ENVIRONMENTAL GUIDELINES FOR CONSTRUCTION ACTIVITIES

Maryland State Highway Administration

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SHA
State Highway Administration
Maryland Department of Transportation

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1. INTRODUCTION

In accordance with its mission, the Maryland State Highway Administration (SHA) is committed to providing mobility through a safe, well-maintained and attractive highway system that enhances Maryland's communities, economy, and environment. To meet this mission, construction operations, equipment management, and materials handling and storage must be conducted and accomplished in a manner to avoid and/or minimize adverse impacts to the natural, cultural, and socio-economic environments. These guidelines are part of SHA's efforts to provide the tools necessary for construction personnel to fulfill SHA's mission.

1.1 Use of the Guidelines

SHA must ensure compliance with Federal, state and/or local environmental regulations, project permit special conditions, and environmental commitments made during the planning and design processes. These guidelines are intended to give an overview of the typical issues that can be encountered by construction operations. These guidelines are offered to provide SHA personnel a general awareness of the environmental requirements and to provide referral when an issue requires assistance from other SHA offices or divisions. Communication with these offices and divisions is essential during the construction phase of projects, particularly when environmental issues are encountered. In general, communication with the District, the Office of Environmental Design, the lead Design Office and the Office of Communications are essential for addressing environmental issues of which the public needs to be made aware. Further, these guidelines address activities that are typically encountered when working within the approved limits of disturbance (LOD). However, the guidelines are not intended to address specific permit requirements or to interpret regulations. Since regulations are ever-changing, this document should be considered a working document that may be periodically updated.

1.2 Glossary of Terms, Acronyms and Abbreviations

AE	Area Engineer
BMP	Best Management Practice
CACCACB	Critical Area Commission for Chesapeake and Atlantic Coastal Bays
CID	Construction Inspection Division
COE	United States Army Corps of Engineers
CPE	Construction Project Engineer
CS	Construction Superintendent
DBH	Diameter at Breast Height
DE	SHA-District Engineer
DNR	Maryland Department of Natural Resources
DS	Designated Specialist
EGD	SHA-Engineering Geology Division
EM	Environmental Monitor
EMC	Environmental Manager-Construction
EPA	United States Environmental Protection Agency

EPD	SHA-Environmental Programs Division
EPLD	SHA-Environmental Planning Division
E&SC	Erosion and Sediment Control
ESCM	Erosion and Sediment Control Manager (Contractor)
FCA	Forest Conservation Act
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FWS	United States Fish and Wildlife Service
GEC	General Engineering Consultant
GWCP	General Waterway Construction Permit
HHD	SHA-Highway Hydraulics Division
IEM	Independent Environmental Monitor
IFB	Invitation for Bid
IVMMMH	Integrated Vegetation Management Manual for Maryland Highways
LAD	SHA-Landscape Architecture Division
LOA	Letter of Authorization
LOD	Limit of Disturbance
MDA	Maryland Department of Agriculture
MDE	Maryland Department of the Environment
MDOT	Maryland Department of Transportation
MDSPGP	Maryland State Programmatic General Permit
MEPA	Maryland Environmental Policy Act
MHT	Maryland Historic Trust
MMD	SHA-Material Management Division
MOU	Memorandum of Understanding
NEPA	National Environmental Policy Act
NMP	Nutrient Management Plan
NOI	Notice of Intent
NOT	Notice of Termination
NPS	National Park Services
NPDES	National Pollutant Discharge Elimination System

NT	Non-tidal
OED	SHA-Office of Environmental Design
OHD	SHA-Office of Highway Development
OMT	SHA-Office of Materials and Technology
OOC	SHA-Office of Construction
OOM	SHA -Office of Maintenance
OOS	SHA-Office of Structures
OPPE	SHA-Office of Planning and Preliminary Engineering
QAI	Quality Assurance Inspector
RCE	Regional Construction Engineer
RTE	Rare Threatened and Endangered Species
RTL	Roadside Tree Law
SHA	Maryland State Highway Administration
SHA-LOD	SHA-Landscape Operations Division
SPCC	Spill Prevention Control and Countermeasures
TMDL	Total Maximum Daily Load
TCLP	Toxicity Characteristic Leaching Procedure
WMA	Water Management Administration
WQC	Water Quality Certification
WUS	Waters of the United States

1.3 SHA Offices, Divisions and Contacts Responsible for Authorizations, Approvals, and Permits

Various offices and divisions within SHA are responsible for coordinating and obtaining approvals and permits when SHA activities impact natural, cultural, and community resources. This section serves to direct the user to the appropriate SHA office and/or division that has responsibilities for particular resources. Changes necessitated by field conditions may require permit modifications and contact with the office responsible for obtaining permits. Contact with more than one office/ division may be required for permit modifications to a particular resource. In addition to the offices/divisions listed below, quick reference charts organized by permit type are also contained in Appendix B to assist in determining the appropriate offices to contact.

Office of Environmental Design, Environmental Programs Division (410) 545-8628

Necessitating Impact/ Issue	Permit/Approval	Issued By
Impacts to wetlands, waters, floodplains, and wetland buffers	Wetland and waterway permits (Letter of Authorization, GWCP, MDSPGP, Individual Corps Permit)	MDE/COE
Projects have erosion and sediment control permits	Quality Assurance Inspection	EPD

Office of Highway Development, Highway Hydraulics Division, Phone Number (410) 545-8390

Necessitating Impact/ Issue	Permit/Approval	Issued By
Disturbing more than 5,000 SF or 100 CY of excavation	Erosion and Sediment Control	MDE
Disturbing more than one acre of earth	NPDES Construction NOI	MDE
Disturbing more than 5,000 SF or 100 CY of excavation	Stormwater Management	MDE
Outfalls in areas of 100,000 population or more	Municipal NPDES	MDE
Any earth disturbance in the Severn River Watershed	Anne Arundel County Erosion and Sediment Control	AA Co. Soil Conservation District
Changes to the 100 year Floodplain elevation	FEMA	MDE
Modifications or restoration of man-made dams across streams or man-made dams at stormwater management facilities	Dam Safety MD Code 378	MDE

Office of Environmental Design, Landscape Operations Division (410) 545-8590

Necessitating Impact/ Issue	Permit/Approval	Issued By
Pruning or felling individual trees in the right of way and/ or forested areas less than 1.0 acre	Roadside Tree Permit	DNR Forest Service
Impacting 1.0 acre or more of forest in a linear highway project	Maryland Reforestation Law Approval	DNR Forest Service
Grading activity of 40,000 SF or more in a non-linear facility project	Forest Conservation Act Approval	DNR Forest Service
Growth of prohibited noxious weeds	Maryland Noxious Weed Law	MDA / SHA-LOD
Pesticide storage, mixing, and application	Pesticide Applicators Law	MDA
Fertilizer application to State land	Nutrient Management Plan	MDA

Office of Planning and Preliminary Engineering (OPPE), Environmental Planning Division (410) 545-8564

Necessitating Impact/ Issue	Permit/Approval	Issued By
Federally funded projects requiring additional right of way	NEPA	EPA/FHWA
Disturbance within the Critical Area (1,000 ft landward from tidal waters including 100 ft buffer ground tidal wetlands)	CACCACB	CACCACB
Impacts to cultural resources (both historic standing structures as well as archeological sites)	Section 106 Coordination	MHT
Impacts to parks and recreational facilities	Section 4(f)	DNR, NPS and FHWA
Air quality issues	Air quality conformity	MDE and EPA
Maintenance and minor impacts to resources in SHA's right-of-way	NEPA/MEPA	PPD-EPLD
An actual "take" of RTE wildlife or wildlife habitat	Wildlife permit/license Section 7 ESA - Biological Opinion if a federal listed species	DNR if state listed FWS if federally listed

Office of Materials and Technology, Engineering Geology Division 443-572-5175

Necessitating Impacts/ Issue	Permit/Approval/ Issue	Issued By
Encounter or expose any abnormal conditions (hazardous/toxic material or spill)	MDE Approval	MDE/EPA

Office of Materials and Technology, Material Management Division (443) 572-5020

Necessitating Impacts/ Issue	Permit/Approval/Issue	Issued by
Recycled Materials	Approvals	Material Management Division

Office of Structures, Engineering Division (410) 545-8070

Necessitating Impacts/ Issue	Permit/Approval/Issue	Issued by
Changes to restrictions and guidelines established in the Coast Guard permit or additional impacts to navigable waters	United States Coast Guard-Bridge Permit	United States Coast Guard

1.4 Construction Site Roles and Responsibilities

Key roles during construction include the following:

Design Engineer (DE). The DE is responsible for developing the plans and specifications of the project.

Regional Construction Engineer (RCE). The RCE performs oversight duties for the Office of Construction.

Area Engineer (AE). The AE administers the project for the District.

Construction Project Engineer (CPE). The CPE is responsible for managing the day-to-day activities on the construction site. It is the CPE's responsibility to read and understand the conditions of all permits for the project and to interact with the contractor to ensure that all permit conditions are met.

Construction Inspection Division (CID). CID staff oversees the various construction activities, verifies quantities, performs various construction tests, and completes inspector's daily reports.

SHA Landscape Operations Division (SHA-LOD). SHA-LOD staff provide guidance to the CPE and CID staff during landscape construction and perform plant material inspections.

Designated Specialist (DS). The DS, provided by an SHA Design office, may be assigned to a project with specialized construction work such as stream restoration. The DS is responsible for assisting the CPE with interpreting the intent of plans and specifications, in identifying the need for plan or field changes, and in assisting with permit/approval modifications for any changes. Refer to contract special provisions for detailed explanation of DS responsibilities.

Environmental Manager – Construction (EMC). On projects with a general engineering consultant (GEC), the EMC serves as a resource and liaison for erosion and sediment (E&S) control and related environmental issues in construction statewide. As oversight, the EMC provides guidance and monitors construction's Regional Quality Assurance Program.

Quality Assurance (QA) Inspector. The QA Inspector is independent of the project staff and is responsible for conducting inspections and assigning ratings to the contractor's E&S control plan implementation. The QA Inspector will inspect the project bi-weekly, at a minimum, to assess ratings using appropriate forms as per SHA Section 308 Standard Specification for construction and materials.

Independent Environmental Monitor (IEM). The IEM may be assigned to a construction site as a condition of a permit or be assigned by SHA for projects with natural resources of special concern. The IEM is an independent inspector who acts as a representative for the regulatory agencies; however, the IEM has no direct regulatory authority and cannot approve permit modifications.

Maryland Department of the Environment - Compliance Inspector (MDE). The MDE compliance inspector will inspect for compliance with permits issued by MDE. The MDE compliance inspector can approve minor modifications to E&S approved plans in the field and authorizes the removal of E&S control.

Contractor's Erosion and Sediment Control Manager (ESCM). The ESCM is responsible for daily inspections of E&S installations, performing maintenance and preparing daily inspection logs. The ESCM must have MDE (Green Card) and SHA Erosion and Sediment Control (Yellow Card) Certifications.

Contractor Superintendent (CS). The CS is the on-site party responsible for the contractor. The CS is responsible for all construction, environmental, safety, and administrative aspects of the project. The CS must have MDE (Green Card) and SHA Erosion and Sediment Control (Yellow Card) Certifications.

1.5 General Requirements for Work within SHA Rights of Way

Construction activities occurring on SHA property and rights of way are subject to various state and federal regulations, licenses, permits, commitments, and coordination pertaining to natural, cultural, and socio-economic resources. Since the range of state and federal regulations is voluminous and ever-changing, no one person can be expected to be an expert on every regulation.

SHA is responsible for designing, constructing and maintaining state roadways for the public benefit. SHA ensures the safety of its roadways by, among other things, maintaining appropriate drainage. SHA maintains side ditches, drainage culverts and other drainage facilities along the roadways keeping them clear of sediment and debris. SHA does not have the right to construct or maintain drainage facilities on private property or control changes in land use by a private property owner. Absent an easement for a drainage repair on private property, SHA does not have the right to enter private property without the property owner's consent.

These guidelines are organized by major topics to assist staff of OOC, OOM, OHD, OOS, OED, OPPE and SHA's Districts to understand and comply with these regulations, licenses, permits, and commitments. The intent is to provide general guidance about environmental compliance on construction projects since an exhaustive treatment of these subjects is beyond the scope of this document.

Each topic will contain a brief overview of:

- the permitting and/or coordinating requirements;
- the agency with regulatory authority;
- the SHA office responsible for permitting and/or coordinating

2. WETLANDS AND WATERWAYS

2.1 State and Federal Wetlands and Waterways

Both tidal and non-tidal wetlands and waterways are protected resources under state and federal jurisdiction. Wetlands are landforms that meet specific parameters for hydrology, soils, and vegetation and range from seasonally saturated forests to tidal marshland. They provide unique habitats such as breeding grounds for many species, controlled sediment transport, water quality benefits through nutrient uptake, flood control and relief, and groundwater recharge/discharge. Because of the importance of these functions, both the state and federal government regulate activities in wetlands. In order to further protect wetland functions, the State also regulates a "buffer" around each non-tidal wetland area. The United States Army Corps of Engineers (COE) is the federal regulatory authority and the Maryland Department of the Environment (MDE) is the State regulatory authority. Lakes, ponds, streams, rivers and bays are considered "waterways" and are subject to state and federal regulation when impacts occur in the waterway and to state regulation when impacts occur in the nontidal floodplain.

Activities in wetlands and waterways are subject to permitting from the state and federal agencies. State and Federal permits issued to SHA are obtained by the Environmental Programs Division (EPD) during the design phase of a project/ activity. The documented approvals are included in the "Required Permits" section of the Invitation for Bid (IFB) to make contractors aware of the conditions required for construction, some of which may impact bid prices.

A permit generally consists of:

- A description of the authorized work.
- General conditions under which the work must be accomplished, including time-of-year restrictions on work in waterways and streams based upon its MDE Stream Use designation.
- Impact plates illustrating the boundaries and types of wetlands, waterways, 100-year floodplain, buffers; and the areas of temporary and permanent impact authorized to allow construction.
- Best Management Practices (BMP) to be implemented during and following construction.
- A form which must be completed and returned to the COE at the completion of the project.
- Special conditions specific to the project and resources when project constraints or site specific conditions warrant.

Once the contractor has been given notice to proceed and establishes the engineer's office, the permit must be displayed on-site at all times. The project will be subject to inspection by the COE and MDE at all times. Failure to comply with the permit conditions is grounds for civil and criminal penalties.

EPD should be contacted immediately whenever field conditions require the following: 1) impacts to wetlands, waterways, 100-year floodplain, and/or buffers not authorized and shown on the permit impact plates; 2) work beyond the limits of disturbance shown on the impact plates, or 3) if permit conditions cannot be met. A permit modification will be required in these circumstances. EPD will coordinate permit modifications, which, at a minimum, require the area of additional impact, the reason the impact cannot be avoided and/or the reason a permit condition cannot be met.

One common permit condition that is influenced by weather or other working conditions is the time-of-year restriction for working in waterways. EPD should be contacted as soon as it is determined that the work may not be completed prior to the closure period to determine the possibility of a waiver of the condition. A waiver may not be obtainable if the water resource is a high quality fisheries habitat or if the work is extensive and will be of long duration.

In some instances, a project which previously had no identified resources within the work area may require impacts to wetlands and waterways in response to field conditions. To determine what activities require investigation and/or coordination, contact EPD.

2.2 Water Quality Certification

Water quality is a protected resource under state and federal jurisdiction. Under the Clean Water Act any activity that may result in any discharge to waters must be certified as not violating state water quality standards or limitations. The federal agency having jurisdiction over the resource is the Environmental Protection Agency (EPA) and MDE is the state agency to which EPA has delegated certification authority.

Water Quality Certification (WQC) is incorporated in MDE's authorization for any wetlands or waterways permit. The EPD is the SHA division responsible for obtaining the permit. When an activity is exempt from the requirement to obtain a non-tidal wetlands and waterways authorization, an individual WQC may be issued by the MDE. The WQC requires compliance with all aspects of the sediment control plan approved by MDE's Plan Review Division. Failure to comply with the WQC may be grounds for civil and criminal penalties. To determine what activities require investigation and/or coordination, contact EPD.

2.3 Waterway Construction Permit

Impacts in waterways and floodplains can cause upstream or downstream flooding, increase erosion, and/or degrade habitat. Therefore, impacts to either waterways or floodplains are regulated activities and require review and authorization. Any construction activity that creates a temporary or permanent waterway obstruction; a change in the course, current, or cross section of a body of water; or changes the 100-year frequency floodplain requires a permit from MDE. The types of waterway and floodplain activities for which SHA obtains permits generally include culvert, box culvert and/or bridge construction and maintenance, and activities requiring placing fill in floodplains.

The Highway Hydraulics Division (HHD) and/or the OOS, Structural Hydrology and Hydraulic Unit will work together with EPD to obtain waterway authorizations for SHA. Any field changes including changes to the size, type, or location of structures in or carrying waters, changes to erosion and sediment control plan within the floodplain, or changes to the approved maintenance of stream flow plan may require review by MDE and may require a permit modification. Contact EPD to coordinate field changes and determine whether MDE review is needed.

2.4 Coast Guard Permit

The Rivers and Harbors Act of 1899 and the General Bridge Act of 1946 give the U.S. Coast Guard the authority to protect navigable waters of the United States. Navigable waters are those waters that at some time, in the past, present, or future are used to transport interstate or foreign commerce. In general, a bridge may not be constructed across any of the listed navigable waters until the location and plans have been approved by the U.S. Coast Guard. Approval is shown by issuance of a bridge permit. The construction contract may have a general permit issued by the COE stating how work adjacent to or in bodies of water is to be performed. It is very important that the Contractor adheres to the restrictions and guidelines established in the permit. All U.S. Coast Guard Bridge Permits include conditions. These conditions have the force of law. They must be understood and complied with. If noncompliance is discovered by the COE, the project may be shut down and may receive severe fines and penalties.

It is the CPE's responsibility to be familiar with these conditions, and comply with them at all times. The Office of Structures-Design Division performs the design for all structures, on the state maintained system, which includes new bridges, bridge replacements, deck replacements, culverts, retaining walls and noise abatement walls. If there are conditions that you cannot feasibly comply with, contact the Office of Structures-Design Division for assistance.

2.5 Critical Area Commission for the Chesapeake and Atlantic Coastal Bays

Within the Department of Natural Resources, the Critical Area Commission (Commission) was created by the Critical Area Act in 1984. The Commission was initially charged with adopting regulations and criteria necessary to effectively implement the Act. This effort was completed in 1985; whereupon the Commission was required to review and approve all local government plans, programs, ordinances, and regulations that were proposed as part of a jurisdiction's Critical Area Program.

The Environmental Planning Division (EPLD) is responsible for obtaining CAC approval for all SHA projects and LAD is responsible for Critical Area mitigation design. Disturbance within the Critical Area (1,000 feet landward from tidal waters including a 100-foot buffer around tidal wetlands) requires coordination and approval from the Commission. To determine what activities require investigation and/or coordination, contact EPLD.

2.6 FEMA Floodway

Regulated floodplains are those areas adjacent to streams and rivers that are subject to flooding on a given storm event (25-Year, 100-Year, etc.). The Federal Emergency Management Administration (FEMA) is the federal authority that defines the limits of the 100-Year FEMA Floodway. FEMA publishes mapping with the 100-Year elevation demarcated; any changes in or on floodplains that could increase flooding during the 100-Year storm in areas identified on the maps requires a FEMA approval and map amendment. To determine what activities require investigation and/or coordination, contact HHD.

3. EROSION AND SEDIMENT CONTROL

Maryland considers its streams, rivers and the Chesapeake Bay vital natural and economic resources. To maintain water quality, MDE regulates activities to ensure that sediment delivery to the waters of the State are reduced to the maximum extent possible. The Federal government has similar regulations under the National Pollutant Discharge Elimination System (NPDES) program.

3.1 Erosion and Sediment Control Requirements

Grading operations that disturb more than 5,000 SF or 100 CY of excavation require the submission of and approval of an E&SC Plan to MDE. The submission will be made through the HHD prior to Advertisement. Permits and Approvals will be included in the IFB. Although grading operations that disturb less than 5,000 SF or 100 CY of excavation do not require formal authorization through MDE, they do require the implementation of E&SC measures to suit the site and the site conditions. The SHA Book of Standard Specification for Construction and Materials contains the description, materials and construction requirements of this work. The MDE 2010 Maryland Standards and Specifications for Soil E&SC measures contain the State criteria for erosion and sediment control.

Any changes to the approved E&SC Plan required during construction must be approved by MDE. Minor changes may be granted in the field by the MDE Inspector. MDE requires major modifications be resubmitted along with supporting computations for formal approval. Major modifications must be made through HHD for review and submittal

At a minimum the process for field modification is:

- The need for E&SC Approval modification is identified by the Contractor or SHA utilizing OOC062.
- The modification request is reviewed by the CPE and Contractor.

The CPE discusses the proposed modification with the MDE Inspector. If the MDE Inspector determines the modification per the MOU between SHA and MDE for E&SC to be minor in nature and technically sufficient, OOC 062 is completed and signed by the MDE Compliance Inspector, the Contractor and the CPE.

If the MDE Inspector determines the modification, per the MOU between SHA and MDE for E&SC to be major, the OOC 062, signed by the Contractor and CPE, will be sent to the Highway Hydraulics Division (HHD) for review and submission to MDE. If the requested modification is technically sufficient and acceptable, HHD will submit the change to MDE and coordinate the response from MDE. Once approval of the modification is obtained, HHD will transmit the approval to the CPE. Documentation of field approved changes must be kept on file by the CPE and should be available to the QA Inspector. To determine what activities require investigation and/or coordination, contact HHD.

3.2 National Pollution Discharge Elimination System (NPDES) General Permit for Stormwater Associates with Construction Activities

A NPDES Notice of Intent (NOI) for coverage under the General Permit for Stormwater Associated with Construction Activity is required for disturbance of one acre or greater. This permit is obtained by the HHD prior to Advertisement. Because this is a general permit, it is the same for every project and is available on line at:

http://www.mde.state.md.us/assets/document/General_Permit_SW_Construction09GP_Signed.pdf

This permit imposes conditions in addition to the E&SC requirements mentioned above. Some of those conditions include:

a) Standard Inspection Form – This form is supplied with the permit and is to be used for SHA self-inspections including weekly, post storm event and in other cases where discharges of excessive sediment are observed. The MDE compliance inspector may request these documents and they should be on hand for them to review.

b) Copy of Permit and Permit Application must be kept on site and available for inspection.

c) Non-Stormwater Runoff – Discharges other than stormwater runoff that are not authorized in the approved E&SC plan may require additional permits which the construction engineer is responsible to acquire.

d) Exceedance of Water Quality Standards – If MDE determines that discharge from the construction site violates applicable water quality standards, they can require modification of E&SC's, development of data and reports to document that the receiving water is attaining water quality standards and/or require that the discharge of pollutants from the construction activity cease. HHD can provide technical support if the need arises.

e) Prevention of Significant Amounts of Sediment to Surface Waters – A set of 'triggering events' that indicate excessive sediment leaving the site have been identified in the permit that if observed, require a set of actions be performed and documented by the CPE. These triggers and actions are listed in the permit (Part IV.B.3) and the CPE is responsible to follow through with them and may be required to present documentation to that effect.

f) Monitoring and Record Keeping – Inspections and reports of those inspections should be conducted weekly, the day after a rainfall event, and as noted above. These inspections are in addition to the biweekly inspections performed by the SHA QA Inspectors. The weekly inspections required under this permit should be performed by the project construction staff.

1. Maintain all inspection reports on site during construction, until the Notice of Termination (NOT) is filed.

2. Maintain all inspection reports for 3 years after construction is complete. Records should be readily accessible in case MDE requests them.

g) Public Access to Records – The CPE is required to make the project construction plans and any inspection reports compiled as part of this permit available to the public, if requested.

h) Waterway Impairments and Total Maximum Daily Loads (TMDLs) – The permit requires adherence to pollutant waste load allocations that have been developed for the receiving waters and limit the amount of a particular pollutant that can enter the waterway. Currently the focus is on sediment and total suspended solids for this condition. HHD will determine if these requirements exist for the particular project when applying for the general permit and it will be noted in the cover letter attached to the permit delivered to the District. MDE may impose additional restrictions during construction if they deem it necessary.

i) Bypass – The intentional diversion of waste (sediment) streams from any portion of a treatment facility (bypass) is prohibited unless it was unavoidable to prevent loss of life, personal injury, or severe property damage or no feasible alternatives such as auxiliary controls are available. An example of bypass is to temporarily divert flow from a sediment basin directly into receiving waters in order to remove sediment to return the basin to original dimensions. In this case, the sediment stream should be passed through an auxiliary control prior to releasing to the receiving water. The CPE should submit a notice of anticipated bypass to MDE 10 days before performing the bypass. If the bypass is unanticipated, the notice should be submitted to MDE within 24 hours after the occurrence.

j) Upset – An exceptional incident in which there is unintentional and temporary noncompliance with effluent limitations (upset) will only be accepted in lieu of non-compliance when the upset is not a result of operational error or improperly designed, installed or maintained facilities. An example of an upset is a sediment basin embankment failure due to a catastrophic storm event. Written documentation that the facility had been inspected and maintained according to the permit requirements would be required in order to demonstrate upset over non-compliance. Upsets must be properly documented and notification made to MDE by the CPE.

k) Responsible Personnel may be subject to Civil and Criminal penalties of up to a $250,000 fine and/or fifteen years of imprisonment for non-compliance with the General permit including

1. Negligently or knowingly violating permit conditions,

2. Placing another in imminent danger or death or injury, and/or

3. Falsification of reports or tampering with monitoring systems.

l) Notice of Termination (NOT) – A NOT form should be filled out and submitted to HHD when the project is complete. This closes out coverage of the permit. This form is attached to the permit that is delivered to the District with the permit.

To determine what activities require investigation and/or coordination, contact HHD.

3.3 Stormwater Management

Highway runoff can have adverse effects upon receiving waters if no measures are taken for the removal of excessive contaminants before the runoff reaches the receiving water. The most common contaminants in highway runoff are heavy metals, inorganic salts, aromatic hydrocarbons, and suspended solids that accumulate on the road surface as a result of regular highway operation and maintenance activities. Salting and sanding practices, for example, may leave concentrations of chloride, sodium, and calcium on the roadway surface. Ordinary operations and the wear and tear of our vehicles also result in the dropping of oil, grease, rust, hydrocarbons, rubber particles, and other solid materials on the highway surface. These materials are often washed off the highway during rain or snow storm events.

Stormwater Management (SWM) is the final phase of the stormwater pollutant removal system. SWM is designed to provide long-term removal of pollutants from highway runoff by settling, filtering and/or biological removal of pollutants before they leave the right-of-way and enter our waterways. To provide effective treatment SWM facilities must be constructed to plan and be maintained.

Maryland State Stormwater Management Requirements

MDE has approval authority over stormwater discharges and reviews all State and Federal projects to ensure compliance to the applicable regulations. MDE will issue SWM approval to projects that meet the requirements established in the 2007 Maryland Stormwater Design Manual and the Guidelines for State and Federal Projects.

HHD is responsible for SWM design and obtaining MDE approval. Any modifications to the SWM plans must be approved by HHD. When necessary, HHD will submit the modifications to MDE for approval.

Converting E&S Controls to Stormwater Management Facilities

In some instances E&SC facilities are converted to permanent SWM facilities. As part of the conversion from a temporary E&SC to a permanent (SWM) pollutant removal system, various controls will have their features modified as construction reaches its final phases. Typically sediment basins and traps are converted into SWM facilities. Prior to conversion, it is essential that the contributing drainage area to the basin be permanently stabilized and that sediment has been allowed to settle out. The basin is then dewatered and accumulated sediment removed.

Drainage areas to SWM facilities should be stabilized prior to constructing the facility.

Heavy construction equipment should not enter areas where infiltration facilities are proposed as it will compact the soil, preventing infiltration.

Stormwater As-Built Certification

The MDE Stormwater Management Approval requires as-built certification for all constructed stormwater management facilities. Stormwater As-Built Certification requires that a licensed Professional Engineer (PE) or Land Surveyor with experience in stormwater management design and construction inspect and certify SWM facilities according to the SHA Stormwater As-Built Certification specification. They must attest that the facilities are constructed to specification and that the facilities function as designed. A Landscape Architect, licensed in the State of Maryland, or an Administration approved Environmental Specialist/Analyst used by the Contractor must inspect planting installations, survival and final turf establishment. The Contractor must complete this work and have the certification approved by SHA and MDE before final payment and closeout of the Contract.

3.4 Illicit Connections

National Pollution Discharge Elimination System Municipal Separate Storm Sewer Permits

The NPDES is a component of the Clean Water Act and addresses water quality by eliminating non-stormwater discharges from surface conveyance systems and removing pollutants from stormwater runoff. The NPDES Municipal Separate Storm Sewer System permits require that any non-stormwater discharges be eliminated from the SHA storm drain systems. Storm drain systems are composed of closed and open conveyance systems. Closed conveyance systems are pipes, inlets, manholes, underground stormwater management systems and other drainage structures. Open conveyance systems are ditches, stormwater management facilities, gutter flow, curb cuts and other surface drainage systems.

NPDES Municipal Separate Storm Sewer permits are issued to HHD for coverage throughout the State. They are not included in the IFB. Questions concerning these permits can be directed to HHD.

Illicit Discharge Detection and Elimination

Illicit connections are discharges that enter the SHA storm drain system without authorization and can carry discharges composed of pollutants and hazardous wastes. Illicit connections are prohibited by the NPDES, Municipal Separate Storm Sewer permits and the Project Engineer should be aware of any illicit connections that exist on the project site or connections that adjacent property owners request the contractor to perform. Any illicit connections on the project site should be removed whether the contract plans call for it or not. Many connection removals can be enforced through the county. Contact HHD to verify illicit connections and coordinate removal of the connections.

3.5 Quality Assurance Inspection

The intent of the SHA's Quality Assurance Program is to create a system that ensures compliance with MDE's E&SC regulation, E&SC permits issued to SHA and the MOU between SHA and MDE. A QA Inspector is assigned to every construction project that require an E&SC permit. The QA Inspector inspects each project every two weeks to ensure compliance with the E&SC Plan. The QA Inspector also inspects the daily ESCM's daily log and the CPE's documentation to determine if the intent of the E&SC Plan is being met. A score will be reported on Form OOC61.1 or OOC61 - E&SC Field Investigation Report. The QA Inspector assigns a rating in accordance with Section 308 of the Standard Specifications for Construction and Materials.

The QA Inspector uses the scores to determine the following ratings:

Rating A ($\geq$ = 90): The project is in compliance. Minor corrective action may be necessary.

Rating B (80- 89.9): The project is in compliance; however corrective action may is necessary.

Rating C (70-79.9): The project is in compliance; however, deficiencies noted require corrections. Shutdown conditions described elsewhere herein could arise quickly. Project will be re-inspected within 72 hours.

Rating D (60-69.9): The project is in non-compliance. SHA will shut down all earthwork. All efforts shall focus on correcting E&SC deficiencies. The project will be re-inspected within 72 hours. All required corrective actions shall be completed within 72 hour period for the project to be upgraded to a 'B' rating. Failure to upgrade the project from a 'D' rating to a 'B' or better rating will result in the project being rated an 'F'. Liquidated damages will be imposed for each day the project has a 'D' rating.

Rating F (<60): The project is in non-compliance. An 'F' rating indicates a score of less than 60 or the appropriate permits or approvals have not been obtained; or that the limits of disturbance have been exceeded, or that wetlands, wetland buffers, Waters of the United States, floodplains, and tree preservation areas have been encroached upon; or that work is not proceeding according to the approved Erosion and Sediment Control Plan and schedule. SHA will shut down the entire project until the project receives a 'B' or better rating. All work efforts shall focus on corrective E&SC deficiencies. Liquidated damages will be imposed for each day the project has an 'F' rating.

In addition to inspection by the QA Inspector, an Independent Environmental Monitor (IEM) may also inspect the devices to determine if any potential for discharge to wetlands and/or Waters of the United States (WUS) exists. The IEM will coordinate with the CPE on these issues. These issues will also be documented in the IEM's daily report in the Environmental Monitor (EM) Toolkit for distribution to the regulatory agencies and the project team. The IEM has no regulatory authority; however, the IEM can provide recommendations to the CPE on methods for maintaining regulatory compliance and/or for additional avoidance and minimization of impacts. To determine what activities require investigation and/or coordination, contact EPD.

4. GRADING

4.1 Borrow Excavation

Borrow excavation is necessary when construction needs exceed the earth available within the project site. These activities require a surface mining permit, license or exemption from MDE in accordance with Environment Article Title 15, Subtitle 8 and COMAR 26.21.01.

The Contractor has three options for obtaining borrow material for use on SHA contracts as outlined in the Standard Specifications for Construction and Materials Section 203.01.01:

Option 1 - Acquire material from a licensed commercial operating supplier.

Option 2 - Make an application to MDE under COMAR Subtitle 8 Surface Mining Permit.

Option 3 - Make an application to SHA to operate under the standards adopted in conformance with COMAR Subtitle Surface Mining, Subsection 15-834 "Exemption". If this option is selected the contractor must submit OOC63 to the District Engineer.

If Option 3 of the specification is elected, the Contractor must submit OOC63 to the District Engineer. This request must be in compliance with the SHA/MDE MOU Reclamation Standards for surface mining. The CPE is responsible for collecting documentation from the Contractor to assure the Contractor is in compliance with the regulations, specifications and MOU.

SHA's DE may grant permission to the contractor to operate a borrow pit only after:

1. All information required in the application is to the satisfaction of the DE
2. Written concurrence of the acceptability of the application is obtained by both the DE and by the Program Manager of the Mining Program at MDE.

Final acceptance of the contract will not be made to the contractor until written concurrence of reclamation has been received from both SHA and MDE.

4.2 Waste Operations

When the available excavation material on a construction site exceeds the need for "fill", disposal of the excess material is necessary. Most often, this requires an off-site location for the disposal by the Contractor. The Standard Specifications for Construction and Materials Section 308.03.10 outlines that off-site waste areas require either MDE or appropriate County Soil Conservation District approval of the sites, depending on whether the site is on public or private property.

The CPE is responsible for collecting documentation stating the disposal site is an approved site.

5. ENVIRONMENTAL DOCUMENTATION

5.1 National Environmental Policy Act/Maryland Environmental Policy Act (NEPA/MEPA)

All SHA federally funded or authorized projects are required to comply with NEPA. The EPLD is responsible for coordinating with the Federal Highway Administration (FHWA) and obtaining environmental document approval. During a project's planning phase, the natural, cultural, and community resources are identified and impacts to the resources are coordinated with various federal, state and/or local regulatory agencies. As a result of this coordination, an alternative is selected and commitments may be made for resource protection or for mitigation of impacts. The decisions are documented in a Record of Decision prepared by FHWA.

For those state funded projects not requiring NEPA coordination, a MEPA review and documentation is prepared. The MEPA process is similar to NEPA as all natural, cultural, and community impacts to resources are assessed and evaluated with the goal of reaching an informed and balanced decision.

The results of these processes are commitments to aid in avoidance or minimization of resources and/or mitigation for impacts to resources. Quite often, commitments and/or mitigation agreements made in the project planning stage are developed as design features on the project by the design lead during IFB development. Field changes could impact the delivery of the commitments.

In order to inform the SHA staff of commitments, an environmental checklist is developed by EPLD. If field changes impact the commitments, contact EPLD for coordination to determine what other actions may be required. A copy of the checklist is contained in the appendix of this document. Some resources covered by NEPA/MEPA also require specific permits once design details and construction methods have been developed. Those resources include: wetlands, streams, forests and individual trees. Commitments developed during project planning become conditions of the permits. These resources are covered in other chapters of the guidelines. The following sections will address resources not covered by individual permits or approvals but require coordination and/or approvals documented the NEPA/MEPA documentation.

5.2 Historic Standing Structures and Archeological Resources

Historic standing structures and archeological resources are protected under state and federal regulations. Cultural (historic) resources are those buildings, sites, or districts that have been determined to have pre-historic or historic significance on the local, state or federal level. Archeological resources are either known areas or areas with potential to contain significant underground relics from the past. The Maryland Historical Trust (MHT) has jurisdiction for the review of state and federal undertakings. The EPLD is responsible for coordination of all SHA projects with MHT.

Activities in these areas are regulated. Generally, all of the required coordination occurs and approvals are obtained during the Project Planning phase of projects. Any special considerations or construction techniques required for cultural resources protection or mitigation normally will be contained in the IFB. However, field changes in a historically or culturally significant area could impact protected resources even without a direct foot print impact. For example, installing additional traffic barrier may result in a visual impact from the resource area which may affect its historic setting. Uncovering previously unidentified cultural resources will require additional coordination with MHT. To determine what activities require investigation and/or coordination, contact the EPLD, Cultural Resource Section.

5.3 Parks and Recreational Facilities/ Section 4(f)

Parks and recreational facilities are protected resources under federal and state regulations. Section 4(f) of the US Department of Transportation Act of 1966 (49 USC 303(c)) permits the use of land from publicly-owned public parks, recreation areas, wildlife or waterfowl refuges, or historic sites of national, state, or local significance, only if there is no feasible and prudent alternative to the use of such land and the action includes all possible planning to minimize harm to the protected property resulting from such use; or the use of the property, including any measures to minimize harm, will have a de minimis impact.

EPLD is responsible for coordinating all of SHA's projects with the Maryland Department of Natural Resources (DNR), the National Park Service and FHWA. Generally, all of the required coordination occurs and approvals are obtained during the planning phase of projects. Any special considerations, construction techniques and/or mitigation will be contained in the IFB. However, field changes in or adjacent to parks and recreational facilities could impact the protected resource. To determine what activities require investigation and/or coordination, contact EPLD.

5.4 Rare, Threatened and Endangered Species (RTE)

The existence of certain species of plants and animals are at such low levels that extinction is a distinct possibility. These species are resources and are on federal and state lists to be protected. EPLD is responsible for coordinating all of SHA's projects with the United States Fish and Wildlife Service (FWS), National Marine Fisheries Service and the DNR to determine if any species or habitats exist within the project areas.

Activities in these areas are protected. Generally, all of the required coordination and approvals are obtained in the project planning phase of projects. Any special considerations, construction techniques and/or mitigations will be contained in the IFB and can include the relocation of the species during construction. However, field changes in or adjacent to the RTE areas could impact the resources. For example, a change in the discharge of a drainage system could re-route water away from a water-dependent, off-site plant species thereby changing the habitat in a way that the plant cannot survive. To determine what investigation and/or coordination is necessary, contact EPLD.

5.5 Air Quality

The federal and state governments regulate impacts to air quality. During the project planning phase of projects, EPLD coordinates with MDE and EPA to receive a Conformity Decision and no further action is required. However, there are other permits or regulations to which an SHA construction site might be subject:

- Particulate Matter from Materials Handling and Construction (COMAR 26.11.06.03) – This regulation requires the control of dust caused by construction activities through the use of water or chemicals.
- Asphalt Plants (COMAR 26.11.02.01) – If a contractor elects to install and operate an asphalt plant on-site, he is responsible for applying and receiving approval from MDE.
- Ready-Mix Concrete Batch Plant (COMAR 26.11.02) – If a contractor elects to install and operate a ready-mix concrete batch plant, he is responsible for applying and receiving approval from MDE.

The CPE is responsible for ensuring that should these activities occur, the Contractor provides copies of the permits and/or implements the permit conditions and/or the regulations.

6. VEGETATION

The protection of existing vegetation, the establishment of new vegetation, the removal of undesirable vegetation, and the control of invasive vegetation are important operations during construction and in preparation for maintenance.

Vegetation provides numerous environmental benefits. It prevents soil erosion, provides water quality treatment, abates noise and air pollution, contributes to safety and recovery areas, provides habitat for plants and animals, and improves roadside aesthetics for the motoring public.

The protection and establishment of trees is under the jurisdiction of Maryland Department of Natural Resources Forest Service (DNR-FS) and the establishment of groundcover vegetation (e.g., turfgrass) is under the jurisdiction of MDE.

The control of invasive and noxious vegetation is occasionally required during construction. The application of pesticides is primarily under the jurisdiction of Maryland Department of Agriculture, and standardized under the Integrated Vegetation Management Manual for Maryland Highways (IVMMMH).

The following laws describe the specific regulations, approvals and requirements for tree impacts, fertilizer applications, and pesticide applications.

6.1 Maryland Tree Laws

Regulations and requirements for the protection and establishment of trees and forested areas are specific to the type of construction activity being performed. The following definitions are used under the Maryland Tree Laws:

Tree: A large, branched, woody plant having one or several self-supporting stems or trunk that reaches a height of at least 20' at maturity. Standard practice is to consider vegetation with a woody stem at least 2" in diameter as a tree, and anything less would be considered brush.

Forest: A biological community dominated by trees and other woody plants that contains at least 100 stems per acre, with at least 50% of those stems with DBH of 2.0 in. diameter or greater.

Questions about these laws should be directed to the Landscape Operations Division.

A summary of the Maryland Tree Laws is provided below:

Maryland Roadside Tree Law (RTL)

Enacted in 1914, the Maryland RTL regulates impacts to individual roadside trees, and impacts to forested areas less than 1.0 acre in size. A roadside tree is defined as any tree, or trees, growing within the public space of a state, county or local road right-of-way that reaches a height of at least 20' and a minimum trunk diameter of 2" at maturity. The law governs removal as well as any treatment of "save" trees such as branch pruning, root pruning, and selective thinning. The Landscape Operations Division acts in a support role to DE's and CPE's to maintain compliance with the law.

Maryland Reforestation Law

Enacted in 1989, the Maryland Reforestation Law regulates linear highway projects that involve the use of state funds with impacts to forest areas of 1.0 acre or greater.

The law provides a 1:1 replacement for the loss of forest cover. Replacement of forest that is removed for highway construction must be accomplished on an acre-for-acre; one-to-one ratio on public lands within a year of the completion of the project, and the reforested areas must remain forested in perpetuity.

First priority is given to locating reforestation on site of the project area, and second priority is given to sites within the same county or watershed as the impacted area. Free standing reforestation sites must be a minimum of a ½ acre in size and at

least 50 feet wide. Reforestation sites that are contiguous with existing forests must be at least a ¼ acre in size. If that is not possible, the constructing agent (usually SHA) must deposit funds into the Reforestation Fund.

The Reforestation Fund is used by DNR to install replacement trees on public lands such as schools and parks. SHA-LOD acts in a support role to assist DE's and CPE's to comply with the law, and to track the acreage of forest clearing and replanting performed under the law.

Maryland Forest Conservation Act

Enacted in 1991, The Maryland Forest Conservation Act (FCA) regulates grading impacts associated with non-linear facility projects, such as salt barns, stand alone park & ride lots, new facility construction (labs, offices, etc.) and stream and wetlands mitigation projects. Any activity that requires an application for a subdivision, grading permit or sediment control permit on areas of 40,000 square feet or greater (slightly less than 1.0 acre), regardless of tree or forest cover, is subject to the Forest Conservation Act.

Areas with impacts greater than 40,000 square feet and that contain any forested area will require a forest stand delineation and forest conservation plan prepared by a licensed forester, licensed landscape architect, or other qualified professional in accordance with the State Forest Conservation Technical Manual guidelines. Once approved by DNR, an approval letter will be provided along with an approval sticker to include on the plan sheet.

If the impacted area is greater than 40,000 square feet, but no forested area exists, simplified forest stand delineation is required. Once approved by DNR, an approval letter will be provided along with an approval sticker to include on the plan sheet. If the area graded is less than 40,000 square feet, the project is exempt from the Forest Conservation Act. An exemption letter must be submitted to DNR for approval. The exemption request must include a site plan showing the limits of grading and any existing environmental features. If DNR concurs, a letter of exemption will be issued.

SHA-LOD assists DE's and CPE's to prepare a forest stand delineation and forest conservation plan, simplified forest stand delineation, or exemption request letter.

6.2 Maryland Nutrient Management Law

Enacted in 1998, the Maryland Nutrient Management Law requires a Nutrient Management Plan (NMP) when applying fertilizer (nitrogen, phosphorus and potassium) to State and other land. The Maryland Department of Agriculture administers the Law and reports the acreage covered by the NMPs to the Governor and General Assembly.

For SHA, a Maryland Certified Nutrient Management Consultant from the SHA-LOD is responsible for developing NMPs used on SHA projects. Soil sampling and testing is necessary for the development of a NMP, is performed by the Office of Materials Technology. Additional testing is performed by the University of Delaware. For projects that involve salvaged soil, the NMP is included in the Contract documents (IFB) as a Special Provisions (SP). For projects that involve furnished topsoil, the NMP is developed after SHA approves the source of supply, tests and approves the soil. The NMP is sent as a memo to the Assistant District Engineer-Construction and to the CPE. Since the NMP uses soil test data, it is able to provide optimum application rates for fertilizer and soil amendments such as compost, limestone and sulfur. As a result, projects with a NMP based on tested topsoil, experience the best immediate and long-term plant growth with the least cost and loss of unnecessary fertilizer nutrients.

All Category 700 Landscape sections that utilize fertilizer require a NMP. NMPs are routinely developed for turfgrass establishment, turfgrass sod establishment, and other seeding operations that involve significant use of fertilizer during construction.

Only when small areas are to be seeded, or it is impossible to obtain soil tests, are the rates of fertilizer to be used as outlined in the 2008 Standard Specifications for Construction and Materials. The outlined rates also apply to certain landscape work (trees, shrubs, beds, and temporary seeding). When unusual site and soil conditions exist a NMP will be developed.

Questions about soil testing, the use of NMPs, the Nutrient Management Reporting Form, fertilizer materials, or related issues should be directed to SHA-LOD.

6.3 Maryland Pesticide Applicator's Law

Enacted in 1975, the Maryland Pesticide Applicator's Law is regulated by the Maryland Department of Agriculture. The Maryland Pesticide Applicator's Law requires that pesticides, including herbicides used for weed control, be applied by a Maryland Registered Applicator under the supervision of a Licensed Maryland Certified Pesticide Applicator.

For pesticide applications within the rights of ways, the applicator is required to be certified in Category 6 (Right of Way). Pesticide applications to turfgrass, trees, shrubs and beds at facilities require Category 3 (Turfgrass & Ornamental), and applications to wetlands and waterways require Category 5 (Aquatic) Certification.

The Integrated Vegetation Management Manual for Maryland Highways (IVMMMH) provides guidance and additional responsibilities for pesticide applicators. Questions about pesticide applicator requirements, application procedures, the Pesticide Application Reporting Form, the IVMMMH, or related issues should be directed to SHA-LOD.

6.4 Maryland Noxious Weed Laws

Enacted in 1969, the Maryland Weed Control Law protects private and public lands against the spread of noxious weeds. Johnsongrass, shatter cane, Canada thistle and several other thistles have been designated as noxious because of their invasiveness, difficulty to control, and economic and aesthetic impact on property in the State. The law requires SHA to manage noxious weeds on its property, and to prevent the spread of seed and viable plant parts in soil.

Amended in 1998 the Maryland Weed Control Law requires MDOT modals to inventory, treat, and annually report their efforts in controlling common reed, known as phragmites.

The 2008 Standard Specifications require inspection to identify and control the above weeds during construction to avoid the spread of seed and viable plant parts. The IVMMMH provides guidance for their control. Questions about the control of Maryland noxious weeds and common reed should be directed to SHA-LOD.

7. NOISE

Since excessive noise can at a minimum be annoying to the public and at worst be damaging to hearing, attention should be paid to the amount of noise generated by construction activities. Local jurisdictions often have ordinances and/or regulations governing noise. The State of Maryland regulates noise levels in COMAR 26.02.03.03.

7.1 Noise

SHA attempts to minimize noise levels and annoyance to the public as much as possible. In populated areas, consider noise levels when planning and scheduling the work. If an activity is expected to occur for an extended period of time, coordination with adjacent property owners may aid in reducing the number of complaints. Check the contract documents for any specific restrictions to noise levels and working hours. Check with the District Safety Officer the OOC Safety Manager to determine what activities may endanger employees' hearing and supply the necessary safety equipment for those activities.

Under Maryland's regulation, noise levels emanating from construction or demolition site activities cannot exceed 90dBA during daytime hours. Daytime blasting operations, pile driving during the hours of 8:00 AM and 5:00 PM and construction and repair work on public property are exempt from this requirement thereby making most of SHA's activities exempt from the regulations. Even though SHA activities are for the most part exempt, an awareness of state' regulation and voluntary compliance whenever possible will make SHA a "good neighbor" and reduce the amount of possible criticism from neighboring inhabitants. Questions about construction noise concerns should be directed to the District Engineer through OOC's chain of command and using standard construction protocol.

8. HAZARDOUS MATERIALS/SPILL PREVENTION CONTROL AND COUNTERMEASURES (SPCC)

The Engineering Geology Division develops geotechnical designs for rock slopes and rock foundations; conducts groundwater contamination and quantity studies; reviews contractor blast designs; conducts seismic vibration studies; and makes hazardous material site assessments. All work shall be in compliance with the Standard Specifications for Construction and Materials, TC-6.09 Hazardous Material and US EPA Oil Pollution Prevention Regulation, Title 40, CFR.

8.1 Hazardous Materials/Rehandled Materials

Prior to bidding, known hazardous materials will have a hazmat handling plan and should be followed per plan.

However, if during the course of the contract work, the contractor encounters or exposes any abnormal conditions which indicate the presence of a hazardous material or toxic waste, work in the area shall immediately be suspended and the CPE notified.

Abnormal conditions could include things such as presence of barrels, obnoxious or unusual odors, hot earth, or smoke. In these conditions, it is usual for the CPE to request an EPA Toxicity Characteristic Leaching Procedure (TCLP) be performed on the suspect material. Once the substance has been identified, proper handling and disposal shall be made in conformance with all applicable state and federal requirements.

If any material furnished by the contractor for re-use on the project, and suspected to be hazardous or toxic, the Engineer may require the Contractor to have it tested and certified in conformance with applicable requirements. Usually a TCLP is performed. If material is found to be hazardous or toxic, use on the project is prohibited. To determine what investigation and/or coordination is necessary, contact SHA's Engineering Geology Division.

8.2 Spill Prevention, Control and Countermeasures

The United States EPA Spill Prevention, Control and Countermeasures (SPCC) Regulation requires that an owner/operator of a facility maintain a certified SPCC plan in the event of potential oil discharge. The main goal of SPCC regulation is "prevention" of a discharge as opposed to "after-the-fact" cleanup measures. Only facilities that meet the following criteria are qualified for the SPCC regulation:

> The facility must be non-transportation related. (Transportation related facilities are onshore and offshore terminal facilities, interstate and intrastate pipeline systems; and highway vehicles used for the transport of oil for commerce.)
>
> The facility must have an aggregate aboveground storage capacity greater than 1,320 gallons or a completely buried storage capacity greater than 42,000 gallons. (No containers with less than a 55 gallon capacity are used in calculating total storage capacity.)
>
> There must be a reasonable expectation for an oil discharge into or upon navigable waters of the United States or adjoining shorelines.

A subset of qualified facilities may meet requirements to be designated as "Tier I" qualified facilities. "Tier 1" facilities operate with a set of streamlined SPCC rule requirements for which the owner or operator has the option to complete a self-certified SPCC Plan template instead of a full SPCC Plan. All other facilities are designated "Tier II" qualified facilities.

The SPCC plan should be part of the project record and available for EPA review. While the requirements of the EPA's SPCC plan are not rigid, the plan should address these main areas:

- Operating procedures to prevent the occurrence of oil discharges
- Control measures to prevent a discharge from entering navigable waters

- Countermeasures to contain, clean up, and mitigate the effects of an oil discharge that impacts navigable waters

Other key elements should be included in the plan, including:

- Name, type and location of facility
- Name and address of owner
- Designated person responsible for oil discharge prevention
- Maps and diagrams
- Management's Approval
- Certification by a licensed P.E. who is experienced with 40CFR112 and has prepared the plan in accordance with good engineering practices
- Analysis of the facility and its greatest discharge potential
- Facility inspection documentation

Any significant spill must be reported to MDE. The report must contain the type and amount of material discharged. Every effort should be made to contain the spill on-site. A location map inidicating discharge point and drainage structures should be included. Barriers should be placed at the discharge points and drainage structure, at a minimum, to keep the material on-site.

To determine what investigation and/or coordination is necessary, contact SHA's Engineering Geology Division.

SHA Engineering Geology Division

1-443-572-5171

MDE Hotline (24 hours/day)

1-866-633-4686

National Response Center

1-800-424-8802

9. Recycled Materials

The Materials Management Division is responsible for support, independent assurance testing and materials management system development and implementation. Material clearance responsibilities will also come under this division. All work shall be in compliance with Maryland Specifications for Construction and Materials, TC-6.10 Recycled or Rehandled Material.

9.1 Recycled or Rehandled Materials

For recycled or rehandled material furnished by the Contractor for use on the project, the CPE may require the Contractor to have the material tested and certified to be in conformance with applicable environmental requirements. The required testing will be determined by the Materials Management Division and may include EPA Toxicity Characteristic Leaching Procedure (TCLP).

This does not preclude the normal materials process, and the recycled material shall conform to applicable specifications. Typical recycled materials include: crumb rubber, recycled asphalt pavement, glass, blast furnace slag, recycled concrete pavement, mining waste rock, coal fly ash, and any material not previously listed that are recycled as the original product or incorporated into other products. To determine what material testing and certification and/or coordination is necessary, contact SHA's Material Management Division.

10. PROJECT ENVIRONMENTAL CLOSEOUT PROCEDURES

Each contract is unique depending on which permits are issued. Not all projects will receive the same permits and approvals. The following list is a general guideline.

EPD

- GWCP – requires the District to complete the GWCP Completion Form and forward to EPD within 30 days of project completion. Form will be included with GWCP permit. Request duplicate form from EPD. If District needs assistance completing form, contact EPD.
- MDSPGP-3 – Requires the District to complete the Self-Certification form and forward to EPD. Form is included in IFB; request duplicate form from EPD. If District needs assistance completing form, contact EPD.
- COE – Permit varies by project and may contain special conditions requiring as-built(s) and/or environmental monitoring reports. See permit special conditions section for close-out procedures. District forwards required information to EPD.
- MD State Tidal License/Permit
- MD State Non-Tidal Wetland and Waterway Permit
- Final OOC61.1 or OOC61- CPE notifies the QA Inspector of project completion. CPE invites the QA Inspector and EPD to semi-final/final walk through. CPE acquires final OOC61.1.

HHD

- NPDES – District completes Notice of Termination (NOT) and forwards to MDE Compliance Division and HHD.
- SWM (Storm Water Management)–As Built(s) — District forwards copies to SHA-HHD

EPLD

- NEPA – District reviews and completes checklist delivered with project documents and forwards to EPLD. Request duplicates from EPLD.
- MEPA – District reviews and completes checklist delivered with project documents and forwards to EPLD. Request duplicates from EPLD.
- CACCACB – District reviews and completes checklist delivered with project documents and forwards to EPLD. Request duplicates from EPLD.

SHA-LOD

- NMP – Project Engineer contacts Landscape Operations Division prior to semi-final walk through for NMP. Landscape Operations Division also approves final stabilization status on behalf of SHA. MDE approves final stabilization prior to removal of final E&SC.

OOC

- OOC3 – District Engineers Certification of Completion of Work – District completes OOC3 form and forwards to OOC along with any permit related requirements.

- MDE – Notify of project semi-final/final status. Acquire final E&S control report from MDE for issues such as SWM, E&SC removals, and final stabilization
- Borrow Pits - Written concurrence of reclamation has been received from SHA and MDE.

OOS

- United States Coast Guard Permit – Permit varies by project and may include special conditions requiring as-built(s), and other requirements or notifications. See permit special condition section for close out procedures. Forward required information to OOS.

Outside Agency Notification

Other outside agencies coordination, that is project specific that may include;

- Federal Aviation Administration/Maryland Aviation Administration- Refer to IFB for specific close out procedures and notifications.
- Local Jurisdictions – city, county, Special Use Areas – Refer to IFB for permits and specific close out procedures and notifications.

SEMI-FINAL/FINAL Walk through

Each contract will have various people who should be invited to the semi-final walk-through. In addition to OOC personnel normally included, the following departments may be included: SHA-LOD, EPD (including QA Inspector), HHD, MDE, other SHA offices and agency representatives depending on permit conditions and/or other environmental commitments.

11. FREQUENTLY ASKED QUESTIONS

1. What do I need to do prior to starting work? Are there any pre-construction submittals I need to have in hand?

Review your contract documents. Contractor is required to submit an E&SC schedule within 14 days of Notice of Award, all permits must be in hand, Supervisor and ESCM must be identified and accompanying certification must be submitted, and an E&SC pre-con must be held. Special conditions in either the state or Federal permits may require additional submittals.

2. What do I need to do when the project is in close-out phase?

Ensure your project has met the environmental requirements/conditions of the authorizations and contract documents. Fill out all required forms with help from the supporting offices/divisions and forward as required. Refer to the Environmental Project Close-out Procedures in this document. Also a form OOC3 form will need to be completed.

3. What forms do I need, and how do I access them?

There are several forms that can be used with regard to environmental issues. The daily inspection form produced by the contractors ESCM is not an SHA form and contractors may elect to use any form which provides the minimum required information. Links to common SHA forms OOC60, OOC61, OOC61.1, OOC62, and OOC3 are found in the index.

4. How do I know what permits I need and which permits do I have to obtain before I start construction? How do I get additional permits? How do I get permit modifications?

Prior to IFB, the Lead Office along with Highway Hydraulics Division and Environmental Programs Division have performed extensive coordination with outside agencies, such as MDE, COE, etc. to acquire the required permits contained in contract documents. Any outstanding permits should be noted and secured prior to any work. The contractor is usually responsible for additional authorizations/permits required based on how they elect to do the work involving activities such as but not limited to: borrow material, waste material, staging stockpiling and batch plant installation/operation. Those additional permit requests are forwarded to the appropriate agencies per the contract documents.

The Highway Hydraulics Division is responsible for obtaining permit modifications for E&SC permits. SHA form OOC62 should be used to request modifications. Environmental Programs Division is responsible for obtaining State and Federal wetland and waterway permit modifications.

5. What steps do I need to take when I am at the final seeding/stabilization phase?

Prior to final stabilization phase, the Construction Project Engineer should have contacted Landscape Operations to verify a Nutrient Management Plan approval. In accordance with the final stabilization requirements of the contract (Section 705) and the Nutrient Management Plan the contractor should be directed to complete the work. Note: remaining E&SC measures on the project shall remain in place until proper stabilization has been reached.

6. I have borrow/fill material associated with my job? Are there special steps I have to take?

Borrow locations will need to be located in accordance with the Standard and Specifications for Construction and Materials Section 203, including identification of the borrow site from one of the three identified methods.

If the contractor is removing fill from the site (waste material), their disposal location must be authorized to receive the material. Authorization comes from MDE and/or local Soil Conservation District and will include a site E&SC plan. SHA personnel need to receive trip tickets from loads sent offsite.

7. Are there special requirements I need to be aware of when the contractor has off site staging or stockpile areas?

The contractor is required to maintain their off site locations associated with the contract in accordance with all local, state and federal environmental requirements, including erosion and sediment control. The CPE should be aware of the location, the approval required and condition of these locations.

8. I have submitted an OOC62 requesting a change, how long do I have to wait before the contractor can do the work?

As an E&SC issue, no proposed work can be completed prior to receiving a permit modification. Minor changes to the E&SC plan as described in the SHA/MDE MOU may be approved by the MDE field inspector assigned to the project. More substantial (major) changes require approval from a series of partners. Highway Hydraulics must approve the plan change prior to submitting to MDE.

Note: Wetland and waterway permit modifications must be approved by SHA EPD prior to being submitted to the regulatory agencies. Once EPD approves the plan, they will submit the change to the regulatory agencies as a permit modification.

The time needed will very depending on the environmental complexities and completed package submitted. Changes to the E&SC plan shall be submitted to SHA in writing at least 14 days prior to implementing the change and requires SHA and MDE approval prior to implementing the change.

9. The E&SC plan and/or the permits do not provide adequate LOD space to do the work required. Can I do the work anyway?

No. In cases where the permits and/or E&SC plans do not provide adequate space within the LOD a permit modification is required. Follow the procedures associated with SHA OOC 62. Coordination with the Highway Hydraulics Division and Environmental Programs Division (wetland or waterway impacts), and other related offices will be required.

10. I have a complex project with multiple phases of work. The contractor has completed this phase of work between station x and y. Does the contractor need to do all work in this phase before starting into the next phase?

At all times the E&S Sequence of Construction should be followed. Work flow maybe such that multiple phases of work could be on going at the same time. Review the sequence of construction with all parties at the E&SC meeting to ensure sequencing requirements. If the contractor wishes to make changes to this, OOC62 should be initiated and submitted.

11. I have all the E&SC items in place per plan. They are working properly, but I still am experiencing erosion on my project. Will I be in non-compliance?

The project is required to be in compliance with the approved plan/contract documents at all times. Standard Specification for Construction and Materials G.P. - 7.12 Land, Air, and Water Pollution requires temporary E&SC measures be used to correct conditions that develop during construction that were not foreseen during the design phase. The Contractor's ESCM should be identifying problem areas during their daily and post storm event inspections, inform SHA who will contact MDE for potential solutions. Initiative to correct these issues with the proper approval should keep the project in compliance. Changes, adjustments and/or modifications should be timely, documented and submitted for required approval.

12. The contractor is submitting their daily inspection and post storm reports. What information is required to be included on this form?

At a minimum these reports should include: the date, time, reviewers name and items identified during the inspection. Documentation (facts) of any related environmental issue on the project could serve as proactive environmental stewardship initiative. Additional information could be included to support the bonus section of the QA report when complied.

13. Who are the people/offices involved in changing the approved E&SC plan?

It is nearly impossible to identify all of the actual people associated with a change, as different situations could require different people which are assigned various areas of responsibility. The project will need to consider the change and its total effect and contact the various support offices/divisions for resolution.

In most cases, the OOC62 is initiated by the contractor's personnel. It is forwarded to the CPE for review and approval. After CPE agrees, change in E&SC plan is required. At this point, HHD reviews and approvals may need to involve other offices/divisions depending on the environmental complexities. HHD and other offices/divisions will coordinate with required regulatory agencies for approval and contact the project.

14. I have had an issue/question arise on the project. I have asked the SHA QA Inspector, the MDE Inspector and EPD's Independent Environmental Monitor. I have gotten 3 different answers. Who am I to take direction from?

Ultimately the person responsible for telling the contractor how to proceed is the CPE. The CPE is best suited to understand the contract, pay line items, schedule and work needs of each project. As long as the decision is in conformance with the project E&SC plan, sequence, MDE specs and SHA Standard Specs, the final decision rests with the CPE. The CPE is tasked with obtaining a common solution with all parties and passing the information onto the contractor in effort to ensure project compliance.

15. Who should I invite to the .....

Pre-Construction Meeting When you have complex permits, the representatives who can assist with the review of special conditions is the HHD project manager, EPD project manager, QA Inspector, MDE, Contractor Superintendent, SHA CPE and any SHA Inspectors who may have responsibility for the daily E&SC plan.

E&S Pre-Construction Meeting MDE! The E&SC Pre-Con is a requirement of the MDE permit. The contractors ESCM/ Superintendent and SHA's CPE/project inspector are responsible for ESC. Related sub-contractors, the QA Inspector and IEM (when required) collectively round out as key members of the Environmental Team to be included.

Semi-Final Inspection MDE! This is a great time to get them out to your site to approve removals of any temporary controls, provided the project has achieved final stabilization requirements. Landscape Operations and the QA Inspector are key people to sign off on your project. Depending on the project's environmental authorizations, the EPD project manager should also attend. The CPE/District should consider any and all invitees in an effort to ensure environmental compliance prior to project close out in an effort to avoid potential recordable non-compliance and/or violations of the approved contract documents.

16. The contractor has approached SHA with a new idea to handle sediment and erosion control issues. However, these measures are not found in MDE's E&SC Handbook or SHA Standard/Spec. Who can I talk to?

Being proactive and bringing new innovative E&SC measures to SHA attention is definitely welcomed. Contact should be made to SHA's HHD who in return will seek MDE concurrence and approval. Monitoring and documentation along with an OOC62 are likely to be required.

17. The contractor has come across some type of archeological find. Will this shut down my entire project automatically?

No. If the contractor discovers any un-identified remains, have the contractor remove any earth disturbing equipment from the area and call SHA's Environmental Planning Division (EPLD). Shut down of the entire project is not necessary unless after a field investigation SHA directs such action.

18. A hurricane/tornado or other emergency situation has hit my project hard; will I receive non-compliance automatically?

Not necessarily. SHA QA Inspectors will not come to your work site and issue the project with non-compliance after such an event. They will work with you and the contractor's ESCM to identify needed corrective measures to help the project get back into compliance. You can most likely expect a report of "no-grade" with items in need of maintenance/repair.

However, if the site has a 'C' or below rating prior to the event and the items had not been corrected by the time of the event, a non-compliance finding may be warranted. Ensure that correction of any outstanding items on your report is well documented prior to any such event.

19. The contractor is planning to store several tanks for fuel within the project limits. Are there special requirements I have to watch out for?

Yes. Storage of any fuels or oil based products OVER 1320 gallons require compliance with EPA Spill Prevention Control & Countermeasures SPCC regulations. The contractor can store up to 1320 gallons under the standard SPCC plan. Amounts over 1320 gallons require a more stringent SPCC plan.

20. I have changes to make in the Critical Areas is there any special steps to be considered?

Yes, you will also need Critical Areas Commission approval. Take into consideration increased time for the request in an effort to avoid additional mitigation requirements. Contact EPLD for guidance, direction, and coordination.

21. I read my contract documents and I still don't know what to do as it relates to an environmental issue, what should I do?

ASK! Call on varying support offices/divisions and let them know of your issue, your concern, your need. Consider calling on the QA program for guidance. Do it in a timely manner, be forthcoming with information and partner for a solution that will keep the project moving forward with minimal delay and protect the environment according to current regulations.

Appendix A

SHA Intranet Links

. OOC60
http://170.93.50.40/oocweb/ooc/0Forms/Active%20Forms/OOC60%20E&S%20Control%20Field%20Investigation%20Report.dot

. OOC61
http://170.93.50.40/oocweb/ooc/0Forms/Active%20Forms/OOC61%20Independent%20Quality%20Assurance%20E&S_Report.doc

. OOC61.1
http://170.93.50.40/oocweb/ooc/0Forms/Active%20Forms/OOC61.1%20Independent%20Quality%20Assurance%20E&S%20Report.dot

. OOC62
http://170.93.50.40/oocweb/ooc/0Forms/Active%20Forms/OOC62%20Request%20for%20Revision%20of%20E&S%20Control%20Measures.dot

. OOC63
http://170.93.50.40/oocweb/ooc/0Forms/Active%20Forms/OOC63%20Application%20for%20Permit%20to%20Operate%20Borrow%20Pit.dot

. OOC3 (DE Close Out Form)
http://170.93.50.40/oocweb/ooc/0Forms/Active%20Forms/OOC03%20Completion%20of%20Work.dot

The forms listed above can also be found in the Reference section of the QAtoolkit.

Appendix B

Office Contact Quick Reference Chart

By SHA Division

Division	Phone Number	Responsibilities
Environmental Programs Division (EPD)	410-545-8628	State and federal wetland permits and modifications Water quality certification Waterway and floodplain permits and modifications QA inspections and field issues
Highway Hydraulics Division (HHD)	410-545-8390	Erosion and sediment control approvals and modifications Stormwater management approvals and modifications NPDES issues Waterway construction issues Dam safety issues FEMA floodplain issues Illicit discharge connections
Landscape Architecture Division (LAD)	410-545-8589	Critical area mitigation
Landscape Operations Division (SHA-L0D)	410-545-8590	Maryland Roadside Tree Law compliance Maryland Nutrient Management Law approval Maryland Pesticide Application Law compliance
Material Management Division (MMD)	443-572-5020	Recycled or rehandled material testing and clearance
Engineering Geology Division (EGD)	443-572-5171	Hazardous material disposal, barrel disposal Spill prevention, control and countermeasures plan
0ffice of Structures, Engineering Division	410-545-8070	Coast Guard permit or issues
Environmental Planning Division (EPLD)	410-545-8564	NEPA/MEPA issues Historic standing structures and archeological resources Park and recreational facilities RTE issues Air quality issues Critical Area Commission for Chesapeake and Atlantic Coastal Bays

Office Contact Quick Reference Chart

By Permits/ Approvals/ Issues

Permit/Approval	Activity	Responsible Office	Phone
Maryland Historic Trust Section 106 Coordination	Possible impacts to historic or archeological resources	EPLD	(410) 545-8564
Tidal Wetlands Permit/License	impacts to tidal wetlands	EPD	(410) 545-8628
Non-tidal Wetlands and Waterways Permit	Significant impacts to non-tidal wetlands, streams, rivers and ponds. buffers, and floodplains	EPD	(410) 545-8628
individual US Army Corp of Engineers Wetland Permit (404)	Significant impacts to non-tidal wetlands and streams, rivers and ponds	EPD	(410) 545-8628
General Waterway Construction Permit (GWCP)	Minor impacts to streams and rivers and their 100-year floodplain	EPD	(410) 545-8628
Maryland State Programmatic General Permit (MDSPGP-3)	Minor impacts to non-tidal wetlands, streams, rivers and ponds	EPD	(410) 545-8628
Erosion and Sediment Control Approval	impacts to over 5,000 sf of earth or 100 cy of excavation	HHD	(410) 545-8390
Storm Water Management Approval	Increases in impervious surfaces	HHD	(410) 545-8390
N01 - National Pollutant Discharge Elimination System (NPDES)	Construction sites with greater than one acre of disturbance	HHD	(410) 545-8390
Illicit Discharge Connection	Detection and elimination of illicit discharge	HHD	(410) 545-8390
Nutrient Management Plan	Establishing vegetation on construction site	L0D	(410) 545-8590
US Coast Guard Permit	Impacts to navigable waters	00S-Engineering Division	(410) 545-8070
Critical Area Commission for Chesapeake and Atlantic Coastal Bays	Disturbance within 1,000 ft of tidal waters and within 100 ft buffer of wetlands	ELPD	(410) 545-8564
Programmatic NEPA CE	Minor impacts to SHA right of way	ELPD	(410) 545-8564
Wildlife Permit/License	An actual take of wildlife or wildlife habitat	ELPD	(410) 545-8564
Endangered Species Incidental Take	Impacting endangered species or endangered species habitat	ELPD	410) 545-8564
Roadside Tree Permit	Trimming or removing roadside trees	L0D	(410) 545-8590
Reforestation Permit	Impacting more than ¼ acre of forest	L0D	(410) 545-8590
Pesticide Applicators Certification	Applicators and managers of pesticide and herbicide use	L0D (SHA Contractor)	(410) 545-8590
Toxic Materials Permit	Using herbicides or pesticides for eradication or control of invasive species	L0D (SHA Contractor)	(410) 545-8590

Office Contact Quick Reference Chart *(Continued)*

Contractor Responsible

Permit/ Approval	Activity	Responsible Office	Issued By
Air Quality Permit to Construct Air Quality Permit to **O**perate	An on-site asphalt or concrete plant on the construction site	SHA Contractor	MDE
Surface Mining Permit/License/ Exemption	Use of off-site borrow pits	SHA Contractor	SHA/MDE
E & S Approval	0ff-site disposal of waste materials	SHA Contractor	MDE
Asbestos Contractor License	Disposal of structures containing asbestos	SHA Contractor	MDE
Lead Paint Accreditations	Disturbing lead paint	SHA Contractor	MDE
Water Appropriation and Use Permit	Use of surface water or ground water for construction site use	SHA Contractor	MDE

Appendix C

Environmental Reference Materials

Approved Plan Set and Specifications

SHA Standard Specifications 2001/2008

Project Specific Reports and NEPA Documentation

United States Army Corps of Engineers' Department of the Army Permit

Maryland Department of the Environment's Tidal Permit, Tidal License, Nontidal Wetlands and Waterways Permit, Water Quality Certification for Nontidal Wetlands and Waterways, and E&S Permit

Department of Natural Resources - Maryland Forest Service Tree Permit

Code of Maryland Annotated Regulations (C0MAR) – Title 26 Department of Environment: http://www.dsd.state.md.us/comar/subtitle_chapters/26_Chapters.aspx

Section 4(f) of the U.S. Department of Transportation Act of 1966 (U.S.C. 303(c)) Coordination

Maryland Historical Trust Concurrence

Section 106 of the National Historical Preservation Act Code of Federal Requirements (CFR)

Critical Area Commission for Chesapeake and Atlantic Coastal Bays Coordination

U.S. Fish and Wildlife Service – Rare, Threatened and Endangered Species Information

Department of Natural Resources Wildlife & Heritage Service – Rare, Threatened and Endangered Species Information

MDE 1994/2010 E&SC Specifications

Maryland Waterway Construction Guidelines, Issued 9/99, revised 11/2000

Project Engineers Guide for Working within SHA R/W

USEPA 0il Pollution Prevention Regulations, Title 40 CFR

USEPA Spill Prevention, Control and Countermeasures Regulations & plan

USEPA Toxicity Characteristic Leaching Procedures

Maryland General Permit for Stormwater Associated with Construction Activity

Best Management Practices

2000 Maryland Stormwater Design Manual, Volume I & II

Integrated Vegetation Management Manual for Maryland Highways

MRCS – MD 378 Pond Code Standards and Specifications for Small Pond Design