

# Environmental Assessment for the Proposed Construction of a Car Wash on Fort George G. Meade, Maryland

Contract No. Y007829 00T6217871

February 2006



Prepared by:

**United States Departments of the Army and Air Force**

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**Draft Finding of No Significant Impact (FNSI)  
Proposed Construction of a Car Wash  
on Fort George G. Meade, Maryland**

**Description of Proposed Action**

The Army Air Force Exchange Service (AAFES), the contracting agency for the proposed project, proposes to construct a car wash on Fort George G. Meade, Maryland.

**Alternatives Considered**

Three alternative sites, as well as a No-Action Alternative, were considered. The action alternatives were evaluated against specific criteria and two sites were eliminated from further consideration. One action alternative was evaluated with the No-Action Alternative. The preferred site for the proposed action is sited on the south side of Ruffner Road, west of Macarthur Road.

**Anticipated Environmental Impacts**

Adverse impacts identified include minor short-term impacts to soils during construction. These will be minimized by implementing best management practices in compliance with the erosion and sediment control plan. Soil disturbance, vegetation removal, and creation of permanent impervious surface area will result in minor impacts to water resources, which will be minimized by adherence to the stormwater management plan and stormwater pollution prevention plan. Removal of vegetation, including mixed hardwood and pine trees, will be at 100%, at minimum; acre per acre. Short-term minimal noise and air quality impacts will occur during construction.

No significant adverse environmental impacts are anticipated for geology, soils, surface or ground water quality, wetlands, floodplains, land use, cultural resources, socioeconomic, infrastructure and utilities, hazardous materials and waste, environmental justice, and protection of children.

**Conclusions**

Based on review of the information contained in this environmental assessment (EA), it is concluded that the construction of an AAFES car wash facility is not a major federal action that would significantly affect the quality of the environment within the meaning of Section 102(2)(c) of the National Environmental Policy Act of 1969, as amended. Accordingly, the preparation of an environmental impact statement for this proposed action is not required.

**Point of Contact**

The EA addressing this action may be reviewed at Odenton Public Library, Crofton Public Library, and Main Post Library. Requests for additional information or submittal of public comments may be made up to 30 days after publication to:

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**Draft Finding of No Significant Impact (FNSI)  
Proposed Construction of a Car Wash  
on Fort George G. Meade, Maryland**

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## **Executive Summary**

**AGENCY:** United States Army (U.S. Army).

**PURPOSE:** The U.S. Army has coordinated the preparation of an Environmental Assessment (EA) of the potential environmental consequences of constructing a proposed car wash at Fort George G. Meade, Anne Arundel County, Maryland (the “Post”), as described in the next paragraph. This EA has been completed pursuant to the National Environmental Policy Act (NEPA); the Council on Environmental Quality regulations implementing NEPA; United States Department of Defense (DoD) Directive 6050.1 “Environmental Effects in the United States of DoD Actions;” and Army Regulation (AR) 200-2 “Environmental Effects of Army Actions.”

**PROPOSED ACTION:** The Army and Air Force Exchange Service (AAFES)\* proposes to construct a new car wash for use by individuals at Fort Meade. The Proposed Action would consist of construction and operation of a 3,900-square-foot (363-square-meter) car wash facility with two automatic rollover bays, four self-service wand bays, mechanical equipment rooms, and four vacuum/drying bays adjacent to an existing shopping center.

New construction would consist of reinforced concrete slab/foundation with block walls. The roof would consist of a pre-finished canopy over three of the four wand wash bays and a standing-seam metal roof over the two auto wash bays. The car wash would be equipped with a reclaim system and oil/water separator. Exterior support would include required utilities, communications, paving, walks, curbs, storm drainage, site improvements, electrical, mechanical, and fire protection for a complete and usable facility.

Three action alternatives and a No-Action Alternative were initially considered. These alternatives included construction of the proposed new facility on three alternative sites. The three action alternatives were evaluated against specific criteria, and two of the sites were eliminated from further consideration. One action alternative complied with five of the six criteria and is assessed, along with the No-Action Alternative, in this EA. The Preferred Alternative for the Proposed Action is sited on the south side of Ruffner Road, west of Macarthur Road.

**ONGOING ACTIONS:** Currently, there are several ongoing actions at Fort Meade proximate to the Preferred Alternative site. The nearest activity is a fast food restaurant proposed for construction beginning fiscal year 2006 adjacent to the shopette.

**SUMMARY OF EFFECTS:** This EA evaluated the environmental sensitivity of Fort Meade with regard to the proposed project. The potential environmental effects of the proposed project were assessed for the following topics: socioeconomics, water resources, noise, climate and air quality, earth resources, infrastructure and utilities, hazardous materials and waste, biological resources,

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\* The Army and Air Force Exchange Service (AAFES) is a non-appropriated fund instrumentality (NAFI) organized as a joint command of the Army and Air Force under the U.S. Department of Defense. AAFES was established more than 100 years ago. Its mission is to provide quality merchandise and services at uniformly low prices to active duty military, Guard and Reserve members, military retirees, and family members. One hundred percent (100%) of the earnings of the AAFES are returned to the Army and the Air Force to provide funding for quality of life programs for service members and their families. AAFES operates more than 10,500 facilities worldwide, including 1,423 retail facilities and 200 military clothing stores.

cultural resources, and land use. Potential impacts to each environmental resource from implementation of the Preferred Alternative for the Proposed Action are summarized below.

**Socioeconomics.** Impacts to the demographic composition of the Post are not expected. The anticipated customer base for the proposed car wash is expected to come from existing customers currently using AAFES facilities; therefore, implementation of the Preferred Alternative would not result in compositional changes according to gender, age, or race.

The customer base is more likely to use this facility than to drive to a car wash facility located off-base due to convenience of location. Because of the distance of the nearest competing car wash, no major effect on the local economy is expected. The project would be likely to have a positive, but insignificant, economic impact for the Post and surrounding areas. Construction personnel needed for this project would be drawn from the current labor force in and near Anne Arundel County; therefore, no significant impacts on the size or composition of the local population would result from implementation of the Preferred Alternative.

**Water Resources.** Construction activities at the approximately 0.85-acre site would result in soil disturbances typical of construction sites. Best Management Practices (BMPs) would be implemented to protect waterways from sediment from disturbed areas. Once the project is complete and all disturbed areas have been adequately stabilized, the BMPs should mitigate runoff from proposed impervious areas. No significant adverse impacts to water resources are expected; no impacts to wetlands or floodplains from implementation of the Preferred Alternative are anticipated.

**Noise.** Construction and land-disturbing activities would result in temporary increases in noise levels. Noise generators during construction include vehicles and equipment involved in site clearing and grading, construction, landscaping, and finishing work. Short-term noise impacts would continue for approximately nine months from the commencement of site work to the end of construction activities. Also, there would be an increase in vehicular traffic noise due to the increase in visits per day by construction vehicles. Impacts could be minimized by limiting construction activity to daylight hours and by using properly maintained and muffled equipment. Noise from operation of the new car wash would be limited. Impacts to sensitive receptors from the project would not be significant.

**Air Quality.** The operation of heavy equipment would have minor, temporary negative impacts on air quality during the construction phase. These impacts primarily would be in the form of increased exhaust pollutants, which can be minimized by good vehicle maintenance. Windblown soil and dust may also occur during the construction phase as a result of equipment movement over exposed soil areas. Fugitive dust could be greatly minimized by appropriate dust control measures, such as wetting the surfaces and by re-vegetating disturbed areas as soon as possible. No significant adverse impacts to air quality would result from implementation of the Preferred Alternative.

**Earth Resources.** During implementation of the Preferred Alternative, a moderate amount of soil disturbance would be anticipated within the 0.85-acre disturbed area. Potential short-term construction impacts may include increased erosion during rainfall events. No long-term adverse impacts would be expected. In compliance with *Maryland Erosion and Sediment Control Guidelines for State and Federal Projects* (Maryland Department of the Environment [MDE] 1990) and *Maryland Stormwater Management Guidelines for State and Federal Projects* (MDE 2001) the U.S. Army Reserve and construction contractor would develop, and submit to the MDE for review and

approval, a stormwater management plan and erosion and sediment control plan prior to the onset of construction. BMPs would be followed.

Adverse impacts from geologic hazards, including seismic shaking or subsidence, would not likely affect this project. In addition, there are no known unique geologic features or mineral resources that would be affected by the proposed project.

**Infrastructure and Utilities.** It is estimated that the Proposed Action would use a maximum of 4,400 gallons of water per day during operation (Brown 2002), an amount that has been determined to cause no strain on current water demand or other projected demands. Additionally, the existing sanitary sewers and wastewater treatment system have the capacity to accommodate the estimated amount of wastewater that would be generated by implementation of the Preferred Alternative.

Solid waste generation would not change significantly as a result of the proposed construction since there would be no increase of permanently assigned personnel. Therefore, an increase from recurring solid waste generation would not occur, except for a small amount of solid waste resulting from the proposed facility.

Construction of the Proposed Action would increase the volume of traffic slightly in the project area due to on-road use by construction equipment, construction workforce vehicles, and vehicles delivering construction materials. The increase in traffic after completion of the Proposed Action is not expected to be significant compared to the volume of traffic currently present in the area and is not expected to affect the current levels of service for adjacent roadways and intersections. No significant adverse impacts to infrastructure or utilities on Fort Meade would result from implementation of the Preferred Alternative.

**Hazardous Materials and Wastes.** Hazardous materials are not anticipated to be stored at the site during operation of the new car wash. Any hazardous materials that are accumulated would be stored and disposed of in accordance with all local, state and federal laws and regulations, and Fort Meade hazardous materials plans. No significant adverse impacts related to hazardous materials and wastes would result from implementation of the Preferred Alternative.

**Biological Resources.** Construction of the proposed project would require removal of trees and shrubs from the 0.85-acre site. Project construction would not contribute significantly to fragmentation of the existing forest habitat because the Preferred Alternative site is in a highly developed area. Furthermore, AAFES would mitigate following a one-to-one area, in a designated location on Post, in compliance with the Maryland Forest Conservation Act and Anne Arundel County Council "Tree Bill" 71-94.

The majority of species currently using the area have adapted to living in urban areas and co-existing with human activity, and are mobile generalist species that use a variety of interspersed/fragmented habitats, range over wide areas for food and cover, and/or are migratory and would use the site seasonally. No federally or state-protected species, species of concern, or species on the state "watch" list are known to exist on or use the Preferred Alternative site. No significant adverse impacts to habitat, wildlife, and threatened and endangered species would result from implementation of the Preferred Alternative.

**Cultural Resources.** Based on the field visit, and past studies on the project area, it is unlikely that cultural resources would be impacted. According to Fort Meade's Integrated Cultural Resources

Management Plan, there are no archaeological sites on the Preferred Alternative site for the Proposed Action (USACE 2001). This action would not affect any resources eligible for the National Register of Historic Places (NRHP).

**Land Use and Zoning.** The Preferred Alternative site is currently undeveloped and wooded with more woodlands to the north and south; however, the areas to the east, west, and northeast are urbanized. The Proposed Action would be contained within Fort Meade, which sets its own land use and zoning designations and would not present conflicts with local or state land use or zoning designations. The proposed site is designated as “Commercial Service.” No significant adverse impacts are anticipated from implementation of the Preferred Alternative, and use of the proposed site would be compatible with surrounding land uses.

**NO-ACTION ALTERNATIVE:** The conditions and characteristics anticipated under the No-Action Alternative for each of the resources at Fort Meade would continue at levels equal to those occurring under the existing condition. No significant impacts would be expected for the No-Action Alternative.

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## **Acronyms and Abbreviations**

AAFES	Army and Air Force Exchange Service
APE	Area of Potential Effect
AR	Army Regulation
AWWTP	Advanced Wastewater Treatment Plant
BMP	Best Management Practice
BRAC	Base Realignment and Closure
CBP	Chesapeake Bay Program
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CO	carbon monoxide
dba	A-weighted decibels, a measure of sound level
DNR	(Maryland) Department of Natural Resources
DoD	(United States) Department of Defense
DPW-EMO	(Fort Meade) Department of Public Works, Environmental Management Office
ESCP	Erosion and Sediment Control Plan
EA	Environmental Assessment
EPA	(United States) Environmental Protection Agency
ERM	Environmental Resources Management
FR	Federal Regulation
gpd	gallons per day
HEL	highly erodible lands
ICRMP	Integrated Cultural Resources Management Plan
IHWMP	Installation Hazardous Waste Management Plan
INRMP	Integrated Natural Resources Management Plan
ISCP	Installation Spill Contingency Plan
K factor	soil erodibility factor
MD	Maryland
MDE	Maryland Department of the Environment
mgd	million gallons per day
NAAQS	National Ambient Air Quality Standards

NAFI	Non-appropriated Fund Instrumentality
NEPA	National Environmental Policy Act
NO <sub>x</sub>	nitrogen oxide
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
NSA	National Security Agency
O <sub>3</sub>	ozone
OASD-PA	Office of the Assistant Secretary of Defense-Public Affairs
Pb	lead
PM <sub>10</sub>	particulate matter equal to or less than 10 microns in diameter
PM <sub>2.5</sub>	particulate matter equal to or less than 2.5 microns in diameter
Post, the	Fort George G. Meade
SIP	State Implementation Plan
SO <sub>2</sub>	sulfur dioxide
SPCC	Spill Prevention Control and Countermeasures
SWMP	Stormwater Management Plan
SWPPP	Stormwater Pollution Prevention Plan
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service

# **1.0 Purpose of and Need for the Proposed Action**

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This Environmental Assessment (EA) identifies, describes, and evaluates the potential impacts to the environment from the proposed construction of a car wash at Fort George G. Meade, Anne Arundel County, Maryland (also referred to herein as the “Post” or “Fort Meade”). This report also identifies required environmental permits relevant to the Proposed Action and identifies any actions that could be taken to minimize environmental impacts.

This document was prepared to identify environmental impacts of the Proposed Action as set forth in 32 Code of Federal Regulations (CFR) Part 651 (Army Regulation [AR] 200-2) “Environmental Effects of Army Actions,” dated 29 March 2002. This EA also implements the National Environmental Policy Act (NEPA) of 1969, the Council on Environmental Quality (CEQ) regulations, and United States Department of Defense (DoD) Instruction 4715.9 “Environmental Planning and Analysis,” dated May 3, 1996.

## **1.1 Organization of the Document**

The first three sections of this EA establish the existing conditions at Fort Meade. Section 1.0 provides a general overview of the purposes for preparing the EA. This section also describes the Proposed Action and explains the purpose of and need for the Proposed Action. Section 2.0 describes the location of the Proposed Action and the methods used to identify the alternatives. In addition, this section describes the No-Action Alternative and the alternative that best meets the siting criteria (the Preferred Alternative). Section 3.0 establishes the environmental setting at Fort Meade by describing the physical, biological, socioeconomic, and the cultural and archaeological resources on the Post. The characteristics described include, but are not limited to, groundwater, wetlands and other surface waters, vegetation, threatened and endangered species, utility infrastructure, air quality, hazardous waste, land use, and transportation. Section 4.0 discusses the environmental consequences of the No-Action Alternative and the Preferred Alternative. Section 5.0 provides a description of the necessary environmental permits and contractor requirements for the proposed project. Section 6.0 provides a complete bibliography of sources used to develop this EA, including persons and agencies consulted, and regulations and documents cited. Section 7.0 is a list of persons who participated in the preparation of this document. Appendix A contains agency correspondence used in the development of this EA. Appendix B and C contain Maryland Erosion and Sediment Control and Stormwater Guidelines, respectively, for State and federal projects.

## **1.2 Description of the Proposed Action**

The Army and Air Force Exchange Service (AAFES)<sup>1</sup> proposes to construct a new car wash for use by individuals at Fort Meade. The Proposed Action would consist of construction and operation of a 3,900-square-foot (363-square-meter) car wash facility with two automatic rollover bays, four self-service wand bays, mechanical equipment rooms, and four vacuum/drying bays adjacent to an existing shopping center. The car wash would use an oil/water separator to collect sand, grit, grease and oil from the wash water. A water reclaim system consisting of three or more 750- to 1,000-gallon tanks also would be installed.

Facility construction would consist of a reinforced concrete slab/foundation with block walls. The roof would consist of a pre-finished canopy over three of the four wand wash bays and a standing-seam metal roof over the two auto wash bays. Exterior support would include required utilities, communications, paving, walks, curbs, storm drainage, site improvements, electrical, mechanical, and fire protection for a complete and usable facility.

## **1.3 Purpose of and Need for the Proposed Action**

The purpose of the Proposed Action is to better serve the needs of the military community. Currently, the Post does not have a car wash facility, which requires people to leave Fort Meade in search of one or to wash their vehicle on their driveway—a practice that increases stormwater runoff and pollutes the waterways.

AAFES proposes to construct a new car wash to provide Post personnel a more accessible and environmentally acceptable alternative, while maintaining easy access and the feel of one-stop shopping near the existing shoppette, commissary, and other associated services. Furthermore, AAFES has identified the construction of the facility as a way to enhance the living conditions and improve the moral and welfare of military personnel and their families at Fort Meade. High morale and welfare tends to correlate with longer commitments by United States Army personnel, which would enhance Fort Meade's long-term productivity by reducing the rate of personnel turnover. In addition, some of the profits generated from the facility would be distributed to the Installation for their Morale, Welfare and Recreation services.

## **1.4 Scope of the Environmental Review**

This EA identifies, describes, and evaluates the potential environmental impacts that could result from implementing the Proposed Action at the Preferred Alternative site, taking into consideration possible cumulative impacts from other actions underway or planned at Fort Meade. Required environmental permits relevant to the proposed project, as well as mitigation measures and management actions that could minimize environmental impacts are identified in the EA. The following resources at Fort Meade are evaluated in this EA: socioeconomics, water resources, noise,

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<sup>1</sup> The Army and Air Force Exchange Service (AAFES) is a non-appropriated fund instrumentality (NAFI) organized as a joint command of the Army and Air Force under the U.S. Department of Defense. AAFES was established more than 100 years ago. Its mission is to provide quality merchandise and services at uniformly low prices to active duty military, Guard and Reserve members, military retirees, and family members. One hundred percent (100%) of the earnings of the AAFES are returned to the Army and the Air Force to provide funding for quality of life programs for service members and their families. AAFES operates more than 10,500 facilities worldwide, including 1,423 retail facilities and 200 military clothing stores.

climate and air quality, earth resources, infrastructure and utilities, hazardous materials and waste, biological resources, cultural resources, and land use.

The Army has proposed other actions at Fort Meade concurrent with the Proposed Action. The environmental impacts of these other actions have been analyzed and are addressed in this EA only in the context of potential cumulative impacts, if any. A cumulative impact, as defined by the CEQ (40 Code of Federal Regulations [CFR] 1508.7), is the “impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of which agency (federal or non-federal) or person undertakes such actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.”

## **1.5 Agency Coordination and Public Participation**

The EA and draft Finding of No Significant Impact (FNSI) will be made available for agency and public review during a 30-day review period. Agency correspondence will be included in Appendix A.

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## 2.0 Description of the Proposed Action and Alternatives

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### 2.1 Location of the Proposed Action

Fort Meade, Maryland, is situated in northwestern Anne Arundel County, midway between Baltimore, Maryland, and Washington, D.C. (Figure 2-1). The Anne Arundel County Seat is approximately 14 miles southeast of the Post in Annapolis, Maryland. Maryland (MD) Route 32 lies along the western part of the Post. Along the south, the Post shares a border with the Patuxent Wildlife Research Center. The Post's eastern border is MD Route 175 and to the north is Interstate 295. The Little Patuxent River runs along the Post's southwest corner. Two of the river's tributaries, Midway Branch and Franklin Branch, flow south through the Post. Fort Meade is located in the Chesapeake Bay watershed.

### 2.2 Alternatives Development Process

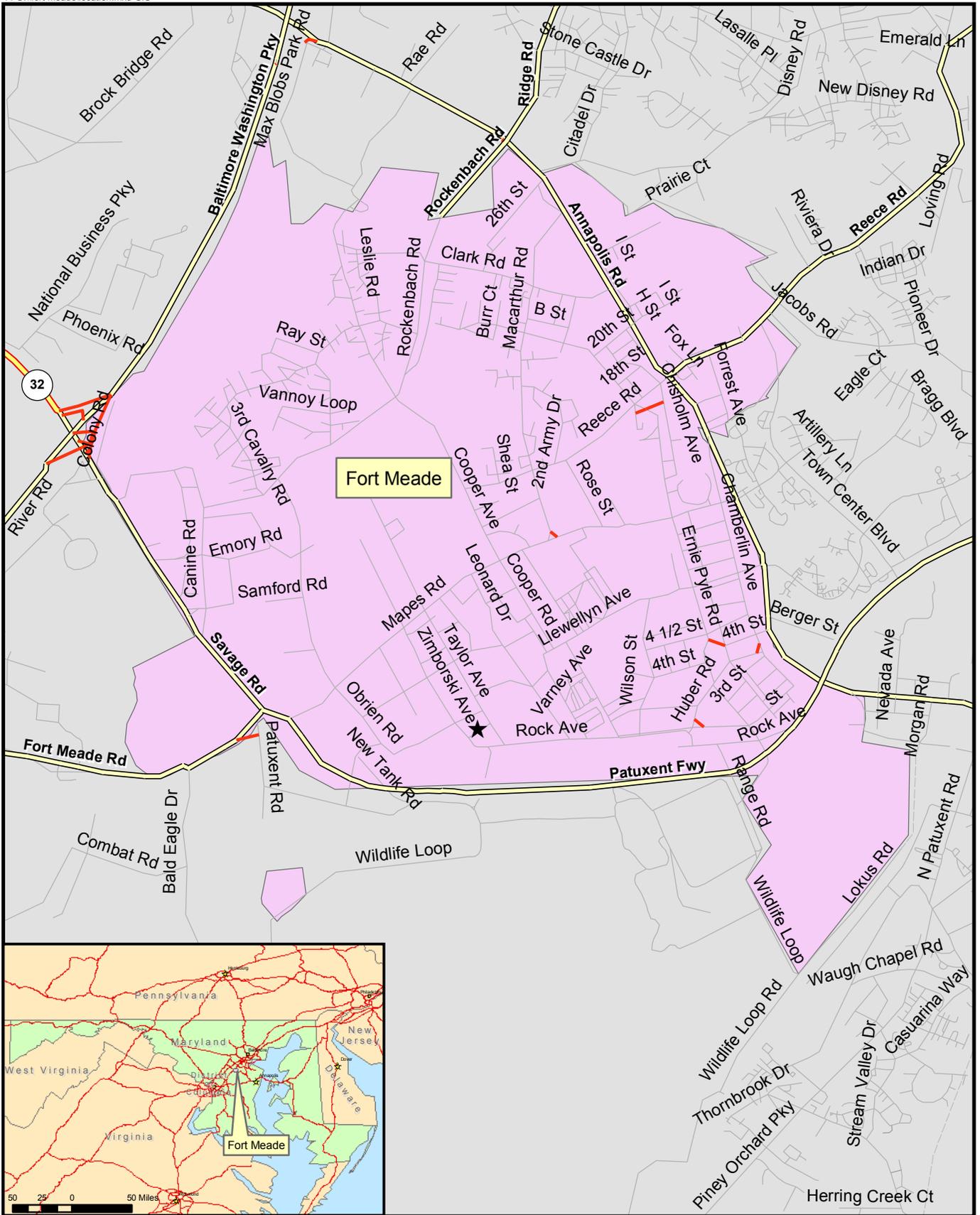
NEPA and 32 CFR Part 651 require the consideration of reasonable alternatives to the Proposed Action. In an attempt to minimize the impact on existing facilities and future projects, both Fort Meade and AAFES staff evaluated feasible sites and site designs against initial concerns and general site selection criteria to determine the most viable and reasonable alternative locations and site designs.

#### *Site Selection Criteria*

The following criteria were developed based upon the purpose of and need for the Proposed Action, as well as other land use and environmental factors:

- Convenient to customers, in an area of heavy traffic flow and high visibility;
- Consistent with AAFES mission activities;
- Located near existing commissary and services;
- Compatible with existing land use, visual character, and current and future planned projects;
- Consistent with military activities; and
- Minimizes adverse impacts to natural resources.

Three alternatives were initially identified as potentially suitable for development of the Proposed Action in accordance with the above criteria. Table 2-1 provides a list of the preliminary alternatives and applies the specific siting criteria to each.



**Regional Location Map - Fort George G. Meade  
Ft. Meade, Maryland**

**Figure 2-1**

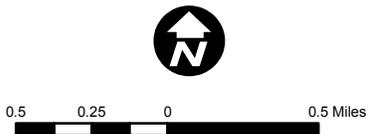


Table 2-1  
Application of Evaluation Criteria to Alternatives

Alternative	Convenient to customers, high traffic flow, and high visibility	Consistent with AAFES mission activities	Near existing commissary	Compatible with existing land use, visual character, and current and future planned projects	Consistent with military activities	Minimizes adverse impacts to natural resources
1	✓	✓	✓	✓	✓	--
2	✓	--	✓	--	--	--
3	--	--	--	--	--	✓

Key:

- ✓ = Criterion met.
- = Criterion not met.

### 2.3 Alternative Sites Considered, but Eliminated from Further Review

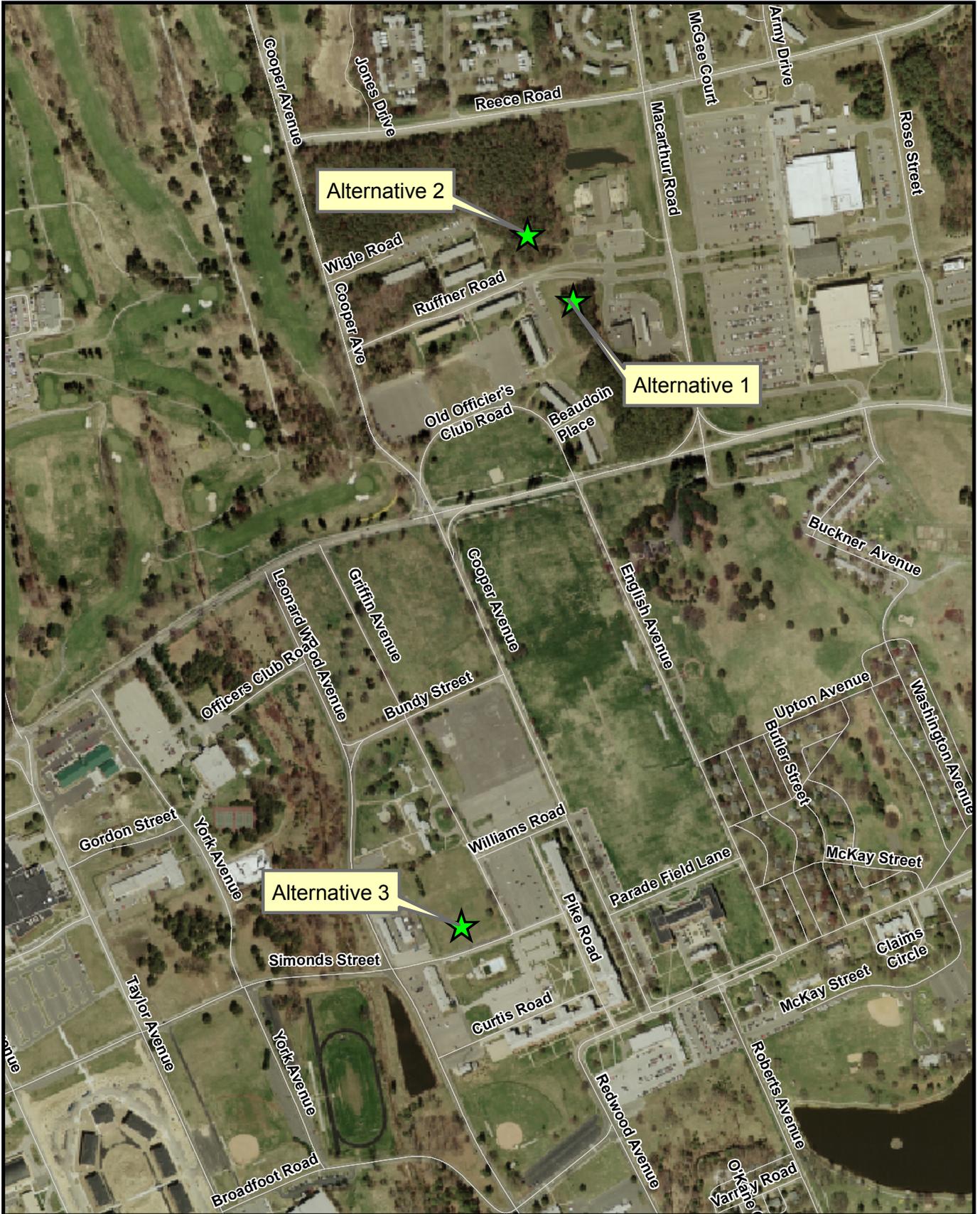
Alternatives 2 and 3 were eliminated from further detailed review after preliminary analysis deemed that each of these alternatives do not comply with general siting criteria or the requirements of the purpose and need. Each of the eliminated alternative sites is briefly described below. Alternative 1 (the Preferred Alternative) meets the majority of the proposed site evaluation criteria and is evaluated, along with the No-Action Alternative (Alternative 4), beginning in Section 2.4 of this EA.

#### 2.3.1 Alternative 2

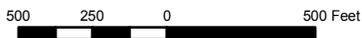
The proposed Alternative 2 site is bounded by Ruffner Road to the south, bachelor officers' quarters to the west, a child development center to the east, and undeveloped forested areas to the north and northwest (Figure 2-2). This proposed alternative site is not zoned. Alternative 2 is located adjacent to a child care facility and is designated a Forest Conservation Area. Construction of the Proposed Action at this site would adversely impact this management area.



North-facing view of the Alternative 2 location across Ruffner Road.



**Alternative Site Locations - Fort George G. Meade  
Ft. Meade, Maryland**



**Figure 2-2**

### **2.3.2 Alternative 3**

Alternative 3 is located on the east side of Leonard Wood Avenue, west of Williams Road, and across from a community pool. This proposed alternative site lies 1 mile away from the main traffic pattern and existing shopping facilities. The adjacent gas station represents only 25% of the market share compared to the 75% controlled by the gas station/shoppette adjacent to the Preferred Alternative site. This proposed alternative site also is not zoned.



Northwest view of the Alternative 3 site, across from the community pool.

## **2.4 Actions to be Evaluated Further in the EA**

### **2.4.1 Alternative 1: Preferred Alternative Site**

The Alternative 1 site location is the Preferred Alternative site (Figure 2-2). The facilities and services that would be provided under Alternative 1 are as described in Section 1.2 “Description of the Proposed Action.” Alternative 1 is the only alternative that meets five of the six site selection criteria.

This site is located southwest of the Macarthur Road and Ruffner Road intersection, and is bounded by Ruffner Road to the north, the shoppette and gas station to the east, bachelor officers’ quarters to the west, and undeveloped forested areas to the south. The proposed site is undeveloped and

primarily consists of pine and mixed hardwood vegetation and is currently designated as a Forest Conservation Area. Land use surrounding the Ruffner/Macarthur intersection is zoned “Commercial Service” and includes the Commissary, Post Exchange, and other retail/commercial services.

Construction of the Proposed Action at the Preferred Alternative site would take approximately nine months. This would include the removal of approximately 0.85 acres of vegetation, including mixed hardwood and pine trees for

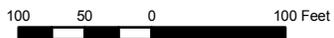
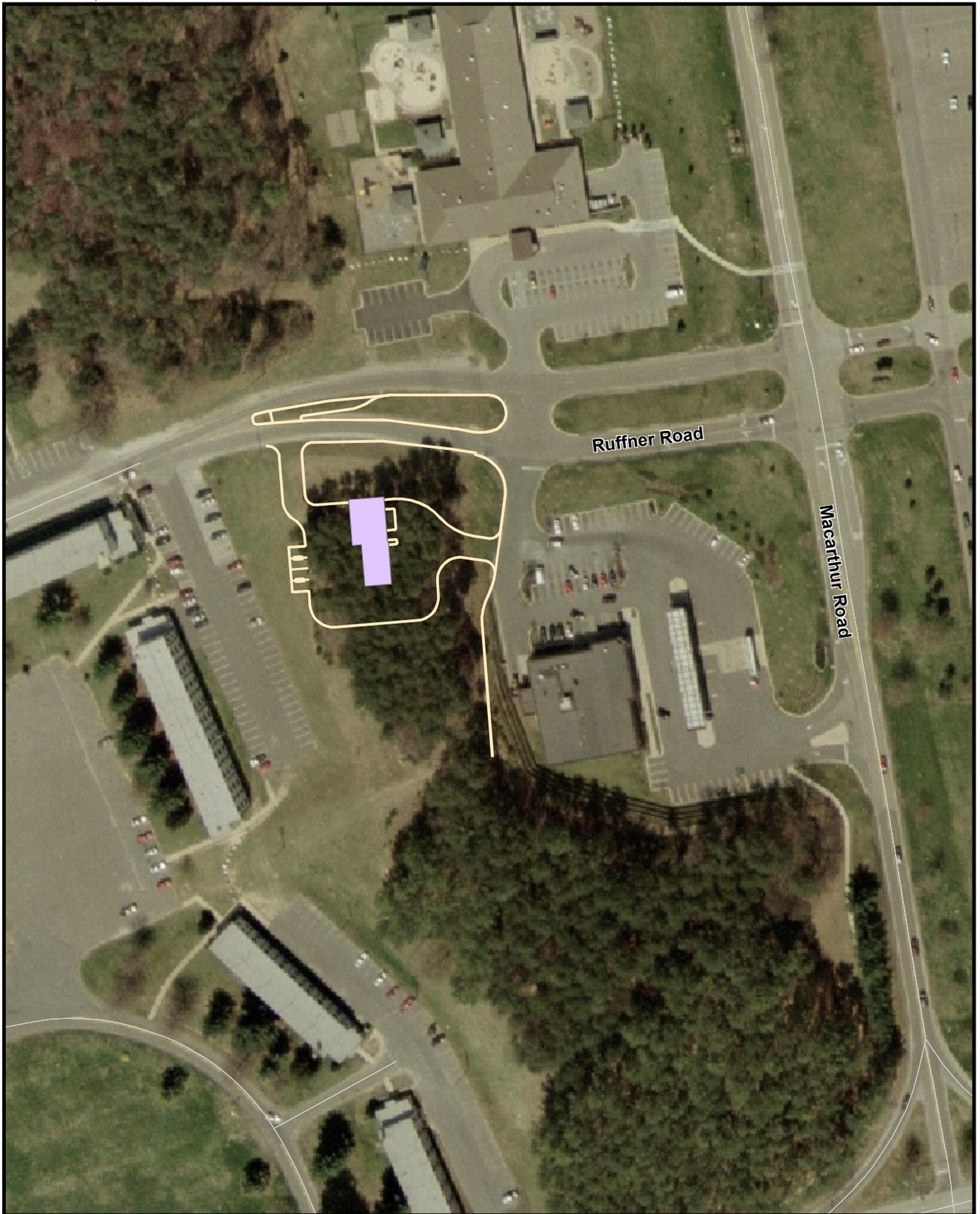


South-facing view of the Alternative 1 site across Ruffner Road.

construction. The total paved area within the disturbed area would comprise approximately 0.52 acres, and contain an approximately 3,900-square-foot building. A conceptual site plan for the Proposed Action at the Preferred Alternative site is shown on Figure 2-3.

#### **2.4.2 Alternative 4: The No-Action Alternative**

Under Alternative 4, the No-Action Alternative, a new car wash would not be built on the Post. In addition, anticipated revenue from the expansion of AAFES service facilities at the Post would not be generated. Without the construction of a new car wash facility, the military community would be required to leave the Post to find a suitable car washing facility or wash their vehicles in their driveways. This would be both inefficient and inconvenient for active military personnel, and their families, especially during drought water restriction times. In addition, washing vehicles on driveways would contribute pollutants to stormwater runoff and receiving waterbodies.



Site Design - Fort George G. Meade  
Ft. Meade, Maryland

Figure 2-3

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## **3.0 Affected Environment**

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This section describes the existing natural and human environment on Fort Meade that may be impacted by the implementation of the Proposed Action at the Preferred Alternative site location or by the No-Action Alternative.

### **3.1 Post Location and History**

Fort Meade encompasses approximately 5,415 acres in Anne Arundel County, Maryland, midway between Baltimore, Maryland, and Washington, D.C. (Figure 2-1). The facility is located southeast of the Baltimore-Washington Parkway and west of Interstate 97. Along the south, the Post shares a border with the Patuxent Wildlife Research Center. The Little Patuxent River runs along the southwest corner of the facility, while two tributaries, Midway Branch and Franklin Branch, flow south through the Post. Fort Meade is located in the Chesapeake Bay watershed.

Fort Meade was authorized by Congress in 1917 to serve as a training cantonment during World War I. The original name of the Post was Camp Meade for Major General George Gordon Meade, the Civil War commander of the Union troops during the Battle of Gettysburg. In 1928, the Post was renamed Fort Leonard Wood; however, Pennsylvanians registered such a large protest that the Post was permanently named Fort George G. Meade on March 5, 1929 (Office of the Assistant Secretary of Defense-Public Affairs and the U.S. Department of Defense [OASD-PA and DoD] 2005).

Over 100,000 men passed through Fort Meade during World War I. At that time, the Post served as a training site for three infantry divisions, three training battalions, and one depot brigade. During World War II, Fort Meade became a training center. The ranges and other facilities were used by more than 200 units and approximately 3,500,000 men between 1942 and 1946. The wartime peak-military personnel figure at Fort Meade of 70,000 was reached in March 1945.

With the conclusion of World War II, Fort Meade reverted to routine peacetime activities. In time, the Post returned to build-up status as many crises, including Korea, West Berlin, Cuba, and Vietnam, erupted. One key post-World War II event at Fort Meade was the transfer from Baltimore, on June 15, 1947, of the Second U.S. Army Headquarters. This transfer brought an acceleration of Post activity since, at that time, Second Army Headquarters exercised command over Army units throughout a seven-state area.

On January 1, 1966, when the Second U.S. Army merged with the First U.S. Army, the consolidated headquarters moved from Fort Jay, New York, to Fort Meade to administer activities of Army installations in a 15-state area. In August 1990, Fort Meade began processing Army Reserve and National Guard units from several states for the presidential call-up in support of Operation Desert Shield. In addition to processing reserve and guard units, Fort Meade sent two of its own active duty units—the 85th Medical Battalion and the 519th Military Police Battalion—to Saudi Arabia. In all, approximately 2,700 personnel from 42 units deployed from Fort Meade during Operation Desert Shield/Desert Storm (OASD-PA and DoD 2005).

Fort Meade continued with its training mission until the 8,100-acre range and training area south of Route 32 was transferred to the United States Fish and Wildlife Service (USFWS), as part of the first

round of closures under the Defense Authorization Amendments and Base Closure Act of 1988 (Public Law 100-526).

Today, Fort Meade provides support and services for 114 tenant organizations, including elements of the First U.S. Army East, the Defense Information School, 902nd Military Intelligence, 694th Intelligence Wing, and the National Security Agency. Following Base Realignment and Closure (BRAC) actions, Fort Meade currently has an increased mission as a major federal administrative center and has the need to accommodate additional tenants and activities.

## **3.2 Socioeconomic Resources**

### **3.2.1 Demographics**

Approximately 9,882 total persons reside at Fort Meade including 8,400 dependents housed on-Post (US Census 2002). Over 1,400 personnel live in on-Post group quarters (Anne Arundel County Office of Planning and Zoning [AACOPZ] 2003).

Fort Meade is located within the Odenton Small Planning Area and covers approximately 51 square miles (131 square kilometers). Between 1990 and 2000, the area experienced the highest growth among planning areas in Anne Arundel County, with an increase in 9,713 residents, 5,132 housing units, and 4,692 households. The 2010 projections estimate increases of 6,500 residents and 2,900 households. Most of the growth is expected to occur on the Fort Meade Military Reservation and the Odenton Town Center Area (AACOPZ 2003).

### **3.2.2 Economy, Employment, and Income**

In 2000, the estimated employment in the Odenton Small Planning Area was 52,900 jobs, including 39,000 for Fort Meade. As the number of jobs exceeds that of residents in the labor force, many of these workers commute from other areas within Anne Arundel County, Maryland, and the Washington-Baltimore region.

The Fort Meade workforce is comprised of approximately 11,779 military personnel (1,875 officers, 288 warrant officers, and 9,616 enlisted) and 26,350 civilians, including onsite contractors (INRMP 2004). Of the 22,211 area residents in the labor force, 3,932, or 18%, were employed in the Armed Forces, with the remaining 82% in the civilian labor force (AACOPZ 2003).

### **3.2.3 Environmental Justice and Protection of Children**

According to Executive Order 12898 “Federal Actions to Address Environmental Justice in Minority and Low Income Populations,” agencies must ensure that federal actions do not disproportionately impose adverse effects on minority or low-income areas. Executive Order 13045 “Protection of Children from Environmental Health Risks and Safety Risks,” April 1997, directs federal agencies to “identify and assess environmental health risks and safety risks that may disproportionately affect children.”

No family housing is adjacent to the Alternative 1 (Preferred Alternative) site. The nearest family housing is approximately 0.25 mile north of Alternative 1 and surrounds a county school.

A child development center is located across Ruffner Road to the northeast of the Alternative 1 site. Access to the site is via Ruffner Road. The center provides daycare and before and after school programs for children of residents between the hours of 6:00am and 6:00pm. The daily average capacity at the center is 250 children.

### **3.3 Water Resources**

#### **3.3.1 Surface Water**

Fort Meade is mostly located in the Little Patuxent drainage of the Atlantic Coastal Plain Physiographic Province. The extreme northeastern corner of the Post drains to the Severn River. There are three primary tributaries to the Little Patuxent on the Post – Midway Branch, Franklin Branch, and an unnamed tributary composed of two smaller tributaries.

Midway Branch and Franklin Branch drain the west and east portions of the Post, joining south of the Post and eventually entering Allen Lake south of Route 32. The Preferred Alternative site (Alternative 1) lies between these two tributaries. The unnamed tributary is composed of two small, unnamed branches that merge before entering the Little Patuxent River. This tributary drains the National Security Agency (NSA) facility area and the southwest portion of the Post. Burba Lake is the only enclosed water body on the Post, with the exception of several stormwater management ponds (Fort Meade 2004a).

The Patuxent River is part of the greater Chesapeake Bay watershed. The Chesapeake Bay is North America's largest and most biologically diverse estuary, home to more than 3,600 species of plants, fish and animals (CBP 2000). In order to protect and restore this valuable ecosystem, Maryland joined a consortium of state and federal agencies to establish the Chesapeake Bay Program partnership. The Army's conservation mission supports the Chesapeake Bay Programs, and Fort Meade is implementing BMPs that support the guidelines established by the partnership.

Approximately 1 mile south of the Route 198 bridge, the Little Patuxent River and its tributaries are designated "Use I-P" waters (Fort Meade 2004a). Use I-P waters are protected for water contact recreation, protection of aquatic life and public water supply. This designated use does not include Franklin Branch and Midway Branch; however, it does include the reach of the Little Patuxent River passing through Fort Meade, as well as the two unnamed tributaries. A more detailed analysis of water quality can be found in the INRMP (Fort Meade 2004a).

#### **3.3.2 Groundwater**

Three aquifers – the Patuxent Aquifer, the Upper Patapsco Aquifer, and Lower Patapsco Aquifer – underlie Fort Meade. The Patuxent Aquifer lies beneath a layer of Arundel Clay, which can be up to 250 feet deep. The Arundel Clay serves as a confining unit for the Patuxent Aquifer. The Lower Patapsco Aquifer lies above the Arundel Clay formation and is composed of fine- to medium-grained brown sand. The Upper Patapsco Aquifer is unconfined and is considered the water table aquifer.

The Patuxent Aquifer is at or near the surface near the fall line (the boundary between the Coastal Plain and Piedmont physiographic provinces) and dips below the surface as it moves eastward. It is between 200 and 400 feet thick beneath the installation. Static water levels in the wells range between 80 and 120 feet below the surface.

### **3.3.3 Floodplains and Wetlands**

Executive Order 11988 “Floodplain Management” requires agencies to take action to minimize development within floodplains. None of the alternative site locations is within floodplains, however, so this resource will not be addressed further in this EA.

Executive Order 11990 “Protection of Wetlands” requires federal agencies to avoid or minimize impacts to wetlands to the most reasonable extent possible. A jurisdictional wetland delineation was not conducted at the site as the exact footprint of the project area was not known for certain. Relatively few wetland areas exist on Fort Meade since it is mostly developed. These are primarily Palustrine and riverine wetlands located adjacent to the Little Patuxent River and tributaries on the southwest side of the Post.

### **3.4 Noise**

Noise is measured as a sound pressure level exerted on the microphone of a sound meter. Sound levels are adjusted (or weighted) for the variation in ear sensitivity to high- and low-pitched sound and are reported as A-weighted decibels (dBA).

Current noise generators in the area of the Preferred Alternative site include vehicular traffic along Macarthur Road and Ruffner Road. No other sources of noise pollution were detected during the field visit. The nearest sensitive receptors to the Preferred Alternative site are the bachelor officers’ quarters adjacent to the lot and the child development center across the road to the northeast.

### **3.5 Air Quality**

The Clean Air Act of 1970, 42 United States Code (USC) 7401 et seq., amended in 1977 and 1990, is the primary federal statute governing air pollution. The Clean Air Act designates six pollutants as criteria pollutants, for which National Ambient Air Quality Standards (NAAQS) have been promulgated to protect public health and welfare. The six criteria pollutants are particulate matter, (PM<sub>10</sub> and PM<sub>2.5</sub>), carbon monoxide (CO), sulfur dioxide (SO<sub>2</sub>), nitrogen oxides (NO<sub>x</sub>), lead (Pb), and ozone (O<sub>3</sub>). Volatile organic compounds (VOCs) are not considered criteria pollutants, but emissions of VOCs are linked to ozone concentrations (EPA 2005a).

In addition, Federal law requires states or local air quality control agencies to establish a State Implementation Plan (SIP) that prescribes measures to achieve or maintain attainment of these standards. Areas that do not meet NAAQSs are designated as “non-attainment” for that criteria pollutant. As of April 11, 2005, the United States Environmental Protection Agency (EPA) classifies Anne Arundel County, Maryland, as being in moderate non-attainment for both O<sub>3</sub> and PM<sub>2.5</sub> (fine particulate matter less than 2.5 micrometers in diameter) (EPA 2005b and 2005c).

### **3.6 Earth Resources**

#### **3.6.1 Geology and Topography**

Fort Meade lies in the Atlantic Coastal Plain Physiographic Province. The Post is underlain by a wedge-shaped mass of unconsolidated sediments that thickens to the southeast. Beneath the sediments is crystalline rock of Precambrian to early Cambrian age (Fort Meade 2004a).

The series of thick, unconsolidated sediments underlying Fort Meade and Anne Arundel County are subdivided (from oldest to youngest) into the Potomac Group, Magothy Formation, and Patuxent River terraces and associated alluvium. The Potomac Group contains five geological units, three of which underlie Fort Meade: the Arundel Clay, the Patuxent Aquifer, and the Lower Patapsco Aquifer. The Arundel Clay contains low vertical hydraulic conductivity and serves as the confining layer between the two aquifers. It is visible in northern Anne Arundel County and consists of red, brown, and gray clay with some ironstone nodules and plant remains (Fort Meade 2004a).

An unnamed confining layer that lies above the Lower Potomac Aquifer is composed of tough variegated clay that generally exhibits low permeability. There are, however, layers within the confining layer that are permeable. Alluvium underlies all of the rivers, streams, and marshes of Fort Meade and consists of interbedded sand, silt, and clay with small gravel inclusions (Fort Meade 2004a).

The topography of Fort Meade slopes gradually to the south and southwest. Slopes exceeding 10% are rare and occur primarily in pockets in the north-central and central part of the Post and along stream corridors. The southern half of Fort Meade contains gradual slopes, generally less than 6%.

**3.6.2 Soils**

Fort Meade has 39 distinct soil mapping units according to the U.S. Department of Agriculture’s Fort George G. Meade Soil Survey (Fort Meade 2004a). The majority of the soil is part of an Evesboro complex. The surface soils identified at the project site are Evesboro Urban Land Complex, Evesboro Loamy Sand, and Evesboro–Galestown Loamy Sands. These soils are characterized in Table 3-1 by slope percent, soil erodibility (K factor), description, percent of coverage by type, and whether they are highly erodible lands (HEL).

**Table 3-1**  
**Types and Selected Physical Characteristics of Soil Found**  
**on the Preferred Alternative Project Site at Fort Meade**

Map Symbol	Map Unit Name	Soil Description	Slope Percent	K Factor	HEL
E	Evesboro Complex	<ul style="list-style-type: none"> <li>▪ Very deep excessively drained sandy loam soil on uplands</li> </ul>	0 to 5		
EoB	Evesboro Loamy Sand	<ul style="list-style-type: none"> <li>▪ deep, droughty sandy material with very low available moisture capacity</li> <li>▪ low natural fertility</li> <li>▪ gravelly material and discontinuous sandy clay lenses in the subsoil</li> </ul>	0 to 5	0.20	No
EsC	Evesboro and Galestown Loamy Sands	<ul style="list-style-type: none"> <li>▪ very droughty, sandy soils</li> <li>▪ very low to low available moisture capacity</li> <li>▪ well suited for community development</li> </ul>	5 to 10	0.20	No
EuD	Evesboro-Urban Complex	<ul style="list-style-type: none"> <li>▪ disturbed land exhibiting nearly level to sloping soils</li> <li>▪ very deep excessively drained soil on uplands</li> </ul>	5 to 15	0.20	No

Key:

K Factor = The degree or intensity of a soil's state or condition of, or susceptibility to, being erodible as determined by the Universal Soil Loss Equation.

HEL = Highly erodible lands as defined in the Anne Arundel County Code § 2-101 (22E).

Source: Fort Meade 2004a.

### **3.7 Infrastructure/Utilities**

#### **3.7.1 Stormwater Drainage**

The majority of stormwater runoff from Fort Meade is conveyed to Midway Branch and Franklin Branch through a combination of pipe and inlet systems together with open ditches. Developed areas generally are equipped with pipe and inlet systems. Because these areas typically contain small, isolated systems, conveyance pipes generally do not exceed 30 inches (Fort Meade 2004a).

The State of Maryland has stringent standards to protect the Chesapeake Bay watershed's valuable water resources. Provisions of the Code of Maryland Regulations 260901-260902 require that all jurisdictions within the state implement a stormwater management program to control the quality and quantity of stormwater runoff resulting from new development. The regulations require that the release rate from newly developed areas not exceed the rate generated by the site under undeveloped conditions. Furthermore, Fort Meade maintains a Stormwater Pollution Prevention Plan (SWPPP) that establishes BMPs for controlling and preventing siltation and other contaminants associated with construction and industrial activity sites from reaching area surface waters.

#### **3.7.2 Potable Water/Sanitary Sewer**

Fort Meade obtains all the potable water used on the Post from a combination of six groundwater wells and an intake in the Little Patuxent River. The groundwater wells draw from the Patuxent Aquifer. Commonly high iron levels from the Patuxent Aquifer exceed federal drinking water standards and require treatment at Fort Meade's water treatment plant.

Daily demands are met by using a mix of surface water and three or four groundwater wells. Under normal conditions, the Little Patuxent River supplies 75% of the water requirements of Fort Meade (Fort Meade 2004a). The Post withdraws water under two Water Appropriation and Use permits from the Maryland Department of Natural Resources (DNR), Water Resources Administration. One permit allows an average of 2 million gallons per day (mgd) of water to be withdrawn annually from the Post's groundwater wells. The other permit allows an average of 5.2 mgd of water to be withdrawn annually from the Little Patuxent River. The Post uses approximately 3.3 mgd on average annually. Peak summer demand rarely exceeds 6 mgd. Fort Meade also maintains approximately 3.475 million gallons of water for emergency use in eight storage tanks on the Post (Fort Meade 2004a).

Fort Meade operates its own water treatment plant, which receives raw water from both the Little Patuxent River and groundwater wells. The facility is a multimedia filtration plant that currently treats an average of 2 mgd, although the treatment capacity of the plant is 8.3 mgd. Water is treated for turbidity, iron, manganese, and fluoride before it is distributed.

One advanced wastewater treatment plant (AWWTP) serves the entire Post. The plant discharges to the Little Patuxent River and operates under National Pollutant Discharge Elimination System (NPDES) Permit No. 96-DP-2533A issued by Maryland Department of the Environment (MDE). The permit sets limits for pollutants in wastewater that can be released to the environment. An additional NPDES permit (No. 95-DP-2634) regulates the use of wastewater treatment effluent for irrigation purposes at the golf course. The AWWTP currently treats 2 mgd and has a treatment capacity between 4.5 and 5 mgd (Sharma 2005).

### **3.7.3 Solid Waste Management**

No active landfills are located on Fort Meade; all solid waste is transported to a state-permitted facility located off the Post. Solid wastes are currently collected and disposed of under a contract with IAP World Services. In fiscal year 2004, the Post generated about 4,549 tons of sanitary waste. However, the annual sanitary waste tonnage is dropping as a result of recycling program efforts (Marquardt 2005). Recycling reduces disposal cost, conserves natural resources, and minimizes environmental problems associated with land disposal. Fort Meade's policy on recycling is governed by the 11 June 2003 Policy Memorandum 200-1-8 entitled "Qualified Recycling Program."

Recycled inert wastes collected include items such as non-hazardous organic materials (yard debris), concrete, and asphalt. The inert waste tonnage recycled by Fort Meade is approximately 1,140 tons per year (Marquardt 2005). Additionally, the Qualified Recycling Program produced approximately 6,149 tons during fiscal year 2004. The majority of this recycled content was from construction and demolition waste associated with the current renovation projects underway throughout the Post and is expected to decrease as the projects are completed (Marquardt 2005).

### **3.7.4 Transportation Systems**

The primary highway access to Fort Meade is via MD Route 175 to Reese Road on the western side of the Post and handles all visitor traffic. Additional access points include MD Route 295, MD Route 175 at Rockenback Road, Mapes Road, and Llewellyn Avenue, MD Route 32 at Pepper Road and Mapes Road, and from two locations near the NSA facility in the southwest corner of the Post. A network of primary and tertiary roads provides access to and from the Alternative 1 site via Macarthur Road from the north/south and Ruffner Road from the west.

### **3.7.5 Public Safety**

Police services at Fort Meade are provided by military police. Additionally, Maryland State Police troopers are located at barracks in Jessup and Glen Burnie. The Fort Meade Fire Station has a 30-member staff, two engine-pump trucks, one emergency rescue vehicle, and one hazardous materials trailer.

Kimbrough Ambulatory Care Center, a Fort Meade outpatient medical care facility, is located less than 1 mile from the Preferred Alternative site. Three nearby civilian hospitals provide emergency services to the area: North Arundel Hospital in Glen Burnie (6 miles east of Fort Meade), Laurel Regional Hospital in Prince George's County (6 miles west), and Anne Arundel Medical Center in Annapolis (12 miles southeast). Military facilities nearby include Walter Reed Army Hospital in northwest Washington, D.C. (30 miles southeast) and National Naval Medical Center in Bethesda, Maryland (24 miles southeast; Fort Meade 2004b).

### **3.7.6 Electrical Systems/Natural Gas**

Baltimore Gas & Electric furnishes electrical and natural gas services to Fort Meade via a distribution system. Future increases in electrical energy needs are considered to be within capacity of the existing system. A Baltimore Gas & Electric natural gas line is located on the west side of the preferred site for the Proposed Action (Alternative 1). Overhead electrical lines run on the southern side of the Preferred Alternative site through the forest conservation area.

### **3.8 Hazardous Materials and Wastes**

The Post is identified as Hazardous Waste Generator ID No. MD 9210020567. Fort Meade is a 90-day facility that transports all hazardous waste off-Post to a permitted state facility. The Post maintains an Installation Hazardous Waste Management Plan (IHWMP) that establishes the implementation methods for hazardous waste located on the Post.

Fort Meade also operates under a Spill Prevention Control and Countermeasures Plan (SPCC Plan) for all facilities where hazardous materials are stored. The SPCC Plan delineates measures and practices that require implementation to prevent and/or minimize spill/release from storage and handling of hazardous materials to protect ground and water surfaces. Basic BMPs for pollution prevention would include monitoring of storage areas, secondary containment, and loading/unloading areas to ensure that products are not spilled during the construction, operation, and maintenance of the facility. No recognized environmental conditions were identified for the Preferred Alternative site based on a site reconnaissance, telephone interviews, and review of aerial photographs. In addition, no hazardous materials are used, nor generated, at the preferred site (Kandt 2005).

### **3.9 Biological Resources**

This chapter describes the existing biological features of the Preferred Alternative site, including general site observations and a review of threatened and endangered species. The following discussion is based on a review of available literature, information provided by environmental personnel at Fort Meade, and observations made during visits to the site on May 17, 2005.

#### **3.9.1 Vegetation**

The Preferred Alternative site is dominated by a mixed vegetation community consisting of mixed pines and hardwoods. A portion of the site is a designated forest conservation area. The conservation area is the product of a partnership between Fort Meade and Maryland DNR Forest Service in support of the Maryland Forest Conservation Act (FCA). This forest conservation area is an isolated wooded upland area surrounded by development and roadways.

#### **3.9.2 Wildlife**

Fort Meade does not have a current comprehensive species list for the Post. Wildlife species found on the Post are representative of those found in urban-suburban environments due to the heavily developed nature of the Post. These species include white-tailed deer (*Odocoileus virginianus*), gray squirrel (*Sciotoctolo Grigio*), raccoon (*Procyon Lotor*), opossum (*Didelphis virginiana*), Eastern chipmunk (*Tamias striatus*), field mouse (*Apodemus sylvaticus*), red fox (*vulpes vulpes*), vole, and mole (Fort Meade 2004a).

Bird species likely to inhabit or use the Preferred Alternative site would be limited to those that have adapted to an urban-suburban existence, such as American robin (*Zenaida macroura*), catbird (*Dumetella carolinensis*), mockingbird (*Mimus polyglottos*), Carolina chickadee (*Poecile carolinensis*), Carolina wren (*Thryothorus ludovicianus*), house wren (*Troglodytes aedon*), downy woodpecker (*Picoides pubescens*), common flicker (*Colaptes auratus*), European starling (*Sturnus vulgaris L.*), house sparrow (*Passer domesticus*), rock dove (*Columba livia*), mourning dove (*Zenaida macroura*), and song sparrow (*Melospiza melodia*). Warblers and raptors may be found

during migrations, however, due to limited habitat, they are most likely not breeding on the Post (Fort Meade 2004a).

### **3.9.3 Threatened and Endangered Species**

Except for occasional transient individuals, no federally listed or proposed endangered or threatened species are known to occur on Fort Meade (Fort Meade 2004b). According to the Maryland Natural Heritage Program, there is one state-endangered fish, the glassy darter (*Etheostoma vitreum*), within the Patuxent River (Fort Meade 2004a). Additionally, the Fort Meade Integrated Pest Management Plan lists nine plant species of state importance that may occur in or around Fort Meade. These include: shaved sedge (*Carex tonsa*), Asa Gray's cyperus (*Cyperus grayi*), Leavenworth's sedge (*Carex leavenworthii*), downy bushclover (*Lespedeza stuevei*), Eastern sedge (*Carex atlantica*), dwarf azalea (*Rhododendron atlanticum*), small's ragwort (*Senecio anonymus*), purple chokeberry (*Aronia prunifolia*), and weak stellate sedge (*Carex seorsa*; Fort Meade 2004a). Army installations must be sensitive to those species that are listed as endangered or threatened under State law, but that are not federally listed (Army Regulation 200-3). State-listed species are not protected under the Endangered Species Act; however, whenever feasible, the Post cooperates with state authorities in an effort to identify and conserve state-listed species.

## **3.10 Cultural Resources**

Cultural resources are protected by a variety of laws and regulations, including the National Historic Preservation Act, as amended; NEPA; the Archaeological Resources Protection Act; the American Indian Religious Freedom Act; and the Native American Graves Protection and Repatriation Act.

Section 106 of the National Historic Preservation Act and implementing regulations (36 CFR 800) outline the procedures to be followed in the documentation, evaluation, and mitigation of impacts for cultural resources. The Section 106 process applies to any federal undertaking that has the potential to affect cultural resources. Projects that require federal funding or are subject to federal regulation also are subject to the Section 106 process, and ensuring compliance with the process is the responsibility of the relevant federal agency. Due to time and resource constraints, project proponents usually fund and contract for the actual work to be done, and the federal agencies do the formal consulting required by the regulations.

The Maryland Historical Trust and sometimes the Advisory Council on Historic Preservation must be consulted regarding impacts to cultural resources and means to mitigate the impacts. Once resources have been identified, and impacts defined, mitigation measures are determined. Depending on the resources encountered, federally recognized American Indian tribes may also be consulted.

### **3.10.1 Archaeological Resources**

The Preferred Alternative site (Alternative 1) was surveyed for archaeological resources in 2001. The Directorate of Public Works, Environmental Management Office, (DPW-EMO) and Maryland Historical Trust established that there are no archaeological resources on the Preferred Alternative site. The Fort Meade Integrated Cultural Resources Management Plan (ICRMP) indicates that there are archaeological sites on the Post (USACE 2001).

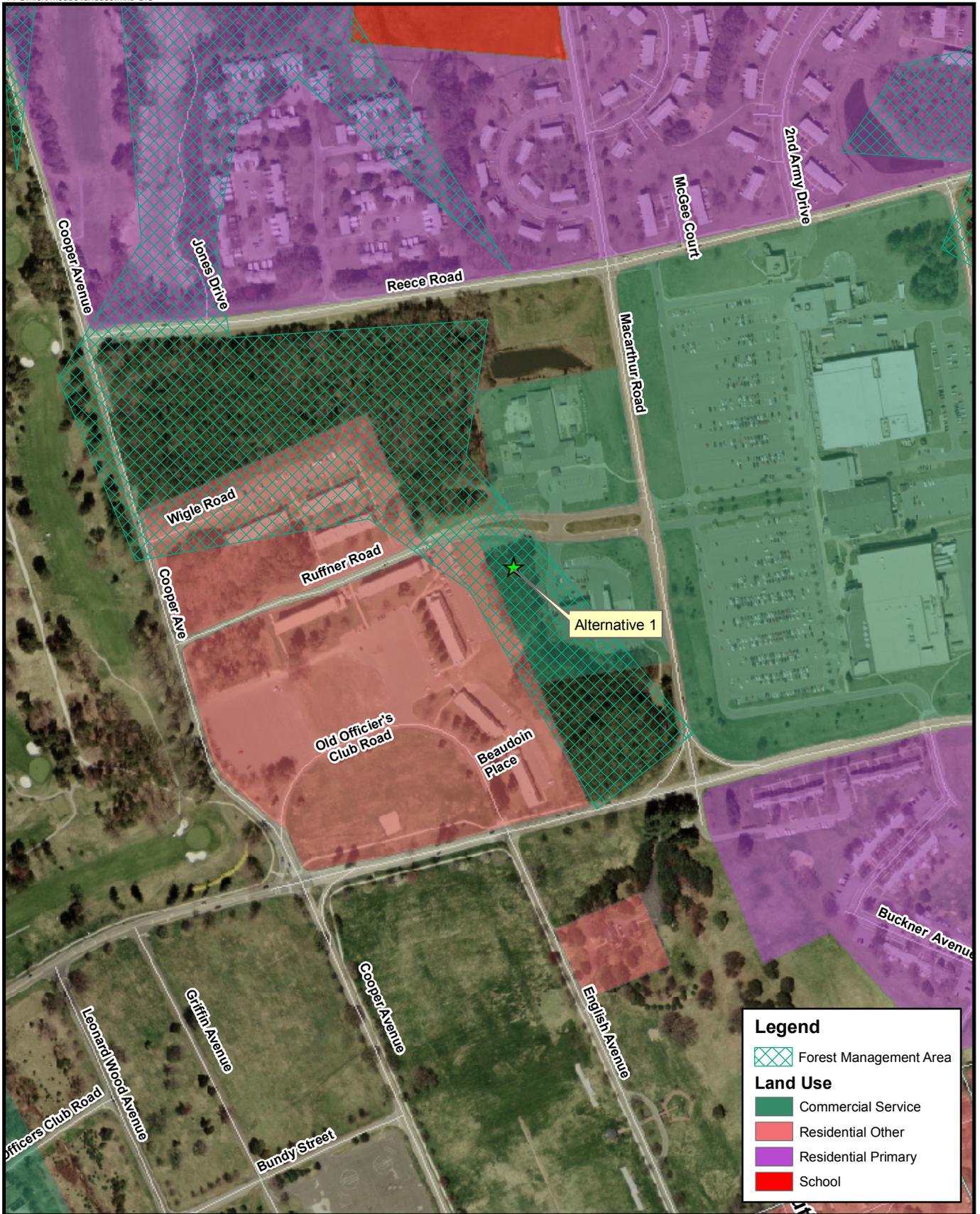
### **3.10.2 Historic Structures**

No properties on Fort Meade are currently listed in the NRHP; however, two historic properties have been determined to be eligible for listing on the NRHP (USACE 2001). These properties include the Fort Meade Historic District located in the southern portion of the Post and the Art Moderne water treatment plant (Building 8688). No historic structures are located on or adjacent to the Preferred Alternative site.

### **3.11 Land Use**

Fort Meade's Master Plan establishes both current and future land use activities on the Post. Current activities on the Post include the support of more than 50 tenant units such as the Defense Information School Headquarters and the National Security Agency, Kimbrough Ambulatory Care Center, the Post Exchange, the Commissary, barracks, and various family housing areas (OASD-PA and DoD 2005).

The Master Plan establishes zones for development on the Post. The Preferred Alternative is currently designated as "Commercial Service." Land use adjacent to the Preferred Alternative site is "Residential Other" (temporary housing and unaccompanied personal housing) to the west and "Commercial Service" to the east and north (Figure 3-1).



**Current Land Use and Location of Preferred Alternative  
Fort George G. Meade  
Ft. Meade, Maryland**



**Figure 3-1**

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## 4.0 Environmental Consequences

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### 4.1 Introduction

This chapter presents an analysis of the potential environmental consequences from implementation of the Preferred Alternative (Alternative 1) and from the No-Action Alternative (Alternative 4) on the various resources identified in Section 3.0. For each resource, effects resulting from the construction of the car wash at the preferred site (Alternative 1) are discussed first, followed by an analysis of the No-Action Alternative. Threshold levels of significance criteria, which are identified at the beginning of each resource discussion, were used to evaluate potential impacts.

### 4.2 Socioeconomic Resources

The threshold level of significance for socioeconomic resources is the potential of the project to result in a substantial population increase, to displace residents, or to result in a substantial change in employment or income.

#### 4.2.1 Alternative 1: Preferred Alternative Site

##### *Demographics*

Under Alternative 1, demographic compositions are expected to remain the same. The customer base is not expected to increase significantly due to customers using the new car wash; most customers visiting the car wash would be expected to use other nearby AAFES services. Any increases, however, would likely not reflect compositional changes according to gender, age, or race; therefore, implementation of Alternative 1 would result in no effect to demographics. No mitigation measures are proposed.

##### *Economic Activity*

The estimated cost of construction for a new car wash facility is approximately \$1,300,000. The proposed new facility would have an estimated three to five employees. The customer base is anticipated to be 0.5% (150 vehicles) of the total number of people (30,000) on the Post per day (O'Brien 2005). Furthermore, these customers are more likely to use this facility than other off-Post facilities due to convenience of location. Total sales at proximate facilities may increase from current levels as a result of the proposed car wash; therefore, this project is expected to have a positive, but insignificant, economic impact for the Post. No mitigation measures are proposed.

##### *Environmental Justice and Protection of Children*

The Proposed Action would not result in significant, disproportionate, adverse impacts on low income or minority adult populations as there is no designated minority or low income housing proximate to the Preferred Alternative site. Additionally, the Preferred Alternative site is zoned for "Commercial Service" activity and is surrounded by existing service facilities.

Implementation of the Proposed Action would not result in a disproportionate risk to children from environmental health risks or safety risks. The Proposed Action would not include the introduction of hazardous materials to the site that would present a disproportionate risk to children.

#### **4.2.2 Alternative 4: No-Action Alternative**

The No-Action Alternative would require no construction activities, so no change in existing conditions would occur. No mitigation measures are proposed for this alternative.

### **4.3 Water Resources**

The threshold level of significance for water resources is the potential of the project to cause substantial changes in wetlands functions, groundwater or surface water flows, increased risk of flooding, the potential to violate an applicable water quality standard for protection of fish and wildlife, or degradation of a water body used as a potable water source.

#### **4.3.1 Alternative 1: Preferred Alternative Site**

##### *Surface Water*

Construction of the Proposed Action on the Preferred Alternative site would result in the loss of natural vegetation and trees on approximately 0.85 acres. Vegetation loss during construction activities would cause soils at the Alternative 1 site to be exposed; the potential for soil erosion and sedimentation to the tributaries on Fort Meade could adversely affect the water quality of the Little Patuxent River downstream. Since the disturbed area for the Proposed Action would be less than 1 acre in size, an NPDES stormwater permit for construction would not be required; however, the contractor would be required to comply with *Maryland Erosion and Sediment Control Guidelines for State and Federal Projects* (MDE 1990; see Appendix B) and *Maryland Stormwater Management Guidelines for State and Federal Projects* (MDE 2001; see Appendix C) to avoid and minimize erosion at the construction site and sediment runoff to waterways (Table 4-1). As part of compliance with these guidelines, the contractor would develop, and submit to the MDE for review and approval, a stormwater management plan (SWMP) and an erosion and sediment control plan (E&SCP) prior to the onset of construction (Marquardt 2005). Approval of the site's SWMP by the MDE would be contingent upon adequate stormwater control and prevention at the site over the long-term (post-construction). Alternatively, AAFES may apply to MDE for a waiver for the stormwater management quantity and quality control requirements if they can demonstrate to the satisfaction of the MDE Water Administration that:

- the project shall return the disturbed area to a predevelopment runoff condition (no hydrologic change and/or redevelopment occurs), i.e., pipeline or conduit projects, certain landscaping projects, certain maintenance projects, certain underground projects; or
- the project lies within an area with an approved watershed management plan; or
- the project lies within an approved institutional management plan that has been developed consistent with Section 3.4 of the *Maryland Stormwater Management Guidelines for State and Federal Projects* (MDE 2001).

**Table 4-1**  
**Potential Water Resources Requirements for the Proposed Action**

<b>Element</b>	<b>Actions</b>	<b>Reviewing Agency</b>
Stormwater Management Plan	Submit plan for review and approval; or Application for Waiver if can show project impacts will not adversely effect surface waters	Maryland Department of the Environment
Erosion and Sediment Control Plan	Submit plan for review and approval	Maryland Department of the Environment
Stormwater Pollution Prevention Plan	Compliance	Fort Meade Department of Public Works, Environmental Management Office
Federal Consistency Determination	Compliance with Coastal Zone Management Act	Maryland Department of the Environment, Wetlands and Waterways Program

Project activities must also comply with Fort Meade SWPPP regulations, which require implementation of measures similar to the stormwater BMPs currently in place for commercial facilities as well as those recommended in the SWPPP. The erosion and sediment controls implemented on the site would be designed to retain sediment on site to the maximum extent possible. Sediment accumulations must be removed from these structures when design capacity has been reduced by 50%. Following initial soil disturbance in the area during construction, temporary soil stabilization must be completed within seven days to the surface of all perimeter dikes, ditches, swales, and all slopes greater than three horizontal to one vertical (3H:1V) or within 14 days for all other disturbed or graded areas to reduce erosion and runoff from the site (MDE 1990).

In addition, since the project site is located within Maryland’s Coastal Zone Management Area, a Federal Consistency Determination has been obtained from the MDE (see Appendix A). The Erosion and Sediment Control Plan and Stormwater Management Plan for the Proposed Action must be submitted to the MDE for review and approval.

Erosion, sediment, and other pollutants would be controlled during all phases of construction in accordance with State of Maryland and federal regulations. Any potential adverse impacts on surface water resources from construction activities would be short-term, localized, and minor in intensity.

***Groundwater***

Construction of the Proposed Action at the Alternative 1 (preferred) site would be within an aquifer recharge area. All onsite construction and operation activities would be required to be in accordance with the Fort Meade SWPPP. Hazardous materials would be stored and disposed of in accordance with all local, state, and federal laws and regulations, and the IHWMP, SPCC Plan, and the Installation Spill Contingency Plan (ISCP). Project design would also include BMPs for control of surface drainage that could contain hazardous materials, such as oil and grease in accordance with the IHWMP. Because of adherence to existing plans and regulations, no adverse effects to groundwater resources would be expected. No mitigation measures are proposed.

### **4.3.2 Alternative 4: No-Action Alternative**

The No-Action Alternative would result in no construction activities; therefore, there no change in existing conditions would occur. No mitigation measures are proposed for this alternative.

## **4.4 Noise**

The threshold level of significance for noise is the increase of incompatible noise contours where sensitive noise receptors (i.e., residences, hospitals, libraries) are located.

### **4.4.1 Alternative 1: Preferred Alternative Site**

#### ***Construction***

Under the Preferred Alternative, sensitive receptors would experience temporary increases in noise levels during construction. Standard construction equipment would be used, including log chippers and shredders, bulldozers, front end loaders, pans track hoes, backhoes, graders, dump trucks, vibrating compactors, sheepsfoot compactors, trenchers, cranes, equipment repair truck, readymix trucks, concrete pumping trucks, curb and gutter machines, pavers, forklifts, and building material and equipment delivery trucks. Short-term noise impacts would continue for approximately nine months from the commencement of site work (October 2005) to the end of construction activities at the Preferred Alternative site. Also, there would be an increase in vehicular traffic noise due to workers driving to the site. Impacts could be minimized by limiting construction activity to daylight hours and by using properly maintained and muffled equipment. Noise associated with implementation of the Preferred Alternative would primarily occur during construction.

The nearest sensitive receptors to the site of the Proposed Action are bachelors' officers quarters adjacent to the Alternative 1 site and the child development center northeast of the site. Noise from construction would represent a short-term impact to those in the area, primarily while they are outdoors. Since construction would occur during the day, no adverse noise impacts would be anticipated for the housing area, however, there would be a minimal short-term increase in noise levels at the child development center during construction.

#### ***Operation***

After implementation of the Proposed Action, noise from operation of the car wash would be limited primarily to a slight increase in the number of vehicles in the area, including patron traffic. This increase in vehicular traffic would have a corresponding increase in noise levels. The facility would be open 24 hours a day, seven days a week. In addition, the use of the vacuum machines and the car wash bays would result in an increase in noise levels during the operation of the car wash facility. Compared to existing noise levels, the noise levels from increased activity would be expected to add a minimal increase to existing ambient noise levels in the project area, the child development center, and the housing area, the nearest sensitive receptors.

### **4.4.2 Alternative 4: No-Action Alternative**

The No-Action Alternative would result in no construction activities; therefore, there would be no change in existing conditions. No mitigation measures are proposed for this alternative.

## **4.5 Air Quality**

The General Conformity Rule has been promulgated by the EPA to ensure that the actions of federal departments or agencies conform to the applicable SIP. The General Conformity Rule covers direct and indirect emissions of criteria pollutants or their precursors that are caused by a federal action, are reasonably foreseeable, and can practically be controlled by the federal agency through its continuing program responsibility. Conformity is demonstrated if the total net emissions expected to result from a federal action in a nonattainment or maintenance area will not:

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

A federal action is exempt from applicability of the General Conformity Rule requirements if the action's total net emissions are below the *de minimis* levels specified in the rule and are not regionally significant (i.e., the emissions represent 10% or less of a nonattainment or maintenance area's total emission inventory of that pollutant) or are otherwise exempt per 40 CFR 51.153. Total net emissions include direct and indirect emissions from all stationary point and area sources, construction sources, and mobile sources caused by the federal action but are not covered by another permitting program. O<sub>3</sub> does not occur directly from any source, but results from a series of reactions between NO<sub>x</sub> and VOCs in sunlight.

### **4.5.1 Alternative 1: Preferred Alternative Site**

The developed areas would consist of a car wash facility, vacuum/drying bays, and two access ways. During the construction of the Proposed Action at the Alternative 1 site, the operation of heavy equipment would result in minor, temporary negative impacts on air quality. These impacts would be primarily in the form of increased exhaust pollutants, which can be minimized through good vehicle maintenance. Due to the size of this project, exhaust emissions from construction equipment will only result in minimal emissions of PM<sub>10</sub>, PM<sub>2.5</sub>, CO, SO<sub>2</sub>, NO<sub>x</sub>, and VOCs. Fugitive dust emissions are caused by ground-disturbing activities which would only occur during the first month of construction. Fugitive dust can be greatly minimized by appropriate dust control measures such as wetting the surfaces and by re-vegetating disturbed areas as soon as possible. Therefore, the primary short-term air quality impacts resulting from the proposed project would be a temporary increase of air pollutants during construction, which would cease as soon as the project is completed.

The construction of the Proposed Action at the Alternative 1 site is not expected to significantly increase the number of vehicles operating in the area since most customers would be current AAFES patrons on Post. No long-term air quality impacts are anticipated for implementing the Proposed Action under Alternative 1.

#### **4.5.2 Alternative 4: No-Action Alternative**

Under the No-Action Alternative, there would be no change in existing conditions and no new construction activities would take place; therefore, no mitigation measures are proposed for this alternative.

### **4.6 Earth Resources**

The threshold level for earth resources (i.e., soils and topography, and geology) is any ground disturbance or other activities that would violate applicable federal or state laws and regulations, such as the Maryland Erosion and Sediment Control Act, and the potential for Notices of Violation for the failure to receive applicable state permits, such as the NPDES construction permit under the Maryland Erosion and Sediment Control Act, prior to initiating the Proposed Action.

#### **4.6.1 Alternative 1: Preferred Alternative Site**

At the Alternative 1 site, project development would require the removal of approximately 0.85 acres of vegetation; however, efforts would be made during construction to preserve vegetation during construction activities to minimize soil disturbance on the preferred site. During construction activities (clearing, grading, and excavating) soils would be susceptible to increased erosion during rainfall events, resulting in short-term adverse impacts to soils. No long-term adverse impacts are expected as there are no HEL soils on the Preferred Alternative site. Adverse impacts from geologic hazards, including seismic shaking or subsidence, are not likely to affect this project. In addition, there are no known unique geologic features or mineral resources on the site that would be affected.

Adherence to the *Maryland Erosion and Sediment Control Guidelines for State and Federal Projects* (MDE 1990; see Appendix B) and the *Maryland Stormwater Management Guidelines for State and Federal Projects* (MDE 2001; see Appendix C) would be required and would include measures to avoid and minimize erosion at the construction site and sediment runoff during construction activities at the Preferred Alternative site. As part of compliance with these guidelines, the USAR and construction contractor would develop, and submit to the MDE for review and approval, a stormwater management plan and erosion and sediment control plan prior to the onset of construction. As a result of following these plans and implementing BMPs, adverse impacts on soils would be short-term.

#### **4.6.2 Alternative 4: No-Action Alternative**

The No-Action Alternative would result in no construction activities; therefore, there would be no change in existing conditions. No mitigation measures are proposed for this alternative.

### **4.7 Infrastructure/Utilities**

The threshold level of significance for infrastructure, utilities, and public safety is the potential for project-related changes to create a substantial increase in demand for utilities and the capacity of these utilities to supply the additional demand.

**4.7.1 Alternative 1: Preferred Alternative Site**

***Stormwater Drainage***

Construction of the Proposed Action at the Alternative 1 site would result in the loss of natural vegetation and trees on approximately 0.85 acres. Because of the vegetation loss during construction activities, soils located at the Preferred Alternative site would be exposed and the potential for soil erosion and sedimentation to Fort Meade waters would increase. The contractor would be required to implement strict erosion-control measures to prevent increased erosion and sedimentation during construction activities; however, because the proposed footprint of the Proposed Action is less than 1 acre in size a NPDES permit would not be required.

***Potable Water/Sanitary Sewer***

The existing water treatment plant and water supply system have the available capacity to accommodate the water supply needed by the Proposed Action. An estimated maximum of 28,000 gallons per day (gpd) of water would be used for the Proposed Action if, under the worst-case scenario, no water conservation methods were employed; however, the design for the car wash incorporates a reclaim system that would filter and reuse an estimated 80% of the water in order to minimize the amount of potable water consumed (Ryko Manufacturing Company 2003). This would decrease the amount of potable water needed to operate the facility to 4,400 gpd as shown in Table 4-2 (Brown 2002). The Fort Meade Environmental Management Office has also requested the facility incorporate a closed-loop system where only water lost due to evaporation and drag out would be consumed by the operation (Brown 2002). Demand is expected to be 100 gpd during site work and 40 gpd during construction. Additionally, greywater from the nearby golf course will be investigated as a source for the car wash water supply. These conservation measures comply with MDE’s drought requirements for commercial car wash facilities, as well as Fort Meade DPW-EMO requirements (Sharma 2005).

**Table 4-2**  
**Potential Potable Water Requirements for the Proposed Action**

<b>Potable Water Use</b>	<b>Self-Service (gallons per vehicle)</b>	<b>Automatic</b>	<b>Total gallons per day <sup>a</sup></b>
No Reclaim	15	55	28,000
Filtration/Reclamation	3 <sup>b</sup>	8	4,400
Closed Loop	n/a <sup>c</sup>	n/a	n/a

Notes:

<sup>a</sup> Expected customer base for car wash is 1% of 39,000 person workforce (approximately 400 vehicles per day)

<sup>b</sup> 80% less water consumption for a reclaimed system (Ryko Manufacturing Company 2003)

<sup>c</sup> Within a closed loop system, only water lost to evaporation and drag-out would be consumed (Brown 2002)

No water strain from current demand or projected demands is expected. The Post’s withdrawal permits allow the withdrawal of 7.2 mgd, however, the average use is 3.3 mgd (Fort Meade 2004a). The treatment capacity of the plant is 8.3 mgd. An existing 8-inch water supply pipe located adjacent to the Preferred Alternative site would provide adequate domestic and fire protection supplies for the

proposed development. Fort Meade also maintains approximately 3.475 million gallons of water for emergency use in eight storage tanks on the Post (Fort Meade 2004a).

The existing sanitary sewers and wastewater treatment system have the capacity to accommodate wastewater generated by the Proposed Action. The AWWTP currently treats 2 mgd of wastewater and has the capacity to treat 4.5 to 5 mgd. Implementation of the Preferred Alternative would not result in an adverse impact to the sanitary sewer and wastewater treatment facilities.

### ***Solid Waste Management***

Construction activities related to the proposed car wash would result in the temporary generation of additional solid waste material. This material would be disposed of on the Post or would be removed from the Post as determined by the construction contract. Once implemented, the Preferred Alternative would not substantially change solid waste generation; only a slight increase would be expected since no increase of permanently assigned personnel would occur at the new facility. No adverse impact with relation to solid waste would be expected from the implementation of Alternative 1.

### ***Transportation Systems***

The threshold level of significance for transportation systems is the potential to substantially impact existing traffic flow, traffic volumes, and/or existing traffic levels of service.

Construction of the Proposed Action on the Preferred Alternative site would only slightly increase the volume of traffic in the project area due to on-road use by construction equipment, construction workforce vehicles, and vehicles delivering construction materials. It is estimated that approximately 15 trips maximum would be required on a daily basis for construction. Construction traffic would likely access the Alternative 1 site via Ruffner Road. Therefore, these 15 trips per day would only result in a slight increase of vehicular traffic that would be negligible and would not result in any impacts to traffic flow.

The customer base for the Proposed Action is anticipated to be 1% of the current workforce and resident population (approximately 39,000) that is on the Post daily (O'Brien 2005). Although there may be new trips generated as a result of the Proposed Action, they will result in negligible traffic impacts.

### ***Public Safety***

Adequate emergency services for fire, security, and medical care are available and no adverse impacts would be expected to occur.

### ***Electrical Systems/Natural Gas***

Under the Preferred Alternative, no adverse impacts to utilities would be expected.

#### **4.7.2 Alternative 4: No-Action Alternative**

The No-Action Alternative would result in no construction activities. Therefore, there would be no change in existing conditions. No mitigation measures are proposed for this alternative.

### **4.8 Hazardous Materials and Wastes**

The threshold level of significance for hazardous materials and wastes is the potential to substantially affect human health, safety, or the environment.

#### **4.8.1 Alternative 1: Preferred Alternative Site**

Construction of the Proposed Action at the preferred site would require the use of heavy machinery, which would, in turn, require maintenance and fuel. Although maintenance would most likely be performed off-site and within an authorized service shop, the use of construction machinery on the site could introduce small quantities of solvents, cleaning agents, greases, oils, hydraulic fluids, and fuel (e.g., gasoline and diesel). Paints and adhesives would also be used on the site during project construction. Hazardous materials would be stored and disposed of in accordance with all local, state and federal laws and regulations, and the Fort Meade IHWMP, SPCC Plan, and ISCP. The construction contractor would likely store hazardous materials in an onsite secured location. No significant quantities of hazardous materials would be used onsite.

There is no known history or evidence of the use, storage, or dumping of hazardous or toxic materials at the Preferred Alternative site (Kandt 2005). Limited hazardous wastes may be stored or generated during construction of the Proposed Action. These would be stored and disposed of per applicable regulations.

#### **4.8.2 No-Action Alternative**

The No-Action Alternative would result in no construction activities; therefore, no change in existing conditions would take place. No mitigation measures are proposed for this alternative.

### **4.9 Biological Resources**

The threshold level of significance for federally protected species would include the disruption of normal behavior patterns or disturbance to habitat at a level that would substantially impact the Post's ability to either avoid jeopardy or to conserve and recover the species. The threshold level of significance for vegetation is removal in amounts that would alter the habitat in a manner detrimental to the species living there.

#### **4.9.1 Alternative 1: Preferred Alternative Site**

##### ***Vegetation***

Construction of the proposed project at the Preferred Alternative site would require the removal of trees and shrubs. During design and construction, efforts would be made to minimize the impacts to vegetation by retaining portion of vegetation on the site. Construction of the proposed project would not contribute to the fragmentation of the existing forest habitat because the Preferred

Alternative site is located within a predominantly urbanized area (e.g., paved roads, shopping center, service centers, etc.) that supports Post personnel and their families.

Project proponents are required to follow the FCA Manual and Ft Meade guidance in planning project development (Fort Meade 2004a). A Forest Stand Delineation (FSD) may be required to characterize and quantify existing forest resources, identify forest cover in the Net Tract Area, and identify areas of forest with priorities for retention (Fort Meade 2004a). Ft Meade may waive the need for a FSD, but generally complies with the FCA; clarification of disputes relies on the FCA standards and specifications. Therefore, in lieu of performing a FSD, Ft Meade requires that 20% mitigation of the total project area, excluding the existing FCA mitigation area. Necessary development of existing FCA areas shall be mitigated at 100%, at minimum; acre per acre. Where ecologically beneficial and practical FCA mitigation shall occur on the project site, otherwise mitigation shall occur on Ft Meade designated sites. A FCA plan mitigation shall be submitted to the Fort Meade DPW-ED for review and approval prior to onset of construction activities.

### ***Wildlife***

Implementing the Proposed Action at the Preferred Alternative site would result in the permanent loss of approximately 0.85 acres of habitat. The majority of the species that currently use the area have adapted to living in urban areas and co-existing with human activity. Many of these same species are also mobile generalist species that use a variety of interspersed/fragmented habitats, range over wide areas for food and cover, and/or are migratory and would use the site seasonally. Therefore, it is anticipated that most wildlife species would be able to avoid the disturbance by relocating to adjacent minimally disturbed areas. Clearing of vegetation and earth-moving activities would result in some unavoidable mortality to burrowing and less mobile fauna. This loss of habitat would result in a minor adverse effect. No additional mitigation measures are proposed.

### ***Threatened and Endangered Species***

Based upon the limited field survey and review of available information no federally listed or proposed threatened or endangered species or critical habitat would be adversely affected by the Proposed Action under Alternative 1.

#### **4.9.2 Alternative 4: No-Action Alternative**

No construction activities would occur under the No-Action Alternative and no change to existing conditions would occur. No mitigation measures are proposed for this alternative.

#### **4.10 Cultural Resources**

The threshold level of significance for cultural resources is the violation of applicable federal laws and regulations, such as the National Historic Preservation Act, Archaeological Resources Protection Act, and others.

##### **4.10.1 Alternative 1: Preferred Alternative Site**

Based on a recent field visit and the Fort Meade ICRMP, it is unlikely that cultural resources would be impacted under implementation of Alternative 1; no effect on cultural resources is expected.

#### **4.10.2 Alternative 4: No-Action Alternative**

The No-Action Alternative would result in no construction activities. Therefore, there would be no change in existing conditions. No mitigation measures are proposed for this alternative.

#### **4.11 Land Use**

The threshold level of significance for land use includes consistency with land use plans and compatibility with existing and future surrounding land uses.

##### **4.11.1 Alternative 1: Preferred Alternative Site**

Under Alternative 1, land use would be altered. The Preferred Alternative site is currently undeveloped and wooded with additional woodlands to the south; however, the areas to the east, west, and northeast are urbanized. Most of the 0.85-acre site would be cleared of trees. Existing peripheral trees and vegetation fronting Ruffner Road would be preserved. Onsite activities would include developing a concrete slab/foundation, the proposed car wash facility, pavement, two new entranceways (one from Ruffner Road and an access road to the shopette parking lot) and a left-hand turning lane for the primary entrance from Ruffner Road. The Proposed Action would be contained within Fort Meade, which sets its own land use and zoning designations and would not present conflicts with local or state land use or zoning designations. The Preferred Alternative site is designated as “Commercial Service” and construction of the proposed car wash facility would not change the land designation. No significant adverse impacts are anticipated from the Proposed Action, and use of the Preferred Alternative site would be compatible with surrounding land uses.

##### **4.11.2 Alternative 4: No-Action Alternative**

The No-Action Alternative would result in no construction activities and existing conditions would not change. No mitigation measures are proposed for this alternative.

#### **4.12 Summary of Potential Direct and Indirect Environmental Consequences and Associated Mitigation Measures**

Table 4-3 summarizes the potential environmental effects of the Preferred Alternative and the No-Action Alternative, as well as proposed mitigation, as applicable.

**Table 4-3  
Potential Environmental Effects and Proposed Mitigation Measures**

Affected Environment	Alternative 1			No-Action Alternative	
	Potential Effects Construction	Potential Effects Operations	Proposed Mitigation	Potential Effects	Proposed Mitigation
<b>Socioeconomic Resources</b>					
Demographics	0	0	▪ None proposed	0	▪ None proposed
Economic Activity	+	+	▪ None proposed	-	▪ None proposed
Environmental Justice and Protection of Children	0	0	▪ None proposed	0	▪ None proposed
<b>Water Resources</b>					
Surface Water	-	-	▪ Adherence to SPCC Plan, SWPPP, ESCP, and SWMP	0	▪ None proposed
Ground Water	0	0	▪ None proposed	0	▪ None proposed
Wetlands and Floodplains	0	0	▪ None proposed	0	▪ None proposed
<b>Noise</b>	-	-	▪ Limit construction activities to daylight hours and use of properly muffled equipment.	0	▪ None proposed
<b>Air Quality</b>	-	0	▪ None Proposed	0	▪ None proposed
<b>Earth Resources</b>	-	0	▪ Adherence to SPCC Plan, SWMP, SWPPP, and ESCP	0	▪ None proposed
<b>Infrastructure/Utilities</b>					
Stormwater Drainage	-	0	▪ Adherence to SPCC Plan, SWPPP, SWMP, and ESCP	0	▪ None proposed
Potable Water/Sanitary Sewer	0	0	▪ None proposed	0	▪ None proposed
Solid Waste Management	0	0	▪ None proposed	0	▪ None proposed
Transportation Systems	-	0	During construction activities: ▪ Provide adequate off-street parking for all construction workers to avoid increased congestion near roadsides; ▪ Encourage construction workers to carpool to the site; and ▪ Schedule truck trips at intervals over the entire working day, thus avoiding peak-hour traffic times.	0	▪ None proposed
Public Safety	0	0	▪ None proposed	0	▪ None proposed
Electrical Systems/Natural Gas	0	0	▪ None proposed	0	▪ None proposed

**Table 4-3  
Potential Environmental Effects and Proposed Mitigation Measures**

Affected Environment	Alternative 1		No-Action Alternative	
	Potential Effects Construction	Potential Effects Operations	Potential Effects	Proposed Mitigation
<b>Hazardous Materials and Wastes</b>	0	0	0	<ul style="list-style-type: none"> <li>Adherence to the Post SPCC and IHWMP requirements</li> </ul>
<b>Biological Resources</b>				
Vegetation	--	0	0	<ul style="list-style-type: none"> <li>Attempt to minimize impacts during initial design activities by introducing green areas and landscaping throughout the project.</li> <li>Adhere to the Maryland Forest Conservation Act to replant trees in a designated area at a 1:1 ratio for those removed during construction.</li> </ul>
Wildlife	-	0	0	<ul style="list-style-type: none"> <li>None proposed</li> </ul>
Threatened and Endangered Species	0	0	0	<ul style="list-style-type: none"> <li>None proposed</li> </ul>
<b>Cultural Resources</b>	0	0	0	<ul style="list-style-type: none"> <li>None proposed</li> </ul>
<b>Land Use</b>	0	0	0	<ul style="list-style-type: none"> <li>None proposed</li> </ul>

Key:

- 0 = No impact.
- = Minor adverse impact.
- = Moderate adverse impact.
- + = Minor positive impact.
- ++ = Moderate positive impact.
- ESCP = Erosion and Sediment Control Plan.
- IHWMP = Integrated Hazardous Waste Management Plan.
- SPCC = Spill Prevention, Control, and Countermeasures.
- SWMP = Stormwater Management Plan.
- SWPPP = Stormwater Pollution Prevention Plan.

### **4.13 Cumulative Impacts**

The CEQ defines cumulative impacts 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” (CEQ 1978). The actions proposed under the alternatives in this EA, in addition to other proposed projects on Fort Meade, have the possibility to result in either negative or positive impacts in a cumulative manner. The projects are limited on a temporal basis since they all have the potential to be implemented within a 10-year period, as indicated by the planning documents obtained for the Post, and therefore may increase the potential for cumulative effects.

Preliminary analysis indicated that the potential direct environmental and socioeconomic effects associated with the preferred alternative would be minor, while there would be no anticipated cumulative effect to environmental justice and protection of children. In general, the construction, operation, and maintenance of the new AAFES facility at the Preferred Alternative site would have no significant adverse cumulative effects. During construction, effects to resources such as air quality, noise, and vegetation would be short-term and temporary. When the construction of the AAFES car wash is analyzed together with past, ongoing, and potential future actions there would be the potential, when combined with other on-Post construction projects, for a short-term localized cumulative effect. Any potential cumulative effect, however, would not be significant because AAFES would be implementing measures such as use of proper equipment and implementation of BMPs to lessen air quality and noise impacts, in addition to adhering to existing standard operating procedures and other guidance already in place at Fort Meade. Figure 4-1 illustrates the locations and expected implementation dates of proposed activities on Fort Meade.

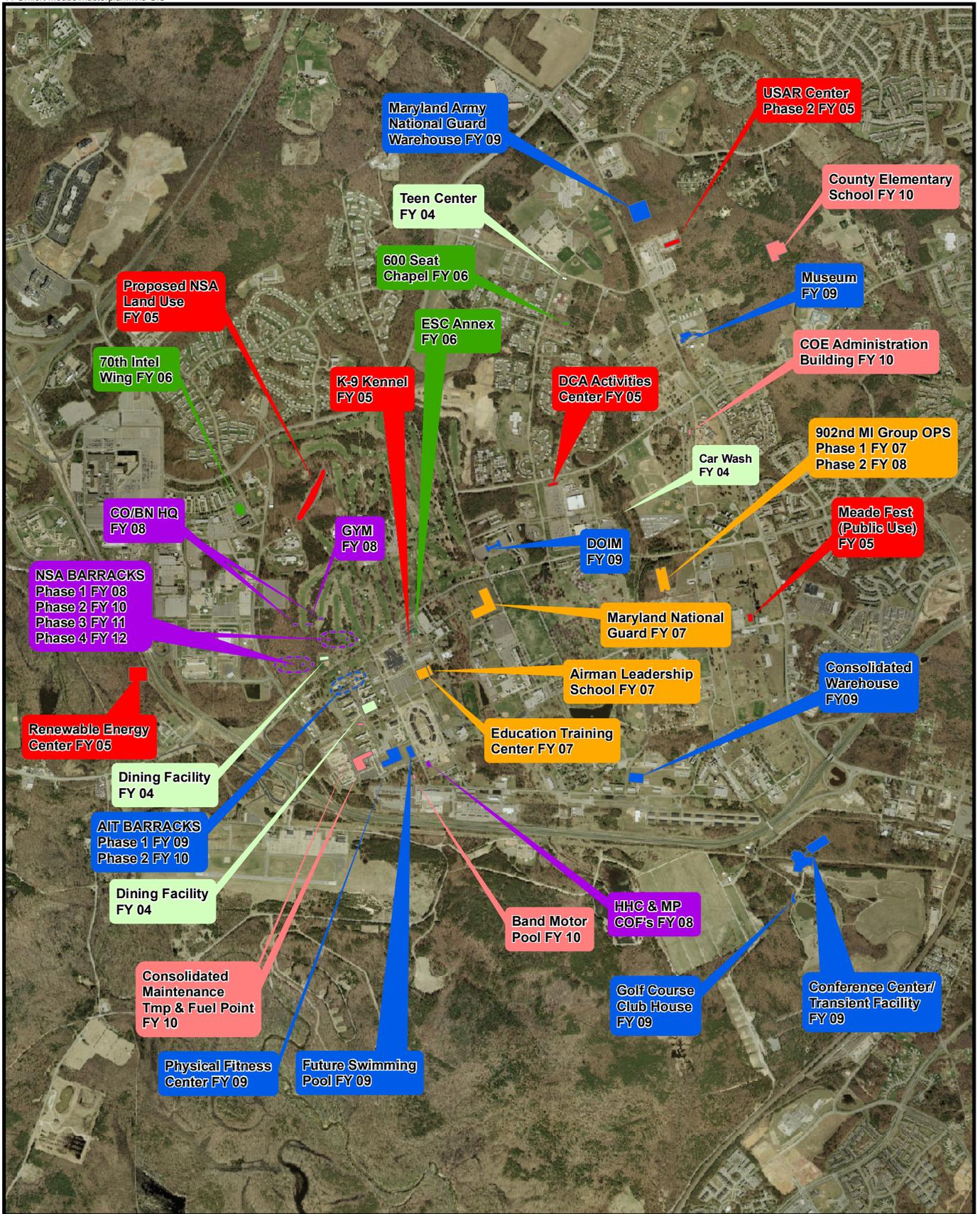
### **4.14 Unavoidable Adverse Environmental Impacts**

Unavoidable short-term negative impacts from implementation of the Preferred Alternative primarily would be associated with construction activities. Impacts of the proposed action would include periodic high noise levels and fugitive dust emissions; however, these impacts would be short-term and generally limited to the immediate area.

Unavoidable long-term negative environmental impacts would include a slight increased demand on the local infrastructure and utilities systems, including water supply, electrical services, and solid waste. Long-term adverse environmental impacts would include the long-term conversion of approximately 0.85 acres of land to developed property.

### **4.15 Relationship between the Short-Term Use of the Environment and Long-Term Productivity**

Short-term uses of the environment under the Preferred Alternative include temporary impacts to the physical environment during grading and construction, and short-term socioeconomic impacts, including maintenance and construction costs and expenditure of public funds for site improvements. Short-term adverse impacts would result from vehicular noise and emissions during construction; these impacts would be mitigated, as required. The short-term need for construction laborers and local materials to complete construction would provide an economic benefit. The Preferred Alternative would enhance Fort Meade’s long-term productivity by providing better facilities for service members.



Proposed Activities - Fort George G. Meade  
Ft. Meade, Maryland

Figure 4-1

Implementing the Preferred Alternative would enhance Fort Meade's long-term productivity by improving the morale and welfare of service members and their families. Better morale and welfare tends to lead to longer commitments with the Army, thereby reducing the rate of service member turnover and training costs.

#### **4.16 Irreversible and Irretrievable Commitments of Resources**

Implementation of the Preferred Alternative would result in the irreversible and irretrievable commitments of resources by Fort Meade. This alternative site selection would require committed resources such as land, building materials, and supplies and their cost; labor; planning and engineering costs; infrastructure capacity; federally owned property; and fossil fuels for construction vehicles.

#### **4.17 Compatibility of the Proposed Action and Alternatives with Objectives of Federal, Regional, State, and Local Land Use Plans, Policies, and Controls**

##### **4.17.1 Applicable Statutes and Regulations**

The following applicable statutes and regulations were considered during the development of this EA:

- NEPA, 42 USC 4321-4370(d) (1994) and AR 200-2, "Environmental Effects of Army Actions," dated 29 March 2002.
- Endangered Species Act of 1973, 16 USC 1531-1544 (1996).
- National Historic Preservation Act, 16 USC 470(f) and (h-2) (1994).
- Clean Water Act, 33 USC 1251-1377 (1994).
- Executive Order 11990, Protection of Wetlands, 42 Federal Regulation (FR) 26961, 3 CFR, 1977, Comp., p. 121.
- Clean Air Act, 42 USC 7401-7671, as amended (1994).
- Executive Order 12898, Federal Actions to Address Environmental Justice, 59 FR 7629 (1994) amended by Executive Order 12948, 60 FR 6381 (1995).
- Executive Order 13045, 62 FR 19885 (1997).
- Occupational Safety and Health Act, 29 USC 651 et seq.
- Executive Order 11988, Floodplain Management, 42 FR 26951, 3 CFR 1977 Comp., p. 117, amended by Executive Order 12148, Federal Emergency Management, 44 FR 43239, 3 CFR, 1979 Comp., p. 412.
- Coastal Zone Management Act of 1972, 16 USC 1451-1467 (1996).
- NPDES General Permit for Stormwater Discharge from Construction Activities, Section 402, Clean Water Act.

#### **4.17.2 Federal Regulatory Consistency Overview**

This EA was prepared and reviewed for consistency with all applicable federal statutes and regulations.

##### ***NEPA, 42 USC §§4321-4370(d) (1994)***

NEPA directs that all federal agencies ensure that environmental considerations be given appropriate consideration in decision-making, along with economic and technical considerations, to the extent possible. AR 200-2 “Environmental Effects of Army Actions” implements the NEPA requirements. This EA was prepared and will be reviewed in accordance with the provisions set forth in NEPA and AR 200-2. This EA considered the environmental consequences of the proposed action and the No-Action Alternative. The document will be on file for review and comment by all appropriate federal, state, and local agencies, organizations, and interested parties.

##### ***Endangered Species Act of 1973, 16 USC §§1531-1544 (1996)***

The Endangered Species Act of 1973 requires that any action authorized by a federal agency be unlikely to jeopardize the continued existence of an endangered or threatened species or result in the destruction or adverse modification of that species habitat that is considered critical. Section 7 of the Endangered Species Act requires that the responsible federal agency consult with the USFWS and the NOAA Fisheries Service (the National Ocean and Atmospheric Administration’s National Marine Fisheries Service was formerly referred to as NMFS) concerning endangered and threatened species under each agency’s control. No federally threatened or endangered species are on or near the proposed construction area (Alternative 1 site) and there would be no effect to fish and wildlife habitat from implementing the Proposed Action.

##### ***National Historic Preservation Act, 16 USC §§ 470(f) and (h-2) (1994)***

The National Historic Preservation Act ensures preservation of our nation’s historic and cultural resources. Section 106 of the Act requires that Fort Meade consult with the appropriate federal, state, and local agencies regarding the potential for the proposed action and the alternatives to affect cultural resources of historical or archaeological significance. The proposed action, implemented under any of the alternatives evaluated, would not affect cultural resources of historical or archaeological significance.

##### ***Clean Water Act, 33 USC §§ 1251-1377 (1994)***

The Clean Water Act, as amended, regulates discharges to the waters of the United States. The Proposed Action would comply with the provisions of the Act. No alterations to water bodies would occur as part of this Proposed Action under any of the alternatives and there would be a proposed minimal increase in stormwater discharges.

***Executive Order 11990, Protection of Wetlands***

Executive Order 11990 “Protection of Wetlands” directs agencies to take action to minimize the destruction, loss or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands on federal property. The Proposed Action, implemented under the evaluated alternatives, would not affect wetland areas.

***Clean Air Act, 42 USC §§ 7401-7671, as amended (1994)***

The Clean Air Act, as amended, requires federal actions to conform to an approved SIP. The SIP is designed to achieve or maintain an attainment designation for air pollutants as defined by the NAAQS. The General Conformity Rule (40 CFR 51 and 93) implements these requirements for federal actions occurring in air quality non-attainment areas or areas covered by an approved maintenance plan. Under the exemption provided in Section 51.853(c)(1) of the rule, the proposed action is in conformity with the SIP.

***Executive Order 12898 “Federal Actions to Address Environmental Justice,” amended by Executive Order 12946 “Federal Emergency Management”***

In accordance with Executive Order 12898, Fort Meade is required to identify and address, as appropriate, the potential for disproportionately high and adverse human health or environmental effects of their actions on minority and low-income populations. Environmental justice issues have been assessed for this Proposed Action and the alternatives, and minority or low-income populations would not be disproportionately affected.

***Executive Order 13045, 62 FR 19885 (1997)***

Federal agencies are required to ensure that their policies, programs, and activities address disproportionate environmental risk and safety risk to children. Implementation of the Proposed Action would not result in a disproportionate environmental or safety risk to children. New hazardous materials would not be introduced as part of the proposed action and none of the proposed activities would increase the potential risk for contaminant exposure to children.

***Occupational Safety and Health Act, 29 USC § 615 et seq. (1970)***

The Occupational Safety and Health Act provides for safe and healthful working conditions. The contractor and operations personnel would be responsible for compliance with applicable Occupational Safety and Health Administration regulations, and neither the Proposed Action nor the alternatives would affect safety and health during construction or operation of the facility.

***Executive Order 11988, amended by Executive Order 12148 “Floodplain Management”***

Executive Orders 11988 and 12148 require federal service agencies to avoid activities that directly or indirectly result in development of floodplain areas. None of the alternative sites for the Proposed Action that are evaluated in this EA are located within the 100-year floodplain.

***Coastal Zone Management Act, 16 USC §§ 1451-1467 (1996)***

The Coastal Zone Management Act, as amended, provides for preservation, protection, development, and, where feasible, restoration or enhancement of the nation's coastal zone. Since Fort Meade lies within the coastal zone, a Federal Consistency Determination has been received from the Maryland Department of Environment (see Appendix A).

***NPDES General Permit for Stormwater Discharge from Construction Activities, Section 402, Clean Water Act***

Current regulations require an NPDES permit for construction activities affecting more than 5 acres, but the threshold was reduced to 1 acre, so any action that impacts over 1 acre of property would require NPDES coverage. The proposed action is less than 1 acre; therefore, an NPDES permit is not required.

**4.17.3 State and Local Regulatory Consistency Overview**

As a part of the federal government's landholdings, Fort Meade is exempt from most state and local zoning and planning regulations. It is Army policy, however, to work closely with state and local officials and to comply with state and local regulations to the maximum extent practicable while remaining consistent with mission and operational requirements. The Proposed Action and the alternatives would not conflict with any state or local land use or growth management regulations. Specific permit requirements are addressed in Section 5.

Because the Proposed Action takes place on federal and military lands, permits and approvals within Anne Arundel County, Maryland, for the Proposed Action, are primarily covered by the existing federal and state requirements previously addressed.

***Maryland Stormwater Management Guidelines for State and Federal Projects, pursuant to the Annotated Code of Maryland, Environment Article, Title 4, Subtitle 2 and the Stormwater Management Regulations, Code of Maryland Regulation (COMAR) 26.17.02.01 through 26.17.02.12.***

These Guidelines provide information necessary for submittal of stormwater management plans to the Maryland Department of the Environment (MDE), Water Management Administration (WMA) for review and approval. Fort Meade would submit a waiver or plan for review and approval prior to construction activities.

***Maryland Erosion and Sediment Control Guidelines for State and Federal Projects pursuant to the Environment Article, Title 4, Subtitle 1 Annotated Code of Maryland and COMAR 26.17.01.***

These guidelines provide State and federal agencies with the information necessary for submittal of plans for construction of projects to the WMA for erosion and sediment control plan review and approval. A plan would be submitted to MDE prior to construction activities.

***Anne Arundel County, Maryland, Department of Public Works Pretreatment Program***

A wastewater discharge permit and installation of an oil/grit separator is required for car wash facilities if discharging to the sanitary sewer in compliance with the MDE Pretreatment Program. The Proposed Action design includes an oil/grit separator and reclamation system. Fort Meade would also submit a wastewater discharge permit prior to construction activities.

## 5.0 Environmental Permits Required for the Proposed Action

### 5.1 Applicable Permit Requirements

Table 5-1 lists the environmental permits that would likely be required for the project.

**Table 5-1  
List of Permits Likely to be Required**

Permits and Approvals	Responsible Agency
Compliance with Fort Meade's Stormwater Pollution Prevention Plan	Fort Meade Department of Public Works - Environmental Management Office
Compliance with Fort Meade's Installation Hazardous Waste Management Plan	Fort Meade Department of Public Works - Environmental Management Office
Compliance with Fort Meade's Installation Spill Contingency Plan and Spill Prevention, Control, and Countermeasure Plan	Fort Meade Department of Public Works - Environmental Management Office
Compliance with the Fort Meade Integrated Natural Resources Management Plan	Fort Meade Department of Public Works - Environmental Management Office
Submittal of a Stormwater Management Plan or a waiver for the plan in compliance with <i>Maryland Stormwater Management Guidelines for State and Federal Projects</i>	Maryland Department of the Environment, Water Management Administration
Submittal of an Erosion and Sediment Control Plan in compliance with <i>Maryland Erosion and Sediment Control Guidelines for State and Federal Projects</i>	Maryland Department of the Environment, Water Management Administration
Completion of Form 144R, Record of Environmental Consideration	Fort Meade Department of Public Works - Environmental Management Office
Endangered Species Act Determination of No Effect	United States Fish and Wildlife Service
Submittal of a Discharge Permit and installation of an oil/grit separator is required if discharging to the sanitary sewer in compliance with Anne Arundel County.	Anne Arundel County, Maryland Department of Public Works

### 5.2 Contractor Requirements

The following are necessary contract requirements that would be associated with the construction of the proposed facility at the Preferred Alternative site (Alternative 1):

- The contractor would be responsible for complying with all applicable permit and management plan requirements listed in Table 5-1;
- The contractor would be responsible for compliance with applicable Occupational Safety and Health Administration regulations concerning occupational hazards and specifying appropriate protective measures for all employees;
- Submission of an Erosion Control Plan and approval of the plan by the state would be required before commencing construction activities;
- All storm drains would be protected during construction activities and cleared of all debris after completion of construction;

- Hazardous materials brought to the construction site would require registration and tracking by the Environmental Management Information System in accordance with Fort Meade's hazardous materials handling procedures;
- Silt fencing would be required along the edges of the area prior to any grading operations. The fencing would remain in place until the disturbance area has been stabilized;
- Hay bales or gravel check dams would be used to divert flow and dissipate energy in areas of heavy flow;
- The destruction of trees and shrubs outside the development envelope would be avoided;
- Existing landscaping, trees, shrubs, and vegetation that would remain on the site should be protected from construction impacts;
- Landscaping activities would be coordinated with Natural Resources personnel in the Fort Meade DPW-EMO. Landscaping vegetation should be coordinated with existing plantings. Contractor would be responsible for landscaping for one year after acceptance of site;
- Materials and demolition debris would be recycled according to Fort Meade policies;
- Exposed soil would be sprayed with water twice daily to minimize dust emissions;
- Any construction materials that may be a source of dust would be covered;
- Vehicular speed in the construction area would be limited and truck beds would be covered to minimize the emission of airborne dust; and
- Automobile and construction vehicle engines would be shut off when not in use.

The following are prohibited:

- Dumping of spoil material into any stream corridor, wetland, surface waters, or at unspecified locations;
- Indiscriminate, arbitrary, or capricious operation of equipment in any stream corridors, wetlands, or surface waters;
- Pumping of silt-laden water from trenches or other excavations into any surface waters, stream corridors, or wetlands;
- Disposal of trees, brush, and other debris in any stream corridors, wetlands, surface waters, or at unspecified locations;
- Permanent or unspecified alteration of the flow line of the stream;
- Open burning of construction project debris; and
- Use of chemicals for dust control.

## 6.0 Bibliography

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### 6.1 Persons and Agencies Consulted

Airey, R., 2005, personal communication, CAD Technician, Johnson Controls, Inc., site visit conversations, telephone and electronic communications regarding digital data for Fort Meade, 17 May and 16 June 2005, with E. Anderson, Ecology and Environment, Inc., Tallahassee, Florida.

Bagnall, A., 2005, personal communication, Master Planner, Fort Meade Directorate of Public Works, site visit conversations, telephone and electronic communications regarding land use, master plan, transportation, forest mitigation, 3 May, 17 May, and 2 June, 14-17 June 2005, with E. Anderson, Ecology and Environment, Inc., Tallahassee, Florida.

Baird, J., 2005, personal communication, GIS Program Manager, Essex Corporation, site visit conversations, telephone and electronic communications regarding digital data for Fort Meade, 17 May and 14 June 2005, with E. Anderson, Ecology and Environment, Inc., Tallahassee, Florida.

Carolan, H., 2005, personal communication, Environmental Specialist, NEPA Coordinator, Fort Meade Directorate of Public Works – Environmental Management Office, telephone communication regarding the documentation requirements and policies, April 2005, with E. Anderson, Ecology and Environment, Inc., Tallahassee, Florida.

Christopher, T., 2005, personal communication, Senior Designer, Morris & Associates, telephone communications and electronic communications regarding site design, 26 May and 1-3 June 2005, with E. Anderson, Ecology and Environment, Inc., Tallahassee, Florida.

Colianni, A., 2005, personal communication, Environmental Specialist, Agronomy and Soil/Erosion Program, Fort Meade Directorate of Public Works – Environmental Management Office, telephone communication regarding forest management area and mitigation requirements, 6 June 2005, with E. Anderson, Ecology and Environment, Inc., Tallahassee, Florida.

DiGiovanni, J., 2005, personal communication, Environmental Specialist, UST/AST Program, Fort Meade Directorate of Public Works – Environmental Management Office, site visit conversations and telephone communication regarding hazardous sites and underground storage tanks, 17 May and 14 June 2005, with E. Anderson, Ecology and Environment, Inc., Tallahassee, Florida.

Ghigiarelli, E., 2005, personal communication, Deputy Program Administrator, Federal Consistency Coordinator, Wetlands and Waterways Program, Maryland Department of Environment, telephone communication regarding Maryland requirements for Federal Consistency Determination, 1 July 2005, with E. Anderson, Ecology and Environment, Inc., Tallahassee, Florida.

- Ginter, A., 2005, personal communication, Realty Specialist, Fort Meade Directorate of Public Works, telephone communication regarding Post population and housing, 17 June 2005, with E. Anderson, Ecology and Environment, Inc., Tallahassee, Florida.
- Gousden, A., 2005, personal communication, Small Business Assistance Program, Maryland Department of the Environment, telephone conversation regarding regulatory requirements for car wash facilities in Maryland, 5 May 2005, with E. Anderson, Ecology and Environment, Inc., Tallahassee, Florida.
- Kandt, D., 2005, personal communication, Environmental Specialist, Hazardous Waste Program, Fort Meade Directorate of Public Works – Environmental Management Office, telephone communication regarding the Fort Meade Hazardous Waste Plan and Disposal Contract, 14 June 2005, with E. Anderson, Ecology and Environment, Inc., Tallahassee, Florida.
- Marquardt, D., 2005, personal communication, Fort Meade Directorate of Public Works – Environmental Management Office, telephone communication regarding forest management area, flora/fauna, solid waste and stormwater, 15 June 2005, with E. Anderson, Ecology and Environment, Inc., Tallahassee, Florida.
- Nelson, S., 2005, personal communication, *The Baltimore Sun*, telephone and electronic communications regarding cost estimates and requirements for advertising in the *Sun*, *Capital*, and *Maryland Gazette*, April 2005, with E. Anderson, Ecology and Environment, Inc., Tallahassee, Florida.
- O'Brien, B., 2005, personal communication, General Manager, Fort Meade Consolidated Exchange, Army & Air Force Exchange Service, site visit conversations, telephone and electronic communications regarding project sites, design, and construction, April through June 2005, with E. Anderson, Ecology and Environment, Inc., Tallahassee, Florida.
- Sharma, B., 2005, personal communication, Environmental Specialist, Waste Water Program, Fort Meade Directorate of Public Works – Environmental Management Office, telephone communication regarding the Fort Meade Waste Water Treatment Plant and water quality of the Little Patuxent River, 14 June 2005, with E. Anderson, Ecology and Environment, Inc., Tallahassee, Florida.
- Tate, C., 2005, personal communication, Pretreatment Coordinator, Ann Arundel County Department of Public Works, telephone conversation regarding permit requirements for the car wash, 9 May and 1 July 2005, with E. Anderson, Ecology and Environment, Inc., Tallahassee, Florida.

## **6.2 References**

- Anne Arundel County Office of Planning and Zoning (AACOPZ), 2003, Odenton Small Area Plan, effective 6 November 2003, <http://www.aacounty.org/PlanZone/SAP/Odenton.cfm>, AACOPZ, Annapolis, Maryland.
- Brown, C., 2002, *Water Conservation in the Professional Car Wash Industry*, September 2002, prepared for the International Carwash Association, Chris Brown Consulting.

Center for Watershed Protection, Inc., 2001, Approaches to Stormwater Treatment CDROM, Ellicott City, Maryland.

Chesapeake Bay Program (CBP), 2000, Chesapeake 2000 Agreement, <http://www.chesapeakebay.net/c2k.htm>, published 28 June 2000.

Environmental Laboratory, 1987, *Corps of Engineers Wetland Delineation Manual*, Technical Report Y-87-1, Department of the Army, Waterways Experiment Station, Vicksburg, Mississippi.

Fort George G. Meade, Environmental Management Office, 2004a, Integrated Natural Resource Management Plan, prepared by CH2MHILL.

Fort George G. Meade, Environmental Management Office, 2004b, Final Environmental Assessment, Fort Meade Construction and Operation of an Army Reserve Center, April 2004, prepared by Mangi Environmental Group.

Ghigiarelli, E., 2004, *A Guide to Maryland's Coastal Zone Management Program Federal Consistency Review*, February 2004, Maryland Coastal Program, Watershed Services, Maryland Department of Natural Resources, Annapolis, Maryland.

Maryland Department of the Environment (MDE), 1990, *Maryland Erosion and Sediment Control Guidelines for State and Federal Projects*, January 1990, MDE Water Management Administration, Baltimore, Maryland.

\_\_\_\_\_, 2000, 2000 Maryland Stormwater Design Manual, Volumes I and II, prepared by Center for Watershed Protection for MDE Water Management Administration, Baltimore, Maryland.

\_\_\_\_\_, 2001, *Maryland Stormwater Management Guidelines for State and Federal Projects*, July 2001, MDE Water Management Administration, Baltimore, Maryland.

Mercer, K., 2002, "Take Me Out to the Carwash: Successful Residential and Community-based Nonpoint-Source Pollution Prevention," *Stormwater: The Journal of Surface Water Quality Professionals*, May/June 2002, accessed at [http://www.forester.net/sw\\_0205\\_take.html](http://www.forester.net/sw_0205_take.html), Forester Communications, Inc., Santa Barbara, California.

Office of the Assistant Secretary of Defense-Public Affairs and the U.S. Department of Defense (OASD-PA and DoD), 2005, Fort George G. Meade web site, <http://www.ftmeade.army.mil/>, last updated 17 June 2005, accessed April-June 2005, Fort George G. Meade, Maryland.

Ruder, B., 2005, "Let Reclaim Work For You," *Auto Laundry News*, April 2005, accessed at <http://www.carwashmag.com/>, EW Williams Publications Company, Fort Lee, New Jersey.

Ryko Manufacturing Company, 2003, <http://www.ryko.com/>, home page, Ryko, Grimes, Iowa.

United States Army Corps of Engineers (USACE), 2001, Integrated Cultural Resources Management Plan, Fort George G. Meade, Anne Arundel County, Maryland, July 2001.

United States Census Bureau, 2002, Census 2000, <http://www.census.gov/main/www/cen2000.html>, last updated 13 May, 2005.

United States Department of Agriculture (USDA), 1997, Soil Survey of Fort George G. Meade, Maryland, November 1997, National Resources Conservation Service, USDA, Annapolis, Maryland.

United States Department of Defense (DoD), 2005, Base Reorganization and Closures, <http://www.defenselink.mil/brac/>, accessed 14 June 2005, DoD, Washington, D.C.

United States Department of Housing and Urban Development (HUD), 1991, *The Noise Guidebook*, <http://www.hud.gov/offices/cpd/energyenviron/environment/resources/guidebooks/noise/index.cfm>, last updated 20 August 2004, HUD, Washington, D.C.

United States Environmental Protection Agency (EPA), 1995, "Compilation of Air Pollutant Emission Factors" AP-42 (5th Edition), January 1995, Office of Air Quality Planning and Standards, U.S. EPA, Washington, D.C.

\_\_\_\_\_, 2002, National Pollutant Discharge Elimination System (NPDES), Pollution Prevention/Good Housekeeping for Municipal Operations – Vehicle Washing, [http://cfpub.epa.gov/npdes/stormwater/menuofbmps/poll\\_18.cfm](http://cfpub.epa.gov/npdes/stormwater/menuofbmps/poll_18.cfm), last updated 25 November 2002, EPA, Washington, D.C.

\_\_\_\_\_, 2005a, Six Common Air Pollutants, <http://www.epa.gov/air/urbanair/6poll.html>, last updated 17 June 2005, EPA, Washington, D.C.

\_\_\_\_\_, 2005b, Air Data, Nonattainment Areas Map – Criteria Air Pollutants, <http://www.epa.gov/air/data/nonat.html?us~USA~United%20States>, maps generated 10 June 2005, EPA, Washington, D.C.

\_\_\_\_\_, 2005c, Green Book for Criteria Pollutants – Ozone Information, <http://www.epa.gov/oar/oaqps/greenbk/oindex.html>, last updated 17 June 2005, EPA, Washington, D.C.

## 7.0 List of Preparers

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The following individuals contributed to the preparation of this EA:

Name	Role	Project Responsibility
Gene Stillman	Project Manager	Project Management; Quality Assurance; Alternatives Analysis; Identification of Affected Environment
David Donohue	Project Director	Quality Assurance
Erica Anderson	Environmental Planner	Alternatives Analysis; Identification of Affected Environment
Gina Edwards	Senior Technical Editor	Document Control and Editing
Laurie Kutina	Air Quality Specialist	Air Quality Existing Environment and Impacts Sections
Kent Cain	GIS Technician	Figures

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# **Appendix A**

## **Agency Correspondence**

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**MARYLAND**  
DEPARTMENT OF  
NATURAL RESOURCES

Robert L. Ehrlich, Jr., Governor  
Michael S. Steele, Lt. Governor  
C. Ronald Franks, Secretary

October 26, 2005

Gene Stillman  
Ecology & Environment, Inc.  
1950 Commonwealth Lane  
Tallahassee, FL 32303

RE: Proposed Car Wash on Fort Meade: Environmental Assessment

Dear Mr. Stillman:

Upon review of the Environmental Assessment for the Proposed Construction of a Car Wash on Fort Meade and cover letter dated September 30, 2005, the following has been determined:

1. The Maryland Forest Conservation Act and Regulations (NRA 5-1601—1613 and COMAR 08.19.01--06) apply to any public or private subdivision plan or application for a grading or sediment control permit on areas 40,000 square feet or greater.

It appears that your project is disturbing less than 40,000 square feet of area. However, the actual limits of disturbance, as shown on a sediment control plan, are used to determine the square footage.

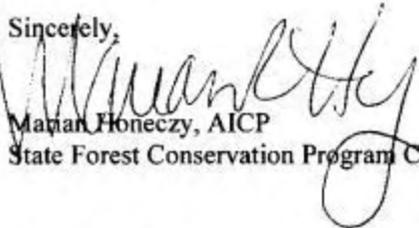
2. If it is determined that the FCA is applicable, then a forest stand delineation and forest conservation plan is required.

If the project's limits of disturbance is *less than* 40,000 square feet:  
Submit a cover letter, a copy of the sediment control plan (the sheet that shows the limits of disturbance and an ADC map locating the project in order for my office to issue an exemption letter.

If the project's limits of disturbance is *more than* 40,000 square feet:  
Submit a forest stand delineation and a forest conservation plan with an application form.

Submit the information to:  
Marian Honecny, MD DNR Forest Service, 580 Taylor Ave Bldg E-1, Annapolis, MD 21401

If you have any questions I can be reached at (410) 260-8511 or via email at [mhonecny@dnr.state.md.us](mailto:mhonecny@dnr.state.md.us)

Sincerely,  
  
Marian Honecny, AICP  
State Forest Conservation Program Coordinator

cc: Horace Henry, MD DNR Forest Service





Robert L. Ehrlich, Jr., Governor  
Michael S. Steele, Lt. Governor  
C. Ronald Franks, Secretary

January 3, 2006

Gene Stillman  
Environmental Planner  
Ecology and Environment, Inc.  
1950 Commonwealth Lane  
Tallahassee, Florida 32303  
Tel: 850-574-1400 ext. 3012  
Fax: 850-574-1179

RE: Fort Meade Car Wash S06-11

Dear Mr. Stillman:

Upon review of the project, Fort Meade Car Wash (FCA # S06-11), which is located at Fort George Meade, Maryland, it has been determined that:

**This project is exempt from the Maryland Forest Conservation Act due to the fact that the area of disturbance is less than 40,000 square feet — §5-1602 (b)(7)(i).**

If you have any questions, I can be reached at (410) 360-9774.

Sincerely,

Horace D. Henry  
Southern Region Urban & Community Forestry Coordinator



Maryland Department of Natural Resources Forest Service,  
8023 Long Hill Road, Pasadena, MD 21122  
Tel: 410-360-9774 • [www.dnr.maryland.gov](http://www.dnr.maryland.gov) • TTY users call via Maryland Relay • Fax: 410-360-9875

September 18, 2005

Gene Stillman  
Ecology & Environment, Inc.  
1950 Commonwealth Lane  
Tallahassee, FL 32303

RE: Environmental Assessment for the Proposed Construction of a Car Wash on Fort George G. Meade, Maryland

Dear Mr. Stillman:

Thank you for the opportunity to review the above referenced Draft Environmental Assessment. My office offers the following comments.

The Army and Air Force Exchange Service (AAFES) propose to construct a new 3,900 square-foot car wash facility, southwest of the Macarthur Road and Ruffner Road intersection, for use by individuals at Fort Meade. The proposed 0.85-acre site is currently undeveloped, but is surrounded by developed lands. The car wash facility would use a hydrodynamic separator such as an oil grit separator to handle the water quality requirements for the project.

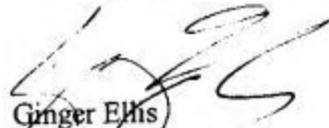
A review of aerial photography confirms the presence of woods on the proposed project site. Moreover, the draft EA indicates the over 80 percent of the site is in a designated a Forest Conservation Area. This conservation area is the product of a partnership between Fort Meade and the Maryland DNR Forest Service in support of the Maryland Forest Conservation Act of 1991 and Anne Arundel County's implementation of that Act. Generally, development is not allowed on sites within a forest conservation easement area. The draft EA did not include a copy of the Plat or deed to clarify the limitations of the forest conservation area easement. Additionally, the EA did not include specific plans for mitigating for the proposed impacts. Please coordinate further discussion of this conservation area, and proposed disturbances to the area, with this office and with the Maryland DNR Forest Service.

The proposed action, a car wash, may be considered a stormwater "Hotspot". According to the MDE 2000 Maryland Stormwater Design Manual, a stormwater hotspot is defined as a land use or activity that generates higher concentration of hydrocarbons, trace metals, or toxicants than are found in typical stormwater runoff, based on monitoring studies. The proposed action would

be classified, based on Table 2.6 of the MDE 2000 manual, as a "vehicle and equipment cleaning facility" and thus would be considered a "Hotspot". As such, a stormwater pollution prevention plan is required.

Please contact me if you have any questions or require further clarification of these comments. Again, thank you for providing us the opportunity to review and comment on this draft environmental assessment.

Best Regards,



Ginger Ellis  
Planning Administrator  
Office of Environmental & Cultural Resources

cc: R. Miller, Land Use and Environment Officer  
file



MARYLAND DEPARTMENT OF THE ENVIRONMENT  
1800 Washington Boulevard • Baltimore Maryland 21230-1718  
(410) 537-4120

Robert L. Ehrlich, Jr.  
Governor

Kendal P. Philbrick  
Secretary

Michael S. Steele  
Lt. Governor

Jonas A. Jacobson  
Deputy Secretary

September 16, 2005

Mr. Gene Stillman  
Ecology & Environment, Inc.  
1950 Commonwealth Lane  
Tallahassee FL 32303

RE: MDE Identification Number: ES20050829-0027  
Project: Car Wash on Fort George G. Meade

Dear Mr. Stillman:

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

While the state would not regulate or even seek voluntary control of noise sources on the base that did not result in off-base complaints, it should be noted that MDE has been receiving a number of complaints regarding car wash facilities. These noise complaints suggest that car wash facilities can be a significant source of annoyance to adjacent land use operations. This becomes an even greater concern if the facility has an air dryer component. Thus, since the document was lacking in details concerning a dryer element, the maximum expected noise levels, the distances to nearby sensitive receptors, and the hours of operation (nighttime hours are more sensitive for residential uses), it is not possible to properly evaluate the potential situation and offer definitive comments. Despite MDE's unlikely involvement with an on-base issue, it is suggested that more detailed information be obtained regarding this aspect of the EA document so that the base can better evaluate the potential for the creation of an annoyance to its own tenants.

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

Sincerely,

Joane D. Mueller  
Clearinghouse Coordinator



Robert L. Ehrlich, Jr., Governor

Michael S. Steele, Lt. Governor

C. Ronald Franks, Secretary

September 9, 2005

Mr. Gene Stillman  
Ecology and Environment, Inc.  
1950 Commonwealth Lane  
Tallahassee, FL 32303

**RE: Environmental Review for Proposed Construction of Car Wash at Fort George G. Meade, Anne Arundel Co., MD.**

Dear Mr. Stillman:

The Wildlife and Heritage Service has determined that there are no State or Federal records for rare, threatened or endangered species within the boundaries of the project site as delineated. As a result, we have no specific comments or requirements pertaining to protection measures at this time. This statement should not be interpreted however as meaning that rare, threatened or endangered species are not in fact present. If appropriate habitat is available, certain species could be present without documentation because adequate surveys have not been conducted. It is also important to note that the utilization of state funds, or the need to obtain a state authorized permit may warrant additional evaluations that could lead to protection or survey recommendations by the Wildlife and Heritage Service. If this project falls into one of these categories, please contact us for further coordination.

Thank you for allowing us the opportunity to review this project. If you should have any further questions regarding this information, please contact me at (410) 260-8573.

Sincerely,

A handwritten signature in cursive script that reads "Lori A. Byrne".

Lori A. Byrne,  
Environmental Review Coordinator  
Wildlife and Heritage Service  
MD Dept. of Natural Resources

ER #2005.1815.aa

ANNE ARUNDEL COUNTY  
DEPARTMENT OF PUBLIC WORKS

INSTRUCTIONS FOR  
WASTEWATER DISCHARGE PERMIT APPLICATION B

GENERAL INSTRUCTIONS

These instructions are designed to assist you in filling out the Wastewater Discharge Permit Application B. Examples have been provided which should answer most questions concerning the information required. If however, you have a question about a particular item, please call Chris Tait or ~~David Obi~~ at 410-222-8818 and we will be happy to assist you.

Please make certain all blanks, except for those answer blanks you are instructed to skip, are filled in even though the answer to a particular item may be zero or none. The information to be provided in Sections D, and E, requires that you be knowledgeable of chemicals used in your manufacturing or service activity. You need not have an analysis of your wastewater to determine the presence or absence of these chemicals. You may, however, have to contact your supplier of a proprietary product for assistance in providing the requested information.

If additional space is required to provide complete information for a particular item, please attach additional sheets keyed to the Section and Item Number and write "continued on additional sheet" in the appropriate blank.

Please complete and return the Permit Application within 30 days to our office at the following address:

PRETREATMENT PROGRAM MANAGER  
ANNE ARUNDEL COUNTY DPW  
437-D MAXWELL FRYE ROAD  
MILLERSVILLE, MARYLAND 21108

## SECTION A. GENERAL INFORMATION

1. The company name should be that name which is for official transactions or as it appears on company stationary.
2. The division name, if applicable, should provide the specific section or group of the company for which the application applies.
3. The mailing address should be the address where all correspondence pertaining to the Wastewater Discharge Permit Application or other business should be sent.
4. The facility address should be the address of the plant or facility for which the Wastewater Discharge Permit Application is being submitted.
5. The facility representative shall be an approved representative of the company with the authority to sign on behalf of the company for the particular production facility and certify the accuracy of information provided on official documents. A plant or facility manager may be assigned such authority.
6. The property tax account number is the 12-digit number found on your tax bill. (NOT your Federal I.D. number)
7. The property owner should be the owner or the landlord of the building and property.
8. The type of user represents commercial establishments (i.e.: retail, wholesale business or offices). Restaurant establishments (i.e.: eating or drinking places); institutional establishments (i.e.: schools, nursing homes); or other establishments (i.e.: manufacturing or government).
9. The SIC Number is a 4-digit number that refers to the type of product or service produced. This number can be found in the Standard Industrial Classification Manual. If the number for your establishment can not be determined, skip this question.
10. The appropriate box should be checked to indicate if the application is for an existing or proposed discharge. If it is a proposed discharge, the anticipated date of commencement. Should be indicated.

## SECTION B. USER FACILITY INFORMATION

1. Indicate the total number of employees, including all shifts.
2. Consider each shift on the basis of normal starting time with three possible shifts per 24-hour day. Only the periods of production or process operation including clean up procedures are to be considered as shift work. The average number of employees per shift should include those office workers, executives and watchmen whose hours generally coincide with the times of production shifts.
3. Indicate the number of hours per day (maximum of 24 hours), the number of days per week (maximum 7 days), and the number of days per year (maximum 365 days) that the facility is in operation.
4. Indicate any period of time when the operation is shut down, with the exception of the days the facility is shut down during normal workweeks. For example, extended holidays shut downs or plant cleanup shut downs that are scheduled for the same periods each year.
5. Indicate the maximum occupancy number (i.e.: theater or restaurant seating count).

## SECTION C. WATER USAGE

1. Check the source from which your facility purchases water. If another source is utilized, totally or in part, indicate that source and clarify by explanation if necessary.
2. The name on the water bill should be the name to which the bill is mailed.
3. The Water Service Account Number is the account number that appears on the water bill (a 15-digit number). List all account numbers applicable to this premise.
4. List the landlord's name and address to which the water bill is delivered.
5. Water consumption in industry varies depending on the type of manufacturing activity, process equipment utilized, number of employees, and other variable characteristics. The average monthly or quarterly consumption is listed on the water bill. To obtain average daily consumption, divide monthly or quarterly consumption by 30, 60 or 90 days respectively. If a water bill is not available, estimate by using 14.0 gallons per employee per day to compute consumption for sanitary purposes. If applicable, add estimated consumption gallonage for

industry/store cleanup and maintenance, product absorption (i.e.: food preparation), and any other processes involving water consumption.

#### SECTION D. PRODUCT OR SERVICE INFORMATION

1. Check all activities conducted at your facility.
2. List the principal products at your facility. Describe the primary operations that will convey a general idea of the type of manufacturing or service activities that take place at the facility address.

For example, if you manufactured "Dairy Products" your primary operation might be:

- |                            |                           |
|----------------------------|---------------------------|
| a. Receiving milk          | e. Dry milk manufacturing |
| b. Bottling milk           | f. Cheese making          |
| c. Ice cream manufacturing | g. Butter making          |
| d. Condensing milk         |                           |

3. Indicate if your facility contains food preparation facilities (i.e.: ovens, stoves, etc.).
4. Indicate if your facility has any garbage grinders (disposals), and indicate the horsepower of each unit.
5. List the principal chemicals and raw materials and their quantities which are in the production of your product, or in the cleanup of your facility. Examples include: Degreasing agents, bleach, printing inks, photo developer, water softening agents, wax strippers, food preservatives, fuel oil, paint thinners, etc.
- 5a. Indicate if your facility processes and develops x-rays onsite. For instance, if you are a chiropractor, you may take x-rays at your office and process them there also. Describe what liquids go down the drain, and the volumes of each liquid. Also, describe any silver systems. For example: Volume of rinse water discharged to sewer = 10 gallons/day; volume of developer/fixer discharged to sewer = 1 gallon/day; electrolytic silver recovery unit is attached to machine and is serviced by ABC Silver Company every 3 months.
- 5b. Indicate if your facility performs photo developing and processing (i.e.: film and negative processing; print and slide developing, etc.) onsite. Describe what liquids go down the drain, and the volumes of each. Also, describe any silver recovery systems. For example: Volume of rinse water discharged to sewer = 30 gallons/day; volume of developer discharged to sewer = 5 gallons/day; volume of fixer discharged to sewer = 2 gallons/day; ionic silver recovery unit treats

developer and fixer before discharge to drain. Recovery unit serviced by ABC Silver Company every 3 months.

- 5c. Describe any laboratory/testing facilities located at your facility. Describe the tests performed, and describe what types of liquids, and detail the volumes that go down the drain. For example: Type of lab = drinking water quality control lab; tests performed = pH, hardness, bacteria, metals, fluoride; liquids to sewer = drinking water samples, pH buffers, acetone, metal standards; volumes to sewer = 100 gallons/day of water samples, 1 ounce/day of pH buffer, 2 ounces/day of acetone, 2 ounces/day of metal standards.
- 5d. Describe any pieces of equipment, which are cleaned or disinfected with liquids at your facility. Indicate the type of cleaning solution used and indicate the volume of liquids discharged each day to the sewer. For example: Surgical equipment is cleaned with 2 gallons of a disinfecting solution, composed of 1.5 gallons of water and 0.5 gallons of Roccal D, and is disposed of daily to the sewer. Attached is an MSDS (Material Safety Data Sheet) for the Roccal D chemical.
- 5e. Describe the types and volumes of chemically treated portable toilet wastes (i.e.: wastes from Port-A-Pottys, RVs, bus or boat holding tanks, etc.) disposed of at your facility. Also, describe the disposal method used for the wastes, and list the type of chemical/deodorizer used. For example: 32 gallons of waste from a 50 gallon boat holding tank is pumped out daily and is directly piped from the dock area into the County Sewer System. 2 gallons of a disinfecting solution, composed of 4 ounces of "Inca Gold", and the rest water is added to the 30 gallons of waste daily. An MSDS on the Inca Gold is attached.
- 5f. Describe the types and volumes of nondomestic wastewater discharged by your facility to the County Sewer System. Nondomestic wastewater includes water from cleaning, cooling, and production sources that are not associated with normal domestic/residential uses, and are not listed in items 5a-5e. For example: Floor wash down – 10 gallons/day. Floor wash contains 2 gallons of bleach, 2 gallons of degreaser, and 6 gallons of water. Boiler blowdown -10 gallons/day. Blowdown contains 5% algaecide, 1% bromide, and 94% water. Vegetable preservative rinse water – 50 gallons/day. Raw vegetables (i.e.: potatoes, carrots, etc.) are soaked in a 5% solution of sodium hypochlorite and water.
6. Describe the storage facilities (i.e.: underground tanks, flammable cabinets, janitors closet) for those chemicals and materials listed in question #5.
7. Describe any active or abandoned underground storage facilities, listing the size, age, material stored, etc.
8. Indicate if a policy has been adopted to prevent and/or manage a chemical/raw material spill in your facility (i.e.: availability of chemical absorbent materials, plugs in floor drains, etc.).

## SECTION E. PROCESS AND WASTE INFORMATION

1. Indicate if your facility is equipped with a grease trap or an oil interceptor, specifying its location, size, maintenance, etc.
2. Indicate the quantity of grease and cooking oil purchased by your facility in pounds per year.
3. Indicate how much of this grease and oil is removed by a hauler from your facility.
4. Indicate if your facility uses solvents (i.e.: Methylene Chloride, Toluene, MEK, etc.) and specify type, method of usage, usage rate, etc.
5. Indicate if your facility generates or receives sludge, other than oil and grease and food wastes, which are hauled away from your facility. Examples could be waste solvents, spent chemicals, outdated materials, metal sludge, incinerated wastes, and pesticide wastes.
6. Describe the storage methods and locations for those items listed in E-4 and E-5. Example: Flammable cabinet in laboratory, shed in warehouse, or 55 gallon drum in hazardous waste shed.



DEPARTMENT OF PUBLIC WORKS

2662 RIVA ROAD  
ANNAPOLIS, MARYLAND 21401

**SUPPLEMENTAL FORM - B**  
**APPLICATION FOR WASTEWATER DISCHARGE PERMIT**  
**WASTE PRETREATMENT PROGRAM**  
**ANNE ARUNDEL COUNTY, MARYLAND**

PLEASE PRINT OR TYPE

**For County Use:**

Date Received \_\_\_\_\_  
Service Area \_\_\_\_\_  
Category \_\_\_\_\_  
Reviewer's Initials  
& Date \_\_\_\_\_

**SECTION A - GENERAL INFORMATION**

1. Company/Institution Name: \_\_\_\_\_
2. Division Name (if applicable): \_\_\_\_\_
3. Mailing Address:
  - a. Street or P.O. Box: \_\_\_\_\_
  - b. City, State, Zip Code: \_\_\_\_\_
4. Facility Address:
  - a. Street Address: \_\_\_\_\_
  - b. City, State, Zip Code: \_\_\_\_\_
5. Name, Title, and Telephone Number of Facility Representative
  - a. Name: \_\_\_\_\_
  - b. Title: \_\_\_\_\_
  - c. Telephone Number: \_\_\_\_\_
6. Property Tax Account Number: \_\_\_\_\_
7. Property Owner Name and Address: \_\_\_\_\_  
\_\_\_\_\_
8. Type of User: Commercial (Specify): \_\_\_\_\_
  - Restaurant: \_\_\_\_\_
  - Institution: \_\_\_\_\_
  - Other: \_\_\_\_\_

9. Standard Industrial Classification (SIC) Number: \_\_\_\_\_

10. Check One:  Existing Discharge  Proposed Discharge

If proposed discharge, give anticipated date when discharge will begin: \_\_\_\_\_

**SECTION B – USER FACILITY INFORMATION**

1. Number of Employees: \_\_\_\_\_

2. Employees per shift: 1<sup>st</sup> \_\_\_\_\_ 2<sup>nd</sup> \_\_\_\_\_ 3<sup>rd</sup> \_\_\_\_\_

3. Operating Schedule: Hrs/day \_\_\_\_\_ Days/week \_\_\_\_\_ Days/year \_\_\_\_\_

4. Scheduled Shutdown Period(s): \_\_\_\_\_

5. Occupancy Number (if applicable): \_\_\_\_\_

**SECTION C – WATER USAGE**

1. Water Sources: \_\_\_\_\_ Anne Arundel County \_\_\_\_\_ Private Well \_\_\_\_\_ Other, Describe: \_\_\_\_\_

2. Name of Water Bill: \_\_\_\_\_

3. Water Service Account Number(s): (1) \_\_\_\_\_

(2) \_\_\_\_\_ (3) \_\_\_\_\_

4. If water is supplied by landlord, give name and address:

Name: \_\_\_\_\_

Street Address: \_\_\_\_\_

City, State, Zip Code: \_\_\_\_\_

5. Average daily water consumption (gallons per day) \_\_\_\_\_ (an estimate is acceptable if water bill is not available).

**SECTION D – PRODUCT OR SERVICE INFORMATION**

1. Check all activities which are present at your facility:

- |  |  |  |
|--|--|--|
| <input type="checkbox"/> Bakery                      | <input type="checkbox"/> Laboratory          | <input type="checkbox"/> Research              |
| <input type="checkbox"/> Convenience Store/Mini-mart | <input type="checkbox"/> Laundry, Cleaning   | <input type="checkbox"/> Residential           |
| <input type="checkbox"/> Electroplating              | <input type="checkbox"/> Manufacturing       | <input type="checkbox"/> Retail Trade          |
| <input type="checkbox"/> Fast Food Restaurant        | <input type="checkbox"/> Medical Care        | <input type="checkbox"/> Vehicle Washdown      |
| <input type="checkbox"/> Flammables, Explosives      | <input type="checkbox"/> Military            | <input type="checkbox"/> Warehousing           |
| <input type="checkbox"/> Food Processing             | <input type="checkbox"/> Office Unit         | <input type="checkbox"/> Wholesale Trade       |
| <input type="checkbox"/> Full Service Restaurant     | <input type="checkbox"/> Painting, Finishing | <input type="checkbox"/> Other (specify) _____ |
| <input type="checkbox"/> Hair Salon/Barber Shop      | <input type="checkbox"/> Plant Washdown      | _____  |
| <input type="checkbox"/> Gas Station                 | <input type="checkbox"/> Printing, Phot      |  |
| <input type="checkbox"/> Government                  | <input type="checkbox"/> Repair Shop, Garage |  |

2. Give a brief description of all operations at this facility including primary products or services:

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3. Does your facility contain food preparation facilities? YES \_\_\_ NO \_\_\_

4. Does your facility have a garbage grinder? YES \_\_\_ NO \_\_\_ If yes, indicate the size of the unit(s):

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5. List chemicals and other raw materials which are used or stored at your facility. Exclude chemicals sold as retail:

<u>Material</u>	<u>Quantity</u> <u>(indicate units)</u>	<u>Material</u>	<u>Quantity</u> <u>(indicate units)</u>
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

5a. Is X-ray processing and developing performed at your facility? YES \_\_\_ NO \_\_\_ If yes, describe what liquids (ie: water rinses, developers, fixers, bleaches, etc.) go down the drain and list the volumes of these liquids discharged per day. (Estimates are acceptable.) Also, indicate if a Silver Recovery Unit(s) is installed on the machine(s) and who services the unit(s).

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5b. Is photo developing and processing performed at your facility? YES \_\_\_ NO \_\_\_ If yes, describe what liquids from this process go down the drain and list the volume of these liquids discharged per day. (Estimates are acceptable.) Also, indicate if a Silver Recovery Unit(s) is installed on the machine(s) and who services the unit(s).

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5c. Are laboratory facilities located at your facility? YES \_\_\_ NO \_\_\_. If yes, indicate the type of testing performed in the laboratory(s); describe what type of liquids go down the drain; and indicate the volumes of the liquids discharged per day.

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**SECTION D – PRODUCT OR SERVICE INFORMATION CONTINUED**

5d. Are any pieces of equipment at your facility cleaned or disinfected with any liquids? YES \_\_\_ NO \_\_\_. If yes, indicate the type(s) of cleaning or disinfection solution(s) used, and indicate the volume(s) of the liquids discharged per day.

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5e. Are there any chemically treated portable toilet wastes disposed of at your facility? YES \_\_\_ NO \_\_\_. If yes, indicate the source(s) and volume(s) of wastes discharged per day. Also, indicate method (ie: septic tank, County sewer system, septic hauler, etc.) used for the wastes, and the type(s) of chemical(s) used.

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5f. What sources of nondomestic wastewater, other than the items listed in 5a through 5e, are discharged to the sewer? Indicate the volume of the wastewater discharged to the sewer from the source(s).

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6. Describe those facilities for storage of raw materials, chemicals, fuel oil, gasoline, etc. stored on the premises, including above and underground storage tanks.

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7. Provide the following specific information on all active or abandoned underground storage tanks.  
NOTE: Include tanks which are partially underground.

- I. Number of tanks in use: \_\_\_\_\_
- a. Tank material(s) (fiberglass, steel, etc.): \_\_\_\_\_
  - b. Size(s) in gallons: \_\_\_\_\_
  - c. Age(s) in years: \_\_\_\_\_
  - d. Material(s) stored: \_\_\_\_\_
  - e. Corrosion protection, if any (ie: coating, cathodic protection): \_\_\_\_\_
- f. Do you have a program to monitor leakage? YES \_\_\_ NO \_\_\_. If yes, describe: \_\_\_\_\_

8. Has a Spill Prevention Control and Countermeasure Plan been prepared for this facility? YES \_\_\_ NO \_\_\_  
If yes, a copy of the plan must be submitted with this application. If no, describe briefly what your facility does to prevent spills of chemicals or raw materials into the sewer: \_\_\_\_\_

#### SECTION E – PROCESS AND WASTE INFORMATION

1. Is your facility equipped with a grease trap (grease/oil interceptor)? YES \_\_\_ NO \_\_\_. If yes, please specify location, size, maintenance schedule, hauler and destination of intercepted waste: \_\_\_\_\_

Hauler: Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
Permit Number (if applicable): \_\_\_\_\_

2. How much grease and oil (Renderer/Reprocessor/Grease Traps/Other) is removed annually from your facility (estimated pounds/year)? \_\_\_\_\_
3. Does your facility use industrial solvents (other than sanitary cleaners)? YES \_\_\_ NO \_\_\_. If yes, please specify type, method of usage, usage rate (gallons/month), storage location (proximity to drains), and destination of spent solvent. \_\_\_\_\_
4. Does your facility generate or receive any wastes or sludges which are hauled away from the facility (other than identified in item E-1)? YES \_\_\_ NO \_\_\_. If yes, please specify material, amount (gallons/month), removal schedule, and hauler: \_\_\_\_\_

Hauler: Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
Permit Number (if applicable): \_\_\_\_\_  
EPA Generator Number: \_\_\_\_\_

5. If material(s) identified in item E-4 and E-5 are stored prior to removal, please describe storage method and location: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

**SECTION F – CERTIFICATION**

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information herein, I believe that the submitted information is true, accurate, and complete.

\_\_\_\_\_  
Signature of Owner or Owner's Authorized Representative

\_\_\_\_\_  
Date

\_\_\_\_\_  
Print Name

\_\_\_\_\_  
Telephone Number

\_\_\_\_\_  
Title



# United States Department of the Interior

FISH AND WILDLIFE SERVICE  
Chesapeake Bay Field Office  
177 Admiral Cochrane Drive  
Annapolis, MD 21401



September 1, 2005

Mr. Gene Stillman  
Ecology & Environment, Inc.  
1950 Commonwealth Lane  
Tallahassee, FL 32303

*RE: Car Wash on Ft. Meade, MD*

Dear Mr. Stillman:

This responds to your letter, received August 11, 2005, 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.

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 Maricela Constantino at (410) 573-4542.

Sincerely,

*(e.r.) Mason*

*Jan* Mary J. Ratnaswamy, Ph.D.  
Program Supervisor, Threatened and Endangered Species

OFFICE OF  
**The Bowie Blade-News**

Published by  
**CAPITAL-GAZETTE NEWSPAPERS**

**CERTIFICATE OF PUBLICATION**

Bowie, MD, August 18, 20 05

We hereby certify, that the annexed \_\_\_\_\_

Public Notice

EA + FONSI

Car Wash - Ft. Meade

**PUBLIC NOTICE**

On behalf of the Army and Air Force Exchange Service, Ecology and Environment, Inc. has investigated the possible environmental impacts associated with construction of a car wash to provide additional service to military and civilian personnel at Fort George G. Meade. An Environmental Assessment and Finding of No Significant Impact (FONSI) have been prepared which evaluate the environmental impacts associated with the proposed construction.

The proposed action consists of the construction of a 3,900 square foot facility with two automatic bays, four self service bays, mechanical equipment rooms, and four vacuum/drying bays adjacent to an existing shopping center. The project will be located on Ruffner Road.

The Environmental Assessment indicates that the construction of the car wash will have minimal impacts on natural resources and the human environment. Construction activities would result in removal of 0.85 acres of vegetation, including mixed hardwood and pine trees. A designated location for the mitigation of these trees would be identified on Fort Meade. Erosion and sediment controls will be employed and required permits obtained.

Copies of the Environmental Assessment and the Finding of No Significant Impact are available for review and comment at Fort George G. Meade Library, Building 4418, Fort Meade, MD, and at the West County Area and Crofton Branch Libraries, and viewed online at <http://www.fortmeade-ems.org/>, or may be obtained by writing Heather Carolan, Environmental Management Office, 239 Ross Road, Fort George G. Meade, MD 20755-5115. The deadline for comment is September 18, 2005, which is 30 days from the date of publication of this notice.

53382 8/18  
000008382-01

was published in

**The Bowie Blade-News**

a newspaper published in Bowie and Prince George's County, MD,

once a week for one

~~successive~~ weeks before the 18th

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The insertions being made the 18th of

August, 20 05

**CAPITAL-GAZETTE NEWSPAPERS**

By [Signature]

No. \_\_\_\_\_

OFFICE OF  
**The Capital**  
and  
**Maryland Gazette**

Published by  
**CAPITAL-GAZETTE NEWSPAPERS**  
HOLDER OF CONTRACT FOR ANNE ARUNDEL COUNTY ADVERTISING

**CERTIFICATE OF PUBLICATION**

Annapolis, MD. August 17 20 05

We hereby certify, that the annexed \_\_\_\_\_

Public Notice

EA + FONSI

Car Wash - Ft. Meade

**PUBLIC NOTICE**

On behalf of the Army and Air Force Exchange Service, Ecology and Environment, Inc. has investigated the possible environmental impacts associated with construction of a car wash to provide additional service to military and civilian personnel at Fort George G. Meade. An Environmental Assessment and Finding of No Significant Impact (FONSI) have been prepared which evaluate the environmental impacts associated with the proposed construction.

The proposed action consists of the construction of a 3,900 square foot facility with two automatic bays, four self service bays, mechanical equipment rooms, and four vacuum drying bays adjacent to an existing shopping center. The project will be located on Ruffnet Road.

The Environmental Assessment indicates that the construction of the car wash will have minimal impacts on natural resources and the human environment. Construction activities would result in removal of 0.85 acres of vegetation, including mixed hardwood and pine trees. A designated location for the mitigation of these trees would be identified on Fort Meade. Erosion and sediment controls will be employed and required permits obtained.

Copies of the Environmental Assessment and the Finding of No Significant Impact are available for review and comment at Fort George G. Meade Library, Building 4418, Fort Meade, MD, and at the West County Area and Crofton Branch Libraries, and viewed online at <http://www.fortmeade-ems.org/>, or may be obtained by writing Heather Carolan, Environmental Management Office, 239 Ross Road, Fort George G. Meade, MD 20755-5115. The deadline for comment is September 18, 2005, which is 30 days from the date of publication of this notice.

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was published in **THE CAPITAL** a newspaper published in the City of Annapolis, Anne Arundel County, MD

once a week for one successive week(s)

before the 18th day of September 20 05

The insertions being made the 17th of August 20 05

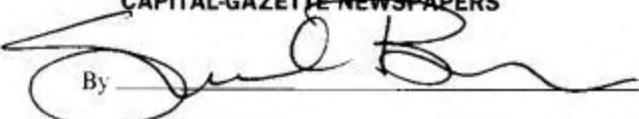
was published in **The MARYLAND GAZETTE** a newspaper published in the City of Annapolis, Anne Arundel County, MD

once a week for one successive week(s)

before the 18th day of September 20 05

The insertions being made the 17th of August 20 05

**CAPITAL-GAZETTE NEWSPAPERS**

By 

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JES/DLH



**ecology and environment**

International Specialists in the Environment

1950 Commonwealth Lane  
Tallahassee, Florida 32303  
Tel. (850) 574-1400, Fax: (850) 574-1179

August 10, 2005

Maryland Department of Housing & Community Development  
Maryland Historical Trust  
Division of Historical and Cultural Programs  
ATTN: Beth Cole  
100 Community Place  
Crownsville, MD 21032

AUG 10 2005

RE: Environmental Assessment for the Proposed Construction of a Car Wash on Fort George G. Meade, Maryland

Dear Ms. Cole:

On behalf of the Army Air Force Exchange Service (AAFES), Ecology and Environment, inc. is preparing an environmental assessment (EA) to evaluate the environmental impacts of proposed construction of a new car wash adjacent to an existing shopping center. The purpose of this letter is to solicit agency input on the enclosed Draft EA.

The proposed action evaluated in the EA is the construction and operation of a 3,900 square foot car wash facility with two automatic rollover bays, four self service wand bays, mechanical equipment rooms, and four vacuum/drying bays. Figure 2-3 in the enclosed Draft EA, illustrates the preferred location for proposed construction activities. In addition, the No-Action Alternative was evaluated.

For preparation of the EA, we are seeking your agency's input to identify specific issues or topics of environmental concern, necessary environmental permits, or other requirements that should be addressed in the assessment. Specifically, your comments should focus on the following:

- Applicable laws and regulations and potential permitting and regulatory requirements;
- The nature and significance of potential direct, indirect, and cumulative impacts (adverse and beneficial); and
- Recommended measures to mitigate and/or monitor adverse impacts.

To ensure that agency comments can be addressed in the draft EA, please submit all written correspondence to me by September 18, 2005, at Ecology & Environment, inc., 1950 Commonwealth Lane, Tallahassee, Florida, 32303; telephone (850) 574-1400, facsimile (850) 574-1179.

*DLH  
9/6/05  
(7a)*

Sincerely,

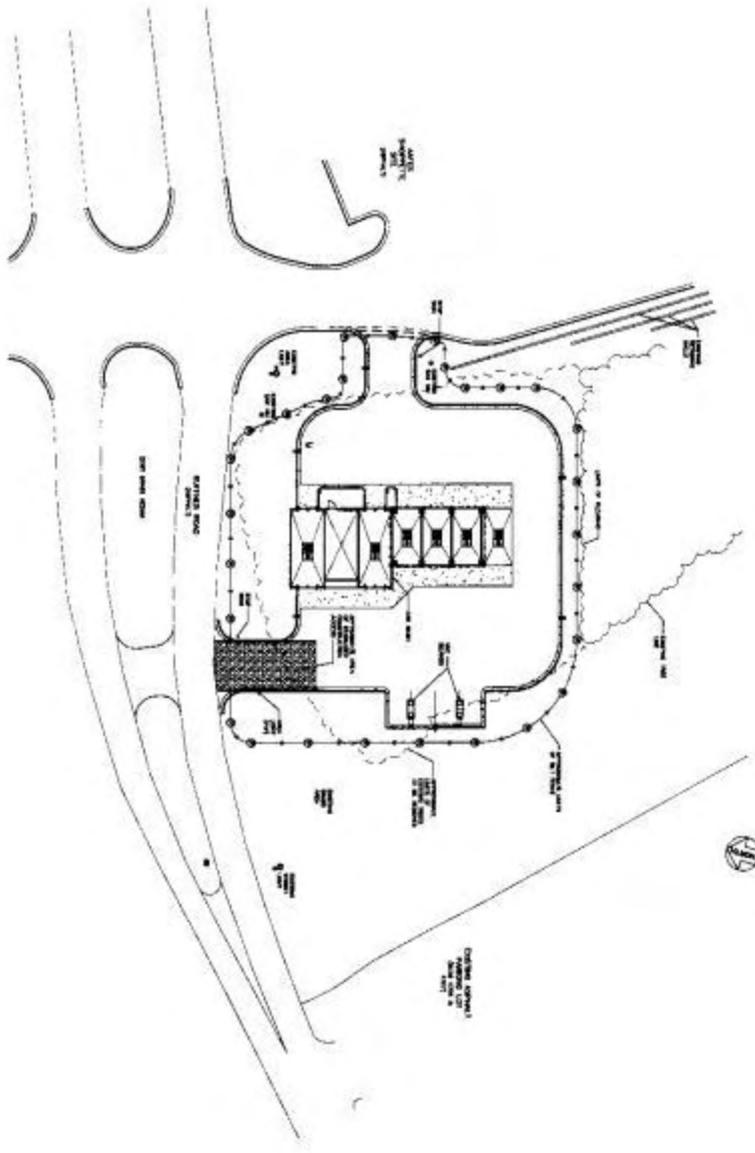
Gene Stillman  
Ecology & Environment, inc.

Enclosure

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

*Dixie Henry* Date 9/6/05

*19  
JES  
8/18/05*



Scale: 1" = 10'-0"

AMFES

NO. 1000

1	2	3	4	5	6	7	8	9	10

AMFES  
 1000  
 1000

AUTO WASH - SHINE  
 SELF SERVICE  
 CAR WASH

ERSON  
 CONTROL PLAN  
 \$210



# MARYLAND DEPARTMENT OF THE ENVIRONMENT

1800 Washington Boulevard • Baltimore MD 21230

410-537-3000 • 1-800-633-6101

Robert L. Ehrlich, Jr.  
Governor

Kendl P. Philbrick  
Secretary

Michael S. Steele  
Lt. Governor

February 14, 2006

Jonas A. Jacobson  
Deputy Secretary

Gene Stillman  
Project Manager  
ecology and environment, inc.  
1950 Commonwealth Lane  
Tallahassee, Florida 32303

RE: Proposed Car Wash Construction  
Fort Meade, Maryland

Dear Mr. Stillman:

I am responding to your request for a Federal Consistency Determination, pursuant to Section 307 of the Federal Coastal Zone Management Act of 1972, as amended (CZMA), for the proposed construction of a car wash at Fort Meade, Anne Arundel County, Maryland. The proposed project consists of the construction and operation of a 3,900 square-foot car wash facility with two automatic rollover bays, four self-service wand bays, mechanical equipment rooms, and four vacuum/drying bays adjacent to an existing shopping center.

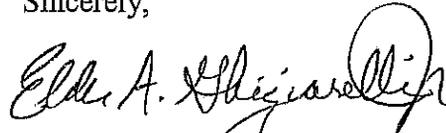
Based upon review of the draft Environmental Assessment (EA), the proposed activities will not result in impacts to wetlands, waterways, or the 100-year floodplain. Construction of the project will result in the removal of trees and shrubs from the 0.85 acre site. In this regard, coordination has taken place with the Department of Natural Resources to ensure compliance with the State's Forest Conservation Act.

As noted in the draft EA, erosion and sediment control and stormwater management plans will require review and approval from the Maryland Department of the Environment. Finally, the EA notes that any hazardous materials and wastes resulting from operation of the proposed facility will be disposed of in accordance with all local, state and federal laws and regulations.

Gene Stillman  
February 14, 2006  
Page 2

Based on the above considerations, the proposed project is consistent with the Maryland Coastal Zone Management Program, as required by Section 307 of the CZMA. If you have any questions, please contact me at (410) 537-3763.

Sincerely,



Elder A. Ghigiarelli, Jr.  
Deputy Administrator  
Federal Consistency Coordinator  
Wetlands and Waterways Program

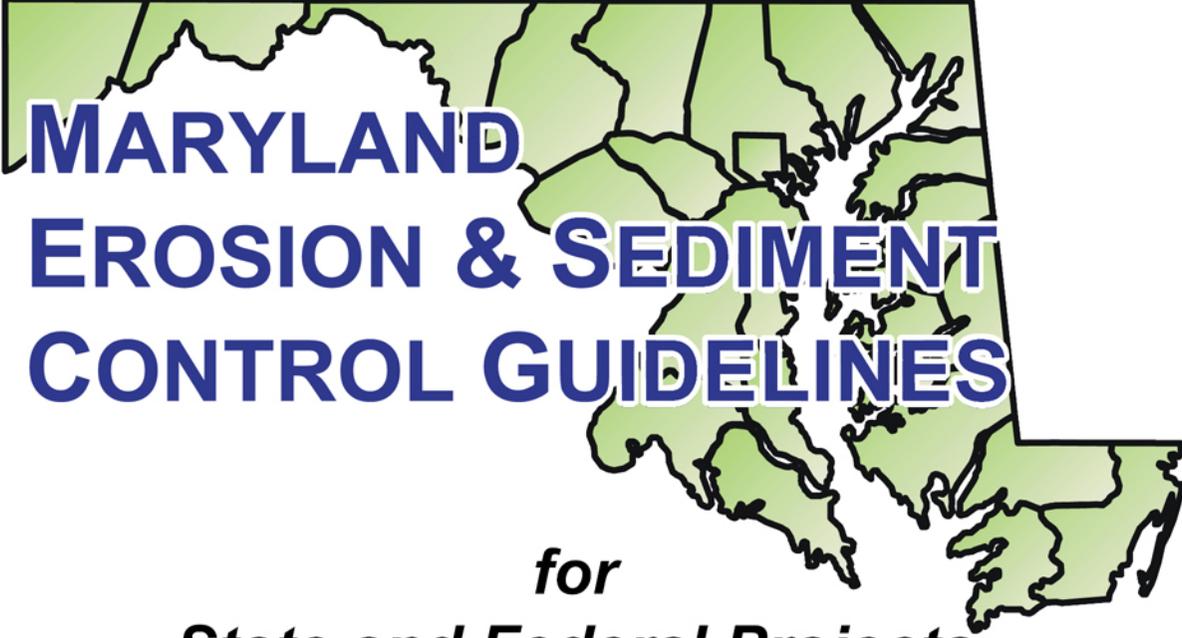
EAGJr:cma

cc: Marina Honeczy, DNR  
Jim Tracy, MDE  
Joanne Mueller, MDE

## **Appendix B**

# **Maryland Erosion and Sediment Control Guidelines for State and Federal Projects**

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**MARYLAND  
EROSION & SEDIMENT  
CONTROL GUIDELINES**

*for  
State and Federal Projects*

**Published January 1990  
Revised January 2004**



**MARYLAND DEPARTMENT OF THE ENVIRONMENT  
WATER MANAGEMENT ADMINISTRATION**

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3 1-800-633-6101

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Robert L. Ehrlich, Jr., Governor  
Michael S. Steele, Lt. Governor

Kendl P. Philbrick, Secretary



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## INTRODUCTION

### Planning

Planning for site development begins with gathering, mapping, and analyzing information about the physical characteristics of the site. Designers are strongly encouraged to visit the proposed development site so that its topographic, vegetative, drainage, and soil characteristics are clearly understood.

The topography and plan of the site must be mapped at suitable contour interval and scale to allow the identification of drainage patterns, slopes, and sensitive environmental features. Mapping the flow of water onto, through, and off the site enables the designer to delineate drainage areas and patterns. Several interim drainage plans and control strategies may be necessary to show changing drainage area boundaries and patterns as the site is graded. Investigating the site soil characteristics by doing geotechnical testing and referring to local soil surveys enables the designer to identify areas suitable for infiltration practices and highly erodible soil areas, which should be left undisturbed, if possible. Areas where vegetation is to be preserved, such as long or steep slopes, highly erodible soils, and buffer strips along water bodies should be mapped and designated to remain undisturbed. Downstream wetlands, lakes, streams, streets, or other areas particularly sensitive to damage from erosion and sedimentation should also be investigated, mapped, and incorporated into the design to afford these areas additional protection. The design should never allow sediment to flow through a sensitive area.

After the site's topographic, drainage, soils, and vegetative characteristics are mapped, a site development plan that minimizes environmental hazards can be developed. Clearly, the most effective way to minimize the likelihood of sediment pollution is to minimize the opportunity for erosion to occur. The most effective way to reduce the amount of erosion that can occur is to reduce both the amount of grading that is required and the length of time the graded area is not stabilized. To reduce grading, plan to utilize the existing terrain by locating buildings and roads so that existing contours are preserved and followed as much as possible. Preserve natural vegetation wherever it is feasible. By reducing the need for grading in this fashion, the amount of erodible area and the corresponding need for sediment control measures is also reduced. Planning the site development so that grading is minimized facilitates the development of an erosion and sediment control plan that is appropriate and cost effective for the site. Proper sequencing of grading operations will minimize site exposure. Sequentially grading and then stabilizing portions of the site, rather than the entire site at one time, will minimize the length of time that the land is in a grading operation. This allows graded areas to be stabilized as soon as possible.

The basic approach to sediment control design should be to think through and plan your grading operation to minimize disturbed area, minimize length of time disturbed areas are exposed, and design sediment control measures that will be the most effective in

preventing erosion from occurring and containing sediment on site. A cooperative team effort between the designer and the reviewer will make these goals achievable.

### Erosion and Sediment Control Plan

Careful phasing and sequencing of grading, stabilization, and construction should be planned to minimize soil exposure. This is the best way to ensure cost effective erosion and sediment control and environmental protection. When planning the clearing and grading schedule, recognize that erosion and sediment control measures must be located so that they are in place and functional when grading operations begin, and that any area not being actively graded must be temporarily or permanently stabilized no more than fourteen days after grading operations cease. Adequate erosion and sediment control devices must be maintained until contributing areas are permanently stabilized and a vegetative cover is established. Therefore, do not plan on clearing and grading more area than can be protected before grading begins and stabilized when grading stops. Retain existing vegetation for as long as possible. Locate stockpiles so that the material will only have to be moved once for final utilization. If possible, plan to re-spread stripped topsoil on previously graded areas in preparation for final stabilization.

When choosing erosion and sediment control measures, recognize where erosion is likely to occur, and take steps to prevent it by utilizing the most appropriate practice. Long or steep slopes are particularly susceptible to erosion. Provide reverse benches or pipe slope drains to minimize erosion from slopes and stabilize the slopes as soon as possible (no longer than seven days after grading stops). Use earth dikes or other diversions at the top of slopes to divert runoff to appropriate outlets. Existing drainage ways and outlets are also subject to erosion due to increased or concentrated run off and appropriate outfall protection must be designed. Provide appropriate stabilization for on and off site drainage ways and outlets to minimize erosion in these areas. Use stone check dams in ditches to reduce runoff velocities to non-erosive rates. Plan your sediment control design with your ultimate stormwater management strategy in mind. Use future stormwater management ponds as sediment basins during construction wherever possible. Again, plan on prompt stabilization of any denuded areas to minimize the amount of sediment that is generated.

Minimizing the opportunity for erosion to occur does not eliminate the need to trap sediment on the development site. Provide perimeter earth dikes, swales, or dike/swales to direct runoff to sediment traps or basins. Choose sediment controls based on drainage area limitations and effectiveness. Locate traps and basins so that they can easily be maintained. Temporarily divert storm drain systems to outfall into a trap or basin if sediment laden runoff is to enter inlets during construction. Locate stabilized construction entrances at all points of ingress and egress on the site to stabilize entrance areas and minimize tracking of sediment. Avoid placing sediment controls in streams, tree-save areas, buffers, and wetlands. Trap sediment laden water before it enters a stream.

A reasonable erosion and sediment control strategy must also recognize the importance of maintenance requirements associated with the sediment control measures employed on site. Traps and basins must be located to provide access for maintenance equipment. A protected location for disposal of sediment removed from traps or basins must also be furnished. Temporary stabilization may need to be reapplied prior to permanent stabilization.

### Summary of Planning and Erosion and Sediment Control Plan Concepts

In summary, successful erosion and sediment control strategies strive to limit the amount of and time during which erodible areas are exposed and trap sediment on site. Erosion can be kept to a minimum by limiting grading and promptly stabilizing denuded areas. Protecting slopes, drainage ways, and outlets also reduces the quantity of sediment that is generated and must be trapped. To prevent sediment from leaving the development site, use perimeter controls and storm drain systems to direct runoff to sediment traps or basins. Protect all points of ingress and egress with stabilized construction entrances. Recognize and plan for the routine maintenance needs of all sediment control measures. Above all, the erosion and sediment control plan must be reasonable and thoroughly thought out if implementation is to be successful.

## **1.0 PURPOSE AND AUTHORITY**

The purpose of these guidelines is to protect, maintain, and enhance the State's natural assets and resources, public health, safety, and general welfare by establishing minimum plan requirements and procedures to control the adverse impacts associated with soil erosion and sedimentation during construction. Minimizing soil erosion and off-site sedimentation will minimize damage to public and private property, and assist in the attainment and maintenance of water quality standards.

The provisions of these guidelines are pursuant to the Environment Article, Title 4, Subtitle 1, Annotated Code of Maryland and COMAR 26.17.01.

These guidelines are intended to provide State and federal agencies with the information necessary for submittal of plans for construction of projects to the Administration for erosion and sediment control plan review and approval.

## **2.0 DEFINITIONS**

1. "Administration" means the Water Management Administration (WMA).
2. "Adverse Impact" means any deleterious effect on waters or wetlands, including their quality, quantity, surface area, species composition, aesthetics, or usefulness for human or natural purposes. Such deleterious effect is or may potentially be harmful or injurious to human health, welfare, safety, property,

biological productivity, diversity, or stability or which unreasonably interfere with the enjoyment of life or property, including outdoor recreation.

3. "Applicant" means any person who executes the necessary forms to procure official approval of a project or a permit to carry out construction of a project.
4. "Clear" means any activity that removes the vegetative ground cover in a manner that does not disturb the root mat of the existing soil surface.
5. "Contractor" means a person who does not have a proprietary interest in a project, but is responsible for implementing and maintaining the approved erosion and sediment control plan.
6. "Department" means the Maryland Department of the Environment (MDE), Water Management Administration (WMA).
7. "Developer" means a person undertaking, or for whose benefit any or all of the activities covered by these Guidelines are commenced or carried on. General contractors or subcontractors, or both, without a proprietary interest in a project are not included within this definition.
8. "Drainage Area" means that area contributing runoff to a single point measured in a horizontal plane, which is enclosed by a ridgeline.
9. "Erosion" means the process by which the land surface is worn away by the action of wind, water, ice, or gravity.
10. "Erosion And Sediment Control" means a system of structural and vegetative measures that minimize soil erosion and off-site sedimentation.
11. "Erosion And Sediment Control Plan", also identified as "plan", means an erosion and sediment control strategy and plan to minimize erosion and prevent off-site sedimentation by containing sediment on-site or by passing sediment laden runoff through a sediment control measure, prepared and approved in accordance with the specific requirements of the Administration and these Guidelines, and designed in accordance with the 1994 Maryland Standards and Specification for Soil Erosion and Sediment Control.
12. "Exemption" means those land development activities that are not subject to the erosion and sediment control requirements contained in these Guidelines.
13. "Grading" means to cause disturbance of the earth. This shall include but not be limited to any excavating, filling, stockpiling of earth materials, grubbing, root mat or topsoil disturbance, or any combination of them.

14. "Permittee" means any person to whom a building or grading permit has been issued.
15. "Person" means the federal government, the State, or other political subdivision of the State, or any of their units, or an individual, receiver, trustee, guardian, executor, administrator, fiduciary, or representative of any kind, or any partnership, firm, association, public or private corporation, or any of their affiliates, or any other entity.
16. "Responsible Personnel" means any foreman, superintendent, or project engineer who is in charge of site clearing and grading operations or sediment control associated with earth changes or disturbances.
17. "Sediment" means soils or other materials transported or deposited by the action of wind, water, ice, gravity, or artificial means.
18. "Site" means any tract, lot, or parcel of land, or combination of tracts, lots or parcels of land that are in one ownership, or are contiguous and in diverse ownership where development is to be performed as part of a unit, subdivision, or project.
19. "Stabilization" means the prevention of soil movement by any of various vegetative and/or structural means.
20. "Standards and Specifications" means the "1994 Maryland Standards and Specifications for Soil Erosion and Sediment Control" or any subsequent revisions.
21. "Variance" means modification of the minimum criteria set forth in the 1994 Maryland Standards and Specifications for Soil Erosion and Sediment Control under specific circumstances where strict adherence to the requirements would result in unnecessary hardship and not fulfill the intent of these guidelines.
22. "Watercourse" means any natural or artificial stream, river, creek, ditch, channel, canal, conduit, culvert, drain, waterway, gully, ravine, or wash, in and including any area adjacent thereto which is subject to inundation by reason of overflow of floodwater.
23. "Watershed" means the total drainage area contributing runoff to a single point.
24. "Wetlands" means an area having saturated soils or periodic high groundwater levels and vegetation adapted to wet conditions and periodic flooding as defined in Environment Article, Title 5, Subtitle 9 and Title 16, Annotated Code of Maryland and COMAR 26.23.01. and 26.24.01.

### **3.0 APPLICABILITY**

#### **3.1 Scope**

No State or federal agency shall clear or grade land without first obtaining approval of an erosion and sediment control plan and implementing the soil erosion and sediment control measures, except as provided within this section.

#### **3.2 Exemptions**

Clearing or grading activities that disturb less than 5,000 square feet of land area and involve less than 100 cubic yards of earth movement are exempt from the provisions of these Guidelines. All other construction activities shall meet the requirements of these Guidelines.

#### **3.3 Variances**

The Administration may grant a written variance from any requirement of Section 4.2- Contents of Erosion and Sediment Control Plans, if there are exceptional circumstances applicable to the site where strict adherence to the provisions of the Guidelines will result in unnecessary hardship and not fulfill the intent of these Guidelines.

### **4.0 EROSION AND SEDIMENT CONTROL PLANS**

#### **4.1 Review and Approval of Erosion and Sediment Control Plans**

State and federal agencies shall submit erosion and sediment control plans for any proposed clearing or grading to the Administration for review and approval. The erosion and sediment control plan shall contain sufficient information, drawings, computations, and notes to describe how soil erosion and off-site sedimentation will be minimized. The Administration shall review the plan to determine compliance with the requirements of these Guidelines prior to approval. The plan shall serve as the basis for all subsequent grading and stabilization.

#### **4.2 Content of the Erosion and Sediment Control Plans**

State or federal agencies are responsible for submitting an erosion and sediment control plan that meets the requirements provided by these Guidelines. The plan shall include sufficient information to evaluate the site conditions, environmental characteristics of the affected areas, potential impacts of the proposed grading on water resources, and effectiveness and acceptability of measures proposed to minimize soil erosion and off-site sedimentation.

Applicants shall submit the following information, as required:

1. A letter of transmittal and application form;
2. A vicinity sketch indicating north arrow, scale, site location, and other information necessary to easily locate the property;
3. A plan at an appropriate scale indicating at least:
  - a. Name, address, and telephone number of:
    - 1) The owner of the property where the grading is proposed;
    - 2) The developer; and
    - 3) The applicant.
  - b. The plan shall show existing and proposed topography on 50 scale photogrammetry with 2 foot contours or other approved scale and contour interval. Also, a 200 scale drainage area map with existing topography, proposed improvements, pertinent drainage information, and schematic initial phase sediment control features shall be included.
  - c. The plan shall show the proposed grading and earth disturbance including:
    - 1) Surface area involved;
    - 2) Volume of spoil material and waste location;
    - 3) Volume of borrow material and borrow location;
    - 4) Limits of grading including limitation of mass clearing and grading whenever possible.
  - d. Storm drainage provisions, including:
    - 1) Existing and proposed bridges, storm drains, culverts, outfalls, etc.;
    - 2) Velocities ( $V_2$  and  $V_{10}$ ) and quantities ( $Q_2$  and  $Q_{10}$ ) of flow at outfalls; and
    - 3) Downstream conditions and provisions to protect downstream areas from erosion and sedimentation.
  - e. Erosion and sediment control provisions to minimize on-site erosion and prevent off-site sedimentation including:

- 1) Provisions to salvage and reuse topsoil and limit (phase) disturbance;
- 2) Location and type of all proposed sediment control measures;
- 3) Details of grading including reference to drainage areas to all sediment control practices with existing and proposed contours shown;
- 4) Design details and design tables for all erosion and sediment control measures; and
- 5) Details and notes of temporary and permanent stabilization measures including placement of the following statement on the plan:

Following initial soil disturbance or re-disturbance, permanent or temporary stabilization shall be completed within:

- a. Seven calendar days as to the surface of all perimeter dikes, swales, ditches, perimeter slopes, and all slopes greater than 3 horizontal to 1 vertical (3:1); and
- b. Fourteen days as to all other disturbed or graded areas on the project site.

The requirements of Sections 3.e.5.a. and 3.e.5.b. do not apply to those areas on which actual construction activities are currently being performed or to interior areas of a surface mine site where the stabilization material would contaminate the recoverable resource. Maintenance of erosion and sediment control practices and devices shall be performed as necessary to ensure that the disturbed areas continuously meet the appropriate requirements of the Standards and Specifications and that runoff from these areas does not adversely impact downstream properties.

- f. Phasing and sequence of construction describing the relationship between the implementation and maintenance of controls, including permanent and temporary stabilization, and the various stages or phases of earth disturbance and construction. The sequence of construction shall, as a minimum, include a schedule (and time frame) for the following activities:

- 1) Clearing and grubbing of those areas necessary for installation of perimeter sediment controls;
- 2) Construction of perimeter controls for tributary disturbed areas;
- 3) Remaining clearing and grubbing of controlled area;
- 4) Grading;
- 5) Staging the sediment control measures for grading the remainder of the site;
- 6) Utility installation and whether storm drains will be temporarily diverted, used, or blocked during construction;
- 7) Final grading, landscaping, and stabilization; and
- 8) Removal of controls.

A revised sequence of construction may be submitted by the contractor selected to construct the project. The revised sequence of construction must be approved by WMA.

- g. That the developer shall request that the inspection agency approve the work completed at the stages of construction specified below in accordance with the approved erosion and sediment control plan, grading or building permit, and this section of the Guidelines:
  - 1) Prior to start of construction and upon completion of installation of perimeter erosion and sediment controls on all sites with disturbed areas in excess of two acres; and
  - 2) Upon establishment of final stabilization and prior to removal of erosion and sediment control measures on all sites with disturbed area in excess of two acres.
- h. Certification by the owner or developer that any clearing, grading, construction, or development will be done pursuant to the approved plan and that responsible personnel involved in the construction project will have a Certificate of Training at a Maryland Department of the Environment approved training program for the control of erosion and sediment prior to beginning the project. Additionally, the owner or developer shall certify right of entry for periodic on-site evaluation by State of Maryland, Department of the Environment, Compliance Inspectors.

- i. The approval authority (WMA) requires certification by a professional engineer, land surveyor, landscape architect, or architect registered in the State that the plans have been designed in accordance with erosion and sediment control laws, regulations, standards, and guidelines.
  - j. A general description of the predominant soil types on the site, as described by the appropriate soil survey information available through the soil conservation districts from the U. S. Natural Resource Conservation Service. The soil survey information may be plotted on the drainage area map to help identify environmentally sensitive areas.
4. Any additional information or data deemed appropriate by the Administration.

#### 4.3 Format of the Erosion and Sediment Control Submittals

The format of erosion and sediment control reports and plans submitted to the Administration shall be as follows:

1. Report – A discussion, with supporting technical documentation of the overall strategy of the proposed erosion and sediment control plan that also contains significant construction details, and their means of derivation, that are required to meet current regulations, guidelines, or specifications for the proposed erosion and sediment control measures.

The erosion and sediment control report shall be on 8 ½ " by 11" paper. The report shall be typed; however, certain computational sheets may be handwritten. The report shall be bound in an acceptable cover binder. Any maps, diagrams, or figures (except computer printouts) that are larger than 8 ½" by 11" shall be folded to a size of 8 ½" by 11" or smaller and shall be placed in a pocket within the report binder. Foldouts or bound maps, diagrams, or figures are not acceptable unless the document is 8 ½" by 11". All maps, diagrams, or figures shall be clearly labeled.

The report shall be submitted in good technical report form. At a minimum each report shall contain the following:

- a. Title on the outside of binder;
- b. Title sheet;
- c. Table of contents;
- d. List of figures or tables; and
- e. Body of the report including:

- 1) Introduction;
  - 2) Analysis; and
  - 3) Conclusions.
- f. Appendices shall include all the background information used in the erosion and sediment control analysis. The background information shall be sufficient to facilitate a straightforward review and at a minimum will include:
- 1) Drainage area maps;
  - 2) Soil type maps;
  - 3) Design specifics for sediment control devices; and
  - 4) Other computations deemed necessary by the Administration.
- The appendices shall be bound as part of the report.
2. Computer printouts, when required, shall include all input data, output data, hydrographs at critical sections where appropriate, and summary output.
  3. Plans, special provisions, and other contract documents shall be submitted in the same manner as used for advertisement purposes. The plans shall include all of the details necessary to construct the erosion and sediment control devices. In the event the advertised plans do not contain the minimum information for erosion and sediment control plans as outlined under Section 4.2-Contents of the Erosion and Sediment Control Plans, it is acceptable to submit the additional information as part of the report and in compliance with Section 4.3.
  4. File Numbers - All reports, computer printouts, plans, special provisions, and other contract documents shall be accompanied by a transmittal letter. The transmittal letter shall list the contents of the submittal, the purpose of the submittal, and shall include the WMA file number (the "SF" number). Failure of any submittal beyond the initial submittal to include the WMA file number (the "SF" number) may result in the return of the submittal without benefit of review or comment. If it is unclear to the applicant whether a project has been assigned a file number, the Administration may be contacted to obtain the proper file number.

## **5.0 APPROVALS**

### **5.1 Approval Requirements**

Approval may not be issued for any project unless an erosion and sediment control plan has been approved by the Administration as meeting all the requirements of these Guidelines.

### **5.2 Approval, Suspension or Revocation**

Any erosion and sediment control approval issued by the Administration may be suspended or revoked after written notice is given for any of the following reasons:

1. Terms or conditions of the approved erosion and sediment control plans violated;
2. Violation notice(s) or stop work order(s) ignored;
3. Site characteristics upon which plan approval was based changed; or
4. Construction standards as required by the approved plan disregarded.

### **5.3 Approval Conditions**

In granting the plan approval, the Administration may impose additional conditions and criteria as may be deemed necessary to ensure compliance with the provisions of these Guidelines and the preservation of the State's natural assets, resources, public health, and safety. Generally, additional controls will be required in environmentally sensitive areas, where there are highly erodible soils, or other facilities that require protection.

### **5.4 Modification of Approved Erosion and Sediment Control Plans**

When inspection of the site indicates that the approved erosion and sediment control plan needs modification, the modification shall be made in compliance with the erosion and sediment control criteria contained in the Standards and Specifications and as directed by the WMA inspector.

## **6.0 EROSION AND SEDIMENT CONTROL CRITERIA**

Erosion and sediment control measures shall be designed in accordance with the provisions of the Standards and Specifications, or other approved design criteria.

## **7.0 INSPECTION**

### **7.1 Inspection Frequency and Reports**

The Administration shall:

1. Ensure that the approved erosion and sediment control plans are on the site and are complied with;
2. Ensure that every active site having a designed erosion and sediment control plan is inspected for compliance with the approved plan;
3. Prepare written reports after every inspection that describe:
  - a. The date and location of the site inspection;
  - b. Whether the approved plan has been properly implemented and maintained;
  - c. Practice deficiencies or erosion and sediment control plan deficiencies; and
  - d. If a violation exists, the type of enforcement action taken.
4. Notify the on-site personnel and the owner/developer in writing when violations are observed, describing the:
  - a. Nature of the violation;
  - b. Required corrective action; and
  - c. Time period in which to have the violation corrected.

The State or federal agency shall promptly correct any violations upon written notification from the Administration.

## **8.0 SEVERABILITY**

If any section, subsection, sentence, clause, phrase, or portion of these Guidelines is for any reason held invalid or unconstitutional by any court of competent jurisdiction, such portion shall be deemed a separate, distinct, and independent provision and such holding shall not affect the validity of the remaining portion of these Guidelines, it being the intent of the Administration that these Guidelines shall stand, notwithstanding the invalidity of any section, subsection, sentence, clause, phrase, or portion hereof.

MARYLAND  
DEPARTMENT OF THE ENVIRONMENT  
Water Management Administration  
Sediment & Stormwater Plan Review Division  
1800 Washington Boulevard  
4<sup>th</sup> Floor, Suite 440  
Baltimore, Maryland 21230-1708  
Telephone: 410 537 3563

**APPLICATION FOR SEDIMENT CONTROL/STORMWATER MANAGEMENT**

CONTRACT NUMBER: \_\_\_\_\_  
PROJECT DESCRIPTION: \_\_\_\_\_  
PROJECT SIZE DISTURBED (ACRES): \_\_\_\_\_  
PROJECT LOCATION/TOWN: \_\_\_\_\_  
PROJECT LOCATION/COUNTY: \_\_\_\_\_  
INFORMATION ENCLOSED: \_\_\_\_\_  
\_\_\_\_\_

APPLICANT NAME: \_\_\_\_\_  
APPLICANT ADDRESS: \_\_\_\_\_  
APPLICANT CONTACT NAME: \_\_\_\_\_  
APPLICANT PHONE NUMBER: \_\_\_\_\_  
FAX MACHINE NUMBER: \_\_\_\_\_

If a consultant(s) has/have been retained, please provide the following information for each consultant:

CONSULTANT NAME: \_\_\_\_\_  
PROJECT ENGINEER: \_\_\_\_\_  
CONSULTANT ADDRESS: \_\_\_\_\_  
CONSULTANT CONTACT NAME: \_\_\_\_\_  
CONSULTANT PHONE NUMBER: \_\_\_\_\_  
FAX MACHINE NUMBER: \_\_\_\_\_

Please include a complete application with the initial project submittal to the Department at the above address. Projects that involve less than 5,000 square feet and less than 100 cubic yards of earth disturbance do not require approval of the Department.

MDE File Number (If Known) \_\_\_\_ - SF - \_\_\_\_

**EROSION AND SEDIMENT CONTROL  
PLAN REVIEW CHECKLIST**

MDE No. \_\_\_\_\_                      \_\_\_ acceptable                      X unacceptable  
 Project: \_\_\_\_\_                      INC incomplete                      R required  
 Contract No. \_\_\_\_\_                      N/A not applicable                      NR not reviewed

**NOTE:** Project is exempt from ero & sed control if disturbed area is < 5000 s.f. & 100 c.y.  
 Notice of Intent (NOI) is required if disturbed area >= 1 acre.

1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	<b>Review Date</b>
_____	_____	_____	Application Form with applicant information
_____	_____	_____	<b>GENERAL PLAN REQUIREMENTS</b>
_____	_____	_____	Location Map (sufficient that inspector can locate facility)
_____	_____	_____	Owner's/Developer's Certification with signature
_____	_____	_____	Design Certification with signature
_____	_____	_____	Standard Stabilization Note
_____	_____	_____	Note to Contractor: "Erosion and Sediment Control Shall Be Strictly Enforced."
_____	_____	_____	Legend including sediment control items
_____	_____	_____	North arrow
_____	_____	_____	Scale (1"=50' max.)
_____	_____	_____	Topography - existing and proposed contours
_____	_____	_____	Property lines
_____	_____	_____	Existing and proposed treelines
_____	_____	_____	Proposed buffer and conservation areas
_____	_____	_____	Limits of wetlands
_____	_____	_____	Limits of 100 Year Floodplain
_____	_____	_____	Storm drain system shown – existing and proposed
_____	_____	_____	Adequate Outfall(s)
_____	_____	_____	Q <sub>10</sub> and V <sub>10</sub>
_____	_____	_____	Outfalls to toe of slope
_____	_____	_____	Topo extends 75' downgrade of outfall
_____	_____	_____	Proposed slopes 2:1 max and 3:1 max in lawn maintenance areas
_____	_____	_____	Standard Erosion and Sediment Control Notes (1 through 27)
_____	_____	_____	Completed Note 27 Site Information
_____	_____	_____	Vegetative Stabilization Specifications (text)
_____	_____	_____	Temporary and Permanent Seeding Summary Tables
_____	_____	_____	MDE Standard Details for proposed controls (1994 Standards and Specs)
_____	_____	_____	Other details

**SITE SPECIFIC REVIEW**



**OWNER'S / DEVELOPER'S CERTIFICATION**

I / We hereby certify that all clearing, grading, construction, and/or development will be done pursuant to this plan and that any responsible personnel involved in the construction project will have a certificate of attendance at a Maryland Department of the Environment approved training program for the control of erosion and sediment before beginning the project. I hereby authorize the right of entry for periodic on-site evaluation by State of Maryland, Department of the Environment, Compliance Inspectors.

_____	_____
Date	Owner / Developer Signature
_____	_____
Card No.	Printed Name and Title

**STANDARD STABILIZATION NOTE**

Following initial soil disturbance or redisturbance, permanent or temporary stabilization shall be completed within seven (7) calendar days as to the surface of all perimeter controls, dikes, swales, ditches, perimeter slopes, and all slopes greater than 3 horizontal to 1 vertical (3:1); and fourteen (14) days as to all other disturbed or graded areas on the project site.

**DESIGN CERTIFICATION**

I hereby certify that this plan has been designed in accordance with the 1994 Maryland Standards and Specifications for Soil Erosion and Sediment Control, the 2000 Maryland Stormwater Design Manual, Volumes I & II and the Maryland Department of the Environment erosion and sediment control and stormwater management regulations.

_____	_____
Date	Designer's Signature
Md. Registration No. _____	_____
P.E., R.L.S., RLA, or R.A. (circle one)	Printed Name

## Standard Erosion And Sediment Control Notes

The Water Management Administration requires that these notes, in their entirety, be included on the erosion and sediment control plan. It is recognized that every note may not apply to all projects. The requirement of any individual note not applicable to the subject project is not binding upon the applicant or the applicant's contractor.

1. The contractor shall notify the Administration (WMA) at (410) 537-3510 seven (7) days before commencing any land disturbing activity and, unless waived by the Administration, shall be required to hold a pre-construction meeting between project representatives and a representative of WMA.
2. The contractor must notify WMA in writing and by telephone at the following points:
  - A. The required pre-construction meeting.
  - B. Following installation of sediment control measures.
  - C. During the installation of sediment basins (to be converted into permanent stormwater management structures) at the required inspection points (see Inspection Checklist on plan). Notification prior to commencing construction of each step is mandatory.
  - D. Prior to removal or modification of any sediment control structure(s).
  - E. Prior to removal of all sediment control devices.
  - F. Prior to final acceptance.
3. The contractor shall construct all erosion and sediment control measures per the approved plan and construction sequence and shall have them inspected and approved by the agency inspector or WMA Inspector prior to beginning any other land disturbances. Minor sediment control device location adjustments may be made in the field with the approval of the WMA Inspector. The contractor shall ensure that all runoff from disturbed areas is directed to the sediment control devices and shall not remove any erosion or sediment control measure without prior permission from WMA Inspector and agency inspector. The contractor must obtain prior agency and WMA approval for changes to the Sediment Control Plan and / or Sequence of Construction.
4. The contractor shall protect all points of construction ingress and egress to prevent the deposition of materials onto public roads. All materials deposited onto public roads shall be removed immediately.
5. The contractor shall inspect daily and maintain continuously in an effective operating condition all erosion and sediment control measures until such times as they are removed with prior permission from WMA Inspector and agency inspector.

6. All sediment basins, trap embankments and slopes, perimeter dikes, swales and all disturbed slopes steeper or equal to 3:1 shall be stabilized with sod or seed and anchored straw mulch, or other approved stabilization measures, as soon as possible but no later than seven (7) calendar days after establishment. All areas disturbed outside of the perimeter sediment control system must be minimized. Maintenance must be performed as necessary to ensure continued stabilization. (Requirement for stabilization may be reduced to three (3) days for sensitive areas.)
7. The contractor shall apply sod or seed and anchored straw mulch, or other approved stabilization measures to all disturbed areas and stockpiles within fourteen (14) calendar days after stripping and grading activities have ceased in the area. Maintenance shall be performed as necessary to ensure continued stabilization. (Requirement may be reduced to seven (7) days for sensitive areas.)
8. Prior to removal of sediment control measures, the contractor shall stabilize and have established permanent stabilization for all contributory disturbed areas using sod or an approved permanent seed mixture with required soil amendments and an approved anchored mulch. Wood fiber mulch may only be used in seeding season where the slope does not exceed 10% and grading has been done to promote sheet flow drainage. Areas brought to finished grade during the seeding season shall be permanently stabilized as soon as possible, but not later than fourteen (14) calendar days after establishment. When property is brought to finished grade during the months of November through February, and permanent stabilization is found to be impractical, temporary seed and anchored straw mulch shall be applied to disturbed areas. The final permanent stabilization of such property shall be applied by March 15 or earlier if ground and weather conditions allow.
9. The site's approval letter, approved Erosion and Sediment Control Plans, daily log books, and test reports shall be available at the site for inspection by duly authorized officials of WMA and the agency responsible for project.
10. Surface drainage flows over unstabilized cut and fill slopes shall be controlled by either preventing drainage flows from traversing the slopes or by installing protective devices to lower the water downslope without causing erosion. Dikes shall be installed and maintained at the top of a cut or fill slope until the slope and drainage area to it are fully stabilized, at which time they must be removed and final grading done to promote sheet flow drainage. Protective methods must be provided at points of concentrated flow where erosion is likely to occur.
11. Permanent swales or other points of concentrated water flow shall be stabilized with sod or seed with an approved erosion control matting, rip-rap, or by other approved stabilization measures.

12. Temporary sediment control devices may be removed, with permission of WMA Inspector and agency inspectors, within thirty (30) calendar days following establishment of permanent stabilization in all contributory drainage areas. Stormwater management structures used temporarily for sediment control shall be converted to the permanent configuration within this time period as well.
13. No permanent cut or fill slope with a gradient steeper than 3:1 will be permitted in lawn maintenance areas. A slope gradient of up to 2:1 will be permitted in non-maintenance areas provided that those areas are indicated on the erosion and sediment control plan with a low-maintenance ground cover specified for permanent stabilization. Slope gradient steeper than 2:1 will not be permitted with vegetative stabilization.
14. For finished grading, the contractor shall provide adequate gradients to prevent water from ponding for more than twenty four (24) hours after the end of a rainfall event. Drainage courses and swale flow areas may take as long as forty-eight (48) hours after the end of a rainfall event to drain. Areas designed to have standing water shall not be required to meet this requirement.
15. Sediment traps or basins are not permitted within 20 feet of a foundation that exists or is under construction. No structure may be constructed within 20 feet of an active sediment trap or basin.
16. The WMA Inspector has the option of requiring additional safety or sediment control measures, if deemed necessary.
17. All trap depth dimensions are relative to the outlet elevation. All traps must have a stable outfall. All traps and basins shall have stable inflow points.
18. Vegetative stabilization shall be performed in accordance with the Standards and Specifications for Soil Erosion and Sediment Control. Refer to appropriate specifications for temporary seeding, permanent seeding, mulching, sodding, and ground covers.
19. Sediment shall be removed and the trap or basin restored to its original dimensions when the sediment has accumulated to one quarter of the total depth of the trap or basin. Total depth shall be measured from the trap or basin bottom to the crest of the outlet.
20. Sediment removed from traps (and basins) shall be placed and stabilized in approved areas, but not within a floodplain, wetland or tree-save area. When pumping sediment laden water, the discharge must be directed to a sediment trapping device prior to release from the site. A sump pit may be used if sediment traps themselves are being pumped out.

21. All water removed from excavated areas (e.g. utility trenches) shall be passed through an approved dewatering practice or pumped to a sediment trap or basin prior to discharge from the site (i.e. via functional storm drain system or to stable ground surface).
22. Sediment control for utility construction for areas outside of designed controls or as directed by engineer or WMA Inspector:
  - A. Call "Miss Utility" at 1-800-257-7777 48 hours prior to the start of work.
  - B. Excavated trench material shall be placed on the high side of the trench.
  - C. Trenches for utility installation shall be backfilled, compacted, and stabilized at the end of each working day. No more trench shall be opened than can be completed the same day, unless;
  - D. Temporary silt fence shall be placed immediately downstream of any disturbed area intended to remain disturbed for more than one day.
23. Where deemed appropriate by the engineer or inspector, sediment basins and traps may need to be surrounded with an approved safety fence. The fence must conform to local ordinances and regulations. The developer or owner shall check with local building officials on applicable safety requirements. Where safety fence is deemed appropriate and local ordinances do not specify fencing sizes and types, the following shall be used as a minimum standard: The safety fence must be made of welded wire and at least 42 inches high, have posts spaced no farther apart than 8 feet, have mesh openings no greater than 2 inches in width and 4 inches in height with a minimum of 14 gauge wire. Safety fence must be maintained and in good condition at all times.
24. Off-site spoil or borrow areas on State or federal property must have prior approval by WMA and other applicable State, federal, and local agencies; otherwise approval must be granted by the local authorities. All waste and borrow areas off-site must be protected by sediment control measures and stabilized.
25. Sites where infiltration devices are used for the control of stormwater, extreme care must be taken to prevent runoff from unstabilized areas from entering the structure during construction. Sediment control devices placed in infiltration areas must have bottom elevations at least two (2) feet higher than the finish grade bottom elevation of the infiltration practice. When converting a sediment trap to an infiltration device, all accumulated sediment must be removed and disposed of prior to final grading of infiltration device.
26. When a storm drain system outfall is directed to a sediment trap or sediment basin and the system is to be used for temporarily conveying sediment laden water, all storm drain inlets in non-sump areas shall have temporary asphalt

berms constructed at the time of base paving to direct gutter flow into the inlets to avoid surcharging and overflow of inlets in sump areas.

27. Site Information:

- a. Total Area of Facility (base, campus, park, etc.) \_\_\_\_\_ Acres
- b. Total Area of Project Site \_\_\_\_\_ Acres
- c. Area Disturbed \_\_\_\_\_ Acres
- d. Area to be Roofed or Paved \_\_\_\_\_ Acres
- e. Total Cut \_\_\_\_\_ Cubic Yards
- f. Total Fill \_\_\_\_\_ Cubic Yards
- g. Off-Site Waste / Borrow Area Location \_\_\_\_\_

**Appendix C**  
**Maryland Stormwater Management Guidelines**  
**for State and Federal Projects**

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**for  
State and Federal Projects**

**July 2001**



**MARYLAND DEPARTMENT OF THE ENVIRONMENT  
WATER MANAGEMENT ADMINISTRATION**

**1800 Washington Blvd., 4<sup>th</sup> Floor STE 440 Baltimore, MD 21230-1708**

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**Robert L. Ehrlich, Jr.**  
Governor

**Kend P. Philbrick**  
Secretary



**MARYLAND DEPARTMENT OF THE ENVIRONMENT**

**SWM GUIDELINES  
FOR STATE AND FEDERAL PROJECTS**

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## **1.0 PURPOSE AND AUTHORITY**

The purpose of these Guidelines is to protect, maintain and enhance the public health, safety, and general welfare by establishing minimum requirements and procedures to control the adverse impacts associated with increased stormwater runoff. Proper management of stormwater runoff will minimize damage to public and private property, reduce the effects of development on land, control stream channel erosion, pollution and sediment deposition, reduce local flooding, and, in some instances, maintain the pre-development runoff characteristics.

The provisions of these Guidelines are pursuant to the Annotated Code of Maryland, Environment Article, Title 4, Subtitle 2 and the Stormwater Management Regulations, Code of Maryland Regulation (COMAR) 26.17.02.01 through 26.17.02.12.

These Guidelines supplement the Stormwater Management Regulations and the "2000 Maryland Stormwater Design Manual". They provide information necessary for submittal of stormwater management plans by State and federal agencies to the Maryland Department of the Environment (MDE), Water Management Administration (WMA) for review and approval. These Guidelines shall not affect the validity of any portion of either the Environment Article or Stormwater Management Regulations in any manner.

### **1.1 Incorporation By Reference.**

For the purpose of these Guidelines, the following documents are incorporated by reference:

- A. The 2000 Maryland Stormwater Design Manual Volumes I & II (Maryland Department of the Environment, April 2000) is incorporated by reference and shall serve as the official guide for stormwater principles, methods, and practices.
- B. USDA Natural Resources Conservation Service-Maryland, Conservation Practice Standard, Pond- Code 378 (January 2000).

## **2.0 DEFINITIONS**

- A. For the purpose of these Guidelines, the following definitions describe the meaning of the terms used in these Guidelines:
  - (1) "Administration" means the Maryland Department of the Environment, Water Management Administration.
  - (2) "Adverse impact" means any deleterious effect on waters or wetlands, including their quality, quantity, surface area, species composition, aesthetics or usefulness for human or natural uses which are or may potentially be harmful or injurious to human health, welfare, safety or property, to biological productivity, diversity, or stability or which unreasonably interfere with the enjoyment of life or property, including outdoor recreation.

- (3) "Agricultural land management practices" means those methods and procedures used in the cultivation of land in order to further crop and livestock production and conservation of related soil and water resources.
- (4) "Applicant" means any State or federal governmental agency that executes the necessary forms to procure official approval to carry out construction of a project.
- (5) "Channel Protection Storage Volume (Cp<sub>v</sub>)" means the volume used to design structural management practices to control stream channel erosion. Methods for calculating the channel protection storage volume are specified in the 2000 Maryland Stormwater Design Manual, Volumes I & II.
- (6) "Clearing" means the removal of trees and brush from the land but shall not include the ordinary mowing of grass.
- (7) "Design Manual" means the 2000 Maryland Stormwater Design Manual, Volumes I & II, that serves as the official guide for stormwater management principles, methods, and practices.
- (8) "Direct discharge" means the concentrated release of stormwater to tidal waters or vegetated tidal wetlands from new development or redevelopment projects in the Critical Area.
- (9) "Drainage area" means that area contributing runoff to a specific location, measured in a horizontal plane, which is enclosed by a ridge line.
- (10) "Easement" means a grant or reservation by the owner of land for the use of such land by others for a specific purpose or purposes, and which must be included in the conveyance of land affected by such easement.
- (11) "Exemption" means those land development activities that are not subject to the stormwater management requirements contained in these Guidelines.
- (12) "Grading" means any act by which soil is cleared, stripped, stockpiled, excavated, scarified, filled or any combination thereof.
- (13) "Grubbing" means exposing the earth by removal of the root mat.
- (14) "Infiltration" means the passage or movement of water through the soil into the underlying soil profile.
- (15) "Institutional Management Plan" means an MDE approved plan for any State or federal agency that provides stormwater management for the entire site that considers all watersheds affected by institution.
- (16) "On-site stormwater management" means the design and construction of systems necessary to control stormwater within an immediate project facility.

- (17) "Overbank flood protection volume ( $Q_p$ )" means the volume controlled by structural practices to prevent an increase in the frequency of out of bank flooding generated by development. Methods for calculating the overbank flood protection volume are specified in the Design Manual.
- (18) "Recharge volume ( $Re_v$ )" means that portion of the water quality volume used to maintain groundwater recharge rates at development sites. Methods for calculating the recharge volume are specified in the Design Manual.
- (19) "Redevelopment" means any construction, reconstruction, alteration, or improvement of, or on, existing impervious area exceeding 5000 square feet.
- (20) "Retention structure" means a permanent structure that provides for the storage of runoff by means of a permanent pool of water.
- (21) "Sediment" means soils or other surficial materials transported and/or deposited by the action of wind, water, ice, or gravity as a product of erosion.
- (22) "Site" means any tract, lot or parcel of land or combination of tracts, lots, or parcels of land, which are in one ownership, or are contiguous and in diverse ownership where development is to be performed as part of a unit, subdivision, or project.
- (23) "Stabilization" means the prevention of soil movement by covering exposed earth using any of various vegetative and/or structural means.
- (24) "Stormwater management" means:
  - a. For quantitative control, a system of vegetative and structural measures that control the increased volume and rate of surface runoff caused by man-made changes to the land; and
  - b. For qualitative control, a system of vegetative, structural, and other measures that reduce or eliminate pollutants that might otherwise be transported by surface runoff.
- (25) "Stormwater Management Plan" means a set of drawings and/or other documents which contain all of the information and specifications pertaining to stormwater management, submitted by an applicant as a prerequisite to obtaining a stormwater management approval.
- (26) "Variance" means the modification of the minimum stormwater management requirements for specific circumstances such that strict adherence to the requirements would result in unnecessary hardship and not fulfill the intent of these Guidelines.
- (27) "Waiver" means the relinquishment of the Applicant from stormwater management requirements for a specific project on a case-by-case review basis.

- (28) "Watercourse" means any natural or artificial stream, river, creek, ditch, channel, canal, conduit, culvert, drain, waterway, gully or ravine, in and including any adjacent area that is subject to inundation from overflow or flood water.
- (29) "Watershed" means the total drainage area contributing runoff to a single point.
- (30) "Watershed Management Plan" means an MDE approved plan for a county or local municipality.
- (31) "Water quality volume (WQ<sub>v</sub>)" means the volume needed to capture and treat 90 percent of the average annual runoff volume at a development site. Methods for calculating the water quality volume are specified in the Design Manual.

### **3.0 APPLICABILITY**

#### **3.1 Scope.**

No State or federal agency shall develop any land without having provided stormwater management measures that control or manage runoff from such development, except as provided within this section. The stormwater management measures must be designed consistent with the Design Manual and constructed according to the project plan approved by the Administration.

#### **3.2 Exemptions.**

The following are exempt from the provisions of these Guidelines and the requirements of providing stormwater management:

- A. Agricultural land management practices;
- B. Projects that do not disturb over 5,000 square feet of land area.

#### **3.3 Waivers**

- A. The Administration may grant a waiver of the stormwater management QUANTITY and QUALITY control requirements where the Applicant can demonstrate to the satisfaction of the Administration that:
  - 1. the project shall return the disturbed area to a predevelopment runoff condition (no hydrologic change and/or redevelopment occurs), i.e., pipeline or conduit projects, certain landscaping projects, certain maintenance projects, certain underground projects; or
  - 2. the project lies within an area with an approved watershed management plan; or
  - 3. the project lies within an approved institutional management plan that has been developed consistent with Section 3.4.

- B. The Administration may grant a waiver of the stormwater management QUANTITY control requirements where the Applicant can demonstrate to the satisfaction of the Administration that:
1. the impervious area created by the project does not exceed six (6) feet in width, is linear in nature, i. e., bike paths, walkways, highway noise barriers, etc., and retains the predevelopment drainage patterns; or
  2. the project is served by an existing public storm drain system of adequate capacity to accommodate the runoff from the proposed development; or
  3. the project generates a maximum channel protection volume ( $C_{p_v}$ ) of 2 cfs; or
  4. the project has direct discharge to tidally influenced receiving waters; or
  5. the project discharges directly to a major waterway (see Table 2). [channel protection volume ( $C_{p_v}$ ) may be required]; or
  6. historical downstream flooding problems do not exist, AND: the local jurisdiction does not require management of the overbank flood protection volume within the watershed (see Table 1.) [Channel Protection Volume ( $C_{p_v}$ ) SHALL be provided as required by the Design Manual].
- C. A Stormwater Management Waiver Application, submitted by the applicant, shall specifically state the item of this section for which the project is eligible. The applicant shall provide sufficient descriptions, drawings, and other information necessary to evaluate the proposed project and confirm the applicability of the waiver request. A separate Stormwater Management Waiver Application may be required in accordance with the provisions of this section if there are subsequent additions, extensions, or modifications to a project receiving a waiver. Any waiver shall be valid only after written notice of granting such waiver is received from the Administration. A copy of the Stormwater Management Waiver Application may be found on page 21 of these Guidelines.
- D. A Stormwater Management Waiver Application shall be required for each eligible drainage area where runoff leaves the project site.
- E. Waivers granted shall:
1. be on a case-by-case basis;
  2. consider the cumulative effects of the waiver policy; and
  3. ensure no adverse impact on the downstream watercourse.
- F. Redevelopment projects shall be in accordance with Section 3.5 of these guidelines.

### **3.4 Institution/Agency Management Plan**

An Institution/Agency Management Plan developed for the purpose of implementing site-wide stormwater management practices shall:

- A. Include detailed hydrologic and hydraulic analyses to determine hydrograph timing;
- B. evaluate both quantity and quality management;
- C. include cumulative impact assessment of institutional development;
- D. identify existing flooding and receiving stream channel conditions;
- E. be presented at a reasonable scale (dictated by the size of area in the analysis);
- F. specify where on-site or off-site quantitative and qualitative stormwater management practices and watershed improvement are (to be) implemented;
- G. be consistent with the General Performance Standards for Stormwater Management in Maryland found in Section 1.2 of the Design Manual;
- H. be consistent with local watershed management plan(s), and
- I. be approved by the Administration.

### **3.5 Redevelopment**

Any reconstruction of, or new construction on, existing impervious area, exceeding 5000 square feet, shall be considered redevelopment. Stormwater management requirements for redevelopment shall be in accordance with the following:

- A. Stormwater management plans for redevelopment shall be consistent with the Design Manual except that the recharge, channel protection storage volume, and overbank flood protection volume requirements do not apply unless required by the Administration. Examples of redevelopment projects are: construction of a building on an existing parking lot; demolition of a building and the construction of a new structure.
- B. All redevelopment projects shall reduce existing impervious areas impacted within project limits by a minimum of 20 percent. Where project site conditions prevent the reduction of impervious area, then stormwater management practices shall be implemented to provide qualitative control for a minimum of 20 percent of the project's predevelopment impervious area. When a combination of impervious area reduction and stormwater practice implementation is used, the combined reduction and treated areas shall be equal to, or exceed, 20 percent of the predevelopment impervious area within the project limits.
- C. Where conditions prevent impervious area reduction or on-site stormwater management, practical alternatives may be considered, including but not limited to:

1. off-site BMP implementation within the project watershed for an impervious area equal to 24 percent of the project impervious area impacted;
  2. watershed or stream restoration;
  3. retrofitting an existing BMP; or
  4. other practices approved by the Administration.
- D. If a net increase in impervious area occurs for the project, the increased impervious area shall be considered new development and shall follow Stormwater Management Criteria, Section 4.0 of these Guidelines. Additionally, water quality shall be provided for 20 percent of the project's predevelopment impervious area.

*EXAMPLE #1: A new building and parking garage are constructed on an existing, one (1) acre paved parking lot. The footprint of the new building and parking garage is one and a half (1.5) acres and completely covers the footprint of the existing 1.0 acre parking lot. The total water quality required equals 0.7 acres [0.5 acres for the new impervious, plus 0.2 acres for redevelopment (20 percent of the predevelopment impervious area)].*

*EXAMPLE #2: A new building and parking garage are constructed on an existing, paved parking lot. The footprint of the new building and parking garage is one and a half (1.5) acres and covers one half (1/2) acre of the existing 1.0 acre parking lot (the remaining 1/2 acre parking lot will remain undisturbed). The total water quality required equals 1.1 acres [1.0 acre for the new impervious, plus 0.1 acres for redevelopment (20 percent of the 1/2 acre predevelopment impervious area replaced by new impervious)].*

- E. When a redevelopment project changes the site runoff characteristics, in a manner that increases the discharge rate, channel protection volume and overbank flood protection volume may be required by the Administration.
- F. When redevelopment reduces the impervious area by a minimum of twenty (20) percent, qualitative control is not required for the redevelopment portion of the project.
- G. Pavement overlay and/or patching are considered maintenance practices, therefore redevelopment criteria is not applicable.

### **3.6 Variance.**

The Administration may grant a written variance from any requirement of Section 4.0, "Stormwater Management Criteria" of these Guidelines if there are exceptional circumstances applicable to the site such that strict adherence will result in unnecessary hardship and not fulfill the intent of the Guidelines. A written request for variance shall be provided to the Administration and shall state the specific variance sought and any evidence necessary to

support the request. A variance may be granted upon consideration and as deemed appropriate by the Administration.

#### **4.0 STORMWATER MANAGEMENT CRITERIA**

##### **4.1 Minimum Control Requirements.**

- A. The minimum control requirements established in this section and the Design Manual are as follows:
1. For projects in Caroline, Cecil (south of the Chesapeake and Delaware [C&D] Canal), Dorchester, Kent, Queen Anne's, Somerset, Talbot, Wicomico, and Worcester counties and their incorporated municipalities, the water quality volume, the recharge volume, and the overbank flood protection volume (the 2-year frequency storm event) criteria shall be used to design BMP's according to the Design Manual; and
  2. For projects in Baltimore City, Allegany, Anne Arundel, Baltimore, Calvert, Carroll, Cecil (north of the C&D canal), Charles, Frederick, Garrett, Harford, Howard, Montgomery, Prince George's, St. Mary's, and Washington counties and their incorporated municipalities, the water quality volume, the recharge volume, and the channel protection storage volume sizing criteria shall be used to design BMP's according to the Design Manual. Control of the 24-hour, 10-year frequency storm event is required according to the Design Manual.
  3. Designated Inter-jurisdictional Flood Hazard Watersheds shall require management measures necessary to maintain the post-development peak discharges for the 24-hour, 100-year frequency storm events at a level that is equal to, or less than, the 24-hour 100-year pre-development peak discharge rates. The stormwater management practices shall control the volume, timing, and rate of flows necessary to maintain a "no increase" in the downstream peak discharge for the 100-year frequency storm event.
  4. The Administration may require more than the minimum control requirements specified in these Guidelines if hydrologic or topographic conditions warrant, or if flooding, stream channel erosion, or water quality problems exist downstream from a proposed project.
- B. Stormwater management and development plans, where applicable, shall be consistent with adopted and approved institutional management plans, watershed management plans or flood management plans as approved by the Maryland Department of the Environment in accordance with the Flood Hazard Management Act of 1976.

##### **4.2 Stormwater Management Measures.**

The structural and nonstructural stormwater management measures established in these Guidelines shall be used, either alone or in combination, in developing a stormwater management plan.

A. Nonstructural Stormwater Management Measures.

1. The following nonstructural stormwater management practices shall be applied according to the Design Manual to minimize increases in new development runoff:
  - a. natural area conservation;
  - b. disconnection of rooftop runoff;
  - c. disconnection of non-rooftop runoff;
  - d. sheet flow to buffers;
  - e. grass channels; and
  - f. environmentally sensitive development.
2. The use of nonstructural stormwater management practices shall be strongly encouraged to minimize the reliance on structural BMP's.
3. The minimum control requirements listed in Section 4.1 of these Guidelines may be reduced in accordance with the Design Manual, when nonstructural stormwater management practices are incorporated into site designs.
4. The use of nonstructural stormwater management practices may not conflict with existing State laws, regulations, or policies.
5. Nonstructural stormwater management practices used to reduce the minimum control requirements must remain unaltered by owners. Approval from the Administration shall be obtained prior to alteration of nonstructural stormwater practices.
6. Alternative structural and nonstructural stormwater management practices may be used for new development water quality control if they meet the performance criteria established in the Design Manual and are approved by the Administration. Practices used for redevelopment projects shall be approved by the Administration.
7. For the purposes of modifying the minimum control requirements or design criteria, the applicant shall submit to the Administration an analysis of the impacts of stormwater flows downstream in the watershed. The analysis shall include hydrologic and hydraulic calculations necessary to determine the impact of hydrograph timing modifications of the proposed development upon a dam, highway, structure, or natural point of restricted streamflow. The point of investigation is to be established, with the concurrence of the Administration, at the first downstream tributary whose drainage area equals, or exceeds, the contributing area to the project or stormwater management facility.

B. Structural Stormwater Management Measures.

1. The following structural stormwater management practices shall be designed according to the Design Manual to satisfy the applicable minimum control requirements established in Section 4.1 of these Guidelines:
  - a. Stormwater management ponds;
  - b. Stormwater management wetlands;
  - c. Stormwater management infiltration;
  - d. Stormwater management filtering systems; and
  - e. Stormwater management open channel systems.
2. The performance criteria specified in the Design Manual with regard to general feasibility, conveyance, pretreatment, treatment and geometry, environment and landscaping, and maintenance shall be considered when selecting structural stormwater management practices.
3. Structural stormwater management practices shall be selected to accommodate the unique hydrologic or geologic regions of the State.

**4.3 Specific Design Criteria.**

The basic design criteria, methodologies, and construction specifications, subject to the approval of the Administration, shall be those of the Design Manual.

- A. Infiltration systems shall be designed in accordance with the Design Manual and shall meet the following requirements:
  1. The facility design shall provide an overflow system with measures to provide a non-erosive velocity of flow along its length and at the outfall.
  2. Infiltration trenches shall be provided with observation wells in accordance with the Design Manual.
- B. Ponds, wetlands, filtering systems and open channel systems shall be designed and constructed in accordance with the Design Manual and shall include the following items:
  1. Velocity dissipation devices shall be placed at the outfall of all detention or retention structures and along the length of any outfall channel as necessary to provide a non-erosive velocity of flow from the structure to a water course.
  2. Where deemed necessary by the Administration, the applicant shall submit an analysis of the impacts of stormwater flows downstream in the watershed. The analysis shall include hydrologic and hydraulic calculations necessary to

determine the impact of hydrograph timing modifications resulting from the proposed development upon a dam, highway, structure, or natural point of restricted stream flow, established with the concurrence of the Administration, and shall extend downstream:

- a. to the first downstream tributary whose drainage area equals or exceeds the contributing area to the pond; or
  - b. to the first downstream tributary whose peak discharge exceeds the largest designed release rate of the pond.
3. The designed release rate of the facility shall be modified if any increase in flooding or stream channel erosion would result at the downstream dam, highway, structure, or natural point of restricted stream flow. The release rate of the facility shall:
- a. Be reduced to a level that will prevent any increase in flooding or stream channel erosion at the downstream control point;
  - b. Be not less than 1-year pre-development peak discharge rate; and
  - c. Meet the requirements established in Section 4.1.
4. Where the selected BMP is a pond, small pond approval shall be obtained from the Administration pursuant to the Environmental Article, Annotated Code of Maryland, Title 5, Subtitle 5.
- C. Off-site structures to be considered:
1. Shall have a contributory drainage area not in excess of 400 acres unless, on a case by case basis, a larger drainage area is approved by the Administration;
  2. Shall provide for a permanent pool of water or provide for 24-hour detention period (a 12-hour detention period may be approved, at the discretion of the Administration, for Use III or Use IV streams) for detaining and releasing the volume of runoff from the 1-year frequency storm;
  3. Shall manage the increase in peak discharges for the 2 and 10 and possibly the 100-year frequency storm events; and
  4. May not be located so as to discharge to Use III Natural Trout Waters identified in COMAR 26.08.02.08C, unless authorized by the Administration (see 4.3.C.2).
- D. When calculating the overbank flood protection ( $Q_{p2}$ ,  $Q_{p10}$ ) the pre-development peak discharge rate shall be computed assuming that all land uses within the project site are in good hydrologic condition.

1. Design considerations shall be given for incorporating the use of natural topography and land cover, such as wetlands, ponds, natural swales, and depressions, as they exist prior to development, to the degree that they can accommodate the increased flow of water.
  2. Where deemed necessary, due to increased volume or rate of discharge from the project site, the Administration may require easements or other necessary property interests, concerning flowage of water, from adjacent property owners. It shall be the responsibility of the applicant to provide said easements or other necessary property interests. Approval of a stormwater management plan does not create or affect any such rights.
- E. Water quality treatment for roadway and/or parking lot construction shall be in accordance with the Design Manual and the following:
1. Grassed Channel Water Quality Credit.
    - a. When computing the discharge for the water quality storm for grassed channel credit, the out-of-project (off-site) drainage area contributing runoff to the grassed channel must be included.
    - b. Credit may be applied only for that portion of the impervious area that reaches the grassed channel via sheet flow or approved pretreatment practice.
    - c. When expanding the limits of paving, grassed channel credit will be applied as follows:
      - (1) the length of the post-development vegetative buffer (the grassed area between the edge of the paving and the centerline of the channel) shall be proportional to the ratio of the pre-development buffer/paving lengths; for EXAMPLE:
 

*the pre-development buffer length (the length of vegetated buffer receiving sheet flow from the existing paved area) equals 50 feet. The pre-development paving length sheet flowing to the buffer equals 25 feet. The pre-development ratio of buffer/paving equals 50/25 or 2/1. The post-development paving length (the length of paving that sheet flows to the grassed buffer) equals 35 feet. Therefore, maintaining the 2/1 ratio, the post-development vegetated buffer length must equal 70 feet minimum.*
      - (2) where the buffer/paving length ratio cannot be provided, the Administration may consider, on a case by case basis, mitigation for reduced buffer length in the form of landscaping and/or grading.

2. Conversion of open section paving to closed section.

a. Quantifying efficiency of water quality treatment provided by existing conditions.

The presence of an existing vegetated filter strip through which runoff sheet flows is an effective water quality measure for the runoff from existing open section paving. Likewise, the presence of an existing vegetated conveyance (swale or channel) that transports the runoff from a "one-inch rainfall" event, at a velocity of 1 fps or less, is an effective water quality measure. When converting open section paving to closed section, the quality of runoff may be negatively impacted due to the loss of these vegetative filtering and/or infiltration measures. This existing water quality value shall be quantified as follows:

(1) Step 1

- Enter Figure 1 with the appropriate slope and read the filter length required to achieve removal goals for total suspended solids (TSS).
- Determine the length of the existing filter.
- The ratio of the existing filter length to the filter length obtained from Figure 1 is the efficiency.

(2) Step 2

- Determine the velocity of the runoff from the one-inch rainfall event in the existing swale/channel.
- Determine the filter efficiency as follows: a velocity of 1 fps or less, equals 100% water quality (WQ) efficiency; a velocity of 3 fps or greater equals 0% water quality efficiency. The efficiency is directly proportional to the velocities of the one-inch rainfall within the existing conveyance.

(3) Step 3

- The greater of the Step 1/Step 2 efficiencies is the percent of water quality provided by the existing conditions.

b. Compensation for the percent of water quality provided by the existing conditions shall be as follows: The area of the existing impervious surface converted from open section to closed section shall be multiplied by the percent of water quality provided by the existing conditions (as

determined in Step 3 above). Water quality shall be provided for this area of existing paving due to the conversion of open section to closed section.

3. Conversion of closed section pavement to open section.

Water quality compensation for conversion of closed section paving to open section paving may be quantified by use of Steps 1 through 3 in Subsection 4.3.E.2.

4. Compensating Water Quality Treatment ( $WQ_v$  and  $Re_v$ )

a. Projects may have drainage areas where it is not possible to provide water quality treatment for all new paved areas. Compensating water quality treatment of existing paving, equal to 120% of the untreated new paved area, may be provided elsewhere within the same watershed. Provision of the compensating water quality treatment shall be included within the project.

b. In order for existing paving to qualify as compensating water quality treatment, there must be no, or substandard, existing water quality treatment for said existing paving. Substandard means less than 100 percent (%), as determined by the method in Subsection 4.3.E.2.a. of these Guidelines.

5. On-Line BMPs

Water quality practices that are placed On-Line (in medians or side channels/ditches/swales) shall include offsite impervious area in the calculation of the water quality requirements.

F. Channel Protection Volume ( $Cp_v$ )

Channel Protection Volume ( $Cp_v$ ) shall be derived in accordance with the Design Manual. Extended detention facilities for projects that include combined redevelopment and new development, shall be in accordance with the following:

1.  $Cp_v$  shall be computed using the new development drainage area only.
2. The extended detention facility may be designed to control the  $Cp_v$ , as computed in accordance with Subsection 4.3.F.1. of these Guidelines, and by-pass the excess runoff contribution from the redevelopment portion of the contributing drainage area.

## **5.0 STORMWATER MANAGEMENT PLANS**

### **5.1 Review and Approval of Stormwater Management Plans.**

- A. For any proposed project, the applicant shall submit a stormwater management plan and/or waiver application to the Administration for review and approval, unless otherwise exempted in accordance with Section 3.2 of these Guidelines. The stormwater management plan shall contain supporting computations, drawings, and sufficient information describing the manner, location, and type of measures in which stormwater runoff will be managed from the entire project. The Administration shall review the plan to determine compliance with the requirements of these Guidelines prior to approval. The plan shall serve as the basis for all subsequent construction.
- B. The stormwater management plan shall not be considered approved until it has been signed and dated by the Administration's Sediment and Stormwater Plan Review Division Chief and the Administration has issued written approval for the project.

### **5.2 Preparation of the Stormwater Management Plan.**

- A. The stormwater management plan shall be prepared by any individual whose qualifications are acceptable to the Administration. The Administration may require that the design be prepared by either a professional engineer, professional land surveyor, or landscape architect licensed in the State of Maryland, as necessary to protect the public or the environment.
- B. If a stormwater "Best Management Practice" (BMP), requires either a dam safety permit or small pond approval from the Administration, the design shall be prepared by an engineer licensed in the State of Maryland.

### **5.3 Contents of the Stormwater Management Plan.**

The applicant is responsible for submitting a stormwater management plan that meets the design requirements of these Guidelines. The plan shall be accompanied by a report that includes sufficient information to evaluate the environmental characteristics of affected areas, the potential impacts of the proposed development on water resources, and the effectiveness and acceptability of measures proposed for managing stormwater runoff. The applicant shall certify on the drawings that all clearing, grading, drainage, construction, and development shall be conducted in strict accordance with the plan. The minimum information submitted, for support of a stormwater management plan, or application for a waiver, shall be in accordance with the following:

- A. Reports submitted for stormwater management plan approval shall include:
  - 1. A brief narrative description of the project;
  - 2. Geotechnical investigations including soil maps, borings, site specific recommendations, and any additional information necessary for the proposed stormwater management design;

3. Descriptions of all water courses, impoundments, and wetlands on or adjacent to the site or into which stormwater directly flows;
4. Hydrologic computations, including drainage area maps depicting pre development and, where appropriate, the post development runoff flow path segmentation and land use;
5. Hydraulic computations;
6. Structural computations;
7. Unified sizing criteria volume computations according to the Design Manual; and
8. Any other information required by the Administration.

C. Format of the Report.

1. The stormwater management report shall be on 8 1/2" x 11" paper. The report shall be typed; however, certain computational sheets may be handwritten. Any maps, diagrams, or figures (except computer printouts) which are larger than 8 1/2" x 11" shall be folded to a size of 8 1/2" x 11" or smaller and shall be placed within the report. Fold-outs or bound maps, diagrams, or figures are not acceptable unless the document is 8 1/2" x 11". All maps, diagrams, or figures shall be clearly labeled.
2. At a minimum each report shall contain the following:
  - a. Title Sheet.
  - b. Table of Contents.
  - c. List of Figures or Tables.
  - d. Body of Report.
    - (1) Introduction.
    - (2) Methodologies Used.
    - (3) Analysis.
    - (4) Summary.
    - (5) Conclusions.

e. Appendices

The Appendices shall include all the background information used in the stormwater management analysis. The background information shall be sufficient to facilitate a straightforward review and will include drainage area maps showing drainage areas, soil types, land uses, point(s) of investigation, and Time of Concentration (Tc) flow paths. Other information to be included: drainage area computations; runoff curve number computations; time of concentration computations; sizing criteria computations; elevation-discharge-storage data, which shall include the discharge computations, storage computations, and any details necessary to confirm those computations, i.e., contour maps, pipe, culverts, and bridge profiles; TR-55 worksheets; schematic diagrams; any and all hydraulic computations; any and all structural computations; including areas necessary to determine downstream analysis for the proposed stormwater management facility. In addition, projects in Cecil (south of the Chesapeake and Delaware Canal), Kent, Queen Anne's, Caroline, Dorchester, Talbot, Wicomico, Somerset and Worcester Counties, inter-jurisdictional watersheds and watersheds with a history of downstream flooding problems shall provide topographic survey maps showing existing drainage areas.

Schematic diagrams showing reach lengths, curve numbers, drainage areas, and structure locations shall be included for all computer printouts and shall be included as part of the Appendices. The Appendices shall be bound as part of the report.

D. Computer Printouts

Computer printouts shall be original printouts or clear, legible, and complete photostatic copies and shall be 8 1/2" x 11" in size and bound with the Appendices or in an additional bound volume. All computer printouts shall be clearly labeled throughout the printout for the various conditions of analyses, at critical sections, and for critical structures, such as stormwater management control structures. Additional bound volume(s) shall be labeled with a complete title block. The computer printouts shall include all input data, output data, hydrographs at critical sections where appropriate, and summary output.

E. Construction Drawings

Construction drawings submitted for stormwater management plan approval shall include the following:

1. A vicinity map
2. Site characteristics
  - a. A topographic survey showing all contours and existing features.

- b. All watercourses, impoundments, and wetlands adjacent to the project which receive site stormwater runoff.
3. All proposed improvements including location of buildings or other structures, impervious surfaces, storm drainage facilities, and all grading;
4. The location of existing and proposed structures and utilities;
5. Any easements and rights-of-way;
6. The delineation, if applicable, of the 100-year floodplain and any on site wetlands;
7. Structural and construction details for all components of the proposed drainage system or systems, and stormwater management facilities;
8. All necessary construction specifications;
9. A sequence of construction which includes, in the appropriate order;
  - a. Notification of the Maryland Department of the Environment (MDE) Compliance Program, a minimum of seven (7) days in advance of any earth disturbance activity.
  - b. Installation of perimeter erosion/sediment controls.
  - c. Development clearing, grubbing, rough grading.
  - d. Construction.
  - e. Final grading.
  - f. Vegetative stabilization.
  - g. Installation of stormwater management practices.
  - h. Removal, with MDE approval, of the erosion/sediment controls.
10. Data for total site area, disturbed area, new impervious area, and total impervious area;
11. A table showing the unified sizing criteria volumes required in the Design Manual;
12. A table of materials to be used for stormwater management facility planting;
13. All soil boring logs and locations;

14. A maintenance schedule;
15. Certification by the owner/developer that all stormwater management construction will be done according to this plan;
16. An As-Built certification signature block to be executed after project completion; and
17. Any other information required by the Administration.

## **6.0 INSPECTION REQUIREMENTS DURING CONSTRUCTION FOR AS-BUILT CERTIFICATION**

A. At a minimum, regular inspections shall be made and documented at the following specified stages of construction:

1. Ponds:
  - (a) Upon completion of excavation to sub-foundation and when required, installation of structural supports or reinforcement for structures, including but not limited to:
    - (i) Core trenches for structural embankments.
    - (ii) Inlet and outlet structures, anti-seep collars or diaphragms, and watertight connectors on pipes; and
    - (iii) Trenches for enclosed storm drainage facilities.
  - (b) During placement of structural fill, concrete, and installation of piping and catchbasins;
  - (c) During backfill of foundations and trenches;
  - (d) During embankment construction; and
  - (e) Upon completion of final grading and establishment of permanent stabilization.
2. Wetlands – at the stages specified for pond construction in 6.0. A (1) of this section, during and after wetland reservoir area planting, and during the second growing season to verify a vegetation survival rate of at least 50 percent.
3. Infiltration trenches:
  - (a) During excavation to subgrade;
  - (b) During placement and backfill of underdrain systems and observation wells;
  - (c) During placement of geotextiles and all filter media;
  - (d) During construction of appurtenant conveyance systems such as diversion structures, pre-filters and filters, inlets, outlets, and flow distribution structures; and
4. Upon completion of final grading and establishment of permanent stabilization.
5. Infiltration basins – at the stages specified for pond construction in 6.0. A (1) of this section and during placement and backfill of underdrain systems.
6. Filtering systems:
  - (a) During excavation to subgrade;
  - (b) During placement and backfill of underdrain systems;

- (c) During placement of geotextiles and all filter media;
  - (d) During construction of appurtenant conveyance systems such as flow diversion structures, pre-filters and filters, inlets, outlets, orifices, and flow distribution structures; and
  - (e) Upon completion of final grading and establishment of permanent stabilization.
7. Open channel systems:
- (a) During excavation to subgrade;
  - (b) During placement and backfill of under drain systems for dry swales;
  - (c) During installation of diaphragms, check dams, or weirs; and
  - (d) Upon completion of final grading and establishment of permanent stabilization.
8. Nonstructural practices – upon completion of final grading and after the establishment of permanent stabilization.
- B. Once construction is complete, As-Built Plan Certification shall be submitted to the Administration by either a professional engineer or professional land surveyor licensed in the State of Maryland to ensure that constructed stormwater management practices and conveyance systems comply with the specifications contained in the approved plans. At a minimum, As-Built certification shall include a set of drawings comparing the approved stormwater management plan with what was constructed. The Administration may require additional information. A copy of the As-Built Certification may be found on page 23 of these Guidelines.

## **7.0 MAINTENANCE**

- A. The owner of the property, or any other person or agent in control of such property, on which work has been done pursuant to these Guidelines, shall maintain in good condition and promptly repair and restore all grade surfaces, walls, drains, dams and structures, vegetation, erosion and sediment control measures, and other protective devices. Such repairs or restoration and maintenance shall be in accordance with approved plans.
- B. A maintenance schedule shall be developed for the life of any stormwater management facility and shall state the maintenance to be completed, the time period for completion, and who shall perform the maintenance. This maintenance schedule shall be printed on the approved stormwater management plan.



AS BUILT CERTIFICATION

I hereby certify that the stormwater management facility shown on the plans has (have) been constructed in accordance with the plans approved by the Maryland Department of the Environment, except as noted in red on the "AS BUILT" drawings.

Name	Signature
Maryland registration number	Date
MDE No.	Facility Identification (number and/or type)

"Certify" means to state or declare a professional opinion based on sufficient and appropriate onsite inspections and material tests conducted during construction.

\*\*\*\*\*

DESIGN CERTIFICATION:

"I hereby certify that this plan has been designed in accordance with the 1994 Standards and Specifications for Soil Erosion and Sediment Control, the 2000 Maryland Stormwater design Manual, Volumes I & II and The Maryland Department of the Environment Stormwater Management Regulations.

Name	Signature
Maryland registration number P.E., R.L.S. or R.L.A. (circle)	Date

**TABLE 1**

For the purposes of Section 3.3 B.6 of these Guidelines, the following are Minimum County Flood Control Requirements:

<b>COUNTY</b>	<b>QP<sub>2</sub></b>	<b>QP<sub>10</sub></b>
<b>Allegany</b>	<b>NO</b>	<b>OPTIONAL<sup>2</sup></b>
<b>Anne Arundel</b>	<b>NO</b>	<b>OPTIONAL<sup>1</sup></b>
<b>Baltimore</b>	<b>NO</b>	<b>OPTIONAL<sup>2</sup></b>
<b>Calvert</b>	<b>NO</b>	<b>OPTIONAL<sup>2</sup></b>
<b>Caroline</b>	<b>YES</b>	<b>NO</b>
<b>Carroll</b>	<b>NO</b>	<b>OPTIONAL<sup>2</sup></b>
<b>Cecil</b>	<b>YES<sup>3</sup></b>	<b>OPTIONAL<sup>1</sup></b>
<b>Charles</b>	<b>NO</b>	<b>OPTIONAL<sup>1</sup></b>
<b>Dorchester</b>	<b>YES</b>	<b>NO</b>
<b>Frederick</b>	<b>NO</b>	<b>MANDATORY</b>
<b>Garrett</b>	<b>NO</b>	<b>OPTIONAL<sup>2</sup></b>
<b>Harford</b>	<b>NO</b>	<b>MANDATORY</b>
<b>Howard</b>	<b>NO</b>	<b>OPTIONAL<sup>2</sup></b>
<b>Kent</b>	<b>NO</b>	<b>OPTIONAL<sup>2</sup></b>
<b>Montgomery</b>	<b>NO</b>	<b>OPTIONAL<sup>2</sup></b>
<b>Prince George's</b>	<b>NO</b>	<b>OPTIONAL<sup>2</sup></b>
<b>Queen Anne's</b>	<b>YES</b>	<b>NO</b>
<b>St. Mary's</b>	<b>NO</b>	<b>OPTIONAL<sup>2</sup></b>
<b>Somerset</b>	<b>YES</b>	<b>NO</b>
<b>Talbot</b>	<b>YES</b>	<b>NO</b>
<b>Washington</b>	<b>NO</b>	<b>MANDATORY</b>
<b>Wicomico</b>	<b>YES</b>	<b>NO</b>
<b>Worcester</b>	<b>YES</b>	<b>NO</b>

1. Where applicant demonstrates that downstream flooding is not an issue and conveyance is adequate, Q<sub>p10</sub> is not required.
2. Where downstream flooding problems exist or conveyance is inadequate, Q<sub>p10</sub> is required.
3. Q<sub>p2</sub> is required in the Coastal Plain (south of the Chesapeake & Delaware Canal).

**TABLE 2**

For the purposes of Section 3.3 B.5 of these Guidelines, the following are considered MAJOR WATERWAYS:

<b>WATERWAY</b>	<b>LIMITS</b>
Susquehanna River	mainstem from mouth to Pennsylvania line
Pocomoke River	mainstem from mouth to MD 12
Nanticoke River	mainstem from mouth to Delaware line
Choptank River	mainstem from mouth to MD 404
Chester River	mainstem from mouth to MD 290
Elk River	mainstem from mouth to US 40
Bush River	mainstem from mouth to US 40
Gunpowder River	mainstem from mouth to US 40
Patapsco River	mainstem from mouth to US 1
Patuxent River	mainstem from mouth to MD 4
Potomac River	mainstem from mouth to I 81
Youghiogheny River	mainstem from Pennsylvania line to I 68
Wicomico River (Wicomico Co.)	mainstem from mouth to US 50

Figure 1. Minimum Vegetative Filter Length Requirements  
To Meet TSS Removal Goals  
(Manning's "n" = 0.20)

