

PROSPECTUS / DRAFT

Mitigation Banking Instrument

For

Virginia Department of Transportation's

Great Oaks Wetland and Stream Mitigation Bank

Prepared for:

Wetland Mitigation Bank Review Team

Prepared by:

VDOT Environmental Quality Division
1401 East Broad Street
Richmond, Virginia 23219

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WETLAND AND STREAM MITIGATION BANKING AGREEMENT

VIRGINIA DEPARTMENT OF TRANSPORTATION

Great Oaks Mitigation Bank Culpeper County, Virginia

I. INTRODUCTION

VDOT proposes to establish within a perpetual, conservation easement established on private property (Atchley Property) the **Great Oaks Wetland Mitigation Bank** (Bank) to provide effective *off-site* compensation for impacts to non-tidal wetlands that cannot be practicably avoided as a result of VDOT projects in the non-tidal portions of the Potomac River watershed. (See Figure 1 for Bank location). The proposed Bank **Geographic Service Area (GSA)** is composed of the following **Hydrologic Units Codes (HUCs)**, all of which are in the **Occoquan / Potomac River Drainage Basin: 0207008** containing the Bank, and the **adjacent HUCs 02070010** and the upper portion of HUC **02070011**. The proposed GSA is illustrated on Figure 2. An individual Site Development Plan (Plan) has been developed to establish the Bank. The Plan is based on a water budget approved by the Mitigation Bank Review Team (MBRT) for the Bank and includes performance criteria, a monitoring plan and conceptual drawings approved for the Bank (See Appendix). The Plan with attached conceptual drawings and a pay-for performance agreement are presented with this document.

II. RELATIONSHIP OF THIS AGREEMENT TO OTHER AUTHORITIES AND GUIDANCE

The development and operation of the Bank will be in accordance with the Code of Virginia Section 33.1-223.2.1 Wetland Banking and Section 62.1-44.15:5 (State Water Control Law) and the “Federal Guidance for the Establishment, Use and Operation of Mitigation Banks”, published in Volume 60, Number 228 of the Federal Register, November 28, 1995, referred to hereafter as Federal Banking Guidance. Wetland mitigation sequencing as indicated in the EPA's Section 404 (b) (1) Guidelines will be utilized by VDOT (i.e., avoidance, minimization, and restoration of temporary wetland impacts) to the maximum extent practicable in its planning, design and construction of the Bank.

III. LOCATION OF BANK

The proposed VDOT Bank is located in Fauquier County northeast of New Baltimore, Virginia (Figure 1). The Bank site consists of approximately 27 acres of land (Atchley Property) bordered to the south by forested lands, to the west by South Run (a tributary of Broad Run and the Occoquan River), to the north by Old Bust Head Road (State Rt. 694), and to the east by residential development along Georgetown Pike (State Rt. 674).

IV. GOALS & OBJECTIVES OF BANK

The principal goal for the Bank is to establish the maximum amount of cost effective and ecologically appropriate wetland and stream mitigation credit for future VDOT projects in the proposed GSA when on-site and individual off-site compensation options for unavoidable non-tidal wetland impacts can be shown to be impracticable and not ecologically preferable.

Mrs. Atchley and her consultant, Marsh Resources, Inc., will establish the Bank for VDOT under a pay-for performance agreement primarily through establishing or restoring wetlands over approximately 16.24 acres of drained agricultural land. Within other portions of the approximately 27.0 acre limits, the Bank will feature enhancement/restoration of existing disturbed agricultural wetlands, establishment / preservation of upland buffer areas and preservation of a valuable portion of the South Run riparian corridor. Specific wetland compensation and stream mitigation goals and objectives for this palustrine, non-tidal Bank are:

- A. Establishment or restoration of approximately 14.34 acres of palustrine forested wetlands;
- B. Restoration of approximately 1.90 acres of “agricultural wetlands”;
- C. Enhancement of approximately 1.16 acres of shrub-scrub wetlands;
- D. Preservation of approximately 1,580 linear feet of existing riparian stream corridor approximately 150 to 200 feet in width.
- E. Preservation of approximately 0.34 ac. of palustrine forest).
- F. Preservation and establishment of approximately 0.91 acres of upland buffer area

V. MEASURES TAKEN OR TO BE TAKEN TO ESTABLISH BANK

- A. VDOT will:
 - 1. VDOT has or will secure and provide for the long-term preservation and management of a perpetual easement that will contain site access and the approximately 27.0 acres of compensatory wetlands that will constitute the Bank.
 - 2. Provide final Bank construction plans based on the attached Site Development Plan (SDP) designed to implement the approved stated goals and objectives for the Bank. The SDP is based on an MBRT approved site water budget and provides grading and planting plans and specifications for the wetland work. The SDP includes performance criteria and a site-monitoring plan for the Bank. The approximately 15.12 acres of compensatory wetland mitigation credit will be established for the Bank under a pay-for-performance agreement between VDOT and Mrs. Atchley / Marsh Resources, Inc.

- B.** Under the pay-for-performance agreement with VDOT, Mrs. Atchley / Marsh Resources, Inc. will be responsible for:
1. Establishing / re-establishing wetland hydrology through such measures as: lowering grades, filling agricultural drainage ditches, reducing soil permeability rates and by constructing drainage patterns and other topographic or drainage features to regulate water flow through and from the site.
 2. Designing and implementing a hydrological monitoring plan approved for confirmation of target wetland hydrology regimes that are consistent with the vegetative goals and objectives of the Bank.
 3. Establishing wetland-planting schemes that reflect the goals and objectives of the project and that are compatible with the native wetland communities of the watershed.
 4. Implementing construction and post construction monitoring and contingency measures as necessary to meet approved performance criteria.
 5. Providing assurances of appropriate financial resources for construction and maintenance of the Bank measures through a post-construction monitoring period that all performance criteria are being met.

VI. CRITERIA FOR USE

A. Wetland Bank Decisions: Decisions concerning a project's use of the Bank will be made as a part of the permit decision.

B. Debits / Credits / Availability:

1. Debits: Decisions concerning credit withdrawal from a bank will be made in accordance with the Code of Virginia Section 33.1-223.2.1 Wetland Banking and Section 62.1-44.15:5 (State Water Control Law) and Sections II.D.6 and 7 of the Federal Banking Guidance (November 28, 1995). In addition, the following general guidelines apply to this bank:
 - a. The approved Bank can be considered as a compensation site for any VDOT project in the GSA approved for the Bank. Limited use of the Bank for project impacts outside of the GSA of the Bank but still within the Chesapeake Bay drainage may be considered on a case by case basis as a part of the permit review process and in accordance with Code of Virginia, Sections 33.1-223.2.1 and 62.1 and 62.1-44.15:5.
 - b. VDOT will establish and maintain an accounting system (i.e., ledgers), which documents credits and debits to the Bank accounts – one each for wetland compensation and stream mitigation credits and debits. Each time an approved debit/credit transaction occurs, VDOT will submit a statement to the permitting agencies. VDOT will also generate an annual report with the accounting ledgers for the Bank to be submitted to all members of the MBRT. The accounting ledgers will be available for inspection on request by any participating agency.

2. Credits: Assignment of credit to the Bank by the MBRT will be based on meeting the performance criteria established in the Plan and the following assumptions:
- a. One (1) wetland compensation credit will be expressed in terms of each acre of wetland established or restored.
 - b. Each ten (10) acres of existing wetlands approved for preservation by the MBRT will yield one (1) acre of wetland compensation credit.
 - c. Each 20 acres of Upland Meadow or Forest approved for establishment by the MBRT will yield one (1) acre of wetland compensation credit for the Bank.
 - d. Each 5 acres of existing Shrub/Scrub wetland approved for enhancement by the MBRT will yield one (1) acre of wetland compensation credit for the Bank
 - e. Each 5 acres of Agricultural Wetlands approved for enhancement/restoration by the MBRT will yield one (1) acre of wetland compensation credit for the Bank
 - f. Each linear foot of Riparian Zone approved for preservation by the MBRT will yield one (1) linear foot of stream mitigation credit for the Bank.
 - g. All wetland compensation credit assigned to the Bank would be debited concurrently.
 - h. Typically, one wetland compensation credit in the Bank would be equal to the credits for wetland establishment/restoration divided by the total wetland compensation credits assigned to the Bank. Since that figure would be less than one, the remainder of a compensation credit would be made up of credit assigned to the Bank for approved measures other than wetland establishment/restoration.

Example: If the Bank, as planned, is established with the above ratios then the resulting wetland mitigation credit for each measure would be:

1) 14.34 ac. of established or restored wetland	=	14.34 credits
2) 1.9 ac. of enhanced agricultural wetlands	=	0.38 credits
3) 1.16 ac. of enhance Shrub/Scrub wetlands	=	0.23 credits
4) 0.34 ac. of existing PFO wetlands preserved	=	0.03 credits
5) 0.91 ac. of Upland Meadow & Forest established	=	<u>0.05 credits</u>
Total:		15.03 credits

In this case, a Bank Debit of one Credit would be composed of 0.95 (14.34/15.03) from establishment/restoration) plus 0.05 from the other approved measures noted above to equal 1.0.

The minimum acreage of wetland establishment/ restoration credited to the Bank shall equal the acreage of wetlands being debited (no net loss). If the regulatory review process allows compensation at a ratio of 1 to 1 from the Bank, a multiplier of 1.05 will be applied to the

wetland compensation requirement and debit. This multiplier will ensure that the area of wetland compensation will contain an establishment/restoration component that is, at a minimum, equal to the area being debited (no net loss).

Example of Debit Calculation:

Area Impacted	Mitigation Ratio*	Multiplier	Required Credits**	Wetland Established/ Restored	Other Credited Measures
1.0 ac.	2:1	N/A	2.00	1.90 ac.	0.10 ac.
1.0 ac.	1.5:1	N/A	1.5	1.425 ac.	0.075 ac.
1.0 ac.	1:1	1.05	1.05	1.00 ac.	0.05 ac.

* Determined during the permit review process ** 1 credit = 0.95 ac. (95%) from establishment/restoration plus 0.05 ac. (5%) from other approved measures

3. Availability of Credit: Credits generated under this Agreement will be released in the following manner:
 - a. Fifteen percent (15%) of the total number of wetland and one hundred percent (100%) of stream mitigation credits available for the Bank site will be released once the following items have occurred:
 - 1) The MBRT has approved this banking instrument and the Bank Site Development Plan,
 - 2) VDOT has secured the easement for the wetland bank, and
 - 3) 50% Plans have been reviewed and approved by the MBRT
 - b. 60% of the Bank site’s total wetland mitigation credit will be available for debiting when a monitoring report to the MBRT demonstrates that the site is meeting the established performance criteria after the first growing season. The remaining wetland mitigation credit (25%) will be released upon demonstration that the performance criteria are being met after the second growing season.

C. Achievement of Performance Criteria: Remedial actions may be necessary to meet the performance criteria (Appendix, Part A) during the 10 year monitoring of the Bank. If the performance criteria are not being met in one or more areas of the Bank, VDOT will work with the MBRT to determine measures to achieve the performance criteria. Bank use of wetland compensation credit and / or stream mitigation credit will be suspended by the MBRT if debiting has or could exceed the total credit based on total area(s) of the Bank actually meeting the performance criteria. Such a suspension of debiting from the Bank would be lifted by the MBRT only upon demonstration that the area or areas of the Bank in question are in compliance with the performance criteria.

VII. LONG-TERM MONITORING AND MAINTENANCE

A. Long-term Operation: Decisions concerning the operational life of the bank, long-term monitoring/management, remedial actions, and financial assurances will be made in accordance with Section II.E. of the Federal Banking Guidance (November 28, 1995).

B. Long-term Protection: The perpetual easement obtained for the Bank will have designated limits of preservation incorporating established wetlands, non-wetland buffer areas and existing wetland preservation areas. The perpetual easement will be retained by VDOT and protected as a natural area. After all mitigation credits are debited, the easement could be sold or transferred to an individual, agency or non-profit preservation organization with deed restrictions approved at that time by the MBRT for long term protection of its resources.

VI. MODIFICATION AND TERMINATION OF THIS AGREEMENT

This agreement may be modified with the approval of all signatories. One or more signatories may propose modifications. Proposals for modification of this agreement will be submitted to VDOT and the U. S. Army Corps of Engineers, Norfolk District. The Corps will circulate the proposals to all signatories for a sixty-day period of review. Approval of the proposals will be indicated by written acceptance. A signatory may terminate its participation in this agreement upon written notice to all other signatories.

VII. PARTICIPATING AGENCY ENDORSEMENTS

We, the undersigned, agree with the format, requirements, criteria and methodology described in this Wetland Banking Agreement for the establishment of the Great Oaks Wetland and Stream Bank by the Virginia Department of Transportation.

Virginia Department of Transportation Date

U.S Army Corps of Engineers, Norfolk District Date

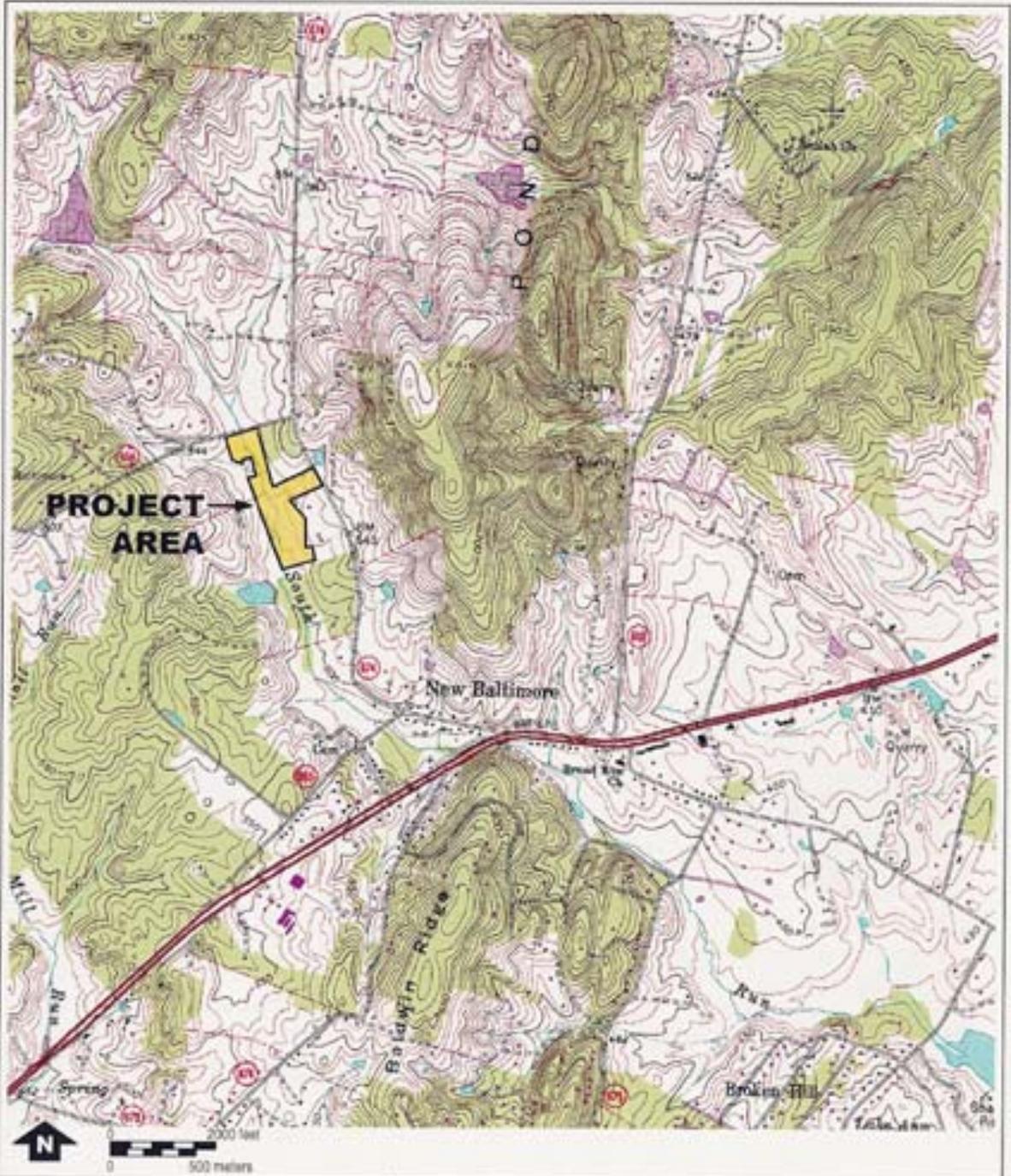
U.S. Environmental Protection Agency Date

U.S. Fish and Wildlife Service Date

Department of Environmental Quality/Water Division Date

Federal Highway Administration Date

VIII. FIGURES




MARSH RESOURCES, INC.
 2800 Post Oak Blvd.
 Houston, TX 77056


GREENHORNE & O'MARA, INC.
 9001 Edmonston Road
 Greenbelt, MD 20770

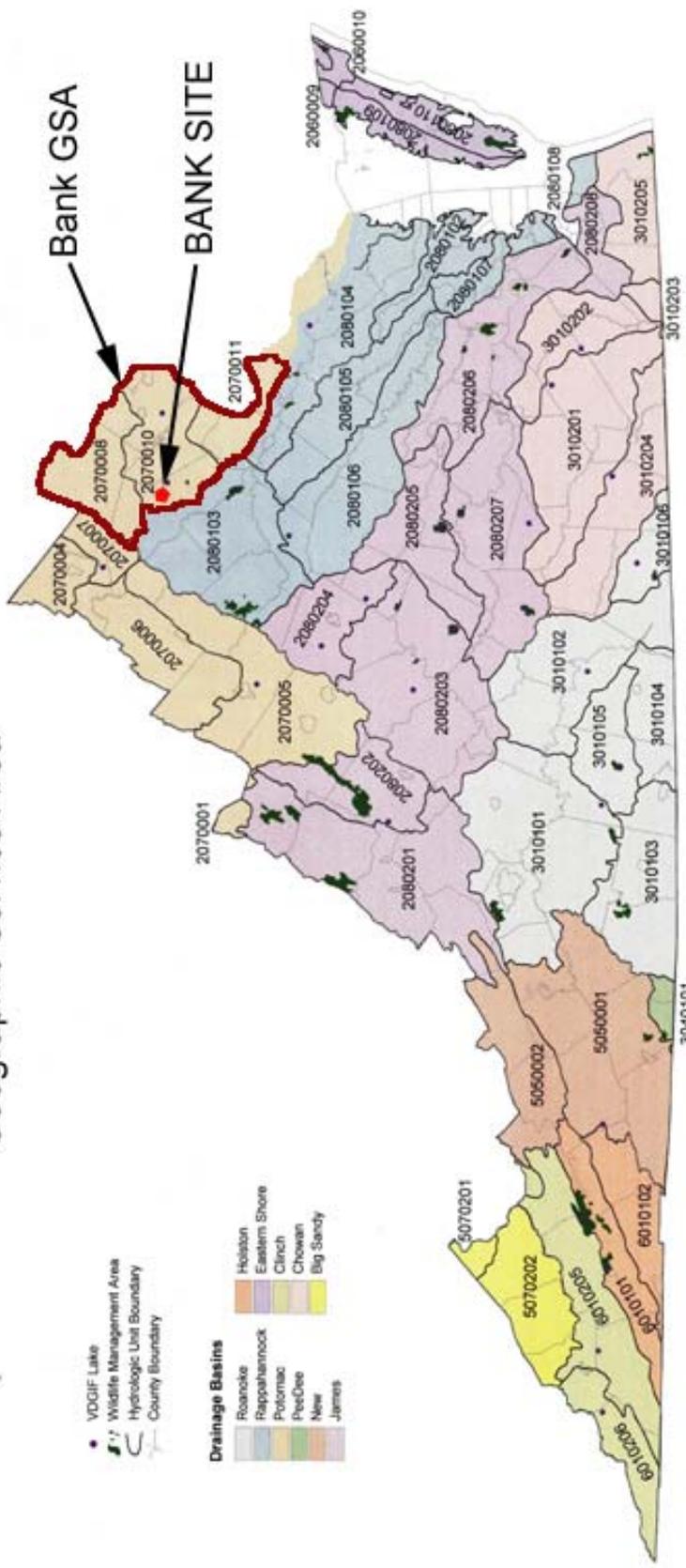
Source: USGS Topographic Map: Thoroughfare Gap, VA photorevised 1983
Latitude and Longitude at Center of Site
 Latitude 38 degrees 46'30"N / Longitude 77 degrees 44'10"W

Exhibit 1: Location Map - Great Oaks Mitigation Site

Figure 1

Hydrologic Units

VDOT's Great Oaks Wetland Mitigation Bank Geographic Service Area



- VDGIF Lake
- Wildlife Management Area
- Hydrologic Unit Boundary
- County Boundary

Drainage Basins

Roanoke	Holston
Rappahannock	Eastern Shore
Potomac	Clinch
Piedmont	Chowan
New	Big Sandy
James	

Source: Hydrologic Unit, 1984
 All other data, 2008
 VDOT - Public Access Information System 2010

Figure 2 - Great Oaks Wetland Bank G. S. A.

APPENDIX

Great Oaks Wetland Mitigation Bank

Site Development Plan

Part A: Performance Criteria And Monitoring Plans

Part B: Conceptual Plan Drawing

Part C: Deed of Easement

Part D: Pay-for-Performance Agreement

Part A - Performance Criteria And Monitoring Plans

I. PERFORMANCE CRITERIA

- 1.1. The site shall meet the following performance criteria:
 - 1.1.1. Hydrology: Wetland hydrology shall be considered established if depths to the seasonal high water table are equal to or less than one foot for at least 12.5% of the growing season for all monitoring years with normal rainfall conditions. April 7th to October 29th, or a total of 206 days, indicating a minimum saturation to the surface of 26 consecutive days during the growing season. For the purposes of verifying the establishment of wetland hydrology, actual soil temperature data collected during post-construction monitoring may be submitted to the MBRT for review and approval.
 - 1.1.2. Vegetation: The following criteria can be altered based on a rationale submitted by VDOT and accepted by the *MBRT*.
 - 1.1.2.1. Woody Plants:
 - 1.1.2.1.1. More than 50% of all woody plants, expressed either by plant stems or canopy coverage, shall be facultative (FAC) or wetter (FACW or OBL).
 - 1.1.2.1.2. A minimum plant stem count of 400/acre must be achieved in sample plots until the canopy cover is thirty percent (30%) or greater.
 - 1.1.2.1.3. In addition, a minimum of 80% of the planted trees and shrubs must be viable and show signs of growth for the life of the permit.
 - 1.1.2.2. Herbaceous Plants:
 - 1.1.2.2.1. More than 50% of all herbaceous plants shall be facultative (FAC) or wetter (FACW or OBL).
 - 1.1.2.2.2. Areal coverage shall be a minimum of 60% after one (1) full growing season and 80% after three (3) growing seasons and remaining at or above 80% for the life of the permit. Shrub/scrub or sapling/forest vegetation is not included in coverage or stem count for herbaceous vegetation.
- 1.2. Should the performance criteria outlined in 1.1 not be met at any time during monitoring period, VDOT must provide the MBRT with their rectification proposal, detailing corrective actions and/or maintenance actions proposed and an implementation schedule for said actions, planned to meet the criteria. Upon review and approval/modification of said corrective measures by the *MBRT*, VDOT shall implement the necessary corrective measures.

II. PERFORMANCE MONITORING

- 1.3. Station/well density
 - 1.3.1. A minimum of one well per every two (2) acres shall be installed. No less than 8 wells will be installed (including at least 2 in a reference wetlands). Vegetative monitoring stations shall be centered on well locations. Additional vegetative monitoring stations shall be installed to achieve an average of one vegetative

monitoring station per acre, including additional stations as necessary to insure that all vegetative zones are sufficiently monitored. VDOT's plans for station location, well design and installation will be provided to, and approved by, the MBRT prior to installation.

- 1.3.2. Each sampling station will have a radius of 30-feet (10-meters). Within each station, four (4) one-meter square quadrats will be randomly placed (to occur within at least two quadrants of the 30-foot sampling station).

1.4. Frequency

- 1.4.1. Monitoring will be conducted during years 1, 2, 3, 5, 7, and 10. If all performance criteria have not been met at the end of the final year, then monitoring will be required for each consecutive year until two annual sequential reports show that the criteria were met.
- 1.4.2. Hydrologic monitoring will occur, as follows:
 - 1.4.2.1. post-grading, prior to planting: weekly for a minimum of three months from the start of the growing season;
 - 1.4.2.2. weekly for a minimum of the first 10 consecutive weeks of the growing season in every monitoring year.
- 1.4.3. Once the wetland hydrology success criteria have been satisfied for a particular monitoring year, weekly monitoring may be discontinued with the concurrence of the MBRT for the remainder of that monitoring year.
- 1.4.4. Vegetative monitoring will occur during August of each monitoring year.

1.5. Monitoring Data. Monitoring in each monitoring year will collect the following information.

- 1.5.1. Hydrologic data
 - 1.5.1.1. Well data
 - 1.5.1.2. Surface water data, at each well location
- 1.5.2. Vegetation data. The following information will be collected within each station:
 - 1.5.2.1. # stems/acre of woody species
 - 1.5.2.2. % survival of planted woody species
 - 1.5.2.3. % cover of woody species greater than 1 meter tall
 - 1.5.2.4. % cover for all herbaceous species
 - 1.5.2.5. Species composition, including non-dominants
 - 1.5.2.6. % of dominant species with an indicator status of FAC or wetter
 - 1.5.2.7. Quantitative measure of noxious species
 - 1.5.2.8. Wildlife observations, recording actual use of wildlife. For casual observations, record the date of observation, number of individuals, presence of juveniles, and use of the site for each animal observation.
 - 1.5.2.9. Panoramic photographs. During each vegetative monitoring period panoramic photographs will be taken from permanent photo stations approved by the MBRT.
- 1.5.3. Identify zone(s) where each sample plot is located.

III. **REPORTING**

- 1.1. Monitoring reports are required. Monitoring reports should indicate whether minimum success criteria and mitigation goals have been met. These reports should be received by the MBRT no later than October 31 of each monitoring year. Each

report shall include:

- 1.1.1. Copies of field data sheets;
 - 1.1.2. Photographic documentation;
 - 1.1.3. An analysis of hydrologic and vegetative data indicating success of the site; and wetland boundary plotted on site plan based on results of hydrology and vegetation data, and calculation of total wetland acreage based on that boundary.
- 1.2. Noxious Species
- 1.2.1. Noxious weeds will be identified and controlled so none become dominant species or alter the desired community structure of the Bank.
 - 1.2.2. If noxious plants are identified in the Bank, the Department will develop a species-specific control plan for approval by the MBRT prior to implementation.
 - 1.2.3. The MBRT may, at any time during the ten-year monitoring period, require removal, treatment or management of undesirable plant or animal species, including physical removal, use of herbicides, live trapping, confining wires or nets, etc.
 - 1.2.4. All vegetation removal from the Bank shall be done by mechanical means only unless the staff of DEQ has first authorized the use of herbicides or algaecides for the control of plants in or immediately adjacent to the Bank

Part B -Conceptual Plan Drawing

Part C – Deed of Easement

Part D – Pay-for-Performance Agreement