VSMP PERMIT FACT SHEET

This document gives pertinent information concerning the Virginia Stormwater Management Program (VSMP) Permit listed below. This permit is being processed as a **MAJOR, MUNICIPAL** permit .The Municipal discharge results from the operation of the City of Portsmouth Municipal Separate Storm Sewer System (MS4).

1. **FACILITY NAME AND ADDRESS:** City of Portsmouth MS4 within the City Boundaries

2. **PERMIT NUMBER:** VA0088668 **PERMIT EXPIRATION DATE:** March 8, 2006

3. **OWNER:** City of Portsmouth
   OWNER CONTACT: Ved Malhotra
   TITLE: Manager of Operations/Stormwater

   PHONE: 757-393-8666
   ADDRESS: Stormwater Management
   Department of Public Works
   2001 Frederick Boulevard
   Portsmouth, VA 23704-6112

4. **PERMIT DRAFTED BY:** DEQ, Office of VPDES Permits
   Permit Writer: Jaime Bauer Date: January 15, 2015
   Permit Reviewer: Melinda Woodruff Date: January 20, 2015

5. **RECEIVING WATERS CLASSIFICATION & INFORMATION:** Discharges from the permittee's MS4 enter the following HUC watersheds**:**

Hydrologic Unit Code (HUC)	Corresponding National Watershed Boundary Dataset 6th Order Number	HUC Name
JL59	20802080304	Hampton Roads Channel
JL56	20802080206	Elizabeth River
JL50	20802080301	Hampton Roads-Streeter Creek
JL55	20802080205	Western Branch Elizabeth River
JL53	20802080203	Southern Branch Elizabeth River-Deep Creek

Basin: James River (Lower)
Sections: 1, 1b, 1d, 1e
Class: II, III
Special Standards: a, z, bb,
Type: Tidal and Free Flowing

7-Day/10-Year Low Flow: N/A
1-Day/10-Year Low Flow: N/A
30-Day/5-Year Low Flow: N/A
Harmonic Mean Flow: N/A

6. **OPERATOR LICENSE REQUIREMENTS:** A licensed operator is not required because there is no treatment facility.

7. **RELIABILITY CLASS:** This requirement is not applicable to this facility.

8. **PERMIT CHARACTERIZATION**:

( ) Issuance
(X) Reissuance
( ) Revoke & Reissue
( ) Owner Modification
( ) Board Modification
( ) Change of Ownership/Name
(Effective Date: _____)
(X) Municipal
SIC Code(s): 9199, 9999
( ) Industrial
SIC Code(s): _____
( ) POTW
( ) PVOTW
( ) Private
( ) Federal
( ) State
( ) Publicly-Owned Industrial

(X) Existing Discharge
( ) Proposed Discharge
( ) Effluent Limited
( ) Water Quality Limited
( ) WET Limit
( ) Interim Limits in Permit
( ) Interim Limits in Other Document
( ) Compliance Schedule Required
( ) Site Specific WQ Criteria
( ) Variance to WQ Standards
( ) Water Effects Ratio
(X) Discharge to 303(d) Listed Segment(s)
( ) Toxics Management Program Required
( ) Toxics Reduction Evaluation
(X) MS4 Program Plan
( ) Pretreatment Program Required
( ) Possible Interstate Effects

9. **SYSTEM DESCRIPTION & ACTIVITIES SUBJECT TO THIS PERMIT:** The permit authorizes point source discharges of stormwater runoff and certain non-stormwater discharges from the MS4 operated or owned by the City of Portsmouth, including the City of Portsmouth schools. An MS4 is a conveyance or system of conveyances owned and/or operated by a public entity, which is designed or used to collect or convey stormwater runoff and is not part of a combined sewer system or publicly owned treatment works. This can include streets, catch basins, curbs, gutters, ditches, man-made channels or storm drains that convey stormwater and ultimately discharge to receiving waters. The MS4 permit regulates the discharge from the municipally owned or operated storm sewer system and not the municipality itself.

The MS4 outfalls addressed in this permit may discharge to tributaries of these water bodies and do not drain the entire HUC acreage. The authorized discharges covered by this permit include discharges from all City MS4 outfalls including existing outfalls as well as any new outfalls constructed during the term of this permit. All discharges covered under this permit eventually drain into the following Chesapeake Bay model segmentsheds: ELIPH, JMSMH, JMSPH, SBEMH, and WBEMH. The acreages identified in the Chesapeake Bay model segmentsheds do not represent the acreages regulated under this permit; instead, it represents the approximate total acreage in the jurisdiction.

This permit does not and is not intended to cover all stormwater discharges within the jurisdictional boundaries of the City. This permit covers solely discharges from municipal stormwater outfalls owned and/or operated by the permittee. Drainage from acreage that discharges into the MS4 is considered regulated acreage under this permit. Drainage from acreage that discharges to surface waters through outfalls not owned and/or operated by the permittee are not considered part of the City of Portsmouth MS4; and thus are not regulated under this permit.

The permittee's MS4 is potentially physically interconnected with other MS4s located within and immediately adjacent to its jurisdictional boundaries. This includes the following large Phase I MS4s that are covered by individual permits:

- City of Norfolk (VA0088650)
- City of Chesapeake (VA0088625)

The permittee's MS4 may also be physically interconnected to the following small Phase II MS4s that are covered under the General Permit for the Discharge of Stormwater from Small MS4s:

- City of Suffolk (VAR040029)
- US Navy (VAR040114)
- US Coast Guard Base Portsmouth (VAR040072)
- Tidewater Community College (VAR040089)
- Virginia Department of Transportation (VAR040115)

10. **SEWAGE SLUDGE USE OR DISPOSAL**: Not applicable to stormwater permits.

11. **DISCHARGE(S) LOCATION DESCRIPTION:** Various stream, rivers, and tributaries of the James River. See Attachment 1 for the City of Portsmouth map.

12. **MATERIAL STORED:** Materials are stored throughout the jurisdiction but are stored in containment areas or rooms or by other such means that prevent stored materials from reaching state waters if a spill were to occur.

13. **STATUTORY OR REGULATORY BASIS FOR PERMIT**

_X_ Virginia Stormwater Management Act (§ 62.1-44.15:24 et seq.)
_X_ State Water Control Law Act (§ 62.1 et seq.)
_X_ Clean Water Act (33 U.S.C. §1251 et seq.)
_X_ Virginia Erosion and Sediment Control Law (§ 62.1-44.15:51 et seq.)
_X_ Chesapeake Bay Preservation Act (§ 62.1-44.15:67 et seq.)
_X_ VSMP Permit Regulation (9 VAC 25-870 et seq.)
_X_ EPA NPDES Regulation (40 CFR Part 122)
_X_ EPA Effluent Guidelines (40 CFR 133 or 400-471)
_X_ Water Quality Standards (9 VAC 25-260 et. seq.)
_X_ Wasteload Allocation from TMDL or River Basin Plan

The United States Environmental Protection Agency (EPA) delegated the authority to implement Section 402 of the CWA to the Commonwealth of Virginia on March 31, 1975. The MS4 and construction stormwater permitting portions of Section 402 implementation were transferred to the Soil and Water Conservation Board and the DCR on January 29, 2005. The program was subsequently transferred to the State Water Control Board (SWCB) and DEQ on July 1, 2013. The conditions of this permit are established in a manner consistent with the CWA and under the laws and regulations of the Commonwealth of Virginia.

Section 62.1-44.15:25 of the Virginia Stormwater Management Act authorizes the SWCB to issue, deny, amend, revoke, terminate, and enforce permits for the control of stormwater discharges from MS4s. It further directs the SWCB to "act to ensure the general health, safety and welfare of the citizens of the Commonwealth as well as protect the quality and quantity of state waters from the potential harm of unmanaged stormwater." DEQ administers the regulations as approved by the SWCB. Section 9 VAC 25-870-310 of the VSMP regulations requires the development and issuance of permits that include appropriate conditions. DEQ applies its authority to establish appropriate permit conditions that further advance the permittee's MS4 program in a manner consistent with the CWA and the Act.

14. **ANTIDEGRADATION**: The State Water Control Board's Water Quality Standards includes an antidegradation policy (9 VAC 25-260-30). All state surface waters are provided one of three levels of antidegradation protection. For Tier 1 or existing use protection, existing uses of the water body and the water quality to protect these uses must be maintained. Tier 2 water bodies have water quality that is better than the water quality standards. Significant lowering of the water quality of Tier 2 waters is not allowed without an evaluation of the economic and social impacts.

Tier 3 water bodies are exceptional waters and are so designated by regulatory amendment. The antidegradation policy prohibits new or expanded discharges into exceptional waters.

The antidegradation review begins with a Tier determination. Receiving streams throughout the City of Portsmouth are determined to be Tier 1 or 2 waterbodies. Compliance with the terms of this permit and reduction of pollutants to the maximum extent practicable is not expected to cause degradation of receiving streams to which the MS4 discharges.

15. **SITE INSPECTION DATE**: June 4-5, 2012 **REPORT DATE**: Unknown
PERFORMED BY: EPA (See Attachment 2)

16. **EFFLUENT LIMITAITONS/MONITORING & RATIONALE**:

Section 402(p)(3)(B) of the CWA establishes the statutory permitting requirements for discharges from municipal separate storm sewer system as the following:

(i) may be issued on a system- or jurisdiction-wide basis;
(ii) shall include a requirement to effectively prohibit non-stormwater discharges into the storm sewers; and
(iii) shall require controls to reduce the discharge of pollutants to the maximum extent practicable, including management practices, control techniques and system, design and engineering methods, and such other provisions as the Administrator or the State determines appropriate for the control of such pollutants.

This permit addresses each of the three statutory requirements established under the CWA in the following manners:

(i) Authorization to discharge under this permit is being given to the permittee for all stormwater and certain non-stormwater discharges from its MS4. Therefore, this permit is being issued on a system-wide basis. Other MS4s located within the city boundaries are required to obtain separate authorization to discharge stormwater.
(ii) The authorization to discharge includes specific reference to authorized discharges and prohibits non-stormwater discharges and other CWA-regulated stormwater discharges into the MS4 unless separate authorization has been obtained by the discharger.
(iii) This permit requires controls to reduce the pollutants to the maximum extent practicable, including management practices, control techniques and system design and engineering methods, and includes other provisions as the Administrator or the State determines appropriate for the control of such pollutants.

In 1999, the Ninth District Court of Appeals determined that MS4 permits need not require strict compliance with water quality standards; rather, compliance was to be based upon the maximum extent practicable standard established in the CWA. The court further ruled that the permitting authority could, at its discretion, require compliance with water quality standards. *Defenders of Wildlife vs. Browne 191 F.3d 1159 (9th Cir. 1999).*

EPA Region III sent a letter dated June 26, 2006 to the Department detailing EPA's expectation that MS4 discharges protect the water quality and to satisfy the appropriate water quality requirements of the CWA. This letter stated:

> *"[T]oday's rule specifies that the 'compliance target' for the design and implementation of municipal storm water control programs is 'to reduce pollutants to the maximum extent practicable (MEP), to protect water quality, and to satisfy the appropriate water quality requirements of the CWA. The first component, reductions to the MEP, would be realized through implementation of the six minimum measures. The second component, to protect water quality, reflects the overall design objective for municipal programs based on CWA section 402(p)(6). The third component, to implement other applicable water quality*

> *requirements of the CWA, recognizes the Agency's specific determination under CWA section 402(p)(3)(B)(iii) of the need to achieve reasonable further progress toward attainment of water quality standards according to the iterative [Best Management Practices] process, as well as the determination that State or EPA officials who establish TMDLs could allocate waste loads to MS4s, as they would to other point sources." 64 F.R. 68722, 68753-54 (emphases added).*
>
> *Although this language is included in the Preamble to the Phase II Rule, it applies to medium and large MS4s as well [Id. At 68754]. As a result, it is clear that EPA intends all municipal dischargers to achieve both technology-based and water quality-based limits. Because WQS are generally more stringent than technology-based standards, the former will generally serve as the minimum floor for discharges. Therefore, the plain statutory language coupled with EPA's own background document on the Phase II Storm Water Rule require that Phase I MS4 permittees comply with both WQS and the MEP Standard, so that discharges must achieve the more stringent limitation.*

This permit clearly defines the expectations of the permittee in meeting each of the components discussed above. The first component, reductions to pollutants to the maximum extent practicable, will be realized through implementation of the iterative MS4 Program, as defined in the permit. The second component, to protect water quality, reflects the overall design objective of the MS4 Program established by the permit. The third component, to implement other applicable water quality requirements of the CWA is met by the requirement to address TMDL wasteload allocations through the development and implementation of TMDL Action Plans for pollutants of concern identified in approved TMDLs.

The Department has determined that the most economically and environmentally feasible method for MS4s to meet the requirements established by this permit is through the implementation of BMPs using an iterative process over a series of permit cycles. MS4 BMPs may consist of structural stormwater controls as well as ordinances, policies, procedures, planning and other programmatic efforts aimed at reducing pollutant loads that are designed with the ultimate compliance goal of meeting the requirements established by this permit.

Section 9 VAC 25-870-460 provides for the use of BMPs to control or abate the discharge of pollutants when numeric effluent limitations are infeasible. The Department finds that at this time numeric effluent limits are infeasible given current technologies and legal authority limitations. The determination of the appropriateness for establishing BMPs as permit conditions in lieu of numeric effluent limits is consistent with the Clean Water Act. § 40 CFR 122.44(k) of the Code of Federal Regulations provides for the use of BMPs to control or abate the discharge of pollutants when numeric effluent limitations are infeasible or when authorized under section 402(p) of the Clean Water Act for the control of stormwater discharges.

In selecting the BMP approach, the Department utilized the recommendations found in EPA's guidance document *Interim Permitting Approach for Water Quality-Based Effluent Limitations in Stormwater Permits* (EPA833-D-96-001 September 1996) to develop a permit that requires the iterative implementation of BMPs. The iterative process allows the permittee the flexibility to select, implement, evaluate, and modify its scheme of BMPs to ensure implementation of the most effective BMPs in reducing the discharge of pollutants.

This permit establishes conditions that refine the implementation of the permittee's long-term MS4 program in an iterative manner that represents reasonable further progress consistent with the water quality requirements established under the CWA. Conditions in this permit are generally in the form of comprehensive programs implemented on a system-wide basis to control sources of pollution rather than targeted treatment methods. At a local level, these types of programs consist of various components, including pollution prevention measures, management or removal techniques, stormwater monitoring, use of legal authority, and other appropriate means necessary to control the quality and quantity of stormwater discharged from the MS4.

In some instances, it may be appropriate for the permittee to consider and implement engineered permanent structural stormwater management facilities. However, the large number of MS4 outfall locations, the unavailability of land in highly developed areas and intermittent and varied discharge conditions do not allow for the efficient use of large scale design or for the use of 'end of pipe treatment'. Therefore, conditions in this permit stress the use of a source reduction and pollution prevention approaches for the reduction of pollutants in stormwater discharges. These approaches are supported on the basis that the quality of stormwater discharge from the MS4 is dependent on the sources of pollutants that contribute to the system through runoff. Minimizing pollutant sources reduces the pollutant loading in MS4 discharges.

Under this permit, the permittee is required to develop TMDL Action Plans no later than 24-months after the effective date of the permit for all TMDLs in which a wasteload was allocated to the discharger for a pollutant of concern. See Attachment 3 of this fact sheet for a list of approved TMDLs for water bodies located in the City of Portsmouth. TMDL Action Plans should be developed consistent with the assumptions and requirements of applicable TMDLs and incorporate an iterative, BMP-based approach consistent with the discussion above. In addition, the permit may also be modified or revoked and reissued if any approved wasteload allocation procedure, pursuant to Section 303(d) of the Clean Water Act, imposes wasteload allocations, limits or conditions on the treatment works that are not consistent with the permit requirements.

17. **ANTI-BACKSLIDING STATEMENT**: All limitations are the same or more stringent than limitations in the previous permit.

18. **COMPLIANCE SCHEDULES:** None

19. **SPECIAL CONDITIONS RATIONALE:**

Part I.A.1 Authorized Discharges - 9 VAC 25-870-10 and 9 VAC 25-870-380 C.2(d)(2)(a)
The permit authorizes the discharge of stormwater runoff from the permittee's MS4 in accordance with the conditions established by this permit. MS4 discharges are to be composed only of stormwater runoff resulting from precipitation or snowmelt. Some incidental non-stormwater discharges are authorized provided these discharges have been determined not to be significant sources of pollutants by the permittee, the Virginia State Water Control Board, or the Soil and Water Conservation Board.

This permit also allows for non-stormwater discharges through the MS4 when those discharges are covered by a separate Virginia Pollutant Discharge Elimination System (VPDES) permit issued by the Department or where the Department has determined that a discharge is not a significant source of pollutants and that a VPDES permit is not required. The permittee may require additional BMPs or stormwater management activities for VPDES permitted facilities when those facilities discharge to its MS4 provided the permittee utilizes its delegated legal authorities.

This permit also allows the discharges of stormwater associated with industrial activity, as defined at 9 VAC 25-31-10, through the MS4 provided authorization is obtained from the Department by the industrial activity operator through a separate VPDES permit action. Similarly, this permit allows for discharges of stormwater from construction activities regulated under the VSMP permitting regulations provided authorization is obtained by the construction activity owner or operator through a separate VSMP permit action from the appropriate VSMP permitting authority. Discharges resulting from spills into the MS4 are not authorized by this permit unless the discharge of material resulting from a spill to the MS4 is necessary to prevent loss of life, personal injury, or severe property damage. This permit does not transfer liability for a spill itself from the party(ies) responsible for the spill to the permittee nor relieve the party(ies) responsible for a spill from liability.

This permit does not regulate discharge categories that are excluded from obtaining permit coverage at 9 VAC 25-870-300 and from federal Clean Water Act (CWA) regulation. Any discharges of pollutant and/or acreage associated with excluded discharge categories is considered unregulated by this permit whether it discharges through the MS4 or directly to State waters.

Part I.A.2 Permittee Responsibilities - 9 VAC 25-870-380 C.2.d

This permit requires that the permittee clearly define the roles and responsibilities of each of its departments to ensure compliance with the requirements of this permit. By defining who is responsible for which conditions of the permit, management of the overall program is streamlined and staff is made aware of their responsibilities.

Part I.A.3. Legal Authority - 9 VAC 25-870-380 C.2.a

Adequate legal authority is required for the permittee to implement and enforce the MS4 Program. It should be noted that Virginia considers local governments as “arms” or instruments of the State. Under the Dillon Rule, the Department cannot issue a permit that gives authorities to political subdivisions that have not been conferred to them either expressly, or by necessary implication, by Code. “In determining the validity of a local government’s exercise of legislative authority, Virginia follows the Dillon Rule of strict construction that provides ‘municipal corporations have only those powers expressly granted, those necessarily or fairly implied from expressly granted powers, and those that are essential and indispensable’ and its corollary that ‘[t]he powers of city boards of supervisors are fixed by statute and are limited to those powers conferred expressly or by necessary implication.’ Therefore, to have the power to act in a certain area, local governments must have express enabling legislation or authority that is necessarily implied from enabling legislation.” Opinion of the Attorney General to the Hon. Richard P. Bell, 2010 Va. AG S-32 (10-045) [citations omitted].

Part I.A.4 MS4 Program Resources - 9 VAC 25-870-380 C.1.f

An annual analysis is necessary to demonstrate that the permittee has adequate financial resources to meet all permit requirements.

Changes from the previous permit: The 2001 permit stipulated that the permittee provide adequate resources to implement the activities under the Stormwater Management Program *to the maximum extent practicable*. This phrasing has been removed. The reasons for this modification are:

1) The term ‘maximum extent practicable’ or MEP has a specific meaning in MS4 statutory language. MEP is the statutory compliance effort required to meet the CWA for the reduction of pollutants and should not be applied to any funding requirements.

2) The permit is the tool used under the CWA to establish conditions that the permittee must meet. Compliance is determined based on the permit. Thus, it is more appropriate to require that the permittee provide adequate funding to meet the conditions of the permit.

Part I.A.5 Permit Maintenance Fees - 9 VAC 25-870-830

The permittee is required to pay permit maintenance fees in accordance with VSMP fee regulations.

Part I.A.6 MS4 Program Plan - 9 VAC 25-870-380 C.1.e

The permittee is required to develop an MS4 Program Plan that describes how the permittee will meet the control requirements in the permit which include components to address stormwater management through existing structural and source controls, new and significant redevelopment,

roadways, retrofitting, pesticide, herbicide and fertilizer applications, illicit discharges and illegal disposal, spill prevention and response, industrial and high risk runoff, construction site runoff, storm sewer infrastructure management, city facilities, public education, training, water quality screening, TMDL Action Plans and a Chesapeake Bay TMDL Action Plan. The MS4 Program Plan is a consolidation of all of the permittee's relevant ordinances or other regulatory requirements, the description of all programs and procedures (including standard forms to be used for reports and inspections) that will be implemented and enforced to comply with this permit and to document the selection, design, and installation of all stormwater control measures. The permittee is required to submit its SWMP document to the permitting authority. If modifications to the M Program Plan are necessary then the permitting authority will notify the permittee. The Department will review program plan modifications within approximately 90 days of receipt.

Part I.A.7 MS4 Program Review and Updates - 9 VAC 25-870-380 C.1.e
The permittee is required to review and update the MS4 Program Plan required in Part I.A.6 as necessary. This condition establishes the annual report as the mechanism for maintaining an updated MS4 Program Plan as well as procedural requirements for plan modifications. The expectation established by this permit is that any person could review the most recent annual report and gain thorough understanding of the permittee's program.. Modifications to the MS4 Program Plan or replacing or eliminating components of an approved plan require review and approval by the Department. The Department will review program plan modifications within approximately 90 days of receipt.

Updates to the MS4 Program Plan made to comply with this state permit that are more stringent than current program requirements are allowed and should be submitted as specified in the permit The permittee may submit program updates for review and approval at any time during the term of this permit. All changes to the MS4 Program Plan should be documented in the annual report for the reporting period in which the change occurred.

Part I.B – Stormwater Management

Part I.B.1 Planning - 9 VAC 25-870-380 C.2.d

The permit requires the permittee to submit to the Department a summary of potential stormwater projects that will be implemented during the term of the permit to meet the reduction requirements of the Chesapeake Bay TMDL and local TMDL as well as the retrofit requirements in Part I.B.2.b). These projects may include projects from watershed studies or other analyses that help to determine actions necessary to address flooding, pollution prevention, water quality concerns, and protect drinking water sources. The summary will include the number of BMP acres treated, impervious and pervious acreage treated by the potential project, condition of the downstream channel, amount of total pollutant reduction, feasibility for implementation, and cost of implementation.

Part I.B.2.a) Construction Site Runoff – 9 VAC 25-870-380 C.2.d(4) and Post Construction Runoff from Areas of New Development and Development on Previously Developed Lands- 9 VAC 25-870-380 C.2.d(1)(b)

This requirement addresses the MS4 Program requirements for control of construction site runoff and post construction runoff from areas of development and redevelopment. It is also required in the federal effluent limitation guidelines for the Construction and Development Point Source Category 40 CFR 450. Stormwater discharges from construction sites generally include sediment and other pollutants such as phosphorus and nitrogen, turbidity, pesticides, petroleum derivatives, construction chemicals, and solid wastes that may become mobilized when land surfaces are disturbed.

This permit requires that the permittee to operate a local erosion and sediment control program that is consistent with the Virginia Erosion and Sediment Control Law and attendant regulations as the minimum standard. Implementation of the Virginia Erosion and Sediment Control regulations also incorporates the reduced regulatory size threshold to comply with the Chesapeake Bay Preservation act requirements. As a result, the permittee's program will address land disturbing activities 10,000 square feet and greater and allow the permittee to implement a more restrictive program for erosion and sediment controls on land disturbing activities 2,500 square feet and greater as necessary for additional water quality protection under the Chesapeake Bay Preservation Act. By referencing the state regulatory requirements, the permit is consistent with state standards for plan review, establishes a site inspection schedule, and staff training.

The Virginia Stormwater Management Program (VSMP) regulations require the permittee develop and implement a program to address post-construction discharges from new development and redeveloped sites, and ensure the long-term operation and maintenance of these controls. Implementation of these provisions supports the Commonwealth's iterative strategy to address the impacts of stormwater runoff from urbanization. The Department approved the permittee as a VSMP authority on June 17, 2014.

The permittee is required to maintain and implement erosion and sediment control and stormwater management programs as required by state law. The Department oversees the permittee's implementation of these programs and determines if the programs are in compliance with the law and regulations through program reviews.

The condition also requires the permittee to identify as part of the MS4 Program Plan those erosion and sediment control requirements and stormwater management requirements that have been adopted that are more stringent than required by the Virginia erosion and Sediment Control and VSMP regulations.

Part I.B.2.b) Retrofitting on Prior Developed Lands - 9 VAC 25-870-380 C.2.d(1)(d)

The permittee is required to implement three (3) retrofit projects prior to the expiration of the permit. DEQ staff has reviewed the last five years of annual reports and other information submitted by the permittee which indicates that permittee has not completed any retrofit projects during the last five years. Therefore, the number of retrofit projects required in this permit is based on the number of retrofit projects being required of other Phase I MS4 and the best professional judgment of DEQ staff. During the permit reissuance process, the permittee indicated that they are planning to complete 3 projects that are yet to be determined. The City is considering various options to meet the retrofit project requirements of the permit. The City is very interested in converting City-owned vacant properties to green infrastructure for beneficial stormwater use and is considering bioretention, bioswales, impervious area removal, tree planning, native planting, and open space preservation. The initiative will provide potential sites for retrofit projects. The permittee is also considering retrofitting existing lakes and school sites with large impervious surfaces. Estimated cost of each project ranges from $100,000 to $300,000.

DEQ recognizes that unforeseen constraints may impact a project's feasibility; therefore, the project list above can be modified as a result of public involvement or feasibility of project design. If a project is determined to be infeasible, a project of similar scope may be used to demonstrate compliance with the retrofit permit condition. Additionally, the permittee may fulfill the retrofit requirement with projects initiated in response to the Chesapeake Bay and local TMDL action plan conditions in Part I.D of the permit. Permittees are required to submit the action plans to the Department for review and approval. Therefore, the retrofit projects will be reviewed and approved through the TMDL Action Plan review and approval process.

Implementation of projects included in the TMDL Action Plans meet the Clean Water Act requirement that MS4 permittees reduce pollutants to the maximum extent practicable (MEP).

Traditionally, MS4 permit conditions requiring BMP implementation served to satisfy technology requirements of reducing pollutants to the MEP and to protect water quality. However, in this permit reissuance, the permittee is required to submit an action plan that demonstrates calculated reductions of nutrients and sediment to meet the Chesapeake Bay TMDL wasteload allocations. Permittees must also submit action plans that address assigned wasteload allocations in local TMDLs. TMDL wasteload allocations are water-quality based and load reductions requirements to meet these wasteload allocations are more stringent than the technology based MEP requirement.

Part I.B.2.c) Roadways - 9 VAC 25-870-380 C.2.d(1)(c)

Roads in the City of Portsmouth are maintained by the permittee with the exception of primary roads which are maintained by the Virginia Department of Transportation. The permit requires any roadways that are maintained by the permittee to be maintained in a manner to minimize discharge of pollutants. The permittee will develop a list of roadways and streets maintained by the city. The list will include the number of miles of roadway treated by BMPs and miles of roadway not treated by BMPs. In addition, the permittee will develop a protocol to minimize pollutant discharge from maintenance activities. The permit requires that all deicing materials remain covered and protected from precipitation until applied. Storage of materials is also covered under the General VPDES Permit for stormwater discharges associated with industrial activities and also addressed in the high risk municipal facilities section of the MS4 permit.

The permit also complies with State statute by restricting the use of materials containing nutrients as deicing agents.

See Part I.B.2.m) for coordination requirements between the permittee and VDOT for those points where the MS4s for each are interconnected.

Part I.B.2.d) Pesticides, Herbicides and Fertilizers - 9 VAC 25-870-380 C.2.d(1)(f)

This permit establishes a development schedule so that by this permit expiration date, turf and landscape nutrient management plans will be implemented on all permittee owned and operated lands where nutrients are placed on more than one-acre of contiguous land. Nutrient management plans are designed to ensure that the appropriate amounts of nutrients are applied to maintain a healthy vegetative cover that is necessary both for the filtration and infiltration of stormwater runoff. A general 5% reduction in baseline application is a simplistic approach that does not address the needs of the vegetation nor represents a sound scientific approach. Virginia regulation, 4VAC5-15-10 defines a “nutrient management plan" as a plan “prepared by a Virginia certified nutrient management planner to manage the amount, placement, timing, and application of manure, fertilizer, biosolids, or other materials containing plant nutrients in order to reduce nutrient loss to the environment and to produce crops.” DCR has a Turf and Landscape Nutrient Management Planning category in its nutrient management program. These requirements are expected to be followed by the certified nutrient management planner. Additional information regarding turf and landscape nutrient management plans can be found at http://www.dcr.virginia.gov/stormwater_management/nmplnr.shtml#forturf.

The permit also authorizes regulation of fertilizers in accordance with authorizing State statute if the permittee determines that such a source control is necessary to prevent any further degradation to water resources, to address TMDL requirements, to protect exceptional state waters, or to address specific existing water pollution and are regulated in accordance with § 62.1-44.15:33.

40 CFR §122.26(d)(2)(iv)(A) of the federal stormwater regulations requires that MS4 Programs include a strategy to reduce pollutants in MS4 discharges associated with pesticides, herbicides, and fertilizers to the maximum extent practical. Integrated Pest Management Plans is one method in which localities may reduce pollutants associated with pesticides. Tracking and reporting the acreage of lands managed by the permittee under Integrated Pest Management plans is a manner in which permittees can demonstrate compliance with the permit with other programs already in place.

Part I.B.2.e) Illicit Discharges and Improper Disposal - 9 VAC 25-870-380 C.2.d(2) and (g)
The sanitary sewer system is maintained and operated by the permittee under the City of Portsmouth Department of Public Utilities as well as Hampton Roads Sanitation District (HRSD). The City is responsible for the gravity sanitary sewer up to the connection of the force main. HRSD is then responsible for the sanitary sewer from the force main to the wastewater treatment plant. The permit requires that the permittee continue to identify illicit discharges to the MS4 from cross connections or exfiltration through inspection of sanitary sewer. The City maintains approximately 365 miles (1.927,200 linear feet) of gravity sanitary sewer. Review of the permittee's last 5 annual reports indicates that on average 152,845 linear feet of sanitary sewer is inspected each year. . However, increased sanitary sewer inspections as a result of the Special Order of Consent resulted in a skewed average value that is higher than normal efforts. Removing the artificially high values results in permittee performing an average annual inspection of sanitary fewer is 119,064 linear feet per year. Therefore, the DEQ has determined that at a minimum it is appropriate to require 120,000 linear feet of sanitary sewer line inspections each year. Sanitary sewer inspections are not limited to visual inspection, and, may include smoke testing, closed circuit television inspection, flushing, infiltration, exfiltration, air testing and other screening methods that are performed in accordance with the Commonwealth of Virginia's Sewage Collection and Treatment Regulations to determine the integrity of the sanitary sewer. It should be noted that as the City continues to implement requirements of the Consent Order including a Maintenance, Operation, and Management Program, the need for sanitary sewer inspections may become less frequent.

This permit also defines non-sediment discharges at construction site activities as illicit discharges under this permit and requires implementation of appropriate pollution controls

The permittee is required to ensure that programs are available to citizens for the proper disposal of hazardous materials. These programs can be run by a third party; however the permittee is responsible for ensuring that the programs are available and publicizing them to citizens at least twice per year.

Please note that in accordance with Part I.A.1.b)1), non-stormwater discharges and stormwater discharges associated with industrial activity (defined at 9 VAC 25-31-10) that are authorized by a separate VPDES permit are authorized discharges from the MS4. Additionally, the exceedance of an effluent limitation by a VPDES permitted discharger to the MS4 does not constitute an illicit discharge to the MS4.

Part I.B.2.f) Spill Prevention and Response - 9 VAC 25-870-380 C.2.d(2)(d)
The permit requires the permittee to continue implementation of a program with the City Fire Department and other city staff to prevent spills and when unpreventable, provide the proper response.

Part I.B.2.g) Industrial and High Risk Runoff - 9 VAC 25-870-380 C.2.d(3)
This permit requirement places emphasis on the visual inspection of industrial and high risk industrial outfalls that discharge into the MS4 as a means of identifying potential sources of pollutants. 9VAC 25-870-380 C.2.d(3) of the VSMP regulations as well 40 CFR §122.26(d)(2)(iv)(C)(2) of the federal regulations require permittees to implement a program to identify and control pollutants in stormwater discharges to the MS4 from industrial and high risk facilities as defined in the permit. These federal and state regulations are the rationale for the requirements of Part I.B.2.g) of the draft permits to implement an industrial inspection program. Additionally, the federal and state regulations require permittees to implement a monitoring program for stormwater discharges associated with the industrial facilities that includes quantitative data for a number of parameters. DEQ recognizes that many of the high risk and industrial dischargers required to be addressed by this type of program are already permitted by

DEQ under the Virginia Pollutant Discharge Elimination Permit Program (VPDES) and perform self monitoring in accordance with their permit requirements; therefore additional quantitative monitoring by the MS4 permittee is duplicative. The permit requirement to establish an industrial inspection program in conjunction with review of DMR data submitted by industrial dischargers to the MS4 meets the intent of the state and federal requirements. DEQ is the authority responsible for compliance and enforcement of the VPDES Stormwater Program, and the requirements of this permit condition do not convey any authority to the MS4 permittee for enforcing the VPDES permit. If the MS4 permittee identifies a concern regarding a permitted or unpermitted discharger, then they should notify the appropriate DEQ regional office.

Part I.B.2.h) Stormwater Infrastructure Management - 9 VAC 25-870-380 C.2.d(4)

The permittee does not maintain all of the stormwater management facilities discharging to the permittee's MS4. In these circumstances, maintenance agreements between the permittee and the responsible party are used to establish that the infrastructure is properly maintained. The permittee is responsible for establishing inspection and follow-up protocols and annual inspecting a portion those infrastructures to ensure that they are being properly maintained.

In order to ensure maintenance of the storm sewer infrastructure, the permittee is required to visually inspect on an annual basis 15% of the total storm system system including conveyances, catch basins, manholes, and drop inlets. Inspection of the system shall include visible observation of the system for structural or conveyance issues, litter, dry weather screening, and IDDE. Additionally, for those stormwater management facilities that are privately maintained and for which a maintenance agreement has been established, the permittee must inspect those facilities at least once during the term of the permit.

Additionally, the permittee must map the MS4 service area and associated MS4 outfalls within 18 months of the permit effective date. The permittee must also identify impervious and pervious acres served for each local watershed. The permittee should provide a map of the MS4 service area and outfalls through a web link to City GIS resources or by providing a GIS shape file and/or data layer.

Part I.B.2.i) City Facilities - 9 VAC 25-870-380C.2.d

This is one of the six minimum control measures. This permit contains a new section that addresses discharges specifically from City facilities. This section pertains specifically to those facilities owned and operated by the City. The conditions established in this permit require the utilization of good housekeeping practices, the discharge prohibition of vehicle wash water, wastewater, purposeful dumping of yard waste and grass clippings and the application for separate permit coverage for all facilities regulated under the VPDES industrial stormwater program.

This permit also requires the development and implementation of individual stormwater pollution prevention plans for any high-priority city facilities with a high potential to discharge pollutants.

Part I.B.2.j) Public Education/Participation - 9 VAC 25-870-380 C.2.d(2)(e) and (f)

This is one of the six minimum control measures. The permittee is required to establish and implement a program to educate the public of the impacts of stormwater on water quality and how stormwater pollution can be mitigated.

This permit places additional emphasis not included in the 2001 permit on public education and outreach that will enhance the permittee's existing programs. This permit also encourages transparency of the permittee's efforts by requiring that the permit, annual reports and the most current MS4 Program Plan be made available for public review.

Additionally, the permittee is required to implement an outreach program to private golf courses that discharge to the MS4 on techniques and use of fertilizers and pesticides.

Part I.B.2.k) Training - 9 VAC 25-870-380 C.2.d(4)
This permit requires the permittee to provide training to city staff in stormwater pollution prevention practices and identification of unauthorized discharges. The permittee will continue implementation of training employees to prevent and reduce stormwater pollution from activities such as park and open space maintenance, fleet and building maintenance, new construction and land disturbances, and stormwater system maintenance. This permit requires employee training for existing and new employees who are involved in performing pollution prevention and good housekeeping practices. All training must include a general stormwater educational component, including an overview of the requirements with which the municipality needs to comply. The permittee is responsible for identifying which staff must attend trainings based on the applicability of the topics listed, and they are required to conduct refresher training. The training requirements have been expanded from the 2001 permit.

Part I.B.2.l) Dry Weather Screening Programs - 9 VAC 25-870-380 C.2.d(2)(b) and (c)
The permit requires dry weather screening of the MS4 system. The focus of dry weather screening is to identify illicit connections and unauthorized discharges to the MS4. . If during a screening event flow is observed, then further investigation by the permittee is required to determine if the source is an authorized non-stormwater discharge or an illicit discharge The permit prescribes specific criteria for identifying locations for dry weather screening. There are a total number of 488 total outfalls discharging from the City of Portsmouth's MS4. Review of the last 5 year annual reports or information provided to the permittee indicates the permittee monitors on average 110 outfalls per year (including follow up inspections) for purposes of the dry weather monitoring program. It's estimated that 40-50% of the City's MS4 is tidally influenced or submerged due to the low elevation of the City. Upon review of this information, DEQ staff believe it is appropriate that the permittee perform dry weather screening based on designated "stations" that are up system from the MS4 outfalls. Based on this information, the permit requires the permittee to screen no less than 75 stations located in the MS4 per year during the term of the permit.

Part I.B.m) VDOT Coordination
The City of Portsmouth MS4 is interconnected with Virginia Department of Transportation (VDOT) MS4. In order to effectively implement the MS4 Program, owners and/or operators of interconnected MS4s must communicate program requirements and keep one another informed of the implementation of the MS4 programs. The permit requires that the permittee coordinate with VDOT regarding various components of the City of Portsmouth MS4 Program including system mapping, TMDL action planning, and water quality monitoring.

The permittee must work with VDOT to identify and quantify any lands that are (1) within the City borders, (2) are part of the VDOT service area and discharge to the VDOT MS4, and (3) not addressed in either the permittee's or VDOT's Chesapeake Bay TMDL Action Plan. These are lands which fall under the jurisdictional control of the permittee and discharge to the VDOT MS4. This does not include lands that discharge to other state or federal permitted MS4s that are within the borders of the City of Portsmouth. Quantification of these lands is to be reported to DEQ when the Chesapeake Bay TMDL Action Plan is submitted. Additionally, the special condition establishes that credit for reductions resulting from new BMPs or BMP retrofits shall not be double counted by VDOT and the permittee. Credit is provided to the permittee who undertakes the project. Credit may be shared by the permittee and VDOT if a written agreement is provided.

Part I.C – Monitoring Requirements - 9 VAC 25-870-380 C.2.c.(4)
The permittee is required to perform in-system monitoring for those parameters listed in the permit. Because this monitoring takes place during storm events it serves a wet weather monitoring and is

in addition to the dry weather screening in Part I.B.2.l) of the permit. The localities of Hampton Roads, including the City of Portsmouth, have entered into a Memorandum of Agreement (MOA) to establish the Hampton Roads Regional Water Quality Monitoring Program (HRRWQMP). The MOA was entered into on March 1, 2014 among the Cities of Portsmouth, Hampton, Newport News, Portsmouth, Portsmouth, and Portsmouth and the Hampton Roads Planning District Commission (HRPDC). The Cities have requested the HRPDC to coordinate the HRRWQMP as a regional water quality monitoring program. The plan details the rational, methods and approach, data analysis, partnership, time line, budget, deliverables and annual project meetings (See Attachment 4). The permit includes the specific in-system monitoring locations for the City. The monitoring plan is considered part of the MS4 Program and should be incorporated by reference to the MS4 Program Plan. The Monitoring program is enforceable under this state permit. Modifications to the City's monitoring responsibilities under the HRRWQMP must be approved by the Department prior to implementation.

9 VAC 25-870-430 J of the VSMP regulations and Part II.A. of the permit states, "*Monitoring shall be conducted according to procedures approved under 40 CFR Part 136 or alternative methods approved by the U.S. Environmental Protection Agency, unless other procedures have been specified in this state permit*." Some holding times and preservation methods specified in 40 CFR Part 136 are not possible for the automated continuous monitoring that is being conducted for the Hampton Roads Regional Water Quality Monitoring Program. This monitoring program will employ the use of refrigerated automated sequential samplers capable of collecting individual samples over the course of a hydrologic event. Samples in their intermediate containers will be retrieved as soon as possible but within 24 hours of collection, and transported in coolers ($\leq$ 6°C). Once samples have been transported to HRSD, a subset of representative samples will be chosen based on season and storm duration. Alternative methods approved by the permit include the following:

- Orthophosphate: Filtering upon laboratory acceptance of samples.
- Orthophosphate: Maximum holding time of 28 days after immediate freezing.
- H_2SO_4 preservation of Nitrate plus Nitrite, Ammonia as Nitrogen, Total Kjeldahl Nitrogen, and Total Phosphorus upon return to HRSD.

In order to fulfill the intent of the monitoring program as required by the regulations, the permittee is required to implement an additional monitoring program in addition to the HRRWQMP in-system monitoring program to measure the effectiveness of the permittee's stormwater management program. Since 2013, the City of Portsmouth has been implementing monitoring program on Hoffler Creek in conjunction with the City of Suffolk in order collect data to provide a representative understanding of the water quality conditions associated with the bacterial TMDL. Each locality is responsible for collecting one sample per month from multiple sites for a total of twelve sites being monitored monthly. The permit incorporates the Hoffler Creek Bacterial Monitoring Program into the City's permit and requires monitoring of at least four (4) locations by Portsmouth and the evaluation of the data to demonstrate upstream BMP effectiveness. The monitoring program is part of the MS4 Program Plan and enforceable under this state permit.

The permit does not contain biological monitoring requirements included in other Phase I MS4 individual permits previously issued by the Department. The Rapid Bioassessment method required in other permits is used to evaluate benthic macroinvertebrate communities and habitats for *free flowing* streams and does not apply to tidally influenced waters to which this permittee discharges. Additionally, there are costly soil testing methods that could potentially evaluate benthics; however, tidal mixing prevents the acquisition of evidence from such monitoring regarding the source of any observed impact, if found. Permittee resources would be better used in program implementation rather than implementing a biological monitoring program that does not provide conclusive data.

This permit requires maintenance of stormwater management facility tracking data and the monitoring of private stormwater management facilities maintenance. This monitoring program is

designed to ensure that maintenance is being conducted on privately owned stormwater management facilities.

Part I.D – TMDL Action Plan and Implementation

Part I.D.1 Chesapeake Bay TMDL Action Plan – 9 VAC 25-870-460:

Pollutant of Concern Loadings from Existing Sources
This permit requires the permittee to reduce the loadings of nutrients and sediment from existing sources (pervious and impervious regulated urban lands developed prior to July 1, 2009) equivalent to Level 2 (L2) scoping run reductions simulated in the Chesapeake Bay Watershed Model. Level 2 implementation equates to an average reduction of 9% of nitrogen loads, 16% of phosphorus loads, and 20% of sediment loads from impervious regulated acres and 6% of nitrogen loads, 7.25% of phosphorus loads and 8.75% sediment loads from pervious regulated acres beyond 2009 progress loads and beyond urban nutrient management reductions for pervious regulated acreage. Calculations are based on an average tributary loading rate

In the Phase I and II Watershed Implementation Plans (WIPs) and the Chesapeake Bay TMDL, the Commonwealth and EPA committed to using a phased approach for the MS4 sector affording MS4 permittees three full five year permit cycles to implement necessary reductions as follows:

- 5% of L2 achieved by the end of the first permit term;
- 35% of the necessary reductions in the second permit term (totaling at least 40% of the necessary reductions no later than the end of the second permit term); and
- 60% of the necessary reductions from the third permit term (totaling 100% of the necessary reductions no later than the end of the third permit term).

Due to multiple delays in permit reissuance, three full permit terms now extends beyond the Chesapeake Bay Program partnership's 2025 goal for implementation of all controls necessary to meet the TMDL. Under the Phase I and II WIPs, Virginia has recognized the right to adjust this plan and take different approaches to meet the 2025 goal. Virginia is committed to a phased approach that allows multiple permit terms for MS4 permittees to fully implement nutrient and sediment reductions necessary to meet the Chesapeake Bay TMDL wasteload allocations. Virginia will adjust its commitments, if necessary, as part of its Phase III WIP to ensure that practices are in place by 2025 that are necessary to meet water quality standards in the Chesapeake Bay and its tidal tributaries.

The permittee shall also review its authorities and adopt and modify the necessary ordinances as well as develop its resources in order to implement the necessary reductions, e.g., develop design protocols, operation and maintenance programs, site plan review criteria, inspection standards, and tracking systems during this first permit cycle.

The permittee is required by this permit to identify the acreages for both the pervious and impervious urban land uses as of June 30, 2009. Included in the permit are the loading rates for the James River Basin. This will allow the permittee to calculate the existing source loads discharged as of 2009 using Table 1 by multiplying the existing acreage by the Edge of Stream loading rates. Using Table 2, the permittee will calculate the total load reductions required to meet 5% reductions during this term of the permit by multiplying the existing acreage by the reduced load rates.

The permittee is allowed to adjust the levels of reduction between pervious and impervious land uses within their service area and Chesapeake Bay segment level, provided the total pollutant load reduction is met. For example, the permittee could implement a 5% nitrogen load reduction on impervious land uses by implementing a reduction strategy sufficiently greater than 6% nitrogen load reduction on pervious land uses provided the total loads from both land uses are met.

Compliance with reduction in loading rate will be measured based on the total reductions required as determined by calculations defined by Tables 1 and 2 in the permit and the reported implementation of BMPs. Additionally, the permittee should use the Watershed Model Phase 5.3.2, or some other tool or methodology that is approved by the Department as consistent with the assumptions of the Bay TMDL in order to demonstrate compliance with the reductions. The permittee may not receive credit toward meeting the required POC reductions for BMPs installed prior to 2009 that were previously reported to the Chesapeake Bay Program. This is consistent with the Chesapeake Bay TMDL Action Plan Guidance Memorandum 14-2012 regarding the methods by which an MS4 permittee may receive credit toward meeting the load reductions.

Finally, since 9 VAC 25-870-610 provides legal authority for the Department to open, modify and reissue this permit, this permit includes language providing notification that it may be opened and modified. DEQ will consider recommending to the Department reopening the permit upon request when an applicable TMDL has been adopted by the State Water Control Board.

This permit is designed to strengthen the permittee's MS4 program in order to protect all surface waters. As a result, by implementing the main body of the permit, the permittee will provide increased protection to the Chesapeake Bay in a manner consistent with Virginia's Phase I and II WIP commitments accepted by EPA.

Control of Transitional Loads and Accounting for Growth from New Development
The permit requires reductions of increased loads from new sources as well as projects grandfathered under the VSMP regulation in recognition that Chesapeake Bay Watershed Model 5.3.2 does not account for increased loads after 2009 where the design of post-construction stormwater management facilities utilized an average land cover condition greater than 16% in some localities. Note that previous versions of the draft permits included a requirement for permittees to reduce 5% of increased loads from new sources (including grandfathered projects) which is a requirement also included in previously issued MS4 permits. DEQ staff has determined that the additional reduction of 15% of the existing source reductions for the Hampton Roads Region is equivalent to or greater than 5% of the increased loads from new sources initiating construction between July 1, 2009 and June 30, 2014 and grandfathered projects that began construction after July 1, 2014 that disturb 1 acre or greater and used a land cover condition greater than 16% for the design of stormwater management facilities Please see Attachment 5 – Alternative Methodology to Calculate Offset from New Sources – for a detailed description of the alternative methodology and how the assumptions provide a conservative estimate of the required load offset. Future permit terms may include refinements in reductions requirements and existing POC loads <u>may be</u> recalculated after review of results of Phase 6 Chesapeake Bay Watershed Model which will include updated watershed information including more current land cover conditions. . If the Commonwealth's approach to address new source loads changes in the future all reductions achieved by the permittee utilizing methodology in (f) and (g) under the 2016 permit will be applied toward reduction requirements in future permit cycles.

As of July 1, 2014 new sources are required to meet post development criteria of 0.41 pounds per acre per year of total phosphorus which has been determined by the Department to be nutrient neutral.

<u>Additional Protections Provided the Chesapeake Bay by this Permit</u>
This permit requires that the permittee continue to identify and eliminate illicit discharges and illegal dumping. The elimination of these illicit discharges reduces the amount of sediment and nutrients discharged through the MS4. For example, using concentrations for the typical pollutant concentrations in untreated medium strength domestic wastewater, published in Wastewater Engineering Treatment and Reuse, Fourth Edition, the elimination of sanitary inflow into the MS4 will remove an estimated 6 lbs. of total suspended solids, 0.33 lbs. of total nitrogen and 0.06 lbs. of total phosphorus per 1,000 gallons of domestic wastewater from entry into the MS4. This permit does not regulate discharges from sanitary sewer treatment plants or their associated

infrastructure or discharges from septic systems. Failed and failing sewer lines and septic tanks will be regulated under the appropriate Code and regulations. The permittee will continue to identify these discharges and report them to the appropriate regulatory authorities.

This permit requires continued implementation of BMPs to reduce pollutants from roadways and stormwater infrastructure maintenance. If the permittee chooses to utilize street sweeping and other infrastructure maintenance as a mechanism for reduction, it will need to describe this effort in its Chesapeake Bay Action Plan.

Part I.D.2 TMDL Action Plans Other than the Chesapeake Bay TMDL– 9 VAC 25-870-460

The 2001 permit does not address TMDLs. This permit requires that the permittee develop TMDL Action Plans for watersheds within 24-months of permit issuance where a wasteload for a pollutant of concern has been allocated to the permit at the time of permit issuance. TMDL Action Plans may be implemented in multiple phases over more than one permit cycle using the adaptive iterative approach provided adequate progress is made to reduce pollutant discharges in a manner that is consistent with the assumptions and requirements of the applicable TMDL wasteload allocations. Progress will be demonstrated by representative and adequate monitoring or other methods (e.g. modeling). Demonstration of compliance with the TMDL WLA assumes that the permittee is not causing or contributing to violations of the water quality standards.

This permit establishes and Action Plan development schedule and requires:

1) Defined content be included in the Action Plan;
2) Public participation and comment during development of the Action Plan;
3) Implementation of the Action Plan; and
4) Evaluation of the Action Plan

For TMDL Action Plans other than the Chesapeake Bay Action Plan, adequate progress is measured during this permit cycle as development and implementation of the TMDL Action Plans. This is in contrast to the requirements of the Chesapeake Bay Action Plan for which permit requirements for MS4s were established in Virginia's Chesapeake Bay Watershed Implementation Plan.

In the case of local TMDL for PCBs for which the permittee has been assigned a wasteload allocation, the permittee should work with DEQ staff to determine the best way to address PCBs in the local TMDL action plans. As part of the action plan, the permittee should implement a program to identify the source of PCBs and any remediation efforts in which that permittee intends to engage.

Part I.E – Annual Reporting - 9 VAC 25-870-440

Compliance with this permit will be evaluated on the basis of program progress and results over the reporting periods throughout the life of the permit. This permit refines the reporting requirements to more specifically monitor the effectiveness of the MS4 Program. Given the large number of variables regarding municipal stormwater, it is impractical to expect a chemical monitoring program to demonstrate pollutant load reductions or ambient water quality improvements resulting from MS4 Program implementation during a single permit term.

Similarly, it is not possible to evaluate pollutant load reductions, ambient water quality improvements or the overall effectiveness of the program by utilizing only the effectiveness indicators found in this permit.

Reports are to be submitted on an annual basis and to be aligned with the permittee's fiscal year. The permittee is required to maintain an MS4 Program Plan that details the MS4 program and progress including all annual reports and is available for public review.

As appropriate, the Department may specify additional requirements or compliance schedules in order to achieve the level of implementation and progress deemed necessary by the Department to achieve water quality protection and meet the intent of the MS4 permitting program.

Part I.F – Definitions
This portion of the permit provides definitions for those terms not explicitly defined in applicable statutes or regulations.

Part II, Conditions Applicable to All VPDES Permits The VPDES Permit Regulation at 9 VAC 25-870-430 requires all VPDES permits to contain or specifically cite the conditions listed.

20. **TOXICS MONITORING/TOXICS REDUCTION AND WET LIMIT SPECIAL CONDITIONS RATIONALE:** Not Applicable

21. **OTHER CONSIDERATIONS IN LIMITIATON DEVELOPMENT**:

VARIANCES/ALTERNATE LIMITATIONS: Not applicable

SUITABLE DATA: Periodic discharge monitoring is not required of this facility. The permit requires however, ambient stream monitoring for conventional pollutants, bacteria, and toxicity as well as extensive annual reporting regarding best management practices and stormwater pollution prevention plans.

CONSISTENCY WITH STATE AND LOCAL LAW OR REGULATION: Section 9 VAC 25-870-320 provides that a VSMP permit cannot infringe on any state or local law or regulations. This is consistent with federal language found at 40 CFR 122.5(c). Although the permittee may not have ownership of the acreage discharging to receiving waters through its MS4, it can use its legal authority granted by the Commonwealth of Virginia to control the pollutant contributions in a manner consistent with established local ordinances and to implement mechanisms necessary to meet conditions established by the permit. As this permit only regulates the discharge of municipal stormwater and not the municipality, the permit cannot infringe on other state or local laws such as those pertaining to land use and zoning, which are clearly defined by provisions of other federal, state or local code. EPA recognized these limitations, specifically those regarding land use, in its Phase II Stormwater Regulations in the Federal Register Vol. 222 (Page 68762) which states, “Land use planning is within the authority of local governments and disagrees that, the implication of [the Phase II rule] dictates any such land use decisions.”

PERMIT FLEXIBILITY: During its regulatory action to establish the Phase I Stormwater Regulations, EPA provided guidance for implementing the regulations. As stated in the Federal Register, Vol. 55, No. 222, November 16, 1990 (Page 47994) “EPA and the States will strive to achieve environmental results in a cost effective manner by placing high priority on pollution prevention activities, and by targeting activities based on reducing risk from particular harmful pollutants and/or discharges to high value waters.” To this end, the Department recognizes that, in most instances, the permittee is best suited to determine the specificity, design and targeting of the comprehensive stormwater management programs to address priorities in a cost effective manner. As such, the permit provides flexibility for the permittee while still establishing specific, enforceable permit conditions in accordance with applicable laws and regulations. This promotes the identification, targeting and control of stormwater pollutant sources in an appropriate manner given the available control alternatives.

22. **303(d) LISTED SEGMENTS**:

The permittee discharges to multiple receiving streams some of which may be listed on the current (2012) 303(d) list. Attachment 3 includes a list of the 303(d) listed waterbodies for which a TMDL has been approved and the permittee given a wasteload allocation for the pollutant(s) of concern.

23. **NPDES INDUSTRIAL PERMIT RATING WORKSHEET SCORE**: 700 SEE ATTACHMENT 6

24. **PUBLIC NOTICE INFORMATION REQUIRED BY 9 VAC 25-870-530**:

Publication: *The Virginia-Pilot*
Publication Dates: March 9, 2016 and March 16, 2016
Comment Period: Start Date: March 9, 2016 End Date: April 8, 2016

DEQ accepts comments and requests for public hearing by hand delivery, e-mail, fax, or postal mail. All comments and requests must be in writing and be received by DEQ during the comment period. Submittals must include the names, mailing addresses, and telephone numbers of the commenter/requester and of all persons represented by the commenter/requester. A request for public hearing must also include: 1) The reason why a public hearing is requested. 2) A brief, informal statement regarding the nature and extent of the interest of the requester or of those represented by the requester, including how and to what extent such interest would be directly and adversely affected by the permit. 3) Specific references, where possible, to terms and conditions of the permit with suggested revisions. A public hearing may be held, including another comment period, if public response is significant, based on individual requests for a public hearing, and there are substantial, disputed issues relevant to the permit.

Ms. Jaime Bauer
Department of Environmental Quality
Office of VPDES Permits
P. O. Box 1105
Richmond, Virginia 23218

For additional information, including a copy of the City of Portsmouth draft individual MS4 permit and permit fact sheet, or to review copies of materials or applicable laws and regulations, contact Ms. Jaime Bauer at (804) 698-4416 or at the address above.

PUBLIC COMMENTS RECEIVED ON DRAFT PERMIT: DEQ received comments on the draft permit during the comment period from one environmental group and several citizens. A summary of the comments received as well as DEQ's responses can be found in Attachment 7 to this fact sheet.

Changes to the draft permit since the public comment period ended:

Permit Condition Number	Description	Reason for Change
Part I.C.1	Specific reporting requirement due date for monitoring protocols and identification of monitoring locations changed from October 1, 2016 to October 1, 2017.	Correction of typo. The Annual Report due October 1, 2016 addresses the reporting requirements of the 2001 permit.
Part I.C.1.c)7)	Replace Dissolved Phosphorus with Orthophosphate.	Revised to correct parameter to be monitored.
Part II.I NOTE	Change "Department of Emergency Services" to "Department of Emergency Management."	Revised to reflect correct state agency name.

25. **ADDITIONAL COMMENTS:**

a. Previous Board Action: None

b. Staff Comments: The annual report due on October 1, 2016 should meet the requirements of the 2001 permit for activities occurring during the reporting period of July 1, 2015 through June 30, 2016. The permit will become effective on July 1, 2016. The first annual report to demonstrate compliance with this permit is due October 1, 2017.

c. VDH Comments: None

d. EPA Comments: The draft permit was originally sent to EPA on January 26, 2015 and a revised draft permit was sent on February 20, 2015. EPA staff by way of email dated February 20, 2015 concurred with the draft permits. However, revisions to the permit as a result of owner review necessitated that the revised permit be reviewed by EPA. The revised permit was sent to EPA for review on November 24, 2015 for a 30-day review period. EPA was unable to complete review of the draft prior to the end of the review period on, and therefore, they issued a general objection letter dated December 21, 2016 regarding reissuance of the draft permit. By issuing the general objection letter, EPA was provided an additional 60 days of review. EPA staff provided comments to DEQ staff on EPA on January 27, 2016 to which DEQ addressed comments or made revisions. The final draft permit was sent to EPA on February 22, 2016. EPA rescinded the objection on February 23, 2016 which allowed DEQ to proceed with the public notice process.

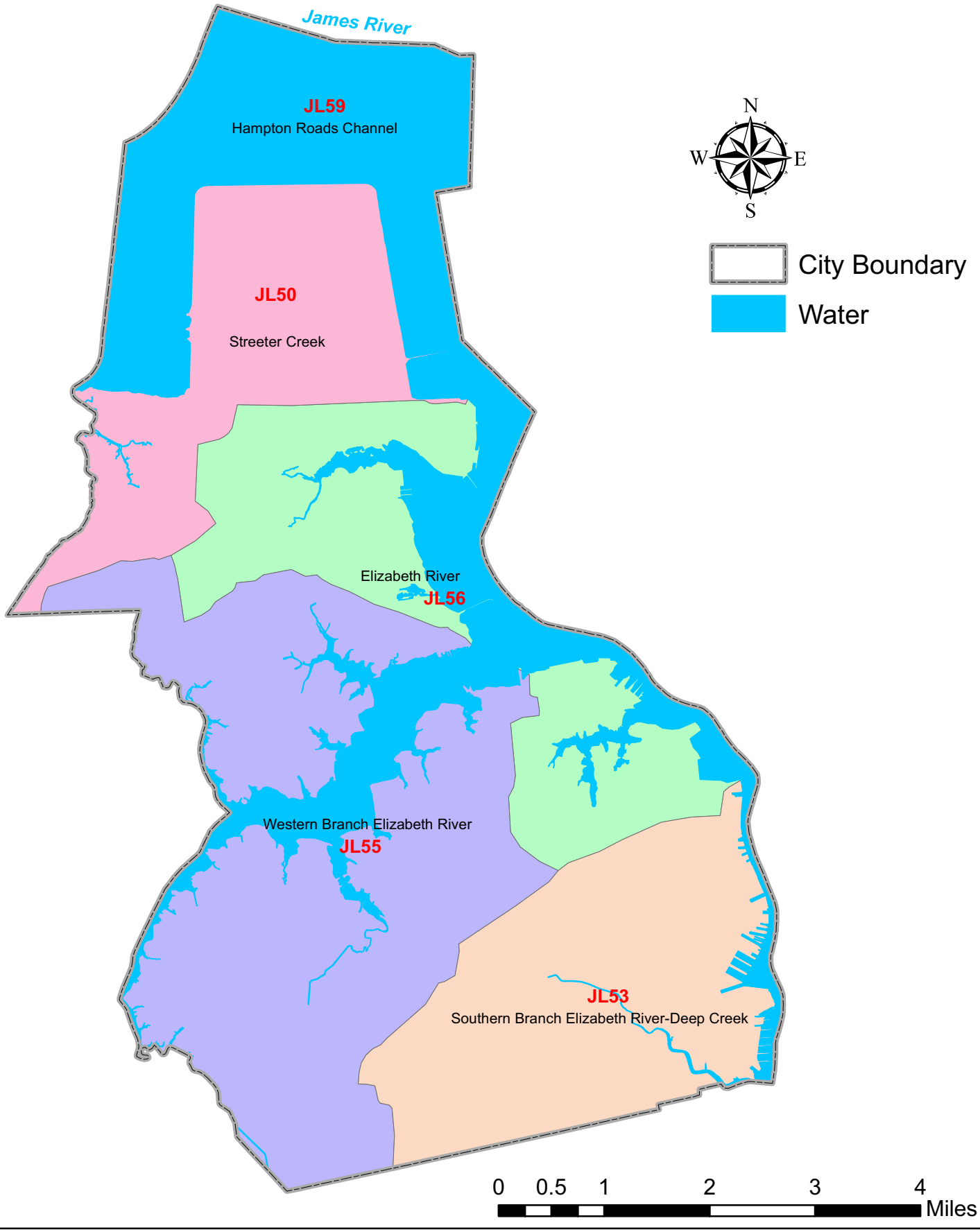
e. Other Comments: Owner comments were received on March 27, 2015, October 9, 2015, and December 11, 2015 in response to various versions of the draft permit. In addition, the owner incorporated or supported comments provided to DEQ by the Hampton Roads Planning District Commission and their lawyer on March 25, 2015, April 28, 2015, October 9, 2015, January 22, 2016, and February 5, 2016. All comments have been discussed and resolved between DEQ and the permittee. The permittee provided notice of concurrence on the draft permit on March 3, 2016.

26. **SUMMARY OF FACT SHEET ATTACHMENTS**:

Attachment 1 – Jurisdictional Map
Attachment 2 – Site Inspection Report
Attachment 3 – 303(d) Listed Segments with an approved TMDL
Attachment 4 – MOA and HRRWQMP
Attachment 5 - Alternative Methodology to Calculate Offset from New Sources
Attachment 6 – NPDES Rating Worksheet
Attachment 7 – Summary of Public Comments and DEQ Responses

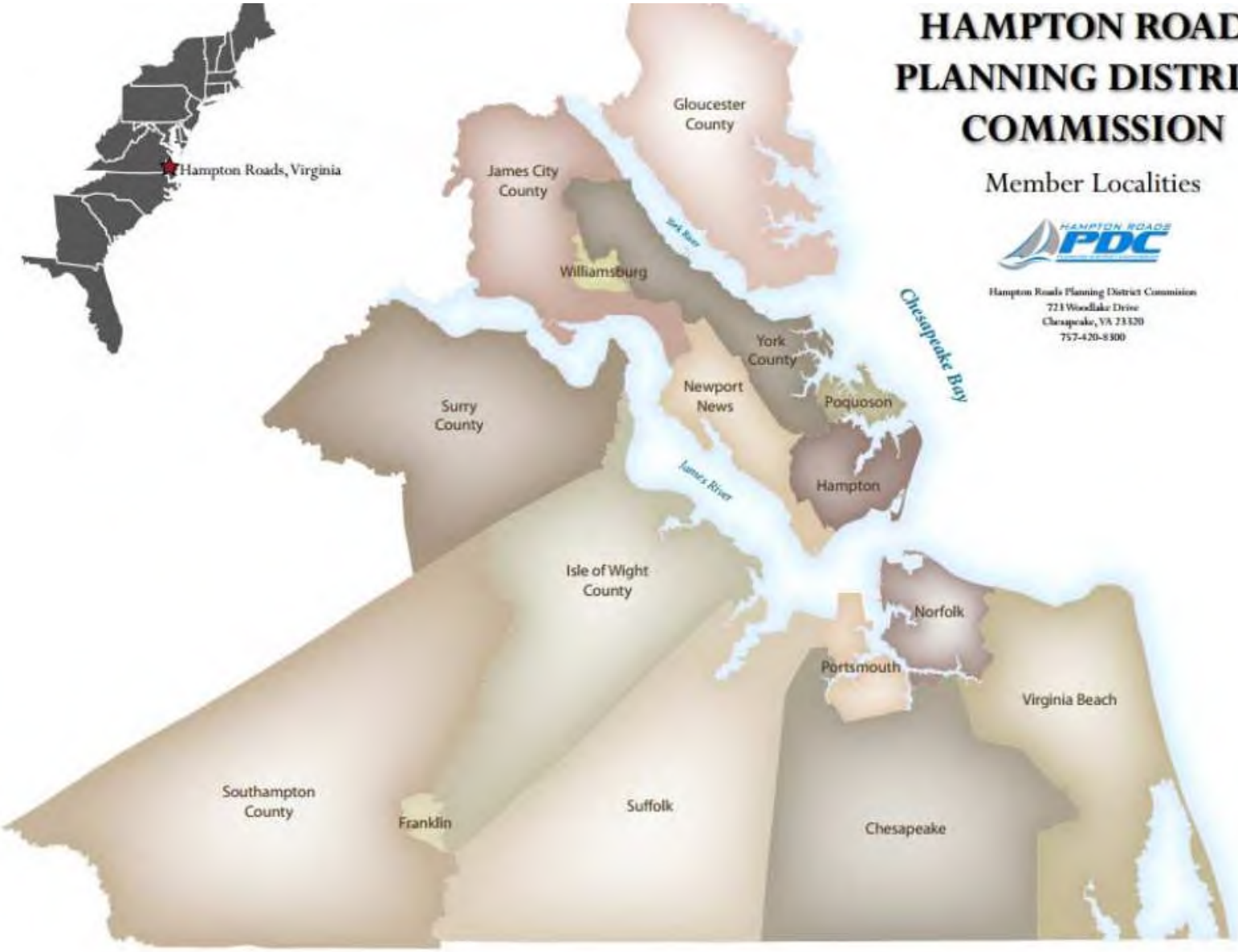
Attachment 1 - Jurisdictional Map

City of Portsmouth 6th Order Hydrologic Units



HAMPTON ROADS PLANNING DISTRICT COMMISSION

Member Localities



Hampton Roads Planning District Commission
723 Woodlake Drive
Chesapeake, VA 23320
757-420-8300

Attachment 2 - Site Inspection Report

CITY OF PORTSMOUTH MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4) PROGRAM INSPECTION REPORT

June 4 through 5, 2012

Office of Compliance and Enforcement
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW
Washington, D.C. 20460

U.S. Environmental Protection Agency, Region III
Water Protection Division
NPDES Enforcement Branch (3WP42)
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EXECUTIVE SUMMARY

From June 4 through 5, 2012, staff from the U.S. Environmental Protection Agency (EPA) Region 3, Virginia Department of Conservation and Recreation (DCR), and EPA's contractor, Eastern Research Group, Inc. (ERG), inspected the municipal separate storm sewer system (MS4) program of the City of Portsmouth, Virginia (Portsmouth or City).

Table 1 below summarizes the observations EPA's inspection team made during the inspection.

Table 1. Summary of Permit Requirements and Inspection Observations

Permit Requirement	Observations
Part I.A.1.b. Illicit Discharge Detection and Elimination	**Observation 1:** Portsmouth has an illicit discharge field screening program in place, but the data generated from the field screening program is not being used to identify all the sources of pollutants entering the storm sewer. **Observation 2:** Portsmouth currently has a system to respond to citizen complaints or observations by city staff of illicit discharges, but the Tidemark tracking database does not include information on follow up activities or closure.
Portsmouth Stormwater Management Plan, May, 2006; Section 8.2 - Municipal Operation Centers Source Prevention; BMP 8.2.a - Annual Inspections of City Yards & Section 8.3 of the SWMP - Source Prevention at Other Facilities	**Observation 3:** Portsmouth has not conducted on-site investigation of potential sources of unauthorized non-stormwater discharges at municipally-owned properties. **Observation 4:** Portsmouth has not ensured environmental compliance and good housekeeping at the City municipal yards
Part I.A.1.c. Industrial and Commercial Facilities	**Observation 5:** Portsmouth has not conducting inspections of industrial/commercial facilities and has not ensured compliance with all City storm system ordinances, because of the Dillon Rule of Virginia.
Part I.A.1.d. Construction Sites	**Observation 6:** Portsmouth utilizes available enforcement options to address stormwater problems on construction sites; however, the enforcement process allows noncompliance to continue indefinitely.

INTRODUCTION

From June 4 through 5, 2012, a compliance inspection team comprising of staff from the U.S. Environmental Protection Agency (EPA) Region 3, Virginia Department of Conservation and Recreation (DCR), and EPA's contractor, Eastern Research Group, Inc. (ERG), inspected the municipal separate storm sewer system (MS4) program of the City of Portsmouth, Virginia (Portsmouth or City).

The purpose of this inspection was to obtain information that will assist EPA in assessing Portsmouth's compliance with the requirements of its Virginia Pollution Discharge Elimination System Permit Number VA0088668, as well as the implementation status of its current MS4 Program.

Based on the information obtained and reviewed, EPA's compliance inspection team made several observations concerning Portsmouth's MS4 program related to the specific permit requirements evaluated. Table 1 below summarizes the permit requirements and the observations made by the inspection team.

The EPA Inspection Team obtained its information through a series of interviews with representatives from Portsmouth, along with a series of site visits, record reviews, and field verification activities. The presentation of inspection observations in this report does not constitute a formal compliance determination or notice of violation. All referenced documentation is provided in Appendix 4 and photographs taken during the inspection are provided in Appendix 5. A complete list of documents obtained is provided as a Document Log in Appendix 6. Appendix 7 provides suggestions for how the City might improve the design and implementation of its current MS4 Program. Specifically, Appendix 7 offers assistance and may expand upon certain observations that were presented in the main body of the inspection report.

During the inspection, the EPA Inspection Team obtained documentation regarding compliance with the Permit. Pertinent information may have been obtained prior, and/or after meeting with Portsmouth staff during the physical inspection, and is presented in this report to support the observations. The City of Portsmouth will be provided 30 days to provide comment on the inspections report. The City's comments will be maintained in the City of Portsmouth's file, available upon request.

The report identifies Permit requirements with specific sections cited, and corresponding observations made during the inspection. The format of the report follows the numeric system used in the Permit and is sequential. Sections of the permit are restated with observations about those requirements listed below. For a complete list of all inspection participants, please refer to the sign-in sheets in Appendix 3. The primary representatives involved in the inspection were the following:

Portsmouth:	**Engineering Department** Mr. James Wright, Assistant City Engineer, MS4 Program Director Ms. Kari Lynch, Erosion Control Specialist Ms. Diane Quick, Erosion Control Specialist Mr. Jeffrey Harper, Senior Civil Engineer **Department of Public Utilities and Department Public Works** Mr. Youssef Khalil, Manager of Public Works

	Mr. Frank Wilson, Field Operations Manager, Dept Public of Utilities Mr. Dennis Bagley, Manager of General Services Ms. Cheryl Hawkins, Industrial Hygienist Mr. Zach Jones, Stormwater Technician **Department of Planning** Mr. Fred Brusso, Planning Administrator **Portsmouth Public Schools** Ms. Nita Mensia-Joseph, Director of Operation **Information Technology/Geographic Information Systems (GIS)** Mr. Cliff Sayles, GIS Technician **Fire Department** Mr. John E. Parish, Captain of the Fire Marshal's Office
Parsons Brinckerhoff:	Ms. Cindy Linkenhoker, Senior Water Resources Engineer Ms. Amity Dewey, Engineer
Virginia DCR Representatives:	Mr. Noah Hill, Regional Manager Mr. Jeff Selengut, MS4 Permit Writer Mr. Ved P. Malhotra, Stormwater Compliance Engineer
EPA Contractors: EPA:	Mr. Mark Briggs, ERG Ms. Kavya Kasturi, ERG Ms. Lauren Scott, ERG Mr. Chuck Schadel, Enforcement Officer Ms. Kyle Zieba, Enforcement Officer Ms. Kaitlyn Bendik, Life Scientist

CITY OF PORTSMOUTH BACKGROUND

Portsmouth has been developing and implementing its MS4 Program since 1996. Portsmouth's current coverage under the NPDES permit program became effective on March 8, 2001 with an expiration date of March 8, 2006. Portsmouth reapplied for a permit in 2005, but since DCR has not issued a new permit, by default, the Permit has been administratively continued.

The City of Portsmouth encompasses approximately 33 square miles within the Chesapeake Bay watershed, and is bounded by the James River, the Elizabeth River, and the Cities of Suffolk, Chesapeake, and Norfolk. The United States Census Bureau estimates the total population of Portsmouth to be 95,535 people in 2010.

The Department of Engineering is responsible for the administration of the Permit. The City has approximately 16 personnel, including three inspectors, to implement the MS4 program. Portsmouth funds its stormwater management program using a stormwater utility fees which was initiated on April 25, 1995. The rate structure is based on Equivalent Residential Units (ERUs), which is equivalent to 1,877 square feet of impervious area. The rate was $8.25 per month per ERU effective July 1, 2011. The City expected to raise $6,696,173.08 in revenue from the stormwater utility fee in FY2012, and the proposed 2012 budget was $6,705,600.00.

INFORMATION OBTAINED RELATIVE TO PERMIT REQUIREMENTS

Both wet and dry weather conditions were experienced throughout the inspection activities. Weather history reports from the National Climatic Data Center for Portsmouth, VA indicated that there were 0.06 inches of precipitation in the city during the field work component of the inspection activities. In addition, the weather history reports indicated approximately 2.06 inches of precipitation had fallen within the three days prior to the inspection and approximately 0.09 inches of precipitation had fallen in the three days following the inspection.

Part I.A. of the Permit: Storm Water Management Program

Part I.A. 1.b. Un-authorized Non-Storm Water Discharges (illicit discharge elimination) – A program and schedule to detect and remove, or to notify a discharger to apply for a separate VPDES permit for, un-authorized non-storm water discharges and/or improper disposal into the municipal storm water sewer system.

Part I.A.1.b. (3)
Where necessary, the permittee shall conduct on-site investigation of potential sources of unauthorized non-stormwater discharges. The permittee shall act as expeditiously as possible to require a discharger to eliminate unauthorized stormwater discharges.

Observation 1: Portsmouth Storm Water Technician Zach Jones described Portsmouth's illicit discharge field screening program. Although Portsmouth has an illicit discharge field screening program in place, the data is not being used to identify <u>all</u> types of sources of pollutants that enter the storm system.

Documentation submitted (Appendix 6 – folder titled "<u>865_13&31_Inspection Priorities</u>") as a result of the EPA Inspection Team's request during the inspection indicates that Portsmouth is making an effort to place a priority on screening outfalls in commercial and industrial segments of the storm system. As stated in Best Management Practice (BMP) 5.2.c of Portsmouth's 2006 *Municipal Separate Storm Sewer System Program Plan* (MS4 Program Plan), Portsmouth randomly selects 25 sites for dry weather screening and all sites that were reported as having flows in the previous fiscal year are also revisited and retested. BMP 5.2.c states that stormwater technicians attempt to track dry weather flow back to its source (see Exhibit 1). A review of the dry weather screening results from 2011 shows that some sites have measured dry weather flows and measured pollutants; however, no documentation <u>exists on efforts to find the source of the pollutants</u>. For example, Portsmouth has documented dry weather flows having detergents concentrations above action levels in June 2011 at a manhole located near 2220 Randolph Street (see Exhibit 2).

Part I.A. 1.b. Un-authorized Non-Storm Water Discharges (illicit discharge elimination) – (continued)

Observation 2: Portsmouth currently uses the Tidemark tracking database as a system to respond to citizen complaints and identification by city staff of potential illicit discharges. However, the Tidemark tracking database does not include information on subsequent actions. For example, a number of issues resulted in a letter and educational materials mailed to the property owner; however, the city of Portsmouth did not conduct further investigations to determine if the property owners had stopped the illicit discharge. To date, Portsmouth has not issued any monetary penalties to private property owners for illicit discharges to the storm system.

Part 1, A. of the Permit. STORM WATER MANAGEMENT PROGRAM (SWMP)
The permittee shall implement, to the maximum extent practicable, the provisions of the SWMP required under this Part as a condition of the permit. All applicable components of the Municipal Separate Storm Sewer System Phase I VPDES Permit Application submitted in accordance with 40 CFR 122.26, and all approved modifications are hereby incorporated by reference into the SWMP. The SWMP shall cover the term of the permit and the permittee shall update it as necessary, or as required by the Department of Environmental Quality, to ensure compliance with the statutory requirements of the Clean Water Act §402 (p) (3) (B). Progress towards the goals and meeting specific program components

Portsmouth Storm Water Management Plan (SWMP), May, 2006

Section 8.2 Municipal Operation Centers Source Prevention

BMP 8.2.a Annual Inspections of City Yards
General Description: The City of Portsmouth annually inspects their seven municipal yards to ensure environmental compliance and good housekeeping.

BMP Goals and Objectives:
The purpose of this BMP is to implement a program to ensure that good housekeeping practices are used at City maintenance yards in order to reduce the potential for impacting stormwater runoff to the MS4.

BMP 8.2.b City Yard Stormwater Inlet Identification
General Description: The City of Portsmouth will identify stormwater inlets within City of Portsmouth yards that are part of the City yard inspection program to ensure environmental compliance and good housekeeping.

BMP Goals and Objectives:
The purpose of this BMP is to ensure that extra measures are used at City maintenance yards near stormwater inlets

Section 8.2 of the SWMP **Municipal Operation Centers Source Prevention** (continued)

Observation 3: The Public Facilities Operations Center only has design drawings are available for the storm drain system, and these drawings do not contain all the storm drain inlets or piping. The Public Schools Operations Center facility plan has storm drain inlets shown on the facility layout; however, during the walk-through of the yard area, two additional storm drains not identified on the facility plan were discovered.

Further, at the Facilities Operations Center, yard inspection forms are being completed by a number of different individuals for different areas, one person has not been made responsible for the entire facility. During the EPA Inspection Team's visit to the Facilities Operations Center on June 4, 2012, none of the persons noted as points of contact for inspections of the Facilities Operation Center were available, and therefore the Mr. James Wright, Assistant City Engineer conducted the inspection.

During that inspection, the following stormwater-related issues were identified at the Facilities Operations Center:

- A soil berm located along the property boundary near the salt barn was breached, allowing sediment and stockpiled street sweepings/catch basin cleanouts to migrate to a wet swale adjacent to I-264 (see Photograph 1);
- Oil staining and evidence of recent oil spills were present in soil along the property boundary in an area where vehicles were awaiting service and in a location where trash dumpsters were parked (see Photograph 2);
- Broken electronic equipment was found lying on grass and gravel surfaces near the paint shop (see Photograph 3);
- A 1-gallon can of mineral spirits was tipped on its side and was lying on a pile of scrap metal near the paint shop;
- A dumpster located near the vehicle wash rack was full of trash that had not been removed over a significant time period as evidenced by approximately 3' tall corn stalks growing from the trash in the dumpster (see Photograph 4);
- A spill of fuel from a city-owned vehicle was observed flowing into a storm drain; and,
- Individuals working in the paint shop stated they had just moved approximately five 5-gallon plastic pails containing residual paint and stormwater from an outdoor storage pad to inside the paint shop just prior to the inspection team arriving. Based on the volume of stormwater in the pails (approximately ½ full), and the amount of paint staining on the concrete pad, the paint shop is storing empty but open paint pails outside.

Section 8.3 of the SWMP - Source Prevention at Other Facilities

BMP 8.3.a Schools

General Description: The City of Portsmouth and the Portsmouth Public Schools have entered into an agreement for the purpose of "complying with the Clean Water Act and Phase II of the Virginia Pollution Discharge Elimination System (VPDES) permit process and to provide for discharge authorization, maintenance and installation of the stormwater and/or storm drainage facilities and operations of
Portsmouth Public Schools."

BMP Goals and Objectives:
The goal of this BMP is to ensure school properties follow good housekeeping procedures and comply with VPDES permit requirements.

Observation 4: At the Public Schools Operations Center, the person responsible for stormwater management had left the position in December 2011, and no employee had been identified to replace this person until June 5, 2012, the day of the EPA Inspection Team's visit to this facility. Inspection records from the previous person responsible for stormwater management could not be located. In addition, the person (selected on June 5, 2012) responsible for stormwater management at the Public Schools Operations Center had no storm water-related training.

A number of storm water-related issues were identified, including:

- A review of the site plan for the Public Schools Operations Center indicated an oil/water separator was present but employees were not aware of the unit or its status. The separator contained residual oils and discharged to a wetland area;
- Storm drain inlets are not included on facility layout drawings. During the site walk-through, three storm drain inlets were identified that were not on drawings;
- Diesel fuel was present on a gravel area adjacent to the emergency generator from either a leak or overfill of the fuel tank; and,
- General stormwater awareness training has not been provided to employees and no training has been provided to the newly appointed stormwater manager for the facility.

Part I.A.1.b. (1) of the Permit - City's Storm Sewer System Discharge Ordinance
The permittee shall implement and enforce all provisions of the City's Storm Sewer System Discharge Ordinance which prohibits unauthorized non-storm water discharges to the storm sewer system.

Portsmouth Ordinance - Sec. 31.1-3.(a)(1) - Pollution of the stormwater system.
It shall be unlawful for any person to put, or allow to be put, any process water, wastewater, filth, animal or vegetable matter, chips, shavings or any other substance in the stormwater system, or do any injury thereto, or in any manner pollute the stormwater system.

Part I.A.1.c.(1) of the Permit - Industrial and Commercial Facility Inspections – The permittee shall inspect any new or previously unidentified facilities and may establish and implement control measures as necessary/appropriate for stormwater discharges from these facilities.

Observation 5: Currently, Public Works relies on the Fire Marshal's Office to alert them if an on-going release is identified during a fire inspection (see also Observation 6). Bases on discussions with Mr. John E. Parish, Captain of the Fire Marshal's Office, the Fire Marshal's Office staff have not been directed nor trained to conduct stormwater inspections. Additionally, based on observations by the EPA Inspection Team, the Fire Marshal's Office staff are not conducting inspections that address improper management of materials that can result in unauthorized non-storm water discharges to the storm sewer system.

On June 4, 2012, the EPA Inspection Team accompanied the Captain of the Fire Marshal's Office while he conducted an inspection of Professional Auto Sales.

A review of Mr. Parish's inspection report for Professional Auto Sales (see Exhibit 3) shows that none of the instances of improper management of materials observed by the EPA Inspection Team during the inspection are included in the report. The instances of improper management of materials observed by the EPA Inspection Team can result in unauthorized non-storm water discharges to the storm sewer system.

The instances of improper management of materials identified by the EPA Inspection Team, but not included on the Fire Marshal's inspection report are:

- Vehicle washing taking place outside on impervious surfaces (see Photograph 5);
- Heavy duty cleaner/degreaser (Purple Power) bucket next to power washer;
- Carwash concentrate bucket next to Shop-Vac;
- Flammable liquid containers stored outside laying on side; and,
- Fluorescent bulbs being stored outside in a stack of tires (see Photograph 6).

Observation 5 (continued):

According to Mr. James Wright, Assistant City Engineer, the Dillon rule denies an entity, such as the City, the authority to enter private property for stormwater inspections. As a result, Mr. Wright stated that Portsmouth has not conducted industrial or commercial inspections. Mr. Wright stated that Portsmouth currently relies on the Fire Marshal's Office to identify potential stormwater-related issues. However, based on discussions with the Fire Marshal's Office, the focus of its inspections is on fire-related issues. Further, training for conducting stormwater inspections has not been provided to the inspectors of the Fire Marshal's Office. Review of the Fire Marshal's reporting form (see Exhibit 3) revealed that the form does not include categories for stormwater nor require the Fire Inspector to make observations related to stormwater.

Part I.A.1.d. Construction Sites – The Storm Water Management Program shall contain a program to continue structural and nonstructural best management practices to reduce pollutants that are discharged through the MS4 in storm water runoff from construction sites. The permittee shall operate in accordance with, and continue enforcement of the requirements of the Subdivision Ordinance (Chapter 33), Zoning Ordinance (Chapter 40), Excavation, Erosion & Sediment Control Ordinance (Chapter 11), Stormwater Management Ordinance (Chapter 31.1) and the Chesapeake Bay Preservation Area Overlay District Ordinance (Chapter 9).

Observation 6: The examples below show Portsmouth utilizes available enforcement options to address stormwater problems on construction sites.

However, the enforcement process allows noncompliance to continue indefinitely, does not compel land developers with a history of chronic noncompliance to stay in compliance, and does not provide general deterrence. Inspectors refer to DCR's field guide as needed when conducting inspections, but Portsmouth does not have a standard operation procedure (SOP) tailored to the city's program. No documentation defines what changes can be made to the approved erosion and sediment control plan in the field. Additionally, no SOP describing the appropriate enforcement action for typical violations is available.

Portsmouth uses notices to comply (NTCs), stop work orders (SWOs), and environmental holds in response to noncompliance with the approved erosion and sediment control plan and charges a fee for each inspection. However, the SWOs only prohibit work related to land disturbing activities, not all activities on-site. In contrast, environmental holds prevent the site from obtaining any building permits. Portsmouth inspectors stated that sites often remain out of compliance until a building permit is needed.

Observation 6 (continued):

The EPA Inspection Team visited the Greenwood Drive site on June 5, 2012. The site was dormant; however, a large stockpile was located on-site (see Photographs 7 through 9). Inspectors had repeatedly noted erosion and sediment control problems (cont.) related to the stockpile; however, because the site was dormant and no permits were needed, the responsible land disturber was not compelled through enforcement actions to resolve the problems. NTCs and SWOs were routinely issued since the start of the project in 2007. At one point, a NTC was issued on 10/15/2010 and the site did not return to compliance until 12/20/2011 (see Exhibit 4).

The EPA Inspection Team visited the Seaboard Square construction site at 2901 Turnpike Rd. After reviewing inspection reports, the EPA Inspection Team observed that this site had chronic erosion and sediment control related problems at the site and had been issued several NTCs and SWOs. For example, on one report the inspectors had observed a dewatering bag that had been sliced open on the bottom to increase the speed of dewatering.

While the inspectors used the available enforcement tools discussed above to rectify the situation Seaboard Square, during the EPA Inspection Team visit on June 4, 2012, a dewatering problem was observed (see Photograph 10 & Photograph 13).

Portsmouth inspectors explained that water had collected near a stockpile on-site after storm events. Prior to EPA's inspection, the responsible land disturber installed a corrugated plastic pipe leading from the area where water collects to the on-site, permanent pond being used as a sediment basin. This temporary measure was approved by the City. According to Portsmouth inspectors, the dewatering system was originally designed with riprap at the inlet of the pipe to slow flow, and silt fencing covered the inlet of the pipe to prevent sediment from entering the pipe. In addition, the outlet of the pipe discharged directly into the pond to minimize erosion of the embankment. Portsmouth inspectors stated that the dewatering was no longer occurring and the pipe had been plugged with concrete at both ends.

While walking around the stormwater pond, the EPA Team and the Portsmouth inspectors observed flow entering the sediment pond from the pipe described above, which had reportedly been plugged (see Photograph 12). The concrete plug used at the outlet of the pipe had been removed and the flow from the pipe had eroded the side of the pond (see Photograph 11). On further inspection, the EPA Team and Portsmouth inspectors observed that the plug had also been removed from the pipe's inlet as well (see Photograph 14).

Observation 6 (continued):

Additionally, the pipe inlet was completely submerged as was the original riprap and there was no silt fence near the pipe inlet. Diane Quick, Erosion Control Specialist with the City immediately called the owner and operator of the site. Gary Haste, ACS and Pat Viola, VICO showed up at the site. The EPA Inspection Team questioned both Mr. Haste and Mr. Viola on the dewatering system. Mr. Viola stated that he directed his people to remove the plugs from the pipe to try to dewater the area again. Neither Mr. Haste nor Mr. Viola contacted the City to make them aware of their decision to begin dewatering that area of the site again.
Before the EPA Inspection Team and Portsmouth inspectors left the site, steps were taken to resolve the issue. Portsmouth inspectors stated they would stop back at the site by COB to inspect the remedies put in place.

Portsmouth tracks inspections, issues, and enforcement in the Tidemark system. Portsmouth inspectors were familiar with the Tidemark system; however, no written manual was available. Portsmouth inspectors stated they received on the job training for learning the Tidemark system and that they keep in close contact to ensure consistency. The inspectors follow particular procedures to use Tidemark, but they are not documented. For example, Tidemark automatically schedules routine inspections every two weeks.

If a problem is found during an inspection, the inspector must manually delete the scheduled routine inspection and schedule a NTC or SWO inspection. Additionally, while a rain event inspection will be noted as such on the inspection form, it may be noted as a routine inspection in the Tidemark database.

In the Tidemark system, Portsmouth inspectors identify issues observed on-site by noting the Virginia 19 minimum standards (MS-19) code in the notes field. The Tidemark "Case Activity Listing" report shows the inspections conducted and the use of NTCs and SWOs, as well as the MS-19 code for problems identified during the inspection.

Information in Tidemark shows that the same MS-19 issues continue to persist regardless of use of NTCs and SWOs. For example, for the 3500 Towne Point site, Portsmouth inspectors routinely identified compliance issues with MS-10 (i.e., storm system inlet protection) starting in June 2011 through December 2011 (see Exhibit 5). Portsmouth inspectors also routinely noted issues with MS-5 (stabilization of earthen structures) and MS-19 (stormwater management) during this time.

An NTC was issued on 9/13/2011 which escalated to an SWO which was released on 10/3/2011. However, the inspectors continued to note issues with MS-5, MS-10, and MS-19 after the release of the SWO until another NTC was issued on 12/8/2011.

Attachment 3 - 303(d) Listed Segments with an Approved TMDL

TMDL Name	EPA Approval Date	SWCB Approval Date	Water Name	ID305B	Location	Cause	Use Description	Cycle First Listed	River, miles	Estuary, sq miles	WLA	Aggregated?
Bacteria Total Maximum Daily Load (TMDL) Development for the Elizabeth River Watershed	7/20/2010	9/30/2010	Southern Branch, Elizabeth R. - Lower	VAT-G15E_SBE03A06	North of the Jordan Bridge. From the Jordan Bridge, Rt. 337 (RM 2.30) downstream to the mouth, confluence with the mainstem Elizabeth R. CBP segment SBEMH. BIBI segment SBEMHa. DSS (ADMIN) shellfish condemnation # 056-007 E (effective 20090518).	Enterococcus	Recreation	1998		0.60	4.42E+12 cfu/day	
			Western Branch, Elizabeth R. - Upper	VAT-G15E_WBE01A02	Located between Stewart Manor and Point Elizabeth areas. From headwaters (RM 8.5) downstream to Sterns Creek (RM 3.5). CBP segment ELIPH. BIBI segment WBEMHa. DSS (ADMIN) condemnation # 056-007 E (effective 20090518).	Enterococcus	Recreation	2004		0.56	9.77E+12 cfu/day	
			Western Branch, Elizabeth R. - Lower	VAT-G15E_WBE02A00	Located between the Point Elizabeth and Lovett Point areas. From Sterns Creek confluence (RM 3.5) downstream to the mouth. CBP segment ELIPH. BIBI segment WBEMHa. DSS (ADMIN) condemnation # 056-007 E (effective 20090518).	Enterococcus	Recreation	2006		1.46		
			Paradise Creek - Lower, trib. to S. Br. Elizabeth R.	VAT-G15E_PAR02A10	South of Norfolk Naval Shipyard. Eastern shore trib to Southern Br. Entirety of Creek. With Deep Water Use. CBP segment SBEMH. BIBI segment SBEMHa. DSS (ADMINISTRATIVE) shellfish condemnation # 056-007 E (effective 20090518).	Enterococcus	Recreation	2006		0.03	4.79E+11 cfu/day	
			Paradise Creek - Upper, trib. to S. Br. Elizabeth R.	VAT-G15E_PAR01A06	South of Norfolk Naval Shipyard. Eastern shore trib to Southern Br. Entirety of Creek. No Deep Water Use. CBP segment SBEMH. BIBI segment SBEMHa. DSS (ADMINISTRATIVE) shellfish condemnation # 056-007 E (effective 20090518).	Enterococcus	Recreation	2006		0.03		

TMDL Name	EPA Approval Date	SWCB Approval Date	Water Name	ID305B	Location	Cause	Use Description	Cycle First Listed	River, miles	Estuary, sq miles	WLA	Aggregated?
Bacteria Total Maximum Daily Load (TMDL) Development for the Hoffler Creek Watershed	12/14/2011	6/29/2012	Hoffler Creek	VAT-G15E_HOF01A06	Located along south shore of Hampton Roads Harbor. Entirety of Hoffler Cr. South shore trib to James R. west of Craney Isl. (at mouth of Elizabeth R). CBP segment JMSMH. DSS (ADMIN) shellfish harvesting condemnation # 064-018 A (effective 20080530).	Enterococcus	Recreation	2008		0.06	3.34E+11 cfu/day	Yes, with VDOT

TMDL Name	EPA Approval Date	SWCB Approval Date	Water Name	ID305B	Pollutant	WLA	Aggregated?
Chesapeake Bay TMDL	12/29/2010		ELIPH – Chesapeake Bay Segment ID		Total Nitrogen	25,976.51 lbs/year	All regulated stormwater permits
					Total Phosphorus	4,817.34 lbs/year	All regulated stormwater permits
					Total Suspended Solids	667,560.09 lbs/year	All regulated stormwater permits
			JMSMH – Chesapeake Bay Segment ID		Total Nitrogen	7,564.67 lbs/year	All regulated stormwater permits
					Total Phosphorus	1,241.33 lbs/year	All regulated stormwater permits
					Total Suspended Solids	151,700 lbs/year	All regulated stormwater permits
			JMSPH – Chesapeake Bay Segment ID		Total Nitrogen	641.24 lbs/year	All regulated stormwater permits
					Total Phosphorus	118.67 lbs/year	All regulated stormwater permits
					Total Suspended Solids	22,888.11 lbs/year	All regulated stormwater permits
			SBEMH – Chesapeake Bay Segment ID		Total Nitrogen	38,634.69 lbs/year	All regulated stormwater permits
					Total Phosphorus	6,903.54 lbs/year	All regulated stormwater permits
					Total Suspended Solids	878,264.78 lbs/year	All regulated stormwater permits
			WBEMH – Chesapeake Bay Segment ID		Total Nitrogen	61,154.62 lbs/year	All regulated stormwater permits
					Total Phosphorus	10,266.68 lbs/year	All regulated stormwater permits
					Total Suspended Solids	1,227,094.98 lbs/year	All regulated stormwater permits

Attachment 4 – MOA and HRRWQMP

MEMORANDUM OF AGREEMENT
ESTABLISHING THE
HAMPTON ROADS REGIONAL WATER QUALITY MONITORING PROGRAM

This Memorandum of Agreement ("Agreement") is entered into this First day of March, 2014 by and among the Cities of Chesapeake, Hampton, Newport News, Norfolk, Portsmouth, and Virginia Beach (individually, the "Locality;" collectively, the "Localities") and the Hampton Roads Planning District Commission ("HRPDC").

WHEREAS, Sections 15.2-4200, *et seq.* of the Code of Virginia enables local governments to establish Planning District Commissions; and

WHEREAS, the Localities, in common with several other local governments in the region, have acted, pursuant to Sections 15.2-4200, *et seq.* of the Code of Virginia, to establish the HRPDC; and

WHEREAS, the HRPDC has been requested and has undertaken various studies to support local government stormwater management programs, including compliance with Virginia Stormwater Management Program ("VSMP") and the Municipal Separate Storm Sewer ("MS4") Permits; and

WHEREAS, the Localities have requested the HRPDC to coordinate a regional water quality monitoring program; and

NOW, THEREFORE, in consideration of the premises, mutual covenants, and obligations contained herein, the Localities and HRPDC hereby enter into this Agreement for the purposes of establishing and maintaining the Hampton Roads Regional Water Quality Monitoring Program.

BASIC PREMISES

The Localities initially received Virginia Pollutant Discharge Elimination System ("VPDES") Permits in 1996. Those permits, which were renewed in 2001, govern the discharges from the individual Locality's MS4s to waters of the state and impose certain operational and reporting requirements on those systems. These permits are renewable on a five (5) year basis, and the Localities applied for renewed permits in 2005. The Localities continue to operate programs under administratively continued permits. Permit renewals are expected in 2014.

The Localities are interested in monitoring stormwater in a manner which quantifies the nitrogen, phosphorus, and sediment loads associated with specific land uses in Hampton Roads.

The objective of the Regional Water Quality Monitoring Program is to collect data at a regional scale that will accurately measure the amount of nutrient and sediments delivered to waterways by the local MS4 systems. The data would be submitted to the

Virginia Department of Environmental Quality ("DEQ") and/or the Chesapeake Bay Program for updates to improve the accuracy of existing computer models, provide a basis upon which to administer local stormwater programs with a greater degree of precision, and improve action plans to meet the Chesapeake Bay total maximum daily load ("TMDL") and other local TMDLs for impaired waters.

The Regional Water Quality Monitoring Program is based on a five-year work plan with acquisition of monitoring equipment and services amortized over the entire term of the initial program.

HRPDC RESPONSIBILITIES

Under the terms of this Agreement, the HRPDC staff is responsible for the following:

- Provide technical support related to water quality monitoring issues to local government staff.
- Provide the necessary administrative, technical, and clerical resources to support program activities.
- Prepare an annual budget for the Hampton Roads Regional Water Quality Monitoring Program.
- Assist the signatories in coordinating communication on monitoring activities to state and federal agencies to ensure that program goals are met.
- Take steps, in conjunction with the Localities, to obtain financial support for program activities from outside sources, including federal, state, and private grants, to the extent that this objective may be accomplished without creating a conflict of interest, as determined by the Localities.
- Contract with the Hampton Roads Sanitation District ("HRSD") and the United States Geological Survey ("USGS") to provide sampling and data analysis required by the regional program.
- Provide the raw data from all monitoring devices directly to the Localities.
- Prepare annual program reports, or components thereof, which comply with the provisions of the MS4 permits and stormwater management programs of the Localities.
- Facilitate the use of the monitoring data in the local TMDL studies being prepared through the DEQ and the United States Environmental Protection Agency and facilitate preparation of TMDL Implementation Plans for impaired waters in the Hampton Roads Region, if requested.

LOCAL GOVERNMENT RESPONSIBILITIES

Under the terms of the Agreement, the Localities are responsible for the following:

- Appoint a representative to serve on the steering committee for the Regional Water Quality Monitoring Program to represent the local government stormwater and water quality related concerns.
- Provide timely technical review of HRPDC analyses and conclusions.
- Provide input on monitoring site selection and land use characterization to support HRSD's sampling and USGS data analysis.
- Provide annual funding to support the agreed-upon regional program, subject to appropriation.

METHOD OF FINANCING

Program costs will be divided equally between the Localities, and the annual cost to each Locality for each year of the five year term of this Agreement is estimated at $84,000. Local contributions may be increased above this annual estimate to reflect program needs only upon modification of this Agreement.

Financial support from other entities, such as federal and state agencies, and the private sector, may be sought and obtained to support the activities of the Hampton Roads Regional Water Quality Monitoring Program, to the extent that this financing effort may be accomplished without creating a conflict of interest, as determined by the Localities.

AVAILABILITY OF FUNDS

Performance by the HRPDC of its responsibilities under this Agreement is subject to the availability of funding from the Localities. The Localities' failure to provide the necessary funding to support these activities will constitute a Notice to Modify or Terminate the Agreement.

MODIFICATIONS

Modifications to this Agreement must be submitted in writing, approved by the HRPDC, and accepted by all signatories.

DURATION AND TERMINATION

This Agreement will have a term of five (5) years, extending from the date of full execution of the Agreement by the signatories. To conform to local government charter and Virginia Code requirements, the funding provisions of this Agreement will be subject

to annual appropriations.

Any signatory may terminate its participation in the Hampton Roads Regional Water Quality Monitoring Program by written Notice to Terminate to all other parties. Such termination will be effective with the start of the following fiscal year. Depending upon the terms of individual MS4 permits, termination of participation in the Hampton Roads Regional Stormwater Management Program in the middle of a permit term may result in changes to permit conditions and require renegotiation of the individual locality's MS4 permit from DEQ.

OWNERSHIP OF PROPERTY

It is not the intent of the signatories that this Agreement will result in the purchase, ownership, leasing, holding, or conveying of any real property, other than those real property rights necessary for the location of the monitoring equipment. At the option of the locality, the equipment paid for by the Localities will be the property of the locality in which the equipment is located.

INDEMNITY

It is the intent of the signatories that no signatory will be held liable for any damage or associated penalties caused by or associated with the failure of any other signatory to discharge its duties or to exercise due diligence in discharging its duties under this Agreement, and that no signatory, by entering this Agreement, waives any defenses or immunities available to it at law, including, but not limited to, those set forth in Section 15.2-970 of the Code of Virginia.

It is the intent of the signatories that no signatory will be held liable for any damage or associated penalties caused by or associated with the failure of any other signatory to comply with the terms and conditions of the signatory's MS4 permit.

SEVERABILITY

If any provision in this Agreement is determined by a court of competent jurisdiction to be invalid and unenforceable, then the remaining provisions shall survive and remain valid and enforceable.

DISPUTE RESOLUTION AND APPLICABLE LAW

This Agreement shall be governed, interpreted and enforced by the laws of the Commonwealth of Virginia. In the event of a dispute between any parties arising out of or related to the Agreement, the parties agree to submit any cause of action to mediation upon consent of all necessary parties, or, to a court with competent jurisdiction located in the corporate limits of one of the member Localities.

LIST OF SIGNATORIES

Signature pages will be signed in counterparts.

CITY OF CHESAPEAKE

CITY OF HAMPTON

CITY OF NEWPORT NEWS

CITY OF NORFOLK

CITY OF PORTSMOUTH

CITY OF VIRGINIA BEACH

HAMPTON ROADS PLANNING DISTRICT COMMISSION

This listing of participants will be followed by individual signature pages.

IN WITNESS THEREOF, the duly authorized Chief Administrative Officer of the Localities and the Executive Director of the Hampton Roads Planning District Commission hereby execute this Agreement.

HAMPTON ROADS PLANNING
DISTRICT COMMISSION

By: Dwight L. Farmer

Date: 2/14/14

Date: 2/14/14

Attest: Kyle Pitts

IN WITNESS THEREOF, the duly authorized Chief Administrative Officer of the Localities and the Executive Director of the Hampton Roads Planning District Commission hereby execute this Agreement.

CITY OF CHESAPEAKE

By: _____

Date: 4/14/14

Date: 4/14/14

Attest: Delores A. Moore

APPROVED AS TO FORM

IN WITNESS THEREOF, the duly authorized Chief Administrative Officer of the Localities and the Executive Director of the Hampton Roads Planning District Commission hereby execute this Agreement.

CITY OF HAMPTON

By: _____
Mary B. Bunting, City Manager

Date: 8/1/2014

Attest:

_____
Clerk of Council

Date: 8/4/14

CITY OF HAMPTON
OFFICE OF THE CITY ATTORNEY
Approved as to legal form and sufficiency
Date: 07.31.2014
_____
Attorney

Approved as to Content:

_____ 8/01/2014
Department of Public Works

IN WITNESS THEREOF, the duly authorized Chief Administrative Officer of the Localities and the Executive Director of the Hampton Roads Planning District Commission hereby execute this Agreement.

CITY OF NEWPORT NEWS

By: James M. Bourey
City Manager

Date: 4/28/14

ATTEST:

Mabel Washington Jenkins
City Clerk

Date: 4-28-14

APPROVED AS TO FORM:

City Attorney

IN WITNESS THEREOF, the duly authorized Chief Administrative Officer of the Localities and the Executive Director of the Hampton Roads Planning District Commission hereby execute this Agreement.

CITY OF NORFOLK

By: _____

Date: 3/10/14

Date: 3/12/14

Attest: _____
City Clerk

Approved as to Form & Correctness

_____
Cynthia B. Hall, Deputy City Attorney

IN WITNESS THEREOF, the duly authorized Chief Administrative Officer of the Localities and the Executive Director of the Hampton Roads Planning District Commission hereby execute this Agreement.

CITY OF PORTSMOUTH

By: John L. Rowe

Date: MARCH 14, 2014

Date: 3/17/14

Attest: Debra Y. White

IN WITNESS THEREOF, the duly authorized Chief Administrative Officer of the Localities and the Executive Director of the Hampton Roads Planning District Commission hereby execute this Agreement.

CITY OF VIRGINIA BEACH

By: James K. Spore

Date: July 10, 2014

Date: August 12, 2014

Attest: Amanda Jeffery, CMC
Chief Deputy City Clerk

APPROVED AS TO CONTENT:

Department of Public Works

APPROVED AS TO LEGAL SUFFICIENCY:

City Attorney's Office

Proposed Hampton Roads Stormwater Monitoring Network
Prepared by the U.S. Geological Survey
January 2014

Introduction and Study Rationale

Detailed information regarding urban stormwater sediment and nutrient loading rates within the Coastal Plain are lacking and a basic understanding of how these loads vary by land-use type has yet to be developed. This lack of locally relevant land-use loading rates for urban areas in the Coastal Plain represents a limitation for the calibration of the Chesapeake Bay Watershed Model in these areas. The development of more accurate Coastal Plain loading rates and basic understanding are critical to informed decision making regarding stormwater management, implementation of management practices, and compliance with assigned sediment and nutrient allocations from the Chesapeake Bay TMDL. This study will remedy the lack of urban loading information in the Coastal Plain area by quantifying these sediment and nutrient loads in the Hampton Roads Region.

Objective

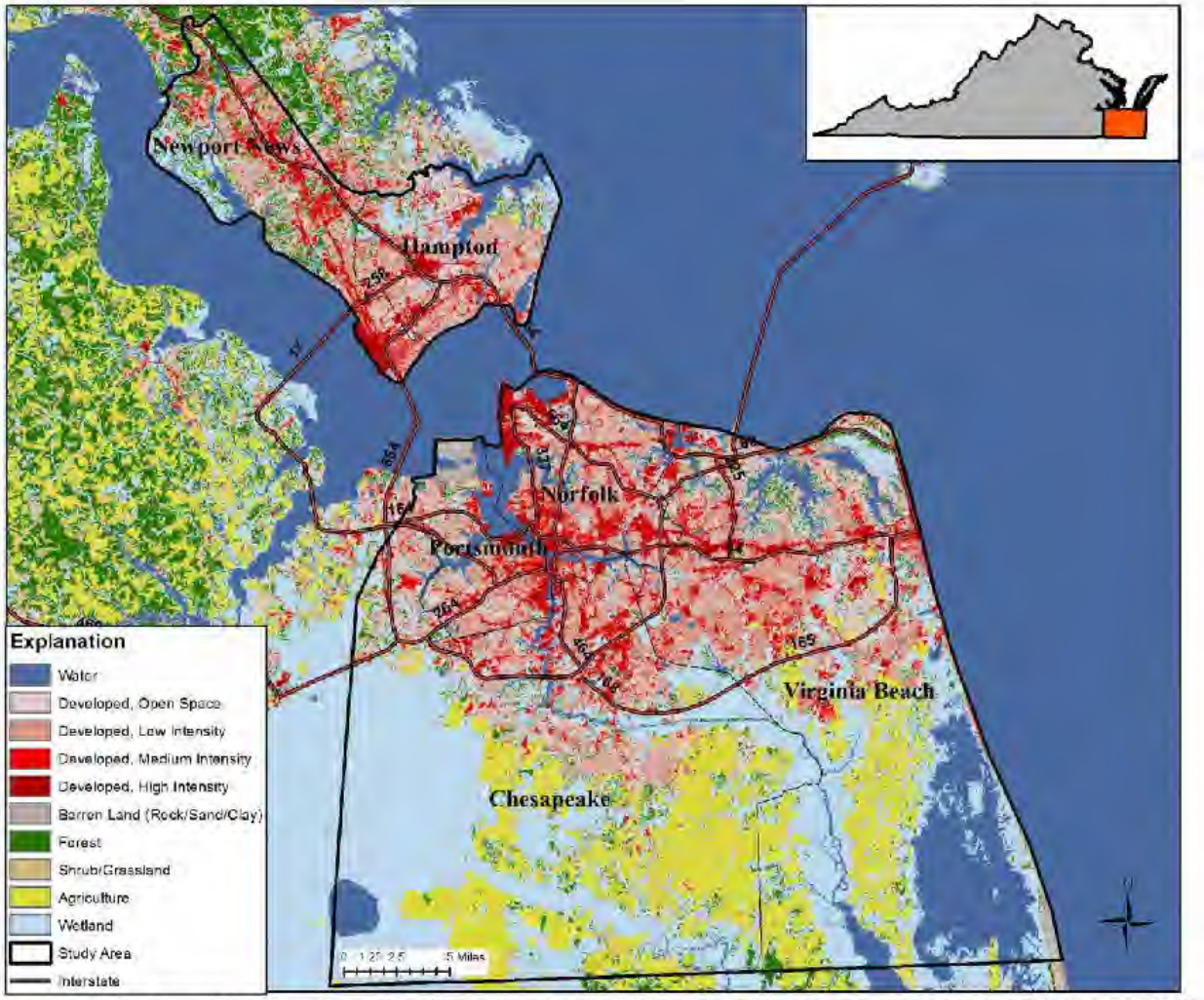
This regional stormwater monitoring effort has two primary study objectives:

1. Design, and implement a stormwater monitoring network to characterize sediment and nutrient loadings from the major types of urban land-uses in the Hampton Roads Region.
2. Use these measured sediment and nutrient loads to compare to Watershed Model loadings and allocations to improve the accuracy of the model in the Coastal Plain.

Methods and Approach

A collection of representative stormwater systems will be identified for intensive water-quality monitoring and load computation within the study area defined by the 6 partnering jurisdictions (Figure 1). The selection of these representative systems will be determined using a statistically based approach to provide a range of urban land-use types and basin scales throughout the region. Given the dominant land-use types being considered and the available project funding, we propose the development of a 12-station monitoring network. A 12-station network is recommended for the characterization of the following 4 urban land-use types:

- High-density residential
- Medium-density residential
- Low-density residential
- Commercial and Light Industrial



Projection: Albers Equal Area, NAD 83. Land cover: Fry and others, 2011, Completion of the 2006 National Land Cover Database for the Conterminous United States PE&RS. Vol. 77(9): 858-864.

***Figure 1**. The study area for the proposed stormwater monitoring network.*

We propose 12 stations to provide 3 study basins per land-use type, which should be sufficient to characterize the range in loadings that are typical of each of the 4 land-use types. By characterizing the range in loadings that are typical of a given land-use type, we should be able to develop meaningful comparisons of within-type variability to the overall between-type variability, which should significantly enhance our understanding of how management activities can be directed efficiently. For example, if high-density urban land-use types are contributing disproportionately to the sediment loadings, management actions in these areas would provide more "bang for the buck" than they would dispersed generally across all land-use types. Conversely, if the loading rates from all land uses are roughly equal, management actions can be directed in a more spatially dispersed manner. Note that given current funding limitations, an 8-station monitoring network is described in the budget section (below Table 1), in case a 12 station network becomes impossible.

During the technical process of site selection, a rather lengthy list of potential sites for each land-use will be generated on the basis of site characteristics and scale. Site-specific knowledge from the PDC and localities will be used to review and refine this potential station list. To the extent possible, a roughly equal number of stations will be located in each partnering jurisdiction. Furthermore, a final list of sites selected for monitoring will be provided to the PDC, the localities, and HRSD for their review before site selection is completed; while technical merit and justification is critical in the site selection process, we expect that there will be enough high-quality potential monitoring sites that the partnership can develop a consensus list of monitoring stations before moving forward with field installation and monitoring.

While the land-use type of heavy industry (ports, shipyards, and such) is not being explicitly considered within this project, we will track and report out on the prevalence of this land-use type in the region, and we will remain aware of the implications of not including this land-use type in the monitoring effort. To the extent possible, the data collected by the other ongoing monitoring efforts in heavy-industry areas will be considered during data analysis.

Load-monitoring stations will be designed to remain operational under all flow conditions – including extended droughts and extreme floods (including hurricanes). Remaining operational during extreme floods is critical because these are the main loading periods and a single large flood can potentially move years to decades worth of material. The primary components of a load-monitoring station include:

- Stream gage for the continuous measurement of flow
- A YSI water-quality sonde for continuous water-quality monitoring (In-situ where appropriate surface-water column depths exist)
- A refrigerated automated sampler (the equivalent of an ISCO) for the collection of stormwater water-quality samples.
- An internal data logger for recording and storing all measured values.
- A satellite telemetry unit (GOES System) to transmit data hourly; the transmitted data will be checked for quality using automated subroutines and made publically available via the USGS NWIS Web pages, approximately 20 minutes after they are transmitted from the monitoring station.
- A power system capable of operating all components of the system – having AC power at a site is a real benefit, though 12-Volt DC power can be used.
- A ruggedized housing to hold the equipment and protect it from the elements, vandals, extreme floods.

At the load-monitoring stations, storm samples will be collected from as many events as reasonable (10-15), with particular emphasis on the collection of a variety of samples that represent a range of seasons, flow conditions, and storm event types. At each station, between 40 and 60 samples will be collected each year, depending on hydrologic conditions.

The sediment and nutrient constituents selected for analysis represent a compromise between the desire to generate as much information as possible, while still keeping costs reasonable, and meeting the fundamental objectives of the study. The following analytes have been selected for HRSD analysis on all water-quality samples that are submitted to the laboratory:

- Total Nitrogen
- Nitrate
- Total Phosphorus
- Orthophosphate
- Total Suspended Sediment (TSS)

While particulate nutrient fractions, further nutrient speciation, and bacterial analysis would represent meaningful additions to this study, the above 5 constituents are considered directly in the Chesapeake Bay Model and therefore represent priority constituents. With additional funding or if we can develop potential high-volume discounts with the HRSD laboratory, we will increase the number of analytes per sample in coordination with the partnership.

Because the bulk of the Chesapeake Bay Nontidal Network is also analyzing samples for Suspended Sediment Concentrations (SSC is very similar to the traditional TSS analysis, except that the analysis is performed on the entire sample, rather than a pipetted aliquot), a limited number of water-quality samples will be analyzed for SSC – this will complement existing network activities throughout the Bay Watershed while also providing detailed information characterizing the percent sand and percent fine material in these stormwater systems. In the long term, detailed information relating to the sand fraction and percent fine fraction will be highly informative if the Chesapeake Bay Program begins to model and provide allocations for fine sediment. Overall the addition of a limited amount of SSC work to this project represents a small increase in project costs, while likely providing significant benefit in the out years of this project.

Methods for the operation and quality assurance of the various monitoring elements will be coordinated between the USGS and HRSD to ensure that the network is operated efficiently, while still maintaining national USGS methodologies to ensure consistency and comparability with other USGS monitoring sites. This methodological consistency is critical for the use of the USGS data-telemetry system and database, and for use of the data by the Bay Program. Methodologies for the consistent operation of continuous monitors (USGS TM-1D3), stream gages (Rantz, 1982), and automated samplers (in preparation) are available to document these methods, and USGS will work with HRSD to resolve any methodological/operational issues that develop.

Data Analysis

Annually, the discrete water-quality storm samples, semi-continuous water-quality data (if available) and the continuous streamflow data will be analyzed to compute monthly and annual sediment and nutrient loads. The methods used to compute the most reliable sediment and nutrient loads will likely vary according to the type of data present, and it's likely multiple methods will be considered to develop a better sense of uncertainty in the computed loads.

The computed sediment and nutrient loads will be compared to the Chesapeake Bay Program Watershed Model in several ways:

- We will use the station-specific monitoring results to compute area-specific and locality-specific sediment and nutrient loads. These locality-specific loads will be determined by scaling from the individual station measurements to the entire locality using locality-specific land-use information and weighted-area computations. By scaling the monitoring results to the individual locality, loadings can be compared to the loadings generated by the watershed model. Some amount of nested station monitoring may occur to confirm that scaling up based on land-use data is reasonable, though this cannot be determined until site selection is underway.
- Direct comparisons between the monitored loads and the land-use specific Watershed Model loads will be made, provided the Watershed Model has evolved to specifically characterize these land uses. While this option isn't currently possible given how the Watershed Model handles urban land uses, subsequent versions of the Watershed Model are expected to consider urban and suburban land-use terms which would permit a more direct comparison between the monitored results and the model results.

To further ensure basic comparability between the monitored sediment and nutrient loads and the modeled loads, we will need to estimate the relative contributions of groundwater to the flow and nutrient loads within these systems, because these groundwater contributions are separately considered within the Watershed Model. We plan a limited amount of baseflow water-quality data collection that we can pair with physical hydrology data (precipitation, streamflow, and evapotranspiration) to enable a basic water-balance computation that will separate stormwater from groundwater inputs. Given the topography and physical setting, it is unlikely that groundwater contributions from these systems are substantial, but enough data will be collected to account for this.

Ultimately, the monitored sediment and nutrient loads will be used to improve the calibration of the Watershed Model to more accurately reflect the contributions from urban land uses specific to the Virginia Coastal Plain. The USGS will coordinate with the Land Use Workgroup and the Modeling Team at the Chesapeake Bay Program throughout this project to keep them apprised of results. Through this collaboration, the USGS will continue to maintain a detailed understanding of how urban land use is represented in the current and future versions of the model, and can ensure that the value of this monitoring effort is maximized

Partnership

All work will be conducted in partnership between the U.S. Geological Survey (USGS), the Hampton Roads Planning District Commission (and its local members), and the Hampton Roads Sanitation District (HRSD). The USGS will retain overall project leadership and will be responsible for completing study design, site selection, and data-analysis activities. The USGS will also work closely with HRSD to oversee field activities. HRSD will be an integral partner, responsible for providing all major field operations (including site installation, sample collection, and site maintenance), laboratory analytical services, and local knowledge to assist with site selection and study initiation. The USGS data telemetry network, database, and online webhosting will be used for all dataflow and management.

This proposed partnership results in several other benefits of note:

- Both USGS and HRSD have extensive expertise in their respective areas of this proposal. The USGS has designed, operated and analyzed data from several other similar sediment and nutrient monitoring networks, while HRSD routinely monitors stormwater and performs the proposed sediment and nutrient analyses.
- The USGS works closely with the USEPA on many different Chesapeake Bay activities; we have primary responsibility for the annual computation of nutrient and sediment trends and loads throughout the nontidal portions of the watershed, and work closely with the modelers who've developed the Watershed Model. The data collected on this project will eventually be used to improve the calibration and parameterization of the Watershed model.
- The USGS and HRPDC have a long history of successfully partnering on water-resources investigations. Similarly, the HRPDC and HRSD have collaborated successfully on several studies. There is every indication that the partnership proposed between all three entities will be entirely successful because the approach plays to the strengths of each entity.
- Because the proposed effort expands the existing USGS national and state-level monitoring networks, there is a tangible federal interest in this project; consequently, the USGS has agreed to purchase or provide approximately 50% of the needed monitoring equipment (valued at approximately $200,000).

Timeline

The following timeline is proposed, acknowledging that this timeline may be modified depending on how quickly site selection is completed and how rapidly the necessary equipment can be procured:

<u>Phase 1 – Study Initiation</u>

February 2014 – Complete discussions related to the Statement of Work and Project Budget, enter into cooperative study agreement

February – March 2014 - Complete site selection

April – May 2014 – Procure monitoring equipment and design site installations

June – July 2014 – Complete site installation – all monitoring is operational by end of July 2014.

Phase 2 – Operation and Analysis

August 2014 – July 2020 - Sediment and nutrient loads will be computed and reported to all partners annually. A minimum of 5 years is required to adequately characterize how sediment and nutrient loads vary with wet and dry water years. Data analysis and publication of results will continue for one year after monitoring is completed.

Phase 3 – Aggregation to the locality scale

August 2015 – Ongoing. After the first year of monitoring has been completed, initial data aggregation and scaling to the locality level will occur. This will be very preliminary with only 1 year of data, and the analysis will be performed every year thereafter.

Project Budget

The proposed annual operating budget for this project is presented below in Table 1 – these budget numbers reflect a "typical" year of operation. As described in the timeline above, a portion of the first year of the study will go to the site selection process and towards the purchase of equipment and installation of monitoring stations.

TABLE 1. Operation and Maintenance of the Stormwater Monitoring Network		
USGS ELEMENTS	***10 Stations***	***12 Stations***
Project Chief Time	$120,000	
Data (QA, Real-time Hosting, Archival)	$50,000	
Travel	$10,000	
HRSD ELEMENTS		
Labor - Field and Management	$170,000	
Vehicles	$4,000	
LABORATORY ANALYSES		
Analyses at HRSD ($101 per sample), 50 samples/year/site	$50,500	
TOTAL OPERATION & MAINTENANCE COSTS	***10 Stations***	***12 Stations***
USGS Total	$180,000	$200,000
HRSD Total	$224,500	$269,400
Project Total	$404,500	$469,400
Total Annual Project Funding		$500,000
		$30,600

**The budget was developed for 10 stations and scaled up to 12; and inverse process would be used to scale down to 8 stations.*

The USGS project chief is responsible for technical design, site selection, and execution of the project. The project chief provides guidance to other key project personnel and directs the work to organize, describe, and interpret the results of the monitoring. The project chief has ultimate responsibility for quality assurance of all the collected data.

The role of the HRSD is to coordinate and conduct field activities, including site construction, the collection of water samples, and the maintenance of monitoring sites. At present, HRSD estimates that no more than 15% of the labor costs described in Table 1 will be related to management of field staff, and only that time actually spent on management of staff will be billed out, so this management cost might be lower than anticipated.

A significant amount of equipment will be required for network startup (approximately $40,000 per site). To keep the annual project costs level, the costs for this equipment will be covered in one of 3 ways:

1. The USGS is committed to purchasing or providing approximately 50% of the needed equipment as our matching contribution to the project. The costs of this equipment will be borne by USGS – they are not being passed along to the partnership.
2. The total budget for the 12-station monitoring plan is $30,600 below the anticipated $500,000 in annual funding required to support this project. A portion of the $30,600 will be reserved for equipment repair and replacement, and a portion of the $30,600 will be used by HRSD for amortizing the costs of the equipment over a period of 5 years.
3. The budget numbers that have been developed and presented in Table 1 are for a 12-month period of network operation, however, a portion of the Year 1 operational budget will be used to cover costs associated with equipment purchase and installation. Therefore, a partial year of monitoring will be possible during the first year, and the number of months of monitoring in Year 1 will depend on the total equipment and installation costs.

The relative distribution of the equipment costs among the 3 above items will ultimately depend on the total equipment costs, and these equipment costs cannot be determined until the study sites are identified. Below is an example to demonstrate approximately how these equipment purchase and site installation costs may be handled, while maintaining a level annual budget.

- *If the equipment purchase and installation costs were $45,000 per site for 12 sites, then the total equipment purchase and installation costs would be $540,000. These costs could be covered as:*
- *$200,000 in equipment might be purchased by USGS*
- *$100,000 in equipment could be purchased using the $30,600 in annual funding that remains unallocated (as $20,000 per year for 5 years, amortized by HRSD)*
- *The remaining $240,000 in equipment expenses would be covered by performing approximately 6 months of monitoring during the first year of the project, rather than 12 months, freeing up approximately half the annual project budget for these equipment and installation expenses.*

- *Note that the actual distribution of these equipment and installation funds will depend on the final equipment costs, and the actual number of months of monitoring during the first year of the study will be adjusted according to the final equipment costs.*

While a 12-station network is strongly recommended for technical reasons, there remains an 8-station alternative that would result in the monitoring of the same 4 land-use types and only 2 stations within each type. There exists additional risk with this approach because, despite all efforts to identify and select representative monitoring sites, there are occasional unforeseen sources and conditions that render a given monitoring site anomalous or unique for a given land-use type or constituent. With 3 monitoring sites per land-use type, the unexpected selection of an unusual monitoring site would not impede our ability to characterize the range of conditions observed within sites; however, with only 2 monitoring sites in a given land-use type, our ability to characterize the range of conditions would be diminished and even worse - an unusual site would be difficult to identify and could be misinterpreted as being typical for a given land use. If insufficient funding for a 12-station network is available, it is recommended that the partnership install 8 stations and develop a goal of expanding the network in subsequent years to include additional sites to better characterize each site type.

Deliverables and Annual Project Meeting

Once the project has been started, semi-annual progress reports will be prepared by USGS with input from HRSD and provided to HRPDC. An annual project update will be provided to all partners (as an annual project meeting, or a presentation to HRPDC), though more frequent presentations and updates can be provided, if preferred. As part of the annual project meeting, any revisions and enhancements to the sampling plan will be discussed – once these study sites are operational, additional questions and study elements can be added relatively efficiently. No formal USGS reports are planned in the first few years of the study; these can be added in out years once sufficient data collection and analysis have been completed to warrant formal reporting.

Contact Information

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Mark Bennett, USGS
Director, Virginia Water Science Center
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mrbennet@usgs.gov

Attachment 5 – Alternative Methodology to Calculate Offset from New Sources

Attachment 5
Alternative Methodology to Offset Increased Loads from New Sources

Purpose

The below narrative describes DEQ's review and consideration of an alternative approach to calculate new source and grandfathered project nutrient and sediment offsets proposed by the six (6) Hampton Roads Phase I permittees for inclusion in Part I.D. of the MS4 Phase I individual permit. The alternative approach proposes to distribute increased load reductions from new source and grandfathered projects region-wide amongst the Phase I localities.

Background

Localities in Tidewater Virginia have been requiring developers to meet water quality standards for land disturbing activities since 1990 through implementation of the Chesapeake Bay Preservation Act, prior to the development of any state-wide water quality standards for land disturbing activities. Under the Chesapeake Bay Preservation Act, any land disturbing activity greater than 2,500 square feet is required to meet performance-based water quality criteria. The post development nonpoint source pollutant runoff load was calculated using the Simple Method and was compared to the calculated pre-development load based upon the average land cover condition or the existing site condition. Stormwater control Best Management Practices (BMPs) were required to be located, designed, and maintained to effectively reduce the pollutant load to the required level depending on the land development situation. In 2004, the General Assembly passed stormwater related legislation that required the application of these performance criteria to all development in Virginia greater than one acre.

The numeric value of the performance criteria was calculated using the Simple Method. The Simple Method estimates stormwater runoff pollutant loads as a product of annual runoff volume and pollutant concentration. Runoff volume is a function of impervious area and the calculation requires inputs of impervious cover, stormwater runoff pollutant concentrations, and annual precipitation. The equation is as follows:

$$\text{Pollutant Load (lb/yr)} = P \times Pj \times Rv \times C \times A \times 0.226, \text{ where:}$$

P = Annual precipitation (inches)
Pj = Fraction of runoff producing rainfall events = 0.9
Rv = (0.05 + 0.009 x % Imperviousness)
C = Pollutant concentration (mg/l)
A = Drainage area (acres)
0.226 = Unit conversion factor

Stormwater pollutant concentrations can be estimated from local or regional data, or from national data sources. Since 1988, total phosphorus has been Virginia's keystone pollutant used to determine water quality design requirements as a result of new development and redevelopment. Phosphorus was chosen by Virginia to allow consistent application of performance based water quality criteria. It was also selected because it exhibits some of the characteristics of particulate pollutants, as well as those of soluble pollutants, making it a good indicator of urban pollutants in general. Nationwide Urban Runoff Program (NURP) estimates urban stormwater contains a total phosphorus concentration of 0.26 mg/L.

Virginia's Chesapeake Bay Local Assistance Division, part of the Department of Conservation and Recreation, determined a baseline annual load of phosphorous for Tidewater Virginia and established a corresponding baseline impervious surface value, or average land cover condition. An analysis of the Chesapeake Bay watershed in Virginia identified the average impervious land cover condition as 16 percent. Using these inputs and an average annual rainfall of 43 inches, the baseline existing land use condition pollutant load is calculated to be 0.45 lb/ac/yr of phosphorus. Localities had the option to adopt this value as the pre-developed default for the entire locality or to calculate a watershed or locality-wide pre-development annual load and corresponding impervious value, and designate a watershed-specific or locality specific average land cover condition. Many localities in the Hampton Roads region chose to adopt specific average land cover conditions, including all of the localities regulated under the Phase I MS4 Program. The difference between the pre- and post-development pollutant load resulting from land

disturbing activities represents the increase in pollutant load that must be controlled by an appropriate BMP. The average impervious area adopted by each Hampton Roads Phase I MS4 permittee and the associated pre-development phosphorus loads calculated using the simple method equation are as follows:

Locality	**Average Impervious Area (%)**	**Phosphorus Load (lb/acre/yr)**
City of Chesapeake - Western Branch of Elizabeth River	26	0.66
City of Chesapeake – Eastern Branch of Elizabeth River	52	1.21
City of Chesapeake – Southern Branch of Elizabeth River	28	0.70
City of Chesapeake – Coopers Ditch and Horserun Ditch *(outside of Chesapeake Bay Watershed)*	29	0.73
City of Chesapeake – All other watersheds	16	0.45
City of Hampton	34	0.83
City of Newport News	36	0.87
City of Norfolk	53	1.23
City of Portsmouth – Elizabeth River	19	0.52
City of Portsmouth – Western Branch	40	0.96
City of Portsmouth – Southern Branch	54	1.25
City of Virginia Beach	25	0.64

Virginia's revised water quality criteria of 0.41 pounds per acre per year of phosphorus became effective on July 1, 2014. The criteria was developed to be protective of local water quality and to achieve no net increase in nutrients for new development. The new criterion was calculated using the Runoff Reduction Method rather than the Simple Method and translates to a land cover condition of 10% impervious cover, 30% turf, and 60% forest. Localities that had previously used the higher land cover conditions are no longer allowed to approve projects using locality specific average impervious area unless a project qualifies for grandfathering in accordance with 9VAC 25-870 of the Virginia Stormwater Management Program regulations.

As MS4 permit requirements were being developed to address sediment and nutrient reductions necessary to meet the requirements of the 2010 Chesapeake Bay TMDL, the Commonwealth determined that reductions from existing conditions as of June 30, 2009 would not address the increased loadings associated with the practice of approving development at the higher percent impervious cover described above for land disturbing activities that occurred between July 1, 2009 and June 30, 2014. Additionally, existing condition reductions would not address increased loads from projects that qualify for grandfathering in accordance with the VSMP regulations, which are allowed to use the Simple Method calculations to determine the appropriate performance criteria. Because the Chesapeake Bay TMDL, Watershed Model, and Watershed Implementation Plan do not account for increased loads due to growth under these conditions, MS4 permittees are required to offset increased loads that occurred on or after July 1, 2009. These offsets are divided into two categories in the MS4 permit Special Condition for the Chesapeake Bay TMDL: new sources between July 1, 2009 and June 30, 2014 and grandfathered projects.

When increased loads result from a land disturbing activity greater than 1 acre, that uses an average land cover condition greater than 16% for the design of post development stormwater management facilities, and that was initiated after July 1, 2009 permittees must offset the increased loads. Earlier Phase I MS4 permit reissuances and the 2013 MS4 General Permit allow permittees to implement the total offset of the increased load from projects occurring between July 1, 2009 and June 30, 2014 in three phases of 5%, 35%, and 60% over three permit cycles. This is the same phased approach Virginia has approved for MS4 permittees to meet the existing condition reduction requirements. For grandfathered projects, earlier

Attachment 5
Alternative Methodology to Offset Increased Loads from New Sources

Phase I MS4 permit reissuances and the 2013 MS4 General Permit require permittees to offset the entire increased load from projects after July 1, 2014 prior to the completion of the project.

During the drafting of the Phase I permit for the MS4 localities in Hampton Roads, DEQ was informed of the lack of available records regarding previously approved projects and the effort required to determine the increased loads on a project by project basis. Localities were not required to keep detailed records or data associated with each project that was reviewed, approved, or implemented. In order to determine increased loads that occurred after July 1, 2009, permittees would have to review each project site plan which may or may not be available, find site information if the plan is not available, determine which projects were actually completed, and calculate loads for the project based on best available information about the site prior to the land disturbing activity. Due to the number of projects that localities review, permittees would be required to exert a tremendous amount of effort and financial resources for an administrative exercise that could be better used for actual best management practices that result in reductions of pollutants of concern. While DEQ's Construction General Permit records may provide some assistance in narrowing down the list of projects for review, not all projects that receive permits are initiated and DEQ did not previously collect information on whether the permitted activity was located in the MS4 service area.

As such, the Hampton Roads Planning District Commission, on behalf of the six Phase I MS4 permittees in Hampton Roads, proposed an alternative method to estimate the required reductions associated with increased loads after July 1, 2009 that resulted from approving development at locality specific average impervious cover. The methodology uses a regional approach for reductions to which all six localities agreed, even though some localities may be required to offset greater loads than if load reductions were determined individually. For example, during the time period of interest, "new sources" in some localities were redevelopment projects that resulted in a decrease in pollutant loads. Those localities would not be required to make offsets under the requirements of the permit to address increased loads from new sources; however, they have agreed to make reductions in pollutants during the first permit cycle beyond the required reductions to address existing conditions as of June 30, 2009. Decreased loads from redevelopment in these instances help to balance out the increased loads in localities that experienced development.

DEQ staff has reviewed the alternative methodology and believes that the conservative assumptions used in the approach will result in equivalent or better reduction requirements than the permit conditions included in previously issued Phase I permits and the 2013 MS4 General Permit to address increased loads from new sources and grandfathered projects.

Methodology and Assumptions

<u>Estimating Increased Loads</u>

Spreadsheet 1A – Estimate of Increased Load from Projects Initiated July 1, 2009 through June 30, 2014: The approved average percent impervious cover for each locality (or locality specific watershed) was used to determine the pre-development loading rate using the simple method described above. Each locality was asked to estimate the amount of new development that occurred between July 1, 2009 and June 30, 2014. Many localities used DEQ's General VPDES Permit for Construction Activities (CGP) data to determine the number of projects that were permitted. Only projects equal to or greater than an acre are required to obtain permit coverage. Other localities used their in-house land disturbance database including projects that disturbed less than an acre, redevelopment projects, and projects that occurred outside of the MS4 service area. Additionally, not all projects were completed to the highest imperviousness allowed under the approved local ordinances but for purposes of these load estimates, the highest value was used.

By multiplying the acreage of new development for each locality by the localities total phosphorus loading rate, the total increase in phosphorus loads for each locality was estimated. The state average impervious cover baseline of 16% (equal to 0.45 lb/acre/yr TP) was multiplied by the new development

acres equal to or exceeding one acre to determine the loading rate if the permittees had used the state average impervious value. The baseline annual load was subtracted from the estimated total phosphorus load to determine the offset required by the permit. Using the pre-determined pollutant loading ratios for each watershed (permit Table 3) of total phosphorus to total nitrogen and total suspended solids the nitrogen and suspended solids offset requirements is estimated. Note that for localities that have more than one watershed, the highest ratio was applied to determine the offsets.

Spreadsheet 1B: Estimate of Increased Load from Projects Qualifying for Grandfathering
Increased loads from projects that qualify for grandfathering under the Virginia Stormwater Management Regulations (9VAC 25-870-48) are estimated similarly to the methodology described above. Permittees estimated the acres of new development over the past 5 years that were part of a project equal to or greater than one acre using DEQ's construction general permit database and records kept at the locality level to determine acres developed from 2009 to 2014 associated with projects equal to or greater than 1 acre. It is assumed that 10% of the development acreage from projects will meet the regulatory criteria to qualify for grandfather and actually be completed. This acreage is then multiplied by the total phosphorus loading rate for each locality to estimate the increase in local phosphorus loading. The phosphorus load was also calculated using the new stormwater criteria of 0.41 lb/acre/yr total phosphorus. By subtracting the load calculated using the new stormwater criteria from the load calculated using approved locality specific imperviousness, the total phosphorus load from grandfathered projects that require offsets is estimated. The total nitrogen and total suspended sediment loads were calculated using the watershed specific ratios described above to determine offsets for those parameters.

DEQ staff has reviewed Construction General Permit records to determine the percentage of total acreage of proposed land disturbance permitted under the 2014 Construction General Permit that qualify for grandfathering in accordance with Part II-C of the Virginia Stormwater Management Program regulation 9 VAC 25-870-48. From July 1, 2014 through May 10, 2016, less than 5% of total area disturbed from projects receiving permit coverage under the July 1, 2014 CGP is eligible for the grandfathered technical criteria statewide. Additionally, DEQ staff reviewed the percentage of total proposed land disturbance permitted that qualify for grandfathering for each of the 6 Phase I MS4 localities in Hampton Roads. In the 6 Hampton Roads Phase I MS4 permittee jurisdictions, on average less than 3% of land disturbance acreage qualifies for grandfathering. Again the percentages were in line with the statewide average with a percentage range of 0 to 5.3%. Based on the review, DEQ staff believes that the estimate of 10% of projects qualifying for the grandfathered technical criteria is a conservative estimate for estimating increased loads from grandfathered projects.

Summary of Land Disturbing Projects Obtaining Permit Coverage between July 1, 2014 and May 10, 2016 that Qualify for Grandfathering Part II-C

	Total # of Projects Permitted	Total # of Projects Meeting Grandfathering II-C	Total # of Acres Land Disturbed from Permitted Projects	Total # of Acres Dist. Meeting GF II-C	% of total area disturbed that qualify for Grandfathering
State Wide	5985	498	111,208.56	5,033.25	4.5%
Chesapeake	212	35	3,696.81	194.46	5.3%
Hampton	59	1	667.12	1.60	2.4%
Newport News	86	1	755.99	1.80	0.2%
Norfolk	97	3	532.18	7.27	1.4%
Portsmouth	36	0	522.31	0	-
Virginia Beach	228	18	2527.51	119.81	4.7%

Calculating Existing Source Loads and Required Reductions

Attachment 5
Alternative Methodology to Offset Increased Loads from New Sources

Using data from the Chesapeake Bay Watershed Model 5.3.2, both the existing loading and reduction rates for the regulated urban impervious and pervious subsources were calculated based on the average values for the river basin and included in the MS4 permits. In the cases of Little Creek and Lynnhaven Rivers, the watershed average is required to be used. All MS4 permittees are required to use existing loading (as of June 30, 2009) and reduction rates for their respective watershed(s) as established in their permits.

For comparison purposes, the following reduction calculations were performed:

- Existing Source Load Calculations (Spreadsheets 2A & 2B):
    - *Reduction Load Rates from Permit Table 2 using Regulated Area based on Permittee's Estimated Service Area (for first permit cycle and by the end of 3 permit cycles)*
    - *Expected Reductions Based on Chesapeake Bay Model 5.3.2 in 2025*

Spreadsheet 3: Regional Comparison of Reduction Calculation Methodologies

This comparison demonstrates that the alternative proposal results in a reduction/offset of loads for nitrogen, phosphorus and sediment during the first permit cycle that is greater than what is expected by the Chesapeake Bay Model 5.3.2 or that would be achieved if each permittee individually implemented new source and grandfathered project offsets based on project by project review of site plans. Specifically, the alternative methodology is estimated to result in the reduction of an additional 36 pounds of nitrogen, 59 pounds of phosphorus, and 23,022 pounds of sediment by the end of the first permit cycle.

Conclusion

The proposed approach for estimating the increased loads from new sources and grandfathered projects incorporates sufficiently conservative estimates to be acceptable by DEQ staff. The alternative approach will result in localities more effectively utilizing limited funding for implementation of reduction strategies rather than on administrative practices to determine precise increased loads.

SPREADSHEET 1A: ESTIMATE OF INCREASED LOADS FROM PROJECTS INITIATED JULY 1, 2009 THROUGH JUNE 30, 2014

Locality	Avg Impervious of Development (%)	Allowed Simple Method Loading Rate for New Development	*Acres of New Development > 1 ac	Loading for New Development	baseline load if 16%	Total Phosphorus to offset in 3 permit cycles	Total Nitrogen to offset in 3 permit cycles**	Total Sediment to offset in 3 permit cycles**
Chesapeake W	26	0.66	282	186	127	59	302	25,053
Chesapeake S	28	0.7	416	291	187	104	530	44,013
Chesapeake E	52	1.21	100	121	45	76	386	32,064
Chesapeake Total	35	0.85	797			239	1,218	101,130
Hampton	34	0.83	202	168	91	77	730	40,866
Norfolk	53	1.23	0	0	0	0	0	0
Newport News	36	0.87	165	143.55	74.25	69.3	353.43	29348.55
Virginia Beach	25	0.64	740	473.6	333	141	1,308	34,208
Portsmouth	40	0.96	30	28.8	13.5	15	78	6,480
Total						**541**	**3,687**	**212,032**

** Localities estimated the acres of new development that would qualify for offsets under the Chesapeake Bay Special Condition relating to increased loads from new and grandfathered sources.*
****Used permit table to estimate TN and TSS based on TP.*

SPREADSHEET 1B: ESTIMATE OF INCREASED LOADS FROM PROJECTS QUALIFYING FOR GRANDFATHERING

Locality	New Development (greater than 1 acre) for past 5 years	Estimated Acres Developed from Project Qualifying for Grandfathering During 1st Permit Cycle**	Allowed Simple Method Loading Rate for New Development (lb/ac/yr)	Grandfathered Loads	Associated Load using Part II.B. Critiera (0.41 lb/acre/yr)	P Loads to offset	Nitrogen Loads to offset***	Sediment Loads to offset***
Chesapeake*	797	79.7	0.85	68	33	35	178.8468	14851.298
Hampton	626	62.6	0.83	52	26	26	249.774	13976.8272
Norfolk	0	0	1.23	0	0	0	0	0
Newport News	165	16.5	0.87	14	7	8	38.709	3214.365
Virginia Beach	740	74	0.64	47	30	17	158.286	4140.966
Portsmouth	30	3	0.96	3	1	2	8.415	698.775
Total						**88**	**634**	**36,882**

**Because Chesapeake has adopted multiple watershed specific average impervious cover, the average of the 3 in the Bay watershed was used to estimate increases from grandfathered projects.*
***Assumed that the pattern of development will be similar to the last five years, i.e., 10% of development projects will be eligible for the grandfathering criteria*
****Used permit table to estimate TN and TSS based on TP.*

SPREADSHEET 2A: REQUIRED REDUCTIONS 1ST PERMIT CYCLE AND TOTAL USING PERMIT REDUCTION RATES & SPREADSHEET ACRES

Calculations using permit reduction ratesand permittee acreage info

SPREADSHEET 2A: REQUIRED REDUCTIONS 1ST PERMIT CYCLE AND TOTAL USING PERMIT REDUCTION RATES & LOCALITY ACRES

			Nitrogen				Phosphorus				Sediment			
		Acres Served	Permit Reduct Rates (9 decimal places)	5% Existing Source Reduct	Total 5% Existing Source Reduct	100% Existing Source Reduct	Permit Reduct Rates (9 decimal places)	5% Existing Source Reduct	Total 5% Existing Source Reduct	100% Existing Source Reduct	Permit Reduct Rates (9 decimal places)	5% Existing Source Reduct	Total 5% Existing Source Reduct	100% Existing Source Reduct
Chesapeake	Reg Urban Impervious	13,706	0.043085997	590.5366749	1230.72286	24,614	0.014288127	195.8330687	251.9338927	5,039	7.034240675	96411.30269	110,566.41	2,211,328
	Reg Urban Pervious	31,181	0.020531291	640.1861847			0.001799199	56.10082402			0.453965907	14155.11095		
Hampton James	Reg Urban Impervious	2,819	0.043085997	121.4594255	217.6690552	4,353	0.014288127	40.27823001	48.70927653	974	7.034240675	19829.52446	21,956.81	439,136
	Reg Urban Pervious	4,686	0.020531291	96.20962963			0.001799199	8.431046514			0.453965907	2127.28424		
Hampton York	Reg Urban Impervious	5,523	0.032895	181.679085	428.781735	8,576	0.01208	66.71784	86.62333125	1,732	4.5668	25222.4364	28,650.78	573,016
	Reg Urban Pervious	10,767	0.02295	247.10265			0.00184875	19.90549125			0.3184125	3428.347388		
Norfolk James	Reg Urban Impervious	9,035	0.043085997	389.2819829	511.4842269	10,230	0.014288127	129.0932274	139.8020599	2,796	7.034240675	63554.3645	66,256.37	1,325,127
	Reg Urban Pervious	5,952	0.020531291	122.202244			0.001799199	10.70883245			0.453965907	2702.005078		
Norfolk LC	Reg Urban Impervious	2,461	0.039200076	96.47138704	151.9971912	3,040	0.01239205	30.49683505	34.87797399	698	5.182279806	12753.5906	13,507.86	270,157
	Reg Urban Pervious	2,184	0.025423903	55.52580415			0.002006016	4.381138944			0.345361794	754.2701581		
Newport News	Reg Urban Impervious	10,997	0.043085997	473.816709	967.696914	19,354	0.014288127	157.1265326	200.4062646	4,008	7.034240675	77355.5447	88,275.69	1,765,514
	Reg Urban Pervious	24,055	0.020531291	493.880205			0.001799199	43.27973195			0.453965907	10920.14989		
Virginia Beach (Assumes all in Lynhaven)	Reg Urban Impervious	15,313	0.035097117	537.4421526	1675.390837	33,508	0.012346664	189.0644658	280.8209791	5,616	4.798142429	73473.95502	88,356.42	1,767,128
	Reg Urban Pervious	45,940	0.024770324	1137.948685			0.001997312	91.75651328			0.323954296	14882.46036		
Portsmouth (No Data Provided; Used Acreage from 5.3.2)	Reg Urban Impervious	6,758	0.043085997	291.1751677	514.2065819	10,284	0.014288127	96.55916227	116.103861	2,322	7.034240675	47537.39848	52,468.83	1,049,377
	Reg Urban Pervious	10,863	0.020531291	223.0314141			0.001799199	19.54469874			0.453965907	4931.431648		
Total Regional Reductions	Reg Urban Impervious	66,612			5697.949401	113,959			1159.277639	23,186			470,039.18	9,400,784
	Reg Urban Pervious	135,628												

SPREADSHEET 2B: Model 5.3.2 Reduction Goals

		Acres Served	**Nitrogen**	**Phosphorus**	**Sediment**
Chesapeake	Reg Urban Impervious	12,074	-12312	-2421	-555874
	Reg Urban Pervious	27,142	2500	357	21688
Hampton	Reg Urban Impervious	3,071	-9767	-2940	-1208018
	Reg Urban Pervious	5,233	-3301	-435	-111243
Norfolk	Reg Urban Impervious	12,804	-23144	-4619	-1938898
	Reg Urban Pervious	12,139	3232	52	-12082
Newport News	Reg Urban Impervious	10,116	-14617	-3289	-1182676
	Reg Urban Pervious	19,839	-5402	-612	-115255
Virginia Beach	Reg Urban Impervious	16,171	-20167	-4853	-1714511
	Reg Urban Pervious	30,227	-5072	-624	-128130
Portsmouth	Reg Urban Impervious	6,758	-8755	-1463	-524705
	Reg Urban Pervious	10,863	1110	155	25981
Total Regional Reductions			95695	20692	7443723

Spreadsheet 3: Regional Comparison of Reduction Calculation Methodologies

	Nitrogen	Phosphorus	Sediment	Notes
Total Required Regional 2025 Reductions from Existing Sources*	113,959	23,186	9,400,784	From Reduction Calc tab using permittee's estimated service area reduction rates included in permits.

Regional First Permit Cycle Reduction Scenarios	Nitrogen	Phosphorus	Sediment	
5% of 2025 reductions	5,698	1,159	470,039	First Permit Cycle Redcutions (excluding offsets). Calculated using Table 2 in Part 1 Section D.1.b.1(e) of current draft permit.
5% of 2025 reductions + estimated first permit cycle offsets	6,516	1,274	517,523	Current Draft Permit Requirement based on locality estimates of increased loads.
115% of First Permit Cycle Reductions (15% address offsets of increased loads)	**6,553**	**1,333**	**540,545**	Locality Preferred Scenario

Offset Summary	Nitrogen	Phosphorus	Sediment	
Total Offsets of increased Loads (all grandfathering + development > 16%)	4,321	628	248,915	
1st Permit cycle offsets of increased loads (all grandfathering + 5% development > 16%)	818	115	47,484	
1st permit cylce offsets as a percent of 1st permit cycle reductions	14.36%	9.89%	10.10%	

Additional Pounds Removed by Hampton Roads Preferred Scenario	Nitrogen	Phosphorus	Sediment	
115% of first permit cycle reductions without offsets Minus Current Draft Permit Requirement	36	59	23,022	

Additional Information	Nitrogen	Phosphorus	Sediment	
Total Load Reduction Expected Using Model 5.3.2	95,695	20,692	7,443,723	
1st Permit Cycle Load Reductions estimated Using Model 5.3.2	4,785	1,035	372,186	

Attachment 6 - NPDES Rating Worksheet

NPDES PERMIT RATING WORK SHEET

☒ Regular Addition
☐ DiscretionaryAddition
☐ Score change, but no status change
☐ Deletion

NPDES NO. VA0088668

Facility Name: City of Portsmouth MS4

City: City of Norfolk

Receiving Waters:

Hampton Roads Channel (JL59)
Elizabeth River (JL56)
Hampton Roads – Streeter Creek (JL50)
Western Branch Elizabeth River (JL56)
Southern Branch Elizabeth River-Deep Creek (JL53)

Reach Number: 1, 1b, 1d, 1e

Is this facility a steam electric power plant (SIC=4911) with one or more of the following characteristics?
1. Power output 500 MW or greater (not using a cooling pond/lake)
2. A nuclear power plant
3. Cooling water discharge greater than 25% of the receiving stream's 7Q10 flow rate

☐ YES; score is 600 (stop here) ☒ NO (continue)

Is this permit for a municipal separate storm sewer serving a population greater than 100,000?

☒ YES; score is 700 (stop here)
☐ NO (continue)

FACTOR 1: Toxic Pollutant Potential

PCS SIC Code: 9199 Primary SIC Code: _____ Other SIC Codes:
Industrial Subcategory Code: 000 (Code 000 if no subcategory)

Determine the Toxicity potential from Appendix A. Be sure to use the TOTAL toxicity potential column and check one)

Toxicity Group	Code	Points	Toxicity Group	Code	Points	Toxicity Group	Code	Points
☐ No Process Waste Streams	0	0	☐ 3.	3	15	☐ 7.	7	35
☐ 1.	1	5	☐ 4.	4	20	☐ 8.	8	40
☐ 2.	2	10	☐ 5.	5	25	☐ 9.	9	45
			☐ 6.	6	30	☐ 10.	10	50

Code Number Checked: _____

Total Points Factor 1: NA

FACTOR 2: Flow/Stream Flow Volume (*Complete either Section A or Section B; check only one)*

Section A ☐ Wastewater Flow Only Considered

Wastewater Type (See Instructions)		Code	Points
Type I: Flow < 5 MGD	☐	11	0
Flow 5 to 10 MGD	☐	12	10
Flow > 10 to 50 MGD	☐	13	20
Flow > 50 MGD	☐	14	30
Type II: Flow < 1 MGD	☐	21	10
Flow 1 to 5 MGD	☐	22	20
Flow > 5 to 10 MGD	☐	23	30
Flow > 10 MGD	☐	24	50
Type III: Flow < 1 MGD	☐	31	0
Flow 1 to 5 MGD	☐	32	10
Flow > 5 to 10 MGD	☐	33	20
Flow > 10 MGD	☐	34	30

Section B ☐ Wastewater and Stream Flow Considered

Wastewater Type (See Instructions)	Percent of instream Wastewater Concentration at Receiving Stream Low Flow		Code	Points
Type I/III:	< 10 %	☐	41	0
	10 % to < 50 %	☐	42	10
	> 50 %	☐	43	20
Type II:	< 10 %	☐	51	0
	10 % to <50 %	☐	52	20
	> 50 %	☐	53	30

Code Checked from Section A or B: _____

Total Points Factor 2: NA

FACTOR 3: Conventional Pollutants
(only when limited by the permit)

A. Oxygen Demanding Pollutant: (check one) ☐ BOD ☐ COD ☐ Other:_____-

			Code	Points
Permit Limits: (check one)	☐	< 100 lbs/day	1	0
	☐	100 to 1000 lbs/day	2	5
	☐	> 1000 to 3000 lbs/day	3	15
	☐	> 3000 lbs/day	4	20

Code Checked: _____

Points Scored: _____

B. Total Suspended Solids (TSS)

Permit Limits: (check one)	☐	< 100 lbs/day	1	0
	☐	100 to 1000 lbs/day	2	5
	☐	> 1000 to 5000 lbs/day	3	15
	☐	> 5000 lbs/day	4	20

Code Checked: _____

Points Scored: _____

C. Nitrogen Pollutant: (check one) ☐ Ammonia ☐ Other: _____
_____

		Nitrogen Equivalent	*Code*	*Points*
Permit Limits: (check one)	☐	< 300 lbs/day	1	0
	☐	300 to 1000 lbs/day	2	5
	☐	> 1000 to 3000 lbs/day	3	15
	☐	> 3000 lbs/day	4	20

Code Checked: _____

Points Scored _____

Total Points Factor 3: NA

FACTOR 4: Public Health Impact

Is there a public drinking water supply located within 50 miles downstream of the effluent discharge (this includes any body of water to which the receiving water is a tributary)? A public drinking water supply may include infiltration galleries, or other methods of conveyance that ultimately get water from the above referenced supply.

☐ YES (If yes, check toxicity potential number below)

☒ NO (If no, go to Factor 5)

Determine the *human health* toxicity potential from Appendix A. Use the same SIC code and subcategory reference as in Factor 1. (Be sure to use the human health toxicity group column ☐ check one below)

Toxicity Group	Code	Points	Toxicity Group	Code	Points	Toxicity Group	Code	Points
☐ No Process Waste Streams	0	0	☐ 3.	3	0	☐ 7.	7	15
☐ 1.	1	0	☐ 4.	4	0	☐ 8.	8	20
☐ 2.	2	0	☐ 5.	5	5	☐ 9.	9	25
			☐ 6.	6	10	☐ 10.	10	30

Code Number Checked: _____

Total Points Factor 4: NA

FACTOR 5: Water Quality Factors

A. *Is (or will) one or more of the effluent discharge limits based on water quality factors of the receiving stream (rather than technology-based federal effluent guidelines, or technology-based state effluent guidelines), or has a wasteload allocation been assigned to the discharge:*

		Code	Points
☐	Yes	1	10
☐	No	2	0

B. *Is the receiving water in compliance with applicable water quality standards for pollutants that are water quality limited in the permit?*

		Code	Points
☐	Yes	1	0
☐	No	2	5

C. *Does the effluent discharged from this facility exhibit the reasonable potential to violate water quality standards due to whole effluent toxicity?*

		Code	Points
☐	Yes	1	10
☐	No	2	0

Code Number Checked: A ____ B ____ C ____

Points Factor 5: A ____ + B ____ + C ____ = __NA__ TOTAL

FACTOR 6: Proximity to Near Coastal Waters

A. *Base Score: Enter flow code here (from Factor 2):_____* *Enter the multiplication factor that corresponds to the flow code: ____*

Check appropriate facility HPRI Code (from PCS):

	HPRI#	*Code*	*HPRI Score*	*Flow Code*	*Multiplication Factor*
☐	1	1	20	11, 31, or 41	0.00
☐	2	2	0	12, 32, or 42	0.05
☐	3	3	30	13, 33, or 43	0.10
☐	4	4	0	14 or 34	0.15
☐	5	5	20	21 or 51	0.10
				22 or 52	0.30
				23 or 53	0.60
				24	1.00

HPRI code checked: ___

Base Score: (HPRI Score) _____ X (Multiplication Factor) ____ = ____ (TOTAL POINTS)

B. *Additional Points □ NEP Program*
For a facility that has an HPRI code of 3, does the facility discharge to one of the estuaries enrolled in the National Estuary Protection (NEP) program (see instructions) or the Chesapeake Bay?

	Code	Points
☐ Yes	1	10
☐ No	2	0

C. *Additional Points □ Great Lakes Area of Concern*
For a facility that has an HPRI code of 5, does the facility discharge any of the pollutants of concern into one of the Great Lakes' 31 areas of concern (see Instructions)

	Code	Points
☐ Yes	1	10
☐ No	2	0

Code Number Checked: A _____ B ____ C ____

Points Factor 6: A ____ + B _____ + C _____ = __NA__ TOTAL

NPDES NO: VA0088668

SCORE SUMMARY

Factor	Description	Total Points
1	Toxic Pollutant Potential	NA
2	Flows/Streamflow Volume	NA
3	Conventional Pollutants	NA
4	Public Health Impacts	NA
5	Water Quality Factors	NA
6	Proximity to Near Coastal Waters	NA
	TOTAL (Factors 1 through 6)	700

S1. Is the total score equal to or greater than 80? ☒ Yes (Facility is a major) ☐ No

S2. If the answer to the above questions is no, would you like this facility to be discretionary major?

☐ No

☐ Yes (Add 500 points to the above score and provide reason below:

Reason:

NEW SCORE: 700

OLD SCORE: NA

Jaime Bauer
Permit Reviewer's Name

(804) 698-4416
Phone Number

January 14, 2015
Date

Attachment 7 – Summary of Public Comments and DEQ Responses

MEMORANDUM
DEPARTMENT OF ENVIRONMENTAL QUALITY
Office of VPDES Permits

629 E. Main Street **Richmond, Virginia 23219** **804-698-4000**

TO: **File**
FROM: **Jaime L. Bauer, MS4 Permits Team Leader**
DATE: **May 25, 2016**
SUBJECT: **Public comments and DEQ response for the City of Portsmouth MS4 Draft VPDES Permit (VA0088668)**

PUBLIC COMMENT PERIOD

The draft permit was public noticed in *The Virginia-Pilot* on March 9, 2016 and March 16, 2016. The comment period began on March 9, 2016, lasted 30 days, and ended on April 8, 2016.

During the comment period, 4 sets of comments were received from the following:

- 1 environmental organizations
- 3 individual citizens

Please note that there were no requests for a public hearing on the draft permit.

Below is a summary of the comments received, the commenter, and DEQ's response to each issue.

Chesapeake Bay and TMDL Commitments

Comment 1: The Bay TMDL identified the overall pollution reductions required by 2025. Virginia's Phase I WIP committed to issuing permits to MS4 permittees that conform to the TMDL to reduce the discharge of nutrients and sediments. Under the *"Chesapeake Bay Special Condition" of the draft MS4 permit, the permittees must* develop a TMDL Action Plan within two years of the permit effective date that requires 5% of the total reductions (required by 2025) during the permit term in the nitrogen, phosphorus, and sediment discharged. The delay in finalizing the draft Hampton Roads permits will complicate the effort to meet the pollutant reductions required by 2025.

Commenter: Peggy Sanner - Chesapeake Bay Foundation

DEQ Response 1: Under the Chesapeake Bay Phase I and Phase II WIPs, Virginia committed to allowing MS4 permittees three full permit cycles to implement the required reductions in accordance with the Chesapeake Bay TMDL. DEQ recognizes that due to multiple delays in the permit reissuance, three full permit terms now extends beyond the Chesapeake Bay Program partnership's 2025 goal for implementation of all controls necessary to meet the TMDL. Under the Phase I and Phase II WIPs, Virginia has recognized the right to adjust this plan and take different approaches to meet the 2025 goal. Virginia is committed to a phased approach that allows multiple permit terms for MS4 permittees to fully implement nutrient and sediment reductions necessary to meet the Chesapeake Bay TMDL wasteload allocations. Virginia will review and adjust its commitments, if necessary, as part of its Phase III

WIP to ensure that practices are in place by 2025 to meet water quality standards in the Chesapeake Bay and its tidal tributaries.

No changes are needed to the permit or fact sheet in response to this comment.

Requirements to Offset Increased loads from New Sources

Comment 2: To fully account for new loads arising after the 2009 baseline, the earlier-issued permits require the permittee (i) to calculate and then offset 5% of the loads resulting from new construction in 2009-2014 disturbing at least 1 acre with >16% impervious cover and (b) to offset new loads from grandfathered projects beginning after 2014 and disturbing at least one acre. The draft Hampton Roads permits propose to substitute a new protocol based on unstated estimates and aggregates resulting in an additional so-called reduction of 15% of the 5% reduction required for this permit period. Stated differently, the new formulation apparently requires a minuscule acceleration (0.75% of the total reductions required by 2025) to this permit period. This differs from and is less stringent than earlier issued MS4 permits. The methodology by which this additional accelerated increment is to be determined is not stated in the permits, and the accompanying Fact Sheets.

Commenters: Peggy Sanner - Chesapeake Bay Foundation, Citizens - Paul Greggs, Dalyn Ripley, Robert Scott

DEQ Response 2: Representing the Hampton Roads Phase I permittees, the Hampton Roads Planning District Commission staff submitted to DEQ an alternative methodology to estimate the increased loads from new sources (after July 1, 2009) including grandfathered sources disturbing greater than 1 acre and using an average land cover condition greater than 16% for the design of post-development stormwater BMPs. Upon review, DEQ staff concurred that the methodology conservatively estimated increased loadings without creating financial and staffing burdens. Approval of an alternative methodology to estimate increased loads from new sources is not unique to the Hampton Roads permittees. DEQ has approved other alternative methodologies submitted in the Chesapeake Bay TMDL Action Plans, including the "aggregate method." DEQ staff agrees that more information should be added to the fact sheet demonstrating how the revised approach is equivalent or more conservative than the original permit language addressing the required offsets. As such, further explanation in the attachment "Alternative Methodology to Calculate Offset from New Sources" has been added to further explain the use of the increased impervious average land cover condition by these localities as well as how the alternative methodology uses conservative assumptions to adequately address increased loads from new sources.

Additionally, the requirement for the permittee to reduce loads equal to "15% of the 5%" is not an acceleration of the existing source load reduction schedule, but is a separate reduction requirement beyond the existing source reduction requirements. While it is true that "15% of 5%" is equivalent to 0.75% of the existing reduction requirements, DEQ chose to write the permit condition to offset new loads as presented in the draft permit so the requirement was not misunderstood as an acceleration of the existing source L2 required reductions. DEQ staff understands that some of this confusion may be based on a statement under the *Control of Transitional Loads and Accounting for Growth from New Development* section of the Chesapeake Bay Special condition rationale in the fact sheet stating that "All reductions utilizing methodology in (f) and (g) under the 2016 permit will be applied toward reduction requirements in future permit cycles." The intent of this statement was to indicate that all reductions made by the permittee this permit cycle to offset new source loads will not be left unaccounted for *should* there be a change in how new source offset requirements are addressed in the future. The language in the fact sheet has been revised for clarity.

The fact sheet has been updated as indicated above.

Comment 3: If permittees have local land use and construction general permit records to estimate increased loads between 2009 and 2014 from projects 1 acre or greater and where an average land cover condition greater than 16% was used for the design of stormwater management facilities, the same records can be used to calculate increased loads using same methodology in earlier issued MS4 permits.

Commenter: Peggy Sanner - Chesapeake Bay Foundation

DEQ Response 3: See response comment 2 above.

Comment 4: The proposed estimate of increased loads between 2009 and 2014 from projects 1 acre or greater and where an average land cover condition greater than 16% was used for the design of stormwater management facilities permittees included an undefined "regional aggregation" of development rates. Based on these aggregate rates, the proposed accelerated reduction of 0.75% is said to be more than sufficient to addresses new loads resulting from development since 2009. Use of an unspecified regional aggregate in lieu of locality-specific calculations will disadvantage the Cities with low rates of development in comparison to those with higher rates of development.

Commenter: Peggy Sanner - Chesapeake Bay Foundation

DEQ Response 4: DEQ staff also raised concerns with the Hampton Roads Phase I permittees and Hampton Roads Planning District Commission that some permittees would be required to offset loads greater than the actual new source loads that occurred in the locality, especially localities that predominantly experienced redevelopment during the 2009 and 2014 time frame, under the regional estimation method. Despite the potential increased cost to some permittees, each permittee supported the regional approach and there was agreement as a region that it was worth the potential cost to avoid the administrative burdens of reviewing loads on a project by project basis.

No changes are needed to the permit or fact sheet in response to this comment.

Comment 5: The proposed estimate for increased loads from grandfather projects in the coming 5 years (2016-2021) assumed the same rates as in the last five years (2010-2015). This assumption enabled the conclusion that 10% of development projects will qualify as grandfathered. Unless there is additional information, this assumption likely underestimates future growth rates, as development in the last 5 years continued to be Great Recession-influenced.

Commenter: Peggy Sanner - Chesapeake Bay Foundation

DEQ Response 5: DEQ staff has reviewed Construction General Permit records to determine the percent of total acreage of proposed land disturbance permitted under the 2014 Construction General Permit that qualifies for grandfathering in accordance with Part II-C of the Virginia Stormwater Management Program regulation 9 VAC 25-870-48. From July 1, 2014 through May 10, 2016, less than 5% of total area disturbed from projects receiving permit coverage under the July 1, 2014 CGP is eligible for the grandfathered technical criteria statewide. Additionally, DEQ staff reviewed the percent of total proposed land disturbance permitted that qualifies for grandfathering for each of the 6 Phase I MS4 localities in Hampton Roads. Again the percents were in line with the statewide average with a percentage range of 0 to 5.3%. Based on the review, DEQ staff believes that the estimate of 10% of projects qualifying as for the grandfathered technical criteria provides a conservative estimate for estimating increased loads from grandfathered projects. Further details can be found in the Fact Sheet Attachment "Alternative Methodology to Calculate Offset from New Sources" regarding the Construction General Permit data as well as additional justification as to why the approach is conservative.

No changes are needed to the permit or fact sheet in response to this comment.

Comment 6: The draft Hampton Roads permits and Fact Sheets suggests that the existing source reductions are accelerated and that increased loads from new development or grandfathered projects are not addressed. The Fact Sheets explain: "All *reductions achieved utilizing methodology in (f) and (g) under the 2016 permit will be applied toward reduction requirements in future permit cycles."* This explanation seems to indicate that all of the reductions obtained in this permit cycle will be subtracted from the requirements applicable to future permit cycles. The language should be changed to clarify that the reduction requirements for this permit term do not serve to reduce the requirements in future permits.

Commenter: Peggy Sanner - Chesapeake Bay Foundation

DEQ Response 6: See response to comment 2 above.

Comment 7: The final Hampton Roads permits should retain the same pollution reduction requirements for addressing new development and grandfathering as included all of the other issued MS4 permits.

Commenter: Peggy Sanner - Chesapeake Bay Foundation

DEQ Response 7: While DEQ staff appreciates the desire for consistent language across all Phase I MS4 individual permits, DEQ staff believes that permit conditions should be adjusted in individual permits to take into account regional and local issues when appropriate. As explained in the response to comment 2 above, DEQ staff believes that the alternative methodology as proposed in the draft permit adequately addresses the requirement for the permittees to offset the increased loads associated with new source loads (2009 – 2014) and grandfathered projects.

No changes are needed to the permit or fact sheet in response to this comment.

Chesapeake Bay TMDL Action Plan

Comment 8: The draft permits requires permittees to include in the reapplication materials demonstration to achieve an additional 35%, for a total of 40%, by the end of that second permit period. For the Hampton Roads MS4 permittees this extends until 2026 – after the Chesapeake Bay TMDL's 2025 conclusion when all pollution reductions required by the WIP I are to be completed. The draft Hampton Roads permits must require each permittee's reapplication for coverage to spell out the specific means and methods it will implement to comply with the entire 100% goal for 2025 to ensure that the permittees take appropriate steps, including budgeting for credit acquisition and reservation of any necessary credits. The following language is proposed in Part I.D.1.d(5):

> *The permittee shall include the following as part of its reapplication package due in accordance with Part II.M: . . . (b) A draft second phase Chesapeake Bay TMDL Action Plan designed to reduce the existing POC loads by (i) an additional 19 times the required reductions in loading rates (for a combined total of 100%) using Table 2 of Part I.D.1.b of this state permit, including documentation evidencing the reservation of any nutrient credits the permittee intends to acquire and the BMPs the permittee intends to implement to ensure that practices are in place by 2025 that are necessary to meet water quality standards in the Chesapeake Bay and its tidal tributaries, or by (ii) such reductions as are consistent with the Bay TMDL that have been provided by the Commonwealth in the Phase III WIP; and (c) An additional 95% reduction in new sources developed between 2009 and 2014 and for which the land use cover conditions was greater than 16%.*

Commenter: Peggy Sanner - Chesapeake Bay Foundation

DEQ Response 8: While DEQ staff recognizes the importance of planning for future reduction requirements, staff also recognizes that with completion of Phase 6 of the Chesapeake Bay Watershed model and Phase III of the WIP during this permit term, there may be revisions to the reduction strategies and requirements necessary to meet the Chesapeake Bay Program goal of 2025. Rather than include a permit condition for an application requirement that may be deemed inaccurate prior to submittal, DEQ staff will be communicating with the permittees through reissuance reminder letters and other means as to what will be required with the reissuance applications.

No changes are needed to the permit or fact sheet in response to this comment.

Comment 9: The draft Hampton Roads permits assert that compliance with conditions of the permit amounts to compliance with applicable water quality standards, including those in the Bay TMDL and the WIPs. One example of this problem is: "This state permit is consistent with the Chesapeake Bay TMDL and the Virginia Phase I and II WIPs to meet the Level 2 (L2) scoping run for existing developed lands as it represents an implementation of 5% of L2 as specified in the 2010 Phase I WIP." However, such assertions are potentially inaccurate, as the permittee cities have not yet devised or submitted for DEQ's review and approval, the Chesapeake Bay TMDL Action Plan that will set out each permittee's proposed pollutant reduction program. The following language is proposed in Part I.D.1: *If fully implemented with an approved, compliant TMDL Action Plan, this state permit is consistent with the Chesapeake Bay TMDL and the Virginia Phase I and Phase II WIPs. . . .*

Commenter: Peggy Sanner, Chesapeake Bay Foundation

DEQ Response 9: DEQ is obligated by the 9 VAC 25-870-460 C.1.f(2) of the Virginia Stormwater Program regulations to draft permits as appropriate to meet both the narrative water quality criterion and numeric water quality criterion and are consistent with the assumptions and requirements of any applicable TMDL wasteload allocation. The draft permits for the Hampton Roads Phase I MS4s have been drafted by DEQ staff such that the permit is consistent with the Chesapeake Bay TMDL and associated WIPs. The language as proposed above speaks to the permittees demonstration of compliance with the terms of the permit and associated water quality planning documents and is not appropriate for inclusion in the permit.

No changes are needed to the permit or fact sheet in response to this comment.

Comment 10: The draft Hampton Roads permits must clarify that, once approved by DEQ, the required Bay TMDL Action Plan is incorporated into and made a part of the Permit. Additionally, the draft permits should be amended to clarify that the adoption of the Bay TMDL Action Plan is a major modification, subject to the full procedural requirements provided by the Virginia Administrative Code. The current permit language provides for public comment at the City level and DEQ approval, but the current drafts do not provide assurances that the permittees' comment and/or hearing structure will offer public participation opportunities required by the Clean Water Act which directs permitting authorities to "provide for, encourage, and assist the participation of the public" and expressly directs that "[p]ublic participation in the development, revision, and enforcement of any regulation, standard, effluent limitation, plan, or program established by the Administrator or any State under this Act shall be provided for, encouraged, and assisted by the Administrator and the States**."**

Commenter: Peggy Sanner - Chesapeake Bay Foundation

DEQ Response 10: As stated in Part I.A.6, The MS4 Program Plan is an enforceable part of the permit and the Chesapeake Bay TMDL Action Plan is part of the MS4 Program Plan. Any changes to the Program Plan must be in accordance with Part I.A.7 of the permit. Additionally, approval of the Chesapeake Bay TMDL Action Plan is not considered a major modification to the permit since the permit

establishes the required load reductions. Public participation and ability to request a hearing is available as part of the permit reissuance process under the Virginia Stormwater Act and Virginia Stormwater Management Program Regulations. The Action Plan document outlines how the permittee will demonstrate compliance with the reduction requirement. As part of the initial action plan process or significant modification process in the proposed approach, the permittee must solicit public input prior to DEQ approval.

No changes are needed to the permit or fact sheet in response to this comment.

Other TMDL Action Plans

Comment 11: The draft permits should require the development of a compliance plan that specifies a definite end date by when the WLA must be achieved (not simply an estimated end) for meeting water quality standards or WLA and benchmarks to show progress for non-Bay TMDLs. This is a requirement in all cases where water quality standards will not be achieved within a single permit period.

Commenter: Peggy Sanner, Chesapeake Bay Foundation

DEQ Response 11: For Other TMDL Action Plans, the permit allows implementation of the TMDL action plan over multiple permit terms as long as the permittee is demonstrating adequate progress. Because VPDES permits are effective for a fixed term of 5 years, conditions and requirements that go beyond the term of the permit cannot be included in the permit. As such, the permit does not contain a defined schedule for when a WLA will be achieved. The action plan is submitted to DEQ for review and approval, incorporated as part of the MS4 Program Plan, and implementation of the action plan is documented through the annual report submitted by the permittee each year. This approach incorporates the iterative approach afforded to MS4 permittees in implementing strategies to address TMDL WLAs.

No changes are needed to the permit or fact sheet in response to this comment.