includes executing USAF operations and supporting Joint Force and Inter-Agency operations in the National Capital Region, as well as Combatant Commanders and Air Force Elements worldwide (USAF, 2011a). To accomplish this mission, JBA supports approximately 141,000 annual aviation operations, including a wide range of fighter, aerial refueling tanker, and transport aircraft, and helicopters. JBA also provides aviation support to varied military and civilian aircraft. The Proposed Action and the No Action Alternative would not result in a change to the current mission or to daily operations (AAFB, 2007b).

4.3 DESCRIPTION OF THE IMPACTS ON THE AFFECTED ENVIRONMENT

4.3.1 Aircraft Operations

Proposed Action

Repair and upgrades at the 16 site-specific BMP locations would have no impact on aircraft operations. The BMP locations are not located within or near the airfield.

No Action Alternative

There would be no impacts on aircraft operations under the No Action Alternative.

4.3.2 Earth Resources

4.3.2.1 Topography

Proposed Action

The site-specific BMP projects would result in moderate long-term changes in topography primarily from the construction of dry ponds, shallow detention wetlands, and bioretention basins that would involve the excavation of basins for the collection and storage of stormwater runoff. While changes to topography would not be beneficial or adverse, they would benefit the purpose and need of the Proposed Action.

No Action Alternative

There would be no impacts on topography under the No Action Alternative.

4.3.2.2 Geology

Proposed Action

The work proposed for the BMP projects would result in shallow excavations up to about 10 feet below the existing ground surface and would be entirely within the geologic layer of surficial coastal deposits at all project locations; therefore, no impacts on geology are anticipated from implementation of the Proposed Action.

No Action Alternative

There would be no impacts on geology under the No Action Alternative.

4.3.2.3 Soils

Proposed Action

Construction activities, including grading, clearing, and excavation for the site-specific BMP projects would result in a temporary disturbance of the ground surface and would have the potential to cause soil erosion. Minor, short-term adverse impacts during construction at Sites 2C and 3B would individually result in more than 1 acre of ground disturbance; sites DP 3-9, DP 3-10, 3F, 9, 20, 29, and DP 3-3/DP 3-4 would result in ground disturbances greater than 5,000 square feet but less than 1 acre. Long-term changes to soils would occur as hydric conditions develop within constructed wetlands at sites 2C and 3F. These disturbances would not substantially alter existing soils conditions because much of the property at the proposed project sites has been previously disturbed by prior development and infrastructure, and most naturally occurring surface soils are no longer present (AAFB, 2007c). Although no borings or other intrusive studies were conducted, based on existing information, there are no special qualities associated with the soils at the project sites. The staging areas for the equipment and construction materials would be either existing gravel, paved, or mowed areas, and therefore would not result in impacts on soils.

JBA would submit an Erosion and Sediment Control Plan to MDE for projects that would disturb more than 5,000 square feet and would obtain coverage under the NPDES General Construction Permit for ground disturbances that individually or cumulatively disturb greater than 1 acre. The General Construction Permit would include preparation of a Stormwater Management Plan and Erosion and Sediment Control Plan, both of which require approval from the MDE Sediment and Stormwater Division prior to construction. Implementation of erosion and sediment control BMPs during construction, as specified in these plans, would minimize impacts on soils. Erosion and sediment control BMPs could include silt fencing, sediment traps, application of water sprays for dust control, and revegetation of disturbed areas.

Accidental release of contaminants such as hydraulic and lubricating oils or cooling fluids could occur during construction, along with accidental releases of pollutants into soils during routine maintenance activities. Any accidental release of contaminants or liquid fuels would be addressed in accordance with the SPCC. The impacts of an accidental release could be substantial and adverse, although the likelihood of an accidental release would be low due to spill prevention and containment measures outlined in the SWPPP and the SPCC.

In summary, with implementation of construction erosion and sediment control BMPs, short-term minor adverse impacts on soils are anticipated under the Proposed Action.

No Action Alternative

Under the No Action Alternative, erosion and sedimentation around existing stormwater BMPs that are failing would continue or worsen, resulting in long-term adverse impacts on soils.

4.3.3 Water Resources

4.3.3.1 Surface Water

Proposed Action

Construction activities, including grading, clearing, and excavation would result in disturbance of the ground surface and would have the potential to cause soil erosion

and the subsequent transport of sediment into waterways via stormwater. These impacts would be short-term, minor and adverse, and would be minimized through the use of erosion and sediment control BMPs specified in the Erosion and Sediment Control Plans and Stormwater Management Plans and prepared for projects as described under Section 4.3.2.3 Soils above. Long-term beneficial impacts on the quality of the surface waters within and downstream of JBA would occur through repair and upgrades of the stormwater BMPs, which would help JBA meet existing NPDES MS4 permit conditions, MDE water quality requirements, and Chesapeake Bay TMDL requirements.

Implementation of erosion and sediment control BMPs during construction would minimize adverse impacts on surface waters. Erosion and sediment control BMPs could include silt fencing, sediment traps, application of water sprays for dust control, and revegetation of disturbed areas.

Accidental release of contaminants, such as hydraulic and lubricating oils or cooling fluids into surface waters could also occur during construction, routine maintenance activities, or an accidental release of pollutants from vehicles or equipment to a permeable surface. Any accidental release of contaminants or liquid fuels would be addressed in accordance with the SPCC. The impacts of an accidental release could be substantial and adverse, although the likelihood of an accidental release would be low due to spill prevention and containment measures outlined in the construction SWPPPs.

Projects under the Proposed Action would comply with the current version of the *Maryland Stormwater Management Guidelines for State and Federal Projects* and with the requirements of the Energy Independence Security Act Section 438. These projects would also support JBA in meeting the requirements of EO 13508 by implementing projects that would improve water quality in streams draining to the Chesapeake Bay.

No Action Alternative

Under the No Action Alternative, stormwater infrastructure at JBA would continue to degrade and water quality would decline due to existing erosion and sedimentation from undersized, inadequate, or degrading infrastructure, resulting in long-term adverse impacts on surface waters. JBA would have difficulty complying with NPDES MS4

permit conditions, MDE water quality requirements, and Chesapeake Bay TMDL requirements.

4.3.3.2 Wetlands

Proposed Action

Work within wetlands would be necessary to implement the Proposed Action in several locations. Because of the nature of the Proposed Action, no practicable alternatives to repairs or construction within wetlands exist. Long-term adverse impacts may result if permanent impacts on wetlands are unavoidable at some of the BMP project locations. BMP sites 2C and 3F would result in long-term beneficial impacts on wetlands from the creation of shallow wetlands; the exact extents and areas of the created wetlands have not been determined at this time and would occur upon final design of the BMPs. The functional values of the created wetlands would result in beneficial impacts on other resources such as stormwater management, wildlife, water quality, and aquatic resources.

Temporary adverse impacts on wetlands and other aquatic habitats could result from construction activities as a result of sediment transport into surface waters from eroded soils. To minimize potential short-term adverse impacts on wetlands from erosion and runoff during construction, JBA would submit an Erosion and Sediment Control Plan to MDE for projects that would disturb more than 5,000 square feet and would obtain coverage under the NPDES General Construction Permit for ground disturbances that individually or cumulatively disturb greater than 1 acre. The General Construction Permit would include preparation of a Stormwater Management Plan and Erosion and Sediment Control Plan, both of which require approval from the MDE Sediment and Stormwater Division prior to construction. Erosion and sediment control BMPs could include silt fencing, sediment traps, mulching bare areas, and revegetation of disturbed areas. However, impacts on wetlands would be avoided and minimized to the maximum extent practicable.

In all areas where potential impacts to mapped or unmapped wetlands may occur, site-specific wetland delineations in accordance with the USACE 1987 *Wetlands Delineation Manual* (USACE, 1987) and the *Coastal Plain Regional Supplement* (USACE, 2010)

would be conducted to determine the precise location and size of the wetland area that would be affected. For projects that would result in impacts on wetlands, JBA would obtain a jurisdictional determination from the USACE along with a CWA Section 404 permit and a Nontidal Wetland Permit from MDE prior to commencement of the work. A Nationwide Permit or a General Permit would likely be required. JBA would comply with all permit conditions and implement mitigation as appropriate. In addition, in accordance with EO 11990, a FONPA would be prepared.

No Action Alternative

Under the No Action Alternative, stormwater infrastructure at JBA would continue to degrade and provide inadequate stormwater conveyance, resulting in pollutants such as sediment entering stormwater runoff. Therefore, surface water quality within and downstream of JBA would not be improved, and would likely worsen, resulting in long-term adverse impacts on wetlands.

4.3.3.3 Floodplains

Proposed Action

The Proposed Action would involve federally funded and authorized construction in the 100-year floodplain. Some of the site-specific BMPs are located within or immediately adjacent to existing streams and work would occur within the 100-year floodplain. Minor long-term beneficial impacts on the functionality of the floodplain would occur through improved conveyance of stormwater and increased infiltration.

This EA also serves as JBA's means for facilitating public review as required by EO 11988. In addition, in accordance with EO 11988, a FONPA must be prepared. Because of the nature of the proposed activities occurring within and adjacent to streams, no practicable alternatives to construction within the floodplain exist.

No Action Alternative

Maintenance activities of the existing storm drainage system would occur in some floodplain areas. Continued sedimentation from the outfalls and inflow sites and from areas where existing water quality BMPs are inadequate or degraded could result in build-up of sediments and nonpoint source pollution that could reduce the existing

storage capacity of the floodplain areas. This could result in long-term adverse impacts as the floodplain elevations increase.

4.3.3.4 Groundwater

Proposed Action

Construction of the BMP projects may include excavations up to approximately 10 feet bgs which could encounter groundwater. Minor, short-term adverse impacts on groundwater could occur. Some BMP projects would have long-term, minor beneficial impacts on infiltration and thus groundwater recharge through the construction of infiltration basins, stormwater detention/dry ponds, bioretention ponds, and shallow wetlands.

Construction erosion and sediment control BMPs (such as dewatering) to mitigate adverse impacts would be contained within the Stormwater Management Plan, the Erosion and Sediment Control Plan, or described within the General Construction Permit.

No Action Alternative

There would be no impacts on groundwater under the No Action Alternative.

4.3.4 Air Quality

Proposed Action

Since there would not be any stationary sources associated with the Proposed Action, it was not necessary to conduct a Prevention of Significant Deterioration Applicability Analysis or Non-attainment New Source Review. Subsequently, the JBA State Operating Permit would not be affected or need to be modified. The actual criteria pollutant emissions were calculated for the Proposed Action as summarized in Table 13 (URS, 2011). The Proposed Action would involve land clearing, grading, removal of excess vegetation, and construction activities using heavy-duty construction vehicles and personally owned vehicles (POVs) to get to/from the work site. There would not be any emissions generated from the stormwater system infrastructure after the construction activities have been completed.

Table 13: Actual Emissions (Tons per Year) from Proposed Action¹

	CO	VOC	NO _x	SO _x	PM ⁴
Mobile Sources ^{2,3}	17	4	28	2	4

¹These emissions assume that all projects occur within one calendar year.

²Source: URS, 2011

³Numbers rounded to a whole number

⁴Assumed PM = PM₁₀ = PM_{2.5}

Construction activities would generate localized fugitive dust and combustion emissions (e.g., NO_x, VOC, CO, and SO_x) from diesel-fueled construction equipment and construction crew POVs (assumed to be light-duty trucks). The construction contract would incorporate specific language pertaining to employing the most appropriate dust suppression methods to minimize fugitive dust. Non-road diesel engines are required by Federal law to utilize ultra-low sulfur fuel, which minimizes NO_x emissions. In accordance with MDE's Transportation Article §22-402, vehicles would be prohibited from idling beyond the allowable consecutive five minutes, unless engine power was necessary to operate heating and cooling or auxiliary equipment installed on the vehicle, to accomplish the intended use of the vehicle, or due to mechanical difficulties over which the operator has no control.

General Conformity

Since JBA is located in a non-attainment area, the Proposed Action was analyzed under the General Conformity regulation. The list of actions at 40 CFR 93.153(c)(2) that would result in no emissions increase or an increase in emissions that is clearly *de minimis* were not applicable to this Proposed Action. However, 40 CFR 93.153(d) allows for exemptions for specific types of Federal actions. The applicable exemption for this Proposed Action is 40 CFR 93.153(d)(4): "Alteration and additions of existing structures as specifically required by new or existing applicable environmental legislation or environmental regulations." The repairs and upgrades to the existing system are needed to ensure continued compliance with the water permits, whereby the goal is to reduce pollution to enable compliance with the State's surface water quality standards. The NPDES permit program is authorized by CWA Section 402 and JBA's industrial and municipal NPDES permits require erosion and sediment control BMPs to reduce pollutants to the "Maximum Extent Practicable." The proposed stormwater system

upgrades would reduce, minimize, or eliminate sources of pollution. Therefore, based upon the exemption under 40 CFR 93.153(d)(4), the emissions from these activities were not quantified. As required by the Army and Air Force guidance documents, a Record of Non-Applicability was prepared (USAF, 2003a; USACHPPM, 2003; see Appendix B).

No Action Alternative

Under the No Action Alternative, repair and construction activities would not occur. There would be no increases in regulated emissions from construction and therefore, no impacts on air quality would occur.

4.3.4.1 Climate Change

Proposed Action

As GHGs are relatively stable in the atmosphere and are essentially uniformly mixed throughout the troposphere and stratosphere, the climatic impact of GHG emissions does not depend upon the source location. Therefore, regional climate impacts are likely a function of global emissions.

Under the Proposed Action, CO₂e emissions were calculated from mobile sources during the construction phase of the stormwater system upgrades. The total CO₂e emissions from these associated activities would be 2,039.0 tonnes (see Table 14). Similar to criteria emissions, all GHG emissions are due to construction activities and there would be no increase in operational GHG emissions. Since there is no JBA mobile source GHG emission baseline to compare these emissions to and there is a lack of regulatory guidance for determining the significance of potential impacts from GHG emissions, no significance conclusion can be made (Jones & Stokes, 2007). However, when compared to global GHG emission estimates (approximately 38 x10⁹ tonnes of CO₂; USEPA, 2010c), the amount associated with the Proposed Action would be negligible.

JBA is committed to complying with Federal and State policies that address climate change. JBA is implementing measures to reduce or mitigate GHG emissions by

investing in alternative fueled vehicles. JBA is also promoting sustainable energy and resource use practices (e.g., carpooling, flextime, and shuttle services).

Table 14: Greenhouse Gas Emissions (Tonnes per Year) from Proposed Action¹

	CO ₂	CH ₄	N ₂ O	CO ₂ e
Mobile Sources ¹	1,997 ³	0.62	0.09	2,039 ³

¹These emissions assume that all projects occur within one calendar year.

²Source: URS, 2011

³Numbers rounded to a whole number

No Action Alternative

Under the No Action Alternative, repair and construction activities would not occur. There would be no increases in regulated emissions from construction and therefore, no impacts on climate change would occur.

Noise

Proposed Action

Noise impacts would be less than the noise from typical daily aircraft operations at JBA. The activities under the Proposed Action, including haul trucks traveling on JBA roads, are not anticipated to be outside the range of existing noise levels at JBA. Minor temporary impacts on JBA employees, tenants, and visitors would occur from the Proposed Action due to increases in noise levels from the operation of heavy equipment during construction. JBA would comply with local noise ordinances and State and Federal standards and guidelines for potential impacts on humans caused by construction activities to mitigate potential impacts on JBA personnel.

OSHA limits noise exposure for workers to 115 dB for a period of no longer than 15 minutes in an 8-hour work shift, and to 90 dB for an entire 8-hour shift. Workers near activities producing noise above those levels would be required to wear hearing protection equipment. Therefore, no impacts on the occupational health of construction workers as a result of construction noise are expected.

No Action Alternative

Under the No Action Alternative, project-specific short-term adverse impacts from noise would occur during maintenance and emergency repair activities. Impacts would be dependent on the type, length, and frequency of the activities, but would not be louder than typical aircraft and base operations at JBA.

OSHA limits noise exposure for workers to 115 dB for a period of no longer than 15 minutes in an 8-hour work shift, and to 90 dB for an entire 8-hour shift. Workers near activities producing noise above those levels would be required to wear hearing protection equipment. Therefore, no impacts on the occupational health of construction workers as a result of maintenance and emergency repair activities are expected.

4.3.6 Infrastructure

4.3.6.1 Stormwater Management and Storm Drainage

Proposed Action

For all work where existing stormwater conveyance would be disrupted during the retrofitting and replacement of existing stormwater infrastructure, stormwater would be disrupted and temporarily re-routed. However, because stormwater conveyance would be maintained at existing levels, impacts would not be adverse or beneficial.

Long-term, minor beneficial impacts on stormwater management at various locations within and downstream of JBA would occur with implementation of the site-specific BMP projects.

Water quality impacts are described under Section 4.3.3.1, Surface Water.

No Action Alternative

Limited maintenance and emergency repair activities would be conducted on the stormwater drainage system as-needed under the No Action Alternative. Stormwater systems would continue to provide inefficient conveyance of stormwater and sedimentation in surface waters. Water quality impacts are described under Section 4.3.3.1, Surface Water.

4.3.6.2 Transportation

Proposed Action

The site-specific BMP projects would not result in changes to transportation or traffic at JBA. Short-term and minor adverse impacts during construction may occur due to haul trucks on the roads or temporary lane closures at specific BMP sites.

No Action Alternative

Maintenance and emergency repair of the existing stormwater system could result in short-term adverse impacts on traffic and transportation at JBA during construction/repair activities due to temporary lane closures or increases in maintenance/construction equipment and worker vehicles at a site; however, the No Action Alternative would not result in changes in traffic or transportation on roads at JBA.

4.3.7 Hazardous Materials and Hazardous Waste Management

Proposed Action

Construction activities under the Proposed Action may include the use of hazardous materials and result in the generation of hazardous waste (i.e., solvents, hydraulic fluid, oil, and antifreeze) and therefore have a potential to result in adverse impacts on the environment. The intensity and duration of the impacts on the environment would vary greatly depending upon the type of accident and the substances involved. With implementation of safety measures and proper procedures in JBA's SWPPP and SPCC for the handling, storage, and disposal of hazardous materials and wastes, no adverse impacts are anticipated during construction.

No ASTs are within the proposed construction footprints. Prior to site-specific construction activities, JBA would verify that no USTs are within the proposed disturbance areas; therefore, no impacts on storage tanks are anticipated.

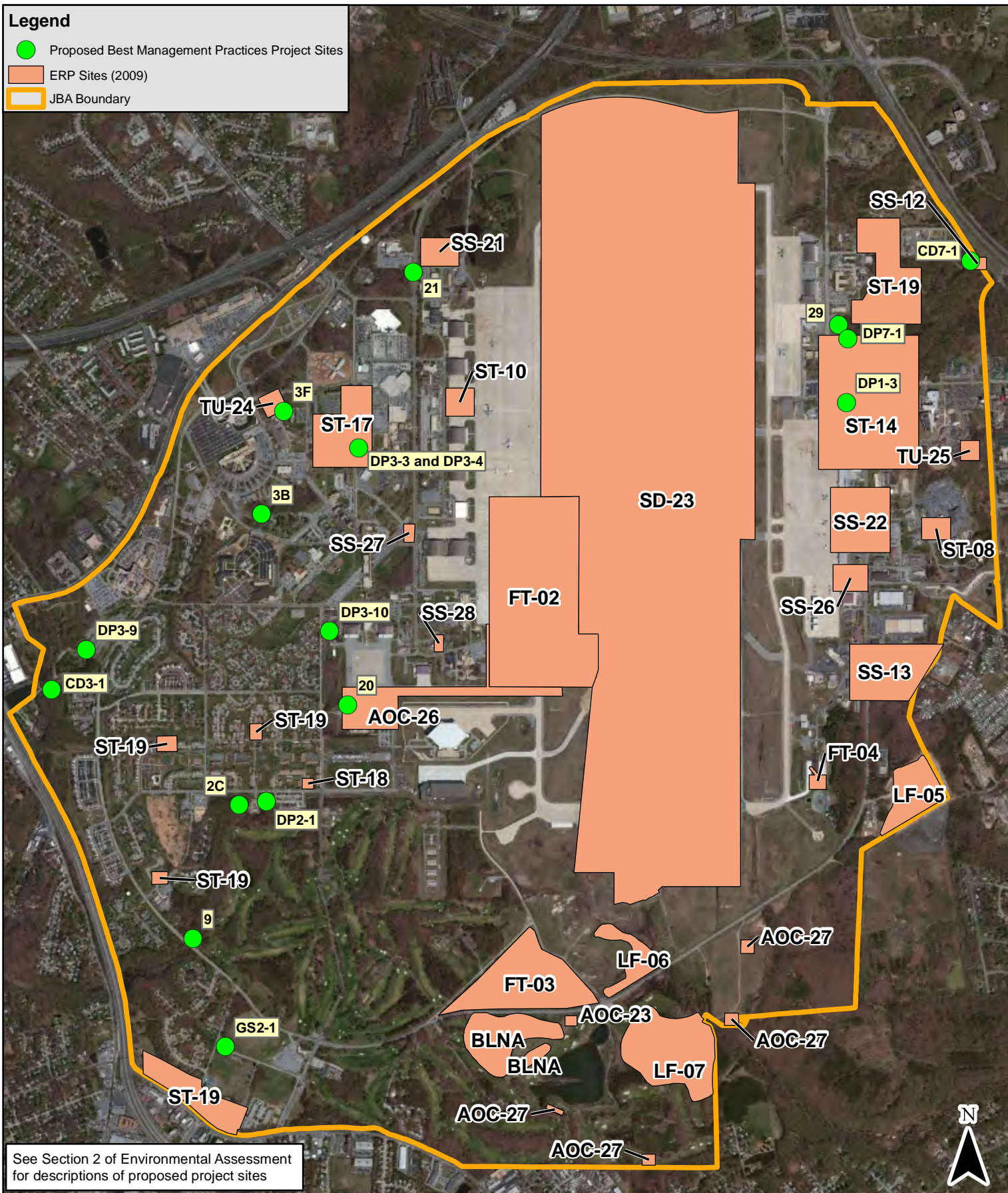
Six ERP sites are located within or adjacent to Proposed Action sites (Figure 7 and Table 15).

Table 15: Proposed Action Sites Within or Adjacent to ERP Sites

ERP Site	ERP Site Description/Action	BMP Site Within or Adjacent to ERP Site
AOC-26	No further remedial action planned (closed)	20
SS-12	Spill Site	CD7-1
SS-21	No further remedial action planned (closed)	21
ST-14	East Side Service Station, undergoing remedial action	DP7-1 and DP1-3
ST-17	No further remedial action planned (closed)	DP3-3 and DP3-4
TU-24	No further remedial action planned (closed)	3F

A Waiver to Construct would be required for all proposed construction on an ERP site. The proposed construction would be evaluated with respect to site activity and environmental risks posed by the construction and the ultimate use of the facility. Any construction or soil disturbance that would intercept an ERP site would require coordination with the Base CES and testing to determine contamination levels and associated worker protection. As a mitigation action during construction in these areas, workers would be educated on the effects of exposure to chlorinated solvents and volatile petroleum hydrocarbons (e.g., headaches, dizziness, blurred vision, etc.). If contaminated soils or groundwater are encountered, they would be managed in accordance with applicable laws and regulations.

Standard design and construction techniques, such as use of clean fill and vapor barriers, would be employed to ensure that no hazardous fumes permeate facilities. Environmental program managers would review project designs and inspect construction activities to ensure that appropriate engineering controls are in place.



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No Action Alternative

Maintenance or emergency repair activities that would occur on the stormwater system under the No Action Alternative may include the use of hazardous materials and hazardous waste generation (i.e., solvents, hydraulic fluid, oil, and antifreeze). With implementation of safety measures and proper procedures for the handling, storage, and disposal of hazardous materials and wastes outlined in JBA's SWPPP and SPCC during maintenance activities, no adverse impacts are anticipated.

4.3.8 Safety and Occupational Health

Proposed Action

The Proposed Action would not result in impacts on safety and occupational health of people at JBA, however construction activities under the Proposed Action could result in adverse impacts on construction worker safety. Construction jobsite safety and the prevention of accidents is an ongoing activity for any USAF jobsite. Contractors would be required to establish and maintain safety programs. All contractors performing construction activities are responsible for complying with USAF safety and OSHA regulations, and are required to conduct construction activities in a manner that does not pose any undue risk to workers or personnel. Contractor responsibilities 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 involved in the proposed stormwater facility repair, construction, and updates are not unique and are not anticipated to pose an unacceptable or unnecessary safety risk to JBA personnel or the public.

Prior to repairs or construction on any of the proposed projects, a review of the potential for encroachment into ESQD arcs would be required. For any work that would occur within an ESQD arc (i.e., in the southwestern corner of the airfield), contractors/workers would need to acquire clearance/permission from USAF to gain access to work within the ESQD.

No Action Alternative

Stormwater system maintenance activities would be conducted in compliance with USAF and OSHA safety requirements, thereby reducing potential impacts on worker safety during maintenance and emergency repair activities.

4.3.9 Biological Resources

4.3.9.1 Vegetation

Proposed Action

Temporary and minor adverse effects on vegetation would occur from the removal of grasses, shrubs and forbs at nearly all BMP projects during construction. Additionally, BMP Project 2C would result in the removal of trees within a forested area, which would have long-term adverse impacts on vegetation. BMP projects 2C and 3F would result in construction of new wetlands and project 3B would replace existing concrete channels with a more natural stream bed and vegetated stream banks; these projects would have beneficial long-term impacts on vegetation by increasing the amount of natural habitat available. Ongoing long-term maintenance activities that would include removal of excess vegetation to continue to provide adequate conveyance of runoff within a channel or inlet would occur at BMP projects CD 3-1, DP 2-1, DP 3-9, DP 7-1, DP 3-10, 20, 29.

To minimize long-term impacts on vegetation, disturbed areas at all Proposed Action projects would be re-vegetated using native species in accordance with the Stormwater Management Plan and Erosion and Sediment Control Plan following construction.

No Action Alternative

Under the No Action Alternative, maintenance activities (i.e., regular vegetation removal from infrastructure, mowing, etc.) would remain at present levels, with minor short-term adverse impacts on vegetation.

4.3.9.2 Wildlife and Birds

Proposed Action

Temporary and minor adverse impacts during construction would occur on wildlife and birds from increased noise and activity levels and the temporary removal of vegetation. JBA would revegetate disturbed areas after construction. Projects 2C and 3F would result in construction of new wetlands and project 3B would replace existing concrete channels with a more natural stream bed and vegetated stream banks; these projects would have beneficial long-term impacts on wildlife and birds by restoring natural habitats. Removal of trees at BMP Project 2C would have long-term adverse impacts on wildlife from removal of habitat. Temporary and minor adverse effects on fish species during construction may occur due to localized decreases in water quality from sediment transported from the project sites in storm-water runoff and from stream alteration activities. Additionally, stream alteration activities would result in temporary disruption of habitat and therefore short-term adverse effects on fish. Long-term benefits on aquatic habitat would occur from minimizing or eliminating existing erosion at some of the proposed BMP sites.

In a letter dated March 14, 2011 responding to JBA's request for MDE project review, MDNR stated that streams and tributaries including Piscataway Creek, Henson Creek, Paynes Branch, Meetinghouse Branch, Cabin Branch, and Charles Branch are classified as Use I streams (Water Contact Recreation and Protection of Aquatic Life). MDNR noted that generally no instream work is permitted in Use I streams during the period of March 1 through June 15, inclusive, during any year. Therefore, JBA would avoid work in these streams during that time to the extent practicable, and would consult with MDNR prior to the start of construction if work between March 1 and June 15 is proposed.

No Action Alternative

Under the No Action Alternative, long-term impacts on habitat from regular vegetation removal and mowing would continue. Temporary and minor adverse impacts during maintenance and emergency repair activities would occur from increased noise and

activity levels and the temporary removal of vegetation. JBA would revegetate disturbed areas after work is completed.

4.3.9.3 Threatened and Endangered Species

Proposed Action

No impacts on State or federally listed threatened and endangered species are anticipated with implementation of the Proposed Action. A letter was submitted to the USFWS on February 16, 2011 requesting USFWS review (Appendix C). No response has been received to date. When site-specific project details (e.g., exact footprints and duration of construction) are developed further, JBA would evaluate potential impacts on State and federally listed threatened and endangered species and initiate the appropriate level of consultation with the USFWS and State as necessary.

No Action Alternative

There would be no impacts on State or federally listed rare, threatened and endangered species under the No Action Alternative.

4.3.10 Cultural Resources

Proposed Action

JBA has determined the Proposed Action would have no adverse effect on historic properties. This finding is based on the nature of the Proposed Action, which primarily entails the repairs and upgrades of existing stormwater infrastructure. JBA has initiated formal Section 106 consultation with the Maryland State Historic Preservation Office (SHPO) and the National Park Service in a letter dated February 16, 2011, and requested concurrence with its findings and determinations (Appendix C). No response has been received to date. When site-specific project details (e.g., exact footprints and duration of construction) are developed further, JBA would evaluate potential impacts on cultural resources and initiate consultation with the SHPO and National Park Service as necessary.

No Action Alternative

There would be no impacts on historic properties under the No Action Alternative.

4.3.11 Land Use

Proposed Action

The Proposed Action would not result in changes to land use therefore, no impacts on land use are anticipated.

No Action Alternative

There would be no impacts on land use under the No Action Alternative.

4.3.12 Social and Economic Environment

4.3.12.1 Population, Employment, and Income

Proposed Action

Construction activities for the Proposed Action would result in short-term minor benefits on the local economy by providing employment opportunities for local construction workers. The presence of construction workers at JBA during business hours may also result in short-term minor benefits to local stores and businesses for purchases. No impacts on population or income are anticipated under any of the project types.

No Action Alternative

Under the No Action Alternative, there would be no impacts on population, employment, or income. Maintenance of the existing stormwater system would be conducted by JBA staff or existing contractors.

4.3.12.2 Recreation

Proposed Action

BMP projects 2C and DP 2-1 are along the northern edge of a golf course; project 9 is along the western edge of the golf course; and project GS 2-1 is at the southwest corner of the golf course driving range near the corner of Vermont Road and Washington Drive. During construction, noise from heavy equipment for work occurring at these sites may be heard by recreational users resulting in short-term minor adverse impacts on recreation.

No Action Alternative

Short-term minor adverse impacts could occur on recreation during maintenance and emergency repair activities on existing stormwater infrastructure due to noise from heavy equipment.

4.3.13 Environmental Justice

Proposed Action

In compliance with EO 12989, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, and EO 13045, *Protection of Children from Environmental Health Risks and Safety Risks*, ethnicity, age, and poverty status in the project area have been examined and compared to State and national statistics. The area is not considered to be one of a low-income or poverty level....A minority population exists in PG County. USAF has determined that minority or low-income populations and children would not be disproportionately affected by the implementation of the Proposed Action. Additionally, the BMP projects would improve water quality and therefore would result in beneficial long-term impacts on people downstream of JBA.

No Action Alternative

No disproportionately high or adverse impacts on low-income or minority populations, or health or safety risks to children would occur under the No Action Alternative.

4.4 CUMULATIVE EFFECTS

4.4.1 Introduction

The CEQ defines cumulative effects as the “impact on the environment, which results from the incremental impact of the action(s) when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions” (40 CFR 1500). Cumulative impacts can result from individually minor, but collectively substantial, actions undertaken over a period of time by various agencies (Federal, State, and local) or individuals. In

accordance with NEPA, a discussion of cumulative impacts resulting from projects that are proposed (or anticipated over the foreseeable future) is required.

To identify cumulative effects, the analysis needs to address two fundamental questions:

1. Does a relationship exist such that affected resource areas of the Proposed Action or alternatives might interact with the affected resource areas of past, present, or reasonably foreseeable actions?
2. If such a relationship exists, then are there any potentially significant impacts not identified when the Proposed Action is considered alone?

The scope of the cumulative effects analysis involves both the geographic extent of the effects and the time frame in which the effects could be expected to occur, as well as a description of what resources could potentially be cumulatively affected.

4.4.2 Projects Considered in Addition to the Proposed Action

JBA has determined that the Proposed Action, in conjunction with the impacts of other USAF projects and operations, could result in cumulative impacts on some resources.

The scope of the cumulative effects analysis involves both the geographic extent of the effects and the time frame in which the effects could be expected to occur, as well as a description of what resources could potentially be cumulatively affected. When addressing cumulative impacts on surface water, soils, wetlands and waters of the U.S., the geographic extent for the cumulative effects analysis is the watershed, which the Proposed Action has the potential to impact, primarily concentrating on past, present, and reasonable foreseeable actions on and within JBA and the surrounding ecosystem.

When addressing cumulative impacts on air quality and noise, the geographic extent for the cumulative effects analysis is the region of influence, which the Proposed Action has the potential to impact, primarily concentrating on past, present, and reasonable foreseeable actions on and within JBA and the surrounding community. The timeframe for the cumulative effects analysis centers on the timing of the Proposed Action and would continue for the next 5 to 10 years.

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 16 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.

Table 16: Proposed Projects at JBA

Project Name/Description	Anticipated Fiscal Year of Award
Demolish Dental Clinics (Buildings 1601, 1603)	2011
Demolish Building 1660	2011
Construct Munitions Storage Area	2011
Construct AAFES Westside Shoppette	2012
Repair West Apron Phase 6B (design/build)	2012
Design/Repair/Replace Deteriorated Concrete Pades 12/13 (design/build)	2012
Demolish Building 1656, 1535, 1679	2012
Construct New Dental Clinic	2012
Demolish/Remove AAFES Canopy and Fuel Tanks	2012
Construct Ambulatory Care Center/Demolish Malcolm Grow Medical Center	2012
AAFES Consolidation and Expansion	2012
Regrade Shoulder Taxiway W-1 to Taxiway W-2 & Replace Curbing	2012
Design/Replace Taxiway Whiskey FAC 90020	2012
Design/Replace Taxiway Sierra Fac 90020	2012
Construct Addition Main Exchange Building 1811 (AAFES)	2012
Construct Refueling Vehicle Maintenance Facility	2012
Demolish 1429, 3229, 1732	2012
Design/Replace Airfield Subsurface Drainage Infrastructure	2012
Addition to Enginer Run Up Pad/Install De-icing System Pad 92	2013
Remove Trenton Court Trailers R62	2014
Construction of West Fitness Center	2015
Replace East Runway	2015
Construct AFDW/11 Wing Building	2015
Construct Consolidated Library/Education Facility	2015
Replace Child Development Center (Building 4575) C1	2016
Construct Mobility Processing Center/Warehouse	2016
Construct Helicopter Operations Facility	2017
Replace USAPAT Headquarters Facility	2017

Project Name/Description	Anticipated Fiscal Year of Award
Construct Consolidated Security Forces Facilities	2017
Demolish Building 1418	2018
ASA Phase II	2018
Construct New BCE Complex – 11th Wing	2018
Construct 3 Story Addition to Cargo Warehouse Building 1900	2018
Construct Consolidated Aircraft Supply Center	2018
Construct Security Forces Group Complex	2019
Construct 21 Point Enclosed Range on No. end of 2495	2019
Construct Fuel Cell Dock Hangar	Unknown
Construct New PAX Terminal/Base Operations	Unknown
Demolish 113 CES Complex Building 3213, 3214, 3215, 3216	Unknown
Construct 201st AS ASE/Equip Storage Facility Shelter No. 2	Unknown
Defense Access Road Construct/Improve Dowerhouse & Woodyard Rd Intersection	Unknown
Repairs to outfalls along the perimeter fence	Unknown
Demolish Building 1600, 1602	Unknown

Source: David Humphreys, 2011; Erik Johnson, 2011; Anne Hodges, 2012.

4.4.3 Description of Potential Cumulative Impacts

4.4.3.1 Aircraft Operations

The stormwater system repair and upgrades described under the Proposed Action would have no impact on aircraft operations. Most of the projects listed in Table 16 are not anticipated to result in adverse impacts on aircraft operations, except for the repairs to airfield stormwater drainage system project, which would be a beneficial project to aircraft operations over the long-term. When combined with the Proposed Action, cumulative impacts to aircraft operations are anticipated to be minimal.

4.4.3.2 Topography

The Proposed Action would result in minor but long-term changes in topography primarily from the construction of dry ponds, shallow detention wetlands, and bioretention basins. Changes to topography from the projects listed in Table 16 may be minor and long-term due to regrading; therefore, cumulative impacts on topography may occur but would be minimal and not likely classified as adverse or beneficial.

4.4.3.3 Geology and Soils

The work proposed for the activities under the Proposed Action and projects listed in Table 16 involve shallow excavations entirely within the geologic layer of surficial coastal deposits within JBA; therefore, no cumulative impacts on geology are anticipated.

Construction activities for the Proposed Action and projects listed in Table 16 (grading, clearing, and excavation) would disturb the ground surface and have the potential to cause soil erosion. These disturbances would not substantially alter existing soil conditions because much of the property on JBA has been previously disturbed by prior development. Implementation of erosion and sediment control BMPs during construction, as specified in the Stormwater Management and Erosion and Sediment Control Plans for each project, would minimize adverse impacts from soil erosion. Erosion and sediment control BMPs could include silt fencing, sediment traps, application of water sprays for dust control, and revegetation of disturbed areas.

Accidental release of contaminants, such as hydraulic and lubricating oils or cooling fluids into the soil could also occur during construction, routine maintenance activities, or an accidental release of pollutants from vehicles or equipment to a permeable surface. Any accidental release of contaminants or liquid fuels would be addressed in accordance with the SPCC. The impacts of an accidental release could be adverse, although the likelihood of an accidental release would be low due to spill prevention and containment measures outlined in the SPCC. With implementation of mitigation measures, cumulative adverse impacts on soils are anticipated to be minimal.

4.4.3.4 Surface Waters

Under the Proposed Action and projects listed in Table 16, construction activities including grading, clearing, and excavation could cause soil erosion and the subsequent transport of sediment into waterways via stormwater. Adverse impacts would be short-term and would be minimized through the use of erosion and sediment control BMPs specified in the Stormwater Management and Erosion and Sediment Control Plans. Construction erosion and sediment control BMPs could include silt fencing, sediment traps, application of water sprays for dust control, and revegetation of disturbed areas.

Accidental release of contaminants, such as hydraulic and lubricating oils or cooling fluids into the soil could also occur during construction, routine maintenance activities, or an accidental release of pollutants from vehicles or equipment to a permeable surface. Any accidental release of contaminants or liquid fuels would be addressed in accordance with the SPCC. The impacts of an accidental release could be adverse, although the likelihood of an accidental release would be low due to spill prevention and containment measures outlined in the SPCC.

The proposed future projects at JBA are anticipated to increase the amount of impervious surfaces at JBA. Prior to construction, the proponent would coordinate with the MDE to obtain a General Permit for Construction Activities under the NPDES program. Adherence to the requirements of the permit would include implementation of erosion and sediment control BMPs to minimize the potential for exposed soils or other contaminants from construction activities to reach nearby surface waters. The proposed facilities in Table 16 would increase the amount of impervious surfaces on the installation, resulting in an increase in the amount of surface runoff and a decrease in groundwater recharge at the installation. These activities would require modifications to the installation storm drainage system and updating the installation SWPPP in order to properly manage stormwater. Additionally, the proponent would coordinate with MDE to control increased stormwater runoff due to development. Adherence to these requirements would minimize degradation of local water quality and would minimize potential impacts. Cumulative impacts to surface waters are anticipated to be minimal.

4.4.3.5 Wetlands

Work under the Proposed Action would occur within wetlands. Additionally, some of the new construction projects listed in Table 16 may also occur within existing streams or wetlands. The Proposed Action would result in the creation of shallow wetlands at two sites and wetland creation (as mitigation) may occur with some of the new construction projects. Cumulative impacts on wetlands could be long-term and adverse.

It is USAF policy not to construct new facilities within areas containing wetlands where practicable. In areas where the existing wetland information indicates there is a potential for impacts on wetlands, or where preliminary site surveys indicate the potential

presence of unmapped wetlands, site-specific wetland delineation would be conducted to determine the precise location and size of the wetland areas. If there would be a potential for impacts on wetlands, a jurisdictional determination would be requested from the USACE. Section 404 permits from USACE and Nontidal Wetland Permits from MDE would be obtained prior to construction and mitigation would be implemented as necessary to minimize and mitigate adverse impacts. In addition, in accordance with EO 11990, a FONPA must be prepared.

4.4.3.6 Floodplains

It is USAF policy to avoid constructing new facilities within the 100-year floodplain in order to protect the functions of floodplains, minimize the potential damage to facilities, and to ensure the safety of working personnel. Any construction in the floodplain would require a zero rise study and an associated FONPA. Some of the activities under the Proposed Action and projects listed in Table 16 may occur within the 100-year floodplain. However, the functionality of the floodplain at JBA would not likely be adversely impacted. Cumulative impacts to floodplains are anticipated to be minimal.

4.4.3.7 Groundwater

Because groundwater occurs near the ground surface in some areas at JBA, groundwater could be encountered during excavations associated with the Proposed Action or projects listed in Table 16. Construction erosion and sediment control BMPs such as dewatering to mitigate these impacts would be contained within the Stormwater Management and Erosion and Sediment Control Plans that would be prepared for activities under the MDE Stormwater General Permit for Construction Activities. The amount of new impervious surface created would be minimal and therefore would result in negligible impacts on infiltration and groundwater recharge. Cumulative impacts to groundwater are anticipated to be minimal.

4.4.3.8 Air Quality and Climate Change

The Proposed Action and actions listed in Table 16 would involve land clearing, grading, removal of excess vegetation, and construction activities using heavy-duty construction vehicles and POVs to get to/from the work site. Construction activities would generate

localized fugitive dust and combustion emissions (e.g., NO_x, VOC, CO, and SO_x) from diesel-fueled construction equipment and construction crew POVs. Efforts would be made during the construction phase to minimize fugitive dust as the construction contract would incorporate specific language pertaining to employing the most appropriate dust suppression methods. Additionally, non-road diesel engines are required by Federal law to utilize ultra-low sulfur fuel, which minimizes NO_x emissions. In accordance with MDE's Transportation Article §22-402, vehicles would be prohibited from idling beyond the allowable consecutive five minutes, unless engine power was necessary to operate heating and cooling or auxiliary equipment installed on the vehicle, to accomplish the intended use of the vehicle, or to mechanical difficulties over which the operator has no control. Cumulative impacts to air quality are anticipated to be minimal.

The amount of GHGs associated with the Proposed Action and actions listed in Table 16 are negligible. JBA is implementing measures to reduce or mitigate GHG emissions by investing in alternative fueled vehicles. The base is also promoting sustainable energy and resource use practices (e.g., carpooling, flextime, shuttle services) wherever practical and reasonable, as well as economically and technologically feasible. Cumulative impacts to climate change are anticipated to be minimal.

4.4.3.9 Noise

Construction noise emanating off-site as a result of the Proposed Action and the activities listed in Table 16 would probably be noticeable in the immediate construction site vicinity, but would not be expected to create long-term adverse impacts. The acoustic environment on and near JBA is expected to remain relatively unchanged from existing conditions under proposed activities. With implementation of workers safety BMPs, no impacts are anticipated to occur to the occupational health of construction workers as a result of construction noise. Cumulative impacts from noise would be temporary and adverse but are expected to be minimal.

4.4.3.10 Stormwater Management

Long-term beneficial impacts on stormwater management from the Proposed Action would occur. Projects listed in Table 16 have the potential to adversely affect

stormwater management due to an increase in pervious surfaces at JBA; however, the amount of new impervious surface created compared to existing conditions would be minimal and the project proponent would implement pre- and post-construction stormwater controls according to JBA and MDE regulations to minimize adverse impacts. The repair to airfield stormwater drainage system and the repair of outfalls along the perimeter fence projects would complement the Proposed Action providing long-term beneficial impacts on stormwater management. Therefore, cumulative impacts on stormwater management would be minimal.

4.4.3.11 Transportation

Temporary adverse impacts on traffic flow would occur during construction activities associated with the Proposed Action and projects listed under Table 16. With implementation of mitigation and safety measures related to transportation and traffic closures due to oversize loads, adverse impacts would be minimized and cumulative adverse impacts to transportation are anticipated to be temporary and minimal.

4.4.3.12 Hazardous Materials and Hazardous Waste Management

The projects associated with the Proposed Action and those actions listed in Table 16 would include construction activities which would use/generate hazardous materials and hazardous wastes (i.e., solvents, hydraulic fluid, oil, and antifreeze). The short- and long-term effects of an accident on the environment would vary greatly depending upon the type of accident and the substances involved. With implementation of safety measures and proper procedures in the SWPPP and SPCC for the handling, storage, and disposal of hazardous materials and wastes during construction activities, no adverse impacts are anticipated during construction.

The proposed construction and demolition projects associated with the Proposed Action and those actions listed in Table 16 would generate construction and demolition waste that would be recycled and/or taken to a local demolition landfill, as appropriate. There are no capacity issues associated with the existing landfills. Hazardous materials and wastes would be handled, stored, and disposed of in accordance with applicable regulations. Any asbestos, lead-based paint or contaminated soils associated with ERP sites would be removed and disposed of per applicable regulations. On other sites,

engineered caps or other land use controls could be used. Construction and maintenance activities could involve hazardous materials, such as fuels. The USAF would ensure implementation of JBA's SPCC safety procedures, training, and mitigation measures, including spill prevention and response. Therefore, no adverse impacts on human and environmental health due to hazardous materials and wastes are anticipated. Cumulative impacts to hazardous materials/waste are anticipated to be minimal.

4.4.3.13 Vegetation, Wildlife and Birds

Implementation of the Proposed Action and the projects listed in Table 16 would result in short-term minor adverse effects on vegetation from the removal of grasses (primarily maintained/mowed turf grass), shrubs, and trees. Following construction, disturbed areas would be re-vegetated with native species in accordance with JBA standards and MDE requirements. Long-term, but highly localized cumulative adverse impacts due to the permanent removal of vegetation associated with some of the future projects combined with the Proposed Action (tree removal for BMP Project 2C) may occur.

The Proposed Action and projects listed in Table 16 are not anticipated to have significant impacts on terrestrial wildlife or birds. The removal of vegetation from within the semi-improved and improved areas of JBA would have minimal impacts on wildlife, as these areas currently have a high level of human activity and do not provide quality habitat. Temporary impacts on wildlife and birds caused by increased noise and activity levels during construction are not anticipated to be significant given that this is an USAF installation where noise levels are high throughout the day. Adverse impacts on wetlands could result in long-term adverse cumulative impacts on vegetation, wildlife and birds. However, impacts on wetlands would be avoided and minimized to the maximum extent practicable.

4.4.3.14 Threatened and Endangered Species

Because the Proposed Action would have no effect on State or federally listed species at JBA, cumulative impacts to threatened and endangered species would not occur. Future actions for projects listed in Table 16 would be reviewed by JBA and consultation

with the USFWS and State for any potential effects to protected species would be initiated.

4.4.3.15 Cultural Resources

Because the Proposed Action would have no effect on cultural resources at JBA, cumulative impacts on cultural resources would not occur. It is unknown if any of the projects listed in Table 16 would affect cultural resources, but JBA would conduct Section 106 consultation as needed for each project as it enters the planning stages.

4.4.3.16 Population, Employment, and Income

Construction activities associated with the Proposed Action and projects listed in Table 16 would result in temporary beneficial cumulative impacts from temporary increases in local employment opportunities and increased business to local stores and businesses. No cumulative impacts on population and income are anticipated.

4.4.3.17 Environmental Justice

The area around JBA is not considered to be a low-income area. However, the area is considered to be one with a minority population. The Proposed action is not expected to have an impact on this demographic group working or living near JBA. Therefore, there would be no disproportionately high or adverse impacts on low-income or minority populations. The Proposed Action may result in minor long-term benefits on communities downstream of JBA due to better water quality leaving JBA. Beneficial cumulative impacts would be negligible.

4.4.3.18 Recreation

During the construction period for the Proposed Action and projects listed in Table 16, additional noise in parts of designated outdoor recreational areas would occur, including the Golf Course and the Base Lake Recreational area. This noise is not anticipated to close or impact the use of the recreational resources on JBA. Adverse cumulative impacts to recreation are anticipated to be minimal.

CHAPTER FIVE LIST OF PERMITS AND APPROVALS

The following list of potential permits, licenses, and approvals are likely to be required for the Proposed Action. The agency responsible for each is included after the identified permit, license, or required consultation. Any required permits, licenses, or approvals would be obtained prior to construction.

- Nontidal Wetlands Permit, MDE
- Section 404 Wetland Permit, USACE
- NPDES Permit for Stormwater Associated with Construction Activities, MDE
- Stormwater Management Plan and Erosion and Sediment Control Plan approval, MDE
- Approval of any new construction within ERP sites by AFDW

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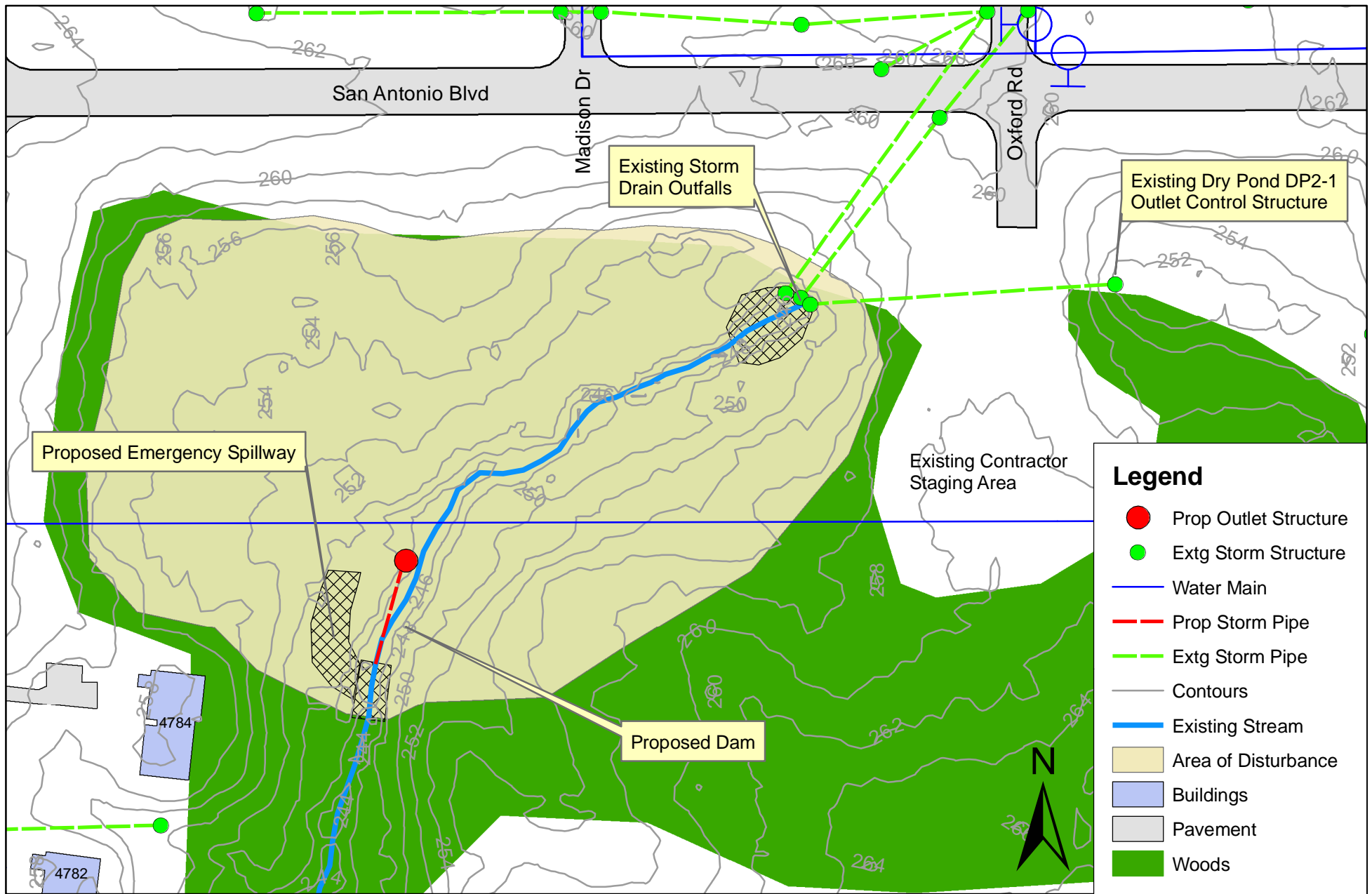
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Appendix A

Site-Specific BMP Figures

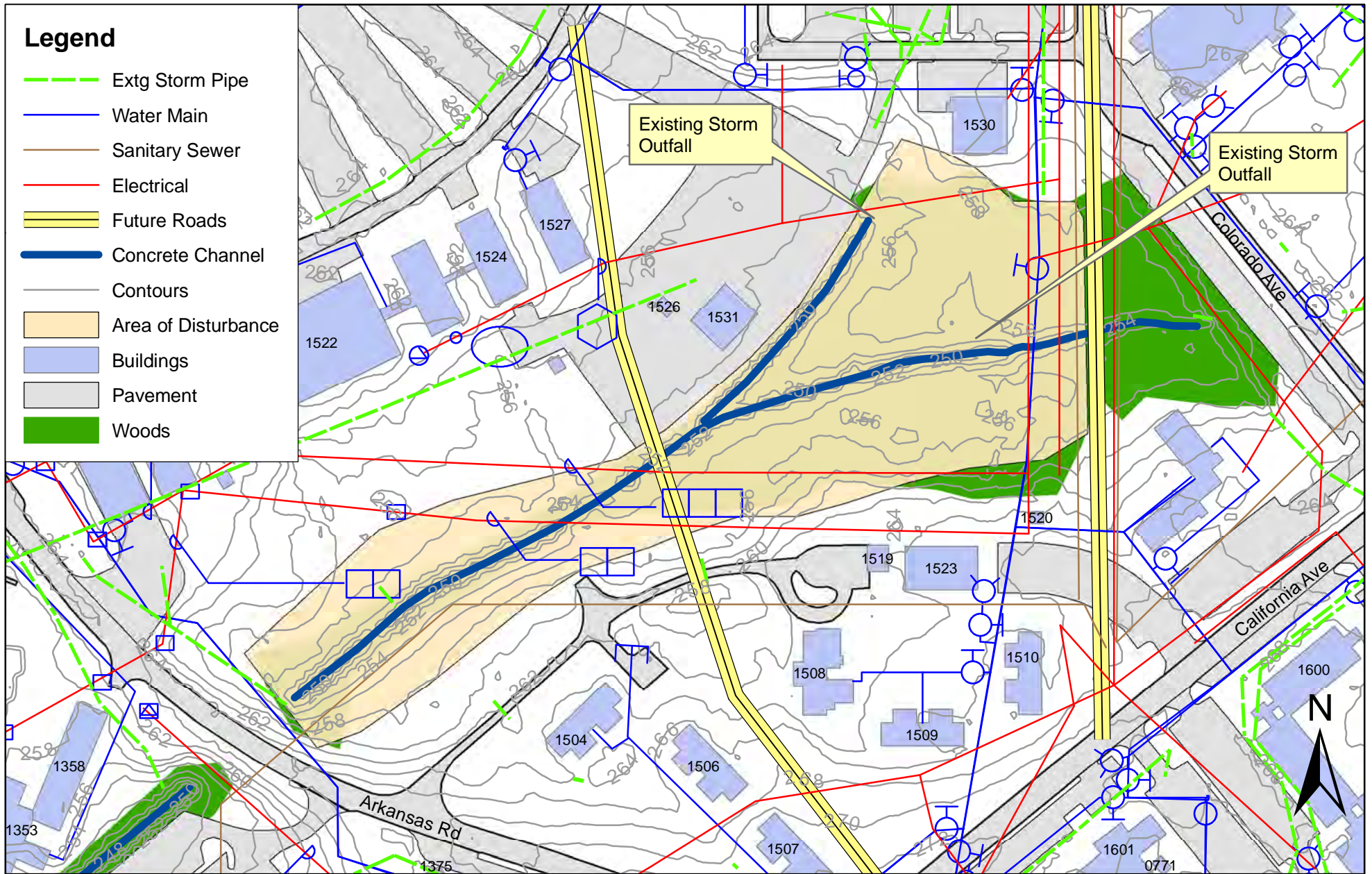


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JOINT BASE ANDREWS STORMWATER SYSTEM REPAIR AND UPGRADES Site 2C: Extended Detention Wetland (San Antonio Blvd)

Legend

- Extg Storm Pipe
- Water Main
- Sanitary Sewer
- Electrical
- Future Roads
- Concrete Channel
- Contours
- Area of Disturbance
- Buildings
- Pavement
- Woods

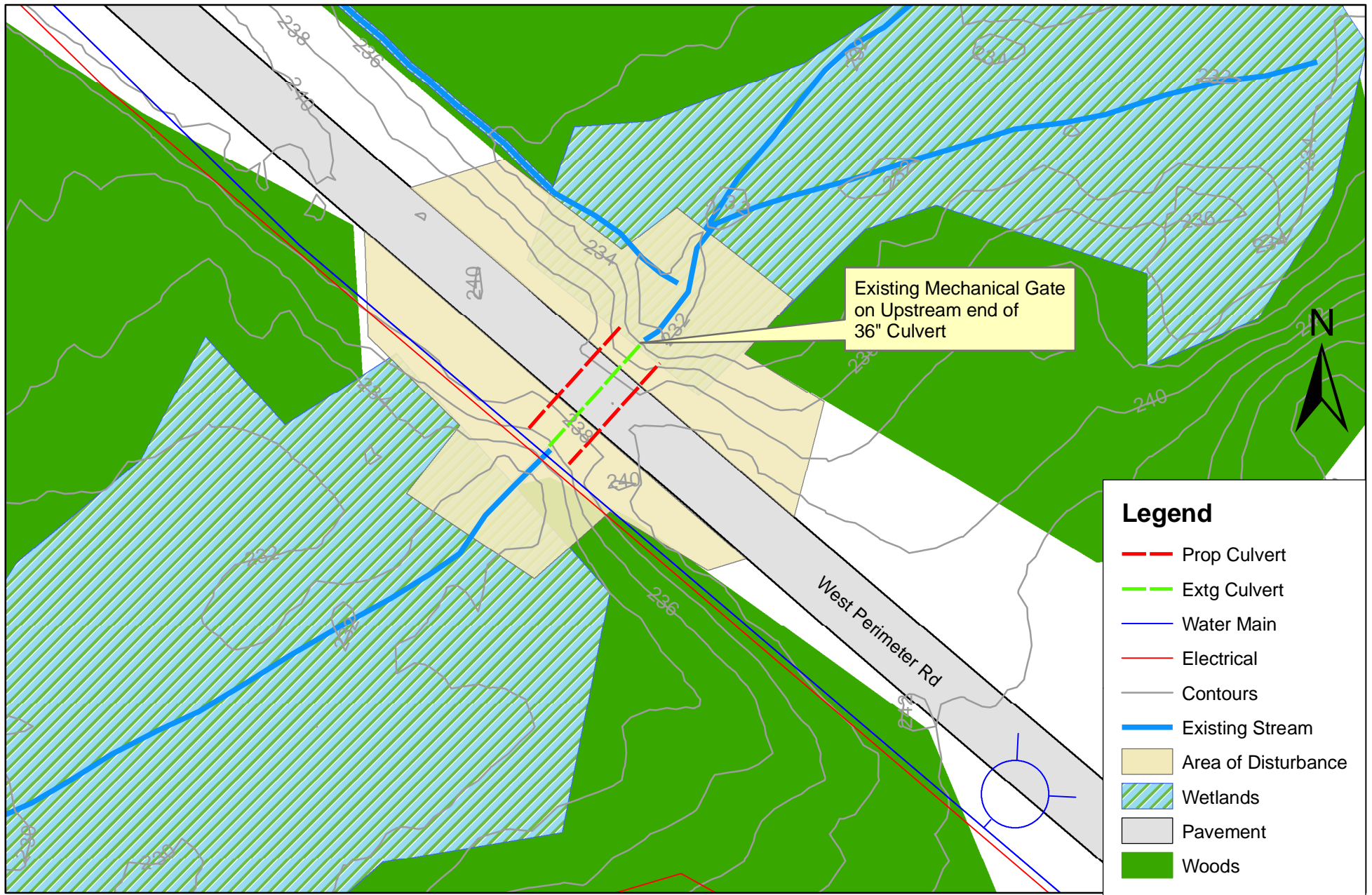


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Feet

1 inch = 150 feet

JOINT BASE ANDREWS STORMWATER SYSTEM REPAIR AND UPGRADES Site 3B: Stream Restoration (Arkansas Rd)

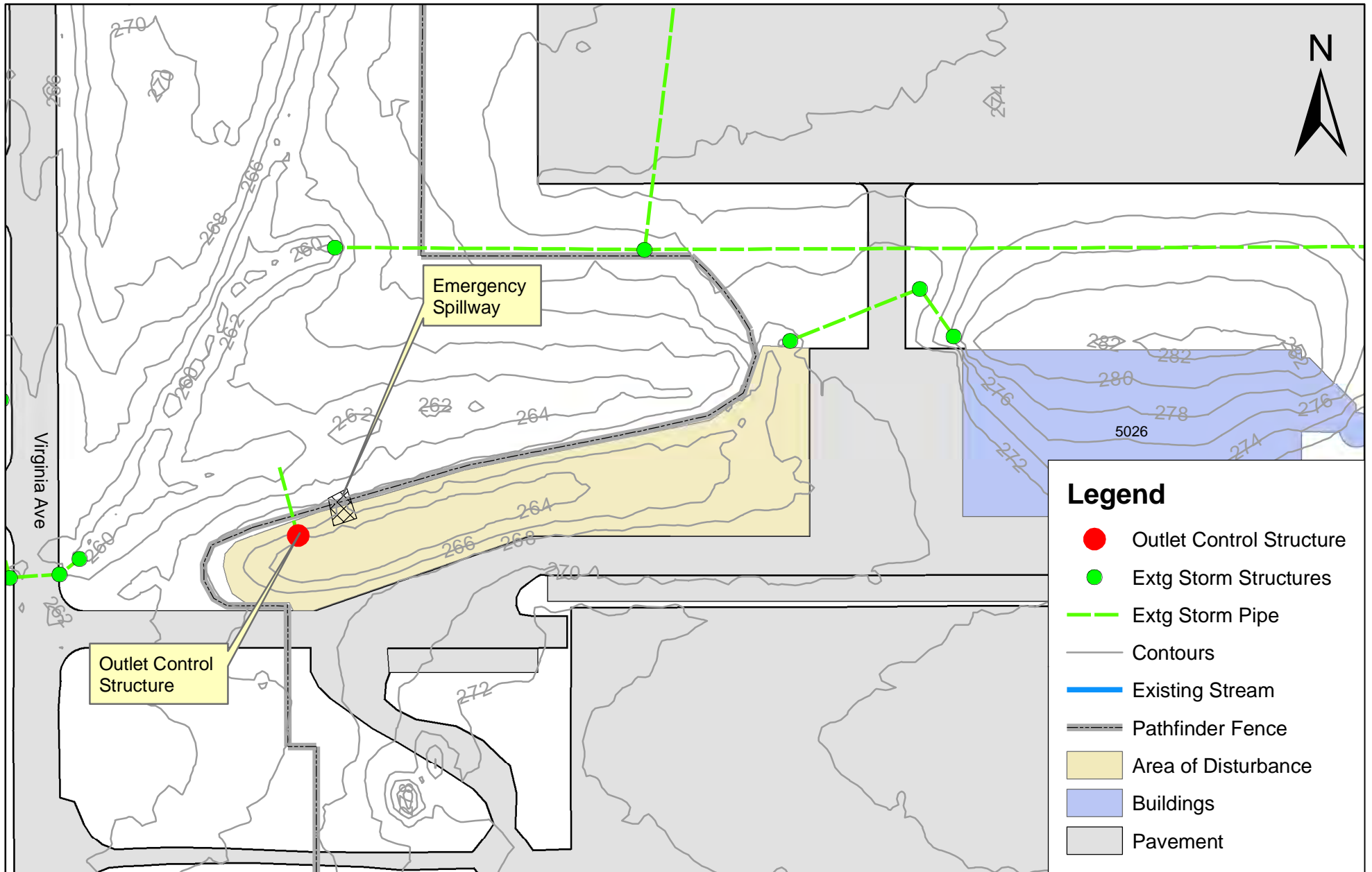


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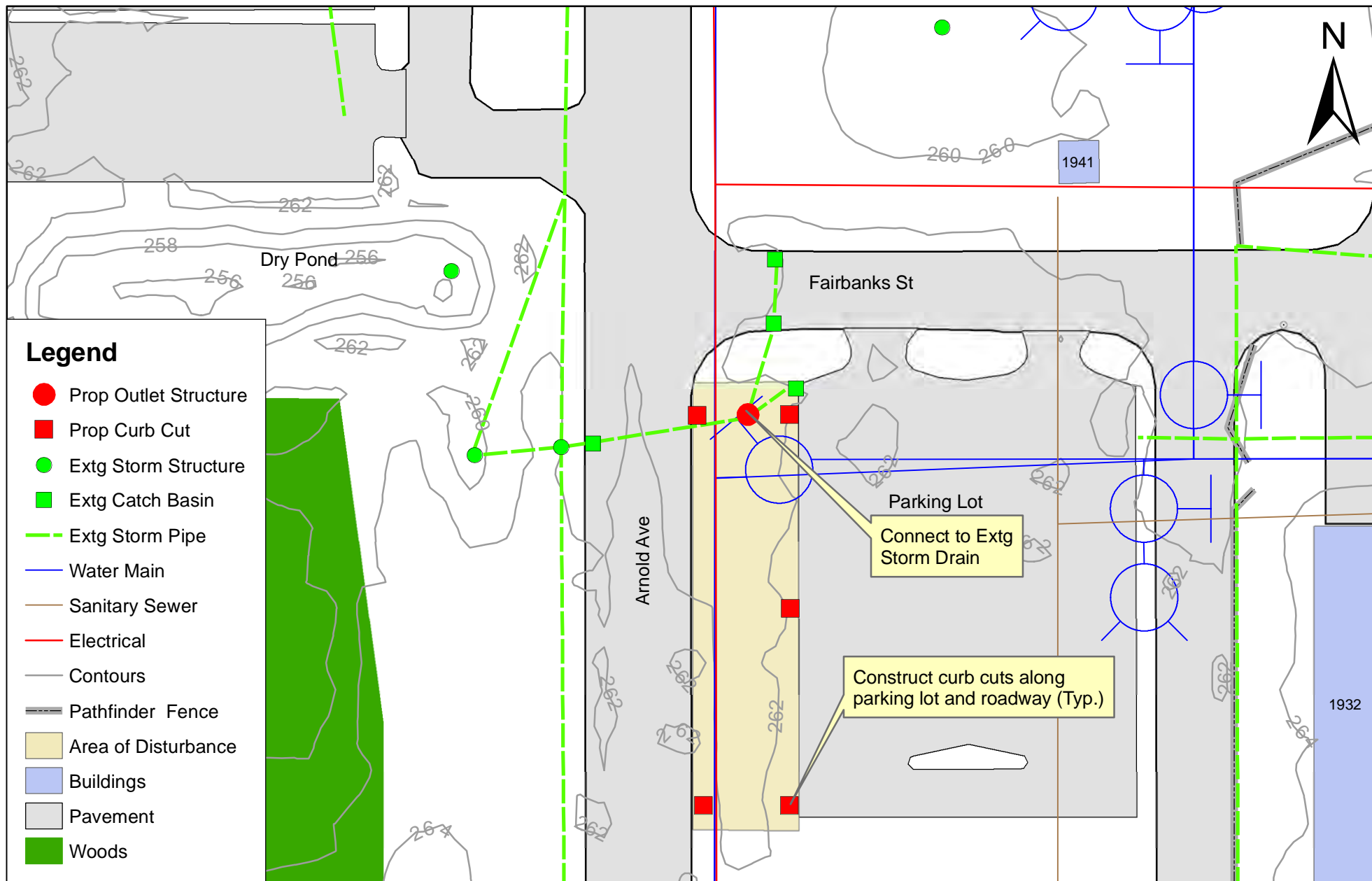


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JOINT BASE ANDREWS STORMWATER SYSTEM REPAIR AND UPGRADES Site 20: Bioretention (Virginia Ave)

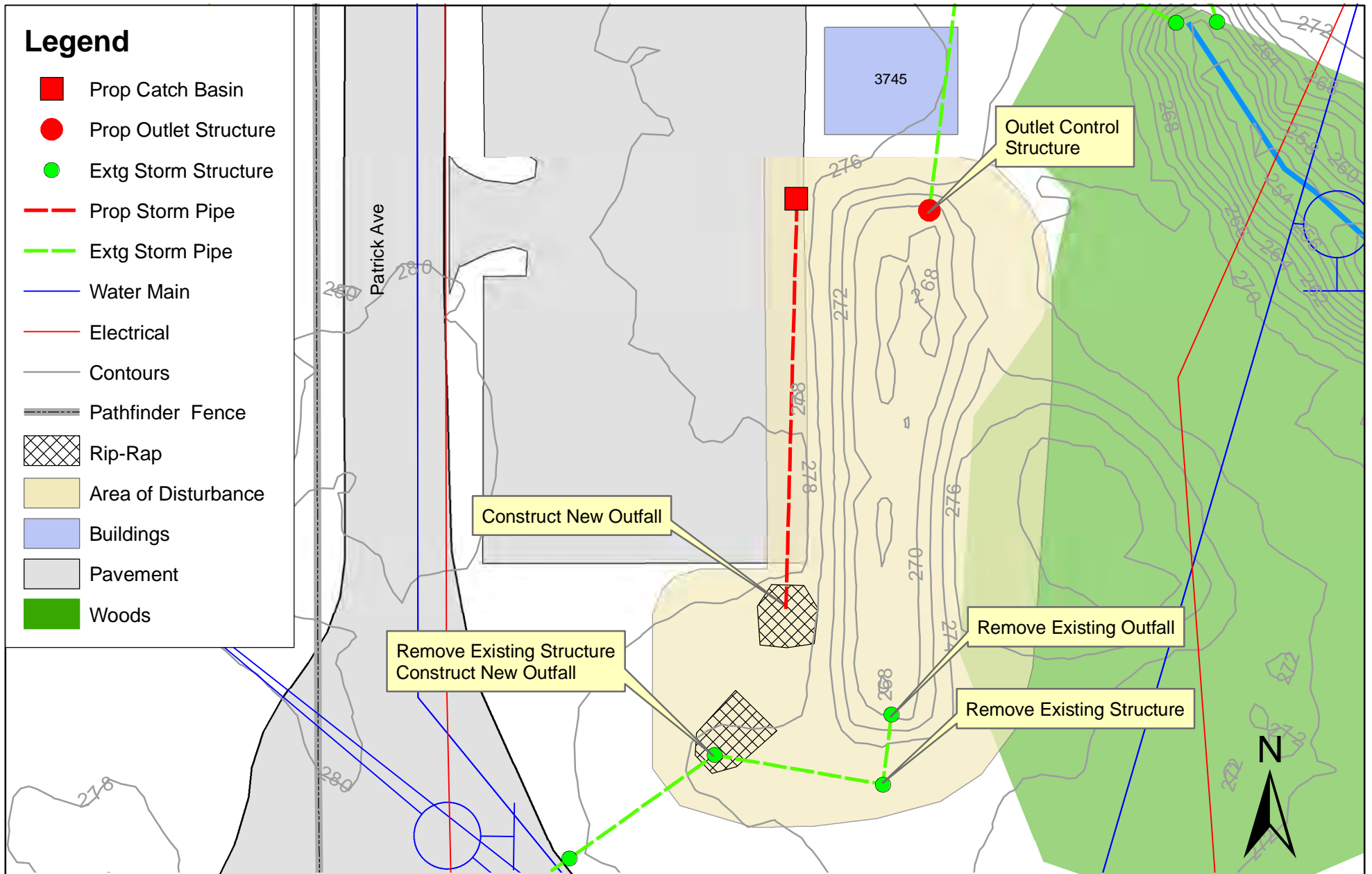


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JOINT BASE ANDREWS STORMWATER SYSTEM REPAIR AND UPGRADES Site 21: Infiltration Basin (Fairbanks St and Arnold Ave)

Legend

- Prop Catch Basin
- Prop Outlet Structure
- Extg Storm Structure
- Prop Storm Pipe
- Extg Storm Pipe
- Water Main
- Electrical
- Contours
- Pathfinder Fence
- Rip-Rap
- Area of Disturbance
- Buildings
- Pavement
- Woods

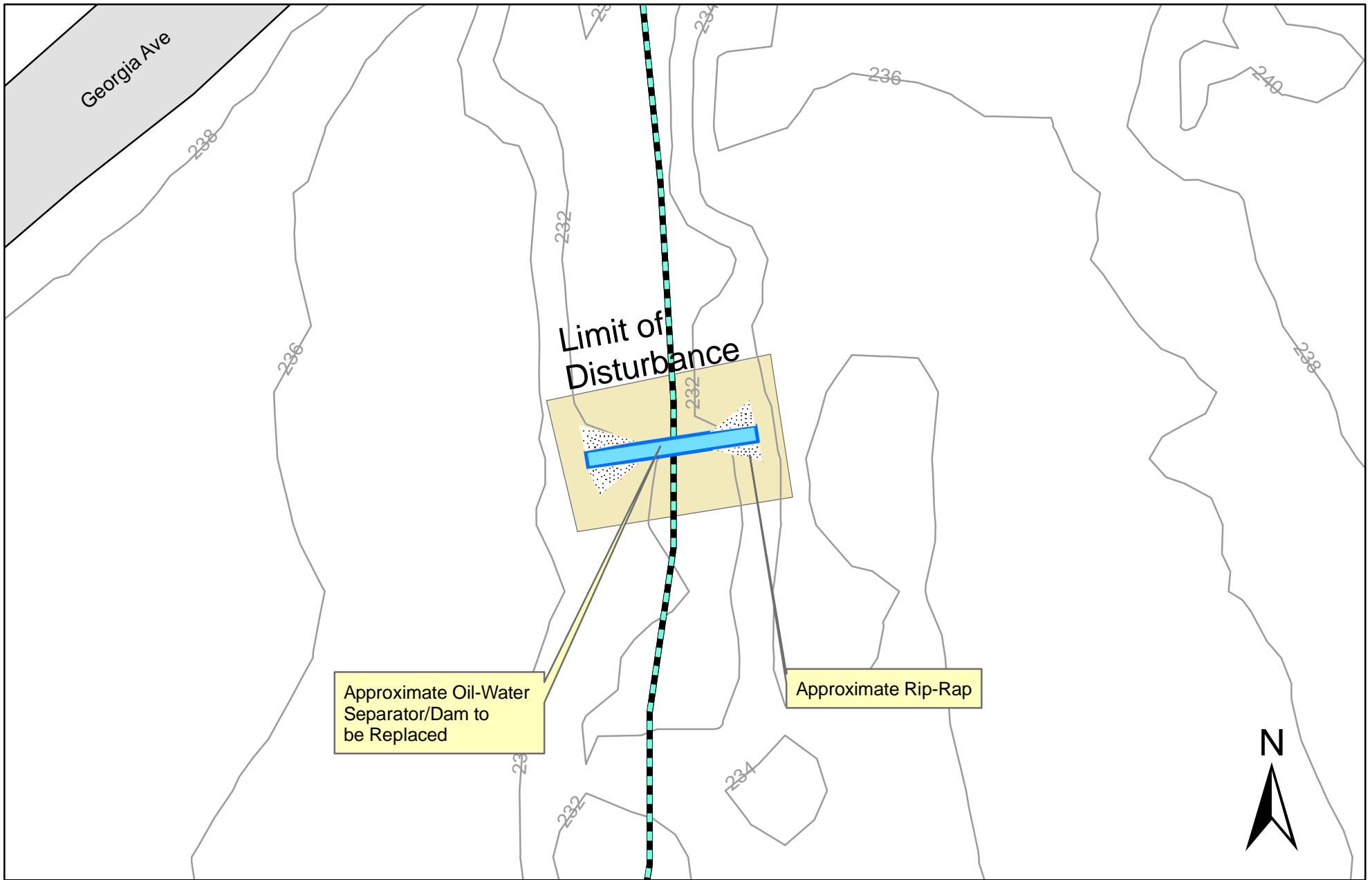


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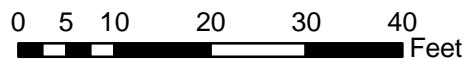
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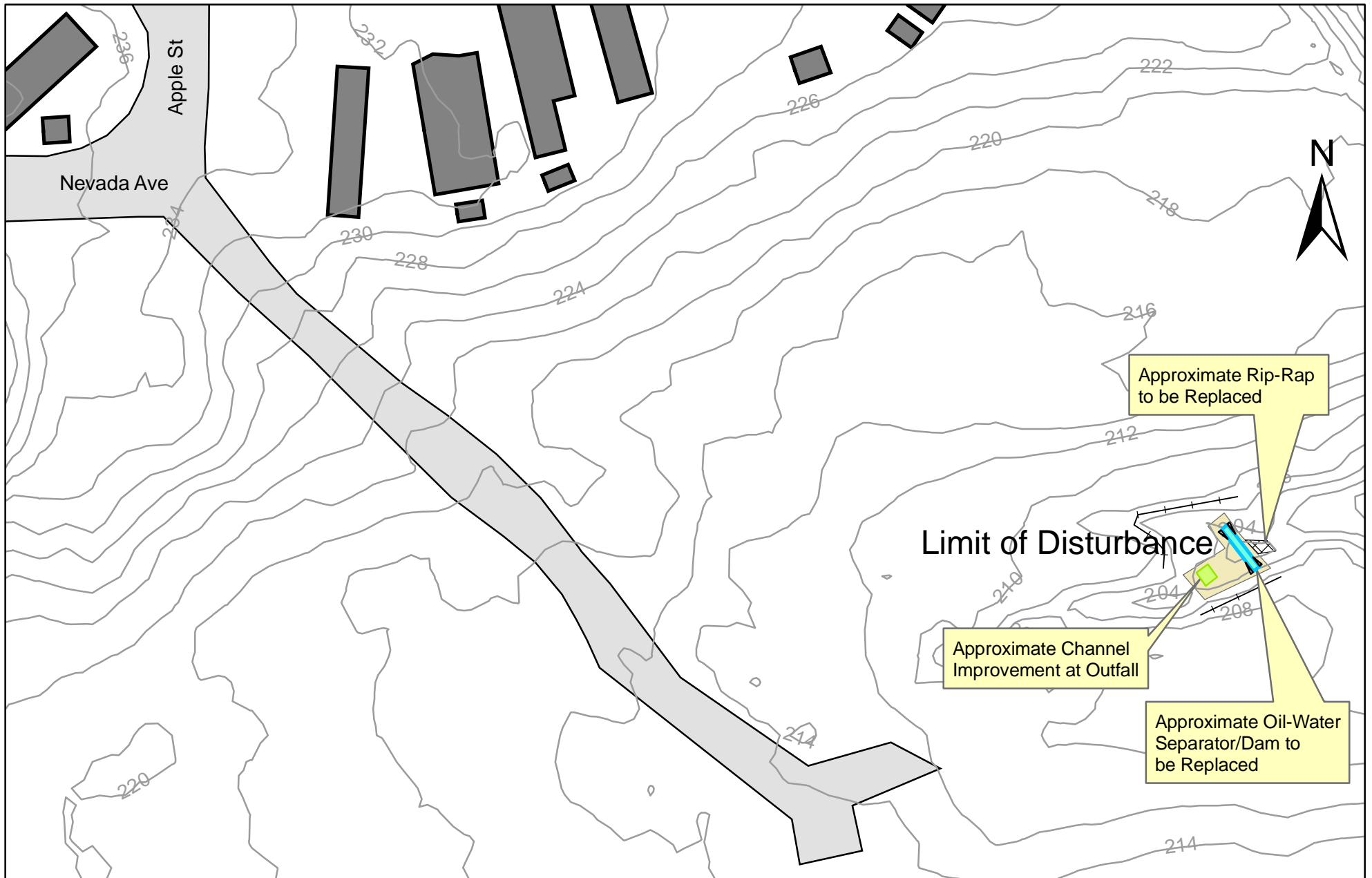
JOINT BASE ANDREWS STORMWATER SYSTEM REPAIR AND UPGRADES Site 29: Wet Pond (Patrick Ave)



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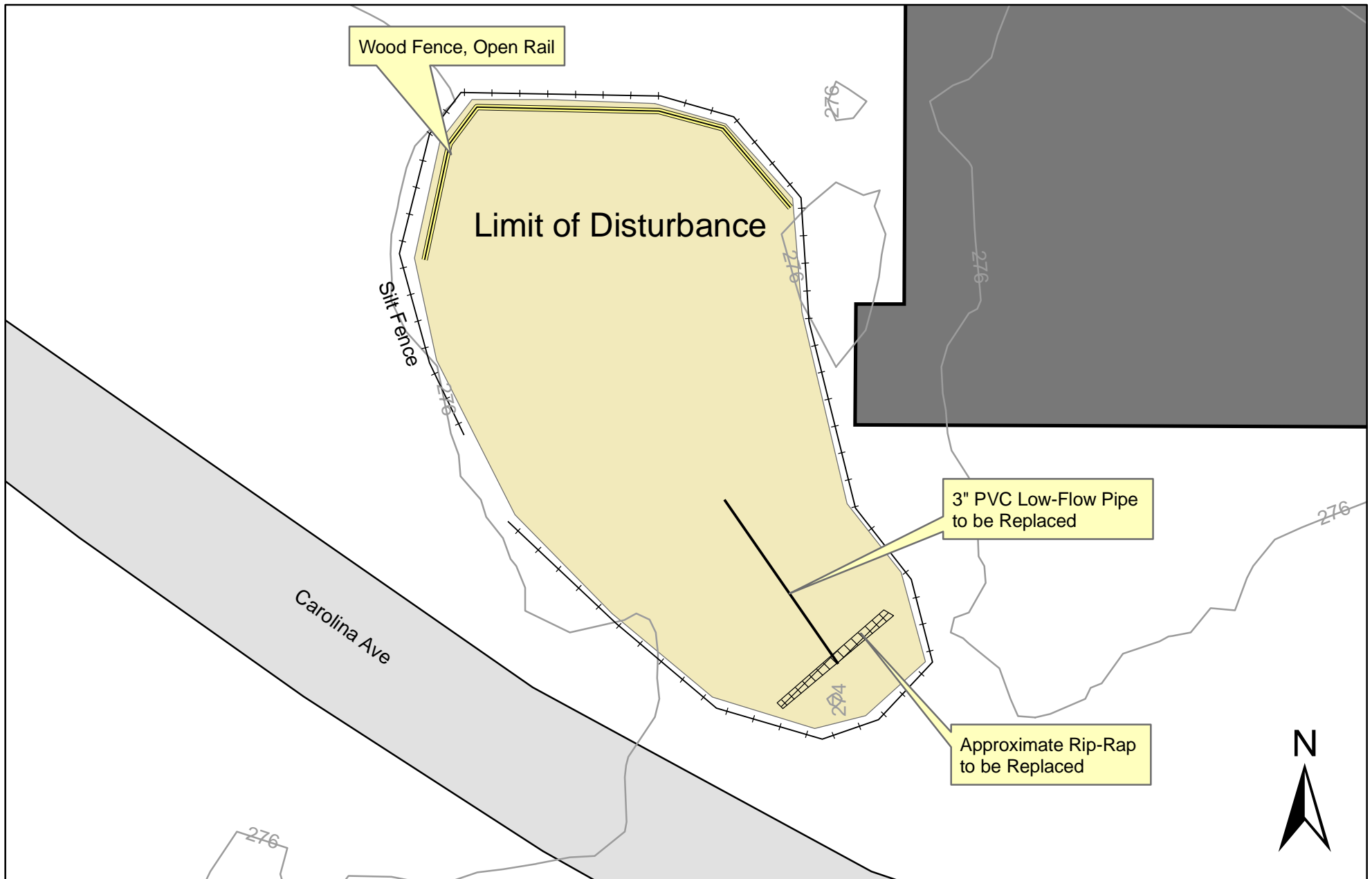
JOINT BASE ANDREWS STORMWATER SYSTEM REPAIR AND UPGRADES
Site CD 3-1: Check Dam Improvement (West Perimeter)



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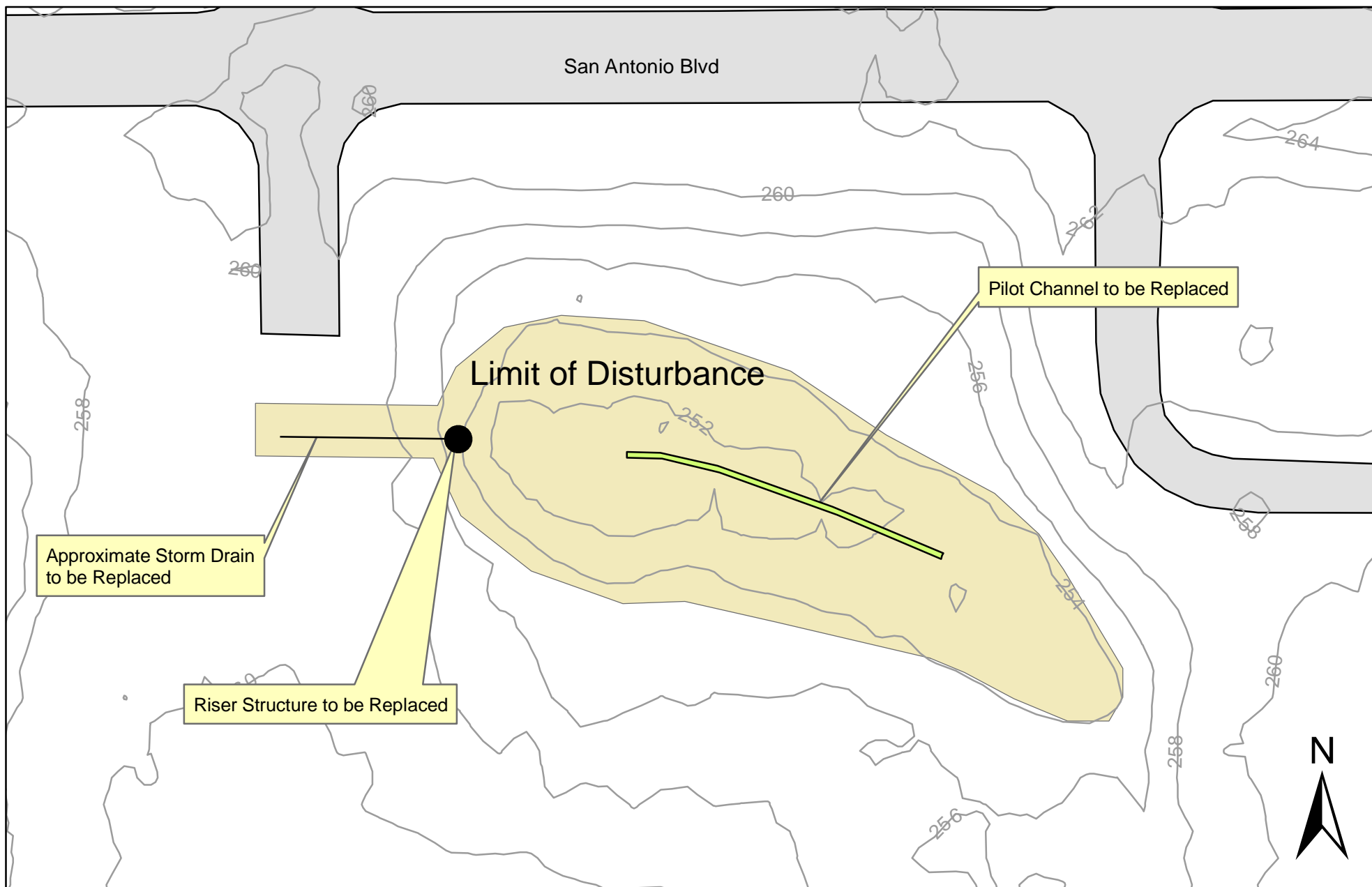
**JOINT BASE ANDREWS STORMWATER SYSTEM REPAIR AND UPGRADES
Site CD 7-1: Check Dam Improvement (Power Station 3787)**



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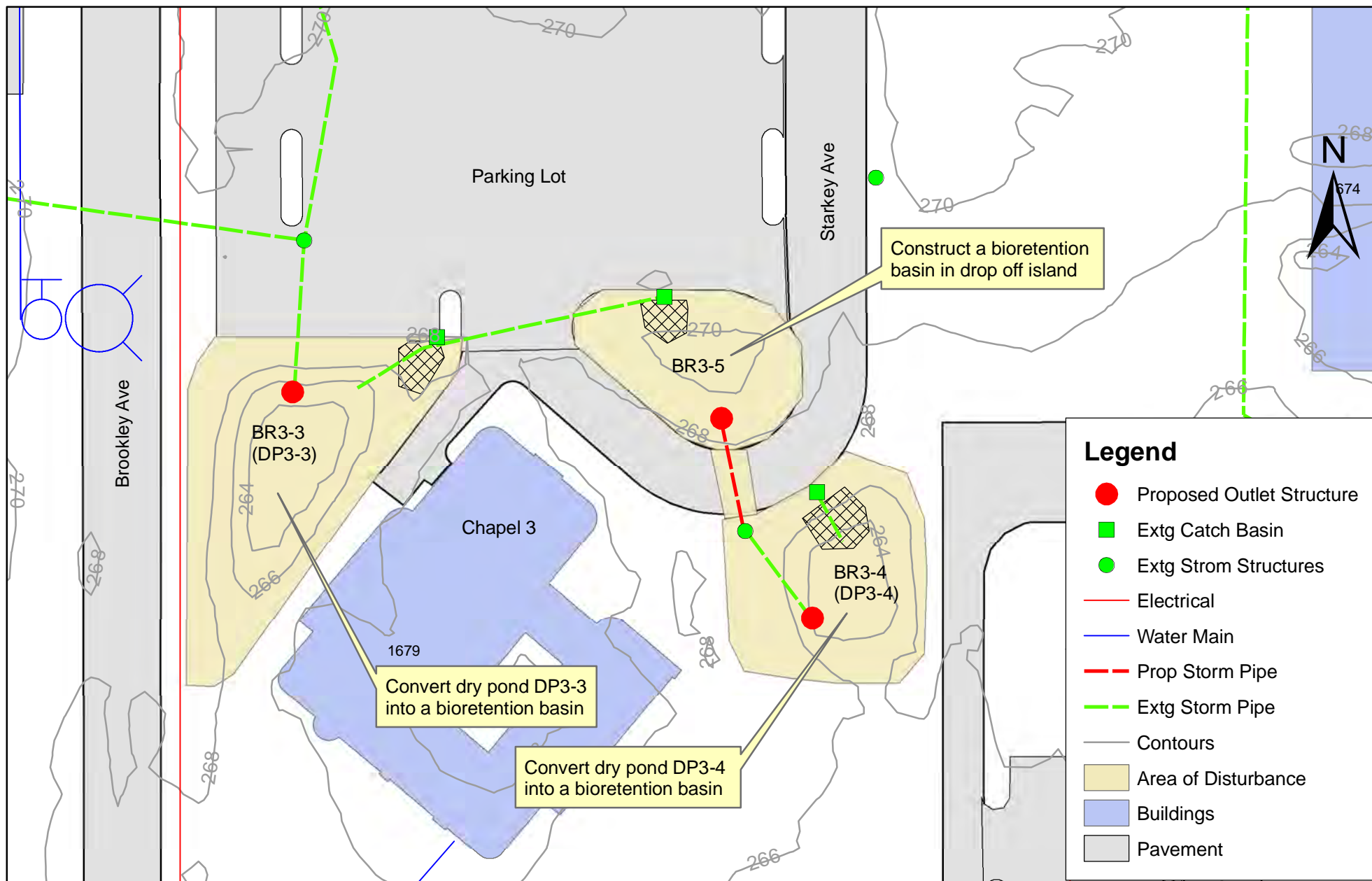
**JOINT BASE ANDREWS STORMWATER SYSTEM REPAIR AND UPGRADES
Site DP 1-3: Stormwater Pond Improvement (Fire Station #2)**



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Feet

**JOINT BASE ANDREWS STORMWATER SYSTEM REPAIR AND UPGRADES
Site DP 2-1: Stormwater Pond Improvement (San Antonio Blvd)**

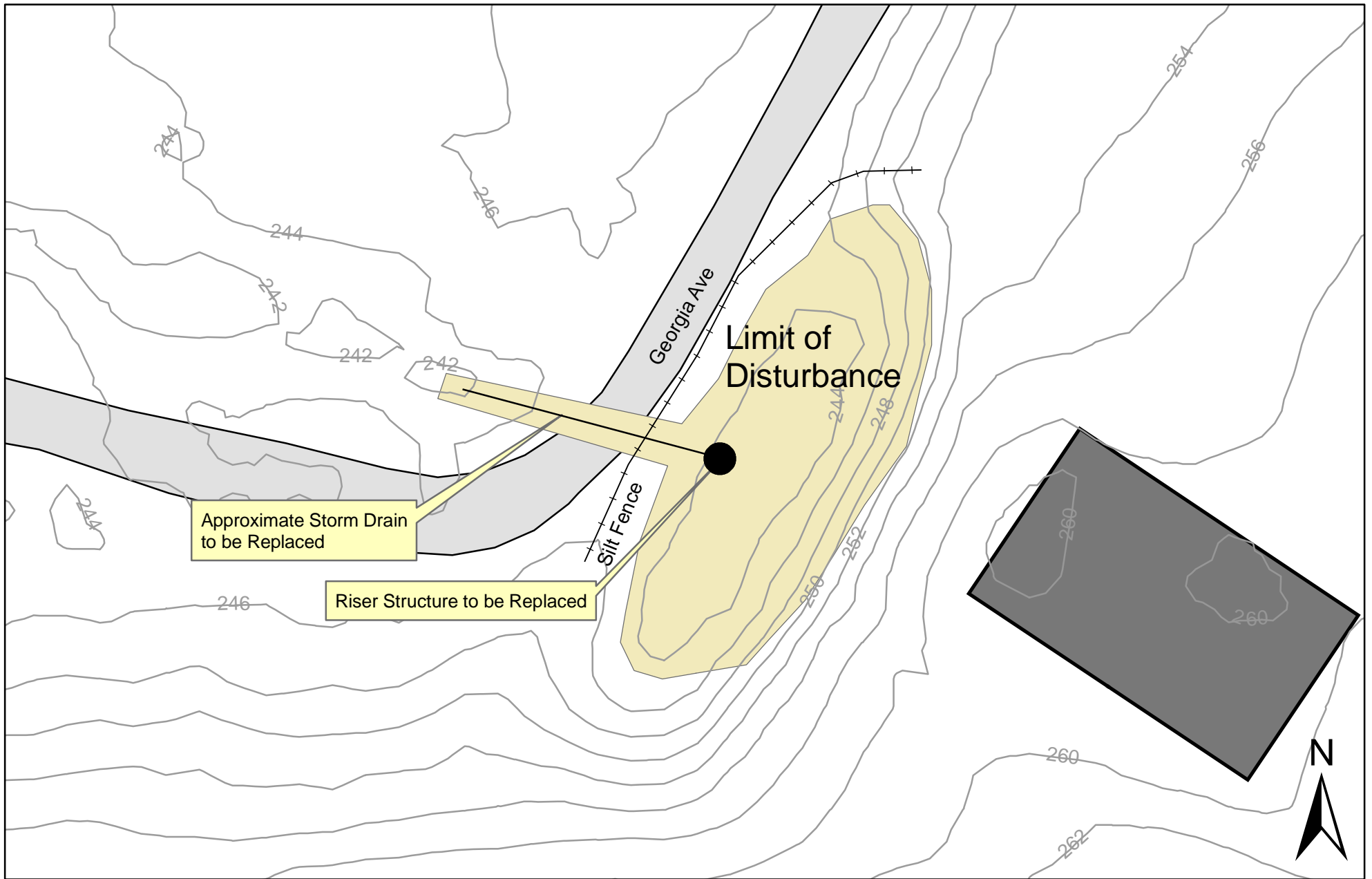


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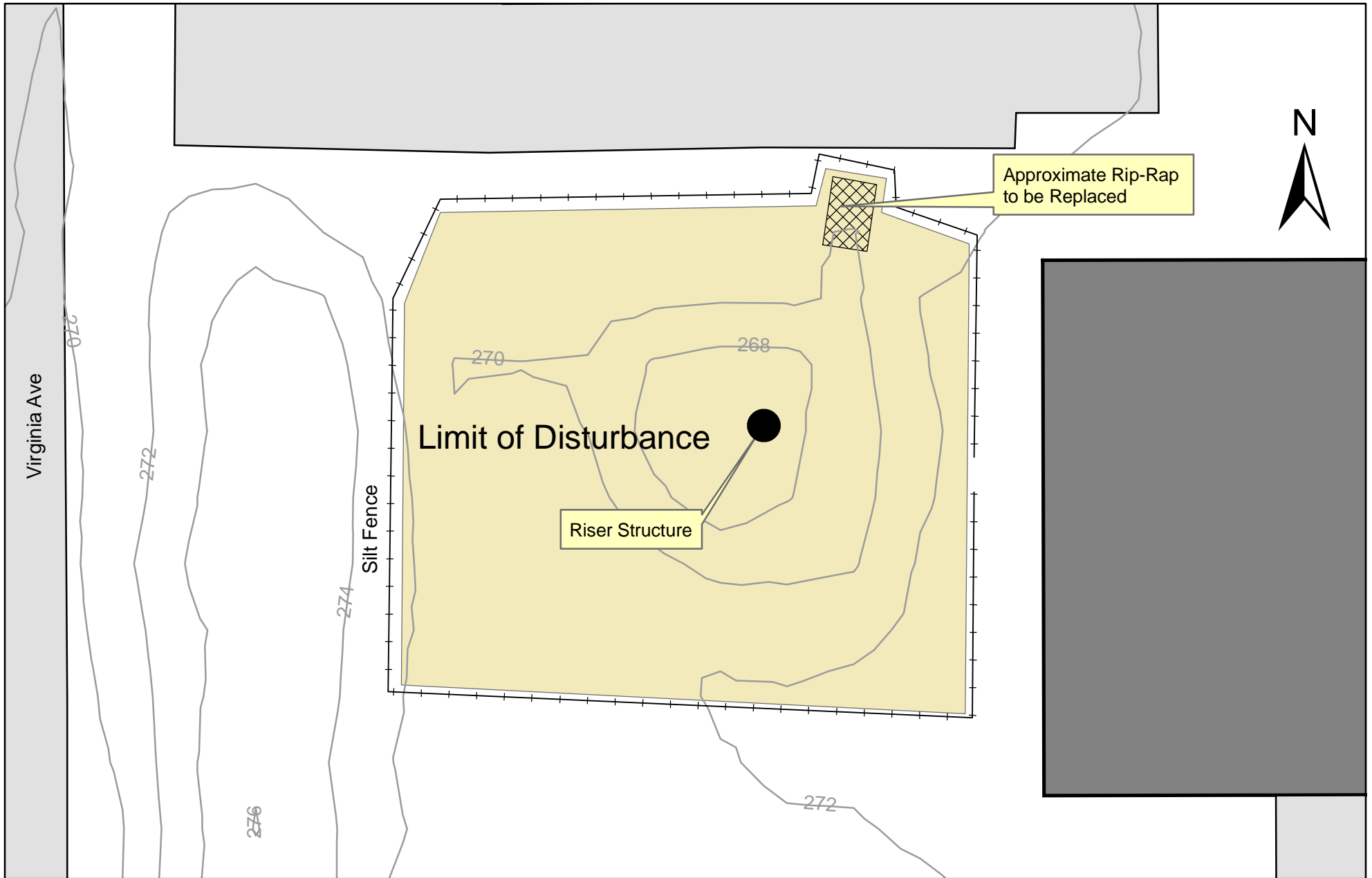
JOINT BASE ANDREWS STORMWATER SYSTEM REPAIR AND UPGRADES Site DP3-3: Bioretention (Brookley Ave)



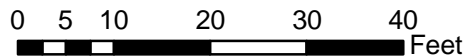
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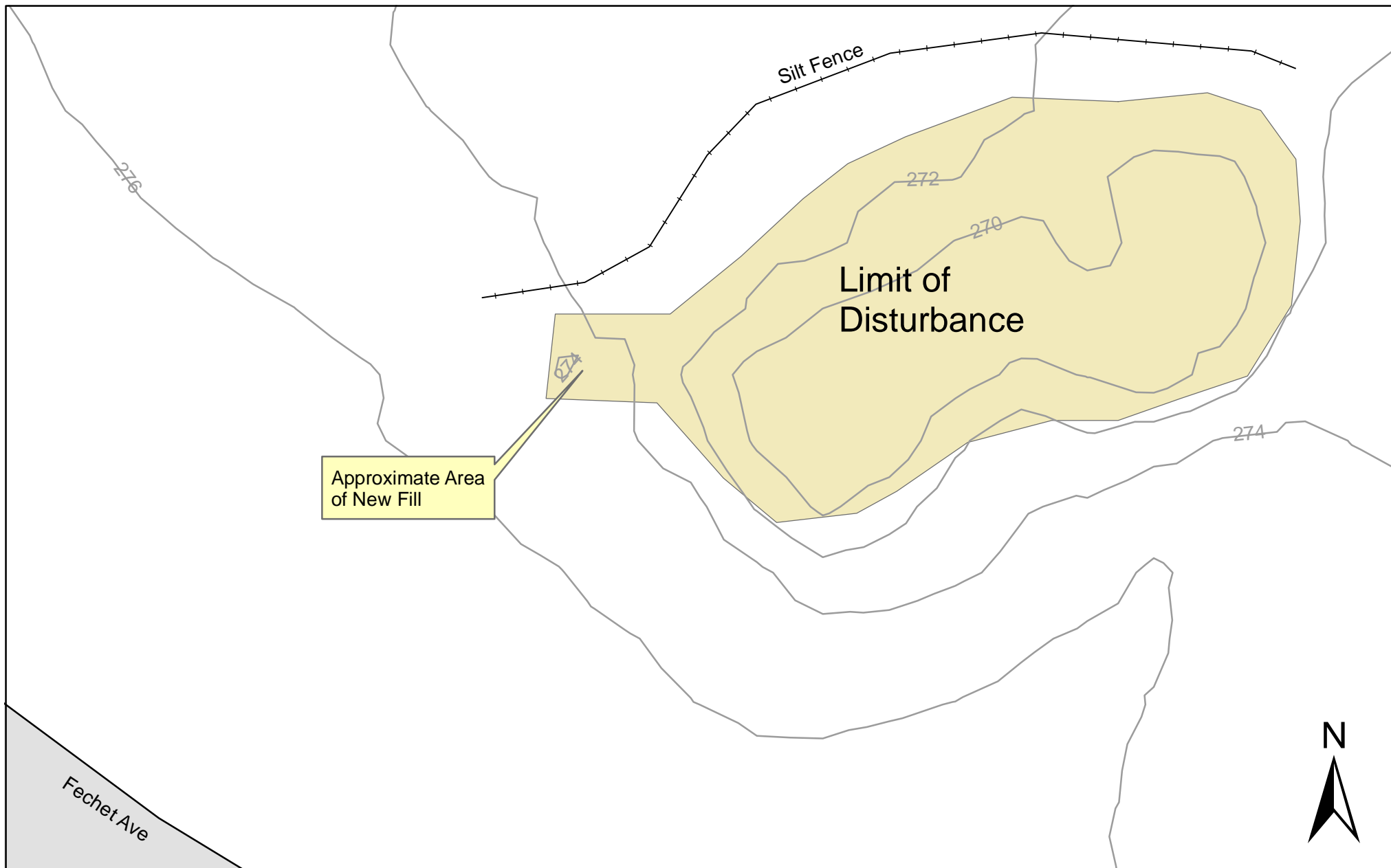
JOINT BASE ANDREWS STORMWATER SYSTEM REPAIR AND UPGRADES Site DP 3-9: Stormwater Pond Improvement (North Perimeter)



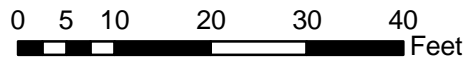
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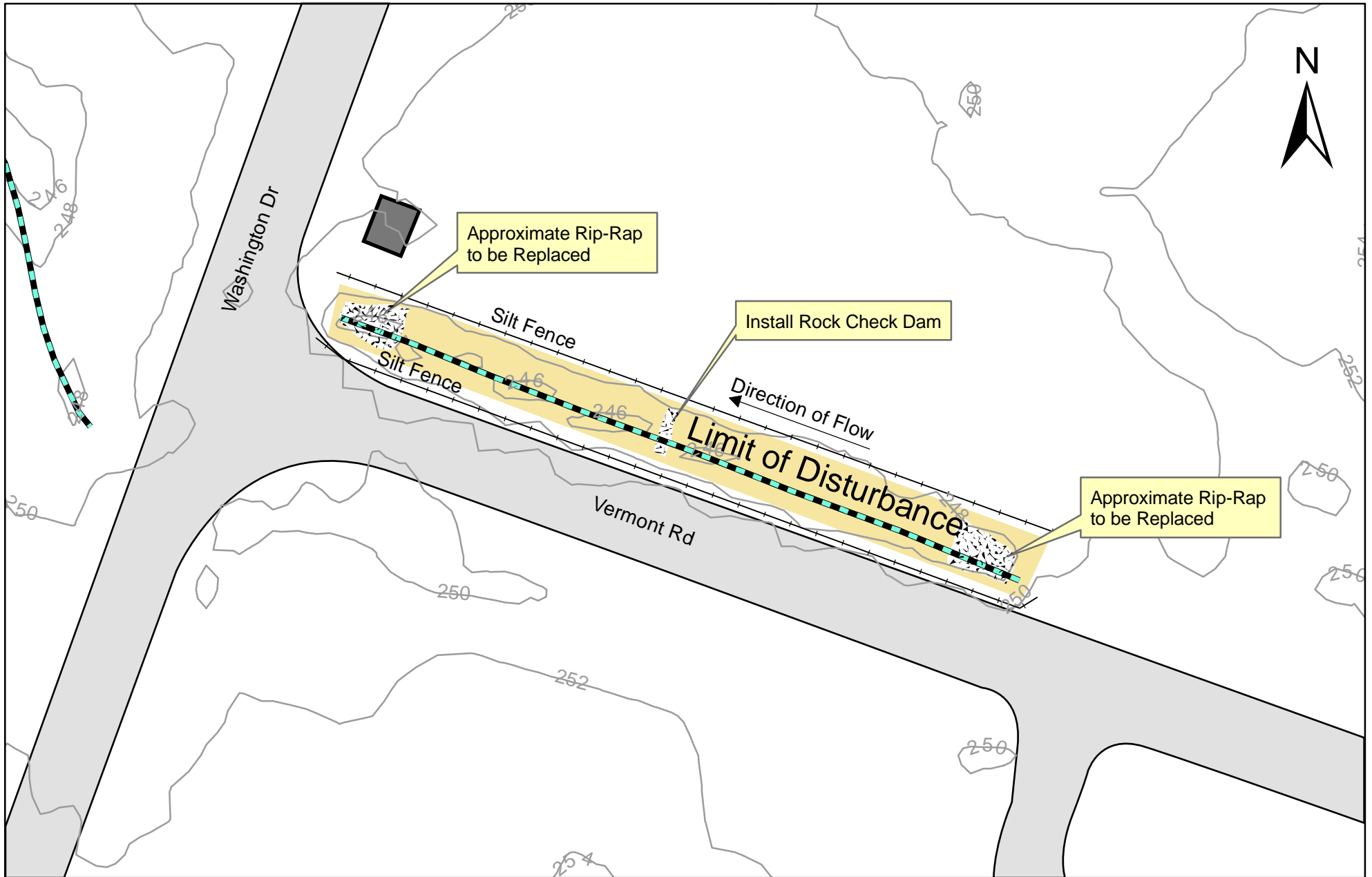
**JOINT BASE ANDREWS STORMWATER SYSTEM REPAIR AND UPGRADES
Site DP 3-10: Stormwater Pond Improvement (Skills Center)**



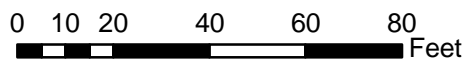
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Baltimore District



JOINT BASE ANDREWS STORMWATER SYSTEM REPAIR AND UPGRADES
Site DP 7-1: Stormwater Pond Improvement (Building 3705)



US Army Corps
of Engineers ©
Baltimore District



JOINT BASE ANDREWS STORMWATER SYSTEM REPAIR AND UPGRADES
Site GS 2-1: Grass Swale Improvement (Driving Range)

Appendix B

Air Quality Record of Non-Applicability

RECORD OF NON-APPLICABILITY

In Accordance with the Clean Air Act- General Conformity Rule for
Stormwater System Restoration and Upgrades at
Joint Base Andrews-Naval Air Facility Washington, Maryland

General Conformity under the Clean Air Act, Section 176 has been evaluated for the project described above according to the requirements of Title 40 of the Code of Federal Regulations Part 93, Subpart B. The requirements of this rule are not applicable to the action because:

☒ The project/action is an exempt action under 40 CFR 93.153(d)(4): Alteration and additions of existing structures as specifically required by new or existing applicable environmental legislation or environmental regulations."

OR

☐ Total direct and indirect emissions from this project/action have been estimated at (only include information for applicable pollutants):

NOx

VOC

PM2.5

Sox

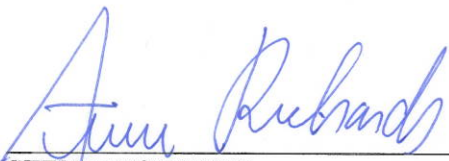
These emission rates are below the conformity threshold values established at 40 CFR 93.153(b):

Conformity Threshold Rate

NOx	100 tpy
VOC	50 tpy
PM2.5	100 tpy
Sox	100 tpy

Supported documentation and emission estimates are

☐ Attached
☒ Appear in the NEPA Documentation
☐ Other


STEVE RICHARDS
Chief of Environmental Management

Dec 3, 2012
Date

Appendix C

Correspondence



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

16 Feb 2011

MEMORANDUM FOR: SEE DISTRIBUTION

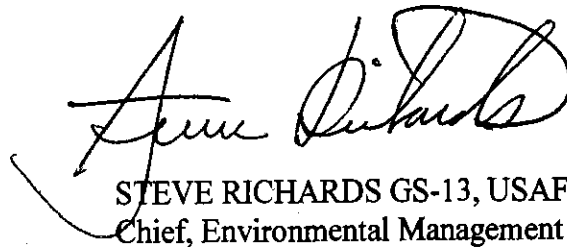
FROM: 11 CES/CEAN
3466 North Carolina Avenue
Andrews AFB MD 20762-4803

SUBJECT: Request for Project Review – Proposed Stormwater System Restoration and Upgrades at Joint Base Andrews, Prince George's County, Maryland

1. Joint Base Andrews (JBA) is preparing a Programmatic Environmental Assessment (PEA) to evaluate the potential environmental impacts from implementation of proposed stormwater system repairs and upgrades at JBA in Prince George's County, Maryland. The purpose of the Proposed Action is to restore and improve the condition and effectiveness of the existing stormwater management system by repairing or replacing inadequate, damaged or failing stormwater infrastructure. The Proposed Action consolidates these assessments, prioritizes the work needed, and implements recommendations in an orderly, programmatic fashion. The Proposed Action includes all of the stormwater system upgrade projects listed in Table 1 (Attachment 2). Locations of the proposed projects are shown on Figures 1 and 2 (Attachment 3).
2. Implementation of the proposed project is entirely within the boundary of the 4,346-acre JBA in southern Prince George's County, Maryland (Figure 1). The 4,346-acre installation is located approximately five miles southeast of Washington D.C.
3. The existing stormwater management system is channeled through oil-water separators, closed storm drains, swales and ditches that connect primarily to a subterranean network of storm drain pipes. Runoff from the Base is discharged through eight major outfalls concentrated primarily along the northern and eastern property boundary. Assessments of the stormwater collection and drainage system between 2004 and 2010 discovered that the system was degraded in several areas due to isolated ponding occurring during low-intensity rainfalls. Additionally, it was determined that several of the existing BMPs and infrastructure were failing or inadequate. A 2004 infrastructure assessment identified several areas dispersed throughout the Base where a high level of concern for failing drainage structures presently exist. Further studies such as a Perimeter Outfall Assessment and an Airfield Stormwater System Assessment provided recommendations to upgrade the stormwater systems.
4. The objective of the proposed improvements seek to restore and improve the condition, effectiveness and spill containment capacity of the existing stormwater management system by repairing and replacing inadequate, damaged or failing stormwater infrastructure. The failure and potential failure of the stormwater system is the result of a combination of factors that

include the deterioration of an ineffective design and improper maintenance of the system and by constructing new facilities to reduce erosion and sedimentation caused by stormwater runoff and overflows. Planned project activities include the removal of vegetation and sediment, the replacement of oil-water separator dams, check dams, riser and outfall piping, outfall weir, culverts and rip rap, the excavation and removal of concrete channeling, the restoration of stream beds, the conversion of dry ponds to bio-retention facilities and the construction of outfall fences and a new bio-retention basin. The total base-wide stormwater pipe and infrastructure improvements are approximated at 36,000 linear feet.

5. In accordance the Council on Environmental Quality guidelines pursuant to the requirements of the National Environmental Policy Act (NEPA), we invite your agency to comment on the proposed project and provide any relevant information about resources under your jurisdiction that may be present in the project area. Please provide written comments within 15 days from the date of this letter to Anne Hodges, 11 CES/CEAO, 3466 North Carolina Ave, Andrews AFB, MD 20762 or send via e-mail to anne.hodges@afncr.af.mil. If you need further information, please contact Ms. Hodges at 301-981-1426.



STEVE RICHARDS GS-13, USAF
Chief, Environmental Management

3 Attachments

1. Distribution
2. Proposed JBA Stormwater System Projects
3. Location Maps

DISTRIBUTION

Mr. Greg Golden
Environmental Review Unit
Maryland Department of Natural Resources
Tawes State Office Building B-3
580 Taylor Avenue
Annapolis, MD 21401

Mrs. Linda C. Janey, J.D.
Director, Maryland State Clearinghouse
Maryland Office of Planning, Room 1104
301 West Preston Street
Baltimore, MD 21201-2365

Ms. Brigid E. Kenney
Planning Director
Maryland Department of the Environment
Office of the Secretary
1800 Washington Blvd
Baltimore, MD 21230

Marie Halka
Deputy Director
Maryland Department of the Environment
SSA-Director's Office
1800 Washington Blvd.
Baltimore, MD 21230

Mr. J. Rodney Little
Department of Housing and Community Development
Maryland Historical Trust
Office of Preservation Services
100 Community Place
Crownsville, Maryland 21032

Mr. Leopoldo Miranda
U.S. Fish & Wildlife Service
Chesapeake Bay Field Office
177 Admiral Cochrane Drive
Annapolis, MD 21401

Ms. Fern Piret
Director of Planning
Prince George's County Department of Planning
14741 Governor Oden Bowie Drive, Room 4150
Upper Marlboro, MD 20772

Ms. Barbara Rudnick
NEPA Team Leader, Office of Environmental Programs (3EA30)
U.S. Environmental Protection Agency, Region III
1650 Arch Street
Philadelphia, PA 19103-2029

Mr. Alex Romero
National Capital Parks-East
1900 Anacostia Drive, SE
Washington, DC 20020

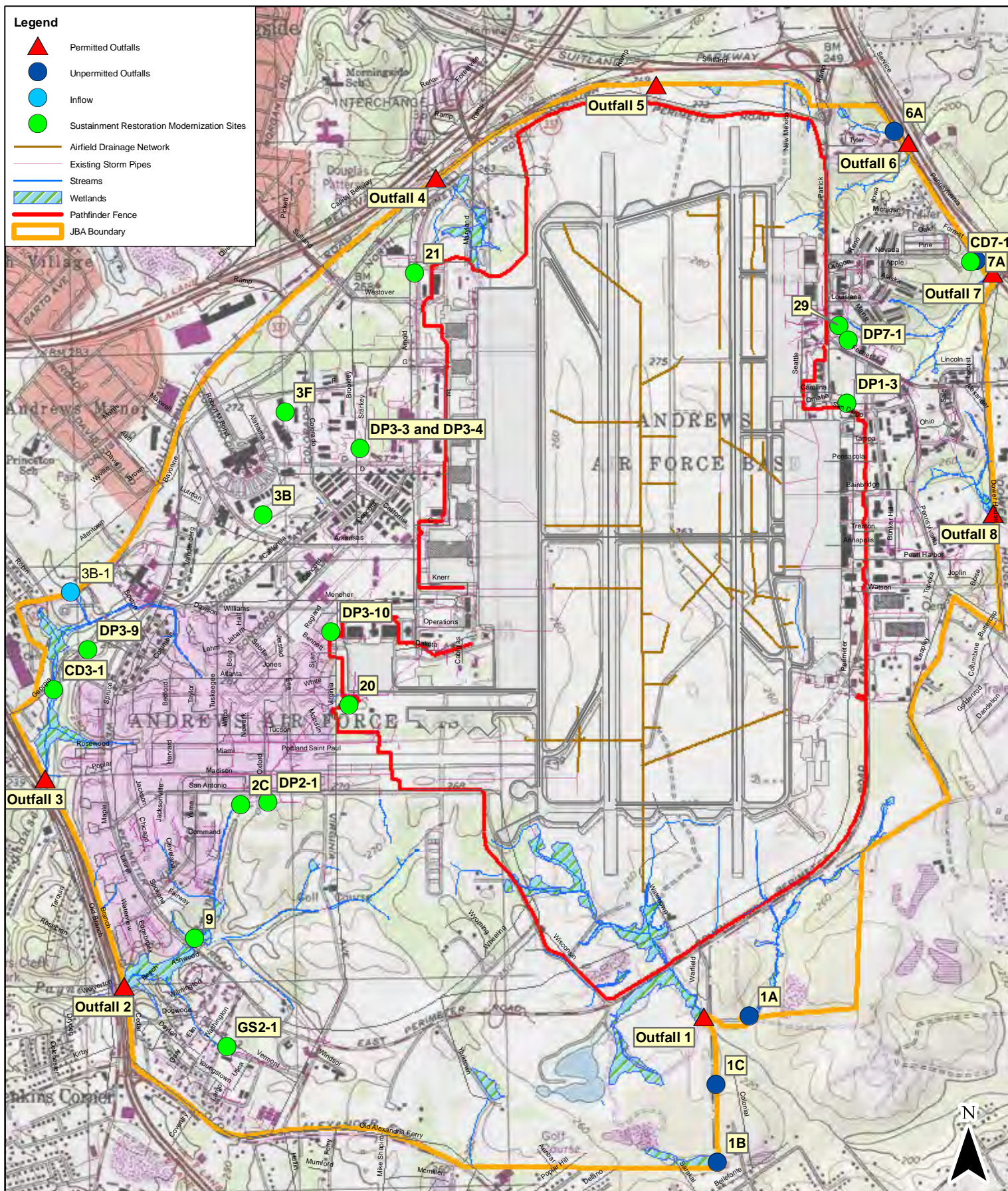
Table 1. JBA Projects and Areas of Disturbance

Project ID	Project Type	Location	Summary of Project	Area of Ground Disturbance (square feet)
CD 3-1	Check Dam	Ground Maintenance Facility off West Perimeter	Replace oil-water separator dam, add rip-rap for channel protection, remove and dispose of excess sediment and vegetation found, repair damage caused by erosion, infrastructure degradation, improper cleaning and maintenance, and improper design.	708
CD 7-1	Check Dam	Near Power Station 3787	Replace oil-water separator dam, and add rip-rap for channel protection.	455
DP 2-1	Dry Pond	San Antonio Blvd, west of Child Development Center	Replace riser and outfall piping, excavate to adjust storage volume, clear excess vegetation, and replace pilot channel.	22,054
DP 3-9	Dry Pond	North Perimeter Road	Replace riser and outfall piping, clear excess vegetation, and replace inflow from parking lot including rip-rap.	8,306
DP 7-1	Dry Pond	Near Building 3705	Remove excess vegetation, clear inlets, and place fill over exposed piping and sinkholes.	4,466
DP 3-10	Dry Pond	Skills Center on the corner of Virginia and Manohar	Clear excess vegetation, clear inlets, and replace rip-rap at inflows.	6,249
DP 1-3	Dry Pond	West of Fire Station #2	Clear inlets, replace outfall weir, and place fill over exposed piping.	4,563
GS 2-1	Grass Swale	Southwest corner of Golf Course driving range	Clear inlets, replace check dam, and replace rip-rap at inlets.	4,396

Project ID	Project Type	Location	Summary of Project	Area of Ground Disturbance (square feet)
2C	Detention Shallow Wetland	Southwest of the intersection of Oxford Road and San Antonio Boulevard	Proposed wetland will be an inline stormwater facility that receives flows through two 60 inch pipe culverts located underneath San Antonio Boulevard and a 30 inch pipe culvert draining from Dry Pond 2-1 near the day care center.	169,598
3B	Stream Restoration for the Concrete Channels	Wooded area north of California Avenue between Colorado Avenue and Arkansas Road	Construct restored stream beds in place of concrete channels to restore the stream to a more natural state.	198,652
3F	Shallow Wetland	Southwest of the intersection of F Street and Colorado Avenue	Remove portions of the existing concrete channel, excavate and dispose of materials generated during the construction of the shallow wetland.	23,244
9	Increase Culvert Capacity	50-foot long culvert crosses West Perimeter Road between Wilmington Court and Yuma Road	Increase capacity of an existing 36 inch concrete pipe culvert to minimize upstream ponding during large storm events and reduce the risk of roadway overtopping.	13,440
20	Retrofit Dry Pond into Bioretention Facility	Intersection of Atlanta Avenue and Virginia Avenue within the pathfinder fence	Remove and dispose of excess sediment and vegetation, repair damage caused by excess erosion, infrastructure degradation, improper cleaning and maintenance, and improper design. Dry pond will be converted into a bioretention facility.	33,427

Project ID	Project Type	Location	Summary of Project	Area of Ground Disturbance (square feet)
21	Infiltration Basin	Southeast of the intersection of Fairbanks Road and Arnold Avenue	Construction of infiltration basin.	4,845
29	Retrofit Storm Water Detention Pond	Near Patrick Avenue east of the parking lot and south of Building 3745	Remove and dispose of excess sediment and vegetation, repair damage caused by excess erosion, infrastructure degradation, improper cleaning and maintenance, and improper design.	28,434
DP 3-3 and DP3-4	Bioretention Basins	Near Chapel 3 that is located at the northeast corner of the intersection of D Street and Brookley Avenue	Convert two existing dry ponds (DP3-3 and DP3-4) into bioretention basins. Construct a third bioretention basin in the island created by the drop off circle for the chapel.	16,853
Outfalls 1-13, Inflow 1	Outfall Perimeter Improvements	Perimeter fence, various locations	Secure perimeter fence, provide maintenance access and provide adequate stormwater capacity for 25-year event at 8 permitted outfalls, 5 minor outfalls, 1 minor inflow	2,500 at each outfall
Airfield Drainage Network	Storm Drainage Network Pipe and Manhole Replacement	Airfield, drainage networks A-H and J	18 projects consisting of the replacement of a total of 36,746 linear feet of pipe and 110 manholes	734,920 ¹

¹ Calculation made assuming width of disturbance around all pipe was 20 feet





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

16 Feb 2011

Steve R. Richards
Natural Resources Management Chief (CEAN)
11th Civil Engineer Squadron
3466 North Carolina Avenue
Andrews AFB MD 20762-4803

Mr. J. Rodney Little
Department of Housing and Community Development
Maryland Historical Trust
Office of Preservation Services
100 Community Place
Crownsville, Maryland 21032

Re: Section 106 Consultation – Proposed Stormwater System Restoration and Upgrades at Joint Base Andrews, Prince George’s County, Maryland

Dear Mr. Little

Joint Base Andrews (JBA) is formally initiating consultation under Section 106 of the National Historic Preservation Act (NHPA) pursuant to the United States Code of Federal Regulations (CFR) Title 36, Part 800, “Protection of Historic Properties,” for the repair and upgrading of the existing stormwater system at JBA, Maryland. JBA is preparing a Programmatic Environmental Assessment (PEA) in accordance with the National Environmental Protection Act (NEPA) requirements to evaluate the potential environmental impacts from implementation of the proposed stormwater system upgrades at JBA. The PEA will address compliance with other Federal statutes, including the Endangered Species Act, Clean Water Act and Executive Orders.

Implementation of the proposed project is entirely within the boundary of the 4,346-acre JBA in southern Prince George’s County, Maryland (Figure 1). The 4,346-acre installation is located approximately five miles southeast of Washington D.C.

The existing stormwater management system is channeled through oil-water separators, closed storm drains, swales and ditches that connect primarily to a subterranean network of storm drain pipes. Runoff from the Base is discharged through eight major outfalls concentrated primarily along the northern and eastern property boundary. Assessments of the stormwater collection and drainage system between 2004 and 2010 discovered that the system was degraded in several areas due to isolated ponding occurring during low-intensity rainfalls. Additionally, it was determined that several of the existing BMPs and infrastructure were failing or inadequate. A 2004 infrastructure assessment identified several areas dispersed throughout the Base where a

high level of concern for failing drainage structures presently exist. Further studies such as a Perimeter Outfall Assessment and an Airfield Stormwater System Assessment provided recommendations to upgrade the stormwater systems.

The objective of the proposed improvements seek to restore and improve the condition, effectiveness and spill containment capacity of the existing stormwater management system by repairing and replacing inadequate, damaged or failing stormwater infrastructure. The failure and potential failure of the stormwater system is the result of a combination of factors that include the deterioration of an ineffective design and improper maintenance of the system and by constructing new facilities to reduce erosion and sedimentation caused by stormwater runoff and overflows. Planned project activities include the removal of vegetation and sediment, the replacement of oil-water separator dams, check dams, riser and outfall piping, outfall weir, culverts and rip rap, the excavation and removal of concrete channeling, the restoration of stream beds, the conversion of dry ponds to bio-retention facilities and the construction of outfall fences and a new bio-retention basin. The total base-wide stormwater pipe and infrastructure improvements are approximated at 36,000 linear feet (refer to Attachment 1 and Figure 2 for proposed action locations and summaries).

Area of Potential Effects (APE)

For both above-ground and archaeological resources, the APE was determined to consist of the 4,346-acre contiguous JBA property, accounting for all areas on JBA where effects to historic properties, if present, could occur (Figure 3).

Identification of Historic Properties

The following table summarizes the cultural resources surveys conducted at JBA, as presented in the 2009 ICRMP.

Year	Author	Title	Survey Type / Scope	Results of Evaluation
1993	NPS	Cultural Resources Report and Management Recommendations for Andrews AFB, Prince George's County	Assessment of potential cultural resources at Andrews AFB.	Belle Chance and Chapel II recommended NRHP eligible. MHT concurred re: Belle Chance, disagreed re: Chapel II.
1995	John Cullinane Assoc.	Inventory and Evaluation of Historic Resources	Identification / evaluation of buildings on base constructed before 1947. MHT survey forms prepared.	Belle Chance and Chapel II recommended NRHP eligible. All other pre-1947 buildings recommended as not eligible. MHT concurred re: Belle Chance and pre-1947, disagreed re: Chapel II.

Year	Author	Title	Survey Type / Scope	Results of Evaluation
1995	Argonne Lab.	An Archeological and Historic Resources Inventory at Andrews	Inventory in response to 1993 NPS recommendations.	3 archaeological sites on Davidsonville Transmitter Station, and 5 archaeological sites within AFB proper recommended potentially NRHP eligible. MHT requested further testing on 9 sites.
1996	Geo Marine Inc.	Andrews AFB, Camp Springs, Maryland – Inventory of Cold War Properties	Base-wide inventory of 28 Cold War-related buildings and structures as part of a Nationwide Air Force Cold War survey.	Building 3032 (the ANG Alert Hangar Building, c1946-48, no longer extant) recommended NRHP eligible. No MHT review.
1996	NPS	U.S. Air Force Cultural Resources Servicewide Overview Project: Andrews AFB	Assessment of historic property inventory and compliance efforts.	No evaluations undertaken.
1999	Bienenfeld and Leininger	Phase II Archeological Investigation at Andrews AFB and Davidsonville Transmitter Station	Evaluation of 9 sites previously identified in 1995 Argonne survey.	3 Davidsonville sites, and historic component of Belle Chance site (18PR447), recommended NRHP eligible. MHT review unclear.
2002	Parsons	Inventory of Selected Cold War Properties, Andrews AFB	Inventory / (re)evaluation of selected Cold War properties, including 16 buildings and 4 housing groups (54 buildings, total). MHT survey forms prepared.	No historic properties identified. MHT concurred re: all 70 evaluations.
2004	Child and Heidenrich	Phase I Archaeological Survey for Safety Zone Tree Control	Phase I survey, 313 STPs.	No historic properties identified. MHT review status unknown.
2008	Goodwin, Heidenrich, and Markel	Phase I Archaeological Survey of the Proposed Location for the Joint Air National Guard / Andrews AFB Munitions Storage Area	Phase I survey of 30 acres, SE corner of base.	No historic properties identified. MHT review status unknown.

Above-ground Resources. The NHPA defines historic property as one that is listed in or eligible for listing in the National Register of Historic Places (NRHP). One above-ground historic property has been identified within the APE: Belle Chance (PG:77-14, determined NRHP eligible, Figure 3).

The NRHP-eligible Belle Chance property (PG:77-14) includes a 1912 dwelling, two auxiliary buildings, a cemetery and one historic archaeological site (18PR447). The two-and-a-half-story Spanish Colonial Revival dwelling (JBA Building #1966) is a rare example of early residential concrete construction and was found significant under NRHP Criterion C. A one-

story concrete storage building (JBA Building #1967) and a one-story concrete garage (JBA Building #1968) are contributing resources to the Belle Chance property. The Estate was acquired by the government, during World War II through a “Declaration of Taking”, for the construction of Camp Springs Army Air Field in 1942. Most of the existing residential and commercial buildings were incorporated into base facilities or demolished. Belle Chance and the surrounding grounds were utilized as the base Commander’s primary residence. Although Belle Chance remains within the larger JBA boundary, the property was transferred out of Federal ownership in 2007. Proposed improvements in proximity to Belle Chance include the construction of a perimeter fence at outfall 4 and the construction of an infiltration basin approximately 900 feet southeast of Belle Chance (Project 21, Attachment 1 and Figure 2).

Two historic properties are located immediately outside of the APE: the Old Bells Methodist Church (NRHP eligible), and the Suitland Parkway (NRHP listed). The Old Bells Methodist Church, located at 6016 Allentown Road, sits outside the western boundary of JBA. In 1997 MHT provided their opinion that the circa 1910 building was eligible for inclusion in the NRHP under Criterion C as an example of rural church architecture. MHT also recommended further research be conducted to determine the property’s potential significance under Criterion A, within the contexts of Methodism during the early twentieth century and the role of the rural church in community life. The proposed improvements in proximity to Old Bells Methodist Church include the replacement of the oil-water separator dam and application of rip-rap for channel protection (Project CD3-1, Attachment 1 and Figure 2).

The 9.35-mile Suitland Parkway runs along JBA’s northern boundary. Conceived in 1937 and completed in 1944, the Parkway was constructed to improve road connections between the military installations of Bolling Air Force Base, Andrews Air Force Base and Washington D.C. Suitland Parkway. The Parkway was listed in the NRHP in 1995 under Criterion A and C for its role in World War II era transportation and for its significance in landscape design. The JBA drainage improvements propose the installation of perimeter fencing around outfall 5, along JBA’s northern property boundary just south of the Parkway (Figure 3).

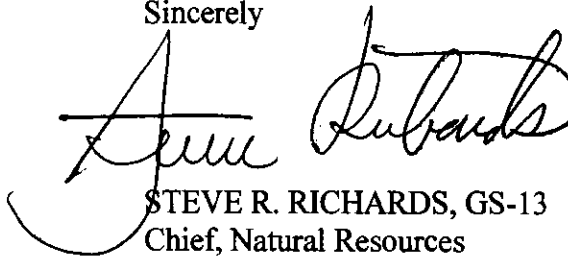
Archaeological Resources. The late eighteenth- to early nineteenth-century historic component of archaeological site 18PR447 has been determined eligible for listing in the NRHP and is part of the NRHP eligible Belle Chance property. The 2009 Integrated Cultural Resource Management Plan (ICRMP) indicates that additional archaeological components of the Belle Chance are likely to exist beyond the current survey limits, including the remnants of barns and other typical buildings, structures and remains associated with an eighteenth-century tobacco plantation. Planned activities with the potential to affect archaeological resources include the removal of existing vegetation and sediment; excavation of drainage ditches and concrete channeling; and the construction of a bio-retention basin.

Determination of Effects

JBA has determined the undertaking will have no adverse effect on historic properties. This finding is based on the nature of the undertaking, which primarily entails the refurbishment of existing infrastructure.

JBA requests that your agency review this letter and the attachments, and concur with JBA's findings and determinations as present herein. Should you have any questions, please contact me at (301)981-1652.

Sincerely



STEVE R. RICHARDS, GS-13
Chief, Natural Resources

Attachments:

Attachment 1 – Stormwater System Restoration/Upgrade Project Components

Figure 1 – JBA Location Map

Figure 2 – Project Component Location Map

Figure 3 – APE and Historic Property Locations

CC:

Mrs. Linda C. Janey, J.D.
Director, Maryland State Clearinghouse
Maryland Office of Planning, Room 1104
301 West Preston Street
Baltimore, MD 21201-2365

Mr. Alex Romero
National Capital Parks-East
1900 Anacostia Drive, SE
Washington, DC 20020

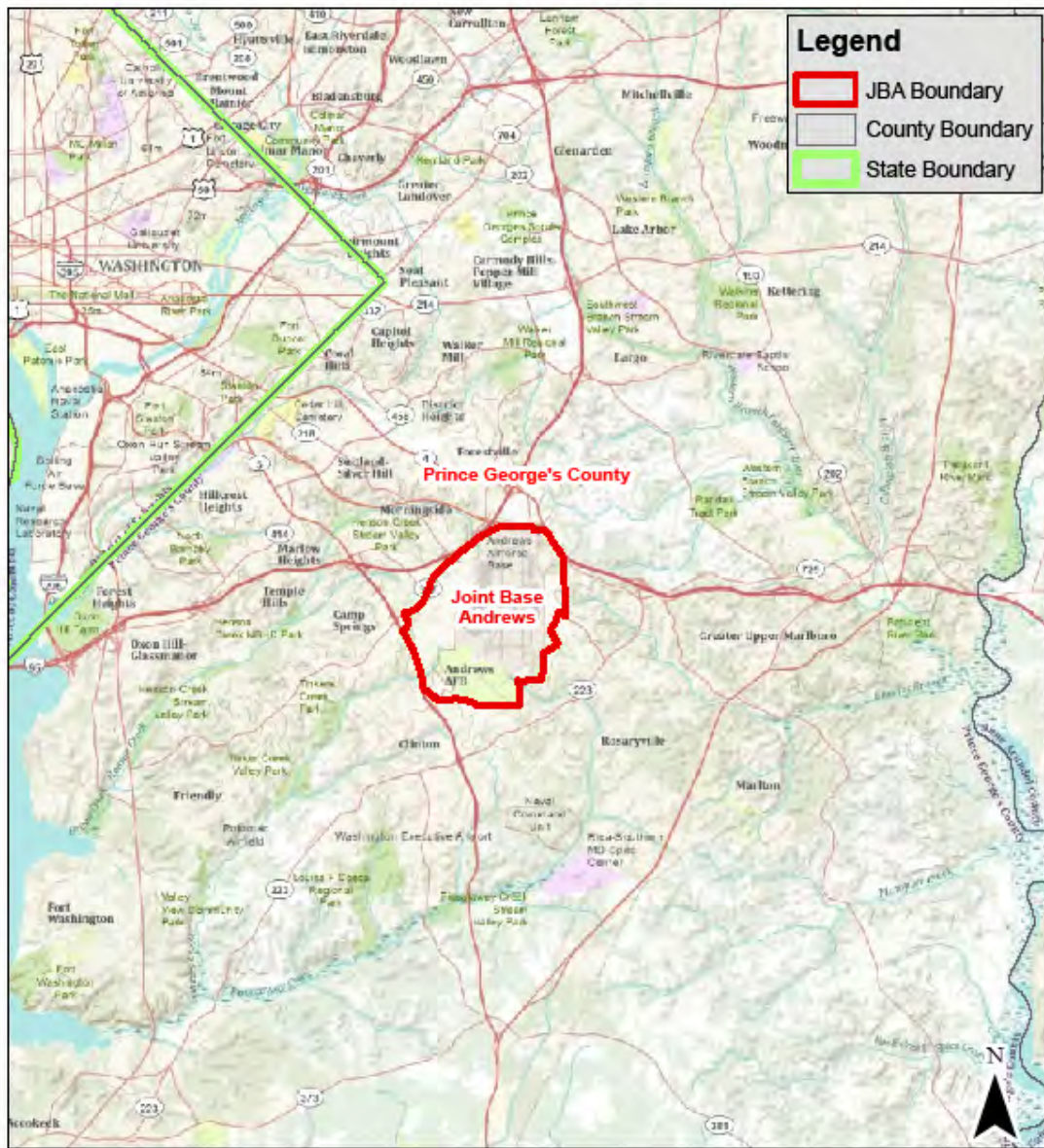
ATTACHMENT 1: STORMWATER SYSTEM RESTORATION/UPGRADE PROJECT COMPONENTS

The proposed undertaking currently includes all of the stormwater system upgrade projects listed in Table 1. Locations of the proposed projects are shown on Figure 2.

Project ID	Project Type	Location	Summary of Project
CD 3-1	Check Dam	Ground Maintenance Facility off West Perimeter	Replace oil-water separator dam, add rip-rap for channel protection, remove and dispose of excess sediment and vegetation found, repair damage caused by erosion, infrastructure degradation, improper cleaning and maintenance, and improper design.
CD 7-1	Check Dam	Near Power Station 3787	Replace oil-water separator dam, and add rip-rap for channel protection.
DP 2-1	Dry Pond	San Antonio Blvd, west of Child Development Center	Replace riser and outfall piping, excavate to adjust storage volume, clear excess vegetation, and replace pilot channel.
DP 3-9	Dry Pond	North Perimeter Road	Replace riser and outfall piping, clear excess vegetation, and replace inflow from parking lot including rip-rap.
DP 7-1	Dry Pond	Near Building 3705	Remove excess vegetation, clear inlets, and place fill over exposed piping and sinkholes.
DP 3-10	Dry Pond	Skills Center on the corner of Virginia Avenue and Manoher Road	Clear excess vegetation, clear inlets, and replace rip-rap at inflows.
DP 1-3	Dry Pond	West of Fire Station #2	Clear inlets, replace outfall weir, and place fill over exposed piping.
GS 2-1	Grass Swale	Southwest corner of Golf Course driving range	Clear inlets, replace check dam, and replace rip-rap at inlets.

Project ID	Project Type	Location	Summary of Project
2C	Detention Shallow Wetland	Southwest of the intersection of Oxford Road and San Antonio Boulevard	Proposed wetland will be an inline stormwater facility that receives flows through two 60 inch pipe culverts located underneath San Antonio Boulevard and a 30 inch pipe culvert draining from Dry Pond 2-1 near the day care center.
3B	Stream Restoration for the Concrete Channels	Wooded area north of California Avenue between Colorado Avenue and Arkansas Road	Construct restored stream beds in place of concrete channels to restore the stream to a more natural state.
3F	Shallow Wetland	Southwest of the intersection of F Street and Colorado Avenue	Remove portions of the existing concrete channel, excavate and dispose of materials generated during the construction of the shallow wetland.
9	Increase Culvert Capacity	50-foot long culvert crosses West Perimeter Road between Wilmington Court and Yuma Road	Increase capacity of an existing 36 inch concrete pipe culvert to minimize upstream ponding during large storm events and reduce the risk of roadway overtopping.
20	Retrofit Dry Pond into Bioretention Facility	Intersection of Atlanta Avenue and Virginia Avenue within the pathfinder fence	Remove and dispose of excess sediment and vegetation, repair damage caused by excess erosion, infrastructure degradation, improper cleaning and maintenance, and improper design. Dry pond will be converted into a bioretention facility.
21	Infiltration Basin	Southeast of the intersection of Fairbanks Road and Arnold Avenue	Construction of infiltration basin.

Project ID	Project Type	Location	Summary of Project
BR3-3, BR3-4, BR3-5	Bioretention Basins	Near Chapel 3 that is located at the northeast corner of the intersection of D Street and Brookley Avenue	Convert two existing dry ponds (DP3-3 and DP3-4) into bioretention basins. Construct a third bioretention basin in the island created by the drop off circle for the chapel. The three basins will be referred to as BR3-3, BR3-4, BR3-5, where BR3-3 is the bioretention basin replacing DP3-3, and BR3-4 is the bioretention basin replacing DP3-4.
WP7-1	Retrofit Storm Water Detention Pond	Near Patrick Avenue east of the parking lot and south of Building 3745	Remove and dispose of excess sediment and vegetation, repair damage caused by excess erosion, infrastructure degradation, improper cleaning and maintenance, and improper design.
Outfalls 1-13, Inflow 1	Outfall Perimeter Improvements	Perimeter fence, various locations	Secure perimeter fence, provide maintenance access and provide adequate stormwater capacity for 25-year event at 8 permitted outfalls, 5 minor outfalls, 1 minor inflow
Airfield Drainage Network	Storm Drainage Network Pipe and Manhole Replacement	Airfield, drainage networks A-H and J	18 projects consisting of the replacement of a total of 36,746 linear feet of pipe and 110 manholes



US Army Corps
of Engineers
Baltimore District

PROJECT	JBA Stormwater Restoration/Upgrades	JBA LOCATION MAP	
SCALE	Provided	FIGURE	1
SOURCE	U.S. Army Corps of Engineers		

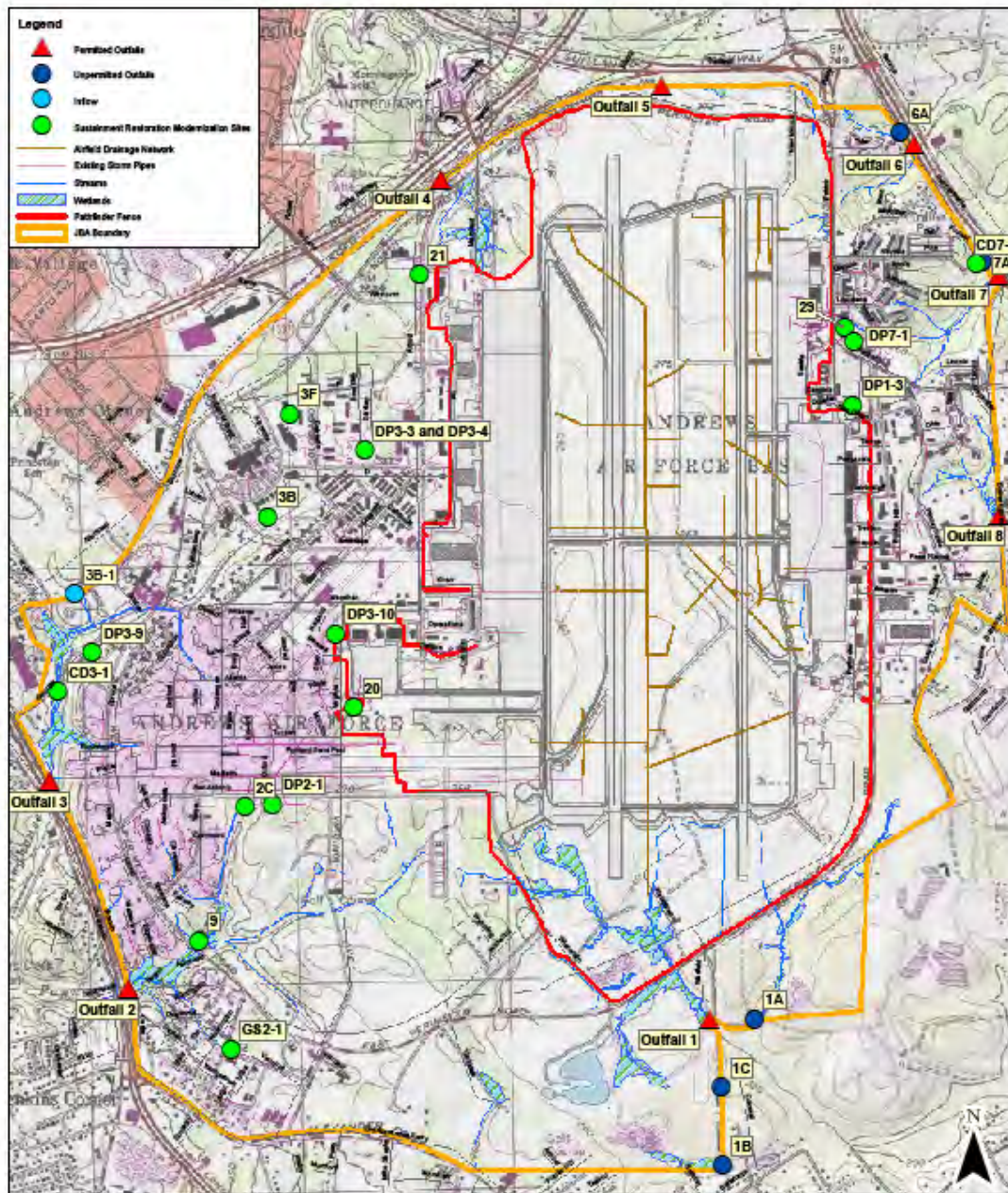
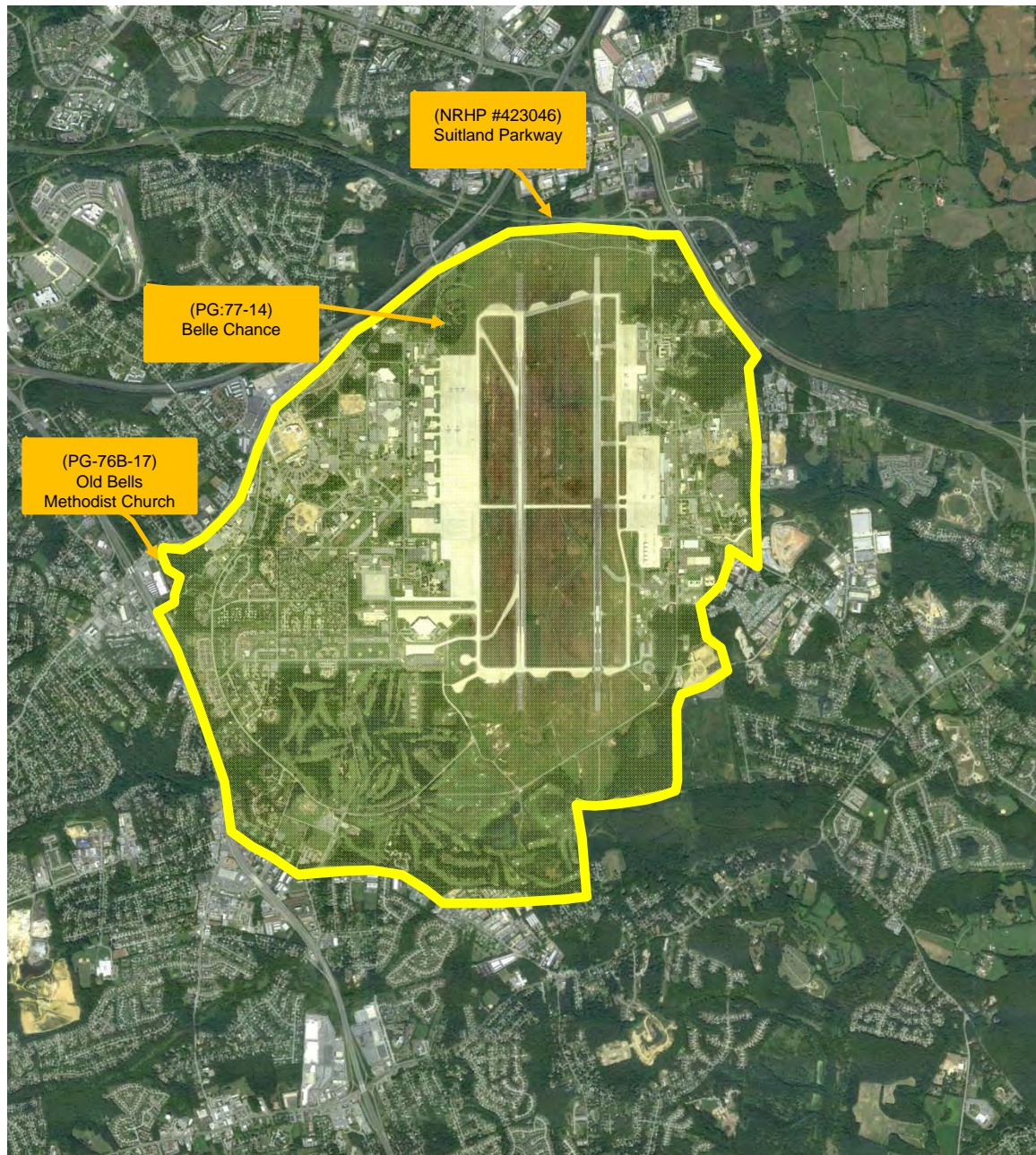


Figure 2: Location of Stormwater
System Upgrade Projects
Joint Base Andrews



PROJECT	JBA Stormwater Restoration/Upgrade	PROJECT COMPONENT LOCATION MAP	
SCALE	Provided		
SOURCE	U.S. Army Corps of Engineers	FIGURE	2



- APE
- Historic Properties

PROJECT JBA Stormwater Restoration/Upgrades	APE MAP SHOWING HISTORIC PROPERTY LOCATIONS	
SCALE N/A		
SOURCE Google Earth Professional 2010		FIGURE 3



Maryland Department of Planning

Martin O'Malley
Governor

Anthony G. Brown
Lt. Governor

Richard Eberhart Hall
Secretary

Matthew J. Power
Deputy Secretary

February 23, 2011

Mr. Steven Richards
Chief, Environmental Management
U.S. Department of the Air Force
11 CES/CEAO
3466 North Carolina Avenue
Andrews Air Force Base, MD 20762

STATE CLEARINGHOUSE REVIEW PROCESS

State Application Identifier: MD20110223-0071

Reviewer Comments Due By: March 7, 2011

Project Description: Scoping prior to preparation of Programmatic E.A. to evaluate impacts of proposed stormwater, and system repairs and upgrades

Project Location: County of Prince George's

Clearinghouse Contact: Bob Rosenbush

Dear Mr. Richards:

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 Departments of Business and Economic Development, Transportation, the Environment, Natural Resources; the County of Prince George's; the Maryland-National Capital Park and Planning Commission; and the Maryland Department of Planning; including the Maryland Historical Trust. They have been requested to contact your agency directly by **March 7, 2011** 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 **March 7, 2011** 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, J.D., Assistant Secretary
for Clearinghouse and Communications

LCJ:BR

cc: Beth Cole - MHT*
Mike Paone - MDPL*
Kate Fritz - M-NCPPCP*
Tammy Edwards - DBED*
Nichol Conley - MDOT*

11-0071_NDC.NEW.doc
Joane Mueller - MDE*
Joe Abe - DNR*

Beverly Warfield - PGEO*
Anne Hodges - AAFB

rec'd 3/2/11
(postmarked 2/25/11)

Stormwater EA



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

Robert M. Summers, Ph.D
Acting Secretary

Anthony G. Brown
Lieutenant Governor

March 10, 2011

Mr. Steven Richards
U.S. Department of the Air Force
11 CES/CEAO
3466 N. Carolina Avenue
Andrews Air Force Base, MD 20762

RE: State Application Identifier: MD20110223-0071
Project: Scoping Prior to Preparation of Programmatic EA

Dear Mr. Richards:

Thank you for providing the Maryland Department of the Environment (MDE) with the opportunity to comment on the above-referenced project. Copies of the documents were circulated throughout MDE for review, and it has been determined that this project is consistent with MDE's plans, programs and objectives.

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,

Joane D. Mueller
MDE Clearinghouse Coordinator
Office of Communications

cc: Bob Rosenbush, State Clearinghouse

Postmarked 3/11/2011



Martin O'Malley, Governor
Anthony G. Brown, Lt. Governor
John R. Griffin, Secretary
Joseph P. Gill, Deputy Secretary

11-MIS-111

March 14, 2011

Steve Richards
Department of the Air Force
11 CES/CEAN
3466 North Carolina Avenue,
Andrews AFB, MD 20762

Subject: Fisheries Information for Proposed Stormwater System Repairs and Upgrades at Joint Base Andrews in Prince George's County, Maryland.

Dear Mr. Richards,

The above referenced project has been reviewed to determine fisheries species in the vicinity of the proposed project. The proposed activities include the stormwater system repairs and upgrades at Joint Base Andrews in Prince George's County, Maryland.

Streams and tributaries near the site include Piscataway Creek, Henson Creek, Paynes Branch, and Meetinghouse Branch in the Washington Metropolitan Basin, and Cabin Branch and Charles Branch in the Patuxent River Basin. Tributaries near the site are classified as Use I streams (Water Contact Recreation, and Protection of Aquatic Life). Generally, no instream work is permitted in Use I streams during the period of March 1 through June 15, inclusive, during any year.

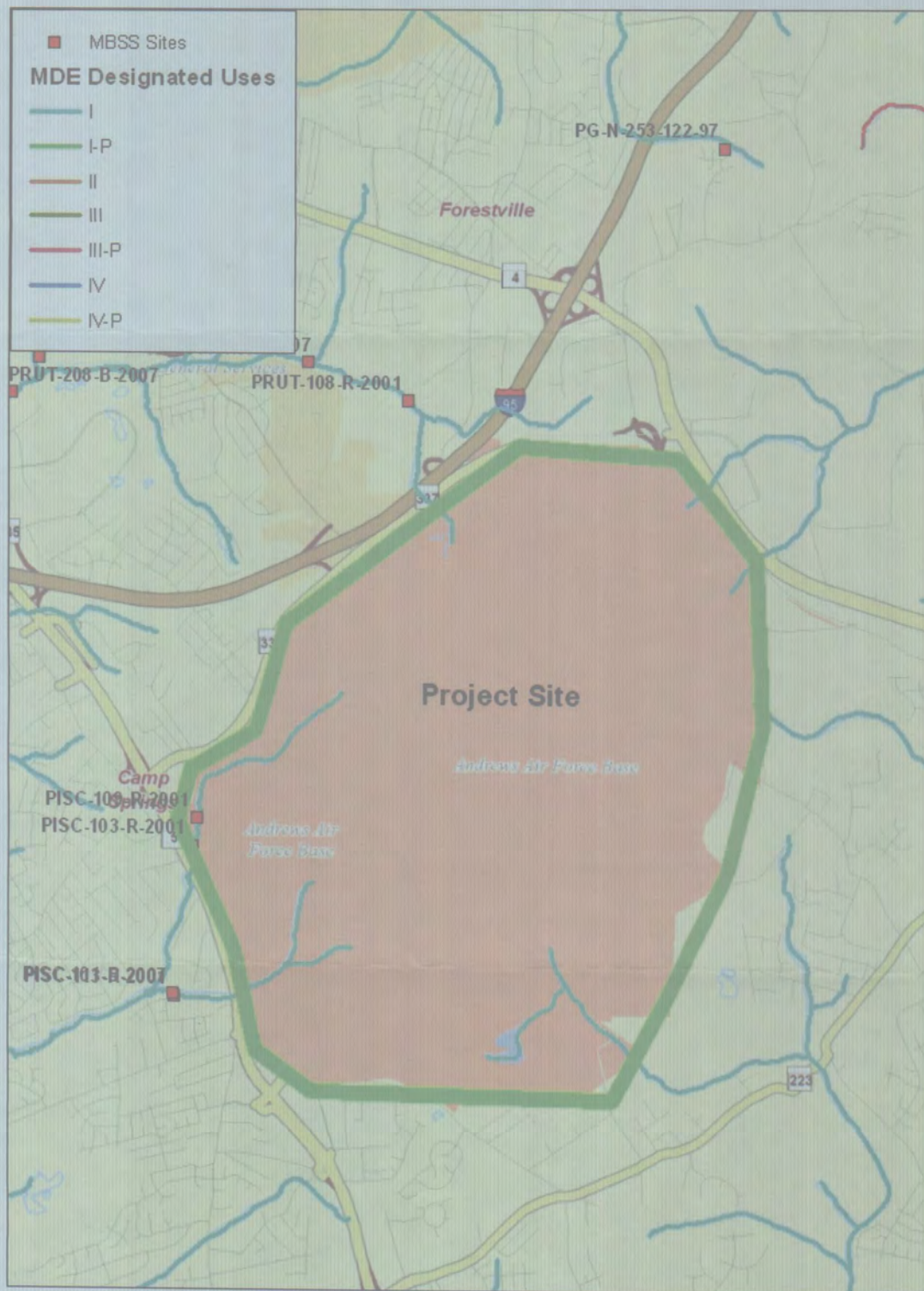
No anadromous fish have been documented near the project site. However, these streams may support many resident fish species documented by our Maryland Biological Stream Survey. There are Maryland Biological Stream Survey (MBSS) stations near the project location. The species collected at two of these stations have been itemized in the attached list. MBSS data can be accessed via the MDDNR web page at <http://mdimap.towson.edu/streamhealth/>, allowing access to resource surveys in neighboring tributaries.

If you have further questions, please contact the Environmental Review Program at 410-260-8799.

Sincerely,

Ken Yetman
Environmental Review Program

Attachments



The following fishes were collected at PRUT-108-R-2001

Common name	Percent of total
<u>BLACKNOSE DACE</u>	75.2
<u>CREEK CHUB</u>	16.4
<u>SWALLOWTAIL SHINER</u>	3.8
<u>AMERICAN EEL</u>	1.3
<u>WHITE SUCKER</u>	1.3
<u>PUMPKINSEED</u>	0.8
<u>TESSELLATED DARTER</u>	0.8
<u>REDBREAST SUNFISH</u>	0.4

The following fishes were collected at PISC-109-R-2001

Common name	Percent of total
<u>BLACKNOSE DACE</u>	44.2
<u>GREEN SUNFISH</u>	21.4
<u>CREEK CHUB</u>	14.3
<u>ROSYSIDE DACE</u>	3.7
<u>SWALLOWTAIL SHINER</u>	3.4
<u>WHITE SUCKER</u>	2.7
<u>PUMPKINSEED</u>	2.4
<u>REDBREAST SUNFISH</u>	2.4
<u>COMMON SHINER</u>	1.7
<u>TESSELLATED DARTER</u>	1.4
<u>CREEK CHUBSUCKER</u>	1.0
<u>AMERICAN EEL</u>	0.7
<u>EASTERN MUDMINNOW</u>	0.7



United States Department of the Interior



FISH AND WILDLIFE SERVICE

Chesapeake Bay Field Office
177 Admiral Cochrane Drive
Annapolis, Maryland 21401
<http://www.fws.gov/chesapeakebay>

September 6, 2011

Steve Richards
Dept. of the Air Force
Head Quarters 11th Wing (AFDW)
Andrews Air Force Base, Md 20762

RE: Proposed Storm water System Restoration and upgrades at base Andrews, Prince Georges County, Md

Dear Mr. Richards:

This responds to your letter, received February, 16, 2011, requesting information on the presence of species which are federally listed or proposed for listing as endangered or threatened within the vicinity of the above reference project area. We have reviewed the information you enclosed and are providing comments in accordance with section 7 of the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*).

Except for occasional transient individuals, no federally proposed or listed endangered or threatened species are known to exist within the project impact area. Therefore, no Biological Assessment or further section 7 Consultation with the U.S. Fish and Wildlife Service is required. Should project plans change, or if additional information on the distribution of listed or proposed species becomes available, this determination may be reconsidered.

This response relates only to federally protected threatened or endangered species under our jurisdiction. For information on the presence of other rare species, you should contact Lori Byrne of the Maryland Wildlife and Heritage Division at (410) 260-8573.

Effective August 8, 2007, under the authority of the Endangered Species Act of 1973, as amended, the U.S. Fish and Wildlife Service (Service) removed (delist) the bald eagle in the lower 48 States of the United States from the Federal List of Endangered and Threatened Wildlife. However, the bald eagle will still be protected by the Bald and Golden Eagle Protection Act, Lacey Act and the Migratory Bird Treaty Act. As a result, starting on August 8, 2007, if your project may cause "disturbance" to the bald eagle, please consult the "National Bald Eagle Management Guidelines" dated May 2007.

If any planned or ongoing activities cannot be conducted in compliance with the National Bald Eagle Management Guidelines (Eagle Management Guidelines), please contact the Chesapeake Bay Ecological Services Field Office at 410-573-4573 for technical assistance. The Eagle



Management Guidelines can be found at:

<http://www.fws.gov/migratorybirds/issues/BaldEagle/NationalBaldEagleManagementGuidelines.pdf>.

In the future, if your project can not avoid disturbance to the bald eagle by complying with the Eagle Management Guidelines, you will be able to apply for a permit that authorizes the take of bald and golden eagles under the Bald and Golden Eagle Protection Act, generally where the take to be authorized is associated with otherwise lawful activities. This proposed permit process will not be available until the Service issues a final rule for the issuance of these take permits under the Bald and Golden Eagle Protection Act.

An additional concern of the Service is wetlands protection. Federal and state partners of the Chesapeake Bay Program have adopted an interim goal of no overall net loss of the Basin's remaining wetlands, and the long term goal of increasing the quality and quantity of the Basin's wetlands resource base. Because of this policy and the functions and values wetlands perform, the Service recommends avoiding wetland impacts. All wetlands within the project area should be identified, and if construction in wetlands is proposed, the U.S. Army Corps of Engineers, Baltimore District, should be contacted for permit requirements. They can be reached at (410) 962-3670.

We appreciate the opportunity to provide information relative to fish and wildlife issues, and thank you for your interests in these resources. If you have any questions or need further assistance, please contact Devin Ray at (410) 573-4531.

Sincerely,



Leopoldo Miranda
Supervisor



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

21 Feb 2012

Mr. Greg Golden, Environmental Review Unit
Maryland Department of Natural Resources
Tawes State Office Building B-3
580 Taylor Ave
Annapolis, MD 21401

Dear Mr. Golden,

Joint Base Andrews (JBA) has prepared an Environmental Assessment (EA) and Finding of No Significant Impact/Finding of No Practicable Alternative (FONSI/FONPA) for implementation of Stormwater System Repair and Upgrades at JBA in Prince George's County, Maryland. The Draft EA and FONSI/FONPA have been prepared 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).

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In accordance with Executive Order 12372, Intergovernmental Review of Federal Programs, we request your review of the draft EA and FONSI/FONPA. The documents are available for review and comment until 18 Mar 2012 at <http://www.andrews.af.mil/library/environmental/index.asp>. Please address written comments to:

Ms. Anne Hodges
11 CES/CEAO
3466 North Carolina Ave.
Joint Base Andrews, MD 20762
(or email anne.hodges@afncr.af.mil)

Please contact me at (301) 981-1426 if you have any questions or concerns.

Sincerely,

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Anne Hodges
Environmental Planner

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Annapolis, MD 21401

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Director, Maryland State Clearinghouse
Maryland Office of Planning, Room 1104
301 West Preston St.
Baltimore, MD 21201-2365

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Planning Director
Maryland Department of the Environment
Office of the Secretary
1800 Washington Blvd.
Baltimore, MD 21230

Marie Halka
Deputy Director
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SSA-Director's Office
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Mr. J. Rodney Little
Maryland Historical Trust
Office of Preservation Services
100 Community Place
Crownsville, MD 21032

Ms. Genevieve LaRouche
US Fish & Wildlife Service
Chesapeake Bay Field Office
177 Admiral Cochrane Dr.
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Ms. Fern Piret
Director of Planning
Prince George's County Department of Planning
14741 Governor Oden Bowie Dr, Room 4150
Upper Marlboro, MD 20772

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Office of Environmental Programs (3EA30)
US Environmental Protection Agency, Region
III
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401 9th Street, NW
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Mr. Michael W. Weil, Urban Planner
National Capital Planning Commission
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**DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 11TH WING (AFDW)
JOINT BASE ANDREWS, MARYLAND 20762**

21 Feb 2012

Mrs. Linda C. Janey, JD
Director, Maryland State Clearinghouse
Maryland Office of Planning, Room 1104
301 West Preston St.
Baltimore, MD 21201-2365

Dear Mrs. Janey,

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(or email anne.hodges@afncr.af.mil)

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Anne Hodges
Environmental Planner

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

21 Feb 2012

Ms. Brigid E. Kenney
Planning Director
Maryland Department of the Environment
Office of the Secretary
1800 Washington Blvd.
Baltimore, MD 21230

Dear Ms. Kenney,

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Environmental Planner

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

21 Feb 2012

Marie Halka
Deputy Director
Maryland Department of the Environment
SSA-Director's Office
1800 Washington Blvd
Baltimore, MD 21230

Dear Ms. Halka,

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**DEPARTMENT OF THE AIR FORCE
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JOINT BASE ANDREWS, MARYLAND 20762**

21 Feb 2012

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Maryland Historical Trust
Office of Preservation Services
100 Community Place
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21 Feb 2012

Ms. Genevieve LaRouche
US Fish & Wildlife Service
Chesapeake Bay Field Office
177 Admiral Cochrane Dr.
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National Capital Planning Commission
401 9th Street, NW
North Lobby, Suite 500
Washington, DC 20004



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

21 Feb 2012

Ms. Fern Piret
Director of Planning
Prince George's County Department of Planning
14741 Governor Oden Bowie Dr, Room 4150
Upper Marlboro, MD 20772

Dear Ms. Piret,

Joint Base Andrews (JBA) has prepared an Environmental Assessment (EA) and Finding of No Significant Impact/Finding of No Practicable Alternative (FONSI/FONPA) for implementation of Stormwater System Repair and Upgrades at JBA in Prince George's County, Maryland. The Draft EA and FONSI/FONPA have been prepared 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).

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Ms. Anne Hodges
11 CES/CEAO
3466 North Carolina Ave.
Joint Base Andrews, MD 20762
(or email anne.hodges@afncr.af.mil)

Please contact me at (301) 981-1426 if you have any questions or concerns.

Sincerely,

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Anne Hodges
Environmental Planner

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Maryland Department of Natural Resources
Tawes State Office Building B-3
580 Taylor Ave
Annapolis, MD 21401

Mrs. Linda C. Janey, JD
Director, Maryland State Clearinghouse
Maryland Office of Planning, Room 1104
301 West Preston St.
Baltimore, MD 21201-2365

Ms. Brigid E. Kenney
Planning Director
Maryland Department of the Environment
Office of the Secretary
1800 Washington Blvd.
Baltimore, MD 21230

Marie Halka
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Office of Environmental Programs (3EA30)
US Environmental Protection Agency, Region
III
1650 Arch Street
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National Capital Parks-East
1900 Anacostia Dr, SE
Washington, DC 20020

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401 9th Street, NW
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Washington, DC 20004

Mr. Michael W. Weil, Urban Planner
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HEADQUARTERS 11TH WING (AFDW)
JOINT BASE ANDREWS, MARYLAND 20762**

21 Feb 2012

Ms. Barbara Rudnick, NEPA Team Leader
Office of Environmental Programs (3EA30)
US Environmental Protection Agency, Region III
1650 Arch Street
Philadelphia, PA 19103-2029

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

21 Feb 2012

Mr. Alex Romero
National Capital Parks-East
1900 Anacostia Dr, SE
Washington, DC 20020

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Anne Hodges
Environmental Planner

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21 Feb 2012

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National Capital Planning Commission
401 9th Street, NW
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Washington, DC 20004

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

21 Feb 2012

Mr. Michael W. Weil, Urban Planner
National Capital Planning Commission
401 9th Street, NW
North Lobby, Suite 500
Washington, DC 20004

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PUBLIC NOTICE

Notice of Availability

Draft Environmental Assessment and Finding of No Significant Impact/Finding of No Practical Alternative for Joint Base Andrews-Naval Air Facility Washington, Maryland

The Air Force District Washington and the 11th Wing, announce the availability of and invite public comments on the Draft Environmental Assessment (EA) and Finding of No Significant Impact/Finding of No Practical Alternative (FONSI/FONPA) for implementation of storm water system repair and upgrades at Joint Base Andrews-Naval Air Facility Washington, Md. The Draft EA and FONSI/FONPA have been prepared pursuant to NEPA, 42 U.S.C. 4321 et seq, and CEQ regulations at 40 CFR Parts 1500-1508.

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The Gazette


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2/20/12

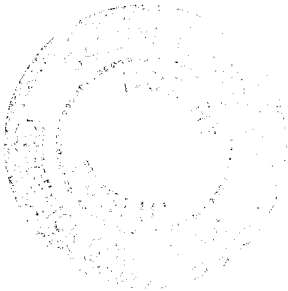
This is to certify that the annexed advertisement of PUBLIC NOTICE: DRAFT EA and FONSI/FONPA was published in a paper of record known as The Gazette of Politics and Business, a weekly subscription newspaper published in Montgomery and Frederick Counties, Maryland. The ad appeared once a week for 1 week(s), before 2/18/12.

Copy of Ad Attached
Ad Order Number: 021734B

Gazette Legal Advertising Department


Notary *Carolyn M. Hummel*

My Commission Expires: 01/01/13



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021734

(2-17-12)

The Gazette

Serving Maryland Communities since 1959

9030 Comprint Court, Gaithersburg, MD 20877 301-846-2108

3/9/12

This is to certify that the annexed advertisement of NOTICE OF AVAILABILITY: DRAFT ENVIRONMENTAL ASSESSMENT AND FINDING OF NO SIGNIFICANT IMPACT/FINDING OF NO PRACTICAL ALTERNATIVE FOR JOINT BASE ANDREWS-NAVAL AIR FACILITY WASHINGTON, MARYLAND was published in the Upper Marlboro/Clinton/Ft. Washington Gazette newspapers, a weekly newspaper published in Prince George's County, Maryland. The Ad appeared once a week for one week, before 3/9/12.

Copy of Ad Attached

Ad Order Number

11172107

Publication Date(s)

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(3-8-12)

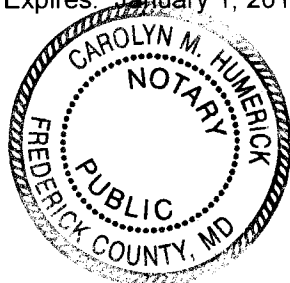
Gazette Legal Advertising Department



Notary Public



My Commission Expires: January 1, 2013



IN REPLY REFER TO:
NCPC File No. 7354

March 16, 2012

Ms. Anne Hodges
11 CES/CEAO
3466 North Carolina Avenue
Joint Base Andrews, MD 20762

Re: Stormwater System Repair and Upgrades Project Draft Environmental Assessment

Dear Ms. Hodges:

Thank you for the opportunity to comment on the Stormwater System Repair and Upgrades Project Draft Environmental Assessment (DEA) on behalf of the National Capital Planning Commission (NCPC). As the central planning agency for the federal government in the National Capital Region, NCPC has review authority related to the overall project under the National Capital Planning Act (40 USC § 8722 (b) (1)).¹ Overall, we note that the Proposed Action is intended to rehabilitate the existing on-base stormwater management system to improve water quality; to comply with applicable water quality regulations; and to help improve the natural environment. As such, the project appears to be consistent with several policies contained in the Federal Environment Element of the Federal Elements of the Comprehensive Plan for the National Capital, in particular:

- Use pervious surfaces and retention ponds to reduce stormwater runoff and impacts to off-site water quality. (Water Quality policies # 5)
- Encourage the natural recharge of groundwater and aquifers by limiting the creation of impervious surfaces ... and designing stormwater swales and collection basins on federal installations. (Water Supply policy # 1)
- Coordinate wetland activities with federal, state, and local government programs and regulations, and with special programs such as the Chesapeake Bay 2000 Agreement. (Land Resources - Wetlands policy # 3)
- Encourage facility design and landscaping practices that provide cover and food for native wildlife. (Land Resources – Wildlife Habitats policy # 4)
- Encourage the restoration of degraded water and land resources, in coordination with federal and local agencies. (Land Resources – Wildlife Habitats policy # 4)

¹ The Planning Act requires federal and District of Columbia agencies to advise and consult with NCPC in the preparation of agency plans prior to preparation of construction plans.

The following sections provide NCPC staff comments that should be addressed in the Final Environmental Assessment (FEA) and all future related project submissions.

2.1 Description of the Proposed Action and Alternatives

The DEA does not adequately describe how the proposed overall stormwater management system project (all 16 projects combined) will change (net) the total area of wetlands, area dedicated to stormwater management, forests, and pervious/impervious (paved) area on Joint Base Andrews (JBA). Specifically, the Comprehensive Plan guides federal installations to reduce the amount of impervious surface area on federal property, and this information is necessary to understand the overall project impacts. Please provide net area changes for all relevant land uses (i.e. wetlands, pavement, etc.) related to the overall improvement project in the FEA and if possible, specify the net changes for each proposed facility type (dry ponds, bioretention basins, grass swales, stream restoration, etc.). If exact areas are unknown at this time, please provide best numerical estimates for area net changes in the FEA, and more detailed information in future individual project submissions.

2.3.1 Site Specific Best Management Practices

The draft EA is not clear whether the proposed 16 individual facility sites comprise the entire stormwater management system for JBA, or rather part of the complete system. Please clarify this point and if there are additional sites, please show these locations in the final EA document.

2.5 Comparison Matrix of Environmental Effects of All Alternatives

The DEA specifies that “adverse impacts would be mitigated by post-construction revegetation” in the summary table (Resource – Vegetation) on page 2-16; however, the document does not specify whether native plants will be used in future re-vegetation efforts. The DEA also explains that disturbed areas at all individual project sites will be re-vegetated in the Environmental Consequences – Vegetation Section (page 4-18). The Comprehensive Plan encourages the use of native plant species, where appropriate. Please include this information in the FEA.

4.3.3.1 Environmental Consequences – *Surface Water*

The DEA states that the overall project will improve downstream water quality and reduce stormwater runoff from JBA; however, the draft document does not specifically quantify either of these improvements (water quality or runoff volume). The Comprehensive Plan encourages federal agencies to avoid thermal pollution and to reduce sedimentation and pollutants in waterways. Please include more detailed information in the final document about the overall project’s impact on stormwater runoff and water quality to provide a better understanding of the

overall project. If exact figures are unknown at this time, please provide best numerical estimates to demonstrate these improvements in the FEA, and more detailed information in future individual project submissions.

The draft document states that the proposed project will help JBA meet existing NPDES MS4 permit conditions, Maryland Department of the Environment (MDE) water quality requirements, and Chesapeake Bay Total Maximum Daily Load (TMDL) requirements (page 4-5). Please explain these requirements in more detail, as well as how the overall system improvement project will help JBA meet the requirements in the FEA. If possible, please show the applicable numeric MDE water quality standards that JBA is required to meet (on-site and/or downstream); the pollutant levels under existing conditions (prior to project implementation); and the forecasted future pollutant levels (once the project is fully constructed), to help illustrate anticipated overall project impacts.

Lastly, the DEA states that projects under the Proposed Action will comply with the requirements of the Energy Independence Security Act (EISA), Section 438 and Executive Order 13508 (Chesapeake Bay Protection and Restoration). Please include the detailed requirements of EISA, Section 438 and Executive Order 13508 in the FEA, as well as how the overall stormwater improvement project and/or future individual projects will comply with these federal statutes.

4.3.3.3 Environmental Consequences - *Floodplains*

The DEA references Executive Order 11988 (Floodplain Management) on page 4-7 and describes the preparation of a Finding of No Practicable Alternative (FONPA). Please describe the requirements of Executive Order 11988 that relate to the overall improvement project in the FEA, as well as the FONPA preparation process in greater detail.

4.3.9.1 Environmental Consequences - *Vegetation*

The DEA recognizes the potential for tree removal as part of several future individual projects such as BMP Project 2C; however, the DEA does not provide specific numbers for trees that will be removed by the overall project (either directly due to construction or indirectly due to critical root zone impacts). Additionally, there is little information provided about potential tree replacement or tree replacement ratios, other than trees will be replaced as mitigation, when necessary. The Comprehensive Plan encourages federal agencies to minimize tree cutting and other vegetation removal to reduce soil disturbance and erosion, particularly in the vicinity of waterways. When tree removal is necessary, trees should be replaced to prevent a net tree loss. Therefore, please provide the specific number of trees to be lost, as well as the ratio at which they will be replaced in the final EA. If exact tree removal numbers are unknown at this time, please provide information related to future tree replacement and best estimates for tree loss in the FEA, and more exact figures in future individual project submissions.

Ms. Anne Hodges

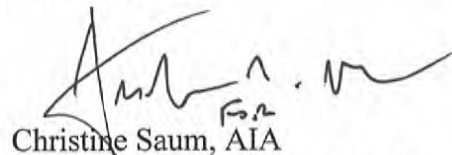
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4.3.9.2 Environmental Consequences – *Wildlife and Birds*

The draft EA states that some of the individual projects (BMP 2C, BMP 3F, and BMP 3B) will create new wetlands and additional natural stream beds, which is consistent with the Comprehensive Plan's policies to provide cover and food for native wildlife, and to restore degraded water and land habitats. Please provide best estimates of how much additional area will be available for native wildlife in the FEA after these individual restoration projects are completed. Also, please describe any preventative measures that will be required to eliminate future project construction interference with migratory birds and/or other wildlife in the FEA.

These comments have been prepared in accordance with NCPC's Environmental and Historic Preservation Policies and Procedures, and reflect the information that NCPC will need to adequately review this project relative to the policies contained in the Federal Elements of the Comprehensive Plan. If you have any questions about these comments, please contact Michael W. Weil at (202) 482-7253 or michael.weil@ncpc.gov.

Sincerely,

A handwritten signature in black ink, appearing to read 'Christine Saum', with a stylized flourish at the end.

Christine Saum, AIA

Acting Director, Urban Design and Plan Review



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

3 Apr 2012

Ms. Christine Saum, AIA
National Capital Planning Commission
401 9th Street, NW
North Lobby, Suite 500
Washington, DC 20004

Dear Ms. Saum:

Attached please find the response to comments on the Draft Environmental Assessment for Stormwater Repair and Upgrades at Joint Base Andrews-Naval Air Facility Washington, Maryland. We appreciate the time you invested to read and comment on the document. I may be reached at (301) 981-1426 if you have any questions or concerns.

Sincerely,

A handwritten signature in black ink, reading "Anne M. Hodges", is positioned above the printed name.

Anne M. Hodges
Environmental Planner

Comment Response Matrix
Draft Stormwater System Repair and Upgrades at
Joint Base Andrews-Naval Air Facility Washington, Maryland

#	Location		Comment	Response
	Page	Section		
1		2.1 Description of Proposed Action and Alternatives	The DEA does not adequately describe how the proposed overall stormwater management system project (all 16 projects combined) will change (net) the total area of wetlands, area dedicated to stormwater management, forests, and pervious/impervious (paved) area on Joint Base Andrews (JBA). Specifically, the Comprehensive Plan guides federal installations to reduce the amount of impervious surface area on federal property, and this information is necessary to understand the overall project impacts. Please provide net area changes for all relevant land uses (i.e. wetlands, pavement, etc.) related to the overall improvement project in the FEA and if possible, specify the net changes for each proposed facility type (dry ponds, bioretention basins, grass swales, stream restoration, etc.). If the exact areas are unknown at this time, please provide best numerical estimates for area net changes in the FEA, and more detailed information in future individual project submissions.	The Proposed Action describes repair, retrofits and some enhancement projects for existing stormwater BMPs, therefore there will not be an overall change in land use. The description of the projects and the area of ground disturbance may be found in Table 1 (note the area of disturbance includes proposed project and any necessary mitigation/re-vegetation locations). Proposed wetland creation and installation of infiltration basins will be within the existing area of stormwater BMPs. Any changes to land use, which are estimated to be negligible, will be described in future NEPA documentation when the design is further along.
2		2.3.1 Site Best Management Practices	The draft EA is not clear whether the proposed 16 individual facility sites comprise the entire stormwater management system for JBA, or rather part of the complete system. Please clarify this point and if there are additional sites, please show these locations in the final EA document.	The projects are part of the entire JBA stormwater system. Please see Figure 2.
3		2.5 Comparison Matrix of Environmental Effects of All Alternatives	The DEA specifies that “adverse impacts would be mitigated by post-construction vegetation” in the summary table (Resource Vegetation) on page 2-16; however, the document does not specify whether native plants will be used in future re-vegetation efforts. The DEA also explains that disturbed areas at all individual project sites will be re-vegetated in the Environmental Consequences – Vegetation Section (4-18). The Comprehensive Plan encourages the use of native plant species, where appropriate. Please include this information in the FEA.	Native plants will be used in future re-vegetation efforts. Language will be added.

Comment Response Matrix
Draft Stormwater System Repair and Upgrades at
Joint Base Andrews-Naval Air Facility Washington, Maryland

#	Location		Comment	Response
	Page	Section		
4		4.3.3.1 Environmental Consequences – Surface Water	<p>The DEA states that the overall project will improve downstream water quality and reduce stormwater runoff from JBA; however, the draft document does not specifically quantify either of these improvements (water quality or runoff volume). The Comprehensive Plan encourages federal agencies to avoid thermal pollution and to reduce sedimentation and pollutants in waterways. Please include more detailed information in the final document about the overall project's impact on stormwater runoff and water quality to provide a better understanding of the overall project. If exact figures are unknown at this time, please provide best numerical estimates to demonstrate these improvements in the FEA, and more detailed information in future individual project submissions.</p> <p>The Draft document states that the proposed project will help JBA meet existing NPDES MS4 permit conditions, Maryland Department of the Environment (MDE) water quality requirements, and Chesapeake Bay Total Maximum Daily Load (TMDL) requirements (page 4-5). Please explain these requirements in more detail as well as how the overall system improvement project will help JBA meet the requirements of the FEA. If possible, please show the applicable numeric MDE water quality standards that JBA is required to meet (on-site and/or downstream); the pollutant levels under existing conditions (prior to project implementation); and the forecasted future pollutant levels (once the project is fully constructed), to help illustrate anticipated overall project impacts.</p> <p>Lastly, the DEA states that projects under the Proposed Action will comply with the requirements of the Energy Independence Security Act (EISA), Section 438 and Executive Order 13508 (Chesapeake Bay Protection and Restoration). Please include the detailed requirements of EISA, Section 438 and Executive Order 13508 in the FEA, as well as how the overall stormwater improvement project and/or future individual projects will comply with these federal statutes.</p>	JBA will follow the requirements under their MS4 permit. The stormwater improvement projects will generally allow for improved infiltration of stormwater, improved conveyance that can reduce erosion on JBA, and some projects will improve uptake of pollutants through detention, infiltration, and uptake by plants. Specific engineering details that address EISA 438 and EO 13508 requirements will be provided later in the design phase.

Comment Response Matrix
Draft Stormwater System Repair and Upgrades at
Joint Base Andrews-Naval Air Facility Washington, Maryland

#	Location		Comment	Response
	Page	Section		
5		4.3.3.3 Environmental Consequences – Floodplains	The DEA references Executive Order 11988 (Floodplain Management) on page 4-7 and describes the preparation of a Finding of a Finding of No Practicable Alternative (FONPA). Please describe the requirements of Executive Order 11988 that related to the overall improvement project in the FEA, as well as the FONPA preparation process in greater detail.	See page 3-11, Section 3.3.3.3
6		4.3.9.1 Environmental Consequences - Vegetation	The DEA recognizes the potential for tree removal as part of several future individual projects such as BMP Project 2C; however, the DEA does not provide specific numbers for trees that will be removed by the overall project (either directly due to construction or indirectly due to critical root zone impacts). Additionally, there is little information provided about potential tree replacement or tree replacement ratios, other than trees will be replaced as mitigation, when necessary. The Comprehensive Plan encourages federal agencies to minimize tree cutting and other vegetation removal to reduce soil disturbance and erosion, particularly in the vicinity of waterways. When tree removal is necessary, trees should be replaced to prevent a net tree loss. Therefore, please provide specific number of trees to be lost, as well as the ratio at which they will be replaced in the final EA. If the exact tree removal numbers are unknown at this time, please provide information related to future tree replacement and best estimates for tree loss in the FEA, and more exact figures in future individual project submissions.	Efforts will be made to minimize the removal of trees to only those absolutely necessary to accomplish the scope of work. Specific engineering details that address any necessary tree removal will be provided later in the design phase.

Comment Response Matrix
Draft Stormwater System Repair and Upgrades at
Joint Base Andrews-Naval Air Facility Washington, Maryland

#	Location		Comment	Response
	Page	Section		
7		4.3.9.2 Environmental Consequences – Wildlife and Birds	The draft EA states that some of the individual projects (BMP 2C, BMP 3F, and BMP 3B) will create new wetlands and additional natural stream beds, which is consistent with the Comprehensive Plan's policies to provide cover and food for native wildlife, and to restore degraded water and land habitats. Please provide best estimates of how much additional area will be available for native wildlife in the FEA after these individual restoration projects are completed. Also please describe any preventative measures that will be required to eliminate future project construction interference with migratory birds and/or other wildlife in the FEA.	Since the projects are repair, retrofits and some enhancement projects for existing stormwater BMPs, there would not be a major change in wildlife habitat. Existing wildlife habitat would be enhanced in the end although there would be temporary impacts during construction. Stream restoration and wetland/stormwater BMP enhancement would improve already existing wildlife habitat. Preventative measures to eliminate interference with migratory birds and other wildlife would be conducted in accordance with the Migratory Bird Treaty Act (MBTA), Maryland Department of Natural Resources (MDNR) requirements and relevant guidance.

Reviewer: Christine Saum, NCPC, (202)482-7200, 16 Mar 2012.



Maryland Department of Planning

Martin O'Malley
Governor
Anthony G. Brown
Lt. Governor

Richard Eberhart Hall
Secretary
Matthew J. Power
Deputy Secretary

April 26, 2012

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

STATE CLEARINGHOUSE RECOMMENDATION

State Application Identifier: MD20120228-0125

Applicant: U.S. Department of the Air Force

Project Description: E.A. & FONSI: Stormwater System Repair and Upgrades: restore and improve condition and effectiveness of existing stormwater management system at Joint Base Andrews

Project Location: Prince George's County

Approving Authority: U.S. Department of Defense

Recommendation: Consistent with Qualifying Comments and Contingent Upon Certain Actions

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 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 Departments of Business and Economic Development, Transportation, the Environment, Natural Resources, the Maryland Military Department, Prince George's County, and the Maryland Department of Planning, including the Maryland Historical Trust. As of this date, the Maryland Departments of Business and Economic Development, Natural Resources, and the Environment have 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 Department of Transportation, 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 Maryland Department of Transportation stated 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 addressed these issues in the attached memorandum: flooding, stream-bank stabilization, water quality, and off-site stormwater management. See the attached memorandum.

Ms. Anne Hodges
April 26, 2012
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The Maryland Military Department; the Maryland Department of Planning, including 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.

Any statement of consideration given to the comments 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 brosenbush@mdp.state.md.us

Thank you for your cooperation with the MIRC process.

Sincerely,



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

LCJ:BR

cc: Beth Cole - MHT
Tammy Edwards - DBED
Melinda Gretsinger - MDOT
Joane Mueller - MDE

Greg Golden - DNR
Lawrence Leone - MILT
Beverly Warfield - PGEO

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Rushern L. Baker, III
County Executive

PRINCE GEORGE'S COUNTY GOVERNMENT



Department of Public Works and Transportation
Office of the Director



MEMORANDUM

March 23, 2012

TO: Beverly Warfield, PGEO Clearinghouse Coordinator
Department of Environmental Resources

FROM: ^{HAH} Haitham A. Hijazi, Director
Department of Public Works and Transportation

RE: Joint Base Andrews, Stormwater Repair
Clearinghouse Referral Number MD20120228-0125

This is in response to your February 29, 2012, request for review of the above-referenced Clearinghouse Referral. The Department of Public Works and Transportation (DPW&T) has reviewed the subject Referral and offers the following.

The Joint Base Andrews-Naval Air Facility (JBA) is a Federal facility, and as such, does not receive review and approval of onsite stormwater management related activities from Prince George's County. The Maryland Department of Environment is the approving authority for State and Federal installations. However, stormwater management activities within the base perimeter may exacerbate existing offsite stormwater problems including stream degradation. Beyond the western perimeter, there are two discharge points that flow to Meetinghouse Branch and Paynes Branch. We would like to call your attention to the long standing problems associated with these two branches and hope to collaborate with JBA to determine how to best address this stream segment with respect to flooding, stream bank stabilization, and water quality. This location can provide a National Pollution Discharge Elimination System (NPDES) retrofitting opportunity.

MD 2012 0228-0125

Beverly Warfield
March 23, 2012
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There is also concern that Project ID #9 (enlargement of an existing 36-inch concrete pipe culvert to alleviate upstream ponding during large storm events) will create problems offsite due to the increased capacity of the culvert.

If you have any questions or need additional information, please contact Mr. Rey de Guzman, Chief, Engineering and Inspection Services Division, Office of Engineering, at (301) 883-5710.

HAH:DAW:dar

cc: Andre' Issayans, Deputy Director, DPW&T
Dawit Abraham, P.E., Associate Director, OE, DPW&T
Rey De Guzman, P.E., Chief, EISD, OE, DPW&T
Armen Abrahamian, Chief, Traffic Safety Division, OE, DPW&T
Derek Winogradoff, Chief, Planning Section, EISD, OE, DPW&T
Steven Snyder, P.E., District Engineer, EISD, OE, DPW&T
Victor Weissberg, Special Assistant to the Director, DPW&T