# MARYLAND STATE HIGHWAY ADMINISTRATION

# FINAL

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# UMBRELLA MITIGATION BANKING INSTRUMENT

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Office of Environmental Design
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## INTRODUCTION

The Maryland State Highway Administration (SHA) (hereinafter, "Sponsor") Umbrella Mitigation Banking Instrument (UMBI or "Instrument") describes the establishment, use, operation, protection, and maintenance of various Mitigation Bank Sites, both existing (legacy sites) and new (yet to be constructed). The UMBI is an agreement made and entered into, by, and among the SHA on behalf of the Maryland Department of Transportation (MDOT) agencies including Maryland Transportation Authority (MDTA), Maryland Mass Transit Administration (MTA), Maryland Aviation Administration (MAA), Maryland Port Administration (MPA), and Maryland Motor Vehicle Administration (MVA); and the UMBI Interagency Review Team (IRT) Chairs (U.S. Army Corps of Engineers (USACE or Corps) Baltimore District and Maryland Department of the Environment (MDE)), in consultation with the U.S. Environmental Protection Agency (EPA), U.S. Fish and Wildlife Service (USFWS), Maryland Department of Natural Resources (DNR), National Marine Fisheries Service (NMFS), Maryland Historical Trust (MHT), and Maryland Chesapeake Bay Critical Area Commission (CAC). USACE and MDE, as Chairs, have signatory and approval authority for the UMBI and other members of the IRT will serve in an advisory and consultation role with the Chairs.

## I. PREAMBLE

Whereas, the Sponsor proposes an UMBI in accordance with USACE Compensatory Mitigation for Losses of Aquatic Resources (Mitigation Rule), 33 CFR 332 and EPA Guidelines for Specification of Disposal Sites for Dredged or Fill Material Rule, 40 CFR 230.

### A. Purpose

The purpose of this UMBI is to enable off-site compensation, for unavoidable impacts to Waters of the U.S., including streams, wetlands, and their functions, as a result of MDOT agencies' transportation activities authorized under Sections 401 and 404 of the Clean Water Act, Section 10 of the Rivers and Harbors Act, Maryland's waterway construction statute, Maryland's Nontidal Wetland Protection Act, and Maryland's Tidal Wetlands Act. The UMBI is intended to meet the requirements of the Mitigation Rule. The UMBI provides guidelines and responsibilities for governing the establishment, use, operation, protection, and maintenance of various Mitigation Bank Sites, proposed by the Sponsor, under this Instrument.

### B. Project Need

Whereas, the Mitigation Rule established that the preferred option in the hierarchy for compensatory mitigation is Mitigation Banking Credits, this Instrument outlines the establishment, use, operation, protection, and maintenance of multiple Mitigation Bank Sites (also referred to as "Addenda" by the UMBI). The Mitigation Bank Sites are both constructed previously (existing) with surplus credit (legacy sites) and new sites that will provide mitigation credit throughout the State of Maryland, where unavoidable impacts related to MDOT agencies' transportation projects and supporting infrastructure are necessary.

The Mitigation Bank Sites are intended solely for use by MDOT agencies, including: SHA, MDTA, MTA, MAA, MPA, and MVA. Projects for MDOT agencies will be coordinated through SHA. SHA will serve as the official Sponsor for MDOT agencies for the UMBI.

## C. Goals and Objectives

Whereas, the goals and objectives of the UMBI are to restore, enhance, create, or preserve self-sustaining natural functional streams and wetlands (including associated upland buffers) to replace the functions and values lost due to unavoidable adverse impacts to "Waters of the U.S." (streams and wetlands) by authorized activities within the authorized service area, the restoration, enhancement, creation or preservation of streams and wetlands and associated improvements shall be designed to achieve the intended level of aquatic ecosystem functionality with minimal human maintenance.

## D. Location and Ownership of Mitigation Bank Sites

Whereas, the Sponsor intends to acquire, or secure by easement or other sufficient real estate instrument, lands within the State of Maryland for inclusion under this UMBI. The Sponsor will propose a Mitigation Site Plan for each prospective Mitigation Bank Site. Each new site will be included through an addendum to the UMBI, which will be governed by its provisions and included in its appendices.

The Sponsor intends to be fully responsible for the establishment, construction, accounting, maintenance, protection, and management of each Mitigation Bank Site approved and implemented under the UMBI.

## E. Mitigation Site Plans

Whereas, a Mitigation Site Plan will be submitted for each Mitigation Bank Site, the Sponsor proposes to develop in accordance with this Instrument each Mitigation Bank Site and associated Mitigation Site Plan by the terms and conditions set forth in this Instrument. The Mitigation Site Plan(s) will discuss existing conditions and proposed activities for the Mitigation Bank Site(s), as well as specifics on Mitigation Bank Site operations and requirements. The Mitigation Site Plan will include any requested clarifications/alternatives to specific clauses/terms of the UMBI document for consideration by the IRT for a specific site.

The Mitigation Site Plan(s) will include the following, at a minimum:

1. ***Objectives:*** Description of resource type(s) based on accepted classification (e.g., Cowardin, Hydrogeomorphic (HGM), and/or Rosgen); amount(s), including acreage and linear footage of aquatic resource type; method of compensation (re-establishment, rehabilitation, enhancement, establishment/creation, restoration, or preservation); and how the anticipated functions of the mitigation project will address watershed needs.

2. ***Site Selection:*** Description of factors considered during the site selection process (CFR 332.3(d) – General Compensatory Mitigation Requirements, Site Selection). Site selection should include the following: Consideration of watershed needs; on-site alternatives to determine the best design approach to meet project objectives; restoration potential; and, feasibility of accomplishing ecologically self-sustaining aquatic resources restoration, enhancement, creation, or preservation at the mitigation site(s). The description should include hydrologic characteristics; soil characteristics; whether the site is contiguous or connected to other natural, protected aquatic habitat areas; considerations

5. ***Determination of Credits:*** Description of the number and type of resource Credits generated by the functional improvements of the project will be provided, including a brief explanation of the rationale for this determination.

6. ***Mitigation Work Plan:*** Detailed specifications and descriptions of the mitigation project, including: Geographic boundaries; construction methods, timing, and sequence; sources of water, including connections to existing Waters of the U.S.; methods for establishing the desired plant community; plans to control invasive species; proposed grading plan, including elevations and substrate slopes; soil management; and, erosion control measures. For stream mitigation projects, the mitigation work plan may also include other relevant information, such as plan form geometry, channel form (e.g., typical channel cross-sections), watershed size, design discharge, and riparian area plantings.

7. ***Maintenance Plan and Initial Monitoring Period Budget:*** Budget, description, and schedule of maintenance and monitoring requirements to ensure the continued viability of the resource once initial construction is complete.

8. ***Performance Standards:*** Ecologically-based standards used to determine whether the mitigation project is achieving its objectives. Further details on performance standards are included in Exhibit A: Performance Standards and Monitoring Protocols, including IRT approved (as of the date of the UMBI execution) Performance Standards for nontidal and tidal wetlands. As the IRT develops additional Performance Standards for streams, buffers, and other resources, and updates the Performance Standards for nontidal and tidal wetlands, they will be incorporated by reference into the UMBI. Performance Standards for any mitigated resources will be included in specific Mitigation Site Plans by the Sponsor. Sponsor may propose, and IRT Chairs in consultation with IRT members may approve, site specific performance standards in any Mitigation Site Plan for any resource for any proposed Mitigation Bank Site. The IRT could use best professional judgement to determine whether performance standards are met. Should Sponsor-proposed performance standards be approved for a site, they will hold precedence over those performance standards included in Exhibit A.

9. ***Monitoring Requirements:*** Monitoring requirements for the Mitigation Site Plan will refer to the standard set in the UMBI, except in situations where the Sponsor and IRT determine site-specific requirements are more appropriate. Site-specific monitoring will be included in the Mitigation Site Plan. Site-specific monitoring will include a description of parameters monitored to determine whether the mitigation project is on track to meet performance standards and if adaptive management is needed. Further details regarding monitoring requirements are included in Exhibit A: Performance Standards and Monitoring Plan.

10. ***Long-term Management Plan:*** Description of how the mitigation project will be managed after performance standards are achieved and the Mitigation Bank Site is closed. The Long-term Management Plan is designed to ensure long-term sustainability of the resource, including long-term financing mechanisms, ownership of the site, and the party responsible for long-term management. SHA intends to maintain responsibility for long-term management of each Mitigation Bank Site. Further details regarding the Long-term

of easements, liens, right-of-ways, reserved timber or mineral rights on the Mitigation Bank Site or adjoining areas; rare, threatened, or endangered species; historic and cultural resources; and, removal of barriers to fish passage. In addition, compatibility with current watershed targeting reports (e.g., Watershed Resources Registry, Prioritizing Sites for Wetland Restoration, Mitigation, and Preservation in Maryland and Maryland Coastal Bays[1], state wildlife plans, etc.) should be considered. Site selection must include a watershed assessment to determine the health of the watershed and its influence on the proposed project area. The intent is that the Mitigation Bank Sites are selected and designed to be self-sustaining once performance standards are achieved. Selection includes appropriate siting to ensure the surrounding landscape and hydrological conditions will support long-term sustainability of the mitigation project.

3. ***Site Protection Instrument:*** Description of the legal arrangements and site protection instrument, including site ownership used to ensure the long-term protection of the Mitigation Bank Site. Title report, title insurance, and property assessment and warranty for the compensatory mitigation property should be provided with the site protection instrument. The Site Protection Instrument must meet the requirements of 33 CFR 332.7(a) – Compensatory Mitigation for Losses of Aquatic Resources, Site Protection and must be approved by the USACE District Engineer and MDE. Further details regarding site protection are included in Section IV.E. – Real Estate Provisions and Exhibit C: Declaration of Covenants and Restrictions. Site Protection Instrument language can be modified for a specific Mitigation Bank Site upon approval of both Sponsor and IRT Chairs in consultation with the IRT, if such changes support achievement of project goals. In the event Sponsor does not own a Mitigation Bank Site (obtains an easement), the Sponsor will coordinate with IRT through its Chairs to develop appropriate conservation easement language for the site until such time the IRT has approved a standard template for use in the State of Maryland.

4. ***Baseline Information:*** Description of ecological characteristics of the proposed Mitigation Bank Site. Baseline information includes description of historic and existing plant communities, historic and existing hydrology, soil conditions, acreage and cover type, boundary survey, location map, geographic coordinates for the site, representative geo-referenced photographs, and other characteristics appropriate to the type of resource proposed as compensation. The baseline information should include a delineation of Waters of the U.S. For stream restoration, the baseline information includes: A site-level, function-based assessment, restoration potential of the site, and a survey of the channel cross-section and longitudinal profile, form, and profile indicative of each stream type, condition, class, and order, as determined in the field or reference reach that will be part of the Mitigation Site Plan. Baseline surveys should be sufficient to develop a Mitigation Site Plan and support the goals of the Mitigation Bank Site.

[1]Available for download at: http://www.mde.state.md.us/programs/Water/WetlandsandWaterways/AboutWetlands/Pages/Programs/WaterPrograms/Wetlands_Waterways/about_wetlands/prioritizingareas.aspx#Maryland.

Management Plan are included in Exhibit F: Long-term Management and Maintenance Plan. Exhibit F will serve as the base template for site specific Long-term Management and Maintenance Plans for each Mitigation Bank Site. Exhibit F will be amended as appropriate to meet each Mitigation Bank Site objectives. Should the responsibility for Long-term Management be transferred to a third party for a Mitigation Bank Site, the conditions of the Long-term Management Plan become the responsibility of the third party. Should Sponsor request that a Mitigation Bank Site be transferred to a third party, Sponsor and IRT Chairs, in consultation with IRT, will develop appropriate mechanisms for assurances and criteria for the transfer.

11. ***Adaptive Management Plan:*** Management strategy to address unforeseen changes in site conditions or other components of the mitigation project, including the party or parties responsible for implementing adaptive management measures.

12. ***Financial Assurances:*** Financial plan required for contingencies, (for example, monitoring and maintenance, catastrophic events, and long-term management activities, associated with the Mitigation Site Plan) based upon the standards set forth in Section IV.D of this Instrument. The standards are to be used except in unique situations where the Sponsor and IRT Chairs, in consultation with the IRT members, determine differently. In the case of the latter, a description of financial assurances will be added to the Mitigation Site Plan detailing how financial assurances are sufficient to ensure a high level of confidence for successful completion of the mitigation project in accordance with its Performance Standards. Exhibit D: Financial Assurances contains a letter describing SHA's programs for assuring funds are dedicated and available for the development, monitoring, maintenance, protection, and long-term management of Mitigation Bank Sites, and a template for preparing budgets for financial assurances for Mitigation Bank Sites.

13. ***Service Area:*** A description, justification, and map of the proposed service area for each Mitigation Bank Site conforming to the terms herein.

14. ***Credit Release Schedule:*** A credit release schedule that is tied to achievement of specific milestones conforming to the terms set forth within Exhibit B: Schedule of Credit Availability and its updates. Site specific Credit Release Schedules may be included in a Mitigation Site Plan for consideration by both parties for that particular site.

15. ***Other Information:*** The IRT may require additional information, as necessary, to determine the appropriateness, feasibility, and practicability of the mitigation project. Additionally, individual modifications or exceptions may be required to suit the local requirements of an individual watershed and will be considered on an as-needed basis in the addendum process.

## F. Project Description

Whereas, in accordance with this Instrument, the Sponsor will establish and/or maintain Mitigation Bank Sites in compliance with the provisions of this Instrument and any Mitigation Site Plans developed pursuant to it, the Sponsor shall maintain each Mitigation

Bank Site in such condition in accordance with approved Performance Standards. The Sponsor is responsible for compliance with this Instrument and any subsequent Mitigation Site Plans until each Mitigation Bank Site is closed in accordance with the Bank Closure procedures defined herein. All released Credits must be debited for bank closure. No additional Credits can be sold after Mitigation Bank Site Closure. If a third party or long-term steward that will assume responsibilities for long-term management, including the long-term funding mechanism, is not identified, the Sponsor shall remain legally responsible for long-term management of the Mitigation Bank Site.

**G. Baseline Conditions**

Whereas, the Sponsor has established, or will establish, baseline conditions for all Mitigation Bank Sites having Mitigation Site Plans developed pursuant to this Instrument, such baseline conditions will describe the existing conditions of the Mitigation Bank Site and how conditions support the goals of the Mitigation Bank Site.

**H. Establishment and Use of Credits**

Whereas, in accordance with the provisions of this Instrument and upon satisfaction of the Performance Standards contained herein or as modified in site-specific Mitigation Site Plans, mitigation Credits can be used as compensatory mitigation in accordance with all applicable requirements for permits/authorizations/determinations issued under Section 404 of the Clean Water Act, Section 10 of the Rivers and Harbors Act, Maryland's Nontidal Wetland Protection Act, Maryland's waterway construction statute, Maryland's Tidal Wetlands Act, and Section 401 Water Quality Certification and associated regulatory programs. The sale, conveyance, or transfer of Credits must be approved by the permitting agencies on a case-by-case basis and include all natural services, functions, and values associated with the resource from which Credits were derived. Credits will be tracked according to habitat type. The preliminary number of Credits and the number of Credits available for initial release will be determined based upon the initial approved Mitigation Site Plan. If the number of total Credits varies with the approval of the Mitigation Site Plan, the as-built plan, or subsequent monitoring reports, the number of Credits available will be adjusted in accordance with the terms and conditions contained herein. Under no circumstances may the same credits be used to provide mitigation for more than one permitted activity. No Credit may be sold or used in any way in relation to another permit requirement to satisfy the requirements of any other program or as compensation for another resource unless approved by the Chairs of the IRT after consultation with the IRT.

**I. IRT**

The IRT consists of the agencies listed below. Each agency may replace its individual representative by notification, in writing, to the Co-Chairs, IRT members, and the Sponsor.

- USACE Baltimore District: Co-Chair
- MDE, Wetlands and Waterways Program: Co-Chair
- EPA
- USFWS
- NMFS
- DNR

- CAC
- MHT

**J. Disclaimer**

Whereas, this Instrument does not warrant the ultimate viability of any Mitigation Bank Site as a compensatory mitigation mechanism, it represents the Sponsor's full faith efforts to execute the spirit of the Clean Water Act. All parties acknowledge the permitting and resource agencies have statutory responsibilities over resources that are independent and separate from actions identified in this Instrument. The Sponsor or IRT may suggest deviations from the standard in the Instrument on a case-by-case basis when founded through a specific scientific argument and agreed on by the IRT Chairs (acting on behalf of the IRT), in writing. The parties understand that agency signature to this Instrument has no effect on the need for consultation between USACE, MDE, and the resource agencies or on the nature and extent of recommendations or conditions made in any future project consultation. Nor can this Instrument be considered to circumscribe or limit the extent of any potential consultative recommendation made by a resource agency in the future.

USACE approval of this Instrument constitutes the regulatory approval required for the SHA UMBI to be used to provide compensatory mitigation for the Department of Army permits pursuant to 33 CFR 332.8(a)(1) – Mitigation Banks and In-lieu Fee (ILF) Programs, General Considerations. This Instrument is not a contract between the Sponsor or Property Owner and USACE or any other agency of the federal government. Any dispute arising under this Instrument will not give rise to any claim by the Sponsor or Property Owner for monetary damages. This provision controls, notwithstanding, any other provision or statement in the Instrument to the contrary.

**K. Transfer of Liability**

Whereas, in accordance with 33 CFR Part 332.3(l)(2) – General Compensatory Mitigation Requirements, Party Responsible for Compensatory Mitigation, the Sponsor agrees to assume responsibility for a permittee's compensatory mitigation requirements, once that permittee has secured the appropriate number and resource type of Credits from the Sponsor, and the USACE District Engineer and MDE have approved the use of Mitigation Bank Site Credits, and received the documentation described in CFR 332.3(l)(3). The UMBI will only be used for permit activities for MDOT agencies' improvement projects using Mitigation Bank Sites developed by MDOT (through SHA).

**L. Exhibits**

Whereas, the following Exhibits are incorporated by reference to this Instrument:

- Exhibit A: Performance Standards and Monitoring Protocols
- Exhibit B: Schedule of Credit Availability
- Exhibit C: Declaration of Restrictive Covenants (USACE template)
- Exhibit D: Financial Assurances: Letter and Cost Estimate Template
- Exhibit E: Compensatory Mitigation Rule Timeline for Bank or ILF Instrument Approval
- Exhibit F: Long-term Management and Maintenance Plan Template

**M. Addenda**

Whereas, Mitigation Site Plans shall be included as individual addenda and additional Mitigation Bank Sites may be included through Addenda, Addendum 1 is incorporated by reference to this Instrument:

- Addendum 1: Albaugh Mitigation Bank Site– Mitigation Site Plan

NOW, THEREFORE, the parties hereto agree to the following:

## II. DEFINITIONS

All terms defined in Mitigation Rule 33 CFR Part 332.2 – General Compensatory Mitigation Requirements, shall have the meanings provided therein and incorporated by reference herein. Other definitions for terms used in this Instrument are included for convenience:

BUFFER ENHANCEMENT – Improvements to buffer areas including supplemental plantings.
BUFFER ESTABLISHMENT – Establishment of buffer areas where none were previously present. Buffer establishment includes planting native species and associated measures such as fencing, posting, and livestock exclusion.
BUFFER RE-ESTABLISHMENT – Removal of invasive species in a buffer and then replanting with native species.
DEFAULT –The omission or failure to perform any duty or responsibility under this instrument.
FINANCIAL ASSURANCES – A mechanism or instrument that ensures that a sufficient amount of money will be available for use to complete or replace a mitigation provider's obligations to implement a required mitigation project and meet specified ecological performance standards and Long Term Management requirements. Financial Assurances may be required for varying aspects associated with a mitigation bank site, including : a) A mechanism to guarantee the initial release of mitigation bank ; b) the maintenance and monitoring fund; c) the catastrophic event fund, and d) the long-term management fund.
INITIAL MONITORING PERIOD – The period during which the Sponsor actively maintains the Mitigation Site prior to transfer to a long-term steward upon bank closure.
INVASIVE SPECIES – Invasive species are identified on the 2010 National Park Service/U.S. Fish and Wildlife Service document "Plant Invaders of the Mid-Atlantic Natural Areas" and the Maryland Invasive Species Council "Invasive Species of Concern in Maryland." Other species (e.g., *Phalaris arundinacea* and *Typha* spp.) may also be considered as invasive species by the IRT.
LEDGER – An accounting of Credits and Debits.
LEGACY SITES – Existing mitigation/restoration sites to be used by MDOT that were previously approved by the USACE and/or MDE or in progress or constructed as compensatory mitigation or other restoration purposes prior to approval of the UMBI.
LONG-TERM STEWARD – The landowner, easement holder of the Mitigation Bank Site lands, or other party charged with long-term maintenance and management responsibility. The long-term steward can be designated at any time; however, a Long-Term Steward can only take on the responsibility after Performance Standards have been met. In some cases, the Bank Sponsor may also be the Long-Term Steward.
MITIGATION SITE PLAN or MITIGATION PLAN (referring to an individual site) – A detailed physical restoration, site protection, maintenance, monitoring, financial, and reporting plan that

identifies specifically how aquatic resources and associated upland buffers will be restored, created, enhanced, preserved, managed and maintained as a Mitigation Bank governed by this Instrument.
MONITORING YEAR 1 (ONE) – The end of the first complete growing season following completion of construction activities, including planting.
SITE PROTECTION INSTRUMENT – a real estate instrument intended to protect, restrict or preserve the land associated with a Mitigation Bank; that will be recorded in the land records; may take the form of an Easement, a Declaration of Restrictive Covenants, or other similar document.
STREAM REACH – The length of a stream identified as representing a uniform set of physical, chemical, and biological conditions. It is the principal sampling unit for collecting physical, chemical, and biological data. In practice, a reach is often defined by a repeating sequence of channel units (riffle-pool-run sequence), by a sampling convention of channel units (e.g., 25 stream width), or by the length of uniform mitigation activities (e.g., re-establishment, rehabilitation, enhancement, or preservation).
UMBRELLA MITIGATION BANK – A group of Mitigation Bank Sites located in a distinct geographical area that share a single Bank Sponsor and are governed by a single Mitigation Banking Instrument. Inclusion of additional Mitigation Bank Sites under an Umbrella Mitigation Banking Instrument will require modification of the Instrument. Mitigation Plans for all Mitigation Bank Sites operating under an Umbrella Mitigation Banking Instrument are considered part of the Instrument. Separate credit ledgers and financial assurances shall be maintained for each Mitigation Site.

## III. AUTHORITIES

The establishment, use, operation, protection, and maintenance of the UMBI and supporting Mitigation Bank Sites are carried out in accordance with the following laws and regulations (authorities):

### *FEDERAL*

1. Clean Water Act (33 U.S.C. §1251 et seq.)
2. Rivers and Harbors Act (33 U.S.C. §401 et seq.)
3. National Environmental Policy Act (42 U.S.C. §4321 et seq.)
4. Regulatory Programs of the Corps of Engineers, Final Rule (33 CFR Parts 320-332)
5. Fish and Wildlife Coordination Act (16 U.S.C. §661 et seq.)
6. Guidelines for Specification of Disposal Sites for Dredged or Fill Material (40 CFR Part 230) (Section 404(b)(1)
7. Endangered Species Act (16 U.S.C. §1531 et seq.)
8. National Historic Preservation Act (16 U.S.C. §470)
9. Magnuson Stevens Fishery Conservation and Management Act (16 U.S.C. §1801 et seq.)
10. Memorandum of Agreement between EPA and the Department of the Army concerning the Determination of Mitigation under the Clean Water Act Section 404(b)(1) Guidelines, February 6, 1990
11. Regulatory Guidance Letter No. 05-01. U.S. Army Corps of Engineers, February 14, 2005
12. Regulatory Guidance Letter No. 08-03. U.S. Army Corps of Engineers, October 10, 2008

### *STATE*

1. Maryland Nontidal Wetlands Protection Act, Environmental Article, Annotated Code of Maryland, Title 5, Subtitle 9
2. Nontidal Wetlands, Code of Maryland Regulations (COMAR) 26.23
3. Waterway Construction, Environmental Article, Annotated Code of Maryland, Title 5, Subtitle 5
4. Construction on Nontidal Waters and Floodplains, COMAR 26.17.04
5. Tidal Wetlands Act, Environmental Article, Annotated Code of Maryland, Title 16
6. Tidal Wetlands, COMAR 26.24
7. Criteria for Review of Nontidal Wetland Permit Applications, COMAR 26.23.02.04
8. Water Pollution Control, Water Quality, COMAR 26.08.02

## IV. ESTABLISHMENT OF THE BANK (MITIGATION BANK SITES)

### A. Scope of Work

The Sponsor agrees to perform all necessary work at the currently proposed and anticipated future Mitigation Bank Site(s), in accordance with the provisions of this Instrument. The work will establish and maintain aquatic habitats and associated upland buffers, as described in Exhibit A: Performance Standards and Monitoring Protocols and Addendum 1: Albaugh Mitigation Bank Site – Mitigation Site Plan for the currently proposed Mitigation Bank Site and future Mitigation Sites, until demonstrated to the IRT (agencies acting through the Chairs) that each project complies with the provisions contained herein, or until all Credits are sold, whichever is the latter. Work, as described above, includes implementing the Mitigation Site Plan(s), appended individually following Exhibit F – Long-term Management and Maintenance Plan.

Prior to Debiting, the following must be completed:

- Instrument approved by the IRT Chairs in consultation with IRT members,
- Mitigation Site Plan approved by the IRT Chairs in consultation with IRT members,
- Mitigation Bank Site secured,
- Site Protection Instrument in place,
- Long-term Maintenance and Management Plan established, and
- Proof of Financial Assurance (completed budget estimate).

### B. Permits

The Sponsor will obtain all appropriate permits or other authorizations needed to construct and maintain the Mitigation Bank Site(s), prior to debiting any Credits beyond the initial release. This Instrument does not fulfill, substitute, or affect such authorizations.

The Sponsor shall not utilize a non-reporting Nationwide, Regional, or State Programmatic General Permit under Section 10 of the Rivers and Harbor Act, Section 404 of the Clean Water Act, or state general permits to impact Waters of the U.S. and/or state waters on any

Mitigation Bank Sites. Notification to the USACE and MDE shall be required for the proposed use of any Nationwide Permit, Regional General Permit, or State General Permit in connection with the approval of a Mitigation Bank Site.

**C. Mitigation Site Plan**

Each Mitigation Bank Site shall be established in accordance with the Mitigation Site Plan. The Mitigation Site Plan(s) are incorporated, by modification, as individual Addenda to this Instrument for each proposed Mitigation Bank Site, according to 33 CFR 332.8 – Mitigation Banks and In Lieu Fee (ILF) Programs.

The Sponsor will submit a written modification request, including a Mitigation Site Plan, to the IRT in accordance with 33 CFR 332.4(c) (2) through (14) – Planning and Documentation, Mitigation Plan. In addition, the following information must be provided: Site location (latitude/longitude, vicinity map, river basin, and eight-digit hydrologic unit code (HUC)), proposed service area, budget, accounting and reporting procedures, determination of credits, credit release schedule, description of existing functions and services, and how functions and services will be improved or enhanced through specific mitigation measures.

The Credits will become available, upon reaching specific milestones, in accordance with the schedule specified in the approved Mitigation Site Plan, as discussed in Section V.F – Schedule of Credit Availability of this Instrument and Exhibit B: Schedule of Credit Availability. If the Mitigation Bank Site will be developed in phases, the phases must be described in the initial Mitigation Site Plan. Each phase must be acceptable to the IRT Chairs (based on consultation with the IRT members) as a stand-alone Mitigation Bank Site, should the subsequent phases not be constructed. An approved Mitigation Site Plan will include all documentation agreed to by the IRT Chairs (based on input from the IRT members) and Sponsor including: service area map, credit ratios, credit release schedule, performance standards, monitoring protocols, and associated documentation (site specific declaration of covenants and restrictions, conservation easements if appropriate, etc.). Templates included in the UMBI will be converted to site specific documents in the approved Mitigation Site Plan.

If physical improvements for subsequent phases are not completed within five years of the last date of signature or approval of the initial Mitigation Site Plan or closure of a previous phase of the Mitigation Bank Site, whichever is longer, the approved Mitigation Site Plan for the uncompleted phases will no longer be considered valid under this Instrument. The Sponsor may reinitiate the process by submitting a request for modification of the approved Instrument, including a Mitigation Site Plan, to the IRT for each subsequent phase consistent with the current IRT documentation or any current template approved for use in Maryland on the date of submission of the modification. Each modification requires public and IRT comment. Approval of initial phases in no way obligates the IRT to approve or accept subsequent phasing requests. New authorizations may also be required by the USACE and MDE.

**D. Utilization and Requirements for Financial Assurances**

Given that the Sponsor is a government agency, the Sponsor provides that the fiscal resources necessary for site development, acquisition, construction, monitoring, maintenance, remedial

measures, and long-term management and protection from catastrophic events for all Mitigation Bank Sites will be supported by federal and state transportation funds. When site maintenance is needed, the Sponsor commits to establish, from existing transportation funds, a budget for necessary expenditures. For all Mitigation Bank Sites, the securing of funding and level of funding, whether maintenance is performed by Sponsor or its contractor, will be based on the scope and nature of the maintenance at the time the need is identified.

The Sponsor will ensure funds are available to meet the mitigation requirements for Credits transferred:

> Funds outlined in the approved Mitigation Bank Site budgets shall be earmarked, held in a program account, and disbursed as work is completed to construct, operate, and monitor the individual Mitigation Bank Sites, and dispersed as needed to manage the Mitigation Bank Sites, including contingency and remedial actions.

Specific actions/measures Sponsor will take to develop and maintain a dedicated funding stream for compensatory mitigation associated with this UMBI are described in the Financial Assurance letter included in Exhibit D: Financial Assurances. In addition, a template for projecting budgets/funding needs for a Mitigation Bank Site has been included in Exhibit D. The template will be completed for each Mitigation Bank Site and included in the Mitigation Site Plan for IRT review.

**E. Real Estate Provisions**

The Sponsor shall record a Site Protection Instrument (SPI) for each Mitigation Bank Site and provide a copy of the recorded SPI to the IRT Chairs within 30 days of recordation. The Sponsor shall receive written approval from the IRT Chairs prior to recording a Site Protection Instrument. The Site Protection Instrument shall be recorded in the chain of title for the Mitigation Bank Site property and ensure the right of ingress and egress for the Bank Sponsor, IRT, and Long-term Steward of the Mitigation Bank Site. Sample Site Protection Instrument is included as Exhibit C: Declaration of Restrictive Covenants.

The Site Protection Instrument, Site Management Plan, or other long-term protection mechanism may not be altered, amended, modified, vacated or terminated in whole, or in part, without the express written approval of the IRT, acting through the Chairs. Each SPI shall contain a provision requiring the Sponsor or Long-term Steward to provide the IRT Chairs 60 days advance notice before any action is taken to void or modify the SPI, Site Management Plan, or other long-term protection mechanism.

**F. As-built Report/Survey**

The Sponsor agrees to submit an As-built Report/Survey to the IRT within 60 days following completion of the construction and planting (as appropriate) for each Mitigation Bank Site, or respective phase(s) of a Mitigation Bank Site, if construction is to occur in defined development phases as described in the Mitigation Site Plan. If the site is built in accordance to the approved plan, written notice to the IRT saying as much can replace the submission of as-built plans. The IRT Chairs will notify the Sponsor and schedule a compliance site visit to verify that the Mitigation Bank Site has been successfully completed in accordance with the Mitigation Site Plan. Within 60 days of this compliance visit, the IRT Chairs will notify the

Sponsor acknowledging approval/confirmation work was successfully completed according to the Mitigation Site Plan or make a request to the Sponsor for additional information.

The As-built Report/Survey will depict the completed portions of the Mitigation Bank Site for that operational year, including a plan view of the constructed/restored wetlands/streams and adjacent buffers with locations of all permanent sampling stations, photo stations, and monitoring wells. In addition, the Report will include a survey showing finished grades, and, for stream projects – cross sections and longitudinal profile, including elevation of constructed structures (e.g. berms, weirs, etc.), planting zones, phases, and densities. The report will describe, in detail, substantial deviations from the requirements described in the Mitigation Site Plan(s) submitted to the IRT and any revised credit breakdown requiring approval from the IRT, acting through its Chairs, for substantial changes to the Mitigation Site Plan. The report will include photographs of the completed Mitigation Bank Site taken from permanent photo stations. Based on the contents of the report, the IRT Chairs, on behalf of the IRT, may request changes to the site.

The stream as-built information, if applicable, will be used as a comparative measure for stream channel stability and referenced in each Monitoring Report, in accordance with the terms found in Section VI.B. and VI.C. Performance Standards and Monitoring Requirements for a stream Mitigation Bank Site will be submitted with future modification requests made to this UMBI and/or addenda to the UMBI.

## V. OPERATION OF THE BANK

### A. Service Area

Each Mitigation Bank Site under this Instrument will provide mitigation to compensate for impacts to Waters of the U.S. and/or state Waters, including wetlands and streams, within the service areas defined in each Mitigation Site Plan. For projects with overlapping service areas, selection of the appropriate Mitigation Bank Site Service Area will be done on a case-by-case basis as part of the permit decision for the project. In general, the service area will be ecologically justified for each project.

There are 22 Federal eight-digit HUCs within the State of Maryland referenced in this UMBI when the Cheat eight-digit HUC is included (See Figure 1). The Upper and Lower Chesapeake Bay HUCs are open water, which will not be utilized in this UMBI, except when associated with tidal waters or tidal wetland restoration projects. There are six River Basins within the State of Maryland referenced in this UMBI (See Figure 2). There are five Physiographic Provinces in the State of Maryland referenced in this UMBI (See Figure 3).

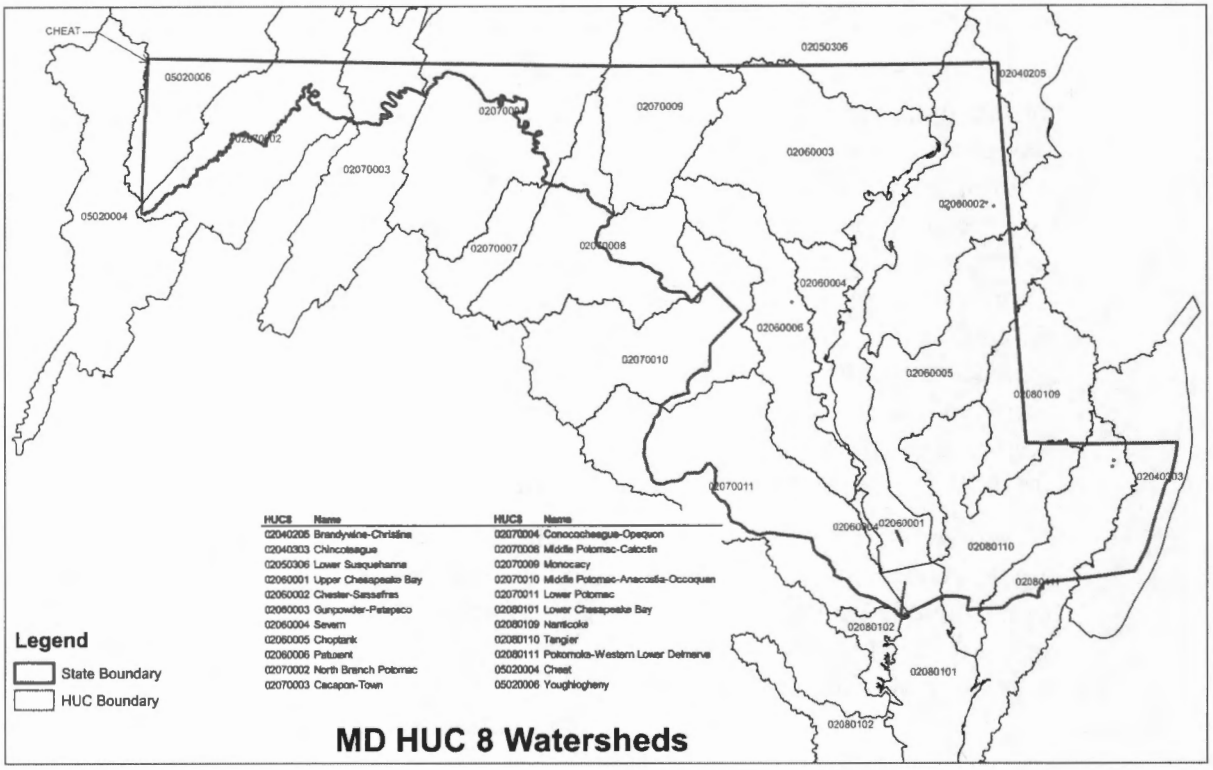


**Figure 1: Maryland HUC8 Watersheds Map**

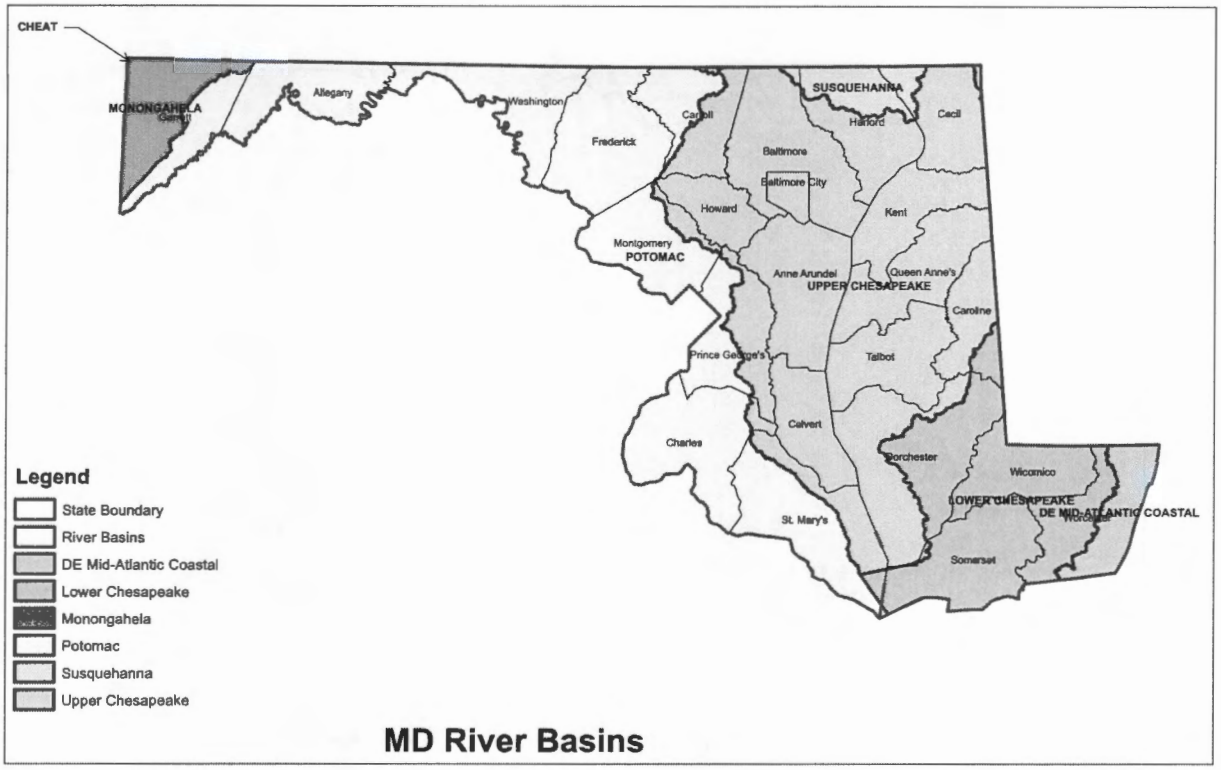


**Figure 2: Maryland River Basins Map**

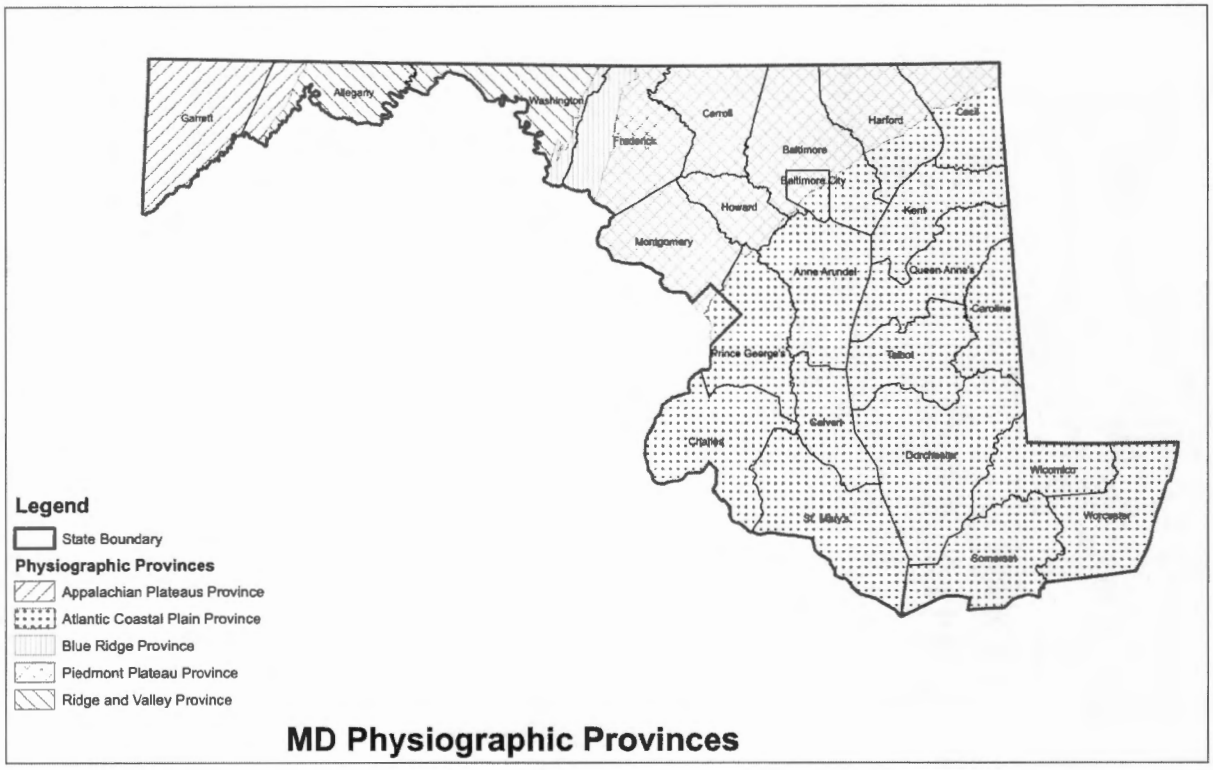


**Figure 3: Maryland Physiographic Provinces Map**

Service Area will be based on the 8-digit HUC watersheds (HUC8). The HUC8 in which the Mitigation Bank Site is located will serve as the Primary Service Area while secondary Service Area will generally be adjacent HUC8 units within the same River Basin and within the same physiographic province. There may be cases in which adjacent HUC8 units or physiographic provinces within a HUC8 may be considered part of the primary service area. However, there may be cases where splitting HUC8 on physiographic province may not be desired. Such situations, will be considered on a case by case basis. For example, although the Blue Ridge province spans multiple HUC8 watersheds, it may not be beneficial to split up the Blue Ridge Province in certain instances. For example, a Mitigation Bank Site located within the Lower Potomac HUC8 would have a secondary service area consisting of the Middle Potomac-Anacostia-Occoquan HUC8, but limited to that portion which only lies below the Piedmont Physiographic Province. Physiographic Province divisions are only used for the Secondary Service Area. Any Primary Service Area will not be divided by Physiographic Province. Figure 4 includes a map depicting the six river basins, five physiographic provinces, and 22 HUC8 sub-watersheds.

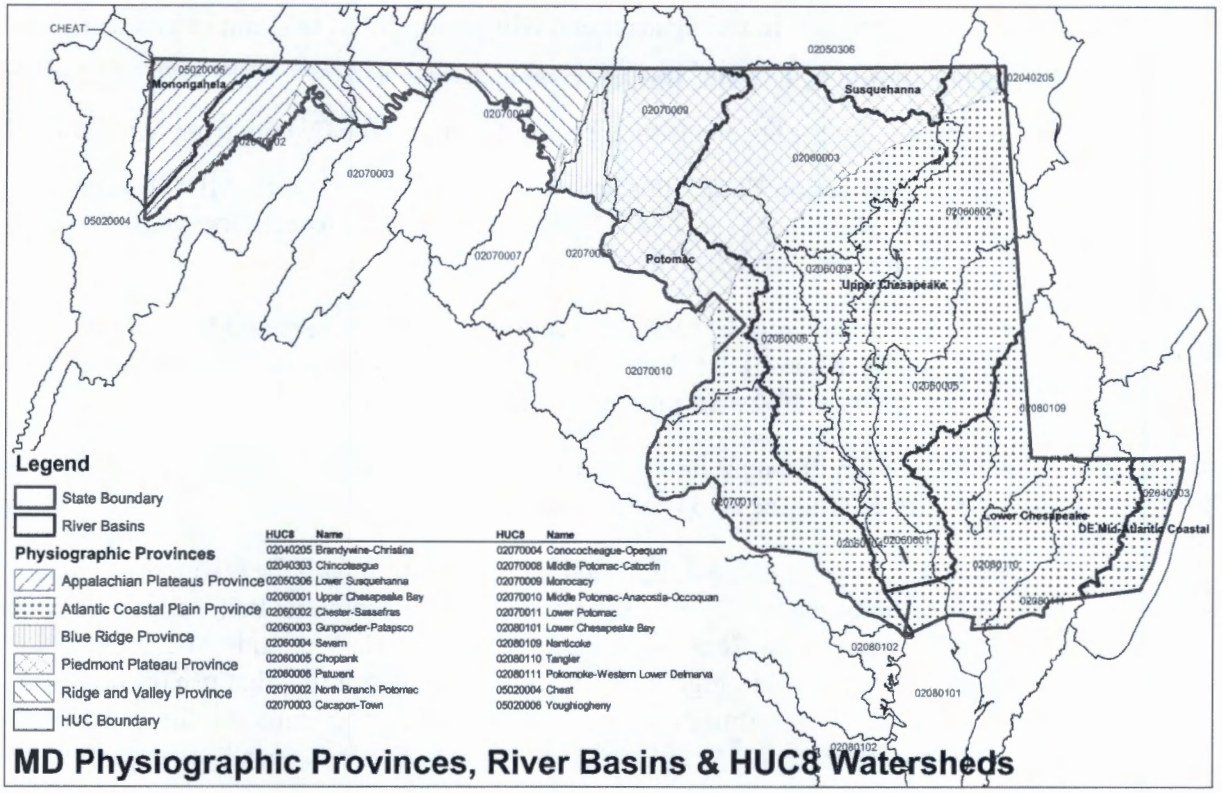


**Figure 4: Service Area Map – HUC8, River Basins, and Physiographic Province**

The service areas are 1) consistent with current watershed service areas, (2) considered adequate size to be economically feasible for wetland/stream banking, and (3) allow for watershed-based mitigation approaches.

At the sole discretion of the USACE and/or MDE (Co-Chairs), the Mitigation Bank Site may be used to compensate for impacts outside the Service Area. Compensation will be determined on a case-by-case basis as part of the project-specific permit decisions and may require higher ratios for impacts outside the primary Service Area.

## B. Access

The Sponsor and/or the current property owner will allow, or otherwise provide, in perpetuity, access to the Mitigation Bank Sites by the Sponsor, members of the IRT or their agents or designees, the Long-term Steward or the Long-term Steward's agents or designees, and the easement holder (if any), as reasonably necessary, for the purpose of inspection, compliance monitoring, and remedial action inspections consistent with the terms and conditions of this Instrument. Access will be granted throughout the periods of establishment, construction, monitoring, operation, maintenance, and long-term management. Inspecting parties shall not

unreasonably disrupt or disturb activities at the Mitigation Bank Sites and adhere to the restrictions identified in this Instrument, Mitigation Site Plan, and/or conservation easement.

**C. Projects Eligible to Use the Bank**

The following types of projects may be eligible to use the Credits from Mitigation Bank Sites:

- The Mitigation Bank Sites are intended solely for use by MDOT agencies, including: SHA, MDTA, MTA, MAA, MPA, and MVA. Projects for MDOT agencies will be coordinated through SHA.

- All activities regulated under Section 10 of the Rivers and Harbors Act; Sections 401 and 404 of the Clean Water Act; and located within the Service Area of a Mitigation Bank Site established pursuant to this Instrument.

- Use of Credits may only be authorized when adverse impacts have been avoided and minimized to the maximum extent practicable.

- If the Corps and/or MDE, based on consultation with the resource agencies, determine that the impacts will result in loss of unique functions that will not be replaced at the Mitigation Bank (e.g., Delmarva bays, Tier II, Wetlands of Special State Concern, etc.), the pertinent regulatory agencies may determine that use of the Mitigation Bank to satisfy the compensatory Mitigation requirements of the authorization is not appropriate.

- Credits may be used to compensate for state and Federal enforcement actions under Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act. Under no circumstances may the same Credits be used to provide mitigation for more than one activity. For example, if a Credit is used to offset impacts pursuant to a Department of the Army permit (DA permit) or State of Maryland Wetlands and Waterways permit, that same Credit may not also be used to confer any type of compensation for other purposes in relation to other programs, such as environmental enforcement, total maximum daily load (TMDL), etc. Credit transactions for any programs other than those involving DA permits must be clearly documented in the specific Mitigation Bank Site ledger.

- Projects in the service area that require a permit under Maryland's Nontidal Wetland Protection Act, Maryland's waterway construction statute, and/or Maryland's Tidal Wetlands Act and their associated regulatory programs, a General Permit (e.g., Nationwide Permit, Regional General Permit ), or an Individual Permit under Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act provided such activities have met all applicable requirements and are authorized by the appropriate agencies.

- Any other project that the IRT or its member agencies deems fit for use of Mitigation Credits.

## D. Assessment Methodology

Credits and Debits for each Mitigation Bank Site established pursuant to this Instrument will be assessed using a combination of acreage or linear feet and habitat type (e.g., Cowardin Classification) methods. There is currently no one regionally adopted functional assessment-based system. Once a regional or statewide functional system is adopted, the new system will be used to evaluate both project impacts and compensation proposals. Table 1 (prepared by IRT) provides a baseline for mitigation ratios for functional crediting purposes until a regional program can be established by the IRT member agencies.

Any acreage or linear foot model shall be based on the physical measurements and habitat type. If the Mitigation Bank Site does not have available in-kind Credits, the permitting agencies may consider use of out-of-kind mitigation from the approved and available Credits under this Instrument. If the mitigation type is out-of-kind, the best professional judgment of the permitting agency shall be used to determine an appropriate ratio of units required. The Sponsor will maintain a unique ledger for each Mitigation Bank Site, which segregates Credits by habitat/wetland classes (palustrine forested (PFO), palustrine, scrub shrub (PSS), palustrine emergent (PEM), and palustrine, open water (POW); and buffer type (wetlands, streams -ephemeral, intermittent, or perennial). The USACE and/or MDE will determine the number and type(s) of Credits required to compensate for the authorized impacts in accordance with Section V.C – Projects Eligible to Use the Bank - of this Instrument.

Once a regional or statewide functional system is adopted, all of the un-debited Credits within Mitigation Bank Sites currently enrolled under this Instrument, can be updated to the new functional-based system via an addendum to the Mitigation Site Plan. After the update has been approved, new sites will use the latest version of established protocols. For existing Mitigation Bank Sites, the beginning balance will be calculated by deleting the prior area or linear foot-based Debits from the total site and determining the total functional mitigation Credits for the remaining un-debited areas within the Mitigation Bank Site based on the approved functional assessment method.

Ratios for "Mitigation Type" are separate from "Impact Type". Ratios for "Impact Type" will be determined during the Permit Review process. All "Mitigation Type" ratios will be determined on a case-by-case basis by the IRT Chairs in consultation with the IRT.

**Table 1: Non-Tidal Wetlands**

| Proposed Mitigation Type | Mitigation Type to Mitigation Credit Ratio | Comments |
|---|---|---|
| Wetland Restoration/Creation | 1:1 | |
| Wetland Enhancement[2] | 2:1 to 10:1 | Ratios depend on amount of functional uplift (e.g., farmed wetland 2:1; *Phragmites* |

[2] Enhancement credits should only be given for significant functional uplift. No credit will be given for "enhancement" of healthy wetland systems (e.g., conversion of healthy emergent wetland to forested wetland).

| | | |
|---|---|---|
| | | control and planting woody species 4:1; *Phragmites* control only 10:1). |
| Nontidal Wetland Preservation[3] | 10:1 | All preservation must meet requirements of Federal Mitigation Rule. Should only be considered for high-quality wetlands within areas of high risk for development/disturbance. Ratio may be higher for Wetlands of Special State Concern. |
| Nontidal Wetland Buffer Enhancement[2] | 15:1 | Generally includes reforestation. |
| Nontidal Wetland Buffer Preservation[2] | 20:1 | Most wetland creation/restoration projects require some wetland buffer around the project. Larger amounts are only considered for high-quality wetlands within areas of high risk for development/disturbance. |
| Out-of-kind | To be determined | Ratios determined on a case-by-case basis. |

**Table 2: Tidal Wetlands**

| **Proposed Mitigation Type** | **Mitigation Type to Mitigation Credit Ratio** | **Comments** |
|---|---|---|
| Wetland Restoration/Creation | 1:1 | |
| Wetland Enhancement[4] | 2:1 to 10:1 | Ratios depend on amount of enhancement and will be determined on case-by-case basis (e.g., *Phragmites* control and replanting 4:1). |

Stream restoration credit ratios will be based on functional uplift. Methods for determining functional uplift will be based on current available methodologies to be referenced in Mitigation Bank Site plans. Sponsor will propose mitigation credit ratios and method for evaluating functional uplift in each Mitigation Site Plan.

The Sponsor will use these ratios to project mitigation needs for proposed improvement projects. The Sponsor recognizes these ratios will ultimately be considered on a case-by-case

[3] Nontidal wetland preservation, buffer enhancement, and buffer preservation should only be considered as a small part of the overall package and must support the wetland system. This may be a larger component of the project if it supports another important habitat, as determined by the Interagency Review Team.

[4] Enhancement credits should only be given for a significant functional uplift. No credit will be given for "enhancement" of healthy wetland systems (e.g., conversion of healthy emergent wetland to forested wetland).

basis to reflect the resources impacted and potential ecological uplift from the proposed mitigation project.

The Credits required for any permit and Credits debited for each impact, are within the sole discretion of the agency issuing such permits for which impacts are authorized and mitigation required (i.e. USACE and/or MDE) and will take into account such factors as the area of wetlands or waters impacted.

## E. Performance Standards

The IRT will use monitoring reports, visual observations, and best professional judgment to determine whether part or all of a Mitigation Bank Site is successful and if corrective actions are warranted. The Performance Standards in Exhibit A: Performance Standards and Monitoring Protocols (including future updates to Performance Standards developed by the IRT for banking), and any additional criteria in the Mitigation Site Plan, will be used to evaluate and determine project success. Site-specific Performance Standards may also be described in the appended Mitigation Site Plans.

The IRT is currently evaluating performance standards for mitigation banking for non-tidal wetlands, tidal wetlands, buffers, and stream restoration projects. Future revisions to the standards are intended to be incorporated for use by Sponsor for Mitigation Bank Sites included in the UMBI. Sponsor and IRT agree that site-specific performance standards developed for Mitigation Bank Sites will prevail in evaluating Mitigation Bank Sites, but best professional judgement may be considered. IRT agrees that future revisions of IRT-developed banking performance standards will continue to provide for site-specific performance standards, and that best professional judgement could be used to determine whether performance standards have been met.

## F. Schedule of Credit Availability

The IRT Chairs will provide, in writing, release of Credits to the Sponsor in accordance with USACE regulations 33 CFR 332.8(g)(2) – General Considerations and (o)(8) – Credit Release Schedule and the schedule described in Exhibit B: Schedule of Credit Availability or as amended in specific Mitigation Site Plans. For phased projects, credit release for each phase will proceed the same as for an individual site. Credits will be tracked according to habitat type.

## G. Transaction Statements

A unique Mitigation Bank Site ledger shall be maintained and updated by Sponsor for each Mitigation Bank Site established under this Instrument. Credits will be tracked according to habitat (streams/wetlands) and vegetation (Cowardin, etc.) type. The ledger will be used to track Credits and Debits summarized in the Annual Ledger Report (Section VI.G.). The Sponsor will update the Regulatory In-Lieu Fee and Bank Information Tracking System (RIBITS) immediately upon successful Debit. Transactions will be updated on RIBITS semi-annually by December 31st and June 30th, showing all transactions for the previous six months and a cumulative tabulation of all transactions to date.

The Sponsor will submit a transaction statement to the USACE and MDE each time Credits are debited or approved. The Sponsor will notify the IRT Chair(s), in writing, of each credit transaction. If requested, the IRT Chairs will distribute the transaction statement to other members of the IRT. A transaction statement shall be made available upon request from any IRT member within 14 days. A transaction statement shall include, at a minimum: Permittee, project name, USACE and MDE permit numbers, type and amount of impact, type and amount of Credit delivered, impact HUC, Mitigation Bank Site name, beginning balances, and ending balances.

### H. Provisions for Uses of the Mitigation Bank Site Areas

In addition to implementation of the terms of this UMBI and compliance with applicable Federal, State, or local regulations or appropriate court orders, the following general activities are permissible, unless the IRT recommends otherwise:

- Monitoring of vegetation, soils, and water.
- Maintenance of wetlands, restored/enhanced stream segments, riparian buffers, trails, bridges, berms, dams, outlet and spillway structures, and other appurtenant facilities, included in the Long-term Management and Maintenance Plan, and as approved by the IRT Chairs in consultation with the IRT members.
- Hunting, trapping, fishing, and other passive recreational uses such as hiking and bird watching.
- Ecological education that does not impact the functions of the Mitigation Bank Site.

The Sponsor shall not use, or authorize the use, of areas within a Mitigation Bank Site or areas surrounding the Mitigation Bank Site over which the Sponsor has control for any purpose that interferes with its conservation. Activities that are prohibited at a Mitigation Bank Site are detailed in Exhibit C: Declaration of Restrictive Covenants.

## VI. MAINTENANCE AND MONITORING OF THE MITIGATION BANK SITES

### A. Maintenance Provisions

The Sponsor agrees to perform all necessary work to maintain each Mitigation Bank Site consistent with the criteria established in each Mitigation Site Plan. The Sponsor shall continue with such maintenance activities until completion of the monitoring period described in Exhibit A: Performance Standards and Monitoring Protocols or as amended in the Mitigation Site Plans (Addenda). Deviation from the monitoring provisions in the approved Instrument and the Mitigation Site Plan(s) is subject to review and written approval by the IRT Chairs, in consultation with the IRT.

### B. Monitoring Provisions

The Sponsor agrees to perform all necessary work to monitor each individual Mitigation Bank Site, as defined under the general parameters set forth below and, more specifically, in Exhibit A: Performance Standards and Monitoring Protocols. The purpose of the monitoring

provisions is to demonstrate compliance with Exhibit A: Performance Standards and Monitoring Protocols and site-specific criteria established in approved Mitigation Site Plan(s). Monitoring of a Mitigation Bank Site will generally last 10 years for PFO/PSS wetlands, but some PEM wetlands may only require five years. Active monitoring shall be conducted during the second, third, fifth, seventh, and tenth years following construction of any phase of the Mitigation Bank Site. The Sponsor shall be responsible for annual monitoring until Bank Closure or until Performance Standards are met, as described below. The Long-term Steward shall be responsible for reporting, in accordance with the Long-term Management Plan.

When the Mitigation Bank Site has met all Performance Standards, but is still operational (i.e., Credits remain available), active monitoring concludes and interim monitoring begins. During the interim monitoring period, the Sponsor is responsible for inspecting and maintaining the site (or phase) to ensure the site (or phase) is continuing to meet Performance Standards. The IRT may conduct periodic site inspections to ensure the site maintenance is completed in accordance with Performance Standards. The Sponsor shall provide the IRT Chairs with an annual interim monitoring report to evaluate how well the site is continuing to meet its Performance Standards.

If the Sponsor fails to submit the annual interim monitoring report to the IRT Chairs by December 31st of each interim monitoring year, the IRT, acting through its Chairs, may suspend the sale or transfer of Credits for that Mitigation Bank Site and, in such event, will notify the Sponsor that the sale or transfer of any Credits is suspended until the appropriate deficiencies have been remedied at the Mitigation Bank Site to the satisfaction of the IRT.

After Bank Closure, the Long-term Steward shall be responsible for reporting in accordance with the Long-term Management and Maintenance Plan. In general, the Mitigation Site Plan for each Mitigation Bank Site will refer to the Monitoring Plan within the UMBI, or future revisions to the Monitoring Plan as approved by the IRT Chairs in consultation with the IRT members, as a guideline and only deviates from it if the individual project requires variation. Monitoring may be terminated, or the extent of monitoring reduced, over part or all of any Mitigation Bank Site, at the discretion of the IRT, acting through the Chairs. Conversely, the USACE and MDE may extend the original monitoring period if Performance Standards have not been met or the Mitigation Bank Site is not on track to meet them.

**C. Reports**

The Sponsor shall submit the following reports to the IRT describing the conditions of the Mitigation Bank Sites and relating conditions to the Performance Standards (Exhibit A: Performance Standards and Monitoring Protocols, or as amended in Mitigation Site Plans (Addenda)) as well as the provisions of Section VI.B – Monitoring Provisions. All submittals shall contain the following certification statement:

> *"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted*

*is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."*

Paper copies of the reports shall be submitted to the IRT and an electronic version shall be submitted to the Chair(s) and/or uploaded to RIBITS by December 31st of each monitoring year. Monitoring reports shall contain, at a minimum, the information identified in Exhibit A: Performance Standards and Monitoring Protocols or the information required for the individual Mitigation Site Plan, if different.

1. *As-built Report/Survey:* For each Mitigation Bank Site, an As-built Report/Survey shall be submitted to the IRT Chairs within 60 days of completion of mitigation activities contained in the applicable Mitigation Site Plan(s). General guidelines for all As-built Reports/Surveys are included below and should be consistent with Section IV.F. of this UMBI. Exhibit A: Performance Standards and Monitoring Protocols and/or the approved Mitigation Site Plan contains information on variations that may pertain specifically to wetlands, streams, or particular types of restoration. Unless a specific project requirement necessitates alteration, all reports shall include:

    a. Title page with Instrument Name, Mitigation Bank Site, Mitigation Bank Site Phase (if applicable), USACE and MDE permit numbers, any requested action (e.g., credit release, IRT review), Sponsor identification, and preparer identification including name, address, phone number, and email address.

    b. Plan view of the constructed/restored wetlands, streams, and/or adjacent buffers depicting design grades and/or any redline revisions using one foot contours with location of all permanent sampling stations, photo stations, monitoring wells, in-stream and stream bank structures, and all permanent cross-sections and profiles.

    c. GIS shapefile depicting the location and extent of the Mitigation Bank Site.

    d. Photographs of the completed Mitigation Bank Site taken from permanent photo stations.

    e. Profiles of in-stream structures, cross-sections (a minimum of two permanent cross sections shall be established in each stream reach), and longitudinal stream profiles taken from permanent locations and compared to design plans.

    f. Pebble counts and summary geomorphologic data, if applicable.

    g. Planting zones, phases, and densities.

    h. Stream gage locations.

    i. As-built elevations.

    j. Revised credit breakdown in the same format as the Mitigation Site Plan.

k. Detailed descriptions of any substantial deviations from the requirements described in the Mitigation Site Plan submitted to the IRT.

l. As-built survey is not required for wetland restoration based solely on plugging or filling ditches or stream mitigation based solely on riparian buffer establishment. For wetland restoration only, the final planting schedule of the Mitigation Bank Site will be provided as documentation of mitigation actions completed onsite subsequent to the completion of planting, which is consistent with the schedule for the As-built Report/Survey.

m. Streams Only: The stream as-built information will be used as a comparative measure for streambank stability and will be referenced in each Monitoring Report as detailed below. For stream channel enhancement, enhancement with structures, and restoration activities, the Monitoring Report shall include physical measurements at the permanent channel cross-section locations consistent with the hydrology and channel design parameters table in the detailed construction plan for each Mitigation Bank Site.

2. *Monitoring Reports:* For each Mitigation Bank Site, monitoring reports will be submitted to the IRT Chairs via an electronic mail attachment, and concurrently uploaded to RIBITS by December 31st of each monitoring year. Monitoring reports will contain all information specified in the approved Mitigation Site Plan, which may include IRT monitoring protocol requirements contained in Exhibit A: Performance Standards and Monitoring Protocols for reporting or updated IRT-approved monitoring protocol included in the approved Mitigation Site Plan, including the following:

   a. Title page indicating the Instrument name, Mitigation Bank Site name, Mitigation Bank Site phase (if applicable), USACE and MDE permit numbers, monitoring year, any requested action (e.g. credit release, IRT review, etc.), Sponsor identification, and preparer identification.

   b. A restatement of the compensation site plan goals, objectives, frequency of monitoring, and Performance Standards (i.e. a summary paragraph defining the purpose of the approved project, a description of how the sites are progressing against Performance Standards set forth in Exhibit A (or as amended in Mitigation Site Plans (Addenda)), and a comparison of the baseline conditions).

   c. Directions to the Mitigation Bank Site(s).

   d. Dates each form of compensatory mitigation began and was completed.

   e. Description of the previous IRT-approved monitoring methods or specific permit-approved protocols. If using sampling methods, include sample size, statistical justification for sampling regime, and data analyses performed. If appropriate, include an assessment of natural population growth by target species.

   f. Description of any structural failures or external disturbances on the Mitigation Bank Site and management activities and/or corrective measures implemented

during the previous year. Description of differences between the approved Mitigation Site Plan and as-built Mitigation Site Plan and rationale for variance. Note that substantial differences between the approved Mitigation Site Plan and the as-built Mitigation Site Plan must be reviewed and approved by the IRT Chairs in consultation with IRT members.

g. Summary data collected per the Monitoring Plan (Exhibit A: Performance Standards and Monitoring Protocols or as amended in Mitigation Site Plans (Addenda)) to substantiate the success and/or potential challenges associated with the compensatory mitigation projects.

h. Stream mitigation reports including status of enhanced and restored stream segments, photographs of established stations, and narrative descriptions of channel development.

i. Figures depicting topography, location of wells, sampling plots, cross-sections, and permanent photo stations. Hand drawings are not sufficient.

j. Post construction aerial photography, if available.

k. Detailed narrative summarizing the conditions of the Mitigation Bank Site with a description of maintenance and monitoring activities.

l. Map depicting areas of previous Credit releases and location and extent of areas associated with current Credit release request(s). Clearly separate Legacy Sites and previously permitted projects, from areas associated with the Mitigation Bank Site.

m. Summary of Credits created by the Mitigation Bank Site and permits debited against the Credits both cumulatively and for the monitoring year. For Legacy Sites, document the acreage of each impacted wetland cover type already encumbered from previously permitted projects.

n. Additional information, as needed, to adequately characterize site conditions.

o. If corrective action is required, the Sponsor shall have the option of developing a corrective action plan and schedule and submitting an updated Monitoring Plan for IRT approval through its Chairs.

p. If the Sponsor fails to submit or is late in submitting a Monitoring Report on three separate occasions, the Sponsor will be subject to IRT restrictions on credit debiting and extensions to the monitoring period.

q. Require some form of monitoring for Mitigation Bank Sites having successfully completed 10-year performance standards (100 percent cumulative credit release), but yet not closed.

3. *Financial Assurance Reporting:* The Sponsor shall submit an annual financial report to the IRT summarizing the status of the Bank's overall budget, including annual

expenditures and appropriations which are derived from financial obligations for maintenance, monitoring, long-term management, and catastrophic events. The financial report shall be submitted by December 31st. If requested, a breakdown of cost expenditures can be provided to the IRT. An Annual Financial Report Template is included in Exhibit D: Financial Assurances.

4. *Long-term Management Annual Reporting:* After Bank Closure, the Long-term Steward shall be responsible for annual reporting in accordance with the Long-term Management and Maintenance Plan. The Long-term Plan Report shall be submitted to the IRT with an electronic version submitted to the Chair(s), by December 31st of each year. The annual Long-term Plan Report shall contain an itemized account of the management tasks conducted during the reporting period in accordance with the Long-term Management and Maintenance Plan, including, but not limited to, the following:

    - Time period covered, i.e., - dates "from" and "to".
    - Description of each management task conducted and time required.
    - General site conditions of the Mitigation Bank Site, recommendations with regard to enhancement measures deemed to be warranted, any problems that need near-, short-, and long-term attention (e.g., weed removal, fence repair, erosion control), and any changes in the monitoring or management program that appear to be warranted based on monitoring results to date. Provide documentation of the budget/estimate of recommended maintenance and repairs.

5. *Semi-annual Ledger Report:* The Sponsor, or its agent, shall submit to the IRT a Semi-annual Ledger Report by December 31st and June 30th for the previous six months. An electronic version of this Ledger Report shall be submitted to the IRT Chairs and uploaded to RIBITS concurrently with this submittal. The report shall document balance in Credits and any financial assurance information from Section IV.D. – Utilization and Requirements for Financial Assurances.

    The Semi-annual Ledger Report will include the following information: Permittee, project name, USACE permit number, State permit number, type of permit, County of impacts, river basin, USGS HUC Code, date of transaction, type of impacted system (Cowardin Classification), amount of wetland/stream impacts (square feet/acres/linear feet), amount of wetland and/or stream Debit from Mitigation Bank Site, Mitigation Bank Site acres/linear feet utilized, released acres/linear feet remaining in Mitigation Bank Site(s), released Credits remaining in Mitigation Bank Site(s), and type of Credit debited (Cowardin Classification, etc.). Credits will be tracked according to habitat (streams/wetlands) and vegetation (PFO, PEM, or PSS) type. The IRT will review the Semi-annual Ledger Report, and acting through the Chair(s), adjust the Credit composition to assure no net loss of wetland acreage or streams. Semi-annual Ledger Reports and Transaction Statements must be submitted to the IRT as long as Credits remain in the Mitigation Bank Site(s) and/or the Mitigation Bank Site(s) remains operational.

## D. Contingency/Adaptive Management Plans/Remedial Actions

The Sponsor shall develop necessary Contingency/Adaptive Management Plans and implement appropriate remedial actions, in coordination with the IRT, to address the potential failure of a Mitigation Bank Site, or a specific phase of a Mitigation Bank Site, to achieve the Performance Standards specified in Exhibit A of this Instrument (or as amended in Mitigation Site Plans (Addenda). A site-specific Adaptive Management Plan will be included in the Mitigation Site Plan to address foreseeable and unforeseeable circumstances that may adversely affect compensatory mitigation success. The Sponsor will make every attempt to correct deficiencies in meeting Performance Standards proactively and will notify the IRT, in writing, as specified in the site-specific Adaptive Management Plan.

If the Sponsor is out of compliance, the IRT Chairs will notify the Sponsor who will have 30 days to submit a written plan and time schedule to achieve compliance. Additional time may be needed depending on the nature of the required remedial action(s). If necessary, the Sponsor will provide the IRT with a schedule for submission of a plan to achieve compliance within 30 days of notification that remedial action(s) is necessary. Within 30 days of the request, the USACE and MDE, in consultation with the IRT, will determine if this request of additional time for submittal is acceptable. The Sponsor will be given one growing season (by November 1st of the following year) to implement remedial actions. If conditions at the Mitigation Bank Site do not improve, or continue to deteriorate within one growing season, the IRT Chairs, acting on behalf of the IRT, may suspend credit transactions indefinitely, until adequate action has been taken to correct the deficiency(ies). If the Sponsor fails to implement remedial actions, the IRT Chairs will direct appropriate remedial actions, including suspension/revocation of available mitigation Credit adjustment (see Section VI.E. below).

Remedial actions will be on a case-by-case basis depending on the specifics of each Mitigation Bank Site. A typical Remedial Action Plan will include the following elements:

- Map showing location of remediation,
- Summary of site deficiencies and potential causes,
- Proposed action(s) to correct the problem(s),
- Schedule of remedial actions,
- Evaluation of remediation success, and
    - Performance Standards
    - Monitoring Protocols
    - Monitoring Report
- IRT coordination.

Following implementation of remedial measures and at the written request of the Sponsor, the IRT will perform a compliance visit to determine whether remedial actions have been successfully implemented and if further remedial action is necessary. Any proposed modifications to Contingency/Adaptive Management Plans/remedial actions must be

approved by the IRT Chairs in consultation with the IRT. Failure to successfully implement Contingency/Adaptive Management Plans/remedial actions may constitute Default as described in Section VI.F.

If the IRT Chairs determine the Mitigation Bank Site is operating at a deficit or has failed to meet the Performance Standards, debiting by the Sponsor shall immediately cease and in such cases, the IRT Chairs, in consultation with the IRT and the Sponsor, will determine remedial actions necessary to correct the situation (see Table 4: Remedial Action Steps).

Table 3 lists the chronology, responsible party, and timeline for completing remedial action steps for Mitigation Bank Sites requiring remedial actions.

**Table 3: Remedial Action Steps**

| Chronological Remedial Action Steps | Party Responsible | Timeline |
|---|---|---|
| 1. Identification of need | Sponsor or IRT | On occurrence |
| 2. Consult to determine remedial action | Sponsor and IRT | As necessary |
| 3. Provide Sponsor written notification | IRT Chairs | Soonest practical |
| 4. Production of Remedial Action Plan | Sponsor | 30 days |
| 5. Approval of Remedial Action Plan | IRT Chairs | As necessary |
| 6. Implementation of Remedial Action Plan | Sponsor | Soonest practical |
| 7. Monitoring of Plan Success | Sponsor | Within one growing season* |
| 8. Compliance Visit | IRT | At request following each growing season |
| 9. Implementation (Step 2) or Default Decision | IRT Chairs | 90 days following compliance site visit |

*From the date the need for remediation was first identified in writing to the Sponsor by the Chairs of the IRT.

In accordance with 33 CFR 332.4(c)(12) – Planning and Documentation, Mitigation Plan, an Adaptive Management Plan should be utilized to address both foreseeable and unforeseeable changes to a Compensatory Mitigation Plan when site conditions or other components dictate the original plan needs adjustment.

The Sponsor will notify the IRT if unable to reach Performance Standards utilizing the original proposal approved by the IRT and set forth within the Mitigation Site Plan for any Mitigation Bank Site. The IRT Chairs may also notify the Sponsor at any time after a site visit if it believes an Adaptive Management Plan is necessary.

The IRT Chairs, in consultation with the IRT, will evaluate proposed measures to determine if they will address deficiencies in the compensatory mitigation project. In addition, the IRT Chairs, in consultation with the IRT, will consider whether the compensatory mitigation project is providing ecological benefits comparable to the original objectives of the compensatory mitigation project when determining whether it is necessary to require adaptive management. Appropriate measures may include site modifications, design changes, revisions to maintenance requirements, and revised monitoring requirements. The remedial

measures must be designed to ensure the modified compensatory mitigation project provides aquatic resource functions comparable to those described in the Mitigation Site Plan objectives. Alternative compensatory mitigation may be required to offset a shortfall in aquatic resource functions. If the IRT Chairs, in consultation with the IRT, determine that the proposed remediation measures are not appropriate or practicable, then the IRT acting through its Chairs may determine that it is necessary for the Sponsor to provide alternative compensatory mitigation.

Performance standards may be revised in accordance with adaptive management to account for measures taken to address deficiencies in the compensatory mitigation project. Performance standards may also be revised to reflect changes in management strategies and objectives if the new standards provide for ecological benefits that are comparable or superior to the approved compensatory mitigation project. No other revisions to Performance Standards are allowed except in the case of natural disasters.

**E. Default**

After 30 days written notice, should the IRT determine the Sponsor is in default of any provision of this UMBI or on the terms of a Mitigation Bank Site Plan, the USACE or MDE may suspend the use or transfer of any Credits from the Mitigation Bank Site until appropriate deficiencies have been remedied to the satisfaction of the IRT. Upon notice of such suspension, the Sponsor agrees to immediately cease all use or transfers of Credits until the IRT Chairs inform the Sponsor that use or transfers may be resumed. If the Sponsor fails to submit one or more required monitoring reports, an additional year of monitoring and reporting will be required to document Mitigation Bank Site compliance. Should the Sponsor remain in default, the IRT, acting through the IRT Chairs, may terminate all future Credit transactions. Upon termination, the Sponsor agrees to perform and fulfill all obligations under this Instrument relating to Credits that were used or transferred prior to termination.

**F. Bank Closure**

Prior to closure of a Mitigation Bank Site, the IRT will perform a final compliance inspection. Upon the IRT Chairs determining, in consultation with the other members of the IRT and the Sponsor, that the following criteria are met, and once all released Credits have been debited, the IRT, through its Chairs, will issue a certification letter to the Sponsor within 60 days of the final compliance inspection stating official closure of the Mitigation Bank Site and the period of long-term ownership and preservation will commence. The criteria that must be met for Bank Closure are:

1. All applicable Performance Standards prescribed in Exhibit A: Performance Standards and Monitoring Protocols of the UMBI or applicable Mitigation Site Plan have been achieved.

2. Released Credits for the Mitigation Bank Site have been debited.

3. Sponsor has reviewed and revised, if necessary, the approved Long-term Management and Maintenance Plan and the revised Long-term Management and Maintenance Plan has been approved by the IRT Chairs, in consultation with the IRT members, pursuant to Section VI.H. – Long-term Management and Maintenance.

4. Sponsor has either: (i) Assumed responsibilities for accomplishing the Long-term Management and Maintenance Plan, in which case the Sponsor will fulfill the role of Long-term Steward, or (ii) Has assigned those responsibilities to another Long-term Steward pursuant to Section VI.H. – Long-term Management and Maintenance.

5. Where the Sponsor has assigned another Long-term Steward, the Long-term Management Fund has been transferred to the permanent Long-term Steward under Section VI.H.4.

6. Sponsor has prepared and submitted to the IRT a GIS shapefile or similar electronic exhibit depicting the location and extent of the Mitigation Bank Site; and

7. Mitigation Bank Site has complied with all other terms of this Instrument.

Within ninety (90) days following the initial monitoring period (active monitoring period) for each Mitigation Bank Site, and upon satisfaction of the Performance Standards and debit of released Credits, the IRT Chairs shall issue a written certification of satisfaction to the Sponsor.

Upon Bank Closure, no further Credit transfer will occur from the Mitigation Bank Site. After Bank Closure and subject to review by the IRT and approval by the IRT Chairs, the Sponsor may request, and the IRT Chairs may agree in writing, to remove from the Mitigation Bank Site lands with no Credits debited, provided the removal and any subsequent utilization does not adversely impact the Mitigation Bank Site areas from which Credit has been debited. The IRT will determine through its Chairs, in its sole discretion, whether any such removal or utilization of Mitigation Bank Site lands adversely impacts Mitigation Bank Site lands for which Credits were transferred or debited and whether any such removal is approved. If removed from Mitigation Bank Site lands, the portion removed is no longer subject to the provision of this UMBI.

## G. Long-term Management and Maintenance

1. Mitigation Bank Sites shall be designed, to the maximum extent practicable, to be self-sustaining once Performance Standards have been achieved. Wetlands and streams/buffers are natural systems influenced by natural forces such as weather, flooding, herbivory, atmospheric deposition, wildlife usage, and natural succession; and these systems are likely to develop vegetation shifts throughout time. Therefore, wetland habitat within a Mitigation Bank Site is expected to fluctuate in response to natural influences. Unless the Mitigation Bank Site is intended to provide a unique habitat for rare, threatened, or endangered species (RTE), or a specific function related to mitigation for a Wetland of Special State Concern (WSSC), attempts to control fluctuations will only be performed when natural factors can be appropriately and practicably controlled as determined by the IRT, with input from the Sponsor. For example, a constructed PEM wetland that experiences development of native trees and shrubs as a result of a nearby seed source may not be expected to be controlled through forestry management; a PFO, converted by beaver activity through inundation or herbivory to a PEM, may not be expected to be managed through wildlife management, unless the vegetation change is adversely affecting the compensatory mitigation project's ability to fulfill its original objectives, creating a negative influence beyond

the boundary of the Mitigation Bank Site, or providing a direct adverse impact to an RTE or function related to a WSSC.

2. The Bank Sponsor shall develop a Long-term Management and Maintenance Plan for each Mitigation Bank Site, in accordance with Section VI.I. – Long-term Management and Maintenance Plan, prior to the initial release of Bank Credits. The Sponsor shall submit the Long-term Management and Maintenance Plan for approval by the IRT Chair(s), in consultation with the IRT. The Long-term Management and Maintenance Plan must be approved and signed by the Sponsor, Long-term Steward, the IRT Chairs, and all signatories to this UMBI, if they desire. The approved Long-term Management and Maintenance Plan will be included as an exhibit to the Mitigation Site Plan(s). The Sponsor is responsible for execution of the approved Long-term Management and Maintenance Plan. The Sponsor may only deviate from the approved Long-term Management and Maintenance Plan upon written approval of the IRT Chair(s), following consultation with the IRT.

3. Upon Bank Closure, the Long-term Steward (Sponsor) shall be responsible for managing the Mitigation Bank Site in perpetuity in accordance with the terms of the Long-term Management and Maintenance Plan, the Mitigation Site Plan, and real estate provisions, including the terms of the recorded Site Protection Instrument.

4. Long-term Management and Maintenance Plan

   The Long-term Management and Maintenance Plan for each Mitigation Bank Site will contain specific objectives that address the long-term management of the Mitigation Bank Site(s). The Long-term Steward will document achievement of each objective or standard in the Long-term Management and Maintenance Plan by submitting status reports (as defined in the rule and in consultation with IRT) to the IRT, on a schedule approved by the IRT, acting through the Chair(s). A primary goal of the SHA UMBI is to create, at each Mitigation Bank Site, a self-sustaining natural aquatic system that achieves the intended level of aquatic ecosystem functionality with minimal human intervention, including long-term site maintenance. Natural changes to the vegetative community, other than changes caused by non-native/invasive weeds that occur after all Mitigation Bank Site Performance Standards have been met, are not expected to require remediation provided the modified compensatory mitigation project provides aquatic resource functions comparable or superior to those ecological benefits described in the approved compensatory mitigation project objectives. The Long-term Steward shall be obligated to manage and monitor the Mitigation Bank Site in perpetuity to preserve its habitat and conservation values in accordance with this UMBI, the Mitigation Site Plan, the Site Protection Instrument, and the Long-term Management and Maintenance Plan. During the Long-term Management and Maintenance period, the Long-term Steward shall be responsible for submitting annual reports to each member of the IRT in accordance with Section VI.C.4. and Exhibit F: Long-term Management and Maintenance Plan.

   The Long-term Management and Maintenance Plan for each Mitigation Bank Site will include, at minimum, periodic patrols for signs of trespass and vandalism, monitoring

condition of structural elements (e.g., signage, fencing, roads, and berms), identification and location of invasive species, and provisions included in Exhibit F: Long-term Management and Maintenance Plan and specific Mitigation Site Plans.

The Sponsor may modify the Long-term Management and Maintenance Plan, subject to review and approval by the IRT, through its Chairs. The Sponsor shall provide the IRT Chairs with 60 days advance notice before any actions are taken to modify the Long-term Management and Maintenance Plan. The Long-term Management and Maintenance Plan may only be amended or modified with the written approval of the IRT Chairs and other signatory parties of the Long-term Management Plan and UMBI, if desired.

Upon execution of a Long-term Management and Maintenance Plan and upon satisfaction of the remaining requirements for Bank Closure under Section VI.G. – Bank Closure, the Sponsor shall be relieved of all further long-term management and maintenance responsibilities under this Instrument for that Mitigation Bank Site.

## VII. RESPONSIBILITIES OF THE INTERAGENCY REVIEW TEAM

- The agencies represented on the IRT agree to provide advice and oversight where appropriate in carrying out provisions of this UMBI. The IRT Chairs, where appropriate, agree to make the decisions required within the UMBI on behalf of the IRT. Where this section refers to an action by the IRT, it is intended that the IRT acts through its Chairs with consultation from the IRT members.
- The agencies represented on the IRT, where appropriate, agree to review and provide comments on all project plans, proposed additions of land to the Mitigation Bank Sites, annual monitoring reports, credit review reports, contingency plans, and necessary permits for the Mitigation Bank Sites. Comments, if any, on the final construction documents for each phase as described in Exhibit C, additions of land to the Mitigation Bank Sites, Monitoring Reports, Credit Review Reports, contingency plans, and permits for Mitigation Bank Site construction and operation will be reviewed within 30 calendar days from the date that the Sponsor provides a complete submittal to the IRT. The USACE Chair shall coordinate such review with members of the IRT to ensure comments are provided within the 90 day comment period.
- The Sponsor shall update the Credit Ledger for the Mitigation Bank Site in RIBITS by the 31st of each December and advise the Co-Chairs, in writing, of each transaction. The Sponsor shall also submit a Credit Ledger by the 30th of each June (mid-year) if any Credits were used in the first half of that year.
- The agencies represented on the IRT agree to review and provide comment to the Co-Chairs for their approval of reports on evaluation of Success Criteria prior to approving Credits within each phase of the Mitigation Bank Site.
- The agencies represented on the IRT shall conduct compliance inspections and provide comments as necessary at the request of the Co-Chairs, so the Co-Chairs may verify Credits available for the Mitigation Bank Site, assess site conditions, and recommend corrective measures (if any) to the Sponsor, until the terms and conditions of the Mitigation Site Plan have been determined to be fully satisfied or until all Credits have been sold, whichever is the latter.

## VIII. OTHER PROVISIONS

### A. Force Majeure

The Sponsor shall maintain the Mitigation Bank Site Property and perform repair or remedial action on any portion of the Mitigation Bank Site Property, as determined by the IRT Chairs in consultation with the IRT members, except for damage or non-compliance caused by events of Force Majeure, as described below:

1. Force Majeure shall mean an irreparable material and detrimental impact on the Mitigation Bank Site over which the Sponsor or any entity controlled by the Sponsor could not have anticipated or controlled (excepting those events specifically identified as "catastrophic events" in other sections of the UMBI). The IRT Chairs, in consultation with IRT members, has sole discretion to determine whether an event is a Force Majeure event as defined herein, whether significant adverse impacts to the Mitigation Bank Site have occurred, and to what extent changes to the Mitigation Bank Site or its management will be permitted. The Sponsor shall bear the burden of demonstrating to the IRT's satisfaction that:

    a. Damage or non-compliance was caused by circumstances beyond the control or anticipation of the Sponsor, property owner, and any person or entity under the direction or control of the Sponsor or property owner, including its employees, agents, contractors, and consultants.

    b. Neither the Sponsor, property owner, nor any person or entity under the direction or control of the Sponsor or property owner, including its employees, agents, contractors, and consultants, could have reasonably foreseen and prevented such damage or non-compliance.

    c. The period of damage or non-compliance was a direct result of such circumstances.

    d. Damage is irreparable by any practicable and reasonable means as determined in the discretion of the IRT.

Should an event of Force Majeure occur that affects the long-term viability of the Mitigation Bank Site during the initial 10-year monitoring period, or before all Credits from the Mitigation Bank Site have been debited, the Sponsor shall notify the IRT Chairs within 24-hours. As promptly and reasonably possible thereafter, Sponsor and IRT representatives shall meet to consult on the course of action for each occurrence. As a result of this consultation, the Sponsor may be required to prepare an Adaptive Management Plan (e.g. revised Credit releases, number of Credits available, etc.) to address the extent of changes to the Mitigation Bank Site, and/or its management, as a result of the Force Majeure event. In the meantime, the Sponsor shall continue to manage and maintain the Mitigation Bank Site to the fullest extent practicable in accordance with the approved Mitigation Site Plan.

## B. Catastrophic Events

The Sponsor shall be responsible for repair and remediation from catastrophic events described below. Damages from catastrophic events are to be repaired using funding designated for catastrophic event remedial actions by the Sponsor or Long-term Steward. Examples of catastrophic events include the following:

1. Floods greater than a presently projected 100-year flood, where "flood" refers to a runoff event.
2. Tornado of F-2 or greater magnitude on the Fujitsu scale.
3. Hurricane of a Category 2 or greater magnitude on the Saffir-Simpson scale.
4. Earthquakes of a magnitude greater than 6.5 on the Richter scale.
5. Extreme drought (Drought Monitor classification of D3 or greater or Palmer Drought Index of -4.0 or less) if such event has broad regional impact and is not endemic to the Mitigation Bank Site and its immediate locale.
6. Insect or animal damage to planted vegetation that occurs across a majority of the site, at a magnitude such that vegetation fails to achieve Performance Standards described in Exhibit A: Performance Standards and Monitoring Protocols, after each phase of planting has surpassed the contractor's one-year warranty (if a one-year warranty was required).
7. Breach of berms, embankments, or spillway and/or damage to outlet structures, washout of stream stabilization structures (including cross vanes, J hooks, rock weirs, imbricated riprap, vegetated stream banks, coir logs, fascines, and riparian plantings) from a 100-year or greater magnitude storm event.

If a catastrophic event affects the long-term viability of the Mitigation Bank Site during initial monitoring or before all Credits have been debited, the Sponsor shall submit a written description of the proposed corrective actions, implementation schedule, and required funding associated with the catastrophic event to the IRT. The Sponsor is responsible for demonstrating damage and Sponsor or any entity controlled by the Sponsor could not have anticipated or controlled the damage and that the proposed corrective actions and schedule are appropriate to repair the damage. The IRT shall have 60 days to review and approve or comment on the Sponsor's proposal.

Reasonably foreseeable technical problems, unanticipated or increased costs, expenses associated with the implementation of actions called for by this UMBI, or a change in financial or business circumstances in and of themselves shall not serve as the basis for modifications of this UMBI and Addenda or excusing the performance of the requirements of this UMBI and Addenda.

## C. Eminent Domain

If a Mitigation Bank Site is taken in whole or in part through eminent domain, the Sponsor shall provide replacement compensation to offset the loss of the conservation functions, services, and values, as determined at the discretion of the IRT. This replacement compensation must be provided within the same service area as the affected Mitigation Bank Site and must be approved by the IRT Chairs in consultation with the IRT members.

## D. Dispute Resolution

Resolution of disputes about application of this Instrument shall be in accordance with the USACE and EPA regulations entitled Compensatory Mitigation for Aquatic Resources (33 CFR Part 325 – Processing of Department of the Army Permits, 33 CFR Part 332 – Compensatory Mitigation for Losses of Aquatic Resources, and 40 CFR Part 230 – Section 404(b)(1) Guidelines for Specification of Disposal Sites for Dredged of Fill Material), as well as other applicable federal or state regulations governing Mitigation Bank operation. Disputes related to satisfaction of Performance Standards may be subject to independent review from government agencies or academia that are not part of the IRT. The IRT Chairs, in consultation with the IRT members, will evaluate this input and recommendations or conclusions and determine whether the Performance Standards are met.

Notice of disputes arising between the Sponsor and IRT outside those referenced in Section VI.D. – Contingency/Adaptive Management Plans/Remedial Actions or VI.E. – Default shall be made in writing. The Sponsor shall submit a written plan to the IRT to resolve the dispute within 90 days. The Sponsor will have a 30-day consultative resolution period, if necessary. Following this period, the IRT Chairs will approve the plan or find the Sponsor in Default.

This Instrument does not waive the United States sovereign immunity and does not provide the Sponsor with a cause of action in federal or state court.

## E. Validity, Modification, and Termination of this Instrument

This Instrument is valid when both the Sponsor and the representatives of the IRT Chairs have signed.

This Instrument may only be amended or modified with the written approval of all signatory parties (IRT Chairs and Sponsor) and shall be subject to modification in accordance with 33 CFR 332.8(g) – Mitigation Banks and In-lieu Fee Programs, Modification of Instruments. In the event the Sponsor determines modifications must be made to this Instrument, the Sponsor shall submit a written request for such modification to the IRT for approval. The IRT shall not unreasonably withhold or delay such approval. Documentation of implemented modifications shall be consistent with this Instrument.

Any proposed modification to a Mitigation Bank Site, including, but not limited to addition of lands to an individual Mitigation Bank Site, establishment of additional Mitigation Bank Sites pursuant to this Instrument, addition of different types of mitigation Credit resources (e.g. stream or wetland Credits), or alteration of Performance Standards will require review and likely amendment of the approved Instrument to comply with 33 CFR 332.8(g) –

Mitigation Banks and In-lieu Fee Programs, Modification of Instruments. Modifications will require submittal consistent with the current IRT documentation standards or the most current template approved for use in Maryland in effect on the date of submission of the modification. In the event of future changes to mitigation banking rules, policies, or regulations, the SHA UMBI may require additional modifications.

Any of the IRT members may terminate participation, upon written notification to all signatory parties, without invalidating this Instrument. Participation of the IRT member seeking termination will end 30 days after written notification.

Refer to Section IV.C. – Mitigation Site Plan of this UMBI if the physical improvements identified in the Mitigation Site Plan have not been completed within five years of the last date of signature or approval of the Mitigation Site Plan.

**F. Specific Language of the UMBI Shall Be Controlling**

Original language within the UMBI will be controlling unless otherwise changed, modified or deleted as a result of any associated Mitigation Site Plan approved by addendum through the IRT. In such cases, the language of the approved Addendum shall be controlling.

**G. Notice**

Any notice required or permitted hereunder shall be deemed to have been given either (i) when delivered by hand, or (ii) three days following the date deposited in the United States mail, postage prepaid, by registered or certified mail, return receipt requested, or (iii) date sent by Federal Express or similar next day nationwide delivery system, addressed to the current members of the IRT as follows or (iv) confirmed receipt of the day notice sent by electronic mail.

If sent to IRT Co-Chairs:

ATTN: Baltimore USACE Mitigation Bank IRT Chair
US Army Corps of Engineers, Baltimore District
Regulatory Branch
P.O. Box 1715
Baltimore MD 21203

ATTN: Mitigation and Technical Assistance Section, IRT Chair
Maryland Department of Environment
Wetlands and Waterways Program
1800 Washington Boulevard, Suite 430
Baltimore MD 21230

If sent to Sponsor:

ATTN: Sonal Ram, Director
Maryland State Highway Administration
Office of Environmental Design

707 N. Calvert Street
Mail Stop C-303
Baltimore MD 21202

Or

Email: sram@sha.state.md.us (initial contact representative for Sponsor)

**H. Entire Agreement**

This UMBI constitutes the entire agreement between the parties concerning the subject matter hereof and supersedes all prior agreements or undertakings.

**I. Invalid Provisions**

In the event one or more of the provisions contained in this UMBI are held to be invalid, illegal, or unenforceable in any respect, such invalidity, illegality, or unenforceability will not affect any other provisions hereof, and this UMBI shall be construed as if such invalid, illegal, or unenforceable provision had not been contained herein.

**J. Headings and Captions**

Any paragraph heading or captions contained in this UMBI shall be for convenience of reference only and shall not affect the construction or interpretation of any provisions of this UMBI.

**K. Counterparts**

This UMBI may be executed by the parties in any combination, in one or more counterparts, all of which together shall constitute one and the same Instrument.

**L. Binding**

This UMBI shall be immediately, automatically, and irrevocably binding upon the Sponsor and its heirs, successors, assigns, and legal representatives upon execution by the Sponsor, USACE, and MDE; even though it may not, at that time or in the future, be executed by the other potential parties to this UMBI. The execution of this UMBI by EPA or DNR, or other agency, city, or county shall cause the executing agency to become a party to this UMBI upon execution, even though some or all of the other potential parties have not signed the UMBI. Execution does not signify the agencies' agreement with the use of Credits from this UMBI in connection with any specific permit or project.

**M. Transfer of Mitigation Responsibility**

As this UMBI is intended for MDOT agency use, the Sponsor and the Permittee may be one in the same. In this case, mitigation responsibility remains with the Permittee, which is the Sponsor.

**N. No Liability of Regulatory Agencies**

The responsibility for financial success and risk to the investment initiated by the Sponsor rests solely with the Sponsor. The regulatory agencies that are parties to this agreement administer their regulatory programs to best protect and serve the public's interest in its

waterways, and not to guarantee the financial success of Mitigation Bank Sites, specific individuals, or entities. Accordingly, there is no guarantee of profitability for any individual Mitigation Bank Site. The Sponsor should not construe this agreement as a guarantee in any way that the agencies will ensure sale (use) of Credits from this UMBI or that the agencies will forgo other mitigation options that may also serve the public interest. Because the agencies do not control the number of Mitigation Bank Sites proposed or the resulting market impacts upon success or failure of individual banks, any information, conclusions or expectations regarding the potential and future demand for Bank Credits are the sole responsibility of the Sponsor. Permitting agencies reserve the right to reject Sponsor's use of a Mitigation Bank Site on a case-by-case basis in such instances in which the agencies determine that the impacted resources are not being replaced at the Mitigation Bank Site. That being said, it is recognized that the Sponsor intends to use all Credits for its related agencies and does not intend to sell Bank Credits. As the Permittee is also the Sponsor, the Sponsor has the expectation that should Mitigation Bank Sites be approved by the IRT following the Sponsor's program to project, finance, and implement Mitigation Bank Sites that the Credits derived from the Mitigation Bank Sites will be available to Sponsor for project impacts within the identified Service Areas.

**O. Transfer of Mitigation Bank Sites/UMBI Ownership/Third Party Resale or Brokerage of Credits**

Third party resale or brokering of mitigation Credits or transfer of Credits to any entity for resale or re-transfer to a permittee is not permitted under the terms of this Instrument.

In the event of sale or transfer of Mitigation Bank Sites/Addenda and/or UMBI to a third party, the transfer provision of this UMBI must be completed, approved by the IRT through its Chairs in consultation with the IRT members, and filed with the IRT. The Sponsor shall first notify the USACE and MDE, no less than 60 days prior to the transfer. Once the transfer has been executed by the Sponsor/Owner, the Transferee/new Owner remains responsible for the Mitigation Bank Site(s) and/or UMBI and all applicable provisions of this approved UMBI, including all Mitigation Site Plans and Long-term Management and Maintenance Plans, as appropriate, approved hereunder. The new Owner/Sponsor must also provide appropriate financial assurances, including long-term management financing, as needed, to the IRT. Any sale or transfer of the Mitigation Bank Sites/Addenda and/or UMBI made without prior written notification to the IRT may, at the discretion of the IRT Chairs acting on behalf of the IRT, result in the termination of this UMBI.

**P. Responsibility for Compensatory Mitigation**

By signing this document below where indicated, the Sponsor fully acknowledges that it is its legal responsibility to provide compensatory mitigation at the Mitigation Bank Sites approved under this Instrument for all MDOT, including Maryland SHA, projects for which it uses the mitigation Credits.

IN WITNESS WHEREOF, the parties hereto have executed this Instrument on the date herein below last written.

SPONSOR

Sonal Ram

April 19, 2017

Maryland State Highway Administration

Date

As Lead Agency for MDOT

By: Sonal Ram

Its: Director, Office of Environmental Design

IN WITNESS WHEREOF, the parties hereto have executed this Instrument on the date herein below last written.

Beth E Bachur — April 21, 2017

USACE- Baltimore District (Co-Chair) — Date

By: Beth Bachur

Its: Acting Chief, Regulatory Branch, Baltimore District

IN WITNESS WHEREOF, the parties hereto have executed this Instrument on the date herein below last written.

_____ 3/23/17

MDE (Co-Chair) Date

By: Lee Currey

Its: Acting Director, Water Management Administration

IN WITNESS WHEREOF, the parties hereto have executed this Instrument on the date herein below last written.

USEPA - Region 3 — Date: 3/13/17

By: Jeffrey Lapp

Its: Associate Director

IN WITNESS WHEREOF, the parties hereto have executed this Instrument on the date herein below last written.

_____ _____

USEPA - Region 3 Date

By: Jeffrey Lapp

Its: Associate Director

TRANSFER OF MITIGATION BANK OR TRANSFER OF BANK LANDS

When the land and/or Mitigation Bank Site associated with this Umbrella Mitigation Bank Instrument is transferred, the terms and conditions of this UMBI will continue to be binding on the new Sponsor and owner(s) of the property. To validate the transfer of this Mitigation Bank Site or UMBI and the associated liabilities associated with compliance with its terms and conditions, the transferee must sign and date below.

_____

(Transferee)

_____

(Date)

*Notary Seal*

LONG-TERM STEWARDSHIP

When the responsibility for Long-term Stewardship associated with this Mitigation Bank Site is assumed by a party other than the Sponsor, the terms and conditions of this UMBI will be binding on such party, the Long-term Steward of the property. Signature below is required and is verification that such party acknowledges and accepts this responsibility and hereby assumes all the obligations and associated liabilities associated with compliance with the UMBI. Terms and conditions in this UMBI that are intended to be binding on the Sponsor beyond such transfer will continue to be binding on the Sponsor.

_____

(Long-term Steward)

_____

(Date)

_____

Mitigation Bank, if necessary)

*Notary Seal*

# EXHIBIT A

## Performance Standards and Monitoring Protocols

# PERFORMANCE STANDARDS AND MONITORING PROTOCOL FOR NONTIDAL WETLAND MITIGATION BANKS

October 28, 2016

A. Nontidal wetland mitigation banks shall conform to the following performance standards by the end of the monitoring period, unless otherwise determined by the Interagency Review Team (IRT) co-chairs (the U.S. Army Corps of Engineers and the Maryland Department of the Environment), in consultation with the IRT.

B. Reporting and Performance Standards: All required documentation, including monitoring reports, semi-annual ledgers, and as-built surveys shall be submitted to IRT co-chairs for distribution to the IRT. The IRT co-chairs, in consultation with the IRT, will use best professional judgment, visual observation, and monitoring reports to evaluate attainment of performance standards and in determining whether part of or the entire Bank is successful or whether corrective actions are warranted. Success will be determined on a plot, well, field, or cell basis. Presenting averages or means of plot data across a bank site is not satisfactory to demonstrate success. All of the following standards will be used to assess project success and credit releases and must be achieved each monitoring year:

1. Wetland Area(s):

I. **Wetland Vegetation Dominance:** Wetland vegetation dominance, defined as a vegetation community where more than 50% of all dominant plant species across all strata are rated obligate ("OBL"), facultative wet ("FACW"), or facultative ("FAC"), using the vegetation sampling procedures as described in the appropriate regional supplement to the Corps of Engineers Wetland Delineation Manual, must be achieved; and

II. **Aerial Cover Vegetative Standards:**
   a. By the end of monitoring year one, a minimum of 50% of the mitigation site shall be vegetated (either by planted or volunteer plants) by native (FAC or wetter) species.
   b. By the end of monitoring year two, a minimum of 60% of the mitigation site shall be vegetated (either by planted or volunteer plants) by native (FAC or wetter) species.
   c. By the end of monitoring year three, a minimum of 70% of the mitigation site shall be vegetated (either by planted or volunteer plants) by native (FAC or wetter) species.
   d. By the end of monitoring year five and each monitoring year thereafter, a minimum of 85% of the mitigation site shall be vegetated (either by planted or volunteer plants) by native (FAC or wetter) species.
   e. Volunteer species should support functions consistent with the project design goals.

III. **Invasive Species:** The goal of any Bank is to have no invasive species. However, if invasive species are present, no more than 10% of relative plant cover[5] over the entire Bank site shall be made up by non-native or invasive species, with no individual colony greater than or equal to 5% of relative plant cover. No more than 5% of relative plant cover over the entire Bank site shall be made up of *Phragmites australis*[6], *Persicaria perfoliata*, or *Lythrum salicaria*. Native status will be based on the Natural Resources Conservation Service Plants Database. Invasive species are identified on the 2010 National Park

[5] "Relative plant cover" is defined as the cover of a particular species as a percentage of total plant cover. Thus, relative cover will always total 100%, even when total absolute cover is quite low.

[6] American Common Reed, *Phragmites australis* subsp. *americanus*, is not considered to be an invasive plant.

Service/U.S. Fish and Wildlife Service document Plant Invaders of Mid-Atlantic Natural Areas (http://www.nps.gov/plants/alien/pubs/midatlantic/) and the Maryland Invasive Species Council Invasive Species of Concern in Maryland (http://www.mdinvasivesp.org/invasive_species_md.html). *Phalaris arundinacea* and *Typha* spp. may also be considered as invasive species by the IRT; and

IV. **Wetland Species Richness:**
   a. For scrub/shrub wetlands, establish a minimum of three species of native wetland shrubs (FAC or wetter) with no more than 75% of one species, over the entire Bank site. Loblolly pine cannot be more than 40%.
   b. For forested wetlands, establish a minimum of three species of native wetland trees and two species of native wetland shrubs (FAC or wetter) with no more than 75% of one species, over the entire Bank site. Loblolly pine cannot be more than 40%; and

V. **Wetland Vegetation Density for Scrub-Shrub and Forested Wetlands:** For scrub-shrub or forested wetlands, native wetland (FAC or wetter) plant density of at least 435 living trees/shrubs per acre with a minimum height of 10 inches shall be achieved by the end of the first growing season following planting and maintained each monitoring year thereafter through the end of the monitoring period; and

VI. **Wetland Vegetation Cover for Forested Wetlands:** For forested wetlands, average tree height of tallest five native wetland trees within each sample plots shall be at least three feet in height at year three and at least five feet in height at year five and each monitoring year thereafter. Canopy cover[7] of native wetland trees and shrubs must be at least 30% by year ten; and

VII. **Wetland Hydrology:** Wetland hydrology, defined as 14 consecutive days of flooding or ponding, or a water table 12 inches (30 cm) or less below the soil surface, during the growing season at a minimum frequency of 5 years in 10 (50 percent or higher probability). For the purpose of this determination, the growing season is based on two indicators of biological activity that are readily observable in the field: (1) above-ground growth and development of vascular plants and (2) soil temperature as an indicator of soil microbial activity. These indicators of biological activity shall be used for determinations of growing season and are more fully described in the appropriate regional supplement to the Corps of Engineers Wetland Delineation Manual.

VIII. **Wetland Soils:** The entire wetland restoration or creation area must meet the Hydric Soil Technical Standard (Technical Note 11) developed by the National Technical Committee for Hydric Soils for saturated conditions and aerobic conditions:
   a. Free water must exist within 10 inches (25 cm) of the ground surface for at least 14 consecutive days; and
   b. Anaerobic conditions must exist within 10 inches (25 cm) of the ground surface for at least 14 consecutive days. Anaerobic conditions may be determined by one of the following methods, as detailed in the Hydric Soil Technical Standard:
      i. Positive reaction to alpha-alpha dipyridyl, determined as least weekly.
      ii. Reduction of iron determined with IRIS tubes installed for 30 days.
      iii. Measurement of redox potential (Eh) using platinum electrodes, determined at least weekly.

2. Buffer Area(s) *Performance Standards are only required to be met if the buffer is getting mitigation credit*:

[7] "Canopy cover" is defined as the percentage of ground covered by tree and shrub leaves, when the edges of the leaves are mentally projected down to the ground surface.

I. **Aerial Cover Vegetative Standards:**
   a. By the end of monitoring year one, a minimum of 50% of the mitigation site shall be vegetated (either by planted or volunteer plants) by native species.
   b. By the end of monitoring year two, a minimum of 60% of the mitigation site shall be vegetated (either by planted or volunteer plants) by native species.
   c. By the end of monitoring year three, a minimum of 70% of the mitigation site shall be vegetated (either by planted or volunteer plants) by native species.
   d. By the end of monitoring year five and each monitoring year thereafter, a minimum of 85% of the mitigation site shall be vegetated (either by planted or volunteer plants) by native species.
   e. Volunteer species should support functions consistent with the project design goals.

II. **Invasive Species:** The goal of any Bank is to have no invasive species. However, if invasive species are present, no more than 10% of relative plant cover[1] over the entire Bank site shall be made up by non-native or invasive species, with no individual colony greater than or equal to 5% of relative plant cover. No more than 5% of relative plant cover over the entire Bank site shall be made up of *Phragmites australis*[2], *Persicaria perfoliata*, or *Pueraria montana*. Native status will be based on the Natural Resources Conservation Service Plants Database. Invasive species are identified on the National Park Service/U.S. Fish and Wildlife Service document *Plant Invaders of Mid-Atlantic Natural Areas* (http://www.nps.gov/plants/alien/pubs/midatlantic/) and the Maryland Invasive Species Council *Invasive Species of Concern in Maryland* (http://www.mdinvasivesp.org/invasive_species_md.html); and

III. **Vegetation Density for Forested Buffers:** For forested buffers, native plant density of at least 435 living trees/shrubs per acre with a minimum height of 10 inches shall be achieved by the end of the first growing season following planting and maintained each monitoring year thereafter through the end of the monitoring period; and

C. Monitoring Timeframe: The Bank Sponsor will be responsible for submitting monitoring reports to IRT co-chairs (the U.S. Army Corps of Engineers and the Maryland Department of the Environment) to be distributed to the IRT, for a period of ten years from the completion of the construction of the mitigation site or phase thereof. Monitoring reports should be concise and effectively provide the information necessary to assess the status of the compensatory mitigation project. Reports should provide information necessary, including supporting data such as plans, maps, and photographs, to illustrate site conditions and whether the compensatory mitigation project is meeting its objectives and performance standards. Monitoring reports shall be submitted for years 2, 3, 5, 7, and 10 ("monitoring years") following completion of construction and planting of the mitigation site or phase thereof. Monitoring reports, paper copies and an electronic version, must be submitted to the IRT co-chairs by December 31 of each monitoring year. Monitoring must be conducted a minimum of once per year during the monitoring years following construction of any phase of the bank site. Monitoring may be terminated or the extent of monitoring may be reduced over part or the entire site at the discretion of the IRT co-chairs, in consultation with the IRT. Conversely, the IRT co-chairs, in consultation with the IRT, may extend the original monitoring period upon a determination that performance standards have not been met or the bank is not on track to meet them.

D. Monitoring Reports: The first monitoring report is due the year the mitigation planting occurs, unless planting occurs after April 15, in which case the first monitoring report will not be due until the end of the next year. For each monitoring report, vegetative monitoring shall be conducted between May 1 and September 30 for forested/scrub-shrub systems and between June 15 and September 30 for emergent systems. Site visits should preferably be during a period with normal precipitation and groundwater levels. The following information must be included with the monitoring report:

1. Overview / Background Data:

   I. Title page indicating the bank name, umbrella bank name (if applicable), site name (if applicable), bank phase (if applicable), monitoring year, any requested action (e.g., credit release, IRT review), Bank Sponsor identification (name, address, phone number, and email address), preparer identification (name, address, phone number, and email address).

   II. Written description of the location, any identifiable landmarks of the Bank, including information to locate the site perimeter(s), and coordinates of the mitigation site (expressed as latitude and longitude).

   III. Date(s) of site inspections.

   IV. A brief paragraph describing the purpose of the Mitigation Bank, including the proposed mitigation acreage and type of aquatic resources approved as part of the mitigation plan and Mitigation Banking Instrument (MBI). Include the dates the mitigation construction was started and the planting was completed.

   V. A brief narrative description of the Mitigation Bank addressing its position in the landscape, adjacent waterbodies, and adjacent land use.

   VI. A short statement on whether the performance standards are being met.

   VII. A narrative description of existing site conditions and how the Mitigation Bank has or has not achieved the goals, objectives and performance standards established for the project.

   VIII. Dates of any recent corrective or maintenance activities conducted since the previous report submission.

   IX. Specific recommendations for any additional corrective or remedial actions.

   X. Estimate the percent of the Mitigation Bank that is establishing into wetland and the type of wetland system (ex: forested, scrub-shrub, emergent). If this differs from what was planned, show the boundaries of the actual wetland area/types on the plans or maps.

   XI. Estimate the percent of the Mitigation Bank buffer that is establishing into forested buffer. If this differs from what was planned, show the boundaries of the actual forested buffer area on the plans or maps.

   XII. Discussion of growing season and how it was determined for this site.

2. Requirements: List the monitoring requirements and performance standards, as specified in the approved mitigation plan, mitigation banking instrument, and/or special conditions of the permit and evaluate whether the compensatory mitigation project site is successfully achieving the approved performance standards or trending towards success. A table is a recommended option for comparing the performance standards to the conditions and status of the developing mitigation site.

3. Summary data: Summary data should be provided to substantiate the success and/or potential challenges associated with the compensatory mitigation project. Take one set of photographs from established photographic points any time between May 1 and September 30 of each monitoring year (pictures should be taken at the same time of year when possible). Photo location points should be identified on the appropriate maps and labeled with the direction in which the photo was taken. Submitted photos should be formatted to print on a standard 8.5 by 11-inch piece of paper, dated, and clearly labeled with the direction from which the photo was taken.

4. Maps and Plans: Maps should be provided to show the location of the compensatory mitigation site relative to other landscape features, habitat types, locations of photographic reference points, transects, sampling data points, and/or other features pertinent to the mitigation plan. GPS coordinates should be shown on the plans for each photographic reference point and sample plot. In addition, the submitted maps and plans should clearly delineate the mitigation site perimeter(s), which will assist the project managers in locating the mitigation area(s) during subsequent site inspections. Each map or diagram should be formatted to print on a standard 8.5 by 11-inch piece of paper and include a legend and the location of any photos submitted for review. As-built plans should be included if they were not already submitted to the IRT.

5. Conclusions: A general statement shall be included that describes the conditions of the compensatory mitigation project. If performance standards are not being met, a brief explanation of the difficulties and potential remedial actions proposed by the Bank Sponsor, including a timetable, must be provided. The IRT co-chairs, in consultation with the IRT, will ultimately determine if the mitigation site is successful for a given monitoring period.

6. Monitoring Report Measurements:

    I. Wetland Area(s):

        a. Vegetation:
            i. During each monitoring year, to assess the overall site, estimate the actual and relative percent cover by dominant plant species (including volunteer plants) and any invasive plant species. Estimate percent cover by plants with a wetland indicator status of FAC or wetter. Estimate the percent survival of woody planted material and number of native trees/shrubs per acre (including native volunteer woody species taller than ten inches). Please note that projects where the vegetation is inconsistent throughout the site may not meet the performance standards (e.g. a site where some portions have high densities of woody species but other portions have low densities).
            ii. For forested wetlands, measure the height of the tallest five trees within each sample plot in each monitoring year. In year ten, measure canopy cover of trees and shrubs.
            iii. Measurements of vegetation based upon performance standard and methods used to evaluate the vegetative success of the mitigation site.
            iv. For each monitoring year, summarize the results from the vegetation plot study, including the density trees/shrubs and percent cover of wetland species present in order of dominance and for each vegetative stratum. Data should be summarized for each plot and also by field or cell. **Do not include the raw plot data in your monitoring report.**

        b. Hydrology:
            i. Estimate percent of site that is inundated or saturated to the surface on the dates of the site visits.
            ii. Monitoring data for surface water and groundwater, including hydrograph of measured depth to water table, after calibrating for above-ground height of well. Data should be included for each well separately and then summarized by field or cell. Well locations should be identified on the appropriate maps.
            iii. Discuss how precipitation during this monitoring year compares with historical precipitation data for that location.

        c. Soils:
            i. Monitoring data to determine if hydric soils are actively developing. This must include evidence that saturated and anaerobic soil conditions are being met, as measured by alpha-alpha Dipyridyl, IRIS tubes, or platinum electrodes.

Locations of soil tests should be identified on the appropriate maps.

ii. Provide a soil profile description with accompanying soil photos for each soil location tested above. Photo location points should be identified on the appropriate maps.

d. Remediation:
   i. Describe any problems observed within the mitigation site, such as: excessive inundation, insufficient hydrology, seasonal drought conditions, invasion by undesirable species of plants or wildlife, disease condition for plants, poor plant establishment, adverse water quality impacts (i.e., excessive sediment loading, water pollution, etc.), human encroachment, and slope failures or erosion problems.
   ii. Describe the proposed remedial measures to address the problems noted above.

e. Remedial measures proposed by the Bank Sponsor are subject to review and approval by the IRT, acting through the Chairs, prior to implementation. In the event that remedial measures are implemented, the monitoring period may be extended on a case-by-case basis. The treatment of non-native invasive plant species does not need the approval of the IRT, but should be completed at the correct time of year by someone with a current pesticide applicator certification and the required MDE toxic materials permit.

II. Buffer Area(s):

a. Vegetation
   i. For each monitoring year, estimate the actual and relative percent cover by native plant species and by invasive plant species. Estimate the number of native trees/shrubs per acre (including native planted or volunteer woody species taller than ten inches). Data should be summarized for each plot and also by field or cell. Please note that projects where the vegetation is inconsistent throughout the site may not meet the performance standards (e.g. a site where some portions have high densities of woody species but other portions have low densities).
   ii. Measurements of vegetation based upon performance standard and methods used to evaluate the vegetative success of the mitigation site. **Do not include the raw plot data in your monitoring report.**
   iii.

b. Remediation:
   i. Describe any problems observed within the upland buffer, such as: invasion by undesirable species of plants or wildlife, disease condition for plants, poor plant establishment, human encroachment, and slope failures or erosion problems.
   ii. Describe the proposed remedial measures to address the problems noted above.

c. Remedial measures proposed by the Bank Sponsor are subject to review and approval by the IRT, acting through the Chairs, prior to implementation. In the event that remedial measures are implemented, the monitoring period may be extended on a case-by-case basis. The treatment of non-native invasive plant species does not need the approval of the IRT, but should be completed at the correct time of year by someone with a current pesticide applicator certification and the required MDE toxic materials permit.

Below are the recommended techniques for monitoring mitigation sites. Alternate techniques may be considered, but must be approved in writing by the IRT co-chairs, in consultation with the IRT, prior to the commencement of the monitoring period.

Recommended Wetland Vegetation Density Measurement Technique

a. The following method for measuring the success of the vegetative colonization should be conducted once between May 1 and September 30 for forested/shrub-shrub systems and between June 15 and September 30 for emergent systems during of the second, third, fifth, seventh, and tenth monitoring years subsequent to the completion of the construction of the mitigation project, unless an alternate schedule is agreed upon by the IRT co-chairs, in consultation with the IRT.
b. Vegetation sample plots shall be located on a stratified random basis over the site in order to sample all areas of restored/constructed wetlands at locations adjacent to each photo location marker. If the random plot location is an outlier, the plot can be moved but justification should be provided in the monitoring report. Once the sample plots are established, they should be stationary, unless the Sponsor recommends, and the IRT co-chairs, in consultation with the IRT agrees to move the sample plot in future years. The following minimum numbers of samples will be required:
    i. If the site is < 5 acres, then a minimum of 3 plots/acre is necessary.
    ii. If the site is > 5 acres but less than 20 acres, then a minimum of 3 plots/acre is required for the first 5 acres, then 2 plots/acre is required for the remaining acreage.
    iii. If the site is > 20 acres, then a minimum of 2 plots/acre is required for the first 20 acres, then 1 plot/acre is required for the remaining acreage.
    iv. All cells, fields, or blocks shall be sampled. A targeted vegetation monitoring approach that correlates monitoring stations with vegetative signatures on aerial photography may be useful for larger mitigation sites.
c. Each plot shall be of a size no less than 400 square feet for woody plants and 3'x3' for herbaceous plants (or circular with approximately the same surface area). The vegetation data shall be collected during the growing season and shall include:
    i. Dominant vegetative species identification
    ii. Percent ground cover assessment
    ii. Number of woody plant stems greater than 10 inches in height (total and #/acre)
    iii. The percentage of dominant species FAC or wetter
    iv. Percent survival by planted species
    v. An invasive/noxious species assessment including percent cover

Recommended Buffer Vegetation Density Measurement Technique

a. The following method for measuring the success of the vegetative colonization should be conducted once between May 1 and September 30 of the second, third, fifth, seventh, and tenth growing seasons subsequent to the completion of the construction of the mitigation project, unless an alternate schedule is agreed upon by the IRT co-chairs, in consultation with the IRT.
b. Vegetation sample plots shall be located on a stratified random basis over the site in order to sample all areas of wetland buffer at locations adjacent to each photo location marker. If the random plot location is an outlier, the plot can be moved but justification should be provided in the monitoring report. Once the sample plots are established, they should be stationary, unless the Sponsor recommends, and the IRT co-chairs, in consultation with the IRT, agrees to move the sample plot in future years. The following minimum numbers of samples will be required:
    i. If the site is < 5 acres, then a minimum of 3 plots/acre is necessary.
    ii. If the site is > 5 acres but less than 20 acres, then a minimum of 3 plots/acre is required for the first 5 acres, then 2 plots/acre is required for the remaining acreage.
    iii. If the site is > 20 acres, then a minimum of 2 plots/acre is required for the first 20 acres, then 1 plot/acre is required for the remaining acreage.
    iv. All cells, fields, or blocks shall be sampled. A targeted vegetation monitoring approach that

correlates monitoring stations with vegetative signatures on aerial photography may be useful for larger mitigation sites.

c. Each plot shall be of a size no less than 400 square feet for woody plants (or circular with approximately the same surface area). The vegetation data shall be collected during the growing season and shall include:
    i. Total actual and relative percent cover of native plant species
    iii. Number of native woody plant stems greater than 10 inches in height (total and #/acre)
    v. An invasive/noxious species assessment including relative percent cover

Recommended Groundwater Well Placement and Data Collection

a. Determine if this wetland is groundwater fed or has a perched water table. Soil profile descriptions must be assessed prior to well installation to identify any restrictive layers to downward water movement. Wells should be installed so they do not penetrate the restrictive layer, but are instead no deeper than the top of the restrictive layer (as discussed in the 2005 Corps document entitled *Technical Standard for Water-Table Monitoring of Potential Wetland Sites ERDC TN-WRAP-05-02*). In most cases, a standard monitoring well installed to 15 inches below the soil surface should be used. Shallower installation depths should be utilized if restrictive soil depths are located within 15 inches of the soil surface. Well design and installation shall be consistent with current Corps guidance.
b. Specific details on the groundwater monitoring wells and locations shall be provided in the mitigation plan and Mitigation Banking Instrument (MBI), and must be approved by the IRT co-chairs, in consultation with the IRT.
c. The following minimum numbers of groundwater wells will be required:
    a. If the site is < 10 acres, then a minimum of 1 well/acre is necessary.
    b. If the site is 10 to 20 acres, then a minimum of 1 well/acre is necessary for the first 10 acres, then 1 well/2 acres is necessary for the remaining acreage.
    c. If the site is > 20 acres, then a minimum of 1 well/acre is necessary for the first 10 acres,1 well/2 acres is necessary for the next 10 acres, and 1 well/5 acres is necessary for the remaining acreage.
    d. Hydrologic zones differentiated by a 1-foot change in elevation should have a minimum of one groundwater monitoring well installed.
    e. For sites with multiple cells, each cell should have at least one well.
d. Begin the collection of groundwater well data within fourteen days of the start of the growing season. Take groundwater well readings once every 7 days for the first two months of the growing season and every 30 days for the remainder of the growing season. Record to the nearest inch. Well data should be collected every year during the monitoring period. If well data confirms the presence of wetland hydrology during multiple years of monitoring, the Sponsor may request that well data not be required every year. The IRT co-chairs, in consultation with the IRT, will consider the evidence of hydrology, based on the monitoring reports, site visits, and local precipitation, to approve or deny this request.
e. The growing season (as further detailed in the Regional Supplement to the Corps of Engineers Wetland Delineation Manual) has begun on a site in a given year when two or more different non-evergreen vascular plant species growing in the wetland or surrounding areas begin to exhibit visible aboveground growth or soil temperature measured at the 12 inch depth is 41°F (5°C).
f. Measure and record any surface water present at the monitoring wells.
g. Include a copy of the plan showing the location of the wells and surface elevation beside each well. Summarize the information regarding groundwater and surface water elevations, and provide monthly rainfall data for the areas.

Indicator of Saturated and Anaerobic Conditions to Demonstrate the Presence of Active Hydric Soil Conditions

a. The Hydric Soil Technical Standard (HSTS) developed by the National Technical Committee for Hydric Soils (Technical Note 11) requires documentation of anaerobic conditions and saturated conditions for a soil to be considered hydric:
    i. For a soil to meet the Saturated Conditions part of the HSTS, free water must exist within 10 inches (25 cm) of the ground surface for at least 14 consecutive days; and
    ii. Anaerobic conditions must exist within 10 inches (25 cm) of the ground surface for at least 14 consecutive days. Anaerobic conditions may be determined by one of the following methods, as detailed in the HSTS:
        (1) Positive reaction to alpha-alpha-Dipyridyl, determined at least weekly.
        (2) Reduction of iron determined with IRIS tubes installed for 30 days.
        (3) Measurement of redox potential (Eh) using platinum electrodes, determined at least weekly.

    Methods to demonstrate the presence of anaerobic conditions are outlined at (http://soils.usda.gov/use/hydric/ntchs/tech_notes/index.html).
b. If using alpha-alpha Dipyridyl to show soil reduction, soils should be measured at least weekly during the growing season, at a depth of six inches. Note that alpha-alpha Dipyridyl is also available as paper strips for easier measurement.
c. Plot locations shall be determined after baseline hydrology data are collected for two years to select areas that represent various hydroperiods. At least one soil sample plot location should be established for each hydroperiod present at the mitigation site. Soil sample plots shall be located within five feet of the monitoring well, and shall be performed during each monitoring year. Additional soil monitoring plots may need to be established where saturation occurs between 5% and 12.5% of the growing season to provide corroborative evidence that wetland hydrology is present. Additional soil monitoring may also be required if soil monitoring occurs during extremely wet or dry years.
d. Include a copy of the plan showing the location of the data collection, summarize the information, and provide monthly rainfall data for the area.
e. If soil testing confirms the presence of actively reducing soil conditions during multiple years of monitoring, the Sponsor may request that soil testing not be required every year. The IRT co-chairs, in consultation with the IRT, will consider the evidence of anaerobic soil conditions, based on the monitoring reports, site visits, and local precipitation, to approve or deny this request.

Recommended Indicator of Reduction in Soils (IRIS) Tube Placement and Data Collection (summarized from the 2008 document entitled *Protocol for Using and Interpreting IRIS Tubes*).

a. IRIS Tubes should be installed during the time of the growing season anticipated to have the highest amount of soil reduction (often in the early growing season). They should be installed in a representative portion of the mitigation site, rather than in the lowest/wettest areas. Additional IRIS tube samples should be taken for larger sites and sites with higher changes in elevation.
b. Create a pilot hole in the soil using a 7/8" push probe.
c. Be sure tubes are labeled.
d. Insert the IRIS tube into the hole until the mark on the tube is at the soil surface (50 cm). If they are installed to shallower depths, mark the depth of the soil surface with a permanent marker.
e. Install five replicates, up to a meter apart, within the study area.
f. Tubes should be left in place for two to four weeks. Then should be removed and replacement tubes can be installed in the same holes for an additional two to four weeks.
g. Gently wash off any adhering soil from the tubes.
h. Estimate the amount of paint removed from each tube.
i. To improve accuracy, have two people estimate the amount of paint removed, then average the two sets of data.
j. Find a six inch area on the tube, entirely within the upper 12 inches, with the most paint removed. Estimate the percentage of paint removed from this six inch area.
k. To meet the Technical Standard for reducing soil conditions as currently specified in the National Technical Committee on Hydric Soils, 30% or more of paint within this six inch section must be removed.

l. At least three of the five replicates must show this paint removal for the soil to demonstrate that it is reducing.
m. Include a copy of the plan showing the location of the IRIS tubes, summarize the information, and, if relevant, provide monthly rainfall data for the areas.

Recommended Method of Application of the Alpha-Alpha Dipyridyl Paper Test Strips

a. Locate a representative sample area with similar micro topography, vegetative community, etc. as is recommended for most sampling approaches in the Regional Supplements. The area should represent the average condition and not one extreme or another.
b. Excavate a soil pit to a depth at least the length of your sharp shooter, generally 14-16 in length*. A fresh slice of the profile should be cut from the side of the pit and laid out for observation and characterization. Apply the test strips to the targeted layer(s) at several locations within the representative area to ensure that the majority of the layer is reduced. Document at what depth the positive reaction(s) to the test occurred. The procedure for problematic soils (Step 4d) discussed in Chapter 5 of the Regional Supplements requires that at least 60% of a layer 4 inches or more thick and located within 12 inches of the surface, react positively from liquid alpha-alpha dipyridyl solution. **Note: The depth of soil excavations for profile characterization can be much deeper depending upon the required depth and thickness requirements of some hydric soil indicators.*
c. It is important that the test strips are applied only to a fresh, broken face of the desired layer(s). Do not add moisture to soil samples or rub soil against or on to the paper, simply press the paper against a fresh, broken ped face on the soil sample(s). Be sure not to test soil samples that have been exposed to digging equipment to prevent false positive reactions. Record all observations of soil moisture, limit of saturation and the depth to water table on a data form and or in your notes.
d. A positive reaction on the paper (turning pink or red) should occur in a few moments but can take longer especially during colder periods. The manufacturer indicates that the reaction normally takes place within about 30 seconds.
e. To increase the validity of your findings, test the targeted layers at several different locations within the same representative area and any other layers which meet an indicator.
f. Testing multiple samples can exhaust your supply quickly but you can double your reserves by cutting the strips in half. Be careful not to use cutting instruments that could contaminate a sample.
g. The test should be performed as soon as you remove the sample and all information (depths, layers, etc.) recorded in the appropriate fields of the data form (i.e. hydrology remarks, soil layer comments, soil remarks, etc.). Your soil profile description should also be performed as soon as possible using one of the representative pits. In addition to photo documenting your soil profile, document the application of the strips before and after any potential reaction.
h. If the soil is allowed to dry before implementing the test strips or characterization of the profile, dig another representative pit and start over.

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June, 2015

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B. Reporting and Performance Standards: All required documentation, including monitoring reports, semi-annual ledgers, and as-built surveys shall be submitted to IRT co-chairs (the U.S. Army Corps of Engineers and the Maryland Department of the Environment). The IRT will use best professional judgment, visual observation, and monitoring reports to evaluate attainment of performance standards and in determining whether part of or the entire Bank is successful or whether corrective actions are warranted. Success will be determined on a transect, plot, well, field, or cell basis. Presenting averages or means of plot data across a bank site is not satisfactory to demonstrate success. All of the following standards will be used to assess project success and credit releases and must be achieved each monitoring year:

1. Vegetated Wetland Area(s):

I. **Wetland Vegetation Dominance:** Wetland vegetation dominance, defined as a vegetation community where more than 50% of all dominant plant species across all strata are rated obligate ("OBL"), facultative wet ("FACW"), or facultative ("FAC"), using the vegetation sampling procedures as described in the appropriate regional supplement to the Corps of Engineers Wetland Delineation Manual, must be achieved; and

II. **Aerial Cover Vegetative Standards:**
   a. By the end of monitoring year two, achieve a minimum of 45% coverage by native wetland (FAC or wetter) plant species.
   b. By the end of monitoring year three, achieve a minimum of 70% coverage by native wetland (FAC or wetter) species.
   c. By the end of monitoring year five, achieve a minimum of 85% coverage by native wetland (FAC or wetter) species
   d. The IRT may consider volunteer species in the aerial coverage estimates (a-c above) when they support functions consistent with the project design goals, including being appropriate for the planned community type.

III. **Invasive Species:** The goal of any Bank is to have no invasive species. However, if invasive species are present, no more than 10% of relative plant cover[8] over the entire Bank site shall be made up by non-native or invasive species, with no individual colony greater than or equal to 5% of relative plant cover. No more than 5% of relative plant cover over the entire Bank site shall be made up of *Phragmites australis*[9]. Native status will be based on the Natural Resources Conservation Service Plants Database. Invasive species are identified on the National Park Service/U.S. Fish and Wildlife Service document Plant Invaders of Mid-Atlantic Natural Areas (http://www.nps.gov/plants/alien/pubs/midatlantic/) and the Maryland Invasive Species Council Invasive Species of Concern in Maryland (http://www.mdinvasivesp.org/invasive_species_md.html). *Phalaris arundinacea* and *Typha* spp. may also be considered as invasive species by the IRT; and

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[8] "Relative plant cover" is defined as the cover of a particular species as a percentage of total plant cover. Thus, relative cover will always total 100%, even when total absolute cover is quite low.

[9] American Common Reed, *Phragmites australis* subsp. *americanus*, is not considered to be an invasive plant.

IV. **Wetland Hydrology:**

a. Establishment and verification of proper tidal hydrology and substrate elevations relative to closest tidal datum. Tidal inundation appropriate to the planned community type is present throughout the site.
b. For areas planned as low marsh, tides must alternately flood and expose the land surface at least once daily. The surface elevations of this wetland type will be between the mean high and mean low tide elevations.
c. For areas planned as high marsh, tides should flood the land surface less often than once daily. The surface elevations of this wetland type will be between the mean high tide and spring high tide elevations.

V. **Wetland Soils:**

a. The substrate must be of a suitable depth and composition to ensure the survival and growth of wetland plants. The substrate must be stabilized to prevent erosion.

2. 25-Foot Buffer Area(s):

I. **Aerial Cover Vegetative Standards:**

a. By the end of monitoring year one, a minimum of 50% of the mitigation site shall be vegetated (either by planted or volunteer plants) by native species.
b. By the end of monitoring year two, a minimum of 60% of the mitigation site shall be vegetated (either by planted or volunteer plants) by native species.
c. By the end of monitoring year three, a minimum of 70% of the mitigation site shall be vegetated (either by planted or volunteer plants) by native species.
d. By the end of monitoring year five and each monitoring year thereafter, a minimum of 85% of the mitigation site shall be vegetated (either by planted or volunteer plants) by native species.
e. Volunteer species should support functions consistent with the project design goals.

II. **Invasive Species:** The goal of any Bank is to have no invasive species. However, if invasive species are present, no more than 10% of relative plant cover[1] over the entire Bank site shall be made up by non-native or invasive species, with no individual colony greater than or equal to 5% of relative plant cover. No more than 5% of relative plant cover over the entire Bank site shall be made up of *Phragmites australis*[2], *Persicaria perfoliata*, or *Pueraria montana*. Native status will be based on the Natural Resources Conservation Service Plants Database. Invasive species are identified on the National Park Service/U.S. Fish and Wildlife Service document *Plant Invaders of Mid-Atlantic Natural Areas* (http://www.nps.gov/plants/alien/pubs/midatlantic/) and the Maryland Invasive Species Council *Invasive Species of Concern in Maryland* (http://www.mdinvasivesp.org/invasive_species_md.html); and

III. **Buffer Species Richness:** For forested buffers, establish a minimum of three species of native trees and two species of native shrubs with each tree and shrub species having an aerial cover of at least 15%; and

IV. **Vegetation Density for Forested Buffers:** For forested buffers, native plant density of at least 435 living trees/shrubs per acre with a minimum height of 10 inches shall be achieved by the end of the first growing season following planting and maintained each monitoring year thereafter through the end of the monitoring period; and

V. **Vegetation Cover for Forested Buffers:** For forested buffers, average tree height of

tallest five native trees within each sample plots shall be at least three feet in height at year three and at least five feet in height at year five and each monitoring year thereafter. Canopy cover[10] of native trees and shrubs must be at least 30% by year ten;

C. Monitoring Timeframe: The Bank Sponsor will be responsible for submitting annual monitoring reports to IRT co-chairs (the U.S. Army Corps of Engineers and the Maryland Department of the Environment) to be distributed to the IRT, for a period of five years from the completion of the construction and planting of the mitigation site or phase thereof. Monitoring reports should be concise and effectively provide the information necessary to assess the status of the compensatory mitigation project. Reports should provide information necessary, including supporting data such as plans, maps, and photographs, to illustrate site conditions and whether the compensatory mitigation project is meeting its objectives and performance standards. Monitoring reports, paper copies and an electronic version, must be submitted to the IRT co-chairs by December 31 of each monitoring year. Monitoring must be conducted a minimum of once per year during the monitoring years following construction of any phase of the bank site. Monitoring may be terminated or the extent of monitoring may be reduced over part or the entire site at the discretion of the IRT. Conversely, the IRT may extend the original monitoring period upon a determination that performance standards have not been met or the bank is not on track to meet them.

D. Monitoring Reports: The first monitoring report is due the year the mitigation planting occurs, unless planting occurs after April 15, in which case the first monitoring report will not be due until the end of the next year. For each monitoring report, vegetative monitoring shall be conducted between June 15 and September 30. These site visits should preferably be during a period with normal hydrologic conditions. The following information must be included with the monitoring report:

1. Overview / Background Data:

I. Title page indicating the bank name, umbrella bank name (if applicable), site name (if applicable), bank phase (if applicable), monitoring year, any requested action (e.g., credit release, IRT review), Bank Sponsor identification (name, address, phone number, and email address), preparer identification (name, address, phone number, and email address).

II. Written description of the location, any identifiable landmarks of the Bank, including information to locate the site perimeter(s), and coordinates of the mitigation site (expressed as latitude and longitude).

III. Date(s) of site inspections.

IV. A brief paragraph describing the purpose of the Mitigation Bank, including the proposed mitigation acreage and type of aquatic resources approved as part of the mitigation plan and Mitigation Banking Instrument (MBI). Include the dates the mitigation construction was started and the planting was completed.

V. A brief narrative description of the Mitigation Bank addressing its position in the landscape, adjacent waterbodies, and adjacent land use.

VI. A short statement on whether the performance standards are being met.

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[10] "Canopy cover" is defined as the percentage of ground covered by tree and shrub leaves, when the edges of the leaves are mentally projected down to the ground surface.

VII. A narrative description of existing site conditions and how the Mitigation Bank has or has not achieved the goals, objectives and performance standards established for the project.

VIII. Dates of any recent corrective or maintenance activities conducted since the previous report submission.

IX. Specific recommendations for any additional corrective or remedial actions.

X. Estimate the amount of the Mitigation Bank that is establishing into each type of wetland system (e.g., tidal low-marsh, tidal high-marsh, beach, open water, etc.). If this differs from what was planned, show the boundaries of the actual wetland area/types on the plans or maps.

XI. Estimate the amount of the Mitigation Bank buffer that is establishing into forested buffer, if applicable. If this differs from what was planned, show the boundaries of the actual forested buffer area on the plans or maps.

2. Requirements: List the monitoring requirements and performance standards, as specified in the approved mitigation plan, mitigation banking instrument, and/or special conditions of the permit and evaluate whether the compensatory mitigation project site is successfully achieving the approved performance standards or trending towards success. A table is a recommended option for comparing the performance standards to the conditions and status of the developing mitigation site.

3. Summary data: Summary data should be provided to substantiate the success and/or potential challenges associated with the compensatory mitigation project. Take one set of photographs from established photographic points any time between June 15 and September 30 of each monitoring year (pictures should be taken at the same time of year when possible). Photo location points should be identified on the appropriate maps and labeled with the direction in which the photo was taken. Submitted photos should be formatted to print on a standard 8.5 by 11-inch piece of paper, dated, and clearly labeled with the direction from which the photo was taken. GPS coordinates should be shown on the plans for each photographic reference point and sample plot.

4. Maps and Plans: Maps should be provided to show the location of the compensatory mitigation site relative to other landscape features, habitat types, locations of photographic reference points, transects, sampling data points, and/or other features pertinent to the mitigation plan. In addition, the submitted maps and plans should clearly delineate the mitigation site perimeter(s), which will assist the project managers in locating the mitigation area(s) during subsequent site inspections. Each map or diagram should be formatted to print on a standard 8.5 by 11-inch piece of paper and include a legend and the location of any photos submitted for review. As-built plans should be included if they were not already submitted to the IRT.

5. Conclusions: A general statement shall be included that describes the conditions of the compensatory mitigation project. If performance standards are not being met, a brief explanation of the difficulties and potential remedial actions proposed by the Bank Sponsor, including a timetable, must be provided. The Corps and MDE, in coordination with the IRT, will ultimately determine if the mitigation site is successful for a given monitoring period.

6. Monitoring Report Measurements:

I. Wetland Area(s):

a. Vegetation:
   i. During each monitoring year, to assess the overall site, estimate the actual and relative percent cover by dominant plant species (including volunteer plants) and any invasive plant species. Estimate percent cover by plants with a wetland indicator status of FAC or wetter. Estimate the percent survival of planted species. Please note that projects where the vegetation is inconsistent throughout the site may not meet the performance standards (e.g. a site where some portions have high densities of FAC or wetter plants but other portions have low densities).
   ii. Measurements of vegetation based upon performance standard and methods used to evaluate the vegetative success of the mitigation site.
   iii. For monitoring years three and five, summarize the results from the vegetation plot study, including the percent cover of planted species and percent cover of each wetland species (planted and volunteer) present in order of dominance and for each vegetative stratum. Data should be summarized for each transect, plot and also by field or cell. **Do not include the raw plot data in your monitoring report.**

b. Hydrology:

   i. Establishment of elevation transects coinciding with vegetation monitoring transects. Elevation profiles shall depict all wetland zones, vegetation plots and transition areas. Elevations should be referenced in feet to a benchmark elevation based upon the North American Vertical Datum of 1988 (NAVD88).
   ii. Establishment of the location of the Mean High Water Line (MHWL), Mean Low Water Line (MLWL), and Spring High Tide Line (SHTL) using onsite monitoring by the applicant and approved by the IRT.
   iii. Measurement of ground water levels, recording the minimum and maximum water table conditions through the wetland transition areas.
   iv. Discuss any relevant hydrologic events (e.g., storms) that may have affected the site.

c. Stability
   i. Estimate percent of site that has erosion problems or slope failure and explain reasons for these problems.
   ii. Discuss long-term stability of the site.

d. Remediation:
   i. Describe any problems observed within the mitigation site, such as: soil stability concerns (e.g., bank or marsh erosion, slope failures, etc.), inappropriate hydrologic regime for the planned wetland community, seasonal drought conditions, storm events, invasion by undesirable species of plants or wildlife, poor plant establishment, adverse water quality impacts (i.e., excessive sediment loading, water pollution, etc.), and human encroachment.
   ii. Describe the proposed remedial measures to address the problems noted above.

e. Remedial measures proposed by the Bank Sponsor are subject to review and approval by the IRT, acting through the Chairs, prior to implementation. In the event that remedial measures are implemented, the monitoring period may be extended on a case-by-case basis. The treatment of non-native invasive plant species does not need the approval of the IRT, but should be completed at the correct time of year by someone with a current pesticide applicator certification and the required MDE toxic materials permit.

II. 25-Foot Buffer Area(s):

a. Vegetation
   i. For each monitoring year, estimate the actual and relative percent cover by dominant plant species (including volunteer plants) and any invasive plant species. Estimate the percent survival of woody planted material and number of native trees/shrubs per acre (including native volunteer woody species taller than ten inches). Please note that projects where the vegetation is inconsistent throughout the site may not meet the performance standards (e.g. a site where some portions have high densities of woody species but other portions have low densities).
   ii. For forested buffers, measure the height of the tallest five trees within each sample plot in each monitoring year. In year ten, measure canopy cover of trees and shrubs.
   iii. Measurements of vegetation based upon performance standard and methods used to evaluate the vegetative success of the mitigation site.
   iv. For each monitoring year, summarize the results from the vegetation plot study, including the density trees/shrubs and percent cover of native species present in order of dominance and for each vegetative stratum. Data should be summarized for each plot and also by field or cell. **Do not include the raw plot data in your monitoring report.**

b. Remediation:
   i. Describe any problems observed within the buffer, such as: invasion by undesirable species of plants or wildlife, disease condition for plants, poor plant establishment, human encroachment, and slope failures or erosion problems.
   ii. Describe the proposed remedial measures to address the problems noted above.

c. Remedial measures proposed by the Bank Sponsor are subject to review and approval by the IRT, acting through the Chairs, prior to implementation. In the event that remedial measures are implemented, the monitoring period may be extended on a case-by-case basis. The treatment of non-native invasive plant species does not need the approval of the IRT, but should be completed at the correct time of year by someone with a current pesticide applicator certification and the required MDE toxic materials permit.

Below are the recommended techniques for monitoring mitigation sites. Alternate techniques may be considered, but must be approved in writing by the IRT prior to the commencement of the monitoring period.

<u>Recommended Wetland Vegetation Density Measurement Technique</u>

c. The following method for measuring the success of the vegetative colonization should be conducted between June 15 and September 30 of monitoring years three and five, subsequent to the completion of the construction of the mitigation project, unless an alternate schedule is agreed upon by the IRT.
d. Vegetation sample plots shall be located on a stratified random basis over the site in order to sample all areas of restored/constructed wetlands at locations adjacent to each photo location marker. Plots should be located within each elevation gradient and spread throughout the Bank.

e. The following minimum numbers of samples will be required:
    i. If the site is < 1 acre, then a minimum of 5 plots/acre is required.
    ii. If the site is > 1 acre but less than 3 acres, then a minimum of 4 plots/acre is required.
    iii. If the site is > 3 acres, then a minimum of 3 plots/acre is required.
f. All cells, fields, or blocks shall be sampled. A targeted vegetation monitoring approach that correlates monitoring stations with vegetative signatures on aerial photography may be useful for larger mitigation sites. Record GPS coordinates for plot locations. Plot locations should be fixed throughout the monitoring period.
c. Each plot shall be of a size no less than 3'x3' (or circular with approximately the same surface area). The vegetation data shall be collected during the growing season and shall include:

    i. Dominant vegetation species identification
    ii. Percent ground cover assessment
    iii. Number of woody plant stems greater than 10 inches in height (total and #/acre)
    iv. The percentage of dominant species FAC or wetter
    v. Percent survival by planted species
    vi. An invasive/noxious species assessment including percent cover

<u>Recommended Buffer Vegetation Density Measurement Technique</u>

c. The following method for measuring the success of the vegetative colonization should be conducted once between May 1 and September 30 of monitoring years three and five, subsequent to the completion of the construction of the mitigation project, unless an alternate schedule is agreed upon by the IRT.
d. Vegetation sample plots shall be located on a stratified random basis over the site in order to sample all areas of wetland buffer at locations adjacent to each photo location marker. The following minimum numbers of samples will be required:
    v. If the site is < 5 acres, then a minimum of 3 plots/acre is necessary.
    vi. If the site is > 5 acres but less than 20 acres, then a minimum of 3 plots/acre is required for the first 5 acres, then 2 plots/acre is required for the remaining acreage.
    vii. If the site is > 20 acres, then a minimum of 2 plots/acre is required for the first 20 acres, then 1 plot/acre is required for the remaining acreage.
    viii. All cells, fields, or blocks shall be sampled. A targeted vegetation monitoring approach that correlates monitoring stations with vegetative signatures on aerial photography may be useful for larger mitigation sites.
c. Each plot shall be of a size no less than 400 square feet for woody plants (or circular with approximately the same surface area). The vegetation data shall be collected during the growing season and shall include:

    i. Dominant vegetation species identification

    ii. Percent ground cover assessment

    iii. Number of woody plant stems greater than 10 inches in height (total and #/acre)

    iv. Percent survival by planted species

    v. An invasive/noxious species assessment including percent cover

# EXHIBIT B

## Schedule of Credit Availability

**EXHIBIT B: SCHEDULE OF CREDIT AVAILABILITY**

A. At the time of submittal of each Addendum to the UMBI, SHA will propose a credit release schedule. If the proposed schedule differs from the Standard Credit Release Schedules used in Maryland, SHA will provide justification as to why the site is unique with justification, based on factors listed in 33 C.F.R. 332.8(o)(8), and should receive an accelerated credit release schedule. The IRT Chairs will then consult with the IRT and make a determination as to the appropriateness of that credit release schedule (See Standard Maryland and Accelerated Schedules below).

B. Upon submittal of all appropriate documentation by the Sponsor, and subsequent written approval by the IRT Chairs, in consultation with the IRT, wetland credits shall be released according to the Credit Release Schedules described below and in site-specific Addenda, once they are approved. Credit Releases shall be determined by the USACE and MDE, in consultation with the other IRT agencies, based upon attainment of the performance standards established for the particular site. The IRT Chairs may determine after consultation with the IRT, that the credit release credit release schedule may be accelerated commensurate with performance. No credit transfer shall occur until the applicable credit release has occurred.

C. If the Mitigation Bank site meets the final year's Performance Standards for two consecutive years, the sponsor may propose that remaining credits be released prior to the final year of monitoring. The IRT would need to approve this early release of credits prior to credits being available.

Preservation Credit Availability

A. Prior to any credit release for Preservation, the long-term protection mechanism (e.g., easement or Declaration of Restrictive Covenants) must be recorded and the Long-Term Management Plan must be approved by the IRT. Once the IRT receives a copy of the recorded protection mechanism and approves the Long-Term Management Plan, 100% of the Preservation credits will be released.

B. Preservation credit cannot serve as compensatory mitigation unless combined with other types of mitigation.

Streams and Legacy Sites Credit Availability

A. Streams and Legacy Sites credit schedules shall be determined on a case by case basis at time of approval of Prospectus/Mitigation Bank Site Plan.

**Standard Maryland Nontidal Wetland Credit Release Schedule**

1. 15% of the total anticipated wetland credits upon MBI execution by the Bank Sponsor, the Corps, MDE, and other IRT agencies who choose to execute the MBI; approval of the final mitigation plan; implementation of the financial assurances; recordation of the approved restrictive covenant or other approved site protection mechanism; and approval of the long-term management plan.
2. 15% of the total as-built wetland credits upon successful completion of all required physical and biological wetland creation work in accordance with the MBI and approved mitigation plan. The Bank Sponsor must complete the initial physical and biological improvements no later than the first full growing season following initial debiting from the Bank. The Bank sponsor must submit a request for this release to the Corps and MDE with an as-built drawing documenting completion of construction and planting. A site visit will be performed by the IRT to confirm the status of the Bank and written approval will be provided by the Corps and MDE.
3. 20% of the total as-built wetland credits upon attainment of the performance standards in year two.
4. 10% of the total as-built wetland credits upon attainment of the performance standards in year three.
5. 15% of the total as-built wetland credits upon attainment of the performance standards in year five.
6. 10% of the total as-built wetland credits upon attainment of the performance standards in year seven.
7. 15% of the total as-built wetland credits upon attainment of the performance standards in year ten.

**Standard Maryland Tidal Wetland Credit Release Schedule**

1. 15% of the total anticipated wetland credits upon MBI execution by the Bank Sponsor, the Corps, MDE, and other IRT agencies who choose to execute the MBI; approval of the final mitigation plan; implementation of the financial assurances; recordation of the approved restrictive covenant or other approved site protection mechanism; and approval of the long-term management plan.
2. 15% of the total as-built wetland credits upon successful completion of all required physical and biological wetland creation work in accordance with the MBI and approved mitigation plan. The Bank Sponsor must complete the initial physical and biological improvements no later than the first full growing season following initial debiting from the Bank. The Bank sponsor must submit a request for this release to the Corps and MDE with an as-built drawing documenting completion of construction and planting. A site visit will be performed by the IRT to confirm the status of the Bank and written approval will be provided by the Corps and MDE.
3. 20% of the total as-built wetland credits upon attainment of the performance standards in year two.
4. 20% of the total as-built wetland credits upon attainment of the performance standards in year three.
5. 30% of the total as-built wetland credits upon attainment of the performance standards in year five.

**Nontidal Wetland Credit Release Schedule (Accelerated)**

| Credit Release Range (percent of total anticipated credits) | Milestone Achievement |
|---|---|
| 15 up to 25 | IRT approval of the final Mitigation Site Plan; implementation of the Financial Assurances; recordation of the approved restrictive covenant or other approved site protection mechanism; and approval of Long-Term Management Plan. |
| 15 up to 25 | Successful completion of all required physical and biological wetland implementation work in accordance with the approved Mitigation Site Plan. The Sponsor must complete the initial physical and biological improvements no later than the first full growing season following initial debiting from the Bank. The Sponsor must submit a request for this release to the USACE and MDE with an as-built drawing documenting completion of construction and planting. A site visit will be performed by the IRT to confirm the status of the mitigation Bank site and written approval will be provided by the USACE and MDE. |
| 5 up to 20 | Upon attainment of the Year 2 performance standards as determined by the IRT and contingent upon the Sponsor's submission of the second year monitoring report. |
| 5 up to 10 | Upon attainment of the Year 3 performance standards as determined by the IRT and contingent upon the Sponsor's submission of the third year monitoring report. |
| 10 up to 15 | Upon attainment of the Year 5 performance standards as determined by the IRT and contingent upon the Sponsor's submission of the fifth year monitoring report. |
| 10 up to 15 | Upon attainment of the Year 7 performance standards as determined by the IRT and contingent upon the Sponsor's submission of the seventh year monitoring report. |
| 5 up to 15 | Upon attainment of the Year 10 performance standards as determined by the IRT and contingent upon the Sponsor's submission of the tenth year monitoring report. |
| 100% | Maximum total for any given site |

**Tidal Wetland Credit Release Schedule (Accelerated)**

| Credit Release Range (percentage of total anticipated credits) | Milestone Achievement |
|---|---|
| 15 up to 25 | IRT approval of the final Mitigation Site Plan; implementation of the Financial Assurances; recordation of the approved restrictive covenant or other approved site protection mechanism; and approval of Long-Term Management Plan |
| 15 up to 25 | Successful completion of all required physical and biological wetland implementation work in accordance with the approved Mitigation Site Plan. The Sponsor must complete the initial physical and biological improvements no later than the first full growing season following initial debiting from the Bank. The Sponsor must submit a request for this release to the USACE and MDE with an as-built drawing documenting completion of construction and planting. A site visit will be performed by the IRT to confirm the status of the Mitigation Bank site and written approval will be provided by the USACE and MDE. |
| 10 up to 20 | Upon attainment of the Year 2 performance standards as determined by the IRT and contingent upon the Sponsor's submission of the second year monitoring report. |
| 15 up to 25 | Upon attainment of the Year 3 performance standards as determined by the IRT and contingent upon the Sponsor's submission of the third year monitoring report. |
| 5 up to 25 | Upon attainment of the Year 5 performance standards as determined by the IRT and contingent upon the Sponsor's submission of the fifth year monitoring report. |
| 100 | Maximum total for any given site |

# EXHIBIT C

## Declaration of Restrictive Covenants (USACE Template)

**STATE OF MARYLAND**
**COUNTY OF _____**

# DECLARATION OF RESTRICTIVE COVENANTS

**THIS DECLARATION OF RESTRICTIVE COVENANTS is made this _____ day of ____, 20____, by _____("Declarant*(s)*").**

## RECITALS

**WHEREAS, Declarant*(s) is/are* the owner*(s)* of certain real property *("Property" which shall include wetlands, any interest in submerged lands, uplands, associated riparian/littoral rights)* located in _____County, Maryland, more particularly [*describe tract to be preserved, including: 1) acreage, 2) a reference to recorded plat(s), or attach an approved permit drawing or site plan, and 3) any excluded property*] and shown in Exhibit A (i.e., metes and bounds of the Property), and Exhibit B (i.e., a scaled plat of the area subject to the Declaration), and made a part hereof ("Conservation Area"); and**

**WHEREAS, Declarant*(s)* entered into a mitigation banking instrument (the "MBI") between: the _____(the "Bank" or the "Bank Sponsor") and the Interagency Review Team (the "IRT"), which consists of the Baltimore District, U.S. Army Corps of Engineers (the "Corps" or "Baltimore District," to include any successor agency); the U. S. Environmental Protection Agency ("EPA"); the U.S. Fish and Wildlife Service ("USFWS"); the National Oceanic and Atmospheric Administration ("NOAA"), the Maryland Department of the Environment ("MDE," to include any successor agency); the Critical Area Commission ("CAC"), the Maryland Historic Trust ("MHT"), and the Maryland Department of Natural Resources ("DNR"); dated _____, 20___; and**

**WHEREAS, pursuant to the MBI, Declarant proposes to create, maintain, and preserve a self-sustaining natural aquatic system and buffer located on the Conservation Area; and**

**WHEREAS, under Federal and State law, the Corps has issued Permit No. _____, and MDE has issued Permit No. _____ (collectively, the "Permits") for impacts to waters of the United States and/or the State of Maryland expected to result from the creation of the self-sustaining natural aquatic system located on the Conservation Area; and**

**WHEREAS, the MBI requires that this Declaration of Restrictive Covenants (the "Declaration") be executed and recorded in order that the Conservation Area shall remain substantially in its natural condition forever; and**

**WHEREAS, the Declarant*(s)* desire(s) to comply with the conditions of the MBI by imposing this Declaration on a Conservation Area within the Property; and**

**WHEREAS, the Conservation Area may contain land, functions, values, and services that serve as compensation and mitigation for impacts to Waters of the U.S. and/or waters of the State that were permitted by the Corps and/or MDE; and**

**WHEREAS, because the Conservation Area may serve as compensation for such above-referenced impacts, the Corps and MDE are third-party beneficiaries under this Declaration.**

**NOW THEREFORE, Declarant*(s)* hereby declare*(s)* that the Conservation Area, shall be held, transferred, conveyed, leased, occupied, or otherwise disposed of and used subject to the following restrictive**

**covenants, which shall run with the land and be binding in perpetuity and forever on all heirs, successors, assigns (they are included in the terms, "Declarant," below), lessees, or other occupiers and users.**

**1. Covenants and Restrictions.** Neither the Declarant*(s)*, nor any subsequent owner or owners of the Conservation Area or any portion thereof, shall undertake or cause to be undertaken within or upon the Conservation Area, within the Property, as described in (*Recitals and/or the site plan attached*), any of the following:

a. Removal, excavation, or dredging of soil, sand, gravel, minerals, organic matter, or materials of any kind;

b. Changing existing drainage characteristics, sedimentation patterns, flow patterns, or flood retention characteristics;

c. Disturbance of the water level or water table by drainage, impoundment, or other means;

d. Dumping, discharging of material, or filling with material, including the driving of piles and placing of obstructions;

e. Grading or removal of material that would alter existing topography;

f. Destruction or removal of plant life that would alter the character of a nontidal wetland, or introduction of exotic species;

g. Agricultural or forestry activities, such as aquaculture, plowing, tillage, cropping, seeding, cultivating, and grazing and raising of livestock, sod production, harvesting for production of food and fiber products. Forestry activities mean planting, cultivating, thinning, harvesting, or any other activity undertaken to use forest resources or to improve their quality or productivity;

h. Use of off-road vehicles and motor vehicles;

i. Destruction or alteration of the Conservation Area EXCEPT:

(i) Alteration necessary to construct the mitigation areas and associated improvements proposed to be built by _____, or its successors, and/or assigns, as approved in the mitigation plan approved by the Permits;

(ii) Alteration necessary to ensure the success of the mitigation areas including monitoring, reconstruction, maintenance, or repair of the constructed mitigation areas, as approved by the Corps and MDE;

(iii) Removal of vegetation when approved by the Corps and MDE and conducted for removal of noxious or invasive plants;

j. Utilizing a non-reporting Nationwide Permit or State Programmatic General Permit under Section 404 of the Clean Water Act or state general permits under MDE regulations to impact any Water of the U.S. on the Property. Notification shall be required to the Corps and MDE for the use of any Nationwide Permit, State Programmatic General Permit, or Regional Permit.

***[if reference is made to the Permit, or to a mitigation plan approved by the Permit, all exceptions (including regarding buffer areas) must be specifically spelled out in the Permit or plan; also, additional, specific, exceptions may be listed in this paragraph, e.g., fire or wildlife management plans, boardwalks, etc]*.**

**2. Duration and Amendment.** The covenants and restrictions listed herein are created pursuant to the Annotated Code of Maryland, Real Property Article § 2-118 and shall run with and bind the Property, and be binding on the Declarant*(s)*, its/their personal representatives, heirs, successors and assigns, unless and until terminated or modified by the Corps, MDE, or other Federal, State, or County agencies which have the legal authority to enforce these covenants and restrictions by regulations, permit, or agreement. The failure of the Corps, MDE, or other such agencies to enforce

the provisions of this Declaration shall not be deemed a waiver of any rights created hereunder. After recording, this Declaration may only be amended by a recorded document signed by the Corps, MDE and Declarant*(s)*. The recorded document, as amended, shall be consistent with the Baltimore District and MDE model conservation restrictions at the time of amendment. Amendment shall be allowed at the discretion of the Corps and MDE, in consultation with resource agencies as appropriate, and then only in exceptional circumstances. Mitigation for amendment impacts will be required pursuant to Baltimore District and MDE mitigation policy at the time of amendment. There shall be no obligation to allow an amendment. The Corps and MDE shall be provided with a 60-day advance written notice of any legal action concerning this Declaration or of any action to extinguish, void, or modify this Declaration in whole or in part. This Declaration is intended to survive foreclosure, bankruptcy, condemnation, or judgments affecting the Property.

3. **Notice to Government.** Any permit application, or request for certification or modification, which may affect the Conservation Area, made to any governmental entity with authority over wetlands or other waters of the United States and/or waters of the State, shall expressly reference and include a copy (with the recording stamp) of this Declaration.

4. **Reserved Rights.** It is expressly understood and agreed that these restrictive covenants do not grant or convey to members of the general public any rights of ownership, entry or use of the Conservation Area. These restrictive covenants are created solely for the protection of the Property, and for the consideration and values set forth above, and Declarant*(s)* reserve*(s)* the ownership of the fee simple estate and all rights appertaining thereto, including without limitation the rights to exclude others and to use the property for all purposes not inconsistent with these restrictive covenants.

5. **Monitoring and Maintenance.** The Bank Sponsor, Long-Term Steward (as defined in the MBI), and their authorized agents shall have the right to enter and go upon the lands of Declarant*(s)* to monitor and manage the Conservation Area to ensure compliance with the Mitigation Site Plan ("Mitigation Site Plan") and Long-Term Management Plan ("Approved Long-Term Management Plan") approved in the MBI. This may include, but is not limited to, completing annual monitoring, controlling invasive species, planting native vegetation, repairing signs/fences, and repairing erosion. The Corps, MDE, IRT, and its/their authorized agents shall have the right to enter and go upon the lands of Declarant*(s)* to inspect the Conservation Area, to verify compliance with the Mitigation Site Plan and Approved Long-Term Management Plan.

6. **Compliance Inspections.** The Corps, MDE, IRT, and its/their authorized agents shall have the right to enter and go upon the lands of Declarant*(s)*, to inspect the Conservation Area and take actions necessary to verify compliance with these restrictive covenants.

7. **Enforcement.** The Declarant*(s)* grant*(s)* to the Corps, the U.S. Department of Justice, and/or MDE, a discretionary right to enforce covenants in a judicial action against any person*(s)* or other entity(ies) violating or attempting to violate these restrictive covenants; provided, however, that no violation of these restrictive covenants shall result in a forfeiture or reversion of title. In any enforcement action, an enforcing agency shall be entitled to a complete restoration for any violation, as well as any other judicial remedy such as civil penalties. Nothing herein shall limit the right of the Corps and MDE to modify, suspend, or revoke the Permits.

8. **Property Transfers.** Declarant*(s)* shall include the following notice on all deeds, mortgages, plats, or any other legal instruments used to convey any interest in the Property and or Conservation Area (failure to comply with this paragraph does not impair the validity or enforceability of this Declaration):

> **NOTICE:** This property Subject to Declaration of Restrictive Covenants Recorded at [insert book and page references, county(ies), and date of recording].

9. **Marking of Property.** The perimeter of the Conservation Area shall at all times be plainly marked by permanent signs saying, "Protected Natural Area," or by an equivalent, permanent marking system.

[*Generally, a surveyed, recorded plat is required; however, at the discretion of the Corps and MDE, an approved permit drawing or site plan attached to these restrictive covenants may suffice*]

**10.** **Recording.** The Declarant*(s)* agree(s) to record this Declaration in the Land Records of the County and provide the Corps and MDE with proof of recordation within thirty (30) days of recordation. A plat depicting the boundaries of the Conservation Area subject to these restrictive covenants shall be recorded in the deed records office for each county in which the Property is situated prior to the recording of these restrictive covenants. The plat*(s) is/are* recorded at [*include book and page references, county(ies), and date*].

**11.** **Separability Provision.** Should any separable part of this Declaration be held contrary to law, the remainder shall continue in full force and effect.

**12.** **Inaccurate or Fraudulent Information.** Should an easement, right or lease on or to the Property not shown on the survey or listed in this Declaration and prior in time and recording to this Declaration, or unrecorded, be exercised in such a manner that it conflicts with or voids the prohibited uses of the Property set out in this Declaration, then the owners of the Property shall be responsible for providing alternative compensatory mitigation in such amounts and of such service and function as the Corps and MDE or any enforcer of this Declaration shall determine in accordance with the Clean Water Act and/or the Maryland Nontidal Wetlands Act.

**13.** **Eminent Domain.** If the Property is taken in whole or in part through eminent domain, the consequential value of the Conservation Area protected by the Clean Water Act and/or the Maryland Nontidal Wetlands Act is the cost of replacement of the conservation functions, services and values with other property in the same watershed.

**IN WITNESS WHEREOF**, the Declarant*(s) has/have* duly executed this Declaration of Restrictive Covenants the date written above.

**IN THE PRESENCE OF:** Declarant*(s)*

_____ By: _____

[*type name of witness under signature line*] [*type name of witness under signature line*]

[*type name of witness under signature line*] *Its:* [*type name of witness under signature line*]

**STATE OF MARYLAND**
**COUNTY OF**

**PERSONALLY** appeared before me _____, the undersigned witness, and made oath that *he/she* saw the within named _____ [, *by* _____, *its* _____,] sign, seal and as *his/her/its* act and deed, deliver the within named Declaration of Restrictive Covenants; and the *he/she* with the other witness named above witnessed the execution thereof.

_____

[*type name of witness under signature line*]

**SWORN to and subscribed before me**
**This _____day of _____, 20___.**

**NOTARY PUBLIC FOR**
**My Commission Expires:**

**IN THE PRESENCE OF:** **Trustees/Bank*(s)***

_____ By: _____

[*type name of witness under signature line*] [*type name of witness under signature line*]

[*type name of witness under signature line*] *Its:* [*type name of witness under signature line*]

**STATE OF MARYLAND**
**COUNTY OF**

**PERSONALLY** appeared before me _____, the undersigned witness, and made oath that *he/she* saw the within named _____[, *by* _____, *its* _____,] sign, seal and as *his/her/its* act and deed, deliver the within named Declaration of Restrictive Covenants; and that *he/she* with the other witness named above witnessed the execution thereof.

_____

[*type name of witness under signature line*]

**SWORN to and subscribed before me**
**This _____day of _____, 20___.**

**NOTARY PUBLIC FOR**
**My Commission Expires:**

I hereby certify this deed was prepared by or under the supervision of _____, an attorney admitted to practice by the Court of Appeals of Maryland.

_____

# EXHIBIT D

## Financial Assurances: Letter and Cost Estimating Template

Larry Hogan, *Governor*
Boyd K. Rutherford, *Lt. Governor*

State Highway Administration
Maryland Department of Transportation

Pete K. Rahn, *Secretary*
Gregory C. Johnson, P.E., *Administrator*

July 26, 2016

Ms. Beth Bachur
Acting Branch Chief
U.S. Army Corps of Engineers
10 South Howard Street
Baltimore MD 21201

Dear Ms. Bachur:

The Maryland Department of Transportation's State Highway Administration (SHA) is providing this financial assurance letter as part of SHA's Umbrella Mitigation Banking Instrument (UMBI) submission. It is intended to ensure you and members of the Interagency Review Team (IRT) that SHA is committed to funding its wetland mitigation program. We are both logistically and financially prepared to support the mitigation program to the fullest extent permitted by law, by providing funds to cover all conditions of an UMBI approval and future Mitigation Bank Site approvals.

The SHA will earmark necessary funds to ensure long-term Mitigation Banking obligations are met through our Consolidated Transportation Plan (CTP) funding, which is subject to legislative appropriation annually and projected out for a six year timeframe. Funds for the Mitigation Banking efforts will be part of the SHA Environmental Preservation budget. The SHA transportation funds are allocated through the Transportation Trust Fund, which is primarily funded through fuel tax, vehicle registration fees, and federal aid. This funding is solely dedicated to transportation related expenditures. The Transportation Trust Fund, a non-lapsing special fund, currently represents a major portion of the State's annual budget. The SHA will budget and distribute funding, as necessary, to account for the acquisition, design, construction, monitoring, adaptive management, long-term maintenance and catastrophic events of any proposed mitigation site, whether it is a Mitigation Bank Site as part of the UMBI, or permittee responsible mitigation site. We will use line item estimations, as shown on the enclose template, to determine a budget for each mitigation site.

These mitigation funds are used for the identification, selection, planning, design, acquisition, construction, monitoring and long-term sites management, and will also be used to support the administration of SHA's UMBI and mitigation implementation efforts. Annually, the SHA Office of Environmental Design will assess both its commitments to existing Mitigation Bank Sites and permittee responsible mitigation sites; as well as projected needs for future compensatory Mitigation Bank Sites, and establish a level of funding required to fulfill those commitments and needs. Our commitment to providing compensatory mitigation through permittee responsible payments into State In-lieu Fee Programs, and/or banking has always proven true and will continue into the future. We promise you that financial assurances of our program will continue without fail and we look forward to a fully executed and agreed upon UMBI, providing both the IRT and SHA confidence to move forward into mitigation banking.

Thank you for your consideration. If you have any questions or comments, please contact Ms. Betty Conners, SHA Office of Finance Director, at 410-545-0030, toll-free 1-888-204-0138, or via email at bconners@sha.state.md.us. Ms. Conners will be happy to assist you.

Sincerely,

Gregory C. Johnson, P.E.,
Administrator

Attachment

cc: Ms. Betty Conners, Director, Office of Finance, SHA

# Annual Financial Report Template

## Annual Financial Report for Bank X

**Date:**

| **Site: Bank X** | **SHA Charge # TBD** |
|---|---|
| | **Total** |
| Starting Budget | |
| Actual Cost to Date (month and year) | |
| **Balance** | |
| Additional Appropriation (if needed) | |
| Actual Cost to Date (month and year) | |
| **Balance** | |
| Additional Appropriation (if needed) | |
| Actual Cost to Date (month and year) | |
| **Balance** | |
| Additional Appropriation (if needed) | |
| Actual Cost to Date (month and year) | |
| **Balance** | |
| Additional Appropriation (if needed) | |

**SHA UMBI**

**TEMPLATE: Cost/Budget Estimate**

**XX Mitigation Site**

| | Estimate of Budget – Financial Assurances | |
|---|---|---|
| SITE: | Estimate ($) | Comments |
| Acquisition/ac. | | Based on average price paid in past and geographic area. |
| C&R Recordation (constant) | | Requires the development of a Plat, writing the C&R, and having someone go to county to record. |
| Planning & Design (constant) | | Average cost to design a site based on costs paid by SHA over the past several years. |
| Construction/ac | | Average cost to construct a site based on costs paid by SHA over the past several years. |
| Monitoring Year 1/ac + Report (constant) | | From average current cost paid by SHA. See Assumption for items included in cost. |
| Monitoring Year 2/ac + Report (constant) | | |
| Monitoring Year 3/ac + Report (constant) | | |
| Monitoring Year 5/ac + Report (constant) | | |
| Monitoring Year 7/ac + Report (constant) | | |
| Monitoring Year 10/ac + Report (constant) | | |
| Maintenance over 10 yrs. (constant) | | See Assumptions |
| Adaptive Management /Interim Monitoring (Remedial Actions over 10 yrs.) | | See Assumptions |
| Long Term Monitoring and Management/yr/ perpetual | | See Assumptions |
| Catastrophic Event | | See Assumptions |
| **TOTAL/ ac. + constant** | **Total Cost/ac + constant** | |
| Estimated budget | | Total Cost/ac + constant |
| Replacement Mitigation (includes: land acquisition, planning and engineering, construction, and monitoring.) | | Original estimated budget estimate + 5% inflation |

02/01/16

# ASSUMPTIONS

**Monitoring**

Hydrology:

Purchase and install wells (assume replacing 30% of wells over the 10 year period):

- Purchase price/ each
- Install price each. Assumes 2 people taking 2 hrs. each to install + 4hrs of total travel time.
- Maintenance price each. Assumes 1 person performing maintenance 1 time per yr. + 2 hrs. of travel time.
- Monitor the Well/each (assume 2 downloads/yr.). Assumes 2 people each download + 4hrs. of total travel time.
- Early Growing Season Surface water Mapping/Ac. Assume 2 people conducting 3 mappings events over a 15 day period/ac. + 12 hrs. of total travel time.

Hydrology Costs:
Year 1 for each well and mapping for each acre needed.
Year 2 each well.
Year 3 each well.
Year 4 each well (not required but recommended).
Year 5 each well.
Year 6 each well (not required but recommended).
Year 7 each well.
Year 8 each well (not required but recommended).
Year 9 each well (not required but recommended).
Year 10 each well.

**Calculate total cost per well and per ac. of mapping.**

Hydric Soils:

1. Using alpha-alpha-Dipyridyl method.
2. Test is performed at same time the Surface water mapping is occurring and at location of existing wells.
3. Travel time is excluded as it is cover in Hydrology.
4. Hydric soil monitoring does not begin until Year 3, as per protocol.
5. Two people performing the work which includes: digging pit, describing and photographing the soil, performing the test and recording the results.

Year 3 each well.
Year 4 each well.
Year 5 each well.
Year 6 each well.
Year 7 each well.
Year 8 each well.
Year 9 each well.
Year 10 each well.

**Calculate total cost for Hydric Soil Monitoring/ac.**

Vegetation:

1. Perform 3 vegetation sample plots /acre.
2. Assumes 2 people collecting the data.
3. Mark plots with PVC pipe and collect GPS point for each plot center point.
4. Sample for all the data required in the protocol
5. Take photos.
6. Travel time not included. Must be determined on site by site basis.

Year 1/ Ac. (includes establishing plots and photostations)
Year 2/Ac.
Year 3/Ac.
Year 5/Ac.
Year 7/Ac.
Year 10/ac.

**Calculate total cost for Vegetation Monitoring/Ac.**

Monitoring Report

1. A full report, as per the protocol, will be performed for Years 1, 2, 3, 5, 7 and 10.
2. On Years 4, 6, 8 and 9. A site visit will be made by the consultant (2 persons) to check for problems/verify no significant change in site conditions and prepare memo.
3. Two IRT site visits will be made over the ten year monitoring period.
4. Excludes any travel time.
5. Aerial photo taken Year 2 and 10.

Year 1.
Year 2.
Year 3.
Year 4.
Year 5 (agency site visit).
Year 6.
Year 7.
Year 8.
Year 9.
Year 10.

**Calculate total cost for preparing Reports over 10 years.**

**Maintenance**

1. Site will require some amount of invasive control every year.
2. Assume 3 work days per year for performing maintenance.

**Calculate total cost for Maintenance over 10 years.**

**Adaptive Management (remedial action)**

1. One remedial action required over the 10 year monitoring period requiring both a design and construction component and interim monitoring.
2. Assume remedial action may be needed on 25% of site, thus, cost represents 25% of original design and construction costs, and interim monitoring.

**Calculate total cost for one remedial action over the 10 year monitoring period.**

**Long Term Monitoring and Management (post monitoring)**

1. One visit per year to assess site conditions, i.e., monitoring.
2. Some invasive control needed every two years, i.e., management.
3. Assume 3 work days every two years to perform maintenance.

**Calculate annual Long Term Monitoring and Maintenance cost.**

**Catastrophic Event**

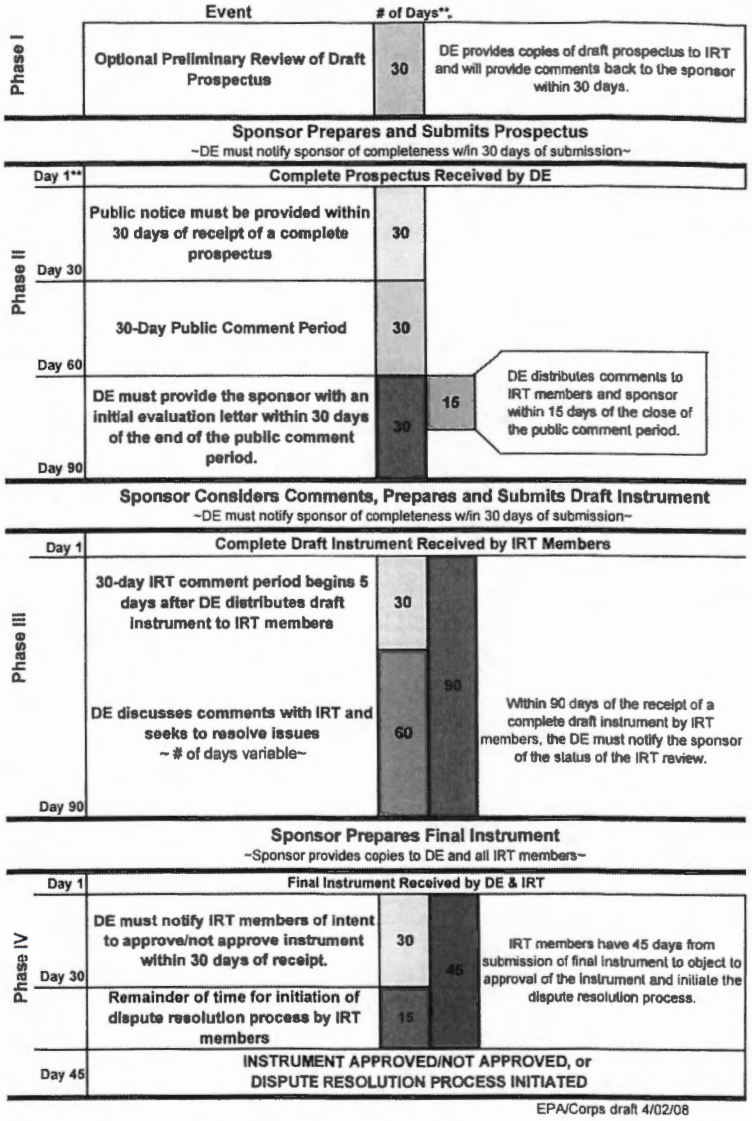
1. Should a Catastrophic Event occur, consultation with the IRT will take place to determine any remedial action.
2. If required by IRT, an assessment and design will be produced.
3. Construction activity will follow the design.
4. Monitoring of the fix will be performed for 2 years following the construction.

**Calculate cost to address repairs from a catastrophic event.**

## EXHIBIT E

## Compensatory Mitigation Rule Timeline for Bank or ILF Instrument Approval

## Compensatory Mitigation Rule
## Timeline for Bank or ILF Instrument Approval*




EPA/Corps draft 4/02/08

**Total Required Federal Review (Phases II-IV): ≤225 Days**

*Timeline also applies to amendments

**The timeline in this column uses the maximum number of days allowed for each phase.

P

# EXHIBIT F

## Long-term Management and Maintenance Plan Template

P

# IIIMARYLAND STATE HIGHWAY ADMINISTRATION LONG-TERM MANAGEMENT PLAN

**Long-Term Management**

**Plan I. Introduction**

**A** Purpose of Establishment

Mitigation Banks will be established by the Umbrella Mitigation Bank Instrument ("UMBI") to compensate for unavoidable impacts to, and to conserve and to protect waters of the U.S. The IRT Agencies include the Baltimore District of the U.S. Army Corps of Engineers, Region III of the U.S. Environmental Protection Agency, the National Marine Fisheries Service, the Maryland Department of the Environment, the Maryland Department of Natural Resources, the Maryland Historical Trust, and the Maryland Chesapeake Bay Critical Area Commission. Terms used in this management plan have the same meaning as defined in the UMBI.

The Bank Sponsor, easement holder, or long-term steward shall provide the Corps and MDE with 60 day advance notice before any action is proposed to be taken to modify the site protection instrument, management plan, or long-term protection mechanism, including the transfer of title to or establishment of any other legal claims over, the Bank site. The site protection instrument may not be altered, modified, amended, vacated, or terminated in whole or in part in any way without the express written approval of the Corps and MDE, in coordination with the IRT.

**B** Purpose of this Long-term Management Plan

The purpose of this long-term management plan is to ensure Bank Sites are managed, monitored, and maintained in perpetuity. This management plan establishes objectives, priorities and tasks to monitor, manage, maintain and report on the waters of the U.S., covered species and covered habitat on the Bank after Performance Standards established for the Bank have been achieved. This management plan will be implemented in accordance with the UMBI and the real estate protection instrument (conservation easement or declaration of restrictions) covering the Bank property.

**C** Long Term Steward and Responsibilities

The Long-Term Steward is the Maryland State Highway Administration (SHA). The Long-Term Steward, and subsequent Long-Term Stewards upon transfer, shall implement this long-term management plan, managing and monitoring the bank property in perpetuity to preserve its habitat and conservation values in accordance with the UMBI, conservation easement and/or declaration of restrictions, and the long-term management plan. Long-term management tasks shall be funded through the SHA Environmental Preservation Fund. The Long-Term Steward must maintain a copy of the UMBI and all addendums associated with the Bank Sites including all deed restrictions and easements. The Long-Term Steward shall be responsible for providing an annual report to the IRT detailing the time period covered, an itemized account of the management tasks and total amount expended. Any subsequent grading, or alteration of the site's hydrology and/or topography by the Long-Term Steward or

its representatives must be approved by the IRT and the necessary permits, such as a Section 404 permit and/or Maryland Nontidal Wetlands Permit, must be obtained if required.

**D** Eminent Domain

If the Bank is taken in whole or in part through eminent domain, the Long-Term Steward shall use all monies received as compensation for lands and all associated services and values taken to provide replacement compensation within the same service area subject to IRT approval. The IRT shall have the right to participate in any proceeding associated with the determination of the amount of such compensation. Replacement compensation may be determined in consultation with the IRT.

## II. Long-Term Management Reports

Long-Term Management reports will be produced for each Bank site entered as addenda to the UMBI. Reports will provide information obtained from inspections and observations made during the annual walk through. Reports will follow the following format.

### Property Description

**A** Setting and Location

The Report will provide the address and a location map depicting the site's location in relation to cities, towns, or major roads, and other distinguishable landmarks. The Bank property map will show the Bank property boundaries on a topographic map.

**B** History and Land Use

A brief description of the site's history and land use will be provided.

**C** Cultural Resources

A brief discussion on any cultural resources identified during mitigation work plan development and approval will be provided.

**D** Topography and Hydrology

A description of site topography and hydrology will be provided. Hydrologic conditions observed during the annual walk-through will be noted and monthly rainfall amounts for the year prior to the site walk through will be provided and compared to seasonal averages to supply some perspective on the observed condition. Any significant precipitation events (storms or flooding) will be noted. Any discernible change in hydrologic inputs such as precipitation, surface run-off and/or out of bank flooding will be noted. Likewise, should contributing drainage areas undergo significant land use change; a description of such change will be provided.
However, unless deemed necessary, no borings will be conducted nor monitoring wells be

installed.

**E** Adjacent Land Uses

A description of land use adjacent to the Bank site will be provided. Any significant change in adjacent land use will be described in order to provide some perspective, if any, on its influence of the Bank site.

**F** Results of Annual Management and Monitoring

A summary of any site management will be provided describing any action(s) taken to ensure the long-term sustainability of the Bank and as further described in Section III below.

## III. Management and Monitoring

The overall goal of long-term management is to foster the long term viability of the Bank site's waters of the U.S., and any listed species/habitat. Routine monitoring and minor maintenance tasks are intended to assure the viability of the Bank site in perpetuity.

**A** Biological Resources

The approach to the long-term management of the Bank site's biological resources is to conduct annual site examinations and monitoring of selected characteristics to determine stability and ongoing trends of the preserved, restored, enhancement, and created waters of the U.S., including wetlands and streams. Annual monitoring will assess the Bank's condition, degree of erosion, establishment of invasive or non-native species, water quality, fire hazard, and/or other aspects that may warrant management actions. While it is not anticipated that major management actions will be needed, an objective of this long-term management plan is to conduct monitoring to identify any issues that arise, and using adaptive management to determine what actions might be appropriate. Those chosen to accomplish monitoring responsibilities will have the knowledge, training, and experience to accomplish monitoring responsibilities.

Adaptive management means an approach to natural resource management which incorporates changes to management practices, including corrective actions as determined to be appropriate by the IRT in discussion with the Long-Term Steward. Adaptive management includes those activities necessary to address the effects of climate change, fire, flood, or other natural events. Before considering any adaptive management changes to the long-term management plan, the IRT will consider whether such actions will help ensure the continued viability of a Bank's biological resources.

The Long-Term Steward for the Bank site shall implement the following:

**Element A.1 Waters of the U.S., including wetlands**

Objective: Monitor, conserve and maintain the Bank site's waters of the U.S.,

including wetlands and streams. Limit any impacts to waters of the U.S. from vehicular travel or other adverse impacts.

Task: At least one annual walk-through survey will be conducted to qualitatively monitor the general condition of these habitats. General topographic conditions, hydrology, general vegetation cover and composition, invasive species, erosion, will be noted, evaluated and mapped during a site examination. Notes to be made will include observations of species encountered, water quality, general extent of wetlands and streams, and any occurrences of erosion, structure failure, or invasive or non-native species establishment.

Task: Establish reference sites for photographs and prepare a site map showing the reference sites for the Bank file. Alternatively, utilize photographic reference sites, if any, developed during interim bank management period. Reference photographs will be taken of the overall Bank site at least every five years from the beginning of the long-term management.

Special attention should be paid to any area adjacent to or draining from non-bank lands. Streams and wetlands should be observed near bank boundaries to observe if increased sediment deposition has occurred. The report should provide a discussion of any recent changes in the watershed (i.e., subdivision being developed upstream of stream bank).

**Element A.2 Threatened/Endangered Plant Species Monitoring** *(if applicable) [Note: This methodology may vary for different plant species as determined in consultation with the IRT]*

Objective: Monitor population status and trends.

Objective: Manage to maintain habitat for specie(s) identified in the Mitigation Work Plan.

Task: Monitor status every year by conducting population assessment surveys. The annual survey dates will be selected during the appropriate period as identified by the applicable member of the IRT. Occupied habitat will be mapped and numbered to allow repeatable data collection over subsequent survey years. Abundance will be assessed semi-quantitatively using broad abundance categories, i.e., 0, 1 - 100, 101 - 500, 501 - 1,000, and >1,000 plants.

Task: Visually observe for changes to occupied habitat, such as changed hydrology or vegetation composition. Record any observed changes. Size of population (1 acre, etc).

Task: Implement other tasks that enhance or monitor habitat characteristics for the specie(s) identified in the Mitigation Work Plan.

**Element A.3 Threatened/Endangered Animal Species Monitoring** *(if applicable)*
*[Note: Species-specific objectives and tasks will need to be developed in consultation with the appropriate IRT agencies]*

Objective: Monitor population status and trends.

Objective: Manage to maintain habitat for specie(s) identified in the Mitigation Work Plan.

Task: Monitor status every year by conducting population assessment surveys. [*The annual survey dates will be selected during the appropriate period each year.*]

Task: Implement other tasks that enhance or monitor habitat characteristics for specie(s) identified in the Mitigation Work Plan.

**Element A.4 Invasive Species**

Invasive species threaten the diversity or abundance of native species through competition for resources, predation, parasitism, interbreeding with native populations, transmitting diseases, or causing physical or chemical changes to the invaded habitat.

Objective: Monitor and maintain control over invasive species that diminish site quality for which the bank was established. The Long-Term Steward shall consult the Maryland Department of Natural Resources *at* http://www.dnr.state.md.us for guidance on what species may threaten the site and on management of those species.

Task: Mapping of invasive species cover or presence shall occur during the first five years of bank management, to establish a baseline. Mapping shall be accomplished through use of available technologies, such as GIS and aerial photography.

Task: Each year's annual walk-through survey (or a supplemental survey) will include a qualitative assessment (e.g. visual estimate of cover) of invasive species. Additional actions to control invasive species will be evaluated and prioritized in coordination with the IRT.

**Element A.5 Vegetation Management**

Objective: Analyze effects of any authorized silvicultural manipulations on the wetland, streams, and buffers on the bank site. If determined appropriate, develop and implement specific silvicultural manipulations (e.g. selective thinning) in coordination with the IRT.

Objective: Adaptively manage vegetation based on site conditions and data acquired through monitoring to maintain biological values.

Task: Review and explore potential vegetation management regimes as proposals and/or opportunities and funding arise. If determined to potentially maintain site quality, develop specific silvicultural practices, amend this long-term management plan with the IRT's approval to reflect those practices, and implement silvicultural actions as funding allows.

Task: Implement vegetation management techniques, if determined beneficial and as funding allows, to allow development of vegetation as identified in the Mitigation Work Plan. Implementation of vegetation management techniques must be approved by the IRT.

## B Security, Safety, and Public Access

The Bank will be fenced or appropriately marked and shall have no general public access, nor any regular public use. Research and/or other educational programs or efforts, hunting, fishing, and passive recreational activities may be allowed on the Bank site as deemed appropriate by the IRT, but are not specifically funded or a part of this long-term management plan.

Potential mosquito abatement issues will be addressed through the development of a plan by the Long-Term Steward and any local mosquito control district or local health department in coordination with and approved by the IRT.

Potential wildfire fuels will be reduced as needed where approved by the IRT.

### Element B.1 – Trash and trespass

Objective: Monitor sources of trash and trespass.

Objective: Collect and remove trash, repair vandalized structures, and rectify trespass impacts.

Task: During each site visit, record occurrences of trash and/or trespass. Record type, location, and management mitigation recommendations to avoid, minimize, or rectify a trash and/or trespass impact.

Task: At least once yearly collect and remove as much trash as possible and repair and rectify vandalism and trespass impacts.

### Element B.2 – Fire Hazard Reduction

Objective: Maintain the site as required for fire control while limiting impacts to biological values.

Task: Reduce vegetation in any areas recommended by authorities, and as approved by the IRT, for fire control.

## C Infrastructure and Facilities

### Element C.1 Fences, Gates, Signage, Crossings, and Property Boundaries

Objective: Monitor condition of fences, gates, signage, crossings, and property boundaries.

Objective: Maintain fences, gates, signage, crossings and property boundaries to prevent casual trespass, allow necessary access, and facilitate management.

Task: During each site visit, record condition of fences, gates, signs, crossings, and property boundaries. Record location, type, and recommendations to implement repair or replacement to fence, gate, signage, crossings or property boundary markers, if applicable.

Task: Maintain fences, gates, signs, crossings and property boundary markers as necessary by replacing posts, wire, gates, and signs. Replace fences and/or gates, as necessary, and as funding allows. Note any trespass by livestock.

### Element C.2 Berms, Structures, and Roads

Objective: Monitor condition of berms, structures, and roads.

Objective: Maintain berms, structures, and roads to facilitate management and maintain conditions of wetlands and streams

Task: During each site visit, record condition of berms, structures, and roads. Record location, type, and recommendations to implement repair or replacement to berms, structures, and roads, if applicable.

Task: Maintain berms, structures, and roads as necessary. Replace berms, structures, and roads as necessary, and as funding allows.

## D Reporting and Administration

### Element D.1 – Annual Report

Objective: Provide annual report on all management tasks conducted and general site conditions to IRT and any other appropriate parties. Each report shall include a cover page with the following information: the bank name, (umbrella bank name if applicable), site name (if applicable), bank phase (if applicable), Long-Term Steward (name, address, phone number, and email address), monitoring

year, and any requested action (e.g. funding release, maintenance recommendations requiring IRT approval).

Task: Prepare annual report and any other additional documentation. Include a summary. Complete and circulate to the IRT and other parties by December 31 of each year. Reports should be distributed electronically.

Task: Make recommendations with regard to (1) any enhancement measures deemed to be warranted, (2) any problems that need near-,short-, and long-term attention (e.g., weed removal, fence repair, erosion control), and (3) any changes in the monitoring or management program that appear to be warranted based on monitoring results to date. Provide documentation of the cost of any recommended maintenance and repairs.

## IV Transfer, Replacement, Amendments, and Notice

### A Transfer

Any subsequent transfer of responsibilities under this long-term management plan to a different Long-Term Steward shall be requested by the Long-Term Steward in writing to the IRT, shall require written approval by the IRT, and shall be incorporated into this long-term management plan by amendment.

The long-term steward shall be required to ensure that any subsequent property owners (if not identified as the long-term steward) are notified of the deed restriction, conservation easement, purpose and location of the bank lands, and requirement for long-term stewardship.

### B Replacement

If the Long-Term Steward fails to implement the tasks described in this long-term management plan and is notified of such failure in writing by any of the IRT, the Long-Term Steward shall have 90 days to cure such failure. If failure is not cured within 90 days, the Long-Term Steward may request a meeting with the IRT to resolve the failure. Such meeting shall occur within 30 days or a longer period if approved by the IRT. Based on the outcome of the meeting, or if no meeting is requested, the IRT may designate a replacement Long-Term Steward in writing by amendment of this long-term management plan. If the Long-Term Steward fails to designate a replacement Long-Term Steward, then such public or private land or resource management organization acceptable to and as directed by the IRT may enter onto the Bank property in order to fulfill the purposes of this long-term management plan.

### C Amendments

The Long-Term Steward, property owner, and the IRT may meet and confer from time to time, upon the request of any one of them, to revise the long-term management plan to better meet management objectives and preserve the conservation values of the Bank property. Any proposed changes to the long-term management plan shall be discussed with the IRT and the

Long-Term Steward. Any proposed changes will be designed with input from all parties. Amendments to the long-term management plan shall be approved by the IRT in writing shall be required management components and shall be implemented by the Long-Term Steward.

If the MD DNR or USFWS determine, in writing, that continued implementation of the long-term management plan would jeopardize the continued existence of a state or federally listed species, any written amendment to this long-term management plan, determined by either the MD DNR or USFWS as necessary, shall be a required management component and shall be implemented by the Long-Term Steward.

**D Notices**

Any notices regarding this long-term management plan shall be directed as follows:

Long-Term Steward

Maryland State Highway Administration
Office of Environmental Design
707 N. Calvert Street, Baltimore, Maryland 21202
PH -410-545-8628
Email:tnichols@sha.state.md.us

IRT Chair:

U.S. Army Corps of Engineers
Baltimore District, P.O. Box 1715, Baltimore, Maryland 21203-1715
PH – 410-962 – 7608

IRT Co-Chair:

Maryland Department of the Environment
1800 Washington Boulevard, Baltimore, Maryland 21230
PH – 410-537-3000

IRT Members:

U.S. Environmental Protection Agency, Region 3
1650 Arch Street, Philadelphia, Pennsylvania 19103-2029
PH – 215-814-5000

National Marine Fisheries Service, Northeast Regional Office
55 Great Republic Drive, Gloucester, Massachusetts 01930-2276
PH – 978-281-9300

Maryland Department of Natural Resources
Tawes State Office Building, 580 Taylor Avenue, Annapolis Maryland 21401
PH – 410-260-8367

Maryland Historical Trust
100 Community Place, Crownsville, Maryland 21032-2023
PH – 410-514-7600

Maryland Chesapeake Bay Critical Area Commission
1804 West Street, suite 100, Annapolis, Maryland 21401
PH – 410-260-3460

U.S. Fish and Wildlife Service
177 Admiral Cochrane Drive, Annapolis, Maryland 21401
PH – 410-537-4599

## V Funding and Task Prioritization

### A Funding

The funding of costs for the long term management of any Bank site shall be provided by the Maryland State Highway Administration through the Environmental Preservation Fund.

### B Task Prioritization

Due to unforeseen circumstances, prioritization of tasks, including tasks resulting from new requirements, may be necessary if insufficient funding is available to accomplish all tasks. The Long-Term Steward and the IRT shall discuss task priorities and funding availability to determine which tasks will be implemented. In general, tasks are prioritized in this order: 1) required by a local, state, or federal agency; 2) tasks necessary to maintain or remediate a Bank Site (including unauthorized impacts); and 3) tasks that monitor resources, particularly if past monitoring has not shown downward trends. Equipment and materials necessary to implement priority tasks will also be considered priorities. Final determination of task priorities in any given year of insufficient funding will be determined in consultation with the IRT and as authorized by the IRT in writing.

### C Enforcement

The IRT and its authorized agents shall have the right to inspect the Bank sites and take actions necessary to verify compliance with this Long-Term Management Plan. Failure by any agency (or owner) to enforce the Long-Term Management Plan contained herein shall in no event be deemed a waiver of the right to do so thereafter.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement on the date herein below last written.

_____ _____
Long-Term Steward Date

INTERAGENCY REVIEW TEAM

By the IRT Chair:

_____ _____
U.S Army Corps of Engineers, Baltimore District Date
By: _____ Its: _____

By the IRT Co-Chair:

_____ _____
Maryland Department of the Environment Date
By: _____ Its: _____

Commenting Agencies:

Environmental Protection Agency, Region III

National Marine Fisheries Service

Maryland Department of Natural Resources

Maryland Historical Trust

Maryland Chesapeake Bay Critical Area Commission

U.S. Fish and Wildlife Service