

Wetland and Stream Replacement Fund
In-Lieu Fee Mitigation Program

Prospectus

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Submitted to:

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I. Introduction

According to the 2008 Federal Mitigation Rule (33 CFR Parts 325 and 332), a complete prospectus for an In-Lieu Fee Fund program includes the general information listed below. The Wetland and Stream Replacement Fund Prospectus addresses these informational requirements in both the body of the Prospectus and in the attached Compensation Planning Framework (CPF) (Appendix A). The location of the information is noted below for the reader's convenience.

- Objectives of the proposed mitigation bank or in-lieu fee program – *Prospectus and CPF*
- How the mitigation bank or in-lieu fee program will be established and operated – *Prospectus*
- Proposed service areas – *CPF*
- General need for and technical feasibility of the proposed mitigation bank or in-lieu fee program – *Prospectus*
- Proposed ownership arrangements - *Prospectus* - and long-term management strategy for the mitigation bank or in-lieu fee project sites – *CPF*
- Qualifications of the sponsor to successfully complete the type(s) of mitigation project(s) proposed, including information describing any past such activities by the sponsor – *CPF*
- Compensation planning framework; - *CPF* - and a description of the in-lieu fee program account(s) - *Prospectus*

II. Objectives

In April 2013, the Virginia General Assembly passed amendments to the Code of Virginia Sections 62.1-44.15:21 and 62.1-44.15:23.1 that established the legal provisions for developing and operating the Wetland and Stream Replacement Fund (“Fund”) in-lieu fee program. The Fund may be used as an additional mechanism for compensatory mitigation for impacts to aquatic resources (i) that result from activities authorized under (a) Section 404 and 401 of the Clean Water Act (33 U.S.C. § 1251 *et seq.*), (b) the Virginia Water Protection Permit Regulation (9 VAC 25-210 *et seq.*), or (c) Section 10 of the Rivers and Harbors Act (33 U.S.C. § 403); (ii) that result from unauthorized activities in waters of the United States or state waters; and (iii) in other cases, as the appropriate regulatory agencies deem acceptable.

One goal of the Wetland and Stream Replacement Fund in-lieu fee program (“Fund”) includes offsetting permanent impacts to surface waters in the Commonwealth through *a variety of means* (emphasis added) in service areas where compensatory mitigation options may be limited. In accordance with the mandate from the Virginia General Assembly for the Fund, *“Moneys in the Fund shall be used for the purpose of purchasing mitigation bank credits in compliance with the provisions of subsection A of § 62.1-44.15:23 as soon as practicable if qualifying credits are available. If such credits are not available within three years of the collection of moneys for a specific impact, then funds shall be utilized either (1) to purchase credits from a Board-approved fund that have met the success criteria, if qualifying credits are available, (2) for the planning, construction, monitoring, and preservation of wetland and stream mitigation projects and preservation, enhancement, or restoration of upland buffers adjacent to wetlands or other state waters when used in conjunction with creation or restoration of*

wetlands and streams, or (3) for other water quality improvement projects as deemed acceptable by the Department of Environmental Quality. Such projects developed under clause (2) shall be developed in accordance with guidelines, responsibilities, and standards established by the Department of Environmental Quality for use, operation, and maintenance consistent with 33 CFR Part 332, governing compensatory mitigation for activities authorized by U.S. Army Corps of Engineer permits.”

The Compensation Planning Framework in Appendix A also discusses the Fund’s goals and objectives. Goals of the Fund include receipt of compensation that supports a watershed approach to conservation, improvement of water quality, and protection and/or improvement to aquatic species habitat.

III. Program Ownership

The Fund shall be administered by the Department of Environmental Quality (DEQ).

DEQ may seek to contract with a manager for implementation of certain tasks, such as the day-to-day management of Fund activities and report preparation. If implemented, DEQ will select the manager in accordance with established state procurement laws, regulations, and policies. DEQ will provide oversight on the manager’s activities and notify the Interagency Review Team regarding any changes to contractual services with the manager.

IV. Program Need/Feasibility

The 2008 Federal Mitigation Rule recognizes that “In many instances, the environmentally preferable compensatory mitigation will be in the form of mitigation banks or in-lieu fee programs because they usually involve consolidating compensatory mitigation projects and resources, and providing financial planning and scientific expertise. They may also reduce temporal losses of functions and reduce uncertainty over project success.”¹

The legislation passed in April 2013, which enabled the establishment and operation of the Fund, was mainly in response to missed opportunities for economic development in areas that lack the compensatory mitigation alternatives normally required by state and federal permitting agencies. Not only is there a lack of operational, approved mitigation banks in certain areas of the Commonwealth, but the existing, approved in-lieu fee fund programs that operate in the Commonwealth may or may not choose to sell or release fund credits in certain localities or for certain activities. Based on Corps of Engineers records, operational compensatory mitigation banks are servicing approximately 80 Virginia counties and more than 15 Virginia cities. As of September 2014, only two approved and operational ILF programs currently exist in Virginia.

Lastly, the Code of Virginia requires that permits shall contain requirements for compensating impacts to surface waters, and for wetlands, such compensation requirements shall be sufficient to achieve no net loss of existing wetland acreage and functions. Compensation “...may be met

¹ Federal Register, Vol. 73, No. 70, Thursday, April 10, 2008, Rules and Regulations page 19602.

through (i) wetland creation or restoration, (ii) purchase or use of mitigation bank credits pursuant to Section 62.1-44.15:23, (iii) *contribution to the Wetland and Stream Replacement Fund established pursuant to § 62.1-44.15:23.1 to provide compensation for impacts to wetlands, streams, or other state waters that occur in areas where neither mitigation bank credits nor credits from a Board-approved fund that have met the success criteria are available at the time of permit application* (emphasis added), or (iv) contribution to a Board-approved fund dedicated to achieving no net loss of wetland acreage and functions. ..." (Code of Virginia Section 62.1-44.15:21)

V. Development of the Wetland and Stream Replacement Fund (Fund)

The Fund's role is to consolidate monies from permitted projects and unpermitted actions in surface waters regulated by the Commonwealth and/or the United States and to pool resources to accomplish larger compensation projects involving the restoration, enhancement, and preservation of wetlands and streams, which presumably have a greater chance of ecological success. Projects may include a mitigation bank developed by a bank sponsor or an on-the-ground project coordinated by a project sponsor.

A. Review and Approval

The Wetland and Stream Replacement Fund requires approval by the participating members of the Inter-agency Review Team (IRT). DEQ currently serves as a Co-Chair of the IRT, along with the U.S. Army Corps of Engineers (Corps). As such, DEQ will recuse its staff from providing review and comment on the Prospectus, Fund Instrument, and any modifications to the Fund Instrument made thereafter. Representatives from the U.S. Environmental Protection Agency (EPA), U.S. Fish and Wildlife Service (FWS), U.S. National Oceanic and Atmospheric Administration (NOAA), the U.S. Department of Agriculture- Natural Resources Conservation Service, Virginia Department of Game and Inland Fisheries, Virginia Department of Conservation and Recreation, Virginia Department of Forestry, and other state, local and federal agencies, as appropriate, may participate in the IRT as consulting members. Instrument modifications, when necessary, must be approved by the Corps' district engineer after consultation with the IRT.

Additionally, DEQ will recuse its staff from review and comment on specific, proposed mitigation projects or modifications involving the Fund that are brought before the Inter-agency Review Team.

The Fund will be subject to periodic review and approval from the Corps in accordance with the 2008 Federal Mitigation Rule.

According to subsection -116.D of the current Virginia Water Protection (VWP) Permit Regulation (9VAC25-210 *et seq.*), DEQ must approve the use of any in-lieu fee fund program either through a general permit regulatory action, a permit issuance action, or through an action conducted at a State Water Control Board (Board) meeting, and such approval will be valid for a renewable term of up to five years. Because the Fund has been mandated through state legislation, the requirement for DEQ to approve the use of its state-owned-

and-operated Fund is waived. The Fund is structured to meet the criteria applied to all in-lieu fee fund programs per 9VAC25-210-116.D, including public participation provisions.

B. Term

The Fund shall be effective on the date that the final Instrument is approved by the Corps.

In accordance with the 2008 Federal Mitigation Rule, should the Corps determine that the Fund is not performing in compliance with the Fund Instrument, the Corps shall provide DEQ with written notice of the non-compliant issues. DEQ will have thirty (30) days after receiving such notice to remedy the non-compliant issues, and if after 30 days a resolution cannot be found, the Corps may suspend the sale or transfer of any Credits upon notification to DEQ. Should DEQ remain non-compliant, the Corps may terminate all future Credit transactions for the associated Fund Service Area. Prior to termination by DEQ, DEQ shall provide an accounting of funds and complete payment on contracts for projects approved by the Corps and any expenses incurred on behalf of the Fund.

If the Corps chooses to terminate the Fund, DEQ would expect the termination provisions of the 2008 Federal Mitigation Rule to apply.

C. Allowable Uses of Fund Monies

Per the Code of Virginia Section 62.1-44.15:23.1, monies in the Fund shall be used for the purpose of purchasing mitigation bank credits in compliance with the provisions of the Code of Virginia Section 62.1-44.15:23.A as soon as practicable, if qualifying credits are available in the operational Service Areas as described in the *Compensation Planning Framework* (Appendix A).

In addition, per the Code of Virginia Section 62.1-44.15:23.1, if bank credits are not available within three years of the collection of monies for a specific impact, then monies shall be used as follows (in no particular order): (1) to purchase credits from a Board-approved fund that have met the success criteria, if qualifying credits are available; (2) for the planning, construction, monitoring, and preservation of wetland and stream mitigation projects and preservation, enhancement, or restoration of upland buffers adjacent to wetlands or other state waters when used in conjunction with creation or restoration of wetlands and streams; or (3) for other water quality improvement projects as deemed acceptable by the Department of Environmental Quality. Credits purchased from another in-lieu fee fund would be 'released' credits, as those are the credits meeting success criteria. If funded with Section 404 mitigation fees, clause (3) would require Corps concurrence following IRT coordination. Projects developed under clause (2), and under clause (3) if funded with Section 404 mitigation fees, would need to be developed in accordance with guidelines, responsibilities, and standards established by DEQ for use, operation, and maintenance consistent with 33 CFR Part 332, governing compensatory mitigation for activities authorized by Corps permits.

VI. Operations and Contingencies

The Compensation Planning Framework (CPF) is used to select, secure, and implement aquatic resource restoration, establishment, enhancement, and/or preservation activities, or per the Code of Virginia, is used for *'other water quality improvement projects as deemed acceptable by the Department of Environmental Quality'*. The Fund's framework, including a discussion of the long-term management provisions, is attached to this Prospectus as Appendix A.

Additional financial information about the Fund may be found in the *Fund Accounting* subsection below.

A. Technical Management of Fund Activities

DEQ and/or the Fund manager will provide limited assistance with the purchase of *mitigation bank credits* with Fund monies. DEQ and/or the Fund manager will verify that the purchase is in compliance with the provisions of the Code of Virginia Section 62.1-44.15:23.A.

Any required credit fee schedules will be attached to the approved ILF program instrument and made available to the public on Corps- and/or DEQ-sponsored web sites. This information will be updated regularly.

Each proposed project will be public noticed and records regarding Fund transactions will be available to the public on Corps- and/or DEQ-sponsored web sites, including RIBITS.

If no bank credits are available within three years of the collection of monies for a specific impact, the following steps will be implemented:

DEQ and/or the Fund manager will provide limited assistance with the purchase of *in-lieu fee fund credits*, when available in the operational Service Area. DEQ and/or the Fund manager will verify that a fund is in compliance with the provisions of Virginia Administrative Code 9VAC25-210-116.D.

DEQ and/or the Fund manager will assist with the development of a compensation project only to the extent necessary to use Fund monies. Such project(s) may include the planning, construction, monitoring, and preservation of wetland and stream mitigation projects, and/or the preservation, enhancement, or restoration of upland buffers adjacent to wetlands or other state waters when used in conjunction with creation or restoration of wetlands and streams. DEQ will not directly plan, build, or implement any project at this time. Project oversight for DEQ may be implemented by the Fund manager with periodic DEQ staff coordination. Each mitigation project proposal and associated funding requires approval by the Corps, in consultation with the IRT members, and must meet the criteria for compensation as detailed in the 2008 Final Mitigation Rule and applicable DEQ regulations and policy.

DEQ and/or the Fund manager will assist with the development of a water quality improvement project, as deemed acceptable by DEQ, only to the extent necessary to

initiate use of Fund monies. DEQ will not directly plan, build, or implement any project at this time. Project oversight for DEQ may be implemented by the Fund manager with periodic DEQ staff coordination. Each mitigation project proposal and associated funding requires approval in consultation with the Inter-agency Review Team (IRT) members.

B. Fund Accounting

The Wetland and Stream Replacement Fund (Fund) shall be a single, FDIC-insured, non-reverting State Treasury Fund (account) operated in accordance with generally accepted accounting principles and state legislation. This means that any monies remaining in the Fund, including interest thereon, at the end of each state fiscal year shall *not* revert to the Commonwealth's General Fund but shall remain in the Fund until approved for use by the Corps in consultation with the IRT.

The Fund shall be administered by the Commonwealth of Virginia Comptroller in the Department of Accounts. DEQ's Office of Financial Management will contact the Virginia Department of Accounts to initiate the Fund. DEQ may use a third-party manager for certain accounting functions (Fund manager).

Per the Code of Virginia Section 62.1-44.15:23.1, the Fund may be used as an additional mechanism for compensatory mitigation for impacts to aquatic resources (i) that result from activities authorized under (a) Section 404 and 401 of the Clean Water Act (33 U.S.C. § 1251 *et seq.*), (b) the Virginia Water Protection Permit Regulation (9 VAC25-210 *et seq.*), or (c) Section 10 of the Rivers and Harbors Act (33 U.S.C. § 403); (ii) that result from unauthorized activities in waters of the United States or state waters; and (iii) in other cases, as the appropriate regulatory agencies deem acceptable. Once the Fund is established, monies will be tracked using a 'project code' system, similar to that system which is currently used for managing federal grant monies received by Virginia. A 'Chart of Accounts' will be prepared to separately account for all monies received. A unique project code will be established to track monies received from state and federal permit actions described in (i) above. Likewise, a unique project code will be established to track monies received from state and federal, non-permit actions, as described in (ii) above. Lastly, a unique project code will be established to track monies received from state permit or non-permit actions described in (iii) above. By establishing separate project codes, monies received can be divided as necessary to accomplish compensatory mitigation per state and/or federal requirements. The Fund shall be subject to audit by the Corps as determined by the Corps and DEQ.

1. Fees Collected

Administrative Fees

DEQ may charge fees to cover reasonable overhead and administrative costs of implementing and managing the Fund. The cost of each credit will likely include some percentage-based or flat-rate administrative fee. DEQ intends to solicit comments from a stakeholders group on the Fund's credit fee schedule. When Fund monies will be used

to provide alternative mitigation, a fee will be assessed and due at the time of project approval by DEQ, likely as an estimated percentage of the total project cost.

Payments into the Fund

Payment amounts will be assessed based on the most-recently approved Fund credit fee schedule. All payments shall be payable to the *Treasurer of Virginia* and credited to the Fund. Payment types accepted are check or Inter-agency Transfer (for Commonwealth of Virginia agencies only).

When a payment is made, DEQ's Office of Financial Management will record the payment and copy the appropriate DEQ-Virginia Water Protection Permit Program staff. Program staff will record the Service Area to be credited with the payment, and the number and type of credits purchased on the applicable Service Area's ledger.

Currently, payment *from a permittee* is due prior to taking any impacts in surface waters, as required by a final Virginia Water Protection Permit. Where compliance and/or enforcement actions apply, payment is due per the terms of the Consent Order or other legally-binding agreement.

Earnings, Interest, and Excess Monies

Any interest earned on monies in the Fund shall remain in the Fund and be credited to it.

Monies received by the Commonwealth that are in excess of the amount needed for compensatory mitigation, or monies received but unused after three years for providing compensatory mitigation, such as but not limited to long-term management activities, shall remain in the Fund, or may be transferred between project codes upon approval by the Corps, in consultation with the IRT.

2. Expenditures/Disbursements from the Fund

Expenditures and disbursements from the Fund shall be made by the Treasurer of Virginia on warrants issued by the Comptroller upon written request signed by the Director of the Department of Environmental Quality. DEQ's Office of Financial Management will provide reporting to Program staff and assist with any questions or concerns they may have with the Fund. The Fund manager, if contracted, will work closely with DEQ to coordinate Fund expenditures, tracking to whom payments are made, for what purpose, the dollar amount, the services and/or materials being purchased, the Service Area in which the payment is to be used, etc.

Based on § 332.8(i)(2) of the 2008 Federal Mitigation Rule, disbursement of monies from the Fund may only be made upon receipt of written approval of a plan to provide compensatory mitigation from the Corps after consultation with the IRT. Additionally, authorization to direct monies must be made to the Commonwealth Comptroller via DEQ and/or the Fund manager.

DEQ and/or the Fund manager may use several methods for Fund money disbursements, including but not limited to, a Request for Proposal (RFP) process in accordance with state procurement laws, regulations, and policies. The process by which Fund monies are disbursed will be coordinated with both internal agency programs and an external stakeholder group to determine the most appropriate options.

VII. References

Please refer to Appendix B for a list of references.

APPENDIX A

WETLAND AND STREAM IN-LIEU FEE FUND COMPENSATION PLANNING FRAMEWORK

Introduction

The Compensation Planning Framework is used to select, secure, and implement aquatic resource restoration, establishment, enhancement, and/or preservation activities.

The following sections address the ten elements of a Compensation Planning Framework as identified in *Compensatory Mitigation for Losses of Aquatic Resources*, 33 C.F.R. § 325 and 332 (2008), and more specifically in § 332.8(c). This framework was developed from a body of existing research and literature; no effort was made to validate the information referenced and quoted.

I. Element 1: Service Areas

The compensation planning framework must support a watershed-based approach to compensatory mitigation. The Virginia General Assembly legislation enacting the Fund supports the establishment of Fund service areas (hereafter ‘Service Areas’) across the entire state.

The Service Areas for the Fund will be the 11 Virginia river watersheds, as defined in Code Section 62.1-44.15:23.A². Figure 1 generally depicts the Service Areas, as follows: the Potomac River Basin, Shenandoah River Basin, James River Basin, Rappahannock River Basin, Roanoke and Yadkin Rivers Basin, Chowan River Basin (including the Dismal Swamp and Albemarle Sound), Tennessee River Basin/Big Sandy River Basin Complex, Chesapeake Bay and its Small Coastal Basins, Atlantic Ocean, York River Basin, and the New River Basin. Selection of these Service Areas supports the objectives stated in the Fund Prospectus (Part I) and is also consistent with Code of Virginia Section 62.1-44.15:23. Code Section 62.1-44.15:21.B allows for the Fund to be used as an additional mechanism for compensatory mitigation and allows for purchasing of mitigation bank credits in compliance with Code Section 62.1-44.15:23.A as soon as practicable if qualifying credits are available. Code Section 62.1-44.15:23.A provides for the purchase of mitigation bank credits from any wetland or stream mitigation bank in the Commonwealth (or in Maryland) as long as numerous criteria are met³.

² Sources show a range of river watersheds in Virginia from 9 river basins (Bailey, C.M., 1998) to 14 (Department of Conservation and Recreation, 2011). The 11 river watersheds referenced herein (defined in the Code of Virginia Section 62.1-44.15:23.A) most closely match the third level basins (HUC-6) as established by the United States Geological Survey National Watershed Boundary Dataset.

³ See Code of Virginia Section 62.1-44.15:23.A.

Virginia's 6th Order NWBD* Units

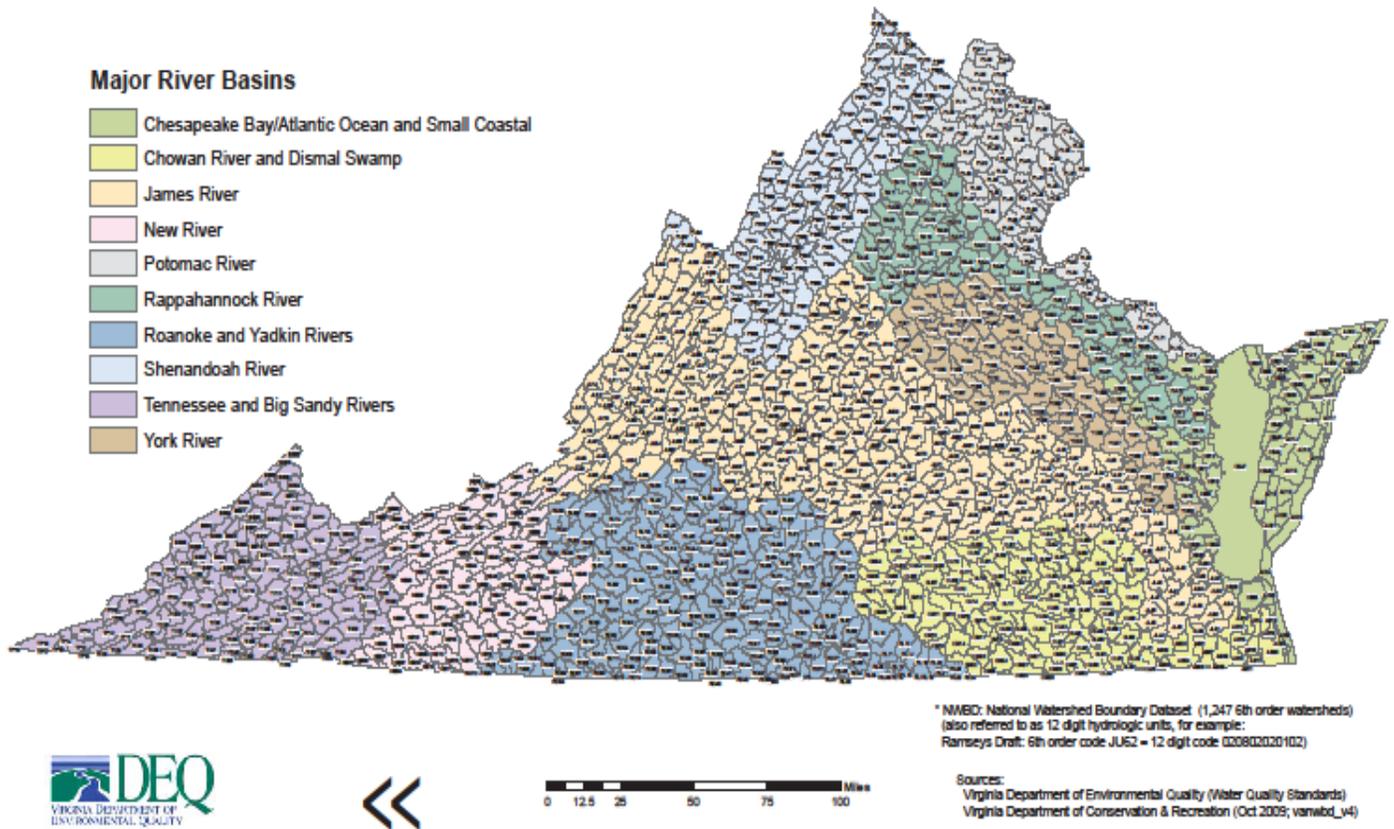


Figure 1: Wetland and Stream Replacement Fund General Service Area Boundaries

Source:

<http://www.deq.virginia.gov/Programs/Water/WaterQualityInformationTMDLs/WaterQualityAssessments/2012305b303dIntegratedReport.aspx#toc>

While the Service Areas are based on larger river watersheds, the geographic scope for use of Fund monies includes smaller divisions at the 8-digit hydrologic unit code (HUC-8), HUC-10, and HUC-12 levels, as delineated by the United State Geological Survey National Watershed Boundary Dataset (WBD). The WBD defines the areal extent of surface water drainage to a point, accounting for all land and surface areas. Also, current Virginia General Assembly actions may allow for a finer definition of a HUC boundary, particularly in the coastal plain region, based on scientifically-defensible data and the approval of such supporting information by agency staff.

II. Element 2: Threats – Aquatic Resources

Virginia continues to lose wetland acreage and functions, waters functions, and ecosystem service capacity through unpermitted activities, permitted activities⁴, and natural processes⁵. The threats identified across Service Areas, and the measures identified to address them, are described below. For more information on a service area basis, refer to Exhibit 1 of this Compensation Planning Framework.

A. Threats

General threats and stresses identified in the Commonwealth's April 2011 *Comprehensive Wetland Program Plan 2011 – 2015*, the DEQ *Draft 2012 305(b)/303(d) Water Quality Assessment Integrated Report (Integrated Report)*, and multiple DEQ programs, include the following:

1. Conversion of wetlands to uplands
2. Conversion of wetlands to other uses such as lawns, timber stands, agriculture, and temporary stock-piles of fill
3. Industrial and urban development
4. Hydrologic alterations to wetlands and streams
5. Invasive species
6. Wetland fragmentation from multiple human-induced activities and natural events
7. Filling and clearing
8. Erosion/sedimentation
9. Inundation
10. Discharge of toxic chemicals and pollutants
11. Conflicting beneficial uses (on- and off-stream)
12. Agriculture and silviculture
13. Recreation

General threats listed in *Virginia's Comprehensive Wildlife Conservation Strategy* ("Virginia Wildlife Action Plan") (2005) are those identified from Salafsky *et al.* (2003) and Richter *et al.* (1997) and include habitat stresses, such as habitat destruction, fragmentation, and degradation and increased noise levels; aquatic stresses, such as channel or shoreline alteration and alteration of chemical, biological, and physical regimes; organism stresses, such as competition and both intentional takings or unintentional killings; and toxins, such as herbicides, insecticides, metals and organic pollutants. The plan also identified the potential Sources of Stress as: agricultural runoff; atmospheric deposition; non-target species management; climate alteration or atmospheric change; exotic or introduced species; recreational use of habitat and/or species;

⁴ By law and regulation, compensatory mitigation is not required for certain small impacts to wetlands, streams, and open waters.

⁵ For example: hurricanes, disease, and drought.

forestry; industrial mineral extraction and power generation; roadways and rights-of-way; waterway navigation; municipal development (urban, suburban, and rural residential).

Based on the DEQ *Draft 2012 305(b)/303(d) Water Quality Assessment Integrated Report (Integrated Report)*, the Virginia Department of Health (VDH) Division of Public Health Toxicology has issued toxic pollutant health advisories (2013) that affect portions of many river basins. Also, the Virginia Department of Mine, Minerals, and Energy has identified mining for non-fuel materials, recognized as a potential threat to water resources, across all river basins (<https://maps.dmme.virginia.gov/flexviewer/DMM/>). Further, studies have suggested that climate change and sea-level rise are expected to impact Virginia's inland resources as well as its coastal resources by affecting temperature and in turn hydrological regimes (U.S. Global Climate Change Research Program 2009; <http://www.globalchange.gov/>).

According to the October 2012 DEQ *Status of Virginia's Water Resources* report: "Although Virginia historically has enjoyed plentiful water resources relative to demand, the growth of the Commonwealth's economy and population presents challenges for maintaining both the quality and quantity of these resources. This challenge is compounded by traditional behaviors and perceptions oriented toward the promotion of water resource consumption. Our water resources are used for a variety of important and sometimes competing in-stream and off-stream uses. Over the past decade, increased demand and competition for water coupled with reduced rainfall have established a greater sense of urgency in Virginia's approach to resource management."

In urban areas, piping infrastructure is becoming a source of potential impacts to waterways. *Urban Stream Daylighting Design Application to Stroubles Creek, Blacksburg, Virginia* (Buchholz, Tracy, 2007) notes "Turn-of-the-century engineering that made rapid land development possible in communities across the country is now failing and creating a host of present-day problems. Cracked and collapsing pipes cause major urban floods; undersized culverts fail to handle today's large amounts of impervious surface area. The health of many streams is severely degraded and their inherent functions are severed from surrounding natural systems to deleterious effect on their ability to support life, transport material, and contain flood waters." Benedict and McMahon (2006) note that 40 to 50 percent or more of the total land in urban areas today is covered by impervious surfaces,... [increasing] the risk of flooding. Hession and Wynn (2006) note that "...streams in the way of urban and suburban sprawl are particularly threatened...by increased sediment loads as well as water volume and velocity entering them from development sites. Another threat stems from the continuation of "traditional" engineering methods to contain streams on said sites: placing them into pipes and culverts.

The VWP Permit Program includes springs under its jurisdiction over activities in surface waters. The Virginia Wildlife Action Plan (2005) notes that possible stresses to Virginia's springs include improper liquid or solid waste disposal, impaired septic systems, petroleum spills/leaks, decomposing plant and animal material, improper pesticide or fertilizer application, abandoned/unattended wells, saltwater intrusion, mining, and de-icing practices (Poff 1997, 1999).

The Mid-Atlantic States Regional Wetlands Assessment Report (Brooks, R.; Haven, K.; Ingram, H.; Angstadt, K.; Stanhope, D.; and Jacobs, A.; April 2013) notes that development of a Unified Mid-

Atlantic Rapid Assessment Protocol (UMARAP) was used to collect a consistent dataset located in each of the five major ecoregions within the Mid-Atlantic Region (MAR). The report states that “Preliminary results showed that riverine wetlands are the dominant hydrogeomorphic subclasses for freshwater wetlands, and that the dominant stressors for wetlands in the region, in descending order of abundance, are hydrologic modification, sedimentation, and vegetation alteration. The Ridge and Valley and Piedmont ecoregions have the most stressors in wetlands, with fewer to the east in the Coastal Plain and toward the west in the Allegheny Plateau.”

Specific to coastal regions in Virginia, permitted impacts to tidal wetlands from 1993 to 2003 amounted to about 42 acres per year (Duhring 2004). This impact number includes changes to wetlands from conversion to other aquatic resources (open water). According to Lerberg *et al.* (2000) and others, shoreline alteration linked with watershed land development has been shown to have negative effects on water quality and a wide variety of aquatic animal populations including blue crabs, finfish, marsh birds, and the communities of organisms living in the near-shore sediments underwater. Marine debris, development of wind energy, climate change, sea-level rise, development encroachment, agriculture, shoreline hardening, leaking underground storage tanks, and invasive plant species are some of the identified, potential threats to coastal water resources in various literary sources (<http://www.deq.virginia.gov/Programs/CoastalZoneManagement/CZMIssuesInitiatives.aspx>; *A Guide to State Management of Offshore Wind Energy in the Mid-Atlantic Region*, April 2013, The Environmental Law Institute; Mid-Atlantic Regional Ocean Planning Workshop, April 4-5, 2013; Mid-Atlantic Regional Council on the Ocean, 2011-2012 MARCO Workplan, June 2011; *Sea Level Rise Adaptation at the Local Government Level in Virginia*, William A. Stiles, Jr., 2011; <http://www.deq.virginia.gov/Portals/0/DEQ/CoastalZoneManagement/section3092011-2016assessment-coastalhazards.pdf>; <http://www.deq.virginia.gov/Programs/CoastalZoneManagement/CZMIssuesInitiatives/LivingShore.aspx>; <http://www.epa.gov/oaqps001/gr8water/xbrochure/chesapea.html>; Commonwealth’s April 2011 *Comprehensive Wetland Program Plan 2011 – 2015*; http://www.dcr.virginia.gov/natural_heritage/vaisc/news/; DEQ Draft 2012 305(b)/303(d) *Water Quality Assessment Integrated Report (Integrated Report)*).

B. Measures

Beyond the Virginia Water Protection (VWP) Permit Program addressing threats by requiring compensation through permits, pursuing unauthorized impacts, and supporting educational initiatives, the Comprehensive Wetland Program Plan includes a number of actions intended to both enhance regulatory efforts and promote more effective voluntary actions.

Many applicants avoid and minimize impacts to surface waters, including wetlands, though careful compensation project planning. DEQ staff also recommends alternatives and requests protection of avoided wetlands and streams. These actions help reduce the amount of impacts upfront and ensure future impacts are less likely.

Purchasing wetland mitigation bank credits, contributing to an in-lieu fee fund, or engaging in wetland creation or restoration, and/or stream restoration are methods commonly used to compensate for the unavoidable loss of surface waters and aquatic resources, either directly or indirectly due to the identified threats and stresses. All compensation resources are required to

be protected in perpetuity. On some sites, preservation of existing aquatic resources or upland buffers is acceptable to satisfy a portion of the compensation requirement.

To the extent possible, consideration in compensation requirements established in VWP permits include the conservation, restoration, and improvement goals of other state and/or federal aquatic resource programs, such as those managed by the Virginia Department of Game and Inland Fisheries.

III. Element 3: Historic Condition / Loss – Aquatic Resources

A general discussion of historic conditions and loss follows below. For more information on a service area basis, refer to Exhibit 1 of this Compensation Planning Framework.

Virginia is believed to have lost about 40 percent of its original complement of pre-colonial wetlands (National Water Summary on Wetland Resources, *United States Geological Survey Water Supply Paper 2425*). The DEQ *Draft 2012 305(b)/303(d) Water Quality Assessment Integrated Report (Integrated Report)* notes that “Virginia has experienced great losses of wetlands as a result of human-related development”, estimating a loss of about 42 percent from the 1780s to the mid-1980s (Dahl, 1990). According to a Chesapeake Bay Foundation fact sheet (2001), Virginia lost more than 770,000 acres of wetlands, for an average annual loss of 3,870 acres, during this same 200-year period.

The DEQ *Draft 2012 305(b)/303(d) Water Quality Assessment Integrated Report (Integrated Report)* reports 52,225 total river miles in the Commonwealth, and the DEQ Status of Virginia’s Water Resources report notes an estimated 52,232 miles of streams and rivers in nine major watersheds, with a total combined flow of all freshwater streams estimated at about 25 billion gallons per day. DEQ’s own permit tracking, noted in the forthcoming paragraphs, show that about 394 miles of stream bed have been filled, excavated, or otherwise impacted since the mid 1980s. Work by Tracy Buchholz in the Department of Landscape Architecture at Virginia Tech (2007) notes: “When the industrial revolution came to full force, it was no longer possible to manage city water flow using pre-industrial methods. As rapid urban expansion took place, concern about pollution in public drinking water led to placing thousands if not millions of miles of creeks and rivers into pipes. Other streams were deliberately converted into sewer channels to efficiently remove human waste, [and the] practice...of...filling in extensive valleys with many tons of fill dirt, a leveling process that was done in advance of urban expansion to facilitate vehicular traffic. While waste disposal management practices and land development patterns have changed in the past 150 years, the management approach toward urban streams has not.”

DEQ’s permitting database⁶ (Comprehensive Environmental Data System, or CEDS) estimates authorized impacts of 1,935 wetland acres (nontidal, tidal, conversion, isolated) and 2,084,366 stream linear feet (394 miles) (nontidal, tidal), prior to receiving any required compensatory mitigation, across Virginia over the last 30 years. Based on the same results, the five 8-digit

⁶ The Comprehensive Environmental Database (CEDS), used to track Virginia Water Protection Permits, was not operational until January 2000, concurrent with the implementation of the general permit authorizations but subsequent to the issuance of some individual permits and water quality certificates. Therefore, CEDS does not present a complete permit record history.

Hydrologic Unit Codes recording the highest amount of wetland and stream impacts are shown below in Table 1 (values rounded).

Table 1 – Highest Permitted Impacts by HUC-8

Hydrologic Unit Code 8	Permitted Permanent Wetland (Acres)	Permitted Permanent Stream Bed (Linear Feet)
02080207 James	124	
02080208 Dismal Swamp	132	
02080206 James	263	
02070008 Potomac	318	
02070010 Potomac	370	
02080104 Rappahannock		8,6193
02080203 James		136,822
02070011 Potomac		145,663
02070010 Potomac		383,085
02070008 Potomac		577,846

According to a publication from the West Virginia University (Belt, K. *et al.*, undated), “the old form of clear-cutting from the 1800s and very early 1900s was an economic practice - cutting all that was usable to a saw mill. Since most timber at that time was large, old-growth timber, nearly all timber was usable - therefore all timber was cut. This total exploitation on the scale of many thousands of acres, in addition to the use of creeks as skid trails, roads, and flumes, left the region's forest resources in an apparent state of ruin.” The Virginia Wildlife Action Plan (2005) notes that in 1630, Virginia had an estimated 24.5 million acres of forest (Smith *et al.* 2005) with over 10 million acres of this area being cleared by 1907. Riparian areas were surely included in these estimates. However, the plan further notes that between 1907 and 1963, forest increased from 14 million acres to 16.4 million acres (Smith *et al.* 2005), and that forestland in Virginia has held steady since then, dropping slightly to 16.1 million acres in 2002 (Smith *et al.* 2005), an annual decline of only 0.013%.

IV. Element 4: Current Conditions – Aquatic Resources

A general discussion of current conditions follows below. For more information on a service area basis, refer to Exhibit 1 of this Compensation Planning Framework.

Virginia has roughly 1 million acres of wetlands with approximately 236,900 acres characterized as tidal or coastal and approximately 808,000 acres characterized as freshwater (2012 DEQ Water Resources Report). Approximately 72% of the wetlands in Virginia are in the Coastal Plain, with another 20% in the Piedmont and the remaining 9% in the other physiographic provinces (Tiner and Finn 1986). The Comprehensive Wetlands Program Plan 2011-2015 (2011) also notes that these

wetlands are 75% palustrine and 25% estuarine. The Environmental Law Institute (2008) estimated that only 4.5% of the Commonwealth's land area is covered by wetlands.

Field work conducted in 2008 in support of the Mid-Atlantic States Regional Wetlands Assessment Report (Brooks, R., Haven, K., Ingram, H., Angstadt, K., Stanhope, D., and Jacobs, A., April 2013) found that by combining relevant parameters from three state wetland Rapid Assessment Protocols, a Unified Mid-Atlantic Rapid Assessment Protocol (UMARAP) could be employed to collect a consistent dataset located in each of the five major ecoregions within the Mid-Atlantic Region (MAR). Preliminary results showed that riverine wetlands are the dominant hydrogeomorphic subclasses for freshwater wetlands, and that the dominant stressors for wetlands in the region are hydrologic modification, sedimentation, and vegetation alteration. A Qualitative Condition Assessment, based on best professional judgment developed during field visits, showed that the majority of wetlands are rated on the boundary between high and moderate condition. Further analysis of the field data from the rapid assessment is still ongoing⁷.

The 2007 Virginia Outdoors Plan states that in 2002, Virginia's Department of Environmental Quality (DEQ) listed 4,318 stream or river miles as impaired. The DEQ *Draft 2012 305(b)/303(d) Water Quality Assessment Integrated Report (Integrated Report)* notes 13,140 miles of impaired rivers/streams as of 2012 – or put differently, approximately 1 out of every 4 miles of stream or river miles are considered to be impaired. According to DEQ program staff, the increase is more reflective of additional assessments and better methods than it is of decreased water quality⁸. Water quality improvement efforts appear to have had some effect on water resources over the last twenty years, as noted in the *Integrated Report*: "Improvements for bacteria occurred at 10% of the stations, nitrogen improved at 24% and declined at 5%, phosphorus improved at 11% and declined at 1%, and suspended solids improved at 12% and declined at 7%. During this time period, the population in Virginia increased from 6,187,358 to 8,001,024, an increase of almost 30%, suggesting that some pollution control measures have been able to track increasing development." Still, water quality issues persist today, as is evidenced by the need to continue developing Total Maximum Daily Load (TMDL) plans in various watersheds. DEQ's web site includes a map showing water quality restoration progress statewide (<http://www.deq.virginia.gov/Programs/Water/WaterQualityInformationTMDLs/WaterQualityAssessments/2012305b303dIntegratedReport.aspx#maps>).

The *Integrated Report* also notes: "... [data] strongly suggest a general pattern of declining discharge (reduced flow) statewide that may be a result of declining precipitation. Inspection of the graphs of discharge versus time...reveals a similar, repetitious pattern among the many stations for which the analyses were conducted. Despite these indications of reduced precipitation, the pattern in flow over the most recent twenty-year time period indicates two wetter than average periods [(1996-97) and (2003-04)]...The state's average annual rainfall between 1895 and 2010 was 42.76 inches and between 1991 and 2010 was 51.06 inches...The three-year drought during the years 2000-2002

⁷ DEQ anticipates final publication of the study results in 2014.

⁸ The impaired stream mileage typically increases with every assessment because additional water bodies are monitored that have not been assessed before. The larger number of impaired stream miles over time reflects improved monitoring efforts much more than worsening water quality. Also, the assessment methodology has been revised since 1998, as well as the Geographical Information System layers. DEQ anticipates the total stream mileage for the state doubling in size for the next assessment cycle due to the increase in use of high resolution layers.

should be noted. This twenty-year pattern in flow is less pronounced in the southwestern Tennessee and Big Sandy basins.” Based on the DEQ October 2012 *Status of Virginia’s Water Resources* report, which focuses on water quantity, precipitation in Virginia during the 2011-2012 water year (October 1, 2011 through September 30, 2012) has been variable spatially and generally below normal in many locations within the eastern half of the Commonwealth. Consequently, stream flows within many of the basins located in this part of the state have been lower than normal. Abnormally dry conditions, with subsequent low stream flows, have persisted particularly in the middle part of the James River basin and in the Chowan River basin.

Simply from the standpoint of assessing water quantity, the DEQ *Status of Virginia’s Water Resources* report (2012) details the following, summarized water withdrawals during the 2011 water year:

- Withdrawals from streams totaled approximately 685 mgd, while withdrawals from reservoirs totaled an additional 393 mgd (about 88% of the total 1,245 million gallons).
- Groundwater is the major source of water for agricultural uses. The total reported 2011 agricultural withdrawal was above the 2007-2011 average by approximately 35%. The apparent rising trend in agricultural water use may be due mainly to a growing interest in aquaculture in the State. The largest 2011 agricultural withdrawals, all from aquaculture facilities, occurred in Bath and Highland Counties in the Valley region and Craig, Wythe, and Smyth Counties in the Southwest region, and accounted for 79% of all agricultural water use in the state.
- Surface water continues to be the major source of water for irrigation, but reported water withdrawals for irrigation in 2011 decreased relative to those in 2010 by about 12%. The majority of irrigation water withdrawals in 2011 occurred on the Eastern Shore, where irrigation users in Accomack and Northampton Counties accounted for approximately 38% of the reported state-wide water withdrawals for irrigation.
- Surface water withdrawal totals are typically greater than ground water withdrawal totals for commercial operations (golf courses, local and federal installations, hotels, and laundromats, among others). Total water withdrawals for commercial operations in 2011 were slightly lower (8%) than the average withdrawals over the past five years. Areas where the largest commercial withdrawals occurred were spread across the state, with concentrations in the Richmond, Hampton Roads and northern Virginia regions.
- Mining includes operations such as sand, rock, and coal mining. The major source of water for mining is surface water, and total water withdrawals in 2011 for mining purposes were similar to those of previous years. Stone and sand mining facilities with the largest withdrawals are mainly located along the I-95 corridor; coal mining withdrawals are located in the southwestern Appalachian basin.
- Manufacturing includes operations such as paper mills, food processors, drug companies, furniture, and concrete companies. Surface water is the predominant source of water for manufacturing, accounting for about 84% of the total withdrawals. Water withdrawals for manufacturing during 2011 were approximately 65 mgd (15%) lower than the average over the past five years. Clusters of large-scale manufacturing withdrawals occur in the Hampton Roads, Richmond and Shenandoah Valley regions, as well as the New River and the Jackson/Upper James River basins.
- Public water supply includes municipal and private water purveyors. Surface water is the major source of water for public water supply in terms of the overall quantities used. Water withdrawals for public water supply during 2011 were nearly equal to the average for the

2007-2011 period and slightly less than 2010 withdrawals. The largest public supply water withdrawals are located within or near population centers such as the Washington DC metropolitan region, Richmond, Hampton Roads and Roanoke.

- Withdrawals for power generation are mostly water diverted and are used non-consumptively. Withdrawals during 2011 by nuclear and fossil-fuel power generating plants were slightly less overall than in 2010.

According to the Virginia Department of Forestry, approximately 50 percent of Virginia's streams have forest buffers. These buffers are the single best natural filter that can effectively remove pollutants from waterways, among providing other ecosystem services. An internet search resulted in multiple sources of information, too numerous to list here, on buffer functions and services. One research paper by M.E. McTammy *et al.*, *Recovery of stream ecosystem metabolism from historical agriculture* (2007), notes that stream ecosystem metabolism might recover from agricultural influence as watersheds undergo reforestation, particularly when shade from terrestrial vegetation is restored. The study found reductions in percent forest cover as a result of agriculture in the southern Appalachian mountains of western North Carolina and southwestern Virginia affected stream ecosystem metabolism by increasing gross primary production, but did not cause changes in ecosystem respiration⁹, and that light availability seemed to be the main driver of gross primary production in most streams.

In summary, aquatic resource conditions vary widely across the state. Water quality at times has improved and degraded in cycles but has improved overall since tracking began. Impacts to aquatic resources can be tied to many, cyclical human and naturally induced events.

V. Element 5: Aquatic Resource Goals and Objectives

A. Overall goals and objectives

The overall goals and objectives for all service areas include:

1. Replacement of lost acreage of wetlands;
2. Replacement of lost functions of all surface waters;
3. Retention of existing resource acreage and functions;
4. Improvements to water quality and other aquatic ecosystem functions;
5. Improvements to terrestrial ecosystem functions as they relate to aquatic resources; and
6. Improvements to overall watershed health, including the consideration of stream beneficial uses.

DEQ requires compensation for wetland and stream impacts that is sufficient to ensure no-net-loss of wetland acreage and function, and to ensure no-net-loss of function in all surface waters, but by law and regulation, not all impacts require compensation. Any mitigation approved must be ecologically preferable among proposed mitigation options; provide continuing

⁹ Ecosystem respiration is the production portion of carbon dioxide in an ecosystem's carbon flux, while photosynthesis typically accounts for the majority of the ecosystem's carbon consumption (http://en.wikipedia.org/wiki/Ecosystem_respiration).

accountability to DEQ and the public; and demonstrate successful replacement of resource functions provided by surface waters (Code of Virginia Section 62.1-44.15:23; 9 VAC 25-210-116(D) through (F)).

The overall goals are generally addressed through the issuance of permits. The Virginia Water Protection (VWP) permit program expects the current level of permitting activities to continue into the future, barring any major economic downturns. Demand for permits reflect proximity to Virginia's population centers, as well as concentrations of surface waters. Virginia Water Protection permitting activity in specific locations is also affected by factors such as overall development pressure, amount of suitable uplands available for build out, and local demand for water-related recreation access. Figures 2 through 4 show the distribution of DEQ permits and impacts by county from 2001 to 2013 (October 2013). Figures 5 through 8 show state-wide wetland, open water, and stream bed compensation activities for the same time period, divided based on the type of associated DEQ permit issued (note: data do not include federal Section 404 permit actions) (October 2013). Due to changes in the way data have been entered into DEQ's permit database over the time period, several different units for compensation exist. The figures represent, to the best of our ability, the compensation received. For the purpose of this Prospectus, one acre of wetlands or one linear foot of stream bed can be equated to one bank or in-lieu fee fund credit. However, bank credits are typically a blend of multiple types of compensation depending upon the specific banking instrument, and in-lieu fee funds in Virginia have only recently switched to using credits as a compensation unit. When recording compensation through use of an in-lieu fee fund, DEQ staff typically recorded a dollar amount contributed to an in-lieu fee fund, and/or at best, a dollar amount and the required compensation in units of area or linear extent.

VWP Permits Issued by County (2001-2013)

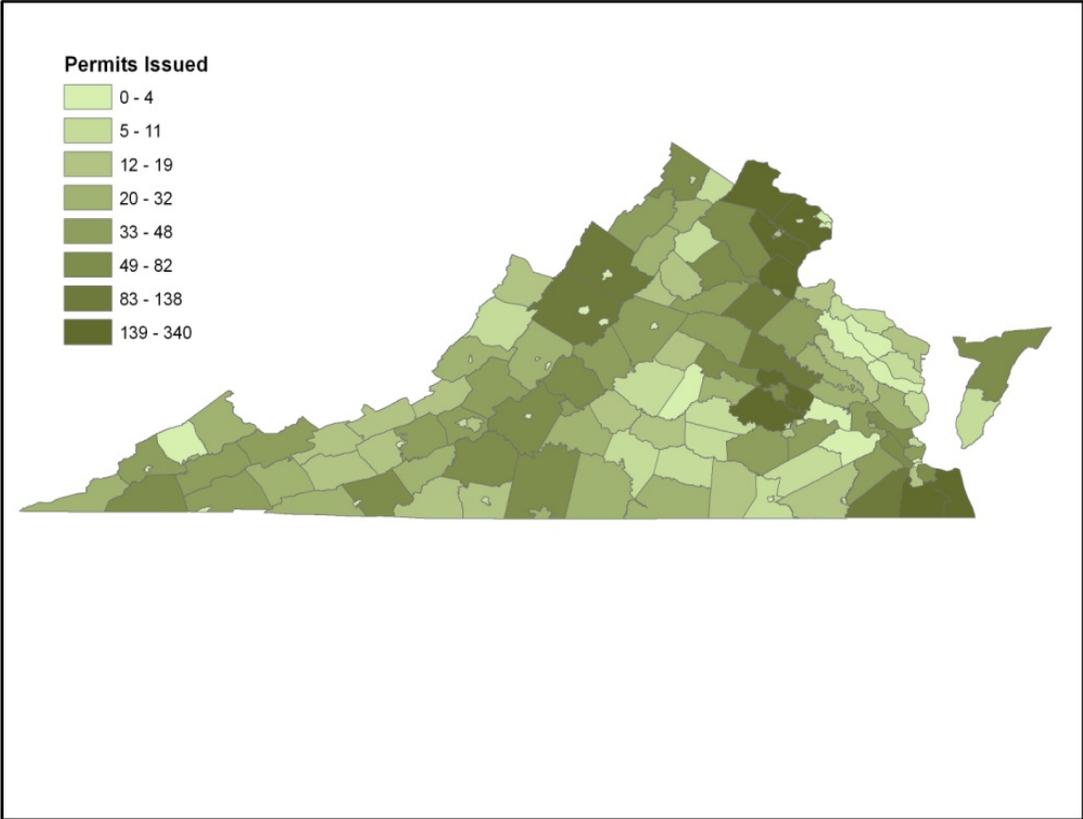


Figure 2: Permits Issued by County
(Source: DEQ CEDS database, October 2013)

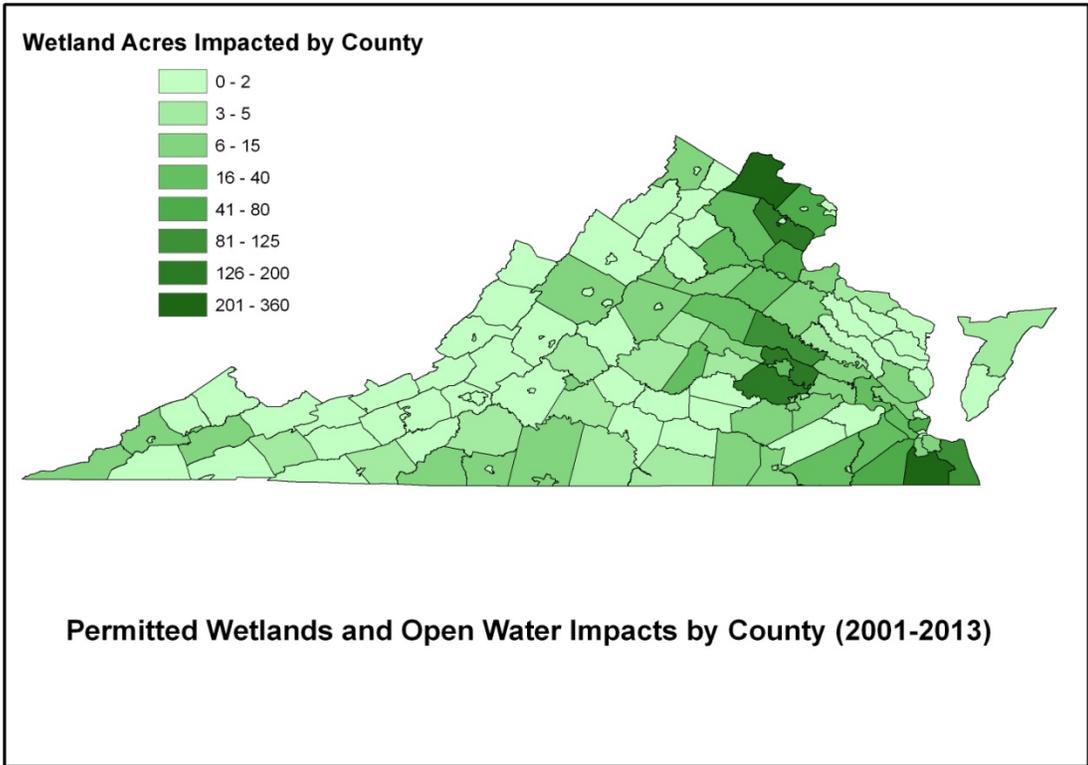


Figure 3: Wetland and Open Water Impacts by County
 (Source: DEQ CEDS database, October 2013)

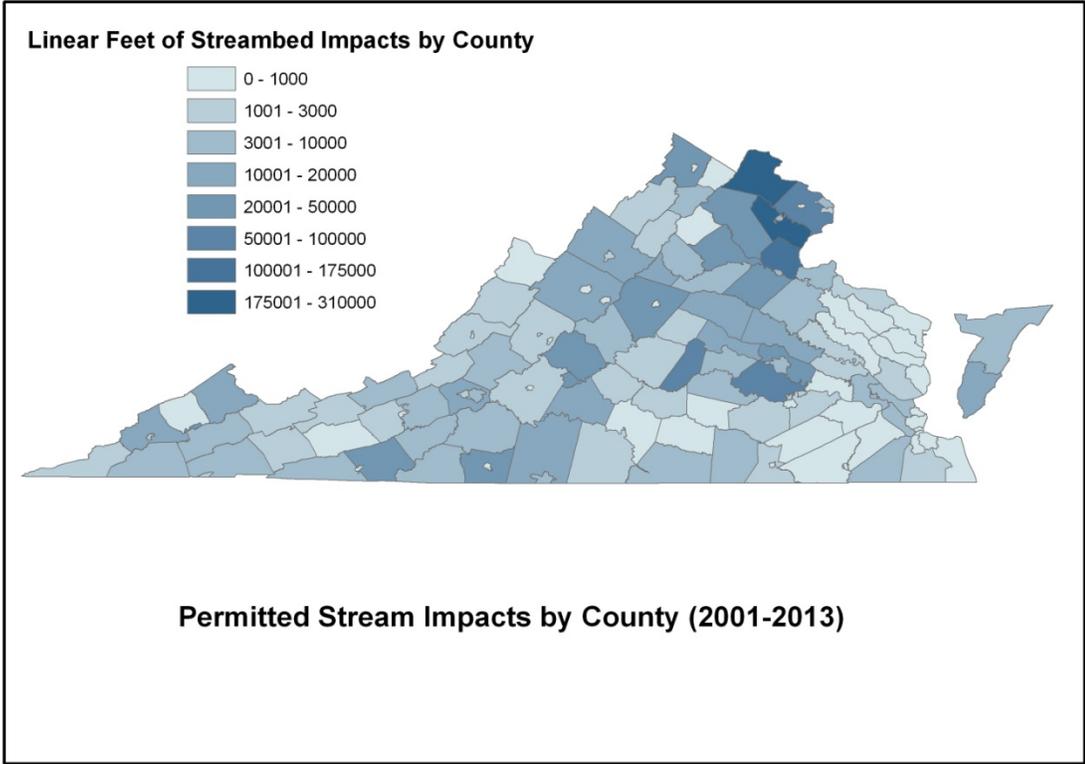


Figure 4: Stream Impacts by County
 (Source: DEQ CEDS database, October 2013)

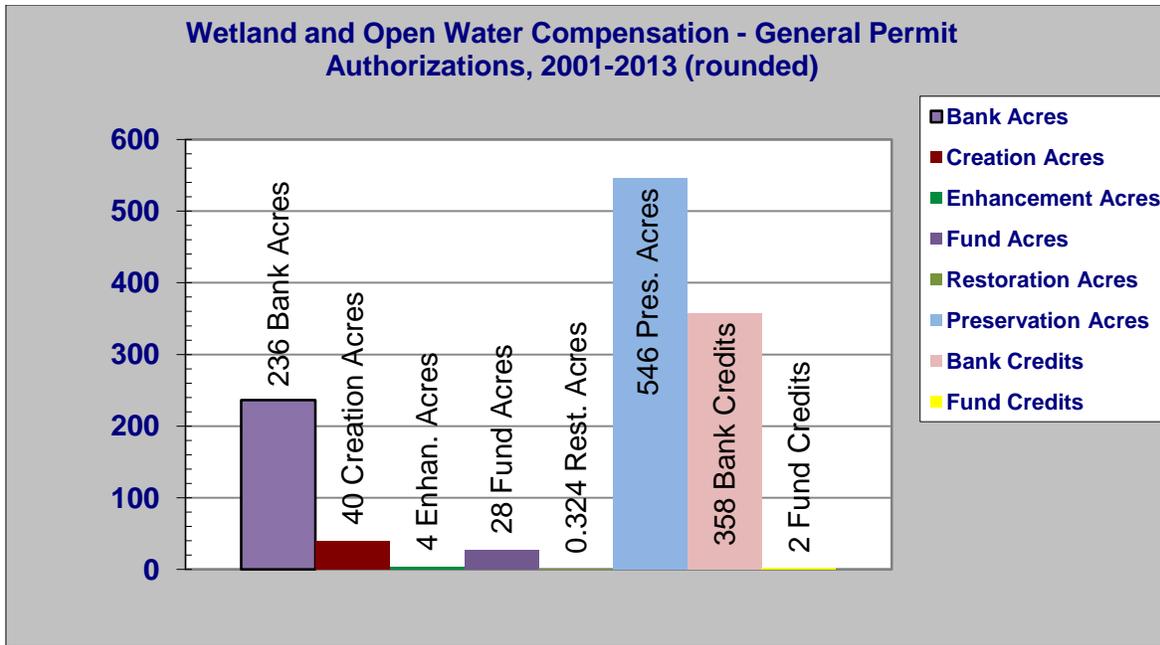


Figure 5: Wetland & Open Water Compensation Activities – DEQ General Permit Authorizations Only
 (Source: DEQ CEDS database, October 2013)

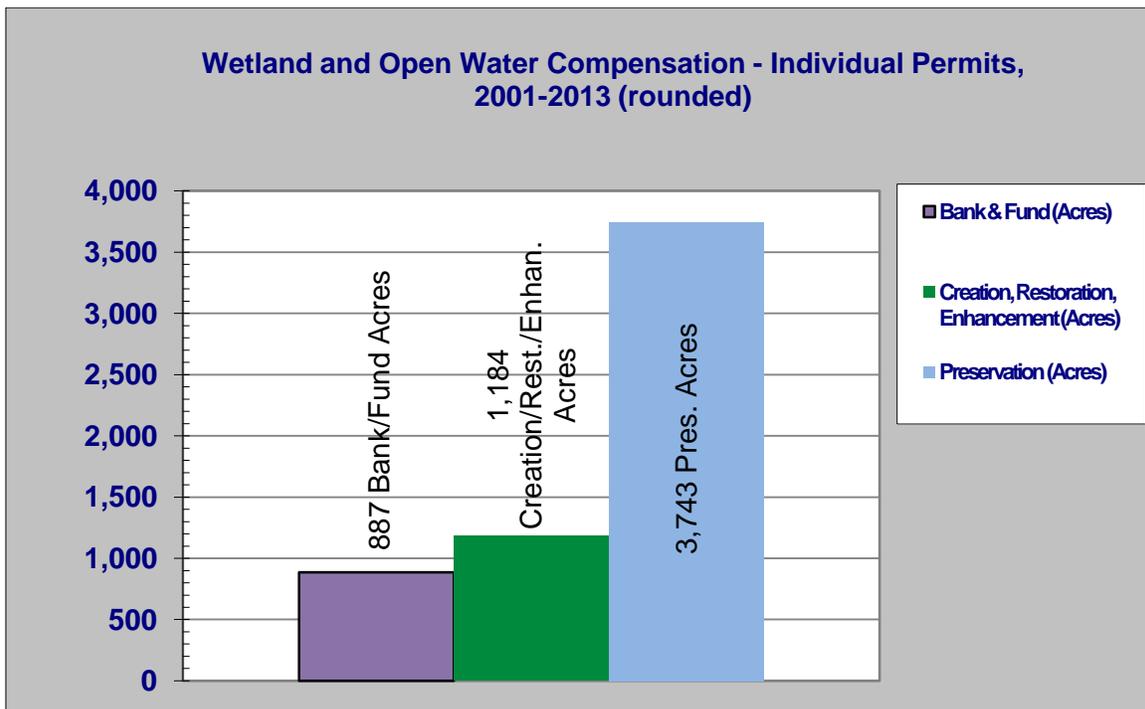


Figure 6: Wetland & Open Water Compensation Activities – DEQ Individual Permits Only
 (Source: DEQ CEDS database, October 2013)

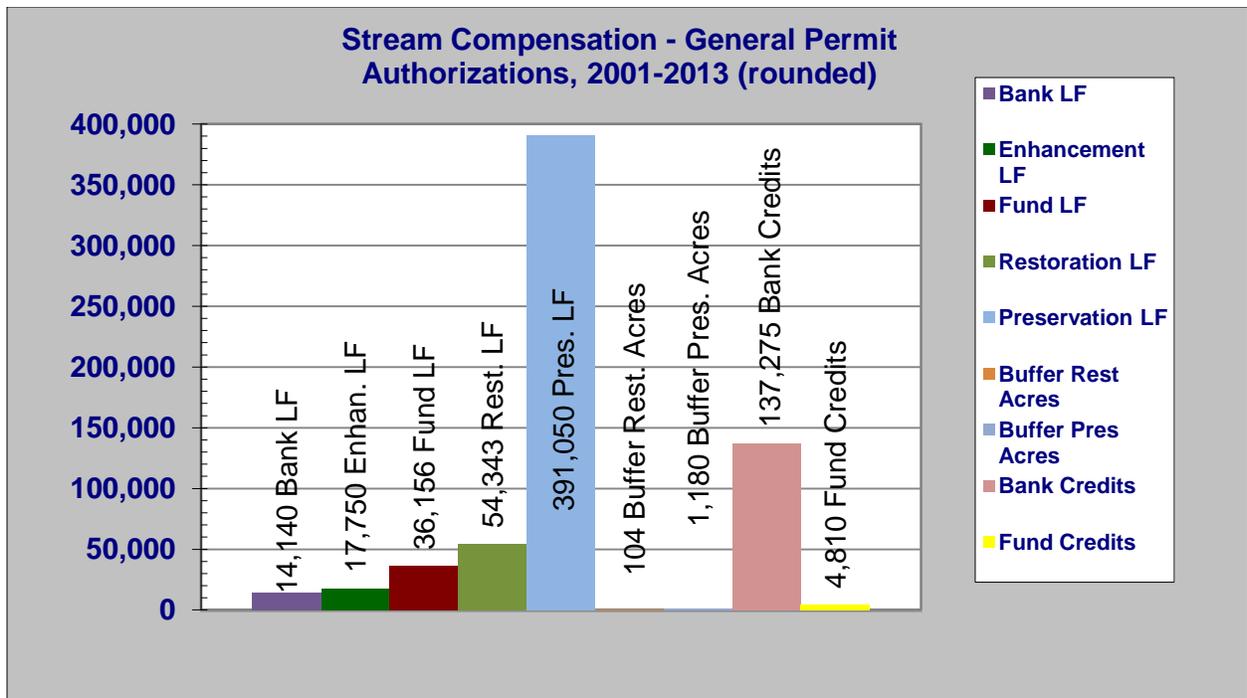


Figure 7: Stream Compensation Activities – DEQ General Permit Authorizations Only
 (Source: DEQ CEDS database, October 2013)

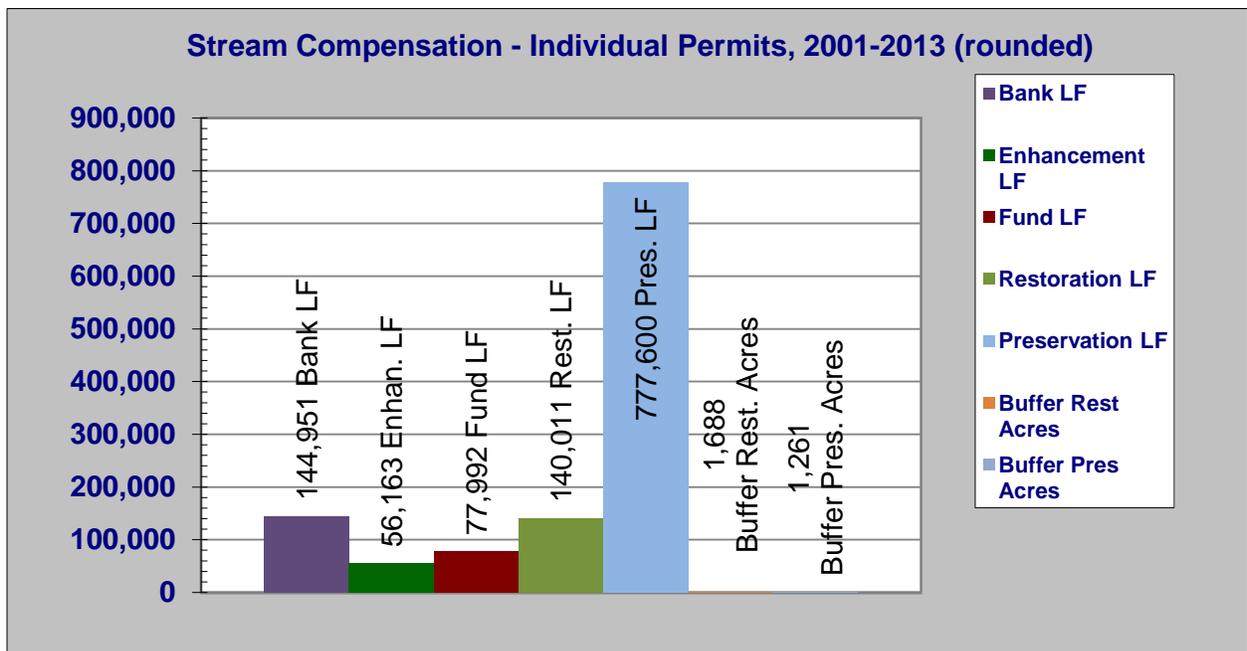


Figure 8: Stream Compensation Activities – DEQ Individual Permits Only
 (Source: DEQ CEDS database, October 2013)

B. Specific goals and objectives

The amounts, types, and locations of aquatic resources the Fund will seek to provide on a Service Area basis will continue to be dependent upon permit requirements. Existing compensation mitigation ratios will typically apply but are subject to change over the life of the Fund, particularly where future condition assessment data may support application of alternative ratios. Additional goals and objectives specific to Service Areas are provided in Exhibit 1 of this Compensation Planning Framework.

Figure 9 depicts the distribution of banks across the Commonwealth, simply based on the HUC-8 (October 2013). Two approved and operational ILF programs also currently exist in Virginia. More importantly, Figure 10 is a graphic of the bank service area coverage in Virginia, as shown on the U.S. Army Corps of Engineers' Regulatory In lieu fee and Bank Information Tracking System (RIBITS) web tool (October 2013). A bank's service area may extend beyond the HUC-8 where the bank is located. Areas currently served by mitigation banks are shaded green – the brighter the shade, the more that area is serviced by one or more banks. The information presented here regarding banks is subject to change, and frequently does change.

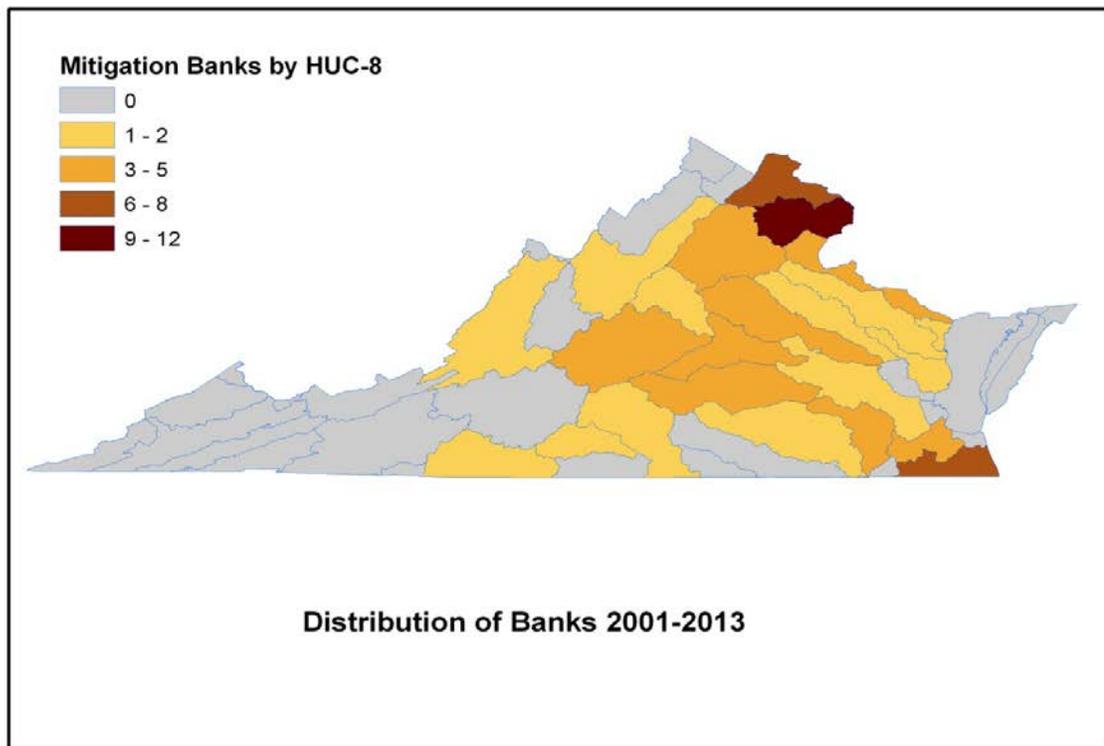


Figure 9: Approved Compensatory Mitigation Banks by HUC-8
(Source: DEQ Bank Tracking Spreadsheet, October 2013)

shows many sites ranked as having “good” potential for restoration in the headwater reaches of larger river systems, *but due to the date of the last revision, care must be taken to verify whether or not a potential site is still available or if a site has already been utilized.*

Appropriate credits may not be already available; therefore, alternative compensation activities may need to be pursued. When such situations arise, DEQ intends to consider compensation alternatives in the scope of possible options to meet the Fund goals and objectives, per the provisions established in law: *“...If such credits are not available within three years of the collection of moneys for a specific impact, then funds shall be utilized either (1) to purchase credits from a Board-approved fund that have met the success criteria, if qualifying credits are available, (2) for the planning, construction, monitoring, and preservation of wetland and stream mitigation projects and preservation, enhancement, or restoration of upland buffers adjacent to wetlands or other state waters when used in conjunction with creation or restoration of wetlands and streams, or (3) for other water quality improvement projects as deemed acceptable by the Department of Environmental Quality. Such projects developed under clause (2) shall be developed in accordance with guidelines, responsibilities, and standards established by the Department of Environmental Quality for use, operation, and maintenance consistent with 33 CFR Part 332, governing compensatory mitigation for activities authorized by U.S. Army Corps of Engineer permits. ...”.*

VI. Element 6: Prioritizing Mitigation Projects

Mitigation banking projects and alternative projects are largely expected to stem from permit actions with occasional need for compensation for unpermitted activities. The same laws, regulations, and policies, including the Virginia Offsite Mitigation Location Guidelines (CENAO-REG March 5, 2008), that are currently used for permit processing will continue until such time that revisions are mandated or implemented. Staff in the Virginia Water Protection Permit Program will play a key role in informing program managers of upcoming compensatory mitigation needs. Agency tracking tools for permit actions will be used for purposes related to use of the Fund.

Exhibit 2 attached to this compensation planning framework includes the full text of the applicable sections of the Code of Virginia, including the provisions under which compensatory mitigation may be obtained and/or provided. Of particular applicability are Sections 62.1-44.15:21, 62.1-44.15:23, 62.1-44.15:23.1, and 62.1-44.15:24.

In addition to the requirements noted above, the selection and prioritization of mitigation banking and alternative projects will depend upon: 1) the proposed project’s consistency with the Fund’s Compensation Planning Framework described herein, including aquatic resource restoration, establishment, and enhancement activities, and preservation of existing aquatic resources that are important for maintaining or improving ecological functions of the watershed; 2) the current Virginia Water Protection Permit Program regulations that govern the compensation requirements; 3) provisions included to meet or enhance other resource agency goals; and/or 4) the number of active banks with available credits operating in the applicable service area.

Project proponents will be required to submit detailed mitigation plans and/or project plan documentation in accordance with Virginia Water Protection Permit Program regulations that

govern the compensation requirements. Project development plans shall also include specific provisions addressing project default and other provisions as recommended by the IRT, including but not limited to, transfer of site ownership (taking into account restrictions imposed by Section 170(h) of the Internal Revenue Code and the regulations promulgated there under, as appropriate). All project proponents will be encouraged to use on-line tools such as the Wetland Condition Assessment Tool (WetCAT) developed by DEQ and the Virginia Institute of Marine Science (VIMS) and the Virginia Coastal Zone Management Program's Virginia Coastal Geospatial & Educational Mapping System (Coastal GEMS), as well as references such as the U.S. Environmental Protection Agency's *Incorporating Wetlands into Watershed Planning*, a supplement to the Watershed Planning Handbook (February 2013), when considering potential mitigation banking or alternative projects. WetCAT is expected to be useful in identifying wetland areas that are stressed and potentially in need of restoration or those in good condition that may be protected through preservation. All projects should also be evaluated using the VA Offsite Mitigation Location Guidelines.

DEQ and its partner(s) may require the submittal of a project proponent's qualifications, experience, and/or financial status to support the proponent's ability to pursue the proposed work tasks for providing compensation. Factors such as, but not limited to, education, licensure, past project results, and familiarity with working in the Commonwealth of Virginia will be considered. Where bank credits are purchased with Fund monies, only banks that are approved by DEQ will be acceptable, and such information noted herein should already be part of that bank's application and/or operating instrument.

VII. Element 7: Preservation

Element 5 above includes an overall goal of retaining existing resource acreage and functions through the requirement of compensatory mitigation in permits, and/or possibly through compliance and enforcement actions for unauthorized impacts, which are governed by specific state laws, regulations, and program guidance (DEQ Guidance Memorandum 09-2004, March 2009). Preservation that accompanies other forms of compensation is an appropriate mechanism that will continue to be used in accordance with DEQ laws, regulations, and program guidance (DEQ Guidance Memorandum 08-2009, June 2008).

The Federal Mitigation Rule criteria for use of preservation can be found in 33 CFR Part 332. The following sections are quoted, and a statement is provided as to how the Element 5 goal can satisfy each criterion:

- A. *"... [332.3a] Compensatory mitigation may be performed using the methods of restoration, enhancement, establishment, and in certain circumstances preservation. Restoration should generally be the first option considered..."*

Virginia Water Protection Permit Program Regulation 9VAC25-210-116 is supportive of this criterion for wetlands: compensatory mitigation for unavoidable wetland impacts may be met through wetland creation; wetland restoration; purchase or use of credits from a mitigation bank, pursuant to Section 62.1-44.15:23 of the Code of Virginia; contribution to an approved in-lieu fee fund; preservation of upland buffers adjacent to state waters, when used in conjunction with wetland creation, wetland restoration, or purchase or use of credits from a mitigation

bank, and when compensatory mitigation for impacts are sufficient to achieve no net loss of existing wetland acreage and no net loss of functions in all surface waters; restoration of upland buffers adjacent to state waters, when used in conjunction with wetland creation, wetland restoration, or purchase or use of credits from a mitigation bank, and when compensatory mitigation for impacts are sufficient to achieve no net loss of existing wetland acreage and no net loss of functions in all surface waters; and preservation of wetlands, when used in conjunction with wetland creation, wetland restoration, or purchase or use of credits from a mitigation bank.

Virginia Water Protection Permit Program Regulation 9VAC25-210-116 is also supportive of this criterion for streams: compensatory mitigation for unavoidable impacts to streams may be met, as appropriate to replace functions or water quality benefits, through stream channel restoration or enhancement; riparian buffer restoration or enhancement; riparian buffer preservation, when compensatory mitigation for impacts are sufficient to achieve no net loss of functions in all surface waters; contribution to an approved in-lieu fee fund; and purchase or use of credits from a mitigation bank, pursuant to Section 62.1-44.15:23 of the Code of Virginia. One factor in determining the required compensation shall be an analysis of stream impacts utilizing a stream impact assessment methodology acceptable to the DEQ.

Specific to the Fund, Section 62.1-44.15:23.1 of the Code of Virginia provides that *“...If such credits are not available within three years of the collection of moneys for a specific impact, then funds shall be utilized either (1) to purchase credits from a Board-approved fund that have met the success criteria, if qualifying credits are available, (2) for the planning, construction, monitoring, and preservation of wetland and stream mitigation projects and preservation, enhancement, or restoration of upland buffers adjacent to wetlands or other state waters when used in conjunction with creation or restoration of wetlands and streams, or (3) for other water quality improvement projects as deemed acceptable by the Department of Environmental Quality. Such projects developed under clause (2) shall be developed in accordance with guidelines, responsibilities, and standards established by the Department of Environmental Quality for use, operation, and maintenance consistent with 33 CFR Part 332, governing compensatory mitigation for activities authorized by U.S. Army Corps of Engineer permits.”*

- B. *“[332.3f] The district engineer must require a mitigation ratio greater than one-to-one where necessary to account for the method of compensatory mitigation (e.g., preservation), the likelihood of success, differences between the functions lost at the impact site and the functions expected to be produced by the compensatory mitigation project, temporal losses of aquatic resource functions, the difficulty of restoring or establishing the desired aquatic resource type and functions, and/or the distance between the affected aquatic resource and the compensation site...”*

“[332.8o] Determining credits...(6) Credits provided by preservation. These credits should be specified as acres, linear feet, or other suitable metrics of preservation of a particular resource type. In determining the compensatory mitigation requirements for DA permits using mitigation banks or in-lieu fee programs, the district engineer should apply a higher mitigation ratio if the requirements are to be met through the use of preservation credits. In determining this higher ratio, the district engineer must consider the relative importance of both the impacted and the preserved aquatic resources in sustaining watershed functions. ...”

Preservation proposed in conjunction with other compensation will continue to be considered on a case-by-case basis. Per 9VAC25-210-116, compensatory mitigation ratios appropriate for the type of aquatic resource impacted and the type of compensation provided shall be applied to permitted impacts to help meet this requirement. Credit may be given for preservation of upland buffers already protected under other ordinances to the extent that additional protection (i.e., additional buffer widths) and water quality and fish and wildlife resource benefits are provided.

By requiring the following preservation ratios when considering mitigation banking or alternative projects to be developed under the Fund, the goals and objectives of the Fund's service area(s) are supported. These current ratios are generally established in guidance and policy developed under the Virginia Water Protection Permit Program [GM08-2009], but are subject to future revision and site-specific considerations: 10:1 to 15:1 for preservation of wetlands; 7:1 to 14:1 for preservation of streams; 15:1 to 20:1 for preservation of upland buffers; and no less than 15:1 for areas already under legal protection.

- C. *"[332.3h] Preservation may be used to provide compensatory mitigation for activities authorized by DA permits when all the following criteria are met: (i) The resources to be preserved provide important physical, chemical, or biological functions for the watershed; (ii) The resources to be preserved contribute significantly to the ecological sustainability of the watershed. In determining the contribution of those resources to the ecological sustainability of the watershed, the district engineer must use appropriate quantitative assessment tools, where available; (iii) Preservation is determined by the district engineer to be appropriate and practicable; (iv) The resources are under threat of destruction or adverse modifications; and (v) The preserved site will be permanently protected through an appropriate real estate or other legal instrument (e.g., easement, title transfer to state resource agency or land trust)..."*

Per 9VAC25-210-80.B.1 (informational requirements for a complete permit application), DEQ evaluates how preservation meets program goals and objectives through the information provided in functional assessments, evaluation of beneficial uses, assessment of potential impacts to federally-listed and state-listed threatened or endangered species, a conceptual mitigation plan (including measures taken to avoid impacts to the maximum extent practicable, the measures proposed to reduce the impacts to surface waters to the maximum extent practicable, and where impacts could not be avoided, the means by which compensation will be accomplished to achieve no net loss of wetland acreage and functions or stream functions and water quality benefits), and the proposed deed restriction language for protecting the compensation site or sites, including all surface waters and buffer areas within its boundaries, in perpetuity.

- D. *"[332.3h] (2) Where preservation is used to provide compensatory mitigation, to the extent appropriate and practicable the preservation shall be done in conjunction with aquatic resource restoration, establishment, and/or enhancement activities. This requirement may be waived by the district engineer where preservation has been identified as a high priority using a watershed approach described in paragraph (c) of this section, but compensation ratios shall be higher..."*

Virginia Water Protection Permits utilizing the Fund will continue to follow the Code of Virginia Section 62.1-44.15:21, regulation 9VAC25-210-116, and DEQ Guidance Memorandum 08-2009, which provide that compensation may incorporate (a) preservation or restoration of upland buffers adjacent to wetlands or other state waters or (b) preservation of wetlands, *when used in conjunction with creation, restoration, or mitigation bank credits*.

VIII. Element 8: Stakeholders

As noted previously, a stakeholders group representing the mitigation banking industry played a key role in driving the legislation that mandated creation of the Fund. Some of these same stakeholders were contacted to provide further input on the Fund structure and operations.

Early in the development of the Fund documents, stakeholder contact included meeting with representatives from the U.S. Army Corps of Engineers – Norfolk District in late May 2013 to obtain general insights regarding the development of an in-lieu fee program, and meeting with the representatives of the Virginia Mitigation Banking Association in June 2013 to gather their perspective regarding development and administration of the Wetland and Stream Replacement Fund.

The following list are examples of workshops, attended by experienced wetland scientists and resource managers, that have been held to develop and adjust the Wetlands Monitoring Assessment protocol used in the Wetland Condition Assessment Tool (WetCAT) to date. WetCAT is an integral part of how DEQ intends to prioritize all compensation projects and meet the Fund goals and objectives:

- June 14-15, 2004. Mid Atlantic Wetlands Workgroup. State College, PA.
- December 14-15, 2004. Mid Atlantic Wetlands Workgroup. Baltimore, MD.
- April 14, 2005. New England Wetlands Workgroup/MAWWG Joint meeting. Poughkeepsie, NY.
- June 5-10, 2005. Society of Wetland Scientist 26th Annual Meeting/Conference, A Protocol for Assessing Wetland Condition by Hydrologic Unit within the Coastal Plain of Virginia, USA. Charleston, SC.
- October 16-20, 2005. Estuarine Research Federation Conference: The Importance of Non-tidal Land and Waters in Basin Dynamics. Norfolk, VA.
- November 8-9, 2005. Mid Atlantic Wetlands Workgroup. Lewes, DE.
- May 10-12, 2006. Mid Atlantic Wetlands Workgroup. Strasburg, VA
- June 27, 2006. Briefing for VA Secretary of Natural Resources
- Special Workshop presentation at DEQ All-hands meeting.
- November 6, 2006. Briefing for ACOE District Engineer Col. Dionysios Anninos.
- November 14-15, 2006. Mid Atlantic Wetlands Workgroup. Davis, WV.
- April 3-5, 2007. Association of Mid-Atlantic Aquatic Biologists, Berkley Springs, WV.
- April 16-18, 2007. Mid Atlantic Wetlands Workgroup with EPA National Wetlands Assessment Team members. Baltimore, MD.
- April 21-22, 2008. Mid Atlantic Wetlands Workgroup. Shepherdstown, WV.
- June 27, 2008. Wetlands Protection Workshop. Piedmont Environmental Council. Prince William County.

- October 2009. Wetlands Condition Assessment in Virginia. Mid Atlantic Wetlands Workgroup.
- May 2010. Nontidal Wetlands Condition Assessment, Mid Atlantic Wetlands Workgroup Annapolis, MD.
- March 2011. Virginia Wetlands Condition Assessment. EPA Headquarters, Office of Water. Washington, D.C.
- April 10-11, 2012. Virginia Wetlands Management. EPA Region III coordination with Norfolk Corps of Engineers. Virginia Beach, VA.
- March 20, 2013. Virginia Wetland Assessment: WetCat. Association of State Wetland Managers. Shepherdstown, WV.

The Fund Instrument, Prospectus, Compensation Planning Framework, and all project proposals will be coordinated for review and comment with the IRT, consisting of federal and state resource agency personnel, per the schedules established in the Federal Mitigation Rule. Project approval may take 250 days or more. DEQ will recuse its staff from reviewing and commenting upon the submittals necessary for the Fund's approval, as well as project proposals that are brought before the IRT. Future revisions to the Fund Instrument, when necessary, will be submitted to the IRT in accordance with the Final Mitigation Rule, and again, DEQ will recuse its staff from review and comment.

Outside of normal public comment periods established as part of Fund approval, DEQ intends to investigate new or existing web sites on which to add Fund information, such as the Regulatory In lieu fee and Bank Information Tracking System (RIBITS). All proposed projects being considered under the Fund will be posted, including a brief description of the project goals and objectives.

DEQ may also hold periodic meetings with stakeholders once the Fund is operational to gain feedback about all aspects of the Fund.

IX. Element 9: Long-term Management/Protection

Long-term management of sites approved for compensatory mitigation, as well as estimating the cost of and securing finances for long-term management, will be the responsibility of the mitigation provider (bank or other ILF program sponsor, project sponsor, or a contracted party) and is expected to be an element of all mitigation projects. Due to limited human and financial resources, DEQ does not intend to directly pursue planning, implementation, construction, or investment management activities.

Permits issued through the DEQ Virginia Water Protection Permit Program contain conditions that require a conceptual and a final compensation plan that meets the requirements of the Virginia Water Protection Permit Program Regulation. Permit staff review such plans for comment and approval. Any compensation site approved for compensation credit must include a Deed of Restrictions, or similar protective instrument that runs with the property chain of title, and a legally-binding agreement between interested parties that contains provisions for managing the compensation site in perpetuity. Such an agreement may assign management responsibilities to the land owner or to another party, and may be reassigned in consultation with the IRT.

To the maximum extent practicable, all project sites must be planned and designed to be self-sustaining over time, but some active management and maintenance may be required to ensure their long-term viability and sustainability. Examples of acceptable management activities include maintaining fire dependent habitat communities in the absence of natural fire, controlling invasive exotic plant species, and the repair/replacement of fences and gates. The long-term management needs for any project that uses monies from the Fund will vary depending upon the nature of the project. Any project approved for use of the Fund monies will be required to submit a long-term management plan that identifies management needs, costs, funding sources, financing, and contingencies sufficient to guarantee the success of each project undertaken in accordance with Corps and DEQ regulations, including remediation of catastrophic events.

X. Element 10: Evaluation and Reporting

An annual report of Fund activities, deposits, disbursements, and balances based on a state fiscal year (July 1 through June 30) will be provided to the IRT by December 31st of each year. Fund reports will include by Service Area all income received, disbursements made, and interest earned by the Fund under each project code; all permits for which in-lieu fee program funds were accepted (state and/or Corps permit number); the amount of authorized impacts; the amount of required compensatory mitigation; the amount paid; and the date the funds were received. The HUC-8 will be included for permitting and compensation activities as available. Finalized Fund reports will be posted to DEQ's web site or other, appropriate web sites such as the Regulatory In lieu fee and Bank Information Tracking System (RIBITS).

Reporting for mitigation bank establishment activities and sponsored alternative project activities, such as but not limited to pre- and post-construction conditions, unexpected events, and success monitoring data, will be reported by the mitigation banking or alternative project sponsor under the provisions of any applicable permits, mitigation banking instruments, protective instruments, or sponsor-required protocols. DEQ does not intend to develop project-specific reports.

Periodic review and revision of Fund credit costs will occur as needed with an opportunity for public comment. Comments and agency responses will be submitted to the IRT as part of the credit cost revision approval process.

Periodic review and revision of the Wetland and Stream Replacement Fund Instrument will occur within DEQ and externally with stakeholder participation solicited well in advance of any requested revisions. DEQ anticipates the first such review will occur within five years of approval of the first proposed project to use Fund monies, unless an earlier point is deemed necessary by DEQ. State law and regulatory changes may also necessitate periodic review of the Fund. Requests for revisions will follow the criteria established in the Final Mitigation Rule.

Exhibit 1

Information Specific to Service Areas

Following is additional information specific to Service Areas regarding aquatic resource threats, historic and current aquatic resource conditions, and potential alternative mitigation projects that may be considered.

The *Virginia Wildlife Action Plan, Appendix H*, (2010) identifies threats for several river basins, as well as the potential sources for such threats. These are included in the summaries provided herein.

As noted previously, certain situations may require a need for an alternative means of compensatory mitigation. Possible options to meet the Fund goals and objectives are described herein. While it is not possible to predict the exact types of projects that may occur, incorporation of restoration or enhancement of wetlands, streams, and buffers should be considered where possible.

Historic and current conditions described herein were gathered from multiple sources. The following basin-specific conditions were reported in the *DEQ Draft 2012 305(b)/303(d) Water Quality Assessment Integrated Report (Integrated Report)* are directly related to the identified aquatic threats:

- Potomac: Approximately 40% forested, 33% farmland and pasture, 27% urban
- Shenandoah: Approximately 45% forested (large amount of federally-owned land and steep topography), 39% farmland and pasture, 16% urban
- James: Over 65% forested, 19% in cropland and pasture, 12% urban
- Rappahannock: Approximately 51% forested, 36% pasture and cropland, 6% urban
- Roanoke: Over 62% forested, 25% cropland and pasture, 10% urban
- Chowan River-Dismal Swamp: Approximately 64% forested, 28% cropland and pasture, 6% urban
- Tennessee: Within Virginia, approximately 48% forested, 40% cropland and pasture, and a small percent considered urban
- Big Sandy: Approximately 86% forest, 5% in cropland and pasture, and a small percent considered urban
- Chesapeake Bay/Atlantic Ocean: Approximately 30% forested, 22% cropland and pasture, 24% urban
- York: Approximately 65% forested, 20% farmland and pasture, 10% urban
- New: Approximately 59% forested, 35% cropland and pasture, 3% considered urban

Potomac River Basin:

Threats

The following threats were identified in the Potomac River basin: sediment load alteration; herbicides/fungicides/insecticides; competition; predation; toxins; nutrient input, organic matter input, turbidity, pH, hydrologic, and dissolved oxygen regime alterations; organic pollutants; channel or shoreline alteration; habitat fragmentation; metals; unintentional capture or killing; and complications due to small populations. Invasive plant species have been identified in the Northern Virginia region

(http://www.dcr.virginia.gov/natural_heritage/vaisc/news/); invasive mussel species (<http://nas2.er.usgs.gov/viewer/omap.aspx?SpeciesID=5>). Some suspected sources of designated use impairment in the rivers of these basins include wildlife and other waterfowl [unspecified activities], non-point sources, agriculture, and grazing in riparian zones, while in lakes the suspected sources are naturally-occurring conditions, atmospheric deposition of toxins, combined sewer overflows, contaminated sediments, and upstream sources (DEQ *Draft 2012 305(b)/303(d) Water Quality Assessment Integrated Report (Integrated Report)*). The Potomac Watershed Partnership notes that “Recent studies in three heavily forested watersheds in the upper Potomac indicate [unpaved, low volume] roads contribute at least 13-54 tons of sediment to streams during a typical rain event!”

Potential alternative projects

In places where agriculture is prevalent, such as the Potomac-Shenandoah, Roanoke, and Rappahannock River Basins, as well as on the Eastern Shore of Virginia, and where the required criteria can be met, measures such as enhancing, increasing, and/or preserving riparian buffer functions and values and excluding of livestock from those wetland or riparian areas may be used to meet or partially meet the Fund goals.

In Service Areas such as the Potomac River Basin where a high level of land development occurs, potential alternative projects may include sediment reduction and habitat restoration as part of the mitigation project activities that focus on water quality improvements.

Dam removal and/or fish passage measures may be an option in Service Areas such as the Potomac, James, Rappahannock, York, and Roanoke River Basins, and even somewhat in Tidewater Virginia. Dams and the associated impounded water have been found to contribute to the destruction of stream habitat, to alter the temperature and chemical nature of downstream waters, as well as the flow velocities of up- and downstream waters (http://www.deq.virginia.gov/Portals/0/DEQ/Water/WetlandsStreams/Stream_Web_Page.pdf). The Nature Conservancy notes that the Chesapeake Bay watershed has over 5,000 dams. The Virginia Department of Game and Inland Fisheries (DGIF) fish-passage program states a Chesapeake 2000 Fish Passage Goal, set in 2004 and revised in 2007, is for Virginia to re-open one-third of the 2,288 total goal miles identified. As of 2007, 81% of the total goal had been reached. DGIF’s web page contains a dam removal prioritization tool developed for The Nature Conservancy that project proponents may use (<http://www.dgif.virginia.gov/fishing/tnc-chesapeake-bay-fish-passage/>).

Shenandoah River Basin:

Threats

Invasive plant species have been identified in the Northern Virginia region (http://www.dcr.virginia.gov/natural_heritage/vaisc/news/); invasive mussel species (<http://nas2.er.usgs.gov/viewer/omap.aspx?SpeciesID=5>). Some suspected sources of designated use impairment in the rivers of these basins include wildlife and other waterfowl [unspecified activities], non-point sources, agriculture, and grazing in riparian zones, while in lakes the suspected sources are naturally-occurring conditions, atmospheric deposition of toxins, combined sewer overflows,

contaminated sediments, and upstream sources (DEQ *Draft 2012 305(b)/303(d) Water Quality Assessment Integrated Report (Integrated Report)*).

Potential alternative projects

In places where agriculture is prevalent, such as the Potomac-Shenandoah, Roanoke, and Rappahannock River Basins, as well as on the Eastern Shore of Virginia, and where the required criteria can be met, measures such as enhancing, increasing, and/or preserving riparian buffer functions and values and excluding of livestock from those wetland or riparian areas may be used to meet or partially meet the Fund goals.

James River Basin:

Threats

The following threats were identified in the James River basin: sediment load alteration; herbicides/fungicides/insecticides; competition; predation; toxins; nutrient input, organic matter input, turbidity, pH, hydrologic, dissolved oxygen regime alterations; organic pollutants; channel or shoreline alteration; habitat fragmentation; and metals. Some suspected sources of designated use impairment in the rivers of this basin include wildlife and other waterfowl [unspecified activities], non-point sources, agriculture, grazing in riparian zones, and unspecified domestic waste, while in lakes the suspected sources are naturally-occurring conditions, atmospheric deposition of toxins, dams/impoundments, changes in stratification and bottom water hypoxia/anoxia (DEQ *Draft 2012 305(b)/303(d) Water Quality Assessment Integrated Report (Integrated Report)*).

Current conditions

Based on the DEQ October 2012 *Status of Virginia's Water Resources* report, which focuses on water quantity, precipitation in Virginia during the 2011-2012 water year (October 1, 2011 through September 30, 2012) has been variable spatially and generally below normal in many locations within the eastern half of the Commonwealth. Consequently, stream flows within many of the basins located in this part of the state have been lower than normal. Abnormally dry conditions, with subsequent low stream flows, have persisted particularly in the middle part of the James River basin and in the Chowan River basin.

The James River Association's 2011 *State of the James River* report gives the river's health an overall score of 53% and a grade of C, which represents a 4% drop in the overall score over the past 2 years. The following summarizes the report finding: In the category of Wildlife the report describes an increase in Bald eagle populations; the American shad population has shown signs of a comeback; oysters and brook trout continue to struggle; and rock fish and small mouth bass, which were at very healthy numbers within the past decade, declined. For Habitat, stream health and tidal water quality decreased slightly and underwater grasses, which depend on clean water to get sunlight to grow, continued their increase and for the first time in decades were found in the main stem of the tidal James above Newport News. Pollution, especially nitrogen, phosphorus and sediment pollution, continues to have the greatest impact on the river's health and is a leading cause of the decreased overall score. After seeing substantial improvement in pollution reductions in the 1990s, average pollution reductions over the past decade show little additional progress, and actually reversed as levels spiked due to large

influxes of sediment with major storm events. Regarding Restoration and Protection Actions, roughly half of the critical restoration and protection actions called for in Virginia's cleanup plan for the James River are reported as complete. With strong permit limits and hundreds of millions of dollars of investments, wastewater treatment has met its share of the cleanup plan. However, implementation and documentation of practices to control polluted runoff from agriculture (23%) and development (28%) is much lower. Conservation of natural areas and restoration of riparian buffers throughout the watershed continues to rise; however, natural areas and buffers are constantly threatened by expanding development.

Potential alternative projects

Dam removal and/or fish passage measures may be an option in Service Areas such as the Potomac, James, Rappahannock, York, and Roanoke River Basins, and even somewhat in Tidewater Virginia. Dams and the associated impounded water have been found to contribute to the destruction of stream habitat, to alter the temperature and chemical nature of downstream waters, as well as the flow velocities of up- and downstream waters (http://www.deq.virginia.gov/Portals/0/DEQ/Water/WetlandsStreams/Stream_Web_Page.pdf). The Nature Conservancy notes that the Chesapeake Bay watershed has over 5,000 dams. The Virginia Department of Game and Inland Fisheries (DGIF) fish-passage program states a Chesapeake 2000 Fish Passage Goal, set in 2004 and revised in 2007, is for Virginia to re-open one-third of the 2,288 total goal miles identified. As of 2007, 81% of the total goal had been reached. DGIF's web page contains a dam removal prioritization tool developed for The Nature Conservancy that project proponents may use (<http://www.dgif.virginia.gov/fishing/tnc-chesapeake-bay-fish-passage/>).

Rappahannock River Basin:

Threats

The following threats were identified in the Rappahannock River basin: sediment load alteration; herbicides/fungicides/insecticides; competition; predation; toxins; nutrient input, organic matter input, turbidity, pH, hydrologic, dissolved oxygen regime alterations; organic pollutants; channel or shoreline alteration; habitat fragmentation; and metals. Some suspected sources of designated use impairment in the rivers of this basin include wildlife and other waterfowl [unspecified activities], grazing in riparian zones, pet waste, on-site septic systems, and naturally-occurring conditions, while in lakes the suspected source is primarily atmospheric deposition of toxins (DEQ *Draft 2012 305(b)/303(d) Water Quality Assessment Integrated Report (Integrated Report)*). According to the *Virginia Ecological Services Strategic Plan 2010 - 2014* (United States Fish and Wildlife Service, February 2012), some threats specific to the Rappahannock River basin include: habitat loss/degradation/fragmentation and poor water quality [unspecified sources].

Potential alternative projects

In places where agriculture is prevalent, such as the Potomac-Shenandoah, Roanoke, and Rappahannock River Basins, as well as on the Eastern Shore of Virginia, and where the required criteria can be met, measures such as enhancing, increasing, and/or preserving riparian buffer functions and values and

excluding of livestock from those wetland or riparian areas may be used to meet or partially meet the Fund goals.

Dam removal and/or fish passage measures may be an option in Service Areas such as the Potomac, James, Rappahannock, York, and Roanoke River Basins, and even somewhat in Tidewater Virginia. Dams and the associated impounded water have been found to contribute to the destruction of stream habitat, to alter the temperature and chemical nature of downstream waters, as well as the flow velocities of up- and downstream waters (http://www.deq.virginia.gov/Portals/0/DEQ/Water/WetlandsStreams/Stream_Web_Page.pdf). The Nature Conservancy notes that the Chesapeake Bay watershed has over 5,000 dams. The Virginia Department of Game and Inland Fisheries (DGIF) fish-passage program states a Chesapeake 2000 Fish Passage Goal, set in 2004 and revised in 2007, is for Virginia to re-open one-third of the 2,288 total goal miles identified. As of 2007, 81% of the total goal had been reached. DGIF's web page contains a dam removal prioritization tool developed for The Nature Conservancy that project proponents may use (<http://www.dgif.virginia.gov/fishing/tnc-chesapeake-bay-fish-passage/>).

Roanoke and Yadkin Rivers Basin:

Threats

The following threats were identified in the Roanoke River basin: sediment load alteration; herbicides/fungicides/insecticides; competition; predation; parasitism; toxins; nutrient input, organic matter input, turbidity, pH, hydrologic, water temperature, dissolved oxygen regime alterations; organic pollutants; channel or shoreline alteration; habitat fragmentation; metals; and complication due to small populations. Some suspected sources of designated use impairment in the rivers of this basin include wildlife and other waterfowl [unspecified activities], grazing in riparian zones, pet waste, on-site septic systems, and unspecified domestic waste, while in lakes the suspected sources are naturally-occurring conditions, dams/impoundments, wildlife and other waterfowl, grazing in riparian zones, and unspecified domestic waste (DEQ Draft 2012 305(b)/303(d) *Water Quality Assessment Integrated Report (Integrated Report)*). Uranium mining has also been identified as a potential threat to water resources in this basin and downstream basins (*Uranium Mining in VA?*, Southern Environmental Law Center, December 2011; *Comparing Potential Virginia Mine Sites to Mining and Milling Operations Globally*, SELC Report on Uranium Mine Sites, Canada, France, Florida, USA, Nov. 17, 2011).

Potential alternative projects

In places where agriculture is prevalent, such as the Potomac-Shenandoah, Roanoke, and Rappahannock River Basins, as well as on the Eastern Shore of Virginia, and where the required criteria can be met, measures such as enhancing, increasing, and/or preserving riparian buffer functions and values and excluding of livestock from those wetland or riparian areas may be used to meet or partially meet the Fund goals.

Dam removal and/or fish passage measures may be an option in Service Areas such as the Potomac, James, Rappahannock, York, and Roanoke River Basins, and even somewhat in Tidewater Virginia. Dams and the associated impounded water have been found to contribute to the destruction of stream

habitat, to alter the temperature and chemical nature of downstream waters, as well as the flow velocities of up- and downstream waters (http://www.deq.virginia.gov/Portals/0/DEQ/Water/WetlandsStreams/Stream_Web_Page.pdf). The Nature Conservancy notes that the Chesapeake Bay watershed has over 5,000 dams. The Virginia Department of Game and Inland Fisheries (DGIF) fish-passage program states a Chesapeake 2000 Fish Passage Goal, set in 2004 and revised in 2007, is for Virginia to re-open one-third of the 2,288 total goal miles identified. As of 2007, 81% of the total goal had been reached. DGIF's web page contains a dam removal prioritization tool developed for The Nature Conservancy that project proponents may use (<http://www.dgif.virginia.gov/fishing/tnc-chesapeake-bay-fish-passage/>).

Chowan River Basin (including the Dismal Swamp and Albemarle Sound):

Threats

The following threats were identified in the Chowan River basin: sediment load alteration; herbicides/fungicides/insecticides; competition; toxins; nutrient input, turbidity, hydrologic, dissolved oxygen regime alterations; and organic pollutants. Some suspected sources of designated use impairment in the rivers of this basin include wildlife and other waterfowl, non-point sources, municipal point-source discharges, atmospheric deposition of toxins, and naturally-occurring conditions, while in lakes the suspected source is naturally-occurring conditions (DEQ *Draft 2012 305(b)/303(d) Water Quality Assessment Integrated Report (Integrated Report)*). According to the *Virginia Ecological Services Strategic Plan 2010 - 2014* (United States Fish and Wildlife Service, February 2012), some threats specific to the Blackwater River basin include: habitat loss/degradation/fragmentation; non-native species; demographic constraints; and unspecified diseases.

Historic conditions

Historically, dioxin, a by-product of paper mill bleaching practices, degraded water quality and negatively affected aquatic biota. However, new bleaching technologies have reduced contaminants from paper plant wastewater that enter the basin (NCDENR 2003). Tiner et al. (2005) found that a study of wetland trends in Southeastern Virginia alone for 1994-2000 showed a net loss of 2,100 acres (1.3%), but that the actual loss of vegetated wetlands was even higher, being offset mainly by a gain in pond and open water area. Tiner et al. (2005) notes the loss of palustrine wetlands was primarily due to conversion to uplands, while estuarine wetlands were lost through conversion to open water.

Current conditions

Based on several sources in North Carolina, the following conditions apply in the Chowan River basin: Many streams in the Chowan basin have been classified as High Quality Waters (North Carolina Dept. of Environmental and Natural Resources, 2003), and the basin contains 136 miles of impaired streams and all waters in the basin have a supplemental classification of Nutrient Sensitive Waters. Water quality appears to be the greatest problem within the Chowan River basin. The Chowan River was the site of North Carolina's first known large-scale coastal algae bloom in 1972 (NCDENR 2003), which resulted from excessive levels of nitrogen and phosphorus in wastewater and runoff. Lowered dissolved oxygen levels from excessive nutrient inputs killed fish and led to fish diseases. As a result, the Chowan River was the first basin in North Carolina to receive "nutrient sensitive waters" classification in 1979 by the

NC Division of Water Quality (NCDWQ 2002). Based on the DEQ October 2012 *Status of Virginia's Water Resources* report, which focuses on water quantity, precipitation in Virginia during the 2011-2012 water year (October 1, 2011 through September 30, 2012) has been variable spatially and generally below normal in many locations within the eastern half of the Commonwealth. Consequently, stream flows within many of the basins located in this part of the state have been lower than normal. Abnormally dry conditions, with subsequent low stream flows, have persisted particularly in the middle part of the James River basin and in the Chowan River basin.

Potential alternative projects

In forested areas across the Commonwealth, goals may include some of those identified by the Virginia Department of Forestry (DOF), including the increase in the amount of forestland conserved, protected and established in Virginia's watersheds for water quality benefits (especially in the New River and Chowan River Basins); the establishment and maintenance of riparian buffer zones; and the planting trees in wetlands or wetland buffers. DOF notes that all of these activities are closely related to meeting water quality goals associated with the Chesapeake Bay restoration and watersheds for Virginia's southern rivers.

Implementation of agricultural and forestry Best Management Practices and stream channel restoration have been identified in the Virginia Wildlife Action Plan as potential conservation measures for the Chowan River Basin (Appendix I, 2005).

Tennessee River Basin/Big Sandy River Basin Complex:

Threats

The following threats were identified in the Tennessee/Big Sandy River basin complex: sediment load alteration; herbicides/fungicides/insecticides; toxins; nutrient input, organic matter input, turbidity, pH, and hydrologic regime alterations; organic pollutants; channel or shoreline alteration; habitat fragmentation; metals; and complications due to small populations. Some suspected sources of designated use impairment in the rivers of this basin include unrestricted cattle access, rural residential areas, sewerage discharges in unsewered areas [i.e., straight pipes], coal mining, and inactive abandoned mine lands, while in lakes the suspected sources are naturally-occurring conditions and atmospheric deposition of toxins (DEQ *Draft 2012 305(b)/303(d) Water Quality Assessment Integrated Report (Integrated Report)*). According to the *Virginia Ecological Services Strategic Plan 2010 - 2014* (United States Fish and Wildlife Service, February 2012), some threats specific to the Clinch/Powell/Holston River basins include: agriculture/forestry; climate change; mining; power generation; recreation; transportation; and urbanization.

Historic conditions

The condition of aquatic resources in the western Virginia watersheds has historically been affected by coal mining, the region's primary industry, which continues to affect aquatic resources today. As alternative energy sources have gained more widespread acceptance, the region has also been, and may continue to be, targeted for energy infrastructure growth. Growth of this particular economic sector will continue to impact surface waters in the region.

Potential alternative projects

DEQ has previously identified the practice of direct discharge (or 'straight-piping') of waste waters to surface waters in the far western reaches of the Commonwealth, such as the Tennessee River Basin/Big Sandy River Basin Complex, that are affecting both water quality and human health. Additionally, DEQ has 24 Total Maximum Daily Load (TMDL) plans in Southwest Virginia that require 100 percent removal of straight pipes as a first step to meet the Water Quality Standard. As such, DEQ's intention is to consider project proposals of this nature after having determined that the project proponent has made a practicable effort in locating suitable, traditional compensation projects in this basin, and/or has made a reasonable effort to consider other compensation practices as part of the project scope.

York River Basin:

Threats

The following threats were identified in the York River basin: sediment load alteration; herbicides/fungicides/insecticides; competition; predation; toxins; nutrient input, organic matter input, turbidity, hydrologic, dissolved oxygen regime alterations; organic pollutants; channel or shoreline alteration; habitat fragmentation; metals; and complications due to small populations. Some suspected sources of designated use impairment in the rivers of this basin include naturally-occurring conditions, grazing in riparian zones, land application of wastes, and runoff from forest/grassland/parkland, while in lakes the suspected sources are inactive abandoned mine lands and changes in stratification and bottom water hypoxia/anoxia (DEQ *Draft 2012 305(b)/303(d) Water Quality Assessment Integrated Report (Integrated Report)*).

Potential alternative projects

Dam removal and/or fish passage measures may be an option in Service Areas such as the Potomac, James, Rappahannock, York, and Roanoke River Basins, and even somewhat in Tidewater Virginia. Dams and the associated impounded water have been found to contribute to the destruction of stream habitat, to alter the temperature and chemical nature of downstream waters, as well as the flow velocities of up- and downstream waters (http://www.deq.virginia.gov/Portals/0/DEQ/Water/WetlandsStreams/Stream_Web_Page.pdf). The Nature Conservancy notes that the Chesapeake Bay watershed has over 5,000 dams. The Virginia Department of Game and Inland Fisheries (DGIF) fish-passage program states a Chesapeake 2000 Fish Passage Goal, set in 2004 and revised in 2007, is for Virginia to re-open one-third of the 2,288 total goal miles identified. As of 2007, 81% of the total goal had been reached. DGIF's web page contains a dam removal prioritization tool developed for The Nature Conservancy that project proponents may use (<http://www.dgif.virginia.gov/fishing/tnc-chesapeake-bay-fish-passage/>).

New River Basin:

Threats

The following threats were identified in the New River basin: sediment load alteration; herbicides/fungicides/insecticides; toxins; nutrient input, turbidity, and hydrologic regime alterations; and channel or shoreline alteration. Some suspected sources of designated use impairment in the rivers of this basin include wildlife and other waterfowl [unspecified activities], non-point source wet weather discharges, livestock grazing or feeding operations, on-site septic treatment systems, and unspecified domestic waste, while in lakes the suspected sources are naturally-occurring conditions, livestock grazing or feeding operations, on-site septic treatment systems, unspecified domestic waste, and wildlife other than waterfowl (DEQ *Draft 2012 305(b)/303(d) Water Quality Assessment Integrated Report (Integrated Report)*).

Potential alternative projects

In forested areas across the Commonwealth, goals may include some of those identified by the Virginia Department of Forestry (DOF), including the increase in the amount of forestland conserved, protected and established in Virginia's watersheds for water quality benefits (especially in the New River and Chowan River Basins); the establishment and maintenance of riparian buffer zones; and the planting trees in wetlands or wetland buffers. DOF notes that all of these activities are closely related to meeting water quality goals associated with the Chesapeake Bay restoration and watersheds for Virginia's southern rivers.

According to the New River Land Trust, "At 57 miles, New River Trail is Virginia's longest State Park. It is also her narrowest—a mere 80- foot right-of-way through private land. The quiet woodlands, creek and river banks, songbird habitat and majestic views visitors seek along this trail are not part of the park. They've been kept rural, to the benefit of people, wildlife and the New River, by generations of private landowners. Today, family lands are turning over at a rapid rate, leaving most of the trail corridor wide-open to the same kind of development that covers large portions of the Eastern U.S. The New River Trail could soon become merely a walkway through suburbia." Corridors preserved in this manner may contribute to protection of water quality and enhancement of habitat and possibly recreational opportunities when implemented within the watershed compensation approach, and preferably as part of a restoration or enhancement effort.

Chesapeake Bay and its Small Coastal Basins:

Threats

The following threats were identified in the Coastal Plain and Coastal Marsh: sediment load alteration; herbicides/fungicides/insecticides; competition; predation; toxins; nutrient input, hydrologic, and salinity regime alterations; organic pollutants; habitat fragmentation and destruction; metals; genetic alteration (e.g., hybridization); unintentional capture or killing; intentional take; sea level rise; and food supply or trophic structure changes.

Historic conditions

Tiner et al. (2005) found that a study of wetland trends in Southeastern Virginia alone for 1994-2000 showed a net loss of 2,100 acres (1.3%), but that the actual loss of vegetated wetlands was even higher, being offset mainly by a gain in pond and open water area. Tiner et al. (2005) notes the loss of palustrine wetlands was primarily due to conversion to uplands, while estuarine wetlands were lost through conversion to open water. The Virginia Wildlife Action Plan notes that "the largest cause of palustrine

forest destruction is creation of reservoirs (45% of loss), followed by urban development (15%), pond construction (14%), and agriculture (14%). ...palustrine scrub-shrub wetlands, 65% of all loss is attributable to reservoir construction, followed by pond construction (18%) and agriculture (16%)...palustrine emergent wetland destruction...is agriculture (37%), followed by pond construction (27%).”

Current conditions

The Virginia Wildlife Action Plan (2005) summarizes conditions as of 2005 in the Chesapeake Bay/Atlantic Ocean region: “...Several indicators were used to determine Bay health, including trends in sediment, nitrogen, and phosphorus levels. ...In most of the watersheds Bay-wide, sediment, nitrogen, and phosphorus concentrations have decreased from the 1980s to 2003. However, many areas in Virginia showed no significant trends, except in one tributary, where concentrations of nitrogen, phosphorus, and sediment all increased during this time. It appears that, despite increases in education, funding, and awareness of the Bay’s value and status, Virginia’s nutrient concentrations have not improved over the last 20 years. ...Oysters and blue crabs are still at low population levels or declining. ...The population of striped bass in the Bay is considered stable, though concerns remain over disease, food, and spawning habitat availability. Migratory fish habitat has expanded through the removal of impediments in the watershed’s rivers. The fish are gradually returning to these areas. ...The Chesapeake Bay Foundation... [reports] In 2004, the Bay scored 27 out of 100 points (a D on their grading scale). This overall score has not changed from 2003. ...In terms of pollution, nitrogen, phosphorus, dissolved oxygen, and overall water quality each scored an F. Toxins received a D. Forested buffers scored a B+, submerged grasses received an F, wetlands received a C+ and resource lands received a D. Development continues to threaten sensitive habitats in the Bay. Fisheries show mixed trends: Striped bass scored an A+, but oysters, blue crabs, and shad each scored an F.”

Potential alternative projects

In places where agriculture is prevalent, such as the Potomac-Shenandoah, Roanoke, and Rappahannock River Basins, as well as on the Eastern Shore of Virginia, and where the required criteria can be met, measures such as enhancing, increasing, and/or preserving riparian buffer functions and values and excluding of livestock from those wetland or riparian areas may be used to meet or partially meet the Fund goals.

Dam removal and/or fish passage measures may be an option in Service Areas such as the Potomac, James, Rappahannock, York, and Roanoke River Basins, and even somewhat in Tidewater Virginia. Dams and the associated impounded water have been found to contribute to the destruction of stream habitat, to alter the temperature and chemical nature of downstream waters, as well as the flow velocities of up- and downstream waters (http://www.deq.virginia.gov/Portals/0/DEQ/Water/WetlandsStreams/Stream_Web_Page.pdf). The Nature Conservancy notes that the Chesapeake Bay watershed has over 5,000 dams. The Virginia Department of Game and Inland Fisheries (DGIF) fish-passage program states a Chesapeake 2000 Fish Passage Goal, set in 2004 and revised in 2007, is for Virginia to re-open one-third of the 2,288 total goal miles identified. As of 2007, 81% of the total goal had been reached. DGIF’s web page contains a dam removal prioritization tool developed for The Nature Conservancy that project proponents may use (<http://www.dgif.virginia.gov/fishing/tnc-chesapeake-bay-fish-passage/>).

The 2012 Phase II Watershed Implementation Plan (WIP) has been developed by the Commonwealth of Virginia as part of the Chesapeake Bay Total Maximum Daily Load (TMDL) effort and details local strategies for meeting plan goals.

Atlantic Ocean:

Threats

The following threats were identified for barrier islands and other beaches: predation; sea level rise; human disturbance; and aquaculture.

Current conditions

The Virginia Wildlife Action Plan (2005) summarizes conditions as of 2005 in the Chesapeake Bay/Atlantic Ocean region: "...Several indicators were used to determine Bay health, including trends in sediment, nitrogen, and phosphorus levels. ...In most of the watersheds Bay-wide, sediment, nitrogen, and phosphorus concentrations have decreased from the 1980s to 2003. However, many areas in Virginia showed no significant trends, except in one tributary, where concentrations of nitrogen, phosphorus, and sediment all increased during this time. It appears that, despite increases in education, funding, and awareness of the Bay's value and status, Virginia's nutrient concentrations have not improved over the last 20 years. ...Oysters and blue crabs are still at low population levels or declining. ...The population of striped bass in the Bay is considered stable, though concerns remain over disease, food, and spawning habitat availability. Migratory fish habitat has expanded through the removal of impediments in the watershed's rivers. The fish are gradually returning to these areas. ...The Chesapeake Bay Foundation... [reports] In 2004, the Bay scored 27 out of 100 points (a D on their grading scale). This overall score has not changed from 2003. ...In terms of pollution, nitrogen, phosphorus, dissolved oxygen, and overall water quality each scored an F. Toxins received a D. Forested buffers scored a B+, submerged grasses received an F, wetlands received a C+ and resource lands received a D. Development continues to threaten sensitive habitats in the Bay. Fisheries show mixed trends: Striped bass scored an A+, but oysters, blue crabs, and shad each scored an F."

Potential alternative projects

The marine environment (Atlantic Ocean) presents unique and specific challenges, most recently recognized in discussions regarding sea-level rise. Permits issued through the Virginia Water Protection Permit Program are frequently waived upon issuance of permits from other state and/or federal permitting programs whose jurisdiction overlaps that of DEQ. While DEQ would expect to have few permitting and compensatory mitigation activities in this Service Area, energy infrastructure projects may present the need for an alternative compensation approach.

Exhibit 2

Excerpts from the Code of Virginia

The following excerpts are for reference only, as copied from the Code of Virginia Legislative Information Service (LIS) web site (December 2, 2013). In accordance with the current Virginia General Assembly House Bill Number 654, which is subject to change, a finer definition of a HUC boundary in § 62.1-44.15:23 may be warranted, particularly in the coastal plain region, based on scientifically-defensible data and the approval of such supporting information by agency staff.

§ 62.1-44.15:21. Impacts to wetlands.

A. Permits shall address avoidance and minimization of wetland impacts to the maximum extent practicable. A permit shall be issued only if the Board finds that the effect of the impact, together with other existing or proposed impacts to wetlands, will not cause or contribute to a significant impairment of state waters or fish and wildlife resources.

B. Permits shall contain requirements for compensating impacts on wetlands. Such compensation requirements shall be sufficient to achieve no net loss of existing wetland acreage and functions and may be met through (i) wetland creation or restoration, (ii) purchase or use of mitigation bank credits pursuant to § 62.1-44.15:23, (iii) contribution to the Wetland and Stream Replacement Fund established pursuant to § 62.1-44.15:23.1 to provide compensation for impacts to wetlands, streams, or other state waters that occur in areas where neither mitigation bank credits nor credits from a Board-approved fund that have met the success criteria are available at the time of permit application, or (iv) contribution to a Board-approved fund dedicated to achieving no net loss of wetland acreage and functions. When utilized in conjunction with creation, restoration, or mitigation bank credits, compensation may incorporate (a) preservation or restoration of upland buffers adjacent to wetlands or other state waters or (b) preservation of wetlands.

C. The Board shall utilize the U.S. Army Corps of Engineers' "Wetlands Delineation Manual, Technical Report Y-87-1, January 1987, Final Report" as the approved method for delineating wetlands. The Board shall adopt appropriate guidance and regulations to ensure consistency with the U.S. Army Corps of Engineers' implementation of delineation practices. The Board shall also adopt guidance and regulations for review and approval of the geographic area of a delineated wetland. Any such approval of a delineation shall remain effective for a period of five years; however, if the Board issues a permit pursuant to this article for an activity in the delineated wetland within the five-year period, the approval shall remain effective for the term of the permit. Any delineation accepted by the U.S. Army Corps of Engineers as sufficient for its exercise of jurisdiction pursuant to § 404 of the Clean Water Act shall be determinative of the geographic area of that delineated wetland.

D. The Board shall develop general permits for such activities in wetlands as it deems appropriate. General permits shall include such terms and conditions as the Board deems necessary to protect state waters and fish and wildlife resources from significant impairment. The

Board is authorized to waive the requirement for a general permit or deem an activity in compliance with a general permit when it determines that an isolated wetland is of minimal ecological value. The Board shall develop general permits for:

1. Activities causing wetland impacts of less than one-half of an acre;
 2. Facilities and activities of utilities and public service companies regulated by the Federal Energy Regulatory Commission or State Corporation Commission. No Board action on an individual or general permit for such facilities shall alter the siting determination made through Federal Energy Regulatory Commission or State Corporation Commission approval. The Board and the State Corporation Commission shall develop a memorandum of agreement pursuant to §§ 56-46.1, 56-265.2, 56-265.2:1, and 56-580 to ensure that consultation on wetland impacts occurs prior to siting determinations;
 3. Coal, natural gas, and coalbed methane gas mining activities authorized by the Department of Mines, Minerals and Energy, and sand mining;
 4. Virginia Department of Transportation or other linear transportation projects; and
 5. Activities governed by nationwide or regional permits approved by the Board and issued by the U.S. Army Corps of Engineers. Conditions contained in the general permits shall include, but not be limited to, filing with the Board any copies of preconstruction notification, postconstruction report, and certificate of compliance required by the U.S. Army Corps of Engineers.
- E. Within 15 days of receipt of an individual permit application, the Board shall review the application for completeness and either accept the application or request additional specific information from the applicant. Within 120 days of receipt of a complete application, the Board shall issue the permit, issue the permit with conditions, deny the permit, or decide to conduct a public meeting or hearing. If a public meeting or hearing is held, it shall be held within 60 days of the decision to conduct such a proceeding, and a final decision as to the permit shall be made within 90 days of completion of the public meeting or hearing.
- F. Within 15 days of receipt of a general permit application, the Board shall review the application for completeness and either accept the application or request additional specific information from the applicant. A determination that an application is complete shall not mean the Board will issue the permit but means only that the applicant has submitted sufficient information to process the application. The Board shall deny, approve, or approve with conditions any application for coverage under a general permit within 45 days of receipt of a complete preconstruction application. The application shall be deemed approved if the Board fails to act within 45 days.
- G. No Virginia Water Protection Permit shall be required for impacts to wetlands caused by activities governed under Chapter 13 (§ 28.2-100 et seq.) of Title 28.2 or normal agricultural activities or normal silvicultural activities. This section shall also not apply to normal residential

gardening, lawn and landscape maintenance, or other similar activities that are incidental to an occupant's ongoing residential use of property and of minimal ecological impact. The Board shall develop criteria governing this exemption and shall specifically identify the activities meeting these criteria in its regulations.

H. No Virginia Water Protection Permit shall be required for impacts caused by the construction or maintenance of farm or stock ponds, but other permits may be required pursuant to state and federal law. For purposes of this exclusion, farm or stock ponds shall include all ponds and impoundments that do not fall under the authority of the Virginia Soil and Water Conservation Board pursuant to Article 2 (§ 10.1-604 et seq.) of Chapter 6 pursuant to normal agricultural or silvicultural activities.

(2007, c. 659; 2008, c. 244; 2013, c. 742.)

§ 62.1-44.15:23. Wetland and stream mitigation banks. *[as passed by the House and Senate (HB654ER) of the Virginia General Assembly, 2/27/14]*

A. When a Virginia Water Protection Permit is conditioned upon compensatory mitigation for adverse impacts to wetlands or streams, the applicant may be permitted to satisfy all or part of such mitigation requirements by the purchase or use of credits from any wetland or stream mitigation bank in the Commonwealth, or in Maryland on property wholly surrounded by and located in the Potomac River if the mitigation banking instrument provides that the Board shall have the right to enter and inspect the property and that the mitigation bank instrument and the contract for the purchase or use of such credits may be enforced in the courts of the Commonwealth, including any banks owned by the permit applicant, that has been approved and is operating in accordance with applicable federal and state guidance, laws, or regulations for the establishment, use, and operation of mitigation banks as long as: ~~(1)~~ (i) the bank is in the same fourth order subbasin, as defined by the hydrologic unit boundaries of the National Watershed Boundary Dataset *or by the hydrologic unit system or dataset utilized and depicted or described in the bank's approved mitigation banking instrument*, as the impacted site, or in an adjacent subbasin within the same river watershed as the impacted site, or it meets all the conditions found in clauses ~~(i)~~ (a) through ~~(iv)~~ (d) and either clause ~~(v)~~ (e) or ~~(vi)~~ (f) of this subsection; ~~(2)~~ (ii) the bank is ecologically preferable to practicable onsite and offsite individual mitigation options as defined by federal wetland regulations; and ~~(3)~~ (iii) the banking instrument, if approved after July 1, 1996, has been approved by a process that included public review and comment. When the bank is not located in the same subbasin or adjacent subbasin within the same river watershed as the impacted site, the purchase or use of credits shall not be allowed unless the applicant demonstrates to the satisfaction of the Department of Environmental Quality that ~~(i)~~ (a) the impacts will occur as a result of a Virginia Department of Transportation linear project or as the result of a locality project for a locality whose jurisdiction encompasses multiple river watersheds; ~~(ii)~~ (b) there is no practical same river watershed mitigation alternative; ~~(iii)~~ (c) the impacts are less than one acre in a single and complete project within a subbasin; ~~(iv)~~ (d) there is no significant harm to water quality or fish and wildlife resources within the river watershed of the impacted site; and either ~~(v)~~ (e) impacts within the Chesapeake Bay watershed are mitigated within the Chesapeake Bay watershed as close as possible to the impacted site or ~~(vi)~~ (f) impacts within subbasins 02080108, 02080208, and 03010205, as defined by the National

Watershed Boundary Dataset, are mitigated in-kind within those subbasins, as close as possible to the impacted site. *For the purposes of this subsection, the hydrologic unit boundaries of the National Watershed Boundary Dataset or other hydrologic unit system may be adjusted by the Department of Environmental Quality to reflect site-specific geographic or hydrologic information provided by the bank sponsor.*

For the purposes of this section, "river watershed" means the Potomac River Basin, Shenandoah River Basin, James River Basin, Rappahannock River Basin, Roanoke and Yadkin Rivers Basin, Chowan River Basin (including the Dismal Swamp and Albemarle Sound), Tennessee River Basin/Big Sandy River Basin Complex, Chesapeake Bay and its Small Coastal Basins, Atlantic Ocean, York River Basin, and the New River Basin.

B. The Department of Environmental Quality is authorized to serve as a signatory to agreements governing the operation of mitigation banks. The Commonwealth, its officials, agencies, and employees shall not be liable for any action taken under any agreement developed pursuant to such authority.

C. State agencies and localities are authorized to purchase credits from mitigation banks.

D. A locality may establish, operate and sponsor wetland or stream single-user mitigation banks within the Commonwealth that have been approved and are operated in accordance with the requirements of subsection A, provided that such single-user banks may only be considered for compensatory mitigation for the sponsoring locality's municipal, joint municipal or governmental projects. For the purposes of this subsection, the term "sponsoring locality's municipal, joint municipal or governmental projects" means projects for which the locality is the named permittee, and for which there shall be no third-party leasing, sale, granting, transfer, or use of the projects or credits. Localities may enter into agreements with private third parties to facilitate the creation of privately sponsored wetland and stream mitigation banks having service areas developed through the procedures of subsection A.

(2007, c. 659; 2008, c. 173; 2011, c. 253; 2012, c. 631.)

§ 62.1-44.15:23.1. Wetland and Stream Replacement Fund established.

There is hereby created in the state treasury a special nonreverting fund to be known as the Wetland and Stream Replacement Fund, hereafter referred to as "the Fund." The Fund shall be established on the books of the Comptroller. All contributions to the Board pursuant to clause (iii) of subsection B of § 62.1-44.15:21 shall be paid into the state treasury and credited to the Fund. Interest earned on moneys in the Fund shall remain in the Fund and be credited to it. Any moneys remaining in the Fund, including interest thereon, at the end of each fiscal year shall not revert to the general fund but shall remain in the Fund. The Fund shall be administered and utilized by the Department of Environmental Quality. The Fund may be used as an additional mechanism for compensatory mitigation for impacts to aquatic resources (i) that result from activities authorized under (a) Section 404 and 401 of the Clean Water Act (33 U.S.C. § 1251 et seq.), (b) the Virginia Water Protection Permit Regulation (9 VAC 25-210 et seq.), or (c) Section

10 of the Rivers and Harbors Act (33 U.S.C. § 403); (ii) that result from unauthorized activities in waters of the United States or state waters; and (iii) in other cases, as the appropriate regulatory agencies deem acceptable. Moneys in the Fund shall be used for the purpose of purchasing mitigation bank credits in compliance with the provisions of subsection A of § 62.1-44.15:23 as soon as practicable if qualifying credits are available. If such credits are not available within three years of the collection of moneys for a specific impact, then funds shall be utilized either (1) to purchase credits from a Board-approved fund that have met the success criteria, if qualifying credits are available, (2) for the planning, construction, monitoring, and preservation of wetland and stream mitigation projects and preservation, enhancement, or restoration of upland buffers adjacent to wetlands or other state waters when used in conjunction with creation or restoration of wetlands and streams, or (3) for other water quality improvement projects as deemed acceptable by the Department of Environmental Quality. Such projects developed under clause (2) shall be developed in accordance with guidelines, responsibilities, and standards established by the Department of Environmental Quality for use, operation, and maintenance consistent with 33 CFR Part 332, governing compensatory mitigation for activities authorized by U.S. Army Corps of Engineer permits. Expenditures and disbursements from the Fund shall be made by the State Treasurer on warrants issued by the Comptroller upon written request signed by the Director of the Department of Environmental Quality. The Department may charge a reasonable fee to administer the Fund.

(2013, c. 742.)

§ 62.1-44.15:24. Definitions.

As used in this article, unless the context requires a different meaning:

"Chesapeake Bay Preservation Act land-disturbing activity" means a land-disturbing activity including clearing, grading, or excavation that results in a land disturbance equal to or greater than 2,500 square feet and less than one acre in all areas of jurisdictions designated as subject to the regulations adopted pursuant to the Chesapeake Bay Preservation provisions of this chapter.

"CWA" means the federal Clean Water Act (33 U.S.C. § 1251 et seq.), formerly referred to as the Federal Water Pollution Control Act or Federal Water Pollution Control Act Amendments of 1972, P.L. 92-500, as amended by P.L. 95-217, P.L. 95-576, P.L. 96-483, and P.L. 97-117, or any subsequent revisions thereto.

"Department" means the Department of Environmental Quality.

"Director" means the Director of the Department of Environmental Quality.

"Flooding" means a volume of water that is too great to be confined within the banks or walls of the stream, water body, or conveyance system and that overflows onto adjacent lands, thereby causing or threatening damage.

"Land disturbance" or "land-disturbing activity" means a man-made change to the land surface that potentially changes its runoff characteristics including clearing, grading, or excavation, except that the term shall not include those exemptions specified in § 62.1-44.15:34.

"Municipal separate storm sewer" means a conveyance or system of conveyances otherwise known as a municipal separate storm sewer system or "MS4," including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains:

1. Owned or operated by a federal, state, city, town, county, district, association, or other public body, created by or pursuant to state law, having jurisdiction or delegated authority for erosion and sediment control and stormwater management, or a designated and approved management agency under § 208 of the CWA that discharges to surface waters;
2. Designed or used for collecting or conveying stormwater;
3. That is not a combined sewer; and
4. That is not part of a publicly owned treatment works.

"Municipal Separate Storm Sewer System Management Program" means a management program covering the duration of a state permit for a municipal separate storm sewer system that includes a comprehensive planning process that involves public participation and intergovernmental coordination, to reduce the discharge of pollutants to the maximum extent practicable, to protect water quality, and to satisfy the appropriate water quality requirements of the CWA and regulations, and this article and its attendant regulations, using management practices, control techniques, and system, design, and engineering methods, and such other provisions that are appropriate.

"Nonpoint source pollution" means pollution such as sediment, nitrogen, phosphorus, hydrocarbons, heavy metals, and toxics whose sources cannot be pinpointed but rather are washed from the land surface in a diffuse manner by stormwater runoff.

"Peak flow rate" means the maximum instantaneous flow from a prescribed design storm at a particular location.

"Permit" or "VSMP authority permit" means an approval to conduct a land-disturbing activity issued by the VSMP authority for the initiation of a land-disturbing activity after evidence of state VSMP general permit coverage has been provided where applicable.

"Permittee" means the person to which the permit or state permit is issued.

"Runoff volume" means the volume of water that runs off the land development project from a prescribed storm event.

"State permit" means an approval to conduct a land-disturbing activity issued by the Board in the form of a state stormwater individual permit or coverage issued under a state general permit or an approval issued by the Board for stormwater discharges from an MS4. Under these permits, the Commonwealth imposes and enforces requirements pursuant to the federal Clean Water Act and regulations and this article and its attendant regulations.

"Stormwater" means precipitation that is discharged across the land surface or through conveyances to one or more waterways and that may include stormwater runoff, snow melt runoff, and surface runoff and drainage.

"Stormwater management plan" means a document containing material describing methods for complying with the requirements of a VSMP.

"Subdivision" means the same as defined in § 15.2-2201.

"Virginia Stormwater Management Program" or "VSMP" means a program approved by the Soil and Water Conservation Board after September 13, 2011, and until June 30, 2013, or the State Water Control Board on and after June 30, 2013, that has been established by a VSMP authority to manage the quality and quantity of runoff resulting from land-disturbing activities and shall include such items as local ordinances, rules, permit requirements, annual standards and specifications, policies and guidelines, technical materials, and requirements for plan review, inspection, enforcement, where authorized in this article, and evaluation consistent with the requirements of this article and associated regulations.

"Virginia Stormwater Management Program authority" or "VSMP authority" means an authority approved by the Board after September 13, 2011, to operate a Virginia Stormwater Management Program or, until such approval is given, the Department. An authority may include a locality; state entity, including the Department; federal entity; or, for linear projects subject to annual standards and specifications in accordance with subsection B of § 62.1-44.15:31, electric, natural gas, and telephone utility companies, interstate and intrastate natural gas pipeline companies, railroad companies, or authorities created pursuant to § 15.2-5102.

"Water quality volume" means the volume equal to the first one-half inch of runoff multiplied by the impervious surface of the land development project.

"Watershed" means a defined land area drained by a river or stream, karst system, or system of connecting rivers or streams such that all surface water within the area flows through a single outlet. In karst areas, the karst feature to which water drains may be considered the single outlet for the watershed.

(1989, cc. 467, 499, § 10.1-603.2; 1991, c. 84; 1994, cc. 605, 898; 2004, c. 372; 2006, cc. 21, 171; 2012, cc. 785, 819; 2013, cc. 756, 793.)

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