



January 2, 2025

Prepared for:

City of Norfolk, Virginia
Department of Public Works - Division of Environmental Management
2233 McKann Avenue
Norfolk, VA 23509

Prepared By:

Hazen and Sawyer
4500 Main St Ste 500
Virginia Beach, VA 23462

Chesapeake Bay TMDL Action Plan

VSMP MS4 Permit No. VA0088650

Revision 2 – January, 2025

Table of Contents

Abbreviations	4
1. Introduction and Background.....	5
1.1 Purpose	5
1.2 Total Maximum Daily Loads and Waste Load Allocations	5
1.3 Public Notification and Comment	6
2. Current MS4 Program and Other Legal Authorities	7
3. New or Modified Legal Authorities	8
4. Total Pollutant Loads and Cumulative Required Reductions.....	9
4.1 MS4 Service Area and Exclusions	9
4.2 Existing Source Loads and Reduction Requirements.....	11
5. Means and Methods to Address Discharges from New Sources.....	14
6. Means and Methods to Meet the Required Reductions and Schedule	15
6.1 Methodology for Estimating POC Removals.....	15
6.2 Credit for BMPs Implemented on Unregulated Lands.....	19
6.3 Credit for BMPs Installed to Meet Development/Redevelopment Requirements	19
6.4 Credit for BMPs and Impoundments Installed Prior to July 1, 2009	20
6.5 Credit for BMPs Retrofitting Prior Developed Lands.....	20
6.6 Credit for MOU BMPs with other MS4 Permittees	21
6.7 Credit for POC Reductions by Street Sweeping	21
6.8 Credit for POC Reductions by Storm Drain Cleaning	23
6.9 Credit for POC Reductions through Nutrient Trading.....	25
6.10 Plan Summary	26
7. Estimate of Expected Costs	28

List of Tables

- Table 2-1: Legal Authority
- Table 3-1: Modified Legal Authority
- Table 4-1: Summary of Regulated and Excluded Land Uses
- Table 4-2: Existing Source Loads and Reduction Requirements – June 30, 2026
- Table 4-3: Existing Source Loads and Reduction Requirements – June 30, 2028
- Table 6-1: Ratio of Phosphorus Loading Rate to Nitrogen Loading Rate
- Table 6-2: Credit for BMPs Implemented on Unregulated Lands
- Table 6-3: Credit for BMPs Implemented to Meet Development/Redevelopment Requirements
- Table 6-4: Credit for BMPs and Impoundments Installed Prior to July 1, 2009
- Table 6-5: Credit for BMPs Retrofitting Prior Developed Lands
- Table 6-6: Street Sweeping Load
- Table 6-7: Street Sweeping Load Reductions
- Table 6-8: Credit for POC Reductions by Street Sweeping
- Table 6-9: Monthly Average Material Collected
- Table 6-10: Percentage of Organic Matter from October-December Calculation
- Table 6-11: Weight of Initial Wet Material Calculation
- Table 6-12: Storm Drain Cleaning Dry Weight Calculation
- Table 6-13: Storm Drain Cleaning Nutrient Credit Calculation
- Table 6-14: Credit for POC Reductions by Storm Drain Cleaning
- Table 6-15: Nutrient Credits to Obtain from HRSD
- Table 6-16: TMDL Action Plan Summary

List of Figures

- FIGURE 4-1: MS4 Service Area
- FIGURE 6-1: Methodology for Estimating BMP POC Removals

List of Appendices

- Appendix A: Public Comment Period
- Appendix B: MS4 Exclusions
- Appendix C: Deducted and Creditable Best Management Practices
- Appendix D: Supplementary City Data
- Appendix E: HRSD SWIFT Agreement

Abbreviations

BMP	Best Management Practice
CDA	Contributing Drainage Area
City	City of Norfolk
CWA	Clean Water Act
FY	Fiscal Year
HRPDC	Hampton Roads Planning District Commission
HRSD	Hampton Roads Sanitation District
HUC	Hydrologic Unit Code
LA	Load Allocation
MLA	Mass Loading Approach
MOS	Margin of Safety
MOU	Memorandum of Understanding
MS4	Municipal Separate Storm Sewer System
NPDES	National Pollutant Discharge Elimination System
PARS	Permit Administration and Review System
POC	Pollutant of Concern
QSLM	Qualifying Street Lanes Method
SWIFT	Sustainable Water Initiative for Tomorrow
TMDL	Total Maximum Daily Load
TN	Total Nitrogen
TP	Total Phosphorus
VDEQ	Virginia Department of Environmental Quality
VDOT	Virginia Department of Transportation
VSMP	Virginia Stormwater Management Program
VPDES	Virginia Pollutant Discharge Elimination System
WLA	Waste Load Allocation

1. Introduction and Background

1.1 Purpose

With a continued commitment to water quality improvement, the City of Norfolk (City) has developed this Total Maximum Daily Load (TMDL) Action Plan to address the Chesapeake Bay TMDL reduction requirements as outlined in the Municipal Separate Storm Sewer Permit (MS4) No. VA0088650 and Virginia Department of Environmental Quality (VDEQ) *Guidance Memo No. GM20-2003 – Chesapeake Bay TMDL Special Condition Guidance*, dated November 12, 2020. The City is pleased to have this opportunity to provide specific information, including potential implementation strategies specific to Norfolk's unique environment. Due to the Chesapeake Bay's proximity to the City, it provides direct economic benefits through increased tourism, diverse fisheries, and an enhanced quality of life for residents; therefore, the City is devoted to seeing the Bay clean-up efforts succeed.

This report provides area-specific baseline data collection of best management practices (BMP) implemented by the City. Additionally, the report outlines proposed strategies to meet established waste load allocations (WLA) for total phosphorus (TP) and total nitrogen (TN). The City understands its role and responsibilities in the implementation of relevant local strategies to support Virginia's demonstration of reasonable assurance of TMDL compliance. The City dedicates itself to improving the quality of the Chesapeake Bay, thereby also guaranteeing improved local water quality.

The Clean Water Act (CWA) requires states to designate their waters with appropriate uses (e.g. swimming, drinking, shellfish harvesting, etc.) and to adopt water quality standards protective of those designated uses. When waters do not meet these standards, the CWA requires the development of a TMDL, or the maximum amount of pollutant that a waterbody can receive without exceeding the water quality standard.

The City's MS4 Permit authorizes stormwater discharge from all existing and new municipal separate stormwater point source discharges to surface waters. Parts I.A.6 and I.D of the permit require the City to maintain an updated MS4 Program Plan that includes TMDL Action Plans for pollutants for which waste loads have been allocated to the MS4 in approved TMDL studies.

The City's MS4 Permit and this TMDL Action Plan serve as the regulatory mechanisms for addressing the load reductions that the Chesapeake Bay TMDL describes and that the MS4 Permit assigned to the City. VDEQ requires MS4 operators to address the required waste loads through the implementation of BMPs, legal authorities, and other programs implemented to address the pollutants of concern (POC). This TMDL Action Plan addresses reduction of POCs to the, specifically TP and TN.

1.2 Total Maximum Daily Loads and Waste Load Allocations

A TMDL assigned to a specific waterbody is the maximum amount of pollutant that a waterbody can receive without exceeding the water quality standard for that pollutant. TMDLs are the collective sum of three components:

- **Waste Load Allocations (WLA)** for point source contributions are discharges from identifiable sources at specific locations. The City's MS4 outfalls are point source discharges and fall under this category.

- **Load Allocations (LA)** for non-point source contributions are from unidentifiable sources or locations and originate over a relatively large area.
- **Margin of Safety (MOS)** is a required component that accounts for modeling uncertainty and other unknown factors.

The City's MS4 Permit presents the applicable TMDLs as WLAs, and they are the major component of the required pollutant reduction needed to meet water quality standards.

1.3 Public Notification and Comment

Part I.D.1.j) of the MS4 permit requires the City to “provide an opportunity for public comment on the additional BMPs proposed to meet the reductions not previously approved by the Department in the first phase Chesapeake Bay TMDL action plan.”

The City made this TMDL Action Plan available to the public on the City of Norfolk website for a 15-day period from November 26, 2024, through December 11, 2024. The City sent email notifications of the comment period to Bay Star Homes and Civic League Presidents. Further notification of the comment period to the public consisted of an advertisement in the Virginia Pilot for two consecutive Sundays: December 1, 2024, and December 8, 2024.

Part I.D.1.i)7) of the MS4 permit requires the City to include “[a] summary of any comments received as a result of public participation required in Part I.D.1.j), the permittee’s response, identification of any public meetings to address public concerns, and any revisions made to the Chesapeake Bay TMDL action plan as a result of public participation.”

Appendix A includes a summary of the comments received during the public participation period and any revisions or actions taken as a result.

2. Current MS4 Program and Other Legal Authorities

Norfolk has developed its current MS4 Program Plan in accordance with Virginia Stormwater Management Law, Virginia Stormwater Management Regulations, and MS4 Permit requirements.

In the 2020 TMDL Action Plan, a review of the City Codes and Ordinances allowed the City to determine all required legal authorities. These legal authorities ensured compliance with Chesapeake Bay TMDL requirements specified in the City's MS4 permit. **Table 2-1** identifies the legal authorities that the 2020 TMDL Action Plan previously reported that remain unmodified.

Table 2-1: Legal Authority

Item	Date
Norfolk City Code, Chapter 14.5: Environmental Offenses	April 13, 1999
Norfolk City Code, Chapter 15: Erosion and Sediment Control	July 1, 2014
Norfolk City Code, Chapter 41.1: Stormwater Management	July 1, 2014
Norfolk City Code, Chapter 42.5: Subdivisions	July 22, 2014
Norfolk City Code, Chapter 45: Trees and Other Vegetation	February 28, 2012
Norfolk City Code, Chapter 49: Wetlands and Coastal Primary Sand Dunes	July 1, 2016

A full copy of the City of Norfolk Stormwater Management Ordinances can be found on the City's Municode system located online at https://library.municode.com/va/norfolk/codes/code_of_ordinances.

3. New or Modified Legal Authorities

Part I.D.1.i)1) of the MS4 Permit requires the City to include “[a]ny new or modified legal authorities, such as ordinances, permits, policy, specific contract language, orders and inter-jurisdictional agreements, implemented or needing to be implemented, to meet the requirements of Parts I.D.1.b) and c) to include a review in the development of these actions.”

The City has updated or modified various legal authorities since the 2020 TMDL Action Plan. **Table 3-1** identifies those recently modified legal authorities permitting Norfolk to execute its MS4 Program Plan and this TMDL Action Plan.

Table 3-1: Modified Legal Authority

Item	Date
Norfolk City Code, Chapter 41.2: Virginia Stormwater Management Program	July 1, 2024
Norfolk City Code, Appendix A, Zoning Ordinance, Article 3.9.6: CBPA-O: Chesapeake Bay Preservation Area Overlay	September 24, 2024
Norfolk City Code, Appendix A, Zoning Ordinance, Article 5: Development Standards	September 24, 2024
Norfolk Stormwater Design and Construction Manual	July 1, 2024

4. Total Pollutant Loads and Cumulative Required Reductions

Part I.D.1.i)2) of MS4 Permit No. VA0088650 requires the City to include “[t]he load and cumulative reduction calculations for each river basin.”

The current MS4 Permit requires Norfolk to estimate existing POC source loads and reduction requirements utilizing the calculation sheet provided in Table 1a of the MS4 Permit. As there are no longer separate WLAs for the James and Little Creek Basins as in the prior permit, and the loading rates are the same for both basins, all calculations and requirements addressed in this TMDL Action Plan are on a city-wide basis.

The City previously delineated the MS4 service area and used the results of the land use analysis to estimate the annual pollutant loads of TP and TN discharge from the regulated MS4 service area. The City recently revised the MS4 service area in 2024 consistent with Part II, Section 2 of *Guidance Memo No. GM20-2003*. Further revisions to the MS4 service area are addressed in this TMDL Action Plan. The revised MS4 service area eliminates several previously identified exclusion areas while also including additional exclusions due to new stormwater permitting. **Figure 4-1** illustrates the revised regulated MS4 service area. A summary of the exclusions is provided in **Appendix B** of this plan.

4.1 MS4 Service Area and Exclusions

Delineating the MS4 service area is a critical step in the TMDL action planning process. Delineation determines both the annual pollutant loads to the Chesapeake Bay from the regulated MS4 as well as the nutrient reductions required of the City. Norfolk’s Department of Public Works Division of Environmental Stormwater Management previously delineated the City’s MS4 service area in 2020 and excluded the following lands within the MS4 service area:

- Other Phase II MS4 service areas;
- Property within the Virginia Department of Transportation (VDOT) right-of-way;
- Sites with individual Virginia Pollutant Discharge Elimination System (VPDES) permits;
- Wetlands and open water; and,

In the City’s current delineation of the regulated MS4 service area, the City included wetlands, a previously excluded area. **Table 4-1** provides a comparison of the previous and revised MS4 service area and exclusion areas. Of the approximate 43,000 acres within the Norfolk city boundary, roughly 27,437 acres are now defined as the City’s responsibility, comprised of approximately 14,342 acres of regulated urban impervious lands and 13,095 acres of regulated pervious lands.

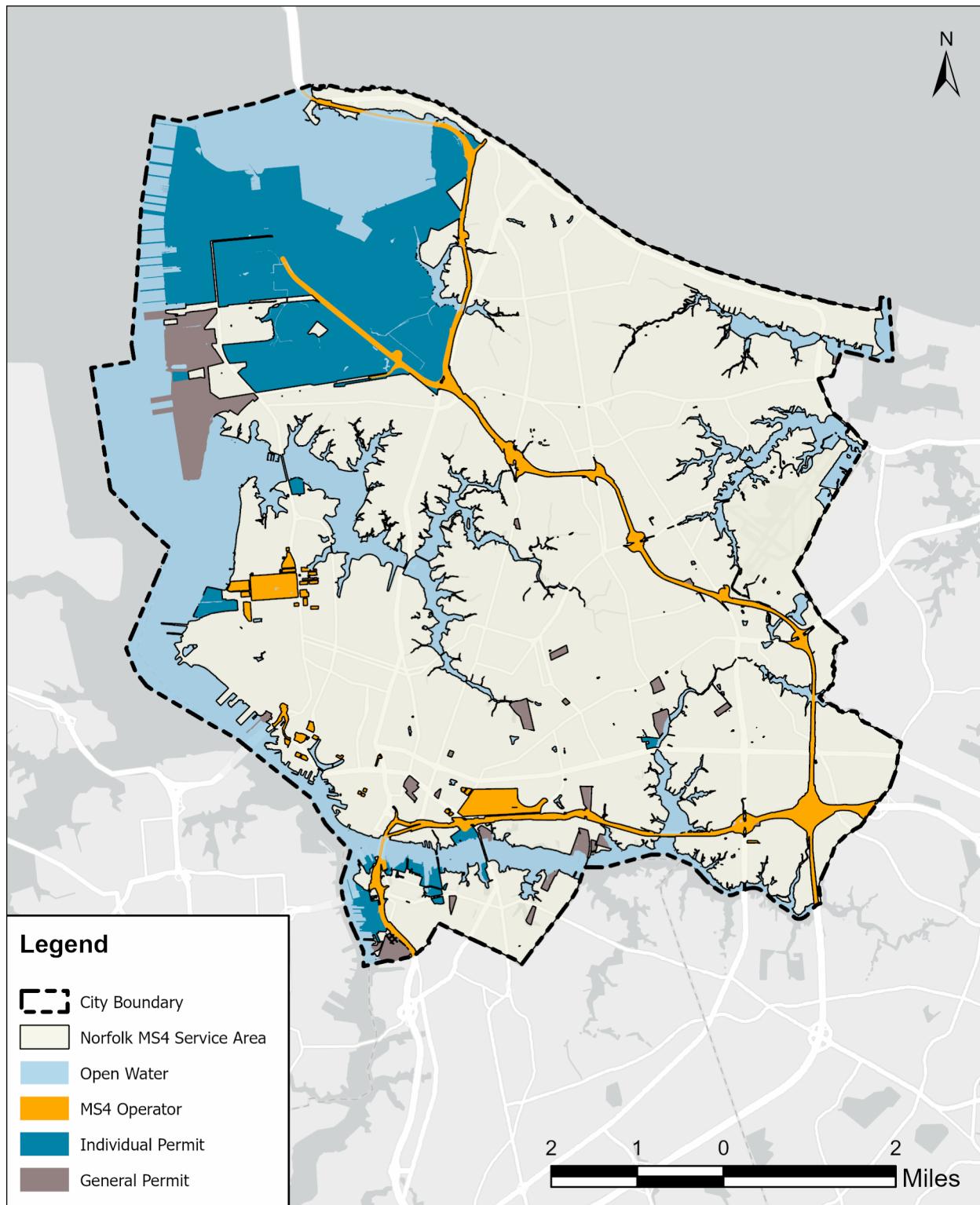


FIGURE 4-1: MS4 Service Area

Table 4-1: Summary of Regulated and Excluded Land Uses

Regulated and Excluded Land Uses	2020 MS4 Delineation (acres)	2024 MS4 Delineation (acres)
Exclusions		
Open Water	8,323.3	8,755.1
Wetlands	577.3	0.0
Direct Drainage	0.0	0.0
Forested Lands	0.0	0.0
Other MS4 Operator	378.6	342.4
VDOT MS4	929.1	1,108.2
VPDES Stormwater Permittee	5,189.9	5,306.2
Total Exclusions	15,398.2	15,512.0
Regulated MS4 Service Area		
Regulated Urban, Impervious	15,376.4	13,808.9
Regulated Urban, Impervious (Wetlands)	-	533.0
Regulated Urban, Pervious	12,174.8	13,095.3
Total Regulated MS4	27,551.2	27,437.3
TOTAL, CITY OF NORFOLK	42,949.3	42,949.3

4.2 Existing Source Loads and Reduction Requirements

The existing source load calculations utilized the regulated urban land use acreage summarized in **Table 4-1** to apply the appropriate POC unit loading rates. The regulated MS4 service area includes 14,342.0 acres of regulated urban impervious area and 13,095.3 acres of regulated pervious area. The product of the regulated urban land use and the respective POC loading rates provided in Table 1a of the City's MS4 Permit is the annual TP and TN loadings to the Chesapeake Bay. **Table 4-2** presents a summary of the existing POC source loads from the regulated MS4 to the Chesapeake Bay.

The City's MS4 Permit requires Norfolk to reduce these annual POC loadings to the Chesapeake Bay, with the nutrient and sediment reduction requirement split over three phases. The first phase required a cumulative POC reduction of 5% by June 30, 2018. The second (current) phase requires a cumulative 40% reduction by June 30, 2026. The third phase requires a cumulative 100% reduction by June 30, 2028. Additionally, section D.b) 1)(g) of the MS4 Permit effective July 1, 2016 required an additional 15% of the 5% load removal requirement (total 5.75%) to offset grandfathered projects and increased loads from new sources initiating construction between July 1, 2009 and June 30, 2014. The City has continued this requirement in this TMDL Action Plan to conservatively calculate estimated removals, establishing the required removals as 5.75%, 40.75% (June 30, 2026), and 100.75% (June 30, 2028).

Tables 1a and 1b of the City's MS4 Permit provide the required POC loading reduction percentages for the second permit cycle, and the products of the loading reduction percentages and the POC loads provide the required POC reductions. **Tables 4-2** and **4-3** present summaries of the City's required POC source load reductions for the second permit cycle, both by June 30, 2026, and June 30, 2028.

Table 4-2: Existing Source Loads and Reduction Requirements – June 30, 2026

Pollutant	Subsource	Loading Rate (lbs/ac/yr)	Existing Developed Lands as of 6/30/09 Served by the MS4 within the Regulated Areas (acres)	Load (lbs/yr)	Percentage of MS4 Required Chesapeake Bay Total L2 Loading Reduction	Percentage of L2 required reduction by June 30, 2026	40.75% cumulative Reduction required by June 30, 2026 (lbs/yr)	Sum of 40.75% cumulative reduction (lbs/yr)
Nitrogen	Regulated Urban Impervious	9.39	14,342.0	134,671	9%	40.75%	4,939	7,177
	Regulated Urban Pervious	6.99	13,095.3	91,536	6%	40.75%	2,238	
Phosphorus	Regulated Urban Impervious	1.76	14,342.0	25,242	16%	40.75%	1,646	1,839
	Regulated Urban Pervious	0.5	13,095.3	6,548	7.25%	40.75%	193	

Table 4-3: Existing Source Loads and Reduction Requirements – June 30, 2028

Pollutant	Subsource	Loading Rate (lbs/ac/yr)	Existing Developed Lands as of 6/30/09 Served by the MS4 within the Regulated Areas (acres)	Load (lbs/yr)	Percentage of MS4 Required Chesapeake Bay Total L2 Loading Reduction	Percentage of L2 required reduction by June 30, 2028	100.75% cumulative Reduction required by June 30, 2028 (lbs/yr)	Sum of 100.75% cumulative reduction (lbs/yr)
Nitrogen	Regulated Urban Impervious	9.39	14,342.0	134,671	9%	100.75%	12,211	17,745
	Regulated Urban Pervious	6.99	13,095.3	91,536	6%	100.75%	5,533	
Phosphorus	Regulated Urban Impervious	1.76	14,342.0	25,242	16%	100.75%	4,069	4,547
	Regulated Urban Pervious	0.5	13,095.3	6,548	7.25%	100.75%	478	

5. Means and Methods to Address Discharges from New Sources

Part I.D.1.a)2) of MS4 Permit No. VA0088650 defines new sources as “pervious and impervious urban land uses served by the MS4 developed or redeveloped on or after July 1, 2009.” To address the compliance requirements of the Virginia Stormwater Management Regulations, the City of Norfolk has adopted the Norfolk Stormwater Design and Construction Manual into its local ordinance (Ord. No. § 1, 5-13-14, eff. 7-1-24). All development and redevelopment projects undergoing site plan review must comply with the requirements of the manual. Additionally, all land disturbance activities exceeding 2,500 square feet must have an approved stormwater management plan and erosion and sediment control plan.

6. Means and Methods to Meet the Required Reductions and Schedule

The following sections provide the means and methods used by Norfolk to satisfy its TMDL POC second cycle POC load reduction requirements.

6.1 Methodology for Estimating POC Removals

Sections 6.2 through 6.5 describe POC reduction credits available to the City through active BMPs located throughout the City. Because TP is the keystone pollutant, typically projects only track the TP reductions achieved and not TN. Additionally, phosphorus reduction credits for several of the project types in the subsections below must account for a baseline phosphorus reduction for land disturbance activities, and any phosphorus reductions achieved above that baseline are creditable. State code 9VAC25-875-580 defines this baseline reduction for land disturbance activities and the associated technical criteria. Establishing these technical criteria aimed to “protect the quality of state waters and to control the discharge of stormwater pollutants.” There are no baseline reduction requirements for nitrogen.

Part I of the technical criteria is more stringent than earlier versions of the criteria. The current criteria require the TP load leaving the site to be less than 0.41 pounds of phosphorus per acre per year, compared to a value of 0.45 pounds per acre per year from previous versions. Projects analyzed in this TMDL Action Plan were the result of redevelopment activities with no baseline removal requirement.

Table 6-1, included as Table 2 in the MS4 Permit, provides a conversion ratio for the equivalent TN based on a known TP load. These equivalent loads allow for the determination of nitrogen reductions when only phosphorus reduction data is available.

Table 6-1: Ratio of Phosphorus Loading Rate to Nitrogen Loading Rate

Ratio of Phosphorus to Other POCs (Based on All Land Uses 2009 Progress Run)	Phosphorus Loading Rate (lbs/ac)	Nitrogen Loading Rate (lbs/ac)
James River Basin	1.0	5.2

In 2007, an electronic tracking mechanism called PARS (Permit Administration and Review System) was developed to track structural BMPs as well as additional site-specific information. Through the 2007-2008 inspection year, the Environmental Specialist, in coordination with the annual structural BMP inspections, continuously confirmed and revised data captured as compared to paper files on record, including approved site plan sheets, post-construction water quality/quantity worksheets, and project narratives. By 2008, the data captured in PARS contained information currently on file for structural BMPs. The PARS data served as the primary data source for completing the 2018 TMDL Action Plan and the 2020 Draft TMDL Action Plan.

In between the submittal of the 2020 Draft TMDL Action Plan and this Action Plan, this City has switched to a different asset management program known as Lucity. The City maintains the Lucity database and updates BMP site data, including POC removals, based on site plan sheets, post-construction water quality/quantity worksheets, and project narratives. Since these pollutant removal values in Lucity are already calculated, certified, and approved, this TMDL Action Plan utilized those POC removals first. Where there were data gaps, this action plan filled them with estimations based on an adopted

methodology. **Figure 6-1** at the end of this section describes and illustrates graphically the process for determining pollutant loads and pollutant removals during the development of this TMDL Action Plan. This process reflects the original methodology from the 2018 and 2020 Action Plans with slight modifications.

Step 1: Obtain Site and BMP Data from Lucity – Data on BMPs in Norfolk, both public and private, were obtained from the City's asset management software known as Lucity. Lucity tracks and stores information regarding active BMPs located throughout the City. Applicable data for this analysis included BMP type, date online, contributing drainage area (CDA), total site area, site impervious area, and TP reduction achieved. GIS served to determine whether a BMP was in the MS4 service area, i.e., regulated or unregulated land.

Step 2: Remove Non-creditable BMPs – Using the date online, status, and comment fields, non-qualifying BMPs were removed from further consideration. These included:

- BMPs implemented to address only water quantity;
- BMPs constructed prior to January 1, 2006; and,
- BMPs which had been archived and were no longer active.

Step 3: Select Appropriate/Conservative CDA Value for Calculations – If no CDA was available in GIS and the Lucity Total Site Area was greater than the Lucity CDA, the Lucity CDA was used for calculations. If the Lucity Total Site Area was less than the Lucity CDA, the Lucity CDA was reduced to the Lucity Total Site Area.

Step 4: Estimate CDA Impervious Area – If the sum of the Lucity pervious area treated by the BMP and the Lucity impervious area treated by the BMP equaled the selected CDA, then the Lucity impervious area treated was used for the CDA impervious area. If not and the Lucity Total Site Area was greater than the Lucity Site Impervious Area, the CDA impervious area was established at the same level of imperviousness as the site. If neither of these previous two conditions are true, the CDA imperviousness was set at 61.7157% based on an analysis of previously delineated BMPs ($r^2 > 0.90$).

Step 5: Estimate POC Loads to BMP – POC Loads to each BMP were developed using the CDA impervious area selected in Step 5. TP was estimated using the equation:

$$TP\ Load\ to\ BMP\ = [0.05 + (0.009 * (CDA\ Impervious\ Area))] * 2.28$$

TN loads to the BMP were estimated from the TP load and the conversion factors presented in **Table 6-1**.

Step 6: Estimate POC Load Reductions by BMP – As a matter of consistency, all POC removals were estimated using the 5th-order polynomial equations for the applicable retrofit reduction curves for the type of BMP under consideration, i.e. runoff reduction (RR) or stormwater treatment (ST). The retrofit equations used for this effort are listed in Table V.B.2 of Appendix V of GM20-2003. Where a value was not calculable, the minimum value of the Chesapeake Bay Program BMP efficiencies and the BMP Clearinghouse efficiencies were selected for calculations.

Step 7: Estimate Nitrogen Load Reduction Using Lucity Phosphorus Removal – If a non-zero value for the phosphorus removal was available in Lucity, the nitrogen removal was also estimated using the following equation:

$$\frac{\text{Lucity TP Removal}}{\text{Selected TP Removal \%}} * \text{Selected TN Removal \%} * 5.2 = \text{TN Removal}$$

Step 8: Select POC Reduction Credit – If a non-zero value for the POC removal was available in Lucity, that value was selected for credit. If the value for the POC removal in Lucity was zero or blank, the POC removal selection differed based on the type of POC. For TP, the selected removal was the estimation from Step 6. For TN, the selected removal was the estimation from Step 7. Where a value was not calculable, the estimation was then generated from Step 6. This hierarchy for selecting POC reduction credit is simplified below:

- TP Removal
 - Priority 1: Lucity Removal
 - Priority 2: Step 6 Estimated Removal
- TN Removal
 - Priority 1: Lucity Removal
 - Priority 2: Step 7 Estimated Removal
 - Priority 3: Step 6 Estimated Removal

Step 9: Remove All Data Entries with Zero/Blank Values for Selected TP Removal – BMPs with missing data, such as CDA, make it impossible to estimate TP removal. However, several recent BMPs in Lucity do not include CDA but have values for TP and TN removal due to the nature of site plan data updates. Querying BMP entries based on zero/blank CDA early in the methodology would have eliminated creditable BMPs; therefore, entries are queried now only after all creditable entries have their respective selected POC removals.

Step 10: Filter Data into Appropriate Credit Categories – Following all calculations, the data was filtered to sort each BMP into the appropriate category corresponding to Sections 7.2 through 7.5 of this TMDL Action Plan.

The 2018 and 2020 TMDL Action Plans previously reported comprehensive lists of qualifying and creditable BMPs and their associated POC reductions achieved for the first phase. As the City maintains its Lucity BMP database, it updates the status of BMPs. As a result, the City has archived multiple BMPs that were previously reported for credit, which now renders their POC removals uncreditable. **Table C-1 in Appendix C** contains a list of BMPs that the City has archived since previous action plans and their respective credits that are no longer applicable to the current TMDL Action Plan.

Reporting criteria in Part I.D.1.i)5) of the MS4 Permit calls for the reporting of “BMPs to be implemented by the permittee prior to the expiration date of this permit.” Taking a conservative approach to reporting credit reductions, the City has elected to not report any planned BMPs in this TMDL Action Plan and only take credit for already implemented BMPs.

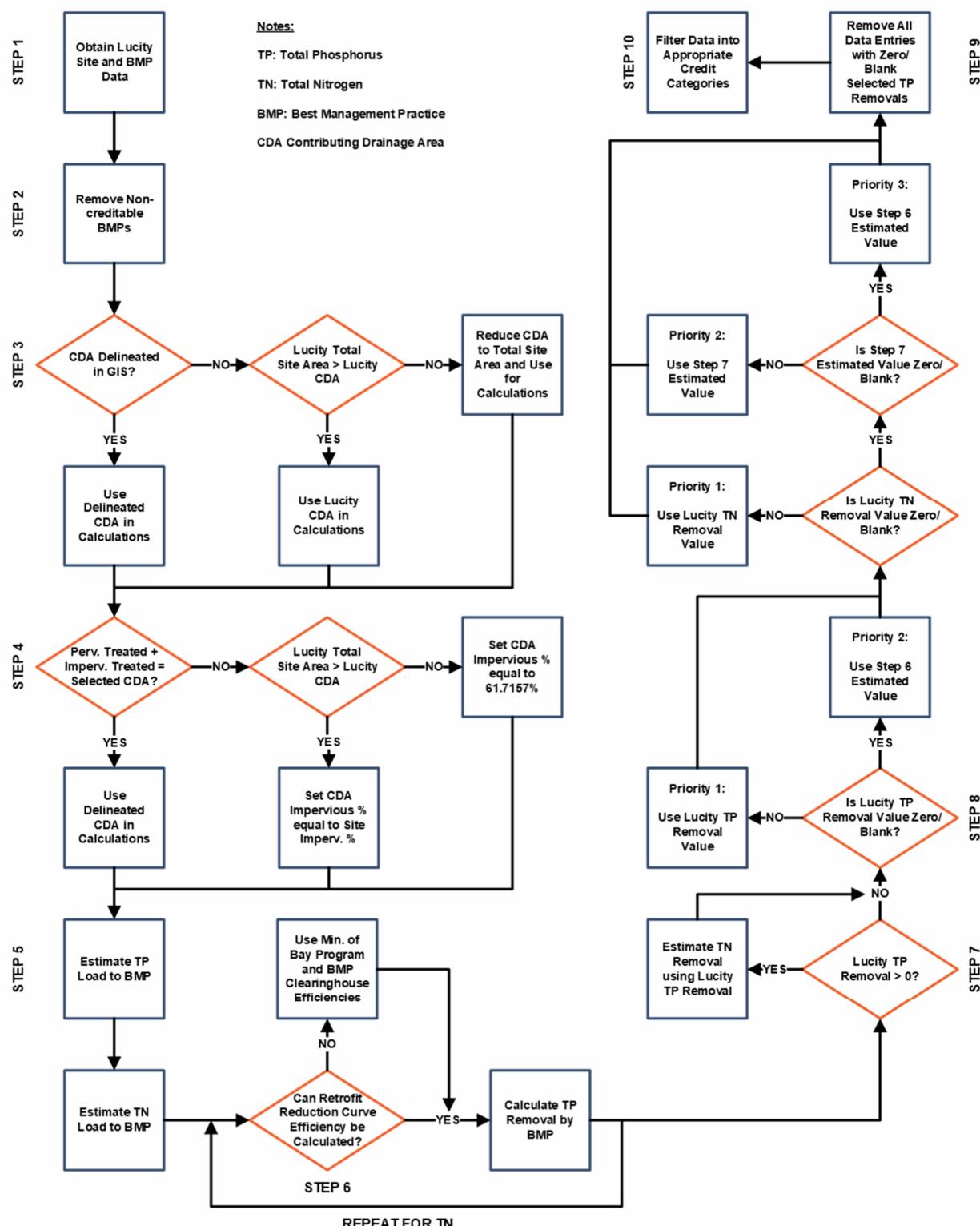


FIGURE 6-1: Methodology for Estimating BMP POC Removals

6.2 Credit for BMPs Implemented on Unregulated Lands

Part I.D.1.k1) of the MS4 Permit allows credit for the “[i]mplementation of BMPs on unregulated lands, provided any necessary baseline reduction is not included toward meeting the required reduction in this permit.”

Following the exclusion of non-qualifying BMPs as the methodology in Section 6.1 describes, the City identified BMPs which met the reporting criteria for credit on unregulated lands. The 2018 TMDL Action Plan previously reported a comprehensive list of qualifying BMPs installed on unregulated lands and their associated POC reductions achieved, and the 2020 Draft TMDL Action Plan reported the same POC reductions. **Table C-1** in **Appendix C** contains a list of all BMPs on unregulated lands that the City has archived since the 2020 TMDL Action Plan and their respective credits that are no longer applicable to the current TMDL Action Plan. **Table 6-2** provides a summary of the POC reductions previously reported and recently deducted.

Table 6-2: Credit for BMPs Implemented on Unregulated Lands

Applicable Action Plan	Reference Table	POC Reductions (lb/yr)	
		TP	TN
Previously Reported in 2020 TMDL Action Plan		209	1,292
Deductions	Table C-1	7.8	98
Total Credits Included in this TMDL Action Plan		201	1,194

6.3 Credit for BMPs Installed to Meet Development/Redevelopment Requirements

Part II, Section 3 of *Guidance Memo No. 15-2005, Chesapeake Bay TMDL Special Condition Guidance, May 18, 2015*, allowed permittees to receive POC reduction credits for BMPs installed to meet development/redevelopment requirements. Part II, Section 3 of *Guidance Memo No. 20-2003, Chesapeake Bay TMDL Special Condition Guidance, November 12, 2020*, provides similar guidance. Following the exclusion of non-qualifying BMPs as the methodology in Section 6.1 describes, the City identified BMPs which met the reporting criteria for credit. **Table C-3** in **Appendix C** contains the list of all creditable BMPs installed to meet development/redevelopment requirements since July 1, 2009. **Table 6-3** provides a summary of the POC reductions previously reported and newly added.

Table 6-3: Credit for BMPs Implemented to Meet Development/Redevelopment Requirements

Applicable Action Plan	Reference Table	POC Reductions (lb/yr)	
		TP	TN
Previously Reported in 2020 TMDL Action Plan		377	2,037
New Credits Included in this TMDL Action Plan		122	286
Total Credits Included in this TMDL Action Plan	Table C-2	499	2,323

6.4 Credit for BMPs and Impoundments Installed Prior to July 1, 2009

Part IV, Section 2 of *Guidance Memo No. 15-2005, Chesapeake Bay TMDL Special Condition Guidance, May 18, 2015*, prepared by the VDEQ allowed permittees to receive full POC reduction credits for previously unreported BMPs. Appendix VI of *Guidance Memo No. 20-2003, Chesapeake Bay TMDL Special Condition Guidance, November 12, 2020*, reiterates this guidance. To receive this credit, permittees must have submitted data on historical BMPs to VDEQ by September 1, 2015, deadline. VDEQ established this deadline to ensure that previously unreported BMPs were included in the Phase 6 Chesapeake Bay Model. The creditable BMPs must have been constructed between January 1, 2006, and July 1, 2009, AND constructed to address water quality within the MS4 service area. To receive this credit, the City provided an affirmative statement in its TMDL Action Plan dated June 2018 indicating, to the maximum extent practicable, that the City submitted a complete list of historical BMPs before the deadline date. The City complied with the above requirements, agreed with the noted provision, and requested allowable POC reduction credits for completing the historical data collection effort. The following statement was provided as required:

“The City has completed and submitted its historical data for BMPs installed prior to June 30, 2013. This data was submitted to VDEQ on August 31, 2015, before the September 1, 2015 deadline.”

As a result of the BMP historical data collection effort, the City identified BMPs which fall within the historical data reporting criteria. **Table 6-4** provides a summary of the POC reductions that the 2020 TMDL Action Plan previously reported, as well as the deductions from that number due to BMP archiving. **Table C-1** in **Appendix C** provides a list of previously reported historical BMPs that are now removed from the TMDL Action plan.

Table 6-4: Credit for BMPs and Impoundments Installed Prior to July 1, 2009

Applicable Action Plan	Reference Table	POC Reductions (lb/yr)	
		TP	TN
Previously Reported in 2020 TMDL Action Plan		105	541
Deductions	Table C-1	2	24
Total Credits Included in this TMDL Action Plan		103	517

6.5 Credit for BMPs Retrofitting Prior Developed Lands

Part I.B.2.b) of the MS4 Permit requires the City to complete “...no less than five (5) projects no later than the expiration date of this state permit.” The permit also stipulates that retrofit projects implemented to meet the Chesapeake Bay Special Conditions, Part 1.D. of the MS4 Permit, “...may be used to meet the requirements of this special condition.”

The City has identified numerous projects implemented to satisfy the requirements of the MS4 permit Part I.B.2.b). In the previous 2020 Action Plan, the reported and claimed credits for retrofits mainly consisted of estimations for planned or under construction retrofits. As these projects update their site plans and calculations, the City updates their Lucy database with the most recent POC removal values. As a result, several of the reported credits from the retrofit BMPs in the 2020 Action Plan are no longer accurate. To correctly report the precise reduction credits, the City will deduct all credits previously

reported and apply the updated methodology described in Section 6.1 to all retrofits in the LUCITY database.

Table C-4 in Appendix C contains the list of all BMPs currently retrofitting prior developed lands. The estimated cost to implement these projects is approximately \$15,000,000. **Table 6-5** provides a summary of the POC reductions previously reported, recently deducted, and newly added.

Table 6-5: Credit for BMPs Retrofitting Prior Developed Lands

Applicable Action Plan	Reference Table	POC Reductions (lb/yr)	
		TP	TN
Previously Reported in 2020 TMDL Action Plan		1,206	3,985
Deductions		1,206	3,985
New Credits included in this TMDL Action Plan	Table C-3	1,360	4,562
Total Credits Included in this TMDL Action Plan		1,360	4,562

6.6 Credit for MOU BMPs with other MS4 Permittees

Part I.D.1.k)3) of the MS4 Permit allows credit for the “[e]stablishment of a memorandum of understanding (MOU) with other MS4 permittees that discharge to the same or adjacent eight-digit hydrologic unit within the same basin to implement BMPs collectively. The MOU shall include a mechanism for dividing the POC reductions created by BMP implementation between the cooperative MS4s.”

No MOUs for joint BMP implementation exist between the City and any other MS4 permittee.

6.7 Credit for POC Reductions by Street Sweeping

VDEQ currently allows MS4 Permittees to claim street sweeping nutrient reduction credits towards attaining their TMDL load reduction requirements. At the time of submission of the June 2018 TMDL Action Plan, Appendix V.G of VDEQ *Guidance Memo No. 15-2005* outlined the two VDEQ approved methods to calculate creditable street sweeping reductions available to MS4 Permittees. These two methods included the “Mass Loading Approach” (MLA) and the “Qualifying Street Lanes Method” (QSLM) both of which were based on the 2011 recommendations provided by an expert panel convened by the Chesapeake Bay Program.

In the expert panel’s most recent report, “Recommendations of the Expert Panel to Define Removal Rates for Street and Storm Drain Cleaning Practices,” dated May 19, 2016, they modified the calculation methodology for street sweeping. They eliminate both MLA and QSLM, replacing them with a single methodology based on cleaning frequency and sweeper technology.

Part II, Section 4 of *Guidance Memo No. 20-2003* states that “...DEQ will accept reductions generated using the mass loading and qualifying lane mile methodologies through June 30, 2022.” This deadline for utilizing either MLA or QSLM reporting methods has passed, rendering previously reported credits inapplicable. This TMDL Action Plan deducts the nutrient credits for street sweeping previously reported

in the 2020 TMDL Action Plan, providing a blank slate to calculate the new credit reductions using the new methodology.

The City conducts street sweeping in various zones of the city, mainly via mechanical sweepers. Per the new guidance, mechanical sweepers no longer provide percent removal for TP or TN; therefore, a majority of the City's street sweeping program does not qualify for credit reduction for the Chesapeake Bay TMDL. One zone in the street sweeping program receives daily sweeping via vacuum assisted technologies, making it eligible for nutrient credit reductions under Appendix V.G of *Guidance Memo No. 20-2003*.

The revised calculation methodology determines the POC removal rate by characteristics of the specific sweeping program. The program for single creditable zone receives daily sweeping passes and therefore falls under the highest removal scenario SCP-1, which is 2 passes per week. Despite the City's sweeping program at smaller intervals than the scenario described, the guidance states that "only the street cleaning [programs] described [in the guidance] are eligible for credit."

For each zone in the street sweeping program, the City maintains an accurate log of the length of road swept. The length of road swept each pass for the creditable zone is approximately 18.1 miles, or 149 curb lane miles. The calculations below describe the unit conversion between miles and curb lane miles.

$$1 \text{ mile} = 5,280 \text{ ft}$$

$$1 \text{ curb lane mile} = 1 \text{ impervious acre} = 43,560 \text{ sq ft}$$

$$43,560 \text{ sq ft} = 5,280 \text{ ft} * 8.25 \text{ ft}$$

$$1 \text{ curb lane mile} = 1 \text{ mile} * 8.25 \text{ ft}$$

$$149 \text{ curb lane miles} = 18.1 \text{ miles} * 8.25 \text{ ft}$$

Using this area swept, **Tables 6-6 and 6-7** provide a summary of the calculations for the street sweeping loading and reductions respectively. These tables reflect Tables 2 and 3 from Appendix V.G of *Guidance Memo No. 20-2003*.

Table 6-6: Street Sweeping Load

Subsource	Pollutant	Curb Lane Miles Swept (1 curb lane mile swept = 1 acre)	2009 EOS Loading Rate (lbs/acre/yr) James River Basin	Estimated Total POC Load Based on 2009 Progress Run (lbs/yr)
Regulated Urban Impervious	Nitrogen	149	9.39	1,402
Regulated Urban Impervious	Phosphorus	149	1.76	263

Table 6-7: Street Sweeping Load Reductions

Subsource	Pollutant	Total Existing Acres Served by MS4 (06/30/09)	Removal Rate Percentage (lbs/acre/yr)	Total Reduction Credit (lbs/yr)
Regulated Urban Impervious	Nitrogen	1,402	0.04	56
Regulated Urban Impervious	Phosphorus	263	0.10	26

Table 6-8 provides a summary of the nutrient credits previously reported, recently deducted, and newly added.

Table 6-8: Credit for POC Reductions by Street Sweeping

Applicable Action Plan	Reference Table	POC Reductions (lb/yr)	
		TP	TN
Previously Reported in 2020 TMDL Action Plan		17	54
Deductions		17	54
New Credits included in this TMDL Action Plan	Table 6-7	26	56
Total Credits Included in this TMDL Action Plan		26	56

6.8 Credit for POC Reductions by Storm Drain Cleaning

In the expert panel's most recent report, "Recommendations of the Expert Panel to Define Removal Rates for Street and Storm Drain Cleaning Practices," dated May 19, 2016, they created a mass based nutrient reduction credit for material removed from catch basins and storm pipes. The City routinely operates three Vactor-style pump trucks, dedicated to clearing blockages and pumping pollutants from the pipes, catch basins, and other structures within the City's MS4 drainage network. Appendix V.G.2 of *Guidance Memo No. 20-2003* calls for reporting storm drain cleaning credits yearly based on how much material the City removed in that fiscal year. The City has chosen to be conservative in their estimate of the amount of pollutants reduced by storm drain cleaning to avoid shortfalls in meeting the future pollutant removals; as a result, the City will annually report nutrient reductions based on the lower of two estimates: estimated reductions based on material collected in the current fiscal year and estimated reductions based on the average material collected over the past fiscal years.

During the 2024 fiscal year, the City collected 190.17 tons of material from structures. Over the past four fiscal years, the City collected an average of 166.34 tons of material from structures. Due to the City's conservative approach, the City will use 166.34 tons in its reduction calculations. When the City collects material from structures, it does not differentiate between sediment or organic matter. To follow the calculation methodology set by Appendix V.G.2 in *Guidance Memo No. 20-2003*, the City has adopted the following methodology to separate its collected material into sediment and organic matter.

Organic matter in catch basins and storm pipes typically consists of leaf litter. The City has assumed that during the fall months (October through December), some percentage of the material collected would consist of organic matter due to the high volume of leaf litter shedding from trees. Although other months

may have some organic matter, the City assumed material collected from January to September consisted of only sediment. **Table 6-9** provides a data summary of the monthly averages of material collected during the previously specified time periods over the last four fiscal years. **Table D-1** in **Appendix D** includes a complete dataset of the material collected during the 2021-2024 fiscal years.

Table 6-9: Monthly Average Material Collected

Fiscal Year	Monthly Average Material Collected (lb/month)	
	Jan-Sept	Oct-Dec
2021	14.90	10.29
2022	10.40	10.19
2023	12.65	24.04
2024	10.11	33.06
Average	12.02	19.40

Assuming that the monthly average material collected, which is sediment only, from January to September stays constant through the months of October through December, the difference between the monthly average material collected during the time intervals would be the organic matter collected during the fall months. This assumption allows the determination of what percentage of material collected during the October-December interval is organic matter. **Table 6-10** summarizes this analysis.

Table 6-10: Percentage of Organic Matter from October-December Calculation

Total Material (lb)	Sediment (lb)	Organic Matter (lb)	Percent Organic Matter (%)
19.40	12.02	7.38	38

The assumptions now allow for determining a final count of the amount of sediment and organic matter collected. **Table 6-11** provides a summary of the calculations using the previous assumptions and percentages, as well as values from the complete storm drain cleaning dataset included in **Appendix D**. The total wet sediment collected was 288,413 lbs, and the total wet organic matter collected was 44,267 lbs.

Table 6-11: Weight of Initial Wet Material Calculation

Time Period	Average Material Collected During 2021-2024 FYs (ton/yr)	Type of Material	Percent Conversion Rate (%)	Average Wet Material Collected (ton/yr)	Sum of Average Wet Material Collected (ton/yr)	Sum of Average Wet Material Collected (lb/yr)
Jan-Sept	108.16	Sediment	100	108.16	144.21	288,413
Oct-Dec	58.19	Sediment	62	36.05		
		Organic Matter	38	22.13	22.13	44,267

Using the weight of wet material collected determined in Table 6-11, the following **Table 6-12**, included as Table V.G.1 in Appendix V.G.2 of *Guidance Memo No. 20-2003*, converts the wet weight into dry

weight using a designated conversion factor. **Table 6-13** provides a summary of the nutrient credit reductions achieved due to the application of nutrient enrichment factors based on the type of material captured. This table is also Table V.G.2 in *Guidance Memo No. 20-2003*.

Table 6-12: Storm Drain Cleaning Dry Weight Calculation

Type of Solid Material	Weight of Initial Wet Material (lb/yr)	Conversion Factor	Dry Weight (lb/yr)
Wet Sediments	288,413	0.7	201,889
Wet Organic Matter	44,267	0.2	8,853

Table 6-13: Storm Drain Cleaning Nutrient Credit Calculation

Type of Material Captured	Nutrient %	Enrichment Factor	Dry Weight (lb/yr)	Nutrient Credit (lb/yr)
BMP and Catch Basin Sediments	%P	0.06%	201,889	121
	%N	0.27%	201,889	545
Organic Matter/Leaf Litter	%P	0.12%	8,853	11
	%N	1.11%	8,853	98

The 2020 TMDL Action Plan notes that the City practices catch basin and drainage system cleaning, but does not claim any nutrient credit reductions for it as there was no method as the time to calculation reductions; therefore, there are no previous reductions to report. **Table 6-14** provides a summary of the nutrient credits claimed for storm drain cleaning in this TMDL Action Plan.

Table 6-14: Credit for POC Reductions by Storm Drain Cleaning

Applicable Action Plan	Reference Table	POC Reductions (lb/yr)	
		TP	TN
New Credits included in this TMDL Action Plan	Table 6-13	132	643
Total Credits Included in this TMDL Action Plan		132	643

6.9 Credit for POC Reductions through Nutrient Trading

As described in Part I.D.1.g)3) and Part I.D.1.h) of the MS4 Permit, the City may obtain POC reduction credits through a “trading program” that is “in accordance with § 62.1-44.19:21 of the Code of Virginia for purposes of compliance.”

The City is participating with the Hampton Roads Sanitation District (HRSD) in a nutrient trading opportunity which qualifies for POC reduction credits. The HRSD Sustainable Water Initiative for Tomorrow (SWIFT) Project presents a nutrient trading opportunity whereby additional rounds of treatment will purify treated wastewater to meet drinking water standards, and HRSD will subsequently inject that treated water into the Potomac aquifer. The SWIFT Project will significantly reduce the total volume of HRSD discharge to the Chesapeake Bay watershed, consequently reducing TP and TN discharges to the Bay. **The City has signed an agreement with HRSD to accept credits to meet its TMDL requirements, and the City reserves the right to exercise the terms of this agreement at such time as the credits are required.** A copy of the agreement is available in **Appendix E**.

Table 6-15 provides a year-by-year summary of the amount of nutrient credits the City will need to obtain from HRSD to meet the necessary credit reductions for phases two and three. These values are subject to change as the City implements new BMPs each year.

Table 6-15: Nutrient Credits to Obtain from HRSD

POC (lb/yr)	Phase 2 (40.75%)			Phase 3 (100.75%)	
	2025	2026	2027	2028	2029
TP	0	0	0	2,226	2,226
TN	0	0	0	8,450	8,450

6.10 Plan Summary

Sections 6.2 through 6.9 document numerous nutrient reduction opportunities which the City intends to claim for credit towards meeting its TMDL load reduction requirements. **Table 6-16** provides a plan summary for the City of Norfolk MS4. Examination of **Table 6-16** reveals that the City exceeds the required POC reduction requirements for the second reduction phase even before exercising the terms of the HRSD SWIFT agreement.

The City would like to note that it implements several other programs and activities that provide water quality benefits for the POCs of interests, even though it does not claim credit for them in this TMDL action plan. These programs include, but are not limited to, the following:

- Connecting homeowner septic systems to the public sanitary sewer system – Norfolk’s Department of Utilities regularly assess opportunities to expand sanitary sewer systems towards remaining clusters of septic systems. Once sanitary sewer main is available adjacent to a property, the City advises the owner that they must connect within five years.
- Providing homeowner BMP installation assistance – Through its Bay Star Homes program and a variety of community partnerships, the City provides residential BMPs such as rain barrels at reduced cost to interested homeowners.
- Urban tree planting – The City routinely replaces dead or aging trees on public property and encourages private property owners to do so on their own property through tree adoption events several times per year. Larger grant funded initiatives target an overall increase in city tree canopy.
- Constructing oyster reefs – Over the past decade, the City and a variety of governmental and community partners have restored many acres of sub- and inter-tidal oyster reefs in local waterways.
- Performing illicit discharge detection and elimination – The City routinely investigates reported illicit discharges and industries that are at high-risk for discharges. Any identified discharges are inspected until the discharge is eliminated.

- Conducting numerous public education and involvement activities – Through direct programming and partnerships with the Hampton Roads Planning District Commission and community partners, the City operates an extensive public education program for residents and businesses.

The City anticipates expanding potential credit reporting activities in the future and reserves the right to report any additional creditable activities from 2009 forward as regulatory agencies, including VDEQ, make better data management capabilities and crediting guidance available.

Table 6-16: TMDL Action Plan Summary

Description	Reference Table/Section	Pollutant of Concern (POC) (lb/yr)	
		TP	TN
Required POC Reductions			
TOTAL REDUCTION REQUIREMENT (JUNE 30, 2026)	Table 4-2	1,839	7,177
TOTAL REDUCTION REQUIREMENT (JUNE 30, 2028)	Table 4-3	4,547	17,745
Reduction Credits			
BMPs Installed on Unregulated Lands	Table 6-2	201	1,194
BMPs Installed to Meet Redevelopment Requirements	Table 6-3	499	2,323
BMPs Installed Prior to July 1, 2009	Table 6-4	103	517
BMPs Retrofitting Prior Developed Lands	Table 6-5	1,360	4,562
MOU BMPs with Other MS4 Permittees	Section 6.6	---	---
POC Reductions by Street Sweeping	Table 6-8	26	56
POC Reductions by Storm Drain Cleaning	Table 6-14	132	643
TOTAL REDUCTION CREDITS		2,321	9,295
POC Reductions through Nutrient Trading	Table 6-15	0	0
TOTAL REDUCTION CREDITS AVAILABLE (JUNE 30, 2026)		2,321	9,295
POC Reductions through Nutrient Trading	Table 6-15	2,226	8,450
TOTAL REDUCTION CREDITS AVAILABLE (JUNE 30, 2028)		4,547	17,745

7. Estimate of Expected Costs

Part I.D.1.i)6) of the MS4 Permit requires the City to provide “[a]n estimate of the expected cost to implement the necessary reductions during the permit cycle.”

To achieve the required reductions in the upcoming permit cycle, the City of Norfolk plans to use credits from a combination of development on unregulated lands, development and redevelopment, historical BMP installation, retrofitting on prior developed lands, street sweeping, and storm drain cleaning. The implementation of unregulated and development/redevelopment BMPs comes at no cost to the City, as developers other than the City construct them. On the other hand, the City completes retrofitted BMPs. Section 6.5 provides a summary of expected costs necessary to implement the water quality improvement projects related to retrofitting on prior developed lands. The estimated cost to implement the identified projects is approximately \$15,000,000, with reliable costs for several projects yet to be available.

The credit reductions for street cleaning and storm drain cleaning are the result of City-funded programs under Norfolk Public Works. The City allocates part of its yearly budget to these programs; however, current cost data is unavailable. The City will continue to track all eligible projects for inclusion, regardless of whether the cost data is available.

Appendix A: Public Comment Period

- Public Comments and Responses

Public Comments and Responses

Comment No. 1:

Comment:

Any reason this window for a 40 page review is only open until the 11th? I'd like to get it into the hands of some environmental experts in the neighborhood for a deeper look at the Lafayette River portion that is more relevant to our neighborhood.

Response:

Per our MS4 Permit we are required to do a 15-day review period on the updates to our Chesapeake Bay TMDL Action Plan. The document was posted on our website November 26 and advertised in the Virginian-Pilot. For additional reach, we sent emails to our available email list which includes Civic Leagues, Keep Norfolk Beautiful newsletter subscribers, and our Bay Star Home members. Just to let you know, the TMDL Action Plan is City-wide, and not neighborhood specific. I am happy to answer any questions that you or your Civic League members may have.

Action Taken:

No changes to the TMDL Action Plan were made as a result of this comment.

Comment No. 2:

Comment:

Thanks, Chrisi! Yeah, I definitely read that it's a city-wide plan, but like others, my only role as a CL leader is to make sure our neighborhood's interest is addressed. Understand the multi-faceted approach/requirement too. Of course, the average citizen doesn't track all that, hence the great idea you all have to engage the CLs. I'll probably post it on Facebook, and maybe share it with 1-2 of our members I know would be interested with the hope that they'll provide helpful feedback.

Response:

N/A

Action Taken:

No changes to the TMDL Action Plan were made as a result of this comment.

Comment No. 3

Comment:

Good morning, Christina. I received this report update from a Community member and am requesting the emails on the CC line be included in further correspondence regarding Public Works' Environmental Management.

The TMDL document is certainly comprehensive!

I have listed some questions/comments below:

Public Comments and Responses

- I do not see a section that highlights changes/updates that have been made since the 2018 document. Is this present?

Response:

The changes in the updated TMDL Action Plan are not highlighted in the current Action Plan, but they include:

1. Accounting for BMPs that have been installed since 2018 and the nutrient load associated (Table B-2)
2. Reviewing VPDES permit, VDOT MS4, and other MS4 Operators in the City (Table A-1)
3. Adding wetlands into our regulated lands as impervious area (Table 4-1)
4. Calculating reduction requirements for 2026 (40.75%) and 2028 (100.75%) (Table 4-2 & 4-3)
5. Calculating the credits that will be needed from HRSD nutrient trading (Table 6-16)
5. Updating reductions achieved by street sweeping (Table 6-7 & 6-8)

This list is not all inclusive of the changes but highlights the larger updates for this Action Plan.

Action Taken:

No changes to the TMDL Action Plan were made as a result of this comment.

Comment No. 4

Comment:

- Is there a TMDL and a related MS4 plan that covers the Eastern Branch of the Elizabeth River? I am looking at our pocket creeks on pg 10 of the 2018 document. The Elizabeth River is considered "Open Water and Wetland." Because I am not a SME, I'm curious about the focus on the James River Basin and Little Creek Watershed, only. Obviously, Southside Neighborhoods have many POCs with our proximity to shipping industry at the southern and eastern branches of the Elizabeth. These shipping industries fall within the Norfolk MS4 service area.

Response:

This is a City-wide TMDL Action Plan and does cover the Eastern Branch of the Elizabeth River. In the 2018 Action Plan, we were required by our MS4 Permit to specifically note the Lower James River Watershed and the Little Creek Watershed on our MS4 Service Area Map. All areas of the City are important to achieving our Chesapeake Bay TMDL goals. In Figure 4-1 of the MS4 Service Area map, wetlands have been identified as impervious area due to multiple shoreline project restorations that allow the City to claim credit for these improvements.

Action Taken:

No changes to the TMDL Action Plan were made as a result of this comment.

Comment No. 5

Comment:

- Did the city meet its goal of 15% reduction during 2009-2014? How has the city progressed with its stated goal of 15% total reduction through 2021?

Public Comments and Responses

Response:

The City has reached all credit reduction requirements and to date is on target to not require HRSD nutrient credits until 2028 (Table 6-15).

Action Taken:

No changes to the TMDL Action Plan were made as a result of this comment.

Comment No. 6

Comment:

- Is there availability to talk about this with the Norfolk Environmental Commission during its Jan or Feb meeting?

Response:

We are available to discuss with the Norfolk Environmental Commission if requested, but the Public Comment period will be closed as it running between November 26-December 11. Our TMDL Action Plan as outlined by our MS4 Permit is required to be submitted to DEQ within 12 months of issuance of our MS4 Permit, which is January 21, 2025.

Action Taken:

No changes to the TMDL Action Plan were made as a result of this comment.

Appendix B: MS4 Exclusions

- Table B-1: List of MS4 Exclusions

Table B-1
List of MS4 Exclusions

Name	Permit	Permit Type	Excluded	Remarks
Norfolk Southern Railway Company - Lamberts Point	VA0003409	Individual Permit	No	The City charges Norfolk Southern a stormwater fee.
BAE Systems Norfolk Ship Repair Inc	VA0004383	Individual Permit	Yes	
US Navy - Naval Station Norfolk	VA0004421	Individual Permit	Yes	
Downtown Elizabeth River Tunnel	VA0005851	Individual Permit	Yes	
Midtown Elizabeth River Tunnel	VA0005860	Individual Permit	Yes	
Veolia SUEZ WTS Services USA Incorporated	VA0053554	Individual Permit	Yes	
Colonna's Shipyard Inc	VA0053813	Individual Permit	Yes	
Norfolk Oil Transit Incorporated	VA0054828	Individual Permit	No	Within Norfolk Southern Railway Company; the City charges Norfolk Southern a stormwater fee.
General Dynamics NASSCO-Norfolk - Ligon Facility	VA0073091	Individual Permit	Yes	
HRSD - Army Base WWTP	VA0081230	Individual Permit	Yes	
HRSD - Virginia Initiative WWTP	VA0081281	Individual Permit	Yes	
Lyon Shipyard Incorporated - Sealift Drydock	VA0089168	Individual Permit	Yes	
Norfolk International Airport	VA0089737	Individual Permit	No	The City charges the airport a stormwater fee.
Lyon Shipyard Incorporated - Norfolk Facility	VA0092495	Individual Permit	Yes	
Virginia Department of Transportation	VA0092975	MS4 Operator/Individual Permit	Yes	The delineation of VDOT's MS4 service area was based on a combination of parcel ownership and interstate aerial imagery. This delineation uses the same shapefile from the 2018 and 2020 delineation with minor changes to include VDOT bridges.
TCS Materials LLC/Vulcan Materials Co - Norfolk	VAG110036	Concrete Products Facilities General Permit	Yes	
Titan Virginia Ready Mix LLC - Campostella	VAG110119	Concrete Products Facilities General Permit	Yes	
Norfolk City - Public Works - Municipal Car Wash	VAG750131	Vehicle Wash and Laundry Facilities General Permit	Yes	
Family Carwash II	VAG750209	Vehicle Wash and Laundry Facilities General Permit	Yes	
Truck Refrigeration Repair, Inc	VAG750213	Vehicle Wash and Laundry Facilities General Permit	Yes	
Old Dominion University	VAR040078	MS4 Operator Permit	Yes	The delineation of ODU's MS4 was based on ODU's MS4 Service Map in its 2024 Chesapeake Bay TMDL Action Plan. This delineation includes the Eastern Virginia Medical School campus due to the recent merging of the two institutions. The EVMS delineation was based on its 2024 campus map.
Tidewater Community College	VAR040089	MS4 Operator Permit	Yes	The delineation of TCC's MS4 was based on TCC's MS4 Mapping of All Regulated Campuses.
Norfolk State University	VAR040097	MS4 Operator Permit	Yes	The delineation of NSU's MS4 was based on a combination of its September 2015 Draft Chesapeake Bay TMDL Action Plan MS4 Service Area and its 2024 campus map.
Cobb's Marina Incorporated	VAR050244	Industrial Stormwater General Permit	Yes	
Tubbs Auto Parts Incorporated	VAR050290	Industrial Stormwater General Permit	Yes	
Carroll Trucking Incorporated	VAR050293	Industrial Stormwater General Permit	Yes	
United Parcel Service Norfolk	VAR050295	Industrial Stormwater General Permit	Yes	
US Postal Sv - Vehicle Maintenance Fac - Norfolk	VAR050301	Industrial Stormwater General Permit	Yes	
VPA - Norfolk International Terminals	VAR050313	Industrial Stormwater General Permit	Yes	
Guterman Iron and Metal Corporation	VAR050351	Industrial Stormwater General Permit	Yes	
Virginia-Carolina Steel Incorporated	VAR050352	Industrial Stormwater General Permit	Yes	
Branscome Inc - Norfolk - Westminster	VAR050370	Industrial Stormwater General Permit	Yes	
Marine Oil Service Incorporated	VAR050382	Industrial Stormwater General Permit	Yes	
United States Gypsum Company - Norfolk	VAR050487	Industrial Stormwater General Permit	Yes	
Virginia Paving Company - Norfolk	VAR051467	Industrial Stormwater General Permit	Yes	
HEPACO, LLC	VAR051701	Industrial Stormwater General Permit	Yes	
Heritage Crystal-Clean, LLC	VAR051722	Industrial Stormwater General Permit	Yes	
Norfolk City- Streets and Bridges - McKann Avenue	VAR051796	Industrial Stormwater General Permit	Yes	

Table B-1
List of MS4 Exclusions

Name	Permit	Permit Type	Excluded	Remarks
EHA Abrasives, LLC	VAR051844	Industrial Stormwater General Permit	Yes	
Marine Hydraulics International - Mid Town	VAR051845	Industrial Stormwater General Permit	Yes	
Norfolk City - Div of Waste Mgmt- Pineridge	VAR052006	Industrial Stormwater General Permit	Yes	
Empire Recycling Norfolk	VAR052143	Industrial Stormwater General Permit	Yes	
Mid-Atlantic Recycling Solutions, LLC	VAR052167	Industrial Stormwater General Permit	Yes	
Six M, LLC	VAR052191	Industrial Stormwater General Permit	Yes	
Bay Disposal & Recycling Corporate Office	VAR052302	Industrial Stormwater General Permit	Yes	
MHI Main Office	VAR052312	Industrial Stormwater General Permit	Yes	
United Disposal Incorporated	VAR052352	Industrial Stormwater General Permit	Yes	
Amazon com Services LLC - DOR2	VAR052516	Industrial Stormwater General Permit	Yes	
Fairwinds Landing	VAR052615	Industrial Stormwater General Permit	No	Fairwinds Landing, LLC leases the docks to Norfolk Southern Railway Company; the City charges Norfolk Southern a stormwater fee.

Appendix C: Deducted and Creditable Best Management Practices

- Table C-1: Credit Deductions from the 2020 TMDL Action Plan
- Table C-2: Credit for BMPs Installed to Meet Development/Redevelopment Requirements
- Table C-3: Credit for BMPs Retrofitting Prior Developed Lands

Table C-1
Credit Deductions from the 2020 TMDL Action Plan

Lucity Site & SWMF IDs			Reported Credit Claimed	
Site ID	SWMF ID #	Site Name	TP (lb/yr)	TN (lb/yr)
BMPs Implemented on Unregulated Lands				
09-0049	09-0049.1	Grandy Village Site Improvements	5.2	83.52
16-0029	16-0029.1	Llewellyn Ave. Roadway Design	1.41	6.97
16-0094	16-0094.1	ODU Barry Art Museum	0.2	0.86
16-0094	16-0094.2	ODU Barry Art Museum	0.34	1.1
16-0013	16-0013.1	5th-7th Bay Redevelopment	0.65	5.15
TOTAL			7.8	98
BMPs and Impoundments Installed Prior to July 1, 2009				
07-0066	07-0066.1	Salvation Army Hope Village	1.55	18.37
08-0095	08-0095.1	Parking Lot	0.17	4.31
S51	S51.2	Downtown Pump Station (PS 145)	0.09	0.5
06-0062	06-0062.2	Little Creek Retail Shops	0.19	1.11
TOTAL			2.0	24

Table C-2
Credit for BMPs Installed to Meet Development/Redevelopment Requirements

Lucity Site & SWMF IDs			Completion Status		Total Phosphorus (TP)			Total Nitrogen (TN)			
Site ID	SWMF ID #	Site Name	Status	Online Date	Priority 1: Lucity Removal (lb/yr)	Priority 2: Estimated Removal Using DA (lb/yr)	Removal Credit Claimed (lb/yr)	Priority 1: Lucity Removal (lb/yr)	Priority 2: Lucity-based Estimated Removal (lb/yr)	Priority 3: Estimated Removal Using DA (lb/yr)	Removal Credit Claimed (lb/yr)
01-0197	01-0197.1	HRT Park and Ride	Active	8/1/2011	1.33	1.78	1.33	4.94	7.99	5.96	4.94
03-0325	03-0325.1	Duplex	Active	8/1/2011	0.03	0.05	0.03	0.40	0.22	0.12	0.40
03-0325	03-0325.2	Duplex	Active	8/1/2011	0.03	0.05	0.03	0.40	0.22	0.12	0.40
03-0325	03-0325.3	Duplex	Active	8/1/2011	0.03	0.05	0.03	0.40	0.22	0.12	0.40
03-0327	03-0327.1	Norfolk General New Pavilion & Parking	Active	7/23/2012	2.60	0.80	2.60	7.31	3.60	11.64	7.31
03-0327	03-0327.2	Norfolk General New Pavilion & Parking	Active	7/23/2012	3.25	3.75	3.25	5.85	16.71	14.50	5.85
03-0327	03-0327.3	Norfolk General New Pavilion & Parking	Active	7/23/2012	5.02	0.63	5.02	5.85	2.09	16.61	5.85
03-0327	03-0327.4	Norfolk General New Pavilion & Parking	Active	7/23/2012	5.02	4.24	5.02	5.85	14.04	16.60	5.85
05-0085	05-0085.1	Walgreens	Active	10/27/2009	16.52	1.95	16.52	4.77	6.44	54.67	4.77
05-0149	05-0149.1	AAAA Self Storage Facility	Active	10/16/2009	2.02	2.22	2.02	6.57	9.90	9.03	6.57
06-0009	06-0009.2	Duplex	Active	8/22/2011		0.18	0.18		0.82		0.82
06-0015	06-0015.1	Duplex Lot "C"	Active	11/30/2009	0.14	0.10	0.14	0.43	0.44	0.63	0.43
06-0036	06-0036.1	Newtowne South Townhomes	Active	3/19/2018	0.81		0.81	0.00			
06-0036	06-0036.2	Newtowne South Townhomes	Active	3/19/2018	0.00	0.94	0.94	0.00	3.12		3.12
06-0044	06-0044.1	Shorewood Shores Phase II	Active	12/2/2013	1.56	0.31	1.56	1.01	1.03	5.16	1.01
06-0044	06-0044.2	Shorewood Shores Phase II	Active	12/2/2013	1.56	0.31	1.56	1.01	1.03	5.16	1.01
06-0044	06-0044.3	Shorewood Shores Phase II	Active	12/2/2013	1.56	0.31	1.56	1.01	1.03	5.16	1.01
06-0044	06-0044.4	Shorewood Shores Phase II	Active	12/2/2013	1.56	0.31	1.56	1.01	1.03	5.16	1.01
06-0044	06-0044.5	Shorewood Shores Phase II	Active	12/2/2013	1.56	0.31	1.56	1.01	1.03	5.16	1.01
06-0044	06-0044.6	Shorewood Shores Phase II	Active	12/2/2013	1.56	0.31	1.56	1.01	1.03	5.16	1.01
06-0104	06-0104.1	Sandollar Duplex	Active	12/31/2009	0.09	0.15	0.09	1.33	0.66	0.40	1.33
06-0121	06-0121.1	Vulcan Construction Materials, L.P.	Active	9/15/2009	1.43	1.66	1.43	5.39	5.50	4.73	5.39
06-0121	06-0121.3	Vulcan Construction Materials, L.P.	Active	9/15/2009	4.88	4.97	4.88	16.13	16.45	16.15	16.13
06-0123	06-0123.1	Huntersville II Townhomes	Active	9/15/2009	0.52	0.41	0.52	2.28	1.35	1.72	2.28
06-0125	06-0125.1	First Presbyterian Church	Active	3/5/2010	3.93	0.12	3.93	0.65	0.38	13.01	0.65
06-0125	06-0125.2	First Presbyterian Church	Active	3/5/2010	0.30	0.16	0.30	0.53	0.54	0.99	0.53
07-0007	07-0007.1	Freemason St. Baptist Church	Active	12/30/2009	0.31	1.52	0.31	8.04	5.04	1.03	8.04
07-0042	07-0042.1	Sentara Parking Garage Expansion	Active	4/30/2010	0.10	0.31	0.10	1.37	1.40	0.46	1.37
07-0042	07-0042.2	Sentara Parking Garage Expansion	Active	4/30/2010	0.10	0.31	0.10	1.37	1.40	0.46	1.37
07-0042	07-0042.3	Sentara Parking Garage Expansion	Active	4/30/2010	0.10	0.31	0.10	1.37	1.40	0.46	1.37
07-0052	07-0052.1	City Line Self Storage	Active	3/15/2011	1.14	1.54	1.14	4.99	5.09	3.77	4.99
07-0061	07-0061.1	Leigh Medical Office Building	Active	3/6/2012	2.41	0.39	2.41	1.25	1.28	7.98	1.25
07-0061	07-0061.2	Leigh Medical Office Building	Active	3/6/2012	1.20	0.17	1.20	0.55	0.56	3.97	0.55
07-0061	07-0061.3	Leigh Medical Office Building	Active	3/6/2012	1.21	0.18	1.21	0.58	0.59	4.00	0.58
07-0061	07-0061.4	Leigh Medical Office Building	Active	3/6/2012	2.04	0.46	2.04	2.59	1.53	6.75	2.59
07-0062	07-0062.1	Single Family Condominium	Active	7/31/2009	0.09	0.11	0.09	0.48	0.48	0.40	0.48
07-0073	07-0073.1	River House Apartments	Active	1/4/2010	0.23	0.16	0.23	0.53	0.54	0.76	0.53
07-0073	07-0073.2	River House Apartments	Active	1/4/2010	0.23	0.16	0.23	0.53	0.54	0.76	0.53
07-0077	07-0077.1	Condos/Coffee Shop	Active	1/29/2010	0.44	3.31	0.44	7.63	10.97	1.46	7.63
07-0104	07-0104.1	Red Cross Parking Lot	Active	1/1/2010	0.26	0.17	0.26	0.54	0.55	0.84	0.54
07-0104	07-0104.3	Red Cross Parking Lot	Active	1/1/2010	0.26	0.17	0.26	0.54	0.55	0.84	0.54
07-0110	07-0110.1	Laundromat	Active	11/17/2009	0.28	0.36	0.28	1.16	1.18	0.91	1.16
07-0110	07-0110.2	Laundromat	Active	11/17/2009	0.28	0.36	0.28	1.16	1.18	0.91	1.16
07-0126	07-0126.1	Trail of the Tiger Exhibit	Active	8/3/2010	2.11	3.04	2.11	14.04	10.07	6.98	14.04
07-0127	07-0127.1	Building Addition at Circle South	Active	11/12/2009	0.27	0.42	0.27	1.37	1.39	0.89	1.37

Table C-2
Credit for BMPs Installed to Meet Development/Redevelopment Requirements

Lucity Site & SWMF IDs			Completion Status		Total Phosphorus (TP)			Total Nitrogen (TN)			
Site ID	SWMF ID #	Site Name	Status	Online Date	Priority 1: Lucity Removal (lb/yr)	Priority 2: Estimated Removal Using DA (lb/yr)	Removal Credit Claimed (lb/yr)	Priority 1: Lucity Removal (lb/yr)	Priority 2: Lucity-based Estimated Removal (lb/yr)	Priority 3: Estimated Removal Using DA (lb/yr)	Removal Credit Claimed (lb/yr)
07-0127	07-0127.3	Building Addition at Circle South	Active	11/12/2009	0.27	0.43	0.27	1.37	1.41	0.89	1.37
08-0007	08-0007.1	Uncle Bob's Self Storage Expansion	Active	1/16/2014	0.60	0.35	0.60	1.15	1.16	1.99	1.15
08-0008	08-0008.2	Lamberts Point Community Center	Active	2/9/2010	0.38	0.70	0.38	2.78	2.33	1.26	2.78
08-0008	08-0008.3	Lamberts Point Community Center	Active	2/9/2010		1.45	1.45		4.80		4.80
08-0038	08-0038.1	Fort Norfolk Plaza	Active	6/2/2010	0.80	0.30	0.80	0.98	1.00	2.64	0.98
08-0040	08-0040.1	The Va Arts Festival	Active	11/4/2010	0.20	0.13	0.20	0.43	0.43	0.66	0.43
08-0047	08-0047.1	Floor Busters	Active	1/6/2011	0.02	0.08	0.02	0.35	0.36	0.09	0.35
08-0047	08-0047.2	Floor Busters	Active	1/6/2011	0.01	0.04	0.01	0.16	0.17	0.03	0.16
08-0055	08-0055.1	Dunkin Donuts	Active	12/2/2009	0.63		0.63	1.93			1.93
08-0056	08-0056.1	Village Garden Senior Housing	Active	11/12/2010	0.11	0.11	0.11	0.49	0.50	0.49	0.49
08-0056	08-0056.2	Village Garden Senior Housing	Active	11/12/2010	0.11	0.11	0.11	0.49	0.50	0.49	0.49
08-0056	08-0056.3	Village Garden Senior Housing	Active	11/12/2010	0.61	0.11	0.61	0.49	0.50	2.73	0.49
08-0056	08-0056.4	Village Garden Senior Housing	Active	11/12/2010	0.23	0.11	0.23	0.49	0.50	1.03	0.49
08-0056	08-0056.5	Village Garden Senior Housing	Active	11/12/2010	0.45		0.45	1.25			1.25
08-0060	08-0060.1	Lot 27 8025 Ransom Road	Active	8/25/2015	0.03		0.03	0.33			0.33
08-0060	08-0060.2	Lot 27 8025 Ransom Road	Active	8/25/2015	0.03		0.03	0.33			0.33
08-0060	08-0060.3	Lot 27 8025 Ransom Road	Active	8/25/2015	0.03		0.03	0.33			0.33
08-0060	08-0060.4	Lot 27 8025 Ransom Road	Active	8/25/2015	0.03		0.03	0.33			0.33
08-0060	08-0060.5	Lot 27 8025 Ransom Road	Active	8/25/2015	0.00	0.02	0.02	0.00	0.06		0.06
08-0062	08-0062.1	Lot 25 8033 Ransom Road	Active	5/23/2017	0.03		0.03	0.29			0.29
08-0062	08-0062.2	Lot 25 8033 Ransom Road	Active	5/23/2017	0.03		0.03	0.29			0.29
08-0062	08-0062.3	Lot 25 8033 Ransom Road	Active	5/23/2017	0.03		0.03	0.29			0.29
08-0062	08-0062.4	Lot 25 8033 Ransom Road	Active	5/23/2017	0.03		0.03	0.29			0.29
08-0063	08-0063.1	Lot 24 8037 Ransom Road	Active	12/11/2017	0.02		0.02	0.31			0.31
08-0063	08-0063.2	Lot 24 8037 Ransom Road	Active	12/11/2017	0.02		0.02	0.31			0.31
08-0063	08-0063.3	Lot 24 8037 Ransom Road	Active	12/11/2017	0.02		0.02	0.31			0.31
08-0063	08-0063.4	Lot 24 8037 Ransom Road	Active	12/11/2017	0.02		0.02	0.31			0.31
08-0072	08-0072.1	Harris Teeter Store 378	Active	11/3/2011	0.46	0.27	0.46	0.88	0.90	1.52	0.88
08-0075	08-0075.1	Guterman Iron Works	Active	4/23/2013	0.94	2.10	0.94	6.82	6.96	3.12	6.82
08-0078	08-0078.1	The Beauty Parlor	Active	1/5/2011	0.02	0.03	0.02	0.11	0.11	0.07	0.11
08-0081	08-0081.1	Thermcor, Inc.	Active	12/15/2009	0.01	0.07	0.01	0.30	0.31	0.04	0.30
08-0089	08-0089.1	Fayton-Sutherlin Bldg	Active	3/28/2014	0.16	0.21	0.16	0.70	0.71	0.53	0.70
08-0089	08-0089.2	Fayton-Sutherlin Bldg	Active	3/28/2014	0.05	0.11	0.05	0.28	0.48	0.22	0.28
08-0096	08-0096.1	Land & Coates	Active	5/12/2010	0.48	0.66	0.48	2.16	2.20	1.59	2.16
09-0002	09-0002.1	Lumber Liquidators	Active	5/7/2010	0.27	0.51	0.27	1.66	1.69	0.89	1.66
09-0002	09-0002.2	Lumber Liquidators	Active	5/7/2010	0.27	0.51	0.27	1.66	1.69	0.89	1.66
09-0015	09-0015.1	Berkley Basketball Court	Active	12/12/2017	0.00	0.09	0.09	0.00	0.40		0.40
09-0024	09-0024.1	Oakleaf Forest	Active	1/1/2011	4.77	3.97	4.77	12.90	13.14	15.78	12.90
09-0024	09-0024.2	Oakleaf Forest	Active	1/1/2011	0.27	0.23	0.27	0.73	0.75	0.89	0.73
09-0024	09-0024.3	Oakleaf Forest	Active	1/1/2011	0.08	0.07	0.08	0.23	0.25	0.26	0.23
09-0024	09-0024.4	Oakleaf Forest	Active	1/1/2011	0.33	0.28	0.33	0.90	0.91	1.09	0.90
09-0024	09-0024.5	Oakleaf Forest	Active	1/1/2011	0.07	0.05	0.07	0.18	0.17	0.23	0.18
09-0024	09-0024.6	Oakleaf Forest	Active	1/1/2011	0.10	0.09	0.10	0.28	0.29	0.33	0.28
09-0024	09-0024.7	Oakleaf Forest	Active	1/1/2011	0.14	0.11	0.14	0.38	0.37	0.46	0.38
09-0024	09-0024.8	Oakleaf Forest	Active	1/1/2011	0.08	0.07	0.08	0.23	0.25	0.26	0.23

Table C-2
Credit for BMPs Installed to Meet Development/Redevelopment Requirements

Lucity Site & SWMF IDs			Completion Status		Total Phosphorus (TP)			Total Nitrogen (TN)			
Site ID	SWMF ID #	Site Name	Status	Online Date	Priority 1: Lucity Removal (lb/yr)	Priority 2: Estimated Removal Using DA (lb/yr)	Removal Credit Claimed (lb/yr)	Priority 1: Lucity Removal (lb/yr)	Priority 2: Lucity-based Estimated Removal (lb/yr)	Priority 3: Estimated Removal Using DA (lb/yr)	Removal Credit Claimed (lb/yr)
09-0024	09-0024.9	Oakleaf Forest	Active	1/1/2011	0.05	0.04	0.05	0.13	0.12	0.17	0.13
09-0024	09-0024.10	Oakleaf Forest	Active	1/1/2011	0.10	0.09	0.10	0.28	0.29	0.33	0.28
09-0024	09-0024.11	Oakleaf Forest	Active	1/1/2011	0.33	0.28	0.33	0.90	0.91	1.09	0.90
09-0024	09-0024.12	Oakleaf Forest	Active	1/1/2011	0.08	0.07	0.08	0.23	0.25	0.26	0.23
09-0024	09-0024.13	Oakleaf Forest	Active	1/1/2011	0.11	0.09	0.11	0.30	0.29	0.36	0.30
09-0024	09-0024.14	Oakleaf Forest	Active	1/1/2011	0.12	0.10	0.12	0.33	0.33	0.40	0.33
09-0024	09-0024.15	Oakleaf Forest	Active	1/1/2011	0.18	0.15	0.18	0.48	0.50	0.60	0.48
09-0024	09-0024.16	Oakleaf Forest	Active	1/1/2011	0.07	0.06	0.07	0.20	0.21	0.23	0.20
09-0024	09-0024.17	Oakleaf Forest	Active	1/1/2011	0.10	0.09	0.10	0.28	0.29	0.33	0.28
09-0024	09-0024.18	Oakleaf Forest	Active	1/1/2011	0.23	0.19	0.23	0.63	0.62	0.76	0.63
09-0024	09-0024.19	Oakleaf Forest	Active	1/1/2011	0.43	0.35	0.43	1.15	1.16	1.42	1.15
09-0024	09-0024.20	Oakleaf Forest	Active	1/1/2011	0.40	0.34	0.40	1.08	1.12	1.32	1.08
09-0024	09-0024.21	Oakleaf Forest	Active	1/1/2011	0.19	0.15	0.19	0.50	0.50	0.63	0.50
09-0024	09-0024.22	Oakleaf Forest	Active	1/1/2011	0.10	0.09	0.10	0.28	0.29	0.33	0.28
09-0024	09-0024.23	Oakleaf Forest	Active	1/1/2011	0.29	0.24	0.29	0.78	0.79	0.96	0.78
09-0024	09-0024.24	Oakleaf Forest	Active	1/1/2011	0.52	0.44	0.52	1.40	1.45	1.72	1.40
09-0027	09-0027.1	First Baptist Church of Berkley Expansion	Active	12/13/2010	0.19		0.19	0.73			0.73
09-0027	09-0027.2	First Baptist Church of Berkley Expansion	Active	12/13/2010	0.13		0.13	0.43			0.43
09-0029	09-0029.1	HRT Bus Maint. Facility	Active	1/4/2012	0.03		0.03	1.77			1.77
09-0029	09-0029.2	HRT Bus Maint. Facility	Active	1/4/2012	0.01		0.01	0.56			0.56
09-0029	09-0029.3	HRT Bus Maint. Facility	Active	1/4/2012	0.01		0.01	0.78			0.78
09-0029	09-0029.4	HRT Bus Maint. Facility	Active	1/4/2012	0.03		0.03	1.47			1.47
09-0029	09-0029.5	HRT Bus Maint. Facility	Active	7/25/2012	0.01		0.01	0.65			0.65
09-0029	09-0029.6	HRT Bus Maint. Facility	Active	7/25/2012	0.01		0.01	0.65			0.65
09-0031	09-0031.1	OSAGE	Active	1/1/2010	0.63	0.51	0.63	2.25	2.29	2.82	2.25
09-0033	09-0033.1	Lake Taylor Hospital additions	Active	2/3/2014	13.48	2.83	13.48	7.23	12.69	60.39	7.23
09-0039	09-0039.1	Wells Fargo	Active	6/6/2013	0.29	0.70	0.29	2.28	2.32	0.96	2.28
09-0039	09-0039.2	Wells Fargo	Active	6/6/2013	0.32	0.75	0.32	2.43	2.49	1.06	2.43
09-0039	09-0039.3	Wells Fargo	Active	6/6/2013	0.13	1.15	0.13	3.74	3.81	0.43	3.74
09-0039	09-0039.4	Wells Fargo	Active	6/6/2013	0.12	0.23	0.12	0.73	0.75	0.40	0.73
09-0039	09-0039.5	Wells Fargo	Active	6/6/2013	0.65	0.29	0.65	0.93	0.95	2.15	0.93
09-0050	09-0050.1	EVMS Parking Garage Addition	Active	9/1/2011	0.06	0.47	0.06	1.53	1.56	0.20	1.53
09-0057	09-0057.1	Metro Machine Parking Addition	Active	9/1/2011	0.28	0.15	0.28	0.50	0.51	0.93	0.50
09-0057	09-0057.2	Metro Machine Parking Addition	Active	9/1/2011	0.28	0.15	0.28	0.50	0.51	0.93	0.50
09-0057	09-0057.3	Metro Machine Parking Addition	Active	9/1/2011	0.28	0.15	0.28	0.50	0.51	0.93	0.50
09-0057	09-0057.4	Metro Machine Parking Addition	Active	9/1/2011	0.28	0.15	0.28	0.50	0.51	0.93	0.50
09-0057	09-0057.5	Metro Machine Parking Addition	Active	9/1/2011	0.28	0.15	0.28	0.50	0.51	0.93	0.50
09-0057	09-0057.6	Metro Machine Parking Addition	Active	9/1/2011	0.28	0.15	0.28	0.50	0.51	0.93	0.50
09-0057	09-0057.7	Metro Machine Parking Addition	Active	9/1/2011	0.28	0.15	0.28	0.50	0.51	0.93	0.50
09-0057	09-0057.8	Metro Machine Parking Addition	Active	9/1/2011	0.28	0.15	0.28	0.50	0.51	0.93	0.50
09-0057	09-0057.9	Metro Machine Parking Addition	Active	9/1/2011	0.28	0.15	0.28	0.50	0.51	0.93	0.50
09-0057	09-0057.10	Metro Machine Parking Addition	Active	9/1/2011	0.28	0.15	0.28	0.50	0.51	0.93	0.50
09-0058	09-0058.1	Mount Hermon Baptist Church Parking Addition	Active	6/21/2010	0.08	0.16	0.08	0.52	0.52	0.26	0.52
09-0058	09-0058.2	Mount Hermon Baptist Church Parking Addition	Active	6/21/2010	0.06	0.16	0.06	0.52	0.52	0.20	0.52
09-0058	09-0058.3	Mount Hermon Baptist Church Parking Addition	Active	6/21/2010	0.13	0.16	0.13	0.52	0.53	0.43	0.52

Table C-2
Credit for BMPs Installed to Meet Development/Redevelopment Requirements

Lucity Site & SWMF IDs			Completion Status		Total Phosphorus (TP)			Total Nitrogen (TN)			
Site ID	SWMF ID #	Site Name	Status	Online Date	Priority 1: Lucity Removal (lb/yr)	Priority 2: Estimated Removal Using DA (lb/yr)	Removal Credit Claimed (lb/yr)	Priority 1: Lucity Removal (lb/yr)	Priority 2: Lucity-based Estimated Removal (lb/yr)	Priority 3: Estimated Removal Using DA (lb/yr)	Removal Credit Claimed (lb/yr)
09-0065	09-0065.1	Filipino Independent Baptist Church	Active	2/7/2011	0.04	0.07	0.04	0.30	0.31	0.19	0.30
09-0065	09-0065.2	Filipino Independent Baptist Church	Active	2/7/2011	0.26	0.30	0.26	1.30	1.32	1.15	1.30
09-0071	09-0071.1	Fox Hall Place	Active	1/1/2010	0.33	0.13	0.33	0.73	0.43	1.09	0.73
09-0072	09-0072.1	Lamberts Point 26th St. Improvements	Active	1/1/2011	0.40	0.15	0.40	0.47	0.48	1.32	0.47
10-0004	10-0004.1	Blessed Sacrament Church addition	Active	8/16/2010	0.25		0.25	1.21			1.21
10-0025	10-0025.1	Metro Machine Parking Addition Phase II	Active	9/1/2011	0.24	0.15	0.24	0.48	0.49	0.79	0.48
10-0031	10-0031.1	Crossroads Elementary Rebuild	Active	8/29/2013	2.09	0.83	2.09	4.53	2.74	6.92	4.53
10-0031	10-0031.2	Crossroads Elementary Rebuild	Active	8/29/2013	2.86	3.63	2.86	19.70	16.21	12.76	19.70
10-0034	10-0034.1	Solid Rock Church parking	Active	4/23/2013	0.02	0.04	0.02	0.17	0.17	0.08	0.17
10-0034	10-0034.2	Solid Rock Church parking	Active	4/23/2013	0.02	0.04	0.02	0.19	0.20	0.08	0.19
10-0036	10-0036.1	Pump Station 34 Replacement	Active	6/8/2012	0.01	0.01	0.01	0.04	0.05	0.02	0.04
10-0050	10-0050.1	Islamia Center	Active	3/1/2012	0.34		0.34	2.12			2.12
10-0051	10-0051.1	Lamberts Point Townhouses	Active	2/22/2012	0.78	0.82	0.78	4.58	2.71	2.58	4.58
10-0052	10-0052.1	Grand Furniture	Active	10/27/2011	1.34	1.82	1.34	4.65	8.17	6.00	4.65
10-0059	10-0059.1	Meadowood Apartments	Active	12/7/2011	3.10	5.16	3.10	23.71	23.10	13.89	23.71
10-0060	10-0060.1	Consolidated Courts Complex	Active	4/1/2018	0.51		0.51	1.56			1.56
10-0060	10-0060.2	Consolidated Courts Complex	Active	4/1/2018	1.11		1.11	4.76			4.76
10-0069	10-0069.1	Forest Lawn Cemetery	Active	3/27/2013	0.11	0.63	0.11	2.74	2.84	0.49	2.74
10-0071	10-0071.1	CVS E Va Bch Blvd. and Newton	Active	3/12/2012	0.50	0.28	0.50	0.90	0.92	1.65	0.90
10-0073	10-0073.1	Lambert's Point Rec Center Parking Addition	Active	1/1/2011	2.97	2.07	2.97	13.02	6.83	9.82	13.02
10-0075	10-0075.1	RT Body Shop Addition	Active	4/23/2012	0.20	0.40	0.20	1.30	1.33	0.66	1.30
11-0002	11-0002.1	Fine Arts Center - Norfolk Collegiate	Active	9/30/2013	0.10	0.22	0.10	1.25	0.74	0.33	1.25
11-0007	11-0007.1	Lake Taylor Hospital Parking Lot Addition	Active	1/18/2012	0.68	1.00	0.68	5.84	3.31	2.25	5.84
11-0012	11-0012.1	Park Crescent Apartments	Active	3/15/2013	1.40	1.14	1.40	6.70	3.79	4.63	6.70
11-0012	11-0012.2	Park Crescent Apartments	Active	3/15/2013	1.14	1.14	1.14	6.70	3.79	3.79	6.70
11-0012	11-0012.3	Park Crescent Apartments	Active	3/15/2013	0.40	0.80	0.40	4.71	2.66	1.32	4.71
11-0012	11-0012.4	Park Crescent Apartments	Active	3/15/2013	0.50	1.28	0.50	7.51	4.25	1.65	7.51
11-0012	11-0012.5	Park Crescent Apartments	Active	3/15/2013	0.80	0.80	0.80	4.71	2.66	2.66	4.71
11-0014	11-0014.1	US General Services Admin	Active	10/30/2012	1.13	0.72	1.13	2.33	2.37	3.74	2.33
11-0015	11-0015.1	O'Reilly Auto Parts	Active	7/27/2012	0.72	0.97	0.72	3.14	3.20	2.38	3.14
11-0016	11-0016.1	Sewells Point Mini Storage	Active	10/2/2013	0.11	1.15	0.11	3.74	3.81	0.37	3.74
11-0019	11-0019.2	Autobell Carwash	Active	10/30/2012	0.28	0.56	0.28	1.81	1.84	0.94	1.81
11-0023	11-0023.1	Subdivision Plan for Bullock Park	Active	9/13/2013	0.37	1.29	0.37	4.19	4.27	1.22	4.19
11-0027	11-0027.1	Slover Library	Active	1/5/2015	0.41	0.33	0.41	1.07	1.10	1.36	1.07
11-0031	11-0031.1	MacArthur Mall Museum Expansion	Active	8/28/2012	0.26	0.15	0.26	0.48	0.50	0.86	0.48
11-0032	11-0032.1	Parking Lot	Active	1/1/2012	0.41	0.58	0.41	2.87	2.61	1.84	2.87
11-0034	11-0034.1	Ingleside Elementary School Gymnasium	Active	1/1/2013	0.61	1.03	0.61	3.24	3.40	2.02	3.24
11-0042	11-0042.1	Jerusalem Apostolic Christian Church	Active	2/20/2013	0.21	0.12	0.21	0.39	0.40	0.70	0.39
11-0044	11-0044.1	CON Small Brick Building	Active	4/5/2013	0.19	0.19	0.19	1.55	0.87	0.87	1.55
11-0045	11-0045.1	Norfolk Machine & Welding	Active	7/16/2012	0.52	1.10	0.52	4.84	4.94	2.33	4.84
11-0056	11-0056.1	Tidewater Gymnastics Parking Lot	Active	1/1/2013	0.16	0.26	0.16	1.12	1.15	0.72	1.12
11-0057	11-0057.1	Chrysler Museum Expansion and Renovation	Active	1/1/2015	0.36	0.22	0.36	0.73	0.74	1.19	0.73
11-0072	11-0072.3	BAE Systems Parking Lot improvements	Active	4/12/2012	1.01	1.41	1.01	1.01	4.68	3.34	1.01
11-0074	11-0074.1	Global Friendship House	Active	12/28/2018	0.26	0.42	0.26	0.00	1.38	0.86	0.86
11-0076	11-0076.1	W 29th St Parking Lot	Active	7/6/2017	0.12	0.15	0.12	0.81	0.50	0.40	0.81

Table C-2
Credit for BMPs Installed to Meet Development/Redevelopment Requirements

Lucity Site & SWMF IDs			Completion Status		Total Phosphorus (TP)			Total Nitrogen (TN)			
Site ID	SWMF ID #	Site Name	Status	Online Date	Priority 1: Lucity Removal (lb/yr)	Priority 2: Estimated Removal Using DA (lb/yr)	Removal Credit Claimed (lb/yr)	Priority 1: Lucity Removal (lb/yr)	Priority 2: Lucity-based Estimated Removal (lb/yr)	Priority 3: Estimated Removal Using DA (lb/yr)	Removal Credit Claimed (lb/yr)
11-0077	11-0077.1	Sentara Leigh Nursing Tower Replacement	Active	2/10/2016	0.24	0.40	0.24	1.47	1.33	0.79	1.47
11-0077	11-0077.2	Sentara Leigh Nursing Tower Replacement	Active	2/10/2016	0.41	0.32	0.41	1.05	1.07	1.36	1.05
11-0077	11-0077.3	Sentara Leigh Nursing Tower Replacement	Active	2/10/2016	0.27	0.15	0.27	0.50	0.51	0.89	0.50
11-0077	11-0077.5	Sentara Leigh Nursing Tower Replacement	Active	2/10/2016	0.39	0.36	0.39	1.15	1.18	1.29	1.15
11-0077	11-0077.6	Sentara Leigh Nursing Tower Replacement	Active	2/10/2016	0.67		0.67	2.94			2.94
11-0077	11-0077.7	Sentara Leigh Nursing Tower Replacement	Active	2/10/2016	0.56		0.56	4.34			4.34
11-0077	11-0077.8	Sentara Leigh Nursing Tower Replacement	Active	2/10/2016	0.65		0.65	8.99			8.99
11-0077	11-0077.9	Sentara Leigh Nursing Tower Replacement	Active	2/10/2016	0.65		0.65	8.99			8.99
11-0077	11-0077.10	Sentara Leigh Nursing Tower Replacement	Active	2/10/2016	0.65		0.65	8.99			8.99
11-0077	11-0077.11	Sentara Leigh Nursing Tower Replacement	Active	2/10/2016	1.88	2.31	1.88	8.99	7.65	6.22	8.99
11-0077	11-0077.12	Sentara Leigh Nursing Tower Replacement	Active	2/10/2016	1.88	2.31	1.88	8.99	7.65	6.22	8.99
11-0077	11-0077.13	Sentara Leigh Nursing Tower Replacement	Active	2/10/2016	1.88	2.31	1.88	8.99	7.65	6.22	8.99
11-0082	11-0082.1	Zoo-Animal Wellness Center	Active	1/13/2014	0.08	0.10	0.08	0.35	0.34	0.26	0.35
11-0082	11-0082.2	Zoo-Animal Wellness Center	Active	1/13/2014	0.04	0.03	0.04	0.09	0.09	0.13	0.09
11-0082	11-0082.3	Zoo-Animal Wellness Center	Active	1/13/2014	0.03	0.02	0.03	0.08	0.07	0.10	0.08
11-0082	11-0082.4	Zoo-Animal Wellness Center	Active	1/13/2014	0.08	0.17	0.08	0.54	0.56	0.26	0.54
12-0003	12-0003.1	Cook Out Restaurant	Active	1/1/2013	0.27	0.17	0.27	0.55	0.56	0.89	0.55
12-0006	12-0006.1	821 W 26TH ST - Industrial Storage Building	Active	9/10/2014	0.14	0.22	0.14	0.97	0.99	0.63	0.97
12-0013	12-0013.1	Rebuild and Convenience Store Addition - BP/7-11	Active	1/1/2013	0.39	0.46	0.39	2.01	2.07	1.75	2.01
12-0014	12-0014.1	Filipino Christian Church	Active	6/9/2013	0.09	0.40	0.09	2.35	1.33	0.30	2.35
12-0015	12-0015.1	CHURCH PARKING LOT	Active	1/1/2013	0.13	0.18	0.13	0.58	0.59	0.43	0.58
12-0016	12-0016.1	Killam Avenue Eatery	Active	8/29/2013	0.05	0.05	0.05	0.29	0.22	0.24	0.29
12-0024	12-0024.1	YMCA Family Center on Granby Street	Active	6/1/2013	0.52	0.29	0.52	0.93	0.95	1.72	0.93
12-0024	12-0024.2	YMCA Family Center on Granby Street	Active	5/31/2013	0.59	0.32	0.59	1.05	1.07	1.95	1.05
12-0025	12-0025.2	WAWA	Active	10/21/2013	0.31	0.17	0.31	1.00	0.56	1.03	1.00
12-0025	12-0025.3	WAWA	Active	10/21/2013	0.64	0.45	0.64	2.62	1.48	2.12	2.62
12-0025	12-0025.4	WAWA	Active	10/21/2013	1.91	1.91	1.91	11.18	6.32	6.32	11.18
12-0026	12-0026.1	Hammett Avenue BMP	Active	10/21/2013	0.15	0.32	0.15	1.03	1.05	0.48	1.03
12-0030	12-0030.1	R.E. Michel Building Addition	Active	11/26/2013	0.35	0.48	0.35	1.56	1.59	1.16	1.56
12-0033	12-0033.1	Balance Builders	Active	1/6/2016	0.13		0.13	0.65			0.65
12-0039	12-0039.2	Suburban Park Redevelopment of Wards Corner	Active	4/30/2013	0.24	0.19	0.24	0.60	0.61	0.79	0.60
12-0039	12-0039.3	Suburban Park Redevelopment of Wards Corner	Active	4/30/2013	0.24	0.14	0.24	0.45	0.46	0.79	0.45
12-0039	12-0039.4	Suburban Park Redevelopment of Wards Corner	Active	4/30/2013	0.24	0.14	0.24	0.45	0.46	0.79	0.45
12-0039	12-0039.5	Suburban Park Redevelopment of Wards Corner	Active	4/30/2013	0.24	0.14	0.24	0.45	0.46	0.79	0.45
12-0039	12-0039.6	Suburban Park Redevelopment of Wards Corner	Active	4/30/2013	0.24	0.26	0.24	0.83	0.84	0.79	0.83
12-0044	12-0044.1	Norfolk Multi-Modal Transportation Center	Active	11/14/2013	0.59	0.66	0.59	2.16	2.19	1.95	2.16
12-0048	12-0048.1	Woodland Avenue Baptist Church	Active	5/14/2021	0.16	0.14	0.16	0.65	0.65	0.72	0.65
12-0050	12-0050.1	Duplex Site Plan for Li Shen	Active	1/1/2014	0.22	0.22	0.22	2.18	0.72	0.73	2.18
12-0064	12-0064.1	Gethsemane Baptist Church Bldg Addition	Active	7/9/2018	0.04	0.21	0.04	0.68	0.70	0.13	0.68
12-0065	12-0065.1	Street Improvements for Asfari Homes	Active	1/1/2016	0.44		0.44	9.36			9.36
12-0065	12-0065.2	Street Improvements for Asfari Homes	Active	1/1/2016	0.93	0.93	0.93	5.43	3.07	3.07	5.43
12-0066	12-0066.1	Sherwin Williams	Active	10/8/2013	0.15	0.20	0.15	1.16	0.66	0.49	1.16
12-0081	12-0081.1	United Disposal	Active	1/1/2014	0.48	0.36	0.48	1.18	1.20	1.59	1.18
12-0082	12-0082.1	Mixed Use Building	Active	7/25/2014	0.21	0.12	0.21	0.38	0.38	0.69	0.38
12-0083	12-0083.1	71 Unit Multifamily	Active	8/27/2014	0.15	0.27	0.15	0.88	0.90	0.50	0.88

Table C-2
Credit for BMPs Installed to Meet Development/Redevelopment Requirements

Lucity Site & SWMF IDs			Completion Status		Total Phosphorus (TP)			Total Nitrogen (TN)			
Site ID	SWMF ID #	Site Name	Status	Online Date	Priority 1: Lucity Removal (lb/yr)	Priority 2: Estimated Removal Using DA (lb/yr)	Removal Credit Claimed (lb/yr)	Priority 1: Lucity Removal (lb/yr)	Priority 2: Lucity-based Estimated Removal (lb/yr)	Priority 3: Estimated Removal Using DA (lb/yr)	Removal Credit Claimed (lb/yr)
12-0085	12-0085.1	Bauer Compressors Expansion	Active	6/19/2013	0.30	0.18	0.30	0.58	0.59	0.99	0.58
12-0085	12-0085.2	Bauer Compressors Expansion	Active	6/19/2013	0.54	1.04	0.54	3.36	3.43	1.79	3.36
12-0085	12-0085.3	Bauer Compressors Expansion	Active	6/19/2013	0.66	1.10	0.66	3.56	3.63	2.18	3.56
13-0000	13-0000.1	Element on Ghent	Active	1/1/2015	0.18	0.12	0.18	0.40	0.41	0.60	0.40
13-0007	23-0007.1	Outer LTE Parking Lot Conversion	Active	4/11/2023	1.74		1.74	17.47		4.02	17.47
13-0009	13-0009.1	Bruce's Park Pump Station #152	Active	3/28/2016	0.08	0.04	0.08	1.10	0.22	0.40	1.10
13-0017	13-0017.1	USAA Parking Garage	Active	3/3/2014	0.24	0.19	0.24	0.60	0.61	0.79	0.60
13-0017	13-0017.2	USAA Parking Garage	Active	3/3/2014	0.24	0.19	0.24	0.60	0.61	0.79	0.60
13-0017	13-0017.3	USAA Parking Garage	Active	3/3/2014	0.24	0.19	0.24	0.60	0.61	0.79	0.60
13-0017	13-0017.4	USAA Parking Garage	Active	3/3/2014	0.24	0.19	0.24	0.60	0.61	0.79	0.60
13-0017	13-0017.5	USAA Parking Garage	Active	3/3/2014	0.24	0.19	0.24	0.60	0.61	0.79	0.60
13-0020	13-0020.1	Chick-Fil-A (Store #03189)	Active	1/1/2014	0.25	0.15	0.25	0.50	0.51	0.83	0.50
13-0020	13-0020.2	Chick-Fil-A (Store #03189)	Active	1/1/2014	0.18	0.14	0.18	0.46	0.47	0.60	0.46
13-0020	13-0020.3	Chick-Fil-A (Store #03189)	Active	1/1/2014	0.13	0.09	0.13	0.30	0.31	0.43	0.30
13-0020	13-0020.4	Chick-Fil-A (Store #03189)	Active	8/4/2024		0.09	0.09		0.31		0.31
13-0031	13-0031.1	7-Eleven	Active	1/2/2014	0.11	0.05	0.11	0.17	0.18	0.37	0.17
13-0040	13-0040.1	Ocean View Avenue Duplex	Active	9/29/2014	0.03	0.09	0.03	0.53	0.30	0.10	0.53
13-0049	13-0049.1	Shirley Avenue Parking Lot	Active	7/9/2014	0.20	0.13	0.20	0.43	0.43	0.67	0.43
13-0049	13-0049.2	Shirley Avenue Parking Lot	Active	7/9/2014	0.17	0.10	0.17	0.33	0.33	0.57	0.33
13-0060	13-0060.1	Colonna Shipyard S. Main St. Improvements	Active	9/17/2024	3.26	5.80	3.26	18.84	19.19	10.79	18.84
13-0061	13-0061.1	Towing Operations Center	Active	11/19/2013	2.90		2.90	9.85			9.85
13-0064	13-0064.1	Leigh Hall Assisted Living Building	Active	1/1/2016	0.30	0.80	0.30	2.59	2.64	0.99	2.59
13-0065	13-0065.1	Metro Machine Corporation Parking Lot Addition	Active	1/1/2015	0.44	0.24	0.44	0.78	0.79	1.46	0.78
13-0074	13-0074.1	3350 E. Princess Anne Rd. Walmart-Wawa	Active	1/1/2015	0.64		0.64	2.59			2.59
13-0074	13-0074.2	3350 E. Princess Anne Rd. Walmart-Wawa	Active	1/1/2015	0.53		0.53	2.03			2.03
13-0085	13-0085.1	Bus Transfer Station	Active	12/22/2015	0.18	0.17	0.18	0.57	0.56	0.60	0.57
13-0085	13-0085.2	Bus Transfer Station	Active	12/22/2015	0.08	0.20	0.08	0.65	0.67	0.26	0.65
13-0085	13-0085.3	Bus Transfer Station	Active	12/22/2015	0.26	0.11	0.26	0.36	0.36	0.86	0.36
13-0089	13-0089.1	Pretty Lake Condos	Active	1/1/2015	0.16	0.21	0.16	0.69	0.71	0.53	0.69
13-0090	13-0090.1	Bolling Square Phase 2	Active	11/5/2015	1.38		1.38	4.84			4.84
13-0091	13-0091.1	Ghent Station	Active	8/11/2015	0.23	0.13	0.23	0.42	0.43	0.76	0.42
14-0008	14-0008.1	Parktowne Clubhouse	Active	1/1/2016	0.43	0.29	0.43	1.72	0.97	1.42	1.72
14-0009	14-0009.1	Lake Taylor Field House	Active	10/1/2014	0.25	0.19	0.25	1.89	0.84	1.13	1.89
14-0009	14-0009.2	Lake Taylor Field House	Active	10/1/2014	0.04	0.02	0.04	0.15	0.11	0.18	0.15
14-0010	14-0010.1	Booker T. Washington Field House	Active	10/1/2014	0.20	0.21	0.20	1.47	0.93	0.90	1.47
14-0022	14-0022.1	NRHA Broad Creek Ph. 5	Active	10/28/2016	5.31	1.04	5.31	3.36	3.44	17.57	3.36
14-0029	14-0029.1	VA Dermatology and Skin Cancer Center	Active	1/1/2016	0.68	0.44	0.68	1.43	1.46	2.25	1.43
14-0047	14-0047.1	Norfolk Hotel and Conference Center	Active	2/10/2017	0.62	0.34	0.62	1.10	1.12	2.05	1.10
14-0049	14-0049.1	Sam's Club	Active	12/7/2015	1.09	2.03	1.09	6.60	6.73	3.62	6.60
14-0049	14-0049.2	Sam's Club	Active	12/7/2015	0.00	2.03	2.03	0.00	6.72		6.72
14-0053	14-0053.1	2800 Church Street	Active	7/30/2020	0.64	0.57	0.64	5.07	2.58	2.87	5.07
14-0070	14-0070.1	Oaks at Elmhurst	Active	10/16/2017	0.86		0.86	1.89		1.99	1.89
14-0070	14-0070.2	Oaks at Elmhurst	Active	10/16/2017	0.08	0.80	0.08	3.50	3.57	0.36	3.50
14-0072	14-0072.1	The Banks at Berkley	Active	3/31/2017	1.17	1.01	1.17	5.66	3.35	3.87	5.66
14-0072	14-0072.2	The Banks at Berkley	Active	3/31/2017	0.98	0.85	0.98	4.76	2.81	3.24	4.76

Table C-2
Credit for BMPs Installed to Meet Development/Redevelopment Requirements

Lucity Site & SWMF IDs			Completion Status		Total Phosphorus (TP)			Total Nitrogen (TN)			
Site ID	SWMF ID #	Site Name	Status	Online Date	Priority 1: Lucity Removal (lb/yr)	Priority 2: Estimated Removal Using DA (lb/yr)	Removal Credit Claimed (lb/yr)	Priority 1: Lucity Removal (lb/yr)	Priority 2: Lucity-based Estimated Removal (lb/yr)	Priority 3: Estimated Removal Using DA (lb/yr)	Removal Credit Claimed (lb/yr)
14-0073	14-0073.1	Campostella Elementary	Active	8/22/2016	2.48	3.54	2.48	9.03	15.85	11.10	9.03
14-0078	14-0078.1	Norfolk Academy Master Plan Phase I	Active	1/1/2017		0.20	0.20		1.03		1.03
14-0080	14-0080.2	Mixed Use Development Church St.	Active	9/27/2016	0.40	0.30	0.40	2.88	1.35	1.79	2.88
14-0085	14-0085.1	Ocean View Elementary School	Active	8/31/2017	4.87	5.31	4.87	13.14	23.78	21.82	13.14
14-0092	14-0092.1	17th Bay Street Duplexes	Active	4/19/2017	0.18	0.14	0.18	1.09	0.64	0.81	1.09
14-0092	14-0092.2	17th Bay Street Duplexes	Active	4/19/2017	0.03	0.03	0.03	0.25	0.14	0.13	0.25
14-0092	14-0092.3	17th Bay Street Duplexes	Active	4/19/2017	0.03	0.03	0.03	0.24	0.14	0.13	0.24
14-0092	14-0092.4	17th Bay Street Duplexes	Active	4/19/2017	0.02	0.02	0.02	0.16	0.07	0.09	0.16
14-0094	14-0094.1	Metro Towing Company, Inc.	Active	3/20/2017	0.41	0.30	0.41	2.95	1.32	1.84	2.95
14-0096	14-0096.1	Ghent Village	Active	1/8/2016	0.04	7.31	0.04	0.35	32.77	0.18	0.35
15-0002	15-0002.1	450 Boush St. Mixed Use Development	Active	10/20/2017	0.96	0.55	0.96	1.78	1.82	3.18	1.78
15-0006	15-0006.1	Clairmont Apartments	Active	5/31/2017	5.94	6.31	5.94	20.47	20.89	19.66	20.47
15-0016	15-0016.1	Maiden's Watch 7 Lot Subdivision	Active	5/7/2021	0.08	0.07	0.08	0.67	0.30	0.36	0.67
15-0016	15-0016.2	Maiden's Watch 7 Lot Subdivision	Active	5/7/2021	0.08	0.07	0.08	0.66	0.30	0.36	0.66
15-0016	15-0016.3	Maiden's Watch 7 Lot Subdivision	Active	5/7/2021	0.10	0.09	0.10	0.90	0.41	0.45	0.90
15-0016	15-0016.4	Maiden's Watch 7 Lot Subdivision	Active	5/7/2021	0.07	0.08	0.07	0.59	0.36	0.31	0.59
15-0016	15-0016.5	Maiden's Watch 7 Lot Subdivision	Active	5/7/2021	0.10	0.09	0.10	0.90	0.41	0.45	0.90
15-0016	15-0016.6	Maiden's Watch 7 Lot Subdivision	Active	5/7/2021	0.09	0.10	0.09	0.77	0.43	0.40	0.77
15-0017	15-0017.1	Bauer Compressors - Bldg 4 Expansion	Active	1/1/2018	0.06	0.05	0.06	0.40	0.22	0.27	0.40
15-0019	15-0019.1	901 Ballentine Boulevard Parking Lot	Active	9/26/2017	0.11	0.11	0.11	0.93	0.50	0.49	0.93
15-0019	15-0019.2	901 Ballentine Boulevard Parking Lot	Active	9/26/2017	0.09	0.08	0.09	0.71	0.38	0.40	0.71
15-0019	15-0019.3	901 Ballentine Boulevard Parking Lot	Active	9/26/2017	0.25	0.16	0.25	1.80	0.71	1.12	1.80
15-0019	15-0019.4	901 Ballentine Boulevard Parking Lot	Active	9/26/2017	0.26	0.22	0.26	2.00	0.99	1.16	2.00
15-0022	15-0022.1	Church Street Station Studios	Active	12/12/2017	0.12	0.13	0.12	0.00	0.43	0.40	0.40
15-0022	15-0022.2	Church Street Station Studios	Active	12/12/2017	0.30	0.33	0.30	0.00	1.10	0.99	0.99
15-0022	15-0022.3	Church Street Station Studios	Active	12/12/2017	0.06	0.13	0.06	0.00	0.43	0.20	0.20
15-0022	15-0022.4	Church Street Station Studios	Active	12/12/2017	0.12	0.13	0.12	0.00	0.43	0.40	0.40
15-0025	15-0025.3	Coastal Villas by the Bay	Active	8/15/2019	0.13	0.27	0.13	1.11	1.19	0.58	1.11
15-0025	15-0025.1	Coastal Villas by the Bay	Active	8/19/2019	1.32	0.76	1.32	9.62	3.39	5.91	9.62
15-0025	15-0025.2	Coastal Villas by the Bay	Active	8/15/2019	0.13	0.32	0.13	1.11	1.45	0.58	1.11
15-0028	15-0028.1	Lowery Road Pedestrian Improvements	Active	12/7/2016	0.13	0.14	0.13	0.47	0.47	0.43	0.47
15-0028	15-0028.2	Lowery Road Pedestrian Improvements	Active	12/7/2016	0.34	0.38	0.34	1.24	1.26	1.13	1.24
15-0031	15-0031.1	1081 Military Hwy Retail Shops	Active	6/7/2018	0.20	0.15	0.20	0.50	0.51	0.66	0.50
15-0035	15-0035.1	Dollar General Store	Active	5/9/2016	0.17	0.29	0.17	1.67	0.95	0.56	1.67
15-0036	15-0036.1	Watermark at Talbot Park - Ph. I	Active	12/9/2016	1.94	0.95	1.94	4.19	4.28	8.69	4.19
15-0036	15-0036.2	Watermark at Talbot Park - Ph. I	Active	12/9/2016	0.61	0.50	0.61	2.20	2.25	2.73	2.20
15-0036	15-0036.3	Watermark at Talbot Park - Ph. I	Active	12/9/2016	0.05	0.19	0.05	0.82	0.84	0.22	0.82
15-0038	15-0038.1	Woodlawn Memorial Gardens	Active	10/29/2018	0.42	1.10	0.42	5.44	4.92	1.88	5.44
15-0038	15-0038.2	Woodlawn Memorial Gardens	Active	10/29/2018	0.49	1.29	0.49	4.10	5.79	2.20	4.10
15-0038	15-0038.3	Woodlawn Memorial Gardens	Active	10/29/2018	0.57	1.50	0.57	4.77	6.71	2.55	4.77
15-0038	15-0038.4	Woodlawn Memorial Gardens	Active	10/29/2018	0.43	1.13	0.43	3.58	5.07	1.93	3.58
15-0038	15-0038.5	Woodlawn Memorial Gardens	Active	10/29/2018	0.60	1.58	0.60	4.98	7.07	2.69	4.98
15-0039	15-0039.2	Captain's Landing	Active	4/28/2018	1.65	1.07	1.65	11.71	4.79	7.40	11.71
15-0043	15-0043.3	Premium Outlets Boulevard	Active	9/25/2017	0.33	0.92	0.33	0.60	3.03	1.09	0.60
15-0043	15-0043.4	Premium Outlets Boulevard	Active	9/25/2017	0.33	0.92	0.33	0.60	3.03	1.09	0.60

Table C-2
Credit for BMPs Installed to Meet Development/Redevelopment Requirements

Lucity Site & SWMF IDs			Completion Status		Total Phosphorus (TP)			Total Nitrogen (TN)			
Site ID	SWMF ID #	Site Name	Status	Online Date	Priority 1: Lucity Removal (lb/yr)	Priority 2: Estimated Removal Using DA (lb/yr)	Removal Credit Claimed (lb/yr)	Priority 1: Lucity Removal (lb/yr)	Priority 2: Lucity-based Estimated Removal (lb/yr)	Priority 3: Estimated Removal Using DA (lb/yr)	Removal Credit Claimed (lb/yr)
15-0043	15-0043.5	Premium Outlets Boulevard	Active	9/25/2017	0.33	0.92	0.33	0.60	3.03	1.09	0.60
15-0043	15-0043.6	Premium Outlets Boulevard	Active	9/25/2017	0.33	0.92	0.33	0.60	3.03	1.09	0.60
15-0043	15-0043.7	Premium Outlets Boulevard	Active	9/25/2017	0.21	0.32	0.21	1.55	1.05	0.69	1.55
15-0043	15-0043.8	Premium Outlets Boulevard	Active	9/25/2017	0.21	0.32	0.21	7.76	1.05	0.69	7.76
15-0043	15-0043.9	Premium Outlets Boulevard	Active	9/25/2017	0.21	0.32	0.21	1.55	1.05	0.69	1.55
15-0043	15-0043.10	Premium Outlets Boulevard	Active	9/25/2017	0.21	0.32	0.21	1.55	1.05	0.69	1.55
15-0044	15-0044.1	Norfolk Academy Football Field	Active	3/11/2021	2.92	2.26	2.92	20.82	10.14	13.08	20.82
15-0044	15-0044.2	Norfolk Academy Football Field	Active	3/11/2021	1.28	2.26	1.28	8.45	10.14	5.73	8.45
15-0049	15-0049.1	7-Eleven	Active	1/1/2017	0.26	0.09	0.26	1.68	0.29	0.86	1.68
15-0049	15-0049.3	7-Eleven	Active	1/1/2017	0.37	0.34	0.37	1.99	1.12	1.22	1.99
15-0052	15-0052.1	Norfolk Academy Leadership Center	Active	4/13/2021	0.26	0.22	0.26	2.18	1.00	1.16	2.18
15-0062	15-0062.1	Colonna's Shipyard New Spotico Creek Facility	Active	3/21/2018	1.14	0.54	1.14	0.31	1.78	3.77	0.31
15-0062	15-0062.2	Colonna's Shipyard New Spotico Creek Facility	Active	3/21/2018	1.66	4.92	1.66	21.61	22.06	7.44	21.61
16-0004	16-0004.1	20th Bay Street Subdivision	Active	9/27/2017	0.01	0.08	0.01	0.11	0.36	0.04	0.11
16-0004	16-0004.2	20th Bay Street Subdivision	Active	8/10/2017	0.01	0.09	0.01	0.11	0.42	0.04	0.11
16-0004	16-0004.3	20th Bay Street Subdivision	Active	8/11/2017	0.01	0.09	0.01	0.11	0.42	0.04	0.11
16-0004	16-0004.4	20th Bay Street Subdivision	Active	12/16/2016	0.01	0.09	0.01	0.11	0.42	0.04	0.11
16-0004	16-0004.5	20th Bay Street Subdivision	Active	1/24/2017	0.01	0.10	0.01	0.11	0.43	0.04	0.11
16-0004	16-0004.6	20th Bay Street Subdivision	Active	1/24/2017	0.01	0.09	0.01	0.11	0.42	0.04	0.11
16-0004	16-0004.7	20th Bay Street Subdivision	Active	11/16/2016	0.01	0.09	0.01	0.11	0.42	0.04	0.11
16-0004	16-0004.8	20th Bay Street Subdivision	Active	10/25/2016	0.01	0.14	0.01	0.11	0.65	0.04	0.11
16-0004	16-0004.9	20th Bay Street Subdivision	Active	9/27/2017	0.13	0.11	0.13	0.91	0.50	0.58	0.91
16-0011	16-0011.2	Granby Townhomes	Active	8/28/2017	0.05	0.05	0.05	0.40	0.21	0.22	0.40
16-0011	16-0011.3	Granby Townhomes	Active	8/28/2017	0.05	0.05	0.05	0.40	0.21	0.22	0.40
16-0011	16-0011.4	Granby Townhomes	Active	8/28/2017	0.05	0.07	0.05	0.40	0.29	0.22	0.40
16-0016	16-0016.1	Lots 5-12 Glenroie Ave. 3 SFR	Active	2/13/2017	0.30		0.30	0.66		0.69	0.66
16-0031	16-0031.1	Norfolk Academy Lower School Addition	Active	4/13/2021	0.20	0.19	0.20	1.69	0.85	0.90	1.69
16-0031	16-0031.2	Norfolk Academy Lower School Addition	Active	4/13/2021	0.05	0.19	0.05	0.39	0.86	0.22	0.39
16-0031	16-0031.3	Norfolk Academy Lower School Addition	Active	4/13/2021	0.42	0.48	0.42	3.53	2.14	1.88	3.53
16-0031	16-0031.4	Norfolk Academy Lower School Addition	Active	4/13/2021	0.17	0.22	0.17	1.31	1.00	0.76	1.31
16-0033	16-0033.1	Norfolk Academy Refectory	Active	4/13/2021	0.04	0.06	0.04	0.26	0.29	0.18	0.26
16-0034	16-0034.1	Grandy Village Phase VI	Active	5/10/2021	5.14	5.96	5.14	33.32	19.73	17.01	33.32
16-0037	16-0037.2	14th Bay Street Residential	Active	4/22/2019	0.03	0.03	0.03	0.21	0.14	0.13	0.21
16-0037	16-0037.3	14th Bay Street Residential	Active	4/22/2019	0.03	0.03	0.03	0.21	0.14	0.13	0.21
16-0037	16-0037.4	14th Bay Street Residential	Active	4/22/2019	0.03	0.03	0.03	0.21	0.14	0.13	0.21
16-0048	16-0048.1	Sunset Dr. at Chesapeake Blvd Drainage	Active	4/6/2021	0.81	1.74	0.81	10.18	5.76	2.68	10.18
16-0060	16-0060.1	Kennebaeck Ave Azalea Garden Rd Drainage	Active	10/24/2018	4.30	0.76	4.30		2.50	14.23	14.23
16-0078	16-0078.1	Norfolk Academy STEAM Addition	Active	4/15/2021	0.01	0.02	0.01	0.10	0.07	0.04	0.10
16-0085	16-0085.2	Newport Manor	Active	8/3/2021	0.52		0.52	2.63		1.20	2.63
16-0091	16-0091.1	814 Brennan Ave-5 lot subdivision	Active	7/9/2021	0.05	0.06	0.05	0.49	0.28	0.22	0.49
16-0091	16-0091.2	814 Brennan Ave-5 lot subdivision	Active	7/8/2021	0.05	0.06	0.05	0.57	0.29	0.22	0.57
16-0091	16-0091.3	814 Brennan Ave-5 lot subdivision	Active	3/4/2022	0.05	0.06	0.05	0.57	0.29	0.22	0.57
16-0091	16-0091.4	814 Brennan Ave-5 lot subdivision	Active	6/16/2021	0.05	0.08	0.05	0.34	0.36	0.22	0.34
16-0091	16-0091.5	814 Brennan Ave-5 lot subdivision	Active	6/16/2021	0.05	0.09	0.05	0.38	0.42	0.22	0.38
16-0097	16-0097.1	1855 Kingston Ave. Duplex	Active	6/7/2019	0.19	0.12	0.19	1.35	0.53	0.85	1.35

Table C-2
Credit for BMPs Installed to Meet Development/Redevelopment Requirements

Lucity Site & SWMF IDs			Completion Status		Total Phosphorus (TP)			Total Nitrogen (TN)			
Site ID	SWMF ID #	Site Name	Status	Online Date	Priority 1: Lucity Removal (lb/yr)	Priority 2: Estimated Removal Using DA (lb/yr)	Removal Credit Claimed (lb/yr)	Priority 1: Lucity Removal (lb/yr)	Priority 2: Lucity-based Estimated Removal (lb/yr)	Priority 3: Estimated Removal Using DA (lb/yr)	Removal Credit Claimed (lb/yr)
16-0097	16-0097.2	1855 Kingston Ave. Duplex	Active	6/7/2019	0.02	0.05	0.02	0.14	0.22	0.09	0.14
16-0098	16-0098.1	St. Paul's Apartments	Active	4/2/2019	0.04	0.06	0.04	0.30	0.28	0.18	0.30
16-0098	16-0098.2	St. Paul's Apartments	Active	4/2/2019	0.04	0.05	0.04	0.30	0.22	0.18	0.30
16-0098	16-0098.5	St. Paul's Apartments	Active	4/2/2019	4.30		4.30	9.46		9.94	9.46
16-0102	16-0102.1	1424, 1426, & 1428 W Ocean View Ave.	Active	5/1/2019	0.24	0.43	0.24	1.60	1.92	1.08	1.60
16-0102	16-0102.2	1424, 1426, & 1428 W Ocean View Ave.	Active	5/1/2019	0.24	0.30	0.24	0.24	1.34	1.08	0.24
16-0109	16-0109.1	4013 Colley Mixed Use	Active	11/25/2019	0.23	0.11	0.23	1.62	0.50	1.03	1.62
16-0109	16-0109.2	4013 Colley Mixed Use	Active	11/25/2019	0.20		0.20	0.44		0.46	0.44
16-0115	16-0115.4	Royal Farms	Active	12/28/2018	1.49		1.49	3.28		3.44	3.28
16-0115	16-0115.5	Royal Farms	Active	12/28/2018	0.00	0.14	0.14	0.00	0.48		0.48
16-0117	16-0117.1	YMCA Gym Addition	Active	3/26/2018	0.22	0.15	0.22	0.50	0.50	0.73	0.50
16-0117	16-0117.2	YMCA Gym Addition	Active	3/26/2018	0.13	0.09	0.13	0.30	0.29	0.43	0.30
17-0002	17-0002.1	9650 Shore Drive-East Beach Veterinary Clinic	Active	1/25/2019	0.00	0.20	0.20	0.00	0.91		0.91
17-0011	17-0011.1	529 W 24th Street	Active	6/19/2017	0.03		0.03	0.07		0.07	0.07
17-0012	17-0012.1	Valley Self Storage Additional Buildings	Active	11/26/2018		0.61	0.61		2.73		2.73
17-0012	17-0012.2	Valley Self Storage Additional Buildings	Active	11/26/2018		0.54	0.54		2.40		2.40
17-0015	17-0015.1	2714-2718 Pleasant Ave Duplex	Active	4/8/2019	0.18	0.13	0.18	1.29	0.59	0.81	1.29
17-0016	17-0016.1	Sunshine Villas	Active	11/2/2018	0.01	0.03	0.01	0.10	0.14	0.04	0.10
17-0021	17-0021.1	Cook Out	Active	1/11/2019	0.29	0.25	0.29	1.64	0.83	0.96	1.64
17-0024	17-0024.1	1224-1228 West Ocean View	Active	7/24/2017	0.04		0.04	0.09		0.09	0.09
17-0028	17-0028.1	1st View St. - 3 SFR	Active	12/10/2019	0.11	0.07	0.11	0.76	0.31	0.49	0.76
17-0028	17-0028.2	1st View St. - 3 SFR	Active	12/10/2019		0.06	0.06		0.29		0.29
17-0028	17-0028.3	1st View St. - 3 SFR	Active	12/10/2019		0.06	0.06		0.29		0.29
17-0029	17-0029.1	Coastal Breeze Car Wash	Active	4/19/2017	0.04		0.04	0.09		0.09	0.09
17-0030	17-0030.1	Apple Retail Properties	Active	12/17/2020	6.13	6.19	6.13	19.50	20.49	20.29	19.50
17-0039	17-0039.1	Checkered Flag Honda Expansion	Active	10/15/2018	0.40	0.75	0.40	2.46	2.49	1.32	2.46
17-0039	17-0039.2	Checkered Flag Honda Expansion	Active	10/15/2018	2.01	2.00	2.01	6.52	6.63	6.65	6.52
17-0039	17-0039.3	Checkered Flag Honda Expansion	Active	10/15/2018	0.53		0.53	1.97		1.22	1.97
17-0042	17-0042.1	MHI - Raleigh Ave. Parking Lot	Active	12/11/2017	0.45		0.45	0.99		1.04	0.99
17-0043	17-0043.1	3 SFR - 1100 Virgilina Ave	Active	8/20/2018	0.09	0.16	0.09	0.74	0.71	0.40	0.74
17-0043	17-0043.2	3 SFR - 1100 Virgilina Ave	Active	8/20/2018	0.13	0.13	0.13	0.93	0.56	0.58	0.93
17-0043	17-0043.3	3 SFR - 1100 Virgilina Ave	Active	8/20/2018	0.02	0.02	0.02	0.14	0.11	0.09	0.14
17-0043	17-0043.4	3 SFR - 1100 Virgilina Ave	Active	8/20/2018	0.04	0.04	0.04	0.31	0.16	0.18	0.31
17-0044	17-0044.1	Sentara Leigh Cancer Center	Active	1/13/2021	2.05	1.94	2.05	6.29	6.42	6.78	6.29
17-0044	17-0044.2	Sentara Leigh Cancer Center	Active	1/13/2021	1.10	1.13	1.10	3.66	3.73	3.64	3.66
17-0045	17-0045.2	Baylor Warehouse Building Addition	Active	4/2/2018	0.45		0.45	1.67		1.04	1.67
17-0046	17-0046.1	Americana Townhomes	Active	12/6/2023	1.05	1.23	1.05	3.34	4.06	3.47	3.34
17-0046	17-0046.2	Americana Townhomes	Active	8/15/2018	0.78		0.78	2.90		1.80	2.90
17-0047	17-0047.2	Devonshire Avenue Sidewalk Improvements	Active	5/26/2023	0.57	0.23	0.57	0.00	0.75	1.89	1.89
17-0047	17-0047.3	Devonshire Avenue Sidewalk Improvements	Active	5/26/2023	0.57	0.23	0.57	0.00	0.75	1.89	1.89
17-0048	17-0048.1	Johnstons Rd & SW Improvements	Active	5/26/2023	1.17	0.20	1.17	0.00	0.65	3.87	3.87
17-0051	17-0051.1	Norfolk Square Contractor's Office	Active	1/23/2023	0.64	0.40	0.64	4.51	1.79	2.87	4.51
17-0052	17-0052.2	2607 Colonial Ave.	Active	2/11/2019	0.29		0.29	0.64		0.67	0.64
17-0053	17-0053.1	Norfolk Botanical Garden- NATO Tower Renovations	Active	5/11/2021	0.06	0.41	0.06	0.45	1.82	0.27	0.45
17-0056	17-0056.1	Coastal Services	Active	1/6/2020	0.18	0.19	0.18	1.25	0.84	0.81	1.25

Table C-2
Credit for BMPs Installed to Meet Development/Redevelopment Requirements

Lucity Site & SWMF IDs			Completion Status		Total Phosphorus (TP)			Total Nitrogen (TN)			
Site ID	SWMF ID #	Site Name	Status	Online Date	Priority 1: Lucity Removal (lb/yr)	Priority 2: Estimated Removal Using DA (lb/yr)	Removal Credit Claimed (lb/yr)	Priority 1: Lucity Removal (lb/yr)	Priority 2: Lucity-based Estimated Removal (lb/yr)	Priority 3: Estimated Removal Using DA (lb/yr)	Removal Credit Claimed (lb/yr)
17-0067	17-0067.1	Lake Wright Properties Redevelopment	Active	11/14/2018	0.10		0.10	0.86		0.23	0.86
17-0067	17-0067.2	Lake Wright Properties Redevelopment	Active	11/14/2018	0.22		0.22	0.48		0.51	0.48
17-0068	17-0068.1	3 SFR Columbia Avenue	Active	12/4/2017	0.12		0.12	0.26		0.28	0.26
17-0069	17-0069.2	Home 2 Suites	Active	10/22/2019	2.50		2.50	5.50		5.78	5.50
17-0072	17-0072.1	8802 Chesapeake Blvd - 3 SFR	Active	3/14/2019	0.09	0.06	0.09	0.64	0.28	0.40	0.64
17-0072	17-0072.2	8802 Chesapeake Blvd - 3 SFR	Active	11/27/2018	0.09	0.06	0.09	0.64	0.28	0.40	0.64
17-0072	17-0072.3	8802 Chesapeake Blvd - 3 SFR	Active	2/13/2019	0.07	0.06	0.07	0.54	0.28	0.31	0.54
17-0073	17-0073.1	ARTFX Building Addition	Active	2/18/2021	3.06	3.08	3.06	13.48	13.78	13.71	13.48
17-0073	17-0073.2	ARTFX Building Addition	Active	2/18/2021	1.57	0.71	1.57	11.64	2.36	5.20	11.64
17-0074	17-0074.1	9544 14th Bay Street Duplex	Active	10/22/2018	0.14	0.07	0.14	0.99	0.31	0.63	0.99
17-0076	17-0076.3	1009 W. Ocean View Duplex	Active	3/30/2018	0.09		0.09	0.20		0.21	0.20
17-0077	17-0077.1	Didlake Expansion	Active	1/18/2019	0.42	0.36	0.42	2.93	1.19	1.39	2.93
17-0077	17-0077.2	Didlake Expansion	Active	1/18/2019	0.10	0.24	0.10	0.88	0.81	0.33	0.88
17-0080	17-0080.1	Salvation Army Parking Lot	Active	5/30/2019	0.36	2.57	0.36	1.15	8.49	1.19	1.15
17-0080	17-0080.2	Salvation Army Parking Lot	Active	5/30/2019	0.27		0.27	0.59		0.62	0.59
17-0081	17-0081.1	13th Bay Street Duplex	Active	11/6/2018	0.15		0.15	0.46		0.35	0.46
17-0083	17-0083.1	7th Bay St. Duplex	Active	5/4/2018	0.11		0.11	0.31		0.25	0.31
17-0089	17-0089.2	Old Ocean View Village Subdivision	Active	12/23/2020	2.29		2.29	11.57		5.29	11.57
17-0090	17-0090.1	Moores Bridges WTP Chemical Feed System	Active	3/4/2021	1.08	3.87	1.08	22.63	12.80	3.57	22.63
17-0092	17-0092.1	Duel Duplex site plan for DSF Development LLC	Active	4/16/2018	0.06		0.06	1.99		0.14	1.99
17-0093	17-0093.2	1600 E. Little Creek Rd-Aldi	Active	11/18/2019	1.31		1.31	15.21		3.03	15.21
17-0095	17-0095.1	Norfolk Botanical Gardens Admin Bldg Parking	Active	12/8/2021	0.13	0.10	0.13	0.91	0.43	0.58	0.91
17-0095	17-0095.2	Norfolk Botanical Gardens Admin Bldg Parking	Active	12/8/2021	0.19	0.19	0.19	1.37	0.86	0.85	1.37
18-0000	18-0000.1	Retreat at Harbor Pointe	Active	12/21/2018	7.10		7.10	15.62		16.41	15.62
18-0002	18-0002.1	General Aviation CBP Facility	Active	7/30/2018	0.99		0.99	8.52		2.29	8.52
18-0003	18-0003.1	North Shore Gardens Fitness Center	Active	4/8/2019	0.03	0.02	0.03	0.18	0.09	0.13	0.18
18-0003	18-0003.2	North Shore Gardens Fitness Center	Active	4/8/2019	0.06	0.05	0.06	0.45	0.22	0.27	0.45
18-0003	18-0003.3	North Shore Gardens Fitness Center	Active	4/8/2019	0.10		0.10	0.22		0.23	0.22
18-0004	18-0004.1	841 Redgate Ave - Site Improvements CHKD	Active	10/10/2022	0.04	0.11	0.04	0.38	0.49	0.18	0.38
18-0005	18-0005.1	OLD DOMINION PEANUT- ADAPTIVE REUSE	Active	6/13/2018	0.34		0.34	0.75		0.79	0.75
18-0006	18-0006.1	EVMS Ed. & Admin. Bldg	Active	4/8/2021	0.47	0.53	0.47	2.33	2.36	2.11	2.33
18-0008	18-0008.2	Wawa at Newtown	Active	12/11/2019	0.15	0.15	0.15	0.86	0.49	0.49	0.86
18-0008	18-0008.3	Wawa at Newtown	Active	12/11/2019	0.52		0.52	1.14		1.20	1.14
18-0009	18-0009.1	1718 EOV Duplex	Active	10/10/2019	0.10	0.10	0.10	0.71	0.44	0.45	0.71
18-0009	18-0009.3	1718 EOV Duplex	Active	10/10/2019	0.03		0.03	0.26		0.07	0.26
18-0010	18-0010.1	VB Blvd Improvements at Newtown Rd	Active	3/1/2022	0.18	0.39	0.18	2.26	1.28	0.60	2.26
18-0010	18-0010.2	VB Blvd Improvements at Newtown Rd	Active	3/1/2022	0.09	0.19	0.09	1.13	0.62	0.30	1.13
18-0010	18-0010.3	VB Blvd Improvements at Newtown Rd	Active	12/12/2018	0.49		0.49	1.08		1.13	1.08
18-0013	18-0013.1	Priority Ford	Active	6/1/2020	2.17	1.99	2.17	11.68	6.60	7.18	11.68
18-0014	18-0014.1	941 Hillside Ave Subdivision	Active	9/17/2019	0.13	0.14	0.13	0.98	0.62	0.58	0.98
18-0014	18-0014.2	941 Hillside Ave Subdivision	Active	9/17/2019	0.11	0.12	0.11	0.78	0.53	0.49	0.78
18-0014	18-0014.3	941 Hillside Ave Subdivision	Active	9/17/2019	0.09	0.12	0.09	0.66	0.53	0.40	0.66
18-0014	18-0014.4	941 Hillside Ave Subdivision	Active	9/17/2019	0.12	0.14	0.12	0.86	0.62	0.54	0.86
18-0014	18-0014.5	941 Hillside Ave Subdivision	Active	1/23/2019	0.04		0.04	0.34		0.09	0.34
18-0019	18-0019.1	Pinewell Station Apartments	Active	1/8/2021	1.23	1.23	1.23	0.73	4.06	4.07	0.73

Table C-2
Credit for BMPs Installed to Meet Development/Redevelopment Requirements

Lucity Site & SWMF IDs			Completion Status		Total Phosphorus (TP)			Total Nitrogen (TN)			
Site ID	SWMF ID #	Site Name	Status	Online Date	Priority 1: Lucity Removal (lb/yr)	Priority 2: Estimated Removal Using DA (lb/yr)	Removal Credit Claimed (lb/yr)	Priority 1: Lucity Removal (lb/yr)	Priority 2: Lucity-based Estimated Removal (lb/yr)	Priority 3: Estimated Removal Using DA (lb/yr)	Removal Credit Claimed (lb/yr)
18-0019	18-0019.2	Pinewell Station Apartments	Active	1/8/2021	1.12		1.12	30.41		2.59	30.41
18-0019	18-0019.3	Pinewell Station Apartments	Active	1/8/2021		3.05	3.05		10.10		10.10
18-0020	18-0020.2	829-831 Little Bay Ave Duplex	Active	7/20/2021	0.23	0.22	0.23	1.63	1.00	1.03	1.63
18-0022	18-0022.1	Lake Taylor HS Storm Drain and Road Repairs	Active	10/12/2021	0.02	0.01	0.02	0.09	0.04	0.07	0.09
18-0022	18-0022.2	Lake Taylor HS Storm Drain and Road Repairs	Active	10/12/2021	0.06	0.05	0.06	0.27	0.16	0.20	0.27
18-0025	18-0025.1	9560 10th Bay St-Duplex	Active	2/11/2021	0.11	0.06	0.11	0.54	0.29	0.49	0.54
18-0028	18-0028.1	Osprey Watch	Active	11/14/2022	11.63	4.72	11.63	36.99	15.61	38.49	36.99
18-0029	18-0029.1	1101 E Leicester Avenue-3 lot SF subdivision	Active	6/8/2020	0.02	0.05	0.02	0.19	0.22	0.09	0.19
18-0029	18-0029.2	1101 E Leicester Avenue-3 lot SF subdivision	Active	6/8/2020	0.03	0.05	0.03	0.20	0.22	0.11	0.20
18-0029	18-0029.3	1101 E Leicester Avenue-3 lot SF subdivision	Active	6/8/2020	0.02	0.05	0.02	0.19	0.22	0.09	0.19
18-0029	18-0029.4	1101 E Leicester Avenue-3 lot SF subdivision	Active	6/8/2020	0.02	0.03	0.02	0.19	0.12	0.09	0.19
18-0029	18-0029.5	1101 E Leicester Avenue-3 lot SF subdivision	Active	6/8/2020	0.02	0.05	0.02	0.19	0.22	0.09	0.19
18-0029	18-0029.6	1101 E Leicester Avenue-3 lot SF subdivision	Active	6/8/2020	0.02	0.05	0.02	0.19	0.22	0.09	0.19
18-0029	18-0029.7	1101 E Leicester Avenue-3 lot SF subdivision	Active	5/30/2019	0.27		0.27	2.32		0.62	2.32
18-0031	18-0031.1	Granby St and Bayview Blvd Intersection	Active	10/18/2018	0.10		0.10	0.22		0.23	0.22
18-0032	18-0032.1	Mt Gilead Church parking addition	Active	12/14/2018	0.67		0.67	4.31		1.55	4.31
18-0034	18-0034.1	Maker's Craft Brewery	Active	10/12/2018	0.73		0.73	6.28		1.69	6.28
18-0036	18-0036.1	Chenman Project	Active	10/24/2018	0.11		0.11	0.24		0.25	0.24
18-0039	18-0039.1	VAMAC	Active	12/11/2019	0.37	0.32	0.37	2.57	1.45	1.66	2.57
18-0043	18-0043.6	Pretty Lake Apartments & Yacht Club	Active	1/20/2021	1.02		1.02	10.24		2.36	10.24
18-0044	18-0044.1	Reeves Avenue Substation Improvement Phase II	Active	8/6/2018	0.11		0.11	0.24		0.25	0.24
18-0048	18-0048.1	Colley Avenue Self Storage	Active	8/6/2020	1.72	1.24	1.72	5.48	5.58	7.71	5.48
18-0049	18-0049.1	Kempsville Behavioral Health Additions	Active	1/7/2021	0.62	0.45	0.62	1.98	2.00	2.78	1.98
18-0049	18-0049.2	Kempsville Behavioral Health Additions	Active	1/7/2021	0.07	0.08	0.07	0.25	0.25	0.23	0.25
18-0051	18-0051.1	Telecommunications Tower	Active	9/30/2018	1.72		1.72	0.20		3.98	0.20
18-0053	18-0053.1	The Tern Subdivision Plan	Active	10/27/2023	0.16	0.14	0.16	0.21	0.62	0.72	0.21
18-0053	18-0053.2	The Tern Subdivision Plan	Active	10/27/2023	0.20	0.18	0.20	0.21	0.79	0.89	0.21
18-0053	18-0053.3	The Tern Subdivision Plan	Active	10/27/2023	0.23	0.20	0.23	0.21	0.91	1.03	0.21
18-0053	18-0053.4	The Tern Subdivision Plan	Active	11/27/2023	0.38	0.34	0.38	0.21	1.53	1.70	0.21
18-0053	18-0053.5	The Tern Subdivision Plan	Active	10/27/2023	0.17	0.15	0.17	0.21	0.68	0.76	0.21
18-0053	18-0053.6	The Tern Subdivision Plan	Active	10/27/2023	0.16	0.14	0.16	0.21	0.62	0.72	0.21
18-0053	18-0053.7	The Tern Subdivision Plan	Active	10/27/2023	0.20	0.18	0.20	0.21	0.79	0.89	0.21
18-0053	18-0053.8	The Tern Subdivision Plan	Active	10/27/2023	1.18	0.93	1.18	7.31	4.14	5.28	7.31
18-0053	18-0053.9	The Tern Subdivision Plan	Active	10/27/2023	1.44	1.13	1.44	7.31	5.05	6.44	7.31
18-0053	18-0053.10	The Tern Subdivision Plan	Active	10/27/2023	1.91	1.50	1.91	7.31	6.70	8.54	7.31
18-0053	18-0053.11	The Tern Subdivision Plan	Active	10/27/2023	0.37	0.29	0.37	7.31	1.31	1.65	7.31
18-0053	18-0053.12	The Tern Subdivision Plan	Active	10/27/2023	0.89	0.70	0.89	7.31	3.12	3.98	7.31
18-0053	18-0053.13	The Tern Subdivision Plan	Active	10/27/2023	0.42	0.33	0.42	7.31	1.48	1.88	7.31
18-0056	18-0056.1	City Hall North Garage Replacement	Active	6/12/2020	0.39	0.30	0.39	2.82	1.36	1.75	2.82
18-0058	18-0058.1	Pecan point Subdivision	Active	11/8/2018	4.25		4.25	27.52		9.82	27.52
18-0059	18-0059.1	Dollar General	Active	12/18/2018	0.08		0.08	0.69		0.18	0.69
18-0061	18-0061.1	River Tower at Harbor's Edge	Active	1/14/2022	0.20	0.16	0.20	1.43	0.71	0.90	1.43
18-0061	18-0061.2	River Tower at Harbor's Edge	Active	1/14/2022	0.11	0.09	0.11	0.77	0.42	0.49	0.77
18-0061	18-0061.3	River Tower at Harbor's Edge	Active	1/2/2019	1.31		1.31	17.88		3.03	17.88
18-0062	18-0062.1	Moores Bridges WTP Alternate Entrance	Active	2/12/2020	0.11		0.11	0.00		0.25	0.25

Table C-2
Credit for BMPs Installed to Meet Development/Redevelopment Requirements

Lucity Site & SWMF IDs			Completion Status		Total Phosphorus (TP)			Total Nitrogen (TN)			
Site ID	SWMF ID #	Site Name	Status	Online Date	Priority 1: Lucity Removal (lb/yr)	Priority 2: Estimated Removal Using DA (lb/yr)	Removal Credit Claimed (lb/yr)	Priority 1: Lucity Removal (lb/yr)	Priority 2: Lucity-based Estimated Removal (lb/yr)	Priority 3: Estimated Removal Using DA (lb/yr)	Removal Credit Claimed (lb/yr)
18-0064	18-0064.1	Lyon Shipyard Building Addition	Active	9/9/2020	0.26	0.24	0.26	0.75	0.78	0.86	0.75
18-0066	18-0066.1	20 Rivanna Building Canopy & Drive Aisle	Active	5/2/2019	0.10	0.08	0.10	0.62	0.35	0.45	0.62
18-0068	18-0068.1	Azalea Garden Place	Active	4/14/2019	2.07		2.07	17.82		4.78	17.82
18-0069	18-0069.1	Sentara Healthcare Orthopedic Site Plan	Active	10/27/2021	1.79	1.65	1.79	9.69	5.47	5.92	9.69
18-0069	18-0069.2	Sentara Healthcare Orthopedic Site Plan	Active	10/27/2021	1.78	1.78	1.78	10.41	5.89	5.89	10.41
18-0069	18-0069.3	Sentara Healthcare Orthopedic Site Plan	Active	10/27/2021	1.29	0.98	1.29	5.75	3.24	4.27	5.75
18-0073	18-0073.1	Parker Ave. Drainage Improvements	Active	5/13/2021	0.95	2.23	0.95	13.03	7.38	3.14	13.03
18-0075	18-0075.1	Newport Avenue Drainage Improvements	Active	6/10/2020	0.03		0.03			0.07	0.07
18-0076	18-0076.1	Sentara Norfolk parking expansion	Active	12/3/2019	0.01		0.01	0.00		0.05	0.05
18-0076	18-0076.4	Sentara Norfolk parking expansion	Active	12/3/2019	0.01	0.02	0.01	0.16	0.07	0.04	0.16
18-0076	18-0076.5	Sentara Norfolk parking expansion	Active	12/3/2019	0.03	0.03	0.03	0.23	0.14	0.13	0.23
18-0076	18-0076.8	Sentara Norfolk parking expansion	Active	6/19/2019	0.1		0.10			0.23	0.23
18-0077	18-0077.1	Rock Gym	Active	2/8/2019	0.89		0.89	7.66		2.06	7.66
18-0080	18-0080.2	5764 E Virginia Beach Blvd-Discount Tire	Active	6/9/2020	0.29		0.29	0.00			
18-0085	18-0085.1	Villa Marina Apartments	Active	6/1/2020	0.06	0.08	0.06	0.49	0.34	0.27	0.49
18-0085	18-0085.2	Villa Marina Apartments	Active	6/1/2020	0.06	0.04	0.06	0.49	0.17	0.27	0.49
18-0085	18-0085.3	Villa Marina Apartments	Active	6/1/2020	0.09	0.20	0.09	0.00	0.67	0.30	0.30
18-0085	18-0085.4	Villa Marina Apartments	Active	11/3/2017	1.89		1.89	4.16		4.37	4.16
18-0085	18-0085.5	Villa Marina Apartments	Active	6/1/2020	0.09	0.14	0.09	0.00	0.47	0.30	0.30
18-0085	18-0085.6	Villa Marina Apartments	Active	6/1/2020	0.09	0.14	0.09	0.00	0.47	0.30	0.30
18-0085	18-0085.7	Villa Marina Apartments	Active	6/1/2020	0.09	0.20	0.09	0.00	0.67	0.30	0.30
18-0085	18-0085.8	Villa Marina Apartments	Active	6/1/2020	0.09	0.14	0.09		0.47	0.30	0.30
18-0085	18-0085.9	Villa Marina Apartments	Active	6/1/2020	0.06	0.09	0.06	0.47	0.40	0.27	0.47
18-0085	18-0085.10	Villa Marina Apartments	Active	6/1/2020	0.06	0.15	0.06	0.47	0.69	0.27	0.47
18-0085	18-0085.11	Villa Marina Apartments	Active	6/1/2020	0.06	0.04	0.06	0.49	0.17	0.27	0.49
18-0085	18-0085.12	Villa Marina Apartments	Active	6/1/2020	0.06	0.04	0.06	0.47	0.17	0.27	0.47
18-0085	18-0085.13	Villa Marina Apartments	Active	6/1/2020	0.06	0.03	0.06	0.47	0.11	0.27	0.47
18-0085	18-0085.14	Villa Marina Apartments	Active	6/1/2020	0.06	0.14	0.06	0.47	0.63	0.27	0.47
18-0085	18-0085.15	Villa Marina Apartments	Active	6/1/2020	0.06	0.12	0.06	0.47	0.52	0.27	0.47
18-0085	18-0085.16	Villa Marina Apartments	Active	6/1/2020	0.06	0.04	0.06	0.47	0.17	0.27	0.47
18-0085	18-0085.17	Villa Marina Apartments	Active	6/1/2020	0.06	0.06	0.06	0.47	0.29	0.27	0.47
18-0087	18-0087.1	Southside Library	Active	8/17/2021	1.02	1.47	1.02	8.53	6.58	4.58	8.53
18-0087	18-0087.2	Southside Library	Active	8/17/2021	0.00	0.75	0.75	0.00	3.36		3.36
18-0092	18-0092.1	1050 N Military HWY-Aldi	Active	12/16/2019	0.41	0.85	0.41	4.98	2.81	1.36	4.98
18-0093	18-0093.1	BAYLOR PARKING	Active	5/14/2021	0.16	0.25	0.16	0.52	0.81	0.53	0.52
18-0095	18-0095.2	Christ & St Luke's Church-Outdoor Improvements	Active	11/22/2019	0.04		0.04	0.09		0.09	0.09
18-0100	18-0100.1	SF DEMO & PARKING LOT	Active	2/1/2022	0.08	0.09	0.08	0.54	0.40	0.36	0.54
18-0100	18-0100.2	SF DEMO & PARKING LOT	Active	2/1/2022	0.08	0.09	0.08	0.54	0.40	0.36	0.54
18-0101	18-0101.1	847-925 Ingleside Road Stormwater Retrofits	Active	5/11/2021	0.46	0.05	0.46	2.58	0.23	2.07	2.58
18-0101	18-0101.3	847-925 Ingleside Road Stormwater Retrofits	Active	5/11/2021	0.46		0.46	2.58			2.58
18-0102	18-0102.1	Aspire at East Beach Senior Housing	Active	6/2/2022	0.68	1.80	0.68	0.00	5.95	2.25	2.25
18-0104	18-0104.1	E Princess Anne Road-Tidewater Tech parking	Active	10/15/2019	0.53	0.80	0.53	4.66	2.63	1.75	4.66
18-0104	18-0104.2	E Princess Anne Road-Tidewater Tech parking	Active	10/15/2019	0.56		0.56	0.00			
18-0104	18-0104.3	E Princess Anne Road-Tidewater Tech parking	Active	4/23/2019	0.50		0.50	1.10		1.16	1.10
18-0104	18-0104.4	E Princess Anne Road-Tidewater Tech parking	Active	4/12/2019	1.15		1.15	2.53		2.66	2.53

Table C-2
Credit for BMPs Installed to Meet Development/Redevelopment Requirements

Lucity Site & SWMF IDs			Completion Status		Total Phosphorus (TP)			Total Nitrogen (TN)			
Site ID	SWMF ID #	Site Name	Status	Online Date	Priority 1: Lucity Removal (lb/yr)	Priority 2: Estimated Removal Using DA (lb/yr)	Removal Credit Claimed (lb/yr)	Priority 1: Lucity Removal (lb/yr)	Priority 2: Lucity-based Estimated Removal (lb/yr)	Priority 3: Estimated Removal Using DA (lb/yr)	Removal Credit Claimed (lb/yr)
19-0001	19-0001.1	Combined Operations Facility Improvements	Active	1/15/2021	0.19	0.02	0.19	0.03	0.08	0.63	0.03
19-0004	19-0004.1	Mil-Spec Abrasives	Active	11/16/2020	4.97	5.87	4.97	15.81	19.42	16.45	15.81
19-0004	19-0004.2	Mil-Spec Abrasives	Active	11/16/2020	0.18	0.00	0.18	15.81			15.81
19-0006	19-0006.1	WNOR Tower Replacement	Active	6/7/2019	0.10		0.10	0.00		0.23	0.23
19-0012	19-0012.1	NDR Ohio Creek Watershed	Active	8/1/2023	0.00	0.61	0.61	0.00	2.73		2.73
19-0012	19-0012.2	NDR Ohio Creek Watershed	Active	8/1/2023	0.27	0.25	0.27	2.24	1.22	1.29	2.24
19-0012	19-0012.3	NDR Ohio Creek Watershed	Active	8/1/2023	0.11	0.11	0.11	0.90	0.54	0.53	0.90
19-0012	19-0012.4	NDR Ohio Creek Watershed	Active	8/1/2023	0.00	0.58	0.58	0.00	2.60		2.60
19-0012	19-0012.5	NDR Ohio Creek Watershed	Active	8/1/2023	0.60	0.34	0.60	4.96	1.62	2.87	4.96
19-0012	19-0012.6	NDR Ohio Creek Watershed	Active	8/1/2023	0.13	0.27	0.13	1.05	1.29	0.62	1.05
19-0012	19-0012.7	NDR Ohio Creek Watershed	Active	8/1/2023	0.07	0.21	0.07	0.62	1.03	0.34	0.62
19-0012	19-0012.8	NDR Ohio Creek Watershed	Active	8/1/2023	0.15	0.37	0.15	1.22	1.78	0.72	1.22
19-0012	19-0012.9	NDR Ohio Creek Watershed	Active	8/1/2023	0.10	0.25	0.10	0.85	1.20	0.48	0.85
19-0012	19-0012.10	NDR Ohio Creek Watershed	Active	8/1/2023	0.13	0.44	0.13	1.06	2.11	0.62	1.06
19-0012	19-0012.11	NDR Ohio Creek Watershed	Active	8/1/2023	0.12	0.11	0.12	1.04	0.51	0.57	1.04
19-0012	19-0012.12	NDR Ohio Creek Watershed	Active	8/1/2023	0.16	0.40	0.16	1.34	1.92	0.77	1.34
19-0012	19-0012.13	NDR Ohio Creek Watershed	Active	8/1/2023	0.14	0.50	0.14	1.16	2.41	0.67	1.16
19-0012	19-0012.14	NDR Ohio Creek Watershed	Active	8/1/2023	0.13	0.70	0.13	1.08	3.33	0.62	1.08
19-0012	19-0012.15	NDR Ohio Creek Watershed	Active	8/1/2023	0.40	0.42	0.40	3.34	1.88	1.80	3.34
19-0012	19-0012.16	NDR Ohio Creek Watershed	Active	8/1/2023	0.36	0.39	0.36	3.01	1.74	1.62	3.01
19-0012	19-0012.17	NDR Ohio Creek Watershed	Active	8/1/2023	0.15	0.16	0.15	1.23	0.73	0.67	1.23
19-0012	19-0012.18	NDR Ohio Creek Watershed	Active	8/1/2023	0.04	0.20	0.04	0.30	0.98	0.19	0.30
19-0012	19-0012.19	NDR Ohio Creek Watershed	Active	8/1/2023	0.13	0.21	0.13	1.07	0.99	0.62	1.07
19-0012	19-0012.20	NDR Ohio Creek Watershed	Active	8/1/2023	0.08	0.23	0.08	0.68	1.12	0.38	0.68
19-0012	19-0012.21	NDR Ohio Creek Watershed	Active	8/1/2023	0.06	0.26	0.06	0.53	1.24	0.29	0.53
19-0012	19-0012.22	NDR Ohio Creek Watershed	Active	8/1/2023	0.19	0.18	0.19	1.61	0.85	0.91	1.61
19-0012	19-0012.23	NDR Ohio Creek Watershed	Active	8/1/2023	0.07	0.30	0.07	0.56	1.45	0.34	0.56
19-0012	19-0012.24	NDR Ohio Creek Watershed	Active	8/1/2023	0.13	0.28	0.13	1.12	1.36	0.62	1.12
19-0012	19-0012.25	NDR Ohio Creek Watershed	Active	8/1/2023	0.08	0.26	0.08	0.70	1.26	0.38	0.70
19-0012	19-0012.26	NDR Ohio Creek Watershed	Active	8/1/2023	0.08	0.24	0.08	0.70	1.15	0.38	0.70
19-0012	19-0012.27	NDR Ohio Creek Watershed	Active	8/1/2023	0.06	0.30	0.06	0.47	1.45	0.29	0.47
19-0012	19-0012.28	NDR Ohio Creek Watershed	Active	8/1/2023	0.25	0.16	0.25	2.05	0.75	1.20	2.05
19-0012	19-0012.29	NDR Ohio Creek Watershed	Active	8/1/2023	0.07	0.14	0.07	0.58	0.66	0.34	0.58
19-0012	19-0012.30	NDR Ohio Creek Watershed	Active	8/1/2023	0.26	0.29	0.26	2.13	1.39	1.24	2.13
19-0012	19-0012.31	NDR Ohio Creek Watershed	Active	8/1/2023	0.30	0.16	0.30	2.46	0.78	1.44	2.46
19-0012	19-0012.32	NDR Ohio Creek Watershed	Active	8/1/2023	0.38	0.19	0.38	3.14	0.89	1.82	3.14
19-0012	19-0012.33	NDR Ohio Creek Watershed	Active	8/1/2023	0.18	0.20	0.18	1.50	0.89	0.81	1.50
19-0012	19-0012.34	NDR Ohio Creek Watershed	Active	8/1/2023	0.26	0.25	0.26	2.15	1.22	1.24	2.15
19-0012	19-0012.35	NDR Ohio Creek Watershed	Active	8/1/2023	0.23	0.28	0.23	1.93	1.26	1.03	1.93
19-0012	19-0012.36	NDR Ohio Creek Watershed	Active	8/1/2023	0.55	0.28	0.55	4.54	1.32	2.63	4.54
19-0012	19-0012.37	NDR Ohio Creek Watershed	Active	8/1/2023	0.27	0.33	0.27	2.29	1.47	1.21	2.29
19-0012	19-0012.38	NDR Ohio Creek Watershed	Active	8/1/2023	0.03	0.03	0.03	0.26	0.14	0.14	0.26
19-0012	19-0012.39	NDR Ohio Creek Watershed	Active	8/1/2023	0.24	0.36	0.24	2.02	1.73	1.15	2.02
19-0012	19-0012.40	NDR Ohio Creek Watershed	Active	8/1/2023	0.61	0.72	0.61	5.08	3.21	2.73	5.08
19-0012	19-0012.41	NDR Ohio Creek Watershed	Active	8/1/2023	0.42	0.85	0.42	3.49	4.06	2.01	3.49

Table C-2
Credit for BMPs Installed to Meet Development/Redevelopment Requirements

Lucity Site & SWMF IDs			Completion Status		Total Phosphorus (TP)			Total Nitrogen (TN)			
Site ID	SWMF ID #	Site Name	Status	Online Date	Priority 1: Lucity Removal (lb/yr)	Priority 2: Estimated Removal Using DA (lb/yr)	Removal Credit Claimed (lb/yr)	Priority 1: Lucity Removal (lb/yr)	Priority 2: Lucity-based Estimated Removal (lb/yr)	Priority 3: Estimated Removal Using DA (lb/yr)	Removal Credit Claimed (lb/yr)
19-0012	19-0012.42	NDR Ohio Creek Watershed	Active	8/1/2023	0.34	0.37	0.34	2.80	1.67	1.53	2.80
19-0012	19-0012.43	NDR Ohio Creek Watershed	Active	8/1/2023	0.40	0.36	0.40	3.31	1.74	1.91	3.31
19-0012	19-0012.44	NDR Ohio Creek Watershed	Active	8/1/2023	0.36	0.43	0.36	3.02	1.92	1.61	3.02
19-0012	19-0012.45	NDR Ohio Creek Watershed	Active	8/1/2023	0.96	0.75	0.96	7.95	3.59	4.59	7.95
19-0012	19-0012.46	NDR Ohio Creek Watershed	Active	8/1/2023	0.20	0.19	0.20	1.70	0.92	0.96	1.70
19-0016	19-0016.1	Restaurant at Bay Point Marina	Active	9/8/2020	0.80	0.76	0.80	0.00	2.50	2.65	2.65
19-0022	19-0022.2	Tidewater Oaks Apartments	Active	10/22/2019	0.34		0.34	3.28		0.79	3.28
19-0026	19-0026.1	Subdivision development plan 828 & 840 Redgate Ave	Active	12/20/2022	0.03	0.00	0.03	0.24	0.01	0.13	0.24
19-0026	19-0026.2	Subdivision development plan 828 & 840 Redgate Ave	Active	12/20/2022	0.05	0.00	0.05	0.39	0.01	0.22	0.39
19-0026	19-0026.3	Subdivision development plan 828 & 840 Redgate Ave	Active	12/20/2022	0.03	0.00	0.03	0.24	0.01	0.13	0.24
19-0026	19-0026.4	Subdivision development plan 828 & 840 Redgate Ave	Active	12/20/2022	0.03	0.00	0.03	0.23	0.01	0.13	0.23
19-0026	19-0026.5	Subdivision development plan 828 & 840 Redgate Ave	Active	12/20/2022	0.03	0.00	0.03	0.23	0.01	0.13	0.23
19-0026	19-0026.6	Subdivision development plan 828 & 840 Redgate Ave	Active	12/20/2022	0.03	0.00	0.03	0.23	0.01	0.13	0.23
19-0026	19-0026.7	Subdivision development plan 828 & 840 Redgate Ave	Active	12/20/2022	0.03	0.00	0.03	0.22	0.01	0.13	0.22
19-0026	19-0026.8	Subdivision development plan 828 & 840 Redgate Ave	Active	12/20/2022	0.03	0.00	0.03	0.23	0.01	0.13	0.23
19-0026	19-0026.9	Subdivision development plan 828 & 840 Redgate Ave	Active	12/20/2022	0.03	0.00	0.03	0.23	0.01	0.13	0.23
19-0026	19-0026.10	Subdivision development plan 828 & 840 Redgate Ave	Active	12/20/2022	0.03	0.00	0.03	0.23	0.01	0.13	0.23
19-0026	19-0026.11	Subdivision development plan 828 & 840 Redgate Ave	Active	12/20/2022	0.03	0.00	0.03	0.22	0.01	0.13	0.22
19-0026	19-0026.12	Subdivision development plan 828 & 840 Redgate Ave	Active	12/20/2022	0.01	0.00	0.01	0.10	0.00	0.04	0.10
19-0026	19-0026.13	Subdivision development plan 828 & 840 Redgate Ave	Active	12/20/2022	0.03	0.00	0.03	0.23	0.01	0.13	0.23
19-0026	19-0026.14	Subdivision development plan 828 & 840 Redgate Ave	Active	12/20/2022	0.03	0.00	0.03	0.22	0.01	0.13	0.22
19-0028	19-0028.2	CHKD Medical Tower II	Active	6/22/2022	0.60	0.01	0.60	0.00	0.06	2.69	2.69
19-0035	19-0035.1	2330 Bowdens Ferry Road-IP Configuration	Active	11/8/2019	0.66		0.66	0.00		1.53	1.53
19-0042	19-0042.1	AIM Technical School Parking Lot & SWM	Active	8/31/2021	6.24	7.87	6.24	22.22	26.04	20.65	22.22
19-0042	19-0042.2	AIM Technical School Parking Lot & SWM	Active	8/31/2021	0.56	0.39	0.56	2.26	1.29	1.85	2.26
19-0042	19-0042.3	AIM Technical School Parking Lot & SWM	Active	8/31/2021	0.56	0.21	0.56	1.22	0.70	1.85	1.22
19-0042	19-0042.4	AIM Technical School Parking Lot & SWM	Active	8/31/2021	0.56	0.93	0.56	5.43	3.09	1.85	5.43
19-0044	19-0044.1	Roadway Improvements - E VB Blvd 6200 Block	Active	10/3/2019	2.20		2.20	0.00		5.08	5.08
19-0045	19-0045.11	Ocean View Pier Cottages and Thirsty Camel	Active	5/28/2020	1.32		1.32	10.05		3.05	10.05
19-0049	19-0049.1	Arifx Parking Lot Addition	Active	2/18/2021	0.47	3.96	0.47	3.66	17.69	2.10	3.66
19-0058	19-0058.1	Harbors edge parking lot	Active	1/11/2022	0.08	0.10	0.08	0.55	0.43	0.36	0.55
19-0058	19-0058.2	Harbors edge parking lot	Active	1/11/2022	0.17	0.20	0.17	1.18	0.88	0.76	1.18
19-0058	19-0058.3	Harbors edge parking lot	Active	1/11/2022	0.10	0.13	0.10	0.73	0.60	0.45	0.73
19-0058	19-0058.4	Harbors edge parking lot	Active	1/11/2022	0.09	0.11	0.09	0.64	0.50	0.40	0.64
19-0061	19-0061.1	The Lofts at Front Street	Active	2/17/2023	0.46	0.02	0.46	3.27	0.09	2.06	3.27
19-0061	19-0061.2	The Lofts at Front Street	Active	2/27/2020	1.17		1.17	11.75		2.70	11.75
19-0071	19-0071.2	West 38th Street Apartments	Active	12/22/2019	0.92		0.92	0.00		2.13	2.13
19-0078	19-0078.1	Intersection Improve--Kempsville Rd, Poplar Hall	Active	1/10/2020	0.03		0.03	0.00		0.07	0.07
19-0079	19-0079.1	Community Beach Basketball Court	Active	2/4/2020	0.22		0.22	0.00		0.51	0.51
19-0082	19-0082.2	Norfolk Fire Training Facility	Active	7/10/2020	0.32		0.32	1.62		0.74	1.62
19-0085	19-0085.1	Norfolk International Airport - Terminal C	Active	3/6/2020	2.03		2.03	20.39		4.69	20.39
19-0086	19-0086.1	STUART SCHOOL APARTMENTS	Active	8/16/2021	0.00	0.12	0.12	0.00	0.53		0.53
19-0091	19-0091.1	PABP APARTMENTS	Active	7/14/2022	0.52	0.70	0.52	0.00	2.31	1.72	1.72
19-0091	19-0091.2	PABP APARTMENTS	Active	7/14/2022	2.28	3.05	2.28	0.00	10.08	7.54	7.54
19-0092	19-0092.1	RICK HENDERICK CADILLAC	Active	6/12/2020	0.39		0.39	2.57		0.90	2.57

Table C-2
Credit for BMPs Installed to Meet Development/Redevelopment Requirements

Lucity Site & SWMF IDs			Completion Status		Total Phosphorus (TP)			Total Nitrogen (TN)			
Site ID	SWMF ID #	Site Name	Status	Online Date	Priority 1: Lucity Removal (lb/yr)	Priority 2: Estimated Removal Using DA (lb/yr)	Removal Credit Claimed (lb/yr)	Priority 1: Lucity Removal (lb/yr)	Priority 2: Lucity-based Estimated Removal (lb/yr)	Priority 3: Estimated Removal Using DA (lb/yr)	Removal Credit Claimed (lb/yr)
19-0093	19-0093.2	ASPIRE AT EAST BEACH SENIOR HOUSING PHASE II	Active	5/22/2020	0.12		0.12	1.21		0.28	1.21
19-0099	19-0099.1	The Railyard - Hampton Blvd & W 23rd	Active	7/16/2024	0.49	0.62	0.49	0.00	2.05	1.62	1.62
19-0099	19-0099.2	The Railyard - Hampton Blvd & W 23rd	Active	7/20/2022	0.35		0.35	1.77		0.81	1.77
19-0099	19-0099.3	The Railyard - Hampton Blvd & W 23rd	Active	7/16/2024	0.93	1.21	0.93	0.00	4.00	3.08	3.08
19-0099	19-0099.4	The Railyard - Hampton Blvd & W 23rd	Active	7/16/2024	4.30	5.77	4.30	0.00	19.09	14.23	14.23
20-0002	20-0002.1	Costco Building + Parking Expansion	Active	8/1/2023	0.35	0.48	0.35	0.00	1.59	1.16	1.16
20-0002	20-0002.2	Costco Building + Parking Expansion	Active	8/1/2023	1.21	1.42	1.21	10.05	6.35	5.41	10.05
20-0003	20-0003.2	Trinity Presbyterian Church	Active	4/27/2020	0.07		0.07	0.15		0.16	0.15
20-0005	20-0005.1	RABY ROAD SIDEWALK IMPROVEMENTS	Active	6/5/2020	0.18		0.18	0.00		0.42	0.42
20-0018	20-0018.1	SHOREWOOD COVE- BUILDING ADDITION	Active	5/17/2021	0.00	0.06	0.06	0.00	0.31		0.31
20-0021	20-0021.1	Granby Street Bike Bypass at Riverview	Active	2/10/2023	0.59	0.73	0.59	0.00	2.40	1.95	1.95
20-0026	20-0026.3	Frank Spicer Building Parking Lot	Active	11/17/2020	0.01		0.01	0.08		0.02	0.08
20-0037	20-0037.1	1400 Sewells Point Rd- Site Improvement	Active	6/8/2021	1.15	2.55	1.15	7.37	8.43	3.81	7.37
20-0037	20-0037.2	1400 Sewells Point Rd- Site Improvement	Active	6/8/2021	0.32	1.37	0.32	3.96	4.53	1.06	3.96
20-0037	20-0037.5	1400 Sewells Point Rd- Site Improvement	Active	7/20/2020	2.94		2.94	22.37		6.79	22.37
20-0049	20-0049.1	E. Water Street Open Space	Active	3/4/2022	0.30	0.33	0.30	2.49	1.50	1.35	2.49
20-0049	20-0049.2	E. Water Street Open Space	Active	3/4/2022	0.08	0.10	0.08	0.69	0.43	0.36	0.69
20-0049	20-0049.3	E. Water Street Open Space	Active	3/4/2022	0.13	0.16	0.13	1.10	0.72	0.58	1.10
20-0054	20-0054.1	East Bay Landing - ROW Improvements	Active	7/26/2021	0.45		0.45	4.51		1.04	4.51
20-0059	20-0059.1	Green Clean	Active	1/27/2021	0.15		0.15	1.14		0.35	1.14
20-0059	20-0059.2	Green Clean	Active	7/29/2022	0.04	0.15	0.04	0.28	0.67	0.18	0.28
20-0059	20-0059.3	Green Clean	Active	7/29/2022	0.04	0.15	0.04	0.28	0.67	0.18	0.28
20-0059	20-0059.4	Green Clean	Active	7/29/2022	0.04	0.15	0.04	0.28	0.67	0.18	0.28
20-0059	20-0059.5	Green Clean	Active	7/29/2022	0.04	0.15	0.04	0.28	0.67	0.18	0.28
20-0059	20-0059.6	Green Clean	Active	7/29/2022	0.04	0.15	0.04	0.28	0.67	0.18	0.28
20-0063	20-0063.1	Tabet Manufacturing	Active	3/29/2022	0.54	0.46	0.54	3.84	2.07	2.41	3.84
20-0066	20-0066.8	Building E - 2nd Bay Development	Active	8/5/2021	0.60		0.60	3.96		1.39	3.96
20-0068	20-0068.1	HAMPTON BLVD WATER STORAGE TANK	Active	11/15/2023	0.10	0.49	0.10	0.00	1.62	0.33	0.33
20-0068	20-0068.2	HAMPTON BLVD WATER STORAGE TANK	Active	11/15/2023	0.10	0.00	0.10	0.00			
20-0069	20-0069.2	1855 CHURCH STREET MIXED USE DEVELOPMENT	Active	4/12/2021	0.10		0.10	0.51		0.23	0.51
20-0073	20-0073.1	East Beach Phase 7-South Subdivision	Active	9/13/2021		0.02	0.02		0.11		0.11
20-0075	20-0075.1	VIRGINIA EYE CONSULTANTS	Active	10/21/2021	0.19	0.26	0.19	1.36	1.18	0.85	1.36
20-0075	20-0075.2	VIRGINIA EYE CONSULTANTS	Active	10/21/2021	0.19	0.18	0.19	1.36	0.81	0.85	1.36
20-0075	20-0075.3	VIRGINIA EYE CONSULTANTS	Active	10/21/2021	0.09	0.14	0.09	0.73	0.62	0.40	0.73
20-0075	20-0075.5	VIRGINIA EYE CONSULTANTS	Active	11/17/2020	1.74		1.74	17.47		4.02	17.47
20-0077	20-0077.1	Harris Teeter Fuel	Active	1/10/2023	0.00	0.72	0.72	0.00	2.40		2.40
20-0078	20-0078.1	OASIS WATERLINE	Active	1/20/2021	1.02		1.02	10.24		2.36	10.24
20-0082	20-0082.1	HONAKER AVENUE & CHAMBER STREET	Active	7/22/2024	3.77	3.77	3.77		1.11	12.47	12.47
20-0083	20-0083.1	1952-1956 E OCEAN VIEW AVENUE	Active	12/8/2023	0.08	0.08	0.08	0.50	0.36	0.36	0.50
20-0083	20-0083.2	1952-1956 E OCEAN VIEW AVENUE	Active	12/8/2023	0.08	0.08	0.08	0.50	0.36	0.36	0.50
20-0083	20-0083.3	1952-1956 E OCEAN VIEW AVENUE	Active	12/8/2023	0.03	0.03	0.03	0.19	0.14	0.13	0.19
20-0083	20-0083.4	1952-1956 E OCEAN VIEW AVENUE	Active	12/8/2023	0.03	0.03	0.03	0.19	0.14	0.13	0.19
20-0083	20-0083.5	1952-1956 E OCEAN VIEW AVENUE	Active	12/8/2023	0.00	0.04	0.04	0.00	0.20		0.20
20-0084	20-0084.1	Building 7 Expansion at Colonna's Shipyard	Active	2/16/2021	0.44		0.44	4.42		1.02	4.42
20-0085	20-0085.4	9542 17th Bay Street Lots 13 & 14	Active	4/7/2021	0.10		0.10	1.00		0.23	1.00

Table C-2
Credit for BMPs Installed to Meet Development/Redevelopment Requirements

Lucity Site & SWMF IDs			Completion Status		Total Phosphorus (TP)			Total Nitrogen (TN)			
Site ID	SWMF ID #	Site Name	Status	Online Date	Priority 1: Lucity Removal (lb/yr)	Priority 2: Estimated Removal Using DA (lb/yr)	Removal Credit Claimed (lb/yr)	Priority 1: Lucity Removal (lb/yr)	Priority 2: Lucity-based Estimated Removal (lb/yr)	Priority 3: Estimated Removal Using DA (lb/yr)	Removal Credit Claimed (lb/yr)
20-0088	20-0088.1	The Edge at Azalea Garden	Active	4/19/2024	2.05	2.37	2.05	6.52	7.86	6.78	6.52
20-0088	20-0088.2	The Edge at Azalea Garden	Active	3/2/2021	0.05		0.05	0.28		0.12	0.28
20-0089	20-0089.1	Intersection Improvements	Active	10/27/2021	0.05		0.05	0.00		0.12	0.12
20-0090	20-0090.2	Salt OV	Active	6/25/2021	1.30		1.30	13.06		3.00	13.06
21-0001	21-0001.2	Multi-Family Residential Development	Active	5/17/2021	0.20		0.20	2.00		0.46	2.00
21-0005	21-0005.3	THE FUSION MULTI-FAMILY DEVELOPMENT	Active	5/19/2021	1.21		1.21	11.76		2.80	11.76
21-0007	21-0007.1	Store Space - Storage Unit Facility	Active	2/6/2023	0.91	0.98	0.91	0.00	3.23	3.01	3.01
21-0009	21-0009.1	Pump Station Replacement #113	Active	7/7/2021	0.11		0.11	0.23		0.25	0.23
21-0010	21-0010.1	Pump Station Replacement #106	Active	7/7/2021	0.15		0.15	0.23		0.35	0.23
21-0011	21-0011.3	Pump Station #105	Active	7/7/2021	0.06		0.06	0.23		0.14	0.23
21-0019	21-0019.1	Sidewalk Improvements - Easy Street	Active	7/13/2023	0.13	0.21	0.13	0.00	0.71	0.43	0.43
21-0021	21-0021.1	Sidewalk Improvements	Active	7/12/2022	0.00	0.21	0.21	0.00	0.71		0.71
21-0026	21-0026.1	Hagues Club Apartments	Active	10/22/2021	0.05		0.05	0.50		0.12	0.50
21-0028	21-0028.1	Colonna's Shipyard Shafting Workshop	Active	6/29/2021	0.35		0.35	1.69		0.81	1.69
21-0028	21-0028.2	Colonna's Shipyard Shafting Workshop	Active	12/9/2022	0.03	1.61	0.03	0.27	7.20	0.13	0.27
21-0029	21-0029.2	WEST 38TH STRTEET APARTMENTS CIVIL SITE PLANS	Active	4/6/2021	0.20		0.20	1.01		0.46	1.01
21-0030	21-0030.1	Woodlawn Mausoleum	Active	7/1/2021	0.09		0.09	0.90		0.21	0.90
21-0030	21-0030.2	Woodlawn Mausoleum	Active	7/1/2021	0.13	0.15	0.13	0.99	0.67	0.58	0.99
21-0033	21-0033.1	Norfolk Terminal Phase 1	Active	7/8/2022	11.10	15.03	11.10	0.00	49.73	36.73	36.73
21-0034	21-0034.1	Algonquin House-Site Improvements	Active	9/2/2021	0.06		0.06	0.58		0.14	0.58
21-0035	21-0035.1	Teamsters Club Bldg.	Active	7/22/2024	0.07	0.08	0.07	0.56	0.34	0.31	0.56
21-0035	21-0035.2	Teamsters Club Bldg.	Active	7/22/2024	0.18	0.23	0.18	1.54	1.02	0.80	1.54
21-0035	21-0035.3	Teamsters Club Bldg.	Active	7/22/2024	0.27	0.31	0.27	2.22	1.40	1.21	2.22
21-0036	21-0036.1	Utilities Pump Station 91 Replacement	Active	8/6/2024	0.07	0.15	0.07	0.00	0.51	0.23	0.23
21-0036	21-0036.2	Utilities Pump Station 91 Replacement	Active	8/4/2021	0.17		0.17	0.37			0.37
21-0048	21-0048.1	Lydia Roper House	Active	1/30/2023	0.11	0.12	0.11	0.75	0.56	0.49	0.75
21-0050	21-0050.1	Utilities Pump Station 93 Replacement	Active	9/27/2021	0.04		0.04			0.09	0.09
21-0051	21-0051.1	7-Eleven Site Improvements	Active	11/12/2021	0.11		0.11	1.07		0.25	1.07
21-0052	21-0052.1	Colonna's Shipyard - Steel Processing Center	Active	10/15/2021	0.10		0.10	0.97		0.23	0.97
21-0055	21-0055.1	The Sanctuary at Pretty Lake	Active	4/29/2024	0.24	0.34	0.24	1.70	1.53	1.07	1.70
21-0055	21-0055.2	The Sanctuary at Pretty Lake	Active	4/29/2024	0.48	0.34	0.48	3.45	1.53	2.15	3.45
21-0060	21-0060.2	EOV Basketball Ct.	Active	8/16/2022	0.24		0.24	1.32		0.55	1.32
21-0061	21-0061.1	ERP - Ryan Resilience Lab	Active	10/30/2023	0.11	0.14	0.11	0.82	0.62	0.49	0.82
21-0061	21-0061.2	ERP - Ryan Resilience Lab	Active	10/30/2023	0.02	0.03	0.02	0.20	0.13	0.09	0.20
21-0061	21-0061.3	ERP - Ryan Resilience Lab	Active	10/30/2023	0.08	0.08	0.08	0.63	0.37	0.36	0.63
21-0061	21-0061.4	ERP - Ryan Resilience Lab	Active	10/30/2023	0.05	0.06	0.05	0.17	0.27	0.22	0.17
21-0061	21-0061.5	ERP - Ryan Resilience Lab	Active	10/30/2023	0.03	0.03	0.03	0.13	0.14	0.13	0.13
21-0061	21-0061.6	ERP - Ryan Resilience Lab	Active	10/30/2023	0.09	0.11	0.09	0.64	0.47	0.40	0.64
21-0061	21-0061.7	ERP - Ryan Resilience Lab	Active	10/30/2023	0.08	0.09	0.08	0.55	0.41	0.36	0.55
21-0061	21-0061.8	ERP - Ryan Resilience Lab	Active	10/30/2023	0.11	0.10	0.11	0.76	0.47	0.49	0.76
21-0061	21-0061.9	ERP - Ryan Resilience Lab	Active	10/30/2023	0.02	0.03	0.02	0.14	0.13	0.09	0.14
21-0061	21-0061.10	ERP - Ryan Resilience Lab	Active	10/30/2023	0.83	0.38	0.83	13.77	1.71	3.73	13.77
21-0062	21-0062.2	Dudley Ave Townhomes	Active	6/1/2022	0.40	0.34	0.40	3.04	1.13	1.32	3.04
21-0063	21-0063.1	Dollar Tree Hangar	Active	1/26/2023	1.98	2.63	1.98	0.00	8.71	6.55	6.55
21-0063	21-0063.2	Dollar Tree Hangar	Active	12/21/2021	1.87		1.87	18.78		4.32	18.78

Table C-2
Credit for BMPs Installed to Meet Development/Redevelopment Requirements

Lucity Site & SWMF IDs			Completion Status		Total Phosphorus (TP)			Total Nitrogen (TN)			
Site ID	SWMF ID #	Site Name	Status	Online Date	Priority 1: Lucity Removal (lb/yr)	Priority 2: Estimated Removal Using DA (lb/yr)	Removal Credit Claimed (lb/yr)	Priority 1: Lucity Removal (lb/yr)	Priority 2: Lucity-based Estimated Removal (lb/yr)	Priority 3: Estimated Removal Using DA (lb/yr)	Removal Credit Claimed (lb/yr)
21-0074	21-0074.1	Main Sail Phase II	Active	7/20/2022	0.30		0.30	0.00		0.69	0.69
22-0002	22-0002.1	Royal Farms #471	Active	11/27/2023	0.08	0.22	0.08	0.00	0.74	0.26	0.26
22-0002	22-0002.2	Royal Farms #471	Active	1/24/2023	0.40	0.79	0.40	4.01	2.62	1.32	4.01
22-0006	22-0006.1	Bay Street Duplex	Active	1/8/2024	0.11	0.13	0.11	0.75	0.60	0.49	0.75
22-0006	22-0006.2	Bay Street Duplex	Active	1/8/2024	0.02	0.01	0.02	0.10	0.07	0.09	0.10
22-0006	22-0006.3	Bay Street Duplex	Active	1/8/2024	0.02	0.04	0.02	0.12	0.20	0.09	0.12
22-0007	22-0007.3	LIV Norfolk Apts	Active	9/7/2022	5.87		5.87	58.95		13.57	58.95
22-0012	22-0012.3	Norfolk Fire Station #11	Active	10/28/2022	0.57		0.57	3.76		1.32	3.76
22-0013	22-0013.7	Metro Apartments- 5900 Northhampton Blvd	Active	6/9/2023	3.63		3.63	36.5		8.39	36.50
22-0014	22-0014.2	Metronet	Active	8/30/2022	0.15		0.15	1.51		0.35	1.51
22-0016	22-0016.1	Meadow Creek Village	Active	1/9/2023	1.73		1.73	17.37		4.00	17.37
22-0017	22-0017.1	Lafayette Park Multipurpose Courts	Active	7/16/2024	0.16	0.45	0.16	1.36	2.01	0.72	1.36
22-0017	22-0017.2	Lafayette Park Multipurpose Courts	Active	12/6/2023	0.05		0.05	0.50		0.12	0.50
22-0018	22-0018.1	Norfolk Academy Soccer Field	Active	9/17/2024	0.10	0.03	0.10	0.65	0.16	0.47	0.65
22-0018	22-0018.2	Norfolk Academy Soccer Field	Active	9/17/2024	0.10	0.03	0.10	0.65	0.16	0.47	0.65
22-0018	22-0018.3	Norfolk Academy Soccer Field	Active	9/17/2024	0.10	0.03	0.10	0.65	0.16	0.47	0.65
22-0018	22-0018.4	Norfolk Academy Soccer Field	Active	9/17/2024	0.10	0.03	0.10	0.65	0.16	0.47	0.65
22-0021	22-0021.1	Park Place Church - MultiFamily	Active	1/4/2023	0.03		0.03	0.30		0.07	0.30
22-0021	22-0021.2	Park Place Church - MultiFamily	Active	7/12/2024	0.03	0.06	0.03	0.18	0.27	0.13	0.18
22-0021	22-0021.3	Park Place Church - MultiFamily	Active	7/12/2024	0.03	0.04	0.03	0.18	0.20	0.13	0.18
22-0021	22-0021.4	Park Place Church - MultiFamily	Active	7/12/2024	0.03	0.09	0.03	0.18	0.40	0.13	0.18
22-0021	22-0021.5	Park Place Church - MultiFamily	Active	7/12/2024	0.08	0.10	0.08	0.55	0.47	0.36	0.55
22-0021	22-0021.6	Park Place Church - MultiFamily	Active	7/12/2024	0.04	0.12	0.04	0.27	0.53	0.18	0.27
22-0021	22-0021.8	Park Place Church - MultiFamily	Active	7/12/2024	0.00	0.04	0.04	0.00	0.20		0.20
22-0021	22-0021.9	Park Place Church - MultiFamily	Active	7/12/2024	0.00	0.03	0.03	0.00	0.13		0.13
22-0024	22-0024.4	3 Single Family Homes	Active	3/6/2023	0.18		0.18	1.19		0.42	1.19
22-0026	22-0026.1	Chenman Phase II	Active	6/24/2024	0.17	0.19	0.17	1.18	0.87	0.76	1.18
22-0026	22-0026.2	Chenman Phase II	Active	6/24/2024	0.15	0.18	0.15	1.09	0.80	0.67	1.09
22-0026	22-0026.3	Chenman Phase II	Active	6/24/2024	0.06	0.07	0.06	0.45	0.33	0.27	0.45
22-0026	22-0026.4	Chenman Phase II	Active	10/11/2021	0.10		0.10	0.76		0.23	0.76
22-0027	22-0027.1	Costco - ADA Upgrades	Active	7/12/2022	0.00	0.48	0.48	0.00	1.59		1.59
22-0027	22-0027.2	Costco - ADA Upgrades	Active	7/12/2022	0.00	1.11	1.11	0.00	3.69		3.69
22-0035	22-0035.1	Riverside Station Apartments	Active	4/26/2023	0.00	1.57	1.57	0.00	5.18		5.18
22-0043	22-0043.5	Panda Express - Military Highway	Active	9/21/2022	0.09		0.09	0.59		0.21	0.59
22-0049	22-0049.1	Block 20 Apartments	Active	4/11/2024	0.51	0.79	0.51	0.00	2.61	1.69	1.69
22-0049	22-0049.2	Block 20 Apartments	Active	4/11/2024	0.05	0.20	0.05	0.00	0.87	0.22	0.22
22-0049	22-0049.3	Block 20 Apartments	Active	4/11/2024	0.05	0.20	0.05	0.00	0.87	0.22	0.22
22-0049	22-0049.4	Block 20 Apartments	Active	4/11/2024	0.05	0.20	0.05	0.00	0.87	0.22	0.22
22-0050	22-0050.1	Block 19 Apartments	Active	12/29/2023	0.42	0.55	0.42	0.00	1.83	1.39	1.39
22-0050	22-0050.2	Block 19 Apartments	Active	12/29/2023	0.02	0.48	0.02	0.00	2.16	0.09	0.09
22-0050	22-0050.3	Block 19 Apartments	Active	12/29/2023	0.02	0.48	0.02	0.00	2.16	0.09	0.09
22-0050	22-0050.4	Block 19 Apartments	Active	12/29/2023	0.02	0.48	0.02	0.00	2.16	0.09	0.09
22-0050	22-0050.5	Block 19 Apartments	Active	12/29/2023	0.02	0.48	0.02	0.00	2.16	0.09	0.09
22-0051	22-0051.1	East Beach Marketplace	Active	3/15/2023	0.25		0.25	2.51		0.58	2.51
22-0052	22-0052.2	Kristen M. Lentz Water Treatment Plant	Active	3/1/2023	0.12		0.12	1.20		0.28	1.20

Table C-2
Credit for BMPs Installed to Meet Development/Redevelopment Requirements

Lucity Site & SWMF IDs			Completion Status		Total Phosphorus (TP)			Total Nitrogen (TN)			
Site ID	SWMF ID #	Site Name	Status	Online Date	Priority 1: Lucity Removal (lb/yr)	Priority 2: Estimated Removal Using DA (lb/yr)	Removal Credit Claimed (lb/yr)	Priority 1: Lucity Removal (lb/yr)	Priority 2: Lucity-based Estimated Removal (lb/yr)	Priority 3: Estimated Removal Using DA (lb/yr)	Removal Credit Claimed (lb/yr)
22-0065	22-0065.1	Parcel 11, Norfolk Commerce Park	Active	3/7/2024	0.81	1.09	0.81	0.00	3.61	2.68	2.68
22-0066	22-0066.1	Sentara Norfolk General -CSS Renovation	Active	8/1/2023	0.25	0.32	0.25	0.00	1.07	0.83	0.83
22-0082	22-0082.1	Staybridge Suites	Active	10/23/2023	0.00	1.27	1.27	0.00	4.21		4.21
22-0085	22-0085.1	U-Haul Warehouse Addition	Active	12/14/2023	1.10	1.36	1.10	0.00	4.50	3.64	3.64
22-0085	22-0085.2	U-Haul Warehouse Addition	Active	12/14/2023	0.59	0.81	0.59	0.00	2.67	1.95	1.95
22-0085	22-0085.3	U-Haul Warehouse Addition	Active	4/11/2023	0.05		0.05	0.50		0.12	0.50
22-0088	22-0088.1	Norfolk Self Storage	Active	8/29/2023	0.69		0.69	6.93		1.59	6.93
22-0095	22-0095.5	Lot 31A, Block 12 East Ocean View	Active	8/28/2023	0.06		0.06	0.60		0.14	0.60
22-0100	22-0100.1	Miller's Fuel Tanks Replacement	Active	6/3/2024	0.10	0.27	0.10	0.00	0.90	0.33	0.33
23-0010	23-0010.5	St. Paul's Block 10	Active	2/1/2024	1.97		1.97	19.78		4.55	19.78
23-0020	23-0020.1	4108 Pretty Lake Duplex	Active	9/1/2023	0.06	0.07	0.06	0.43	0.30	0.27	0.43
23-0020	23-0020.2	4108 Pretty Lake Duplex	Active	9/1/2023	0.01	0.07	0.01	0.11	0.30	0.04	0.11
23-0020	23-0020.3	4108 Pretty Lake Duplex	Active	9/1/2023	0.05	0.13	0.05	0.39	0.59	0.22	0.39
23-0020	23-0020.4	4108 Pretty Lake Duplex	Active	9/1/2023	0.08	0.13	0.08	0.68	0.59	0.36	0.68
23-0023	23-0023.3	Townplace Suites- Norfolk Airport	Active	8/22/2023	0.50		0.50	5.02		1.16	5.02
23-0028	23-0028.1	Walmart Additions	Active	6/15/2023	0.07		0.07	0.46		0.16	0.46
23-0033	23-0033.2	Walmart Building Addition & Pickup 2.0 Improvement	Active	6/22/2023	0.15		0.15	0.99		0.35	0.99
23-0036	21-0043.1	Berry Robinson Center - Sidewalk Revision	Active	3/30/2023	0.05	0.41	0.05	0.36	1.87	0.23	0.36
23-0036	23-0036.1	Berry Robinson Center - Sidewalk Revision	Active	3/30/2023	0.24	0.41	0.24	1.94	1.87	1.11	1.94
23-0048	23-0048.1	Hermitage Museum &Garden Visual Art School MOD	Active	12/13/2023	0.09	0.10	0.09	0.64	0.47	0.40	0.64
23-0048	23-0048.2	Hermitage Museum &Garden Visual Art School MOD	Active	12/13/2023	0.06	0.07	0.06	0.45	0.33	0.27	0.45
23-0048	23-0048.3	Hermitage Museum &Garden Visual Art School MOD	Active	12/13/2023	0.04	0.04	0.04	0.27	0.20	0.18	0.27
23-0048	23-0048.4	Hermitage Museum &Garden Visual Art School MOD	Active	12/13/2023	0.05	0.06	0.05	0.36	0.27	0.22	0.36
23-0048	23-0048.5	Hermitage Museum &Garden Visual Art School MOD	Active	12/13/2023	0.01	0.03	0.01	0.08	0.13	0.04	0.08
23-0062	23-0062.1	American Red Cross- Building Renovations	Active	2/23/2024	0.01		0.01	0.10		0.02	0.10
23-0063	23-0063.1	Fire Line	Active	2/19/2024	0.03		0.03	0.30		0.07	0.30
23-0066	23-0066.2	Parcel B Berkley Center	Active	11/7/2023	0.82		0.82	8.23		1.90	8.23
23-0093	23-0093.1	HomeCo Industrial Renovation	Active	8/27/2024	0.18	0.20	0.18	1.28	0.89	0.81	1.28
23-0093	23-0093.2	HomeCo Industrial Renovation	Active	8/27/2024	0.85	1.14	0.85	6.05	5.09	3.80	6.05
23-0093	23-0093.3	HomeCo Industrial Renovation	Active	8/27/2024	0.58	0.70	0.58	4.17	3.14	2.61	4.17
23-0093	23-0093.4	HomeCo Industrial Renovation	Active	8/27/2024	0.30	0.30	0.30	2.13	1.38	1.37	2.13
23-0093	23-0093.5	HomeCo Industrial Renovation	Active	8/27/2024	0.03	0.02	0.03	0.20	0.11	0.15	0.20
23-0093	23-0093.6	HomeCo Industrial Renovation	Active	8/27/2024	0.99	2.63	0.99	0.00	8.71	3.28	3.28
23-0096	23-0096.1	HRSD- Army Base	Active	2/16/2024	0.10		0.10	1.00		0.23	1.00
23-0097	23-0097.3	HRSD Virginia Initiative Plant	Active	2/26/2024	0.06		0.06	0.60		0.14	0.60
23-0112	23-0112.4	Site Plan for 1121 Redgate Ave Lots 20, 21, & 22	Active	5/31/2024	0.07		0.07	0.70		0.16	0.70
23-0123	23-0123.4	Block 17	Active	3/30/2023	0.73		0.73	7.33		1.69	7.33
23-0125	23-0125.2	Block 18- St. Paul's Redevelopment	Active	6/11/2023	0.66		0.66	6.41		1.53	6.41
23-0127	23-0127.1	Market Heights Apartment Complex	Active	3/14/2023	1.08	1.92	1.08	0.00	8.56	4.83	4.83
23-0128	23-0128.1	Airport- Rehabilitate Runway Phase III	Active	3/15/2024	2.27		2.27	22.80		5.25	22.80
23-0133	23-0133.1	Walmart Additions	Active	2/5/2024	0.02		0.02	0.13		0.05	0.13
24-0005	24-0005.1	Centria	Active	6/6/2024	0.60		0.60	6.03		1.39	6.03
B22-03226	B22-03226.1	Single Family - Chesapeake Blvd	Active	6/12/2023	0.02	0.04	0.02	0.14	0.20	0.09	0.14
B22-03226	B22-03226.2	Single Family - Chesapeake Blvd	Active	6/12/2023	0.02	0.04	0.02	0.14	0.20	0.09	0.14
B23-00568	B23-00568.1	SF Pool Site Plan	Active	1/30/2024	0.03	0.03	0.03	0.20	0.13	0.13	0.20

Table C-2
Credit for BMPs Installed to Meet Development/Redevelopment Requirements

Lucity Site & SWMF IDs			Completion Status		Total Phosphorus (TP)			Total Nitrogen (TN)			
Site ID	SWMF ID #	Site Name	Status	Online Date	Priority 1: Lucity Removal (lb/yr)	Priority 2: Estimated Removal Using DA (lb/yr)	Removal Credit Claimed (lb/yr)	Priority 1: Lucity Removal (lb/yr)	Priority 2: Lucity-based Estimated Removal (lb/yr)	Priority 3: Estimated Removal Using DA (lb/yr)	Removal Credit Claimed (lb/yr)
Light rail	Light Rail.1	HRT Newtown Park and Ride	Active	5/15/2011	2.90	3.19	2.90	2.90	10.56	9.60	2.90
S103	S103.1	Ray & Joan Krock Center	Active	10/23/2014	2.68	3.41	2.68	8.71	15.28	12.01	8.71
S71	S71.1	Sewells Point GC Entrance	Active	1/1/2017		0.11	0.11	0.63	0.37		0.63
S71	S71.2	Sewells Point GC Entrance	Active	1/1/2017		0.11	0.11	0.63	0.37		0.63
S72	S72.1	Continous Flow Intersecion	Active	12/15/2020	10.86	11.20	10.86	36.27	37.05	35.94	36.27
SCHF	SCHF.1	Cape Henry Filterra	Active	5/2/2014	0.24	0.18	0.24	0.57	0.59	0.79	0.57
					TOTAL	499					2323

Table C-3
Credit for BMPs Retrofitting Prior Developed Lands

Lucity Site & SWMF IDs			Completion Status		Total Phosphorus (TP)			Total Nitrogen (TN)			Retrofit Construction Cost		
Site ID	SWMF ID #	Site Name	Status	Online Date	Priority 1: Lucity Removal (lb/yr)	Priority 2: Estimated Removal Using DA (lb/yr)	Removal Credit Claimed (lb/yr)	Priority 1: Lucity Removal (lb/yr)	Priority 2: Lucity-based Estimated Removal (lb/yr)	Priority 3: Estimated Removal Using DA (lb/yr)	Removal Credit Claimed (lb/yr)		
11-0048	11-0048.1	Colley Bay Living Shoreline	Active	5/1/2013	34.48		34.48	118.08			118.08		
12-0042	12-0042.1	Myrtle Park Imprvts-Richmond Cres-Living Shoreline	Active	5/1/2014	3.02		3.02	49.59			49.59	TBD	
12-0053	12-0053.1	Greenway Stormwater Park	Active	1/1/2014	12.35	0.98	12.35	0.00	2.26	28.54	28.54	\$ 450,353.00	
13-0050	13-0050.1	Knitting Mill Creek Living Shoreline	Active	10/25/2018	15.15		15.15	50.80			50.80	\$ 974,369.00	
14-0079	14-0079.1	Norfolk Juvenile Detention Center Pond	Active	1/1/1999	25.00	8.35	25.00	98.50	27.63	82.67	98.50	\$ 543,980.00	
15-0011	15-0011.1	Parkdale Channel Improvements	Active	6/1/2017	33.60		33.60	37.10			37.10	\$ 422,977.00	
15-0014	15-0014.1	Jeff Robertson Park	Active	4/19/2019	8.41	0.67	8.41	38.35	3.63	45.37	38.35	\$ 340,574.00	
15-0047	15-0047.1	Gosnold Drainage Improvements	Active	3/25/2022	1.19	0.01	1.19						
16-0014	16-0014.1	Anne Outten Pond Retrofit	Active	1/1/1995	101.80	5.10	101.80	336.11	11.78	235.27	336.11	\$ 557,279.00	
16-0046	16-0046.1	Templar Boulevard Ditch Restoration	Active	7/9/2018	17.60	0.38	17.60	38.30	1.25	58.24	38.30	\$ 188,209.00	
16-0047	16-0047.1	Central Business Park Pond Retrofit	Active	11/14/2019	9.83	0.17	9.83	38.84	0.40	22.72	38.84	\$ 494,732.00	
16-0054	16-0054.1	Lake Modoc	Active	10/25/2018	74.84	0.05	74.84	247.10	0.11	172.96	247.10		
16-0055	16-0055.1	Roberts Road Pond Retrofit	Active	12/13/2019		38.13	38.13		126.17		126.17	\$ 485,408.00	
16-0075	16-0075.1	Dune Street Wetland	Active	8/10/2018	6.40		6.40	23.40			23.40	\$ 303,711.00	
16-0092	16-0092.1	Lindenwood Barraaud Park Shoreline Restoration	Active	7/6/2021	81.96		81.96	256.95			256.95	\$ 2,596,344.00	
16-0093	16-0093.1	Beach Avenue Living Shoreline	Active	8/12/2018	39.12		39.12	123.32			123.32	\$ 814,377.00	
16-0099	16-0099.1	Villa Circle Living Shoreline	Active	5/1/2019	67.44		67.44	225.48			225.48	\$ 1,312,867.00	
17-0004	17-0004.1	LAKE TAYLOR	Active	5/1/2020	477.50	2.21	477.50	1,719.14	5.10	1103.56	1719.14	\$ 2,103,200.00	
17-0023	17-0023.1	North Shore Road Living Shoreline	Active	7/2/2019	126.76		126.76	266.60			266.60	\$ 1,074,731.00	
17-0063	17-0063.1	Hermitage Living Shoreline	Active	7/2/2019	33.68		33.68	140.82			140.82	\$ 765,981.00	
18-0101	18-0101.2	847-925 Ingleside Road Stormwater Retrofits	Active	5/11/2021	0.92	0.02	0.92	5.16			5.16	\$ 415,000.00	
18-0103	18-0103.1	4605-4625 E PRINCESS ANNE STORMWATER RETROFIT	Active	5/26/2020	2.20	0.97	2.20	12.37	3.21	7.28	12.37		
20-0024	20-0024.1	PLEASANT POINT LIVING SHORELINE	Active	4/3/2023	15.22		15.22	38.32			38.32	TBD	
20-0029	20-0029.1	Lake Taylor Middle School-Parking Lot & Access Dr	Active	9/10/2020	0.95		0.95	6.27		2.20	6.27		
20-0044	20-0044.1	Sewells Point Elementary	Active	7/29/2022	0.12	0.13	0.12	0.00	0.43	0.40	0.40		
S102	S102.1	Haven Creek Pathway	Active	5/1/2012	19.42		19.42	76.98			76.98		
S108	S108.1	Walters Drive Living Shoreline	Active	5/17/2024	12.07		12.07	25.47			25.47		
S2	S2.1	Ballentine Elementary School Lake	Active		101.20		147.61	101.20	434.00	488.46	334.89	434.00	\$ 1,003,441.00
					TOTAL		1360				4562	\$ 14,847,533.00	

Appendix D: Supplementary City Data

- Table D-1: Material Collected During Storm Drain Cleaning Over 2021-2024 Fiscal Years

Table D-1
Material Collected During Storm Drain Cleaning Over 2021-2024 Fiscal Years

Fiscal Year 2021												
	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Material Collected (Tons)	18.64	0.00	8.52	7.87	0.00	23.00	24.65	22.84	25.76	14.21	19.52	0.00
Material Collected YTD (Tons)	18.64	18.64	27.16	35.03	35.03	58.03	82.68	105.52	131.28	145.49	165.01	165.01
Fiscal Year 2022												
	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Material Collected (Tons)	9.11	7.62	9.60	12.17	0.00	18.40	0.00	20.58	24.77	0.00	12.06	9.90
Material Collected YTD (Tons)	9.11	16.73	26.33	38.50	38.50	56.90	56.90	77.48	102.25	102.25	114.31	124.21
Fiscal Year 2023												
	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Material Collected (Tons)	24.72	25.18	0.00	23.92	30.81	17.39	0.00	19.97	19.76	19.16	5.06	0.00
Material Collected YTD (Tons)	24.72	49.90	49.90	73.82	104.63	122.02	122.02	141.99	161.75	180.91	185.97	185.97
Fiscal Year 2024												
	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Material Collected (Tons)	0.00	40.22	0.00	50.00	0.00	49.18	0.00	18.69	23.41	8.67	0.00	0.00
Material Collected YTD (Tons)	0.00	40.22	40.22	90.22	90.22	139.40	139.40	158.09	181.50	190.17	190.17	190.17

Appendix E: HRSD SWIFT Agreement

- Hampton Roads Water Quality Credit Agreement for Chesapeake Bay Restoration

HAMPTON ROADS WATER QUALITY CREDIT AGREEMENT FOR CHESAPEAKE BAY RESTORATION

**THIS HAMPTON ROADS WATER QUALITY CREDIT AGREEMENT FOR
CHESAPEAKE BAY RESTORATION** (this “Agreement”) is made this 28 day of June, 2017, by and between the Hampton Roads Sanitation District (“HRSD”) and the City of Norfolk (the “City”) (each a “Party” and jointly, the “Parties”).

BACKGROUND

A. The HRSD Plants. HRSD owns and operates various wastewater treatment plants that are authorized to discharge the nutrients total nitrogen (“TN”) and total phosphorus (“TP”) as well as sediment as total suspended solids (“TSS”) to the Chesapeake Bay watershed (the “HRSD Plants”). The HRSD Plants have TN, TP and TSS waste load allocations assigned by the State Water Control Board and the Virginia Department of Environmental Quality (jointly, “DEQ”) pursuant to the Water Quality Management Planning Regulation, 9 VAC 25-720, and by the U.S. Environmental Protection Agency (“EPA”) pursuant to the Chesapeake Bay Total Maximum Daily Load (“TMDL”) and related Virginia Watershed Implementation Plan (“WIP”). The HRSD Plants are subject to the General Virginia Pollutant Discharge Elimination System (“VPDES”) Watershed Permit Regulation for TN and TP Discharges and Nutrient Trading in the Chesapeake Bay Watershed in Virginia, 9 VAC 25-820, most recently reissued by DEQ effective February 8, 2017, as hereafter modified or reissued from time to time (the “Watershed General Permit”). Due to exceptional performance and current operating conditions, the HRSD Plants currently discharge less TN, TP and TSS than they are authorized to discharge under the Watershed General Permit while protecting Chesapeake Bay water quality and, therefore, HRSD has the ability to provide TN, TP and TSS credits on at least a temporary basis.

B. The Locality MS4. The City owns and operates a municipal separate stormwater sewer system (“MS4”) authorized to discharge TN, TP and TSS to the Chesapeake Bay watershed. Like the HRSD Plants, the MS4 is subject to the Chesapeake Bay TMDL as derived from the Virginia WIP and to a VPDES Permit issued to the City by DEQ. Pursuant to the TMDL, WIP and VPDES Permit for the MS4, it is anticipated that the City will reduce MS4-related TN, TP and TSS discharges pursuant to City-developed and DEQ-approved TMDL Action Plans for each of three, five-year permit cycles, which are referred to as the First Bay TMDL Permit Cycle (5% Progress), Second Bay TMDL Permit Cycle (40% Progress), and Third Bay TMDL Permit Cycle (100% Progress). During 2017, the City is in its First Bay TMDL Permit Cycle.

C. The SWIFT Project. HRSD’s Sustainable Water Initiative For Tomorrow (“SWIFT”) Project was conceived with multiple benefits in mind for the Hampton Roads region. Aside from TMDL benefits, this innovative water purification project is designed to enhance the sustainability of the long-term groundwater supply and help address other environmental pressures such as sea level rise and saltwater intrusion. The SWIFT Project is intended to achieve these benefits by taking already-treated wastewater that would otherwise be discharged into the Chesapeake Bay watershed, purifying it through additional rounds of advanced water treatment to meet drinking water standards, and injecting the resulting drinking quality water into the Potomac aquifer deep underground. With respect to TMDL benefits, SWIFT will result in a

significant reduction in the total volume of HRSD discharge to the Chesapeake Bay watershed, to achieve greater environmental benefits with corresponding significant reductions of TN, TP and TSS discharges to the Chesapeake Bay watershed.

D. Legal Authority. Pursuant to Virginia Code § 62.1-44.19:21, the City may acquire and use TN and TP credits for purposes of compliance with the Chesapeake Bay TMDL loading reductions of its MS4 VPDES Permit, including credits generated by the HRSD Plants by discharging less TN or TP than permitted under the Watershed General Permit. Pursuant to Virginia Code § 62.1-44.19:21.1, the City may also acquire and use TSS credits for purposes of compliance with the Chesapeake Bay TMDL loading reductions of its MS4 VPDES Permit, including credits generated by the HRSD Plants by discharging less TSS than allocated under the Chesapeake Bay TMDL. With respect to all three parameters, it is recognized that this authority does not limit or otherwise affect the authority of DEQ to establish and enforce more stringent water quality-based effluent limitations in permits where such limitations are necessary to protect local water quality and, further, that the use of water quality credits does not relieve an MS4 permit holder of any requirement to comply with applicable local water quality-based limitations.

E. Redevelopment-Based MS4 TMDL Action Plan. The City expects to achieve its Chesapeake Bay TMDL reduction goals more cost-effectively by utilizing HRSD-generated TN, TP and TSS credits before and during operation of the SWIFT Project in lieu of stormwater retrofit projects on a condensed 10-year schedule (*i.e.*, Second and Third Bay TMDL Permit Cycles) coupled with ongoing stormwater quality improvements from redevelopment projects, which are subject to TP reduction criteria (and associated TN and TSS reductions) under the applicable water quality design requirements of DEQ's Virginia Stormwater Management Program Regulation, 9VAC25-870-63.A.2. By aligning with the normal redevelopment cycle rather than scheduling retrofits prior to redevelopment activity, the City's Chesapeake Bay TMDL Action Plan will also conserve scarce state and local resources for other important water quality projects.

F. Credit Trading Premise of SWIFT. For all of the above reasons and others, the ability to generate TN, TP, and TSS credits through the SWIFT Project and apply those credits as progress under the Hampton Roads localities' MS4 Permits and associated TMDL Action Plans is a fundamental premise for the SWIFT Project. HRSD is proceeding with the SWIFT Project, and the City is supporting it, in large part in reliance on these critical water quality trading-based benefits.

AGREEMENT

NOW, THEREFORE, in consideration of the foregoing premises (hereby incorporated as if fully set forth herein), the mutual covenants and conditions herein, and other good and valuable consideration, the receipt and sufficiency of which HRSD and the City acknowledge, the Parties hereby agree as follows.

1. Annual Credit Transfers Prior to SWIFT Feasibility Determination. Prior to HRSD's determination of SWIFT Project feasibility as provided below, HRSD shall annually generate and transfer to the City the quantity of water quality credits needed to meet the City's

compliance requirements under its DEQ-Approved Chesapeake Bay TMDL Action Plan for its MS4, as provided below. This annual transfer shall be made by HRSD's execution and delivery to the City of the Annual Water Quality Credit Transfer Form (Attachment B hereto) on or before May 20 immediately following each calendar year of HRSD's credit generation.

a. Determination of Total Reductions Needed. The City shall determine the total TN, TP and TSS reductions required for its full MS4 implementation of the Chesapeake Bay TMDL and WIP as issued in December 2010, in accordance with the procedures established in its VPDES Permit and DEQ Guidance Memorandum 15-2005, Chesapeake Bay TMDL Special Condition Guidance (May 18, 2015).

b. Credit Demand Minimization Elements. The City shall minimize its calculated reductions by (i) accurately mapping and delineating its existing MS4 service area, (ii) taking full credit for reductions achieved by stormwater projects and regulated redevelopment projects occurring prior to the effective date of the City's VPDES Permit in effect as of the effective date of this Agreement, and (iii) other procedures or accounting measures reasonably available to the City.

c. Credit Transfer Ceilings. HRSD's annual credit transfer obligations to the City shall not exceed the lesser of (i) the City's initial estimate of credit needs, or (ii) 95 percent of the City's total calculated reductions determined in accordance with Subparagraphs 1.a. and 1.b. and set forth in a DEQ-approved Chesapeake Bay TMDL Action Plan, or (iii) the quantity of credits actually needed to meet such total calculated reductions. The City's initial estimate of credit needs as of the effective date of this Agreement is set forth in Section 1 of Attachment A hereto. Following DEQ's approval of the City's Chesapeake Bay TMDL Action Plan and subsequent acceptance of the credit needs by HRSD as consistent with the requirements of this Subparagraph 1.c., HRSD shall issue an update to Attachment A setting forth in Section 2 thereof HRSD's actual annual credit transfer obligation determined in accordance with this Subparagraph 1.c.

d. Term & Termination of Initial Credit Transfers. HRSD's annual credit transfer obligations to the City under this Paragraph 1 shall expire upon (i) conversion to a permanent transfer of wasteload allocations as provided in Paragraph 2, (ii) termination as specifically authorized by any other provision of this Agreement, or (iii) December 31, 2036, whichever occurs first.

2. Permanent Transfer After SWIFT Feasibility Determination. Upon HRSD's determination that full-scale implementation of the SWIFT Project is feasible, HRSD shall permanently transfer to the City the quantity of TN, TP and TSS waste load allocations set forth for its MS4 on Attachment A hereto, as updated and issued by HRSD in accordance with Paragraph 1.c.

a. Factors for Feasibility Determination. Feasibility shall be determined in HRSD's sole discretion taking into account (i) whether all required permits and approvals have been acquired in final, non-appealable form acceptable to HRSD including the federal Safe Drinking Water Act Underground Injection Control Permit, (ii) whether the first full-scale

HRSD plant upgrade is online and performing as desired, (iii) whether full-scale implementation of the SWIFT Project is technically and financially feasible, and (iv) other material factors.

b. Timing for Feasibility Determination. Without limiting HRSD's discretion to determine whether full-scale SWIFT Project implementation is feasible or when to make such determination, it is the mutual goal of the Parties for HRSD to make such determination as soon as reasonably possible and not later than December 31, 2025, so as to preserve the maximum amount of time prior to the termination date for the City to implement stormwater retrofit projects or other permit compliance measures that might be necessary should it be determined that the SWIFT Project is not feasible.

3. Regulatory Plans & Approvals. In furtherance of the annual credit transfer and, when applicable, the permanent transfer contemplated by this Agreement, the Parties shall collaborate on appropriate submittals to and requests of DEQ, as follows; however, HRSD shall have no responsibility for the failure or refusal of DEQ or other governmental authority to approve such transfers.

a. City's TMDL Action Plan. For purposes of annual and, when applicable, permanent transfers, the City shall each include in its Chesapeake Bay TMDL Action Plan a provision for the receipt and use of TN, TP and TSS credits from the HRSD Plants in the form set forth in Attachment C hereto (or such other form as may be mutually agreeable to the City and HRSD).

b. HRSD Watershed General Permit Registration. For purposes of permanent wasteload allocation transfers, when applicable, HRSD shall modify its Watershed General Permit Registration and, if necessary, individual VPDES permits to reflect such transfers.

c. Virginia Chesapeake Bay TMDL Phase III WIP. HRSD and the City shall collaborate to seek inclusion in the Phase III WIP of recognition of the SWIFT Project and the annual and, when applicable, permanent transfers contemplated by this Agreement.

4. Authorized Use of Credits. The City agrees that its sole and limited use of the TN, TP, and TSS credits transferred under this Agreement shall be for the purpose of MS4 Permit compliance and Chesapeake Bay TMDL implementation and that it shall not transfer any portion of HRSD-generated credits (or waste load allocations, if applicable) to any other person or entity. In the event that the City no longer requires some or all of the credits (or waste load allocations) for such use, they shall revert to HRSD and HRSD shall update and reissue Attachment A accordingly.

5. Mutual Cooperation. The Parties shall continue to cooperate with each other as reasonably necessary to confirm or bring about the transfers contemplated by this Agreement.

6. Permits & Approvals. If for any reason any federal, state, regional or local government or agency fails to issue any necessary permit, approval or other authorization for the SWIFT Project or the transfers contemplated by this Agreement, HRSD shall be excused from its performance hereunder.

7. Force Majeure. The obligations of HRSD, including its annual or permanent transfer obligations, shall be suspended while and as long as performance is prevented or impeded by strikes, disturbances, riots, fire, severe weather, acts of war, acts of terrorism, acts of God, government action (other than by HRSD), major technical, engineering or construction related delays, or any other cause similar or dissimilar to the forgoing that is beyond the reasonable control of and not due to the gross negligence of HRSD.

8. Change in Law. In the event of any material change in applicable laws or regulations, the Parties shall work together to attempt to amend this Agreement to conform to such change, while maintaining as closely as practical the provisions and intent of this Agreement. If in any such event HRSD is unable to perform its transfer obligations as provided herein, the City shall be solely responsible for otherwise meeting its TMDL and MS4 Permit obligations.

9. Significant Financial & Budgetary Constraints. Notwithstanding any other provision of this Agreement or any prior determination of feasibility of the SWIFT Project, HRSD reserves the right to terminate or renegotiate this Agreement in the event HRSD experiences significant financial or budgetary challenges which, in HRSD's opinion, would significantly impair its ability to perform its obligations hereunder. In such event, the Parties shall work together to attempt to amend this Agreement to accommodate such challenges, with the goal of providing annual credits to the City (and to other Hampton Roads localities with similar water quality credit agreements) as practical.

10. Credit Supply Constraints. Notwithstanding any other provision of this Agreement, to the extent that HRSD determines in its sole discretion that its available quantity of water quality credits (or allocations) is insufficient to meet the total MS4 Chesapeake Bay TMDL Action Plan compliance requirements of the City and of all other Hampton Roads localities that are party or become party to a similar water quality credit agreement, HRSD's obligations hereunder shall be limited to transferring to the City its pro rata share of HRSD's available credits based on pollutant-specific total credit needs of all Hampton Roads localities. HRSD agrees to provide the City with notice of its ability only to transfer a pro rata share of HRSD's available credits as promptly as possible but no later than 90 days after becoming aware of the event limiting HRSD's ability to meet the total credit needs of all Hampton Roads Localities. For clarity, HRSD shall assume no obligation under this Agreement to install, upgrade, improve, or significantly alter the operation of any portion of its sewerage system or treatment works for purposes of providing water quality credits (or allocations).

11. No Third-Party Beneficiaries. This Agreement is solely for the benefit of the Parties hereto and their permitted successors and assigns and shall not confer any rights or benefits on any other person or entity.

12. No Assignment. This Agreement, and the rights and obligations established hereunder, shall be binding upon and inure to the benefit of any successors of the Parties. However, no Party may transfer or assign this Agreement, or its rights or obligations hereunder, without the prior written consent of the other Party, which consent shall not be unreasonably withheld.

13. Expenses; Commissions. Except as provided herein, each Party shall pay its own fees and expenses, including its own counsel fees, incurred in connection with this Agreement or any transaction contemplated hereby. The Parties represent and warrant to each other that they have not dealt with any business broker or agent who would be entitled to a brokerage commission or finders fee as a result of this Agreement or any related transactions.

14. Governing Law; Venue; Severability. This Agreement shall be construed in accordance with and governed for all purposes by the laws of the Commonwealth of Virginia. This Agreement is a Virginia contract deemed executed and accepted in the City of Norfolk; and all questions with respect to any of its provisions shall be instituted, maintained, and contested in a court of competent jurisdiction in the City of Norfolk, Virginia. If any word or provision of this Agreement as applied to any Party or to any circumstance is adjudged by a court to be invalid or unenforceable, the same shall in no way affect any other circumstance or the validity or enforceability of any other word or provision.

15. No Waiver. Neither any failure to exercise or any delay in exercising any right, power or privilege under this Agreement by either Party shall operate as a waiver, nor shall any single or partial exercise of any right, power or privilege hereunder preclude the exercise of any other right, power or privilege. No waiver of any breach of any provision shall be deemed to be a waiver of any preceding or succeeding breach of the same or any other provision, nor shall any waiver be implied from any course of dealing.

16. Entire Agreement; Amendments. This Agreement contains the entire agreement between the Parties as to the subject matter hereof and supersedes all previous written and oral negotiations, commitments, proposals and writings. No amendments may be made to this Agreement except by a writing signed by both Parties.

17. Counterparts; Signatures; Copies. This Agreement may be executed in counterparts, both of which shall be deemed an original, but all of which together shall constitute one and the same instrument. A facsimile or scanned signature may substitute for and have the same legal effect as an original signature. Any copy of this executed Agreement made by photocopy, facsimile or scanner shall be considered the original for all purposes.

18. Authorization. Each Party represents that its execution, delivery and performance under this Agreement have been duly authorized by all necessary action on its behalf, and do not and will not violate any provision of its charter or enabling legislation or result in a material breach of or constitute a material default under any agreement, indenture, or instrument of which it is a party or by which it or its properties may be bound or affected.

IN WITNESS WHEREOF, the Parties hereto have caused the execution of this Agreement as of the date first written above.

[SIGNATURES BEGIN ON NEXT PAGE]

**SIGNATURE PAGE OF HAMPTON ROADS WATER QUALITY CREDIT
AGREEMENT FOR CHESAPEAKE BAY RESTORATION BY AND BETWEEN
HRSD AND CITY OF NORFOLK**

**HAMPTON ROADS SANITATION
DISTRICT**

By:


Edward G. Henifin
General Manager

CITY OF NORFOLK

By:


Douglas L. Smith
Interim City Manager

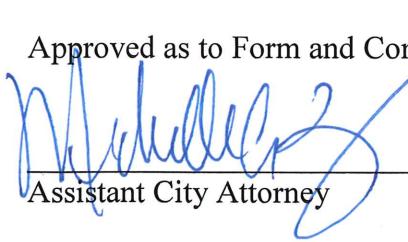
ATTEST:


Bled A. Bunn
City Clerk

Contents Approved:


David Ricks, P.E.
Director, Department of Public Works

Approved as to Form and Correctness:


Michael C. Johnson
Assistant City Attorney

**HAMPTON ROADS WATER QUALITY CREDIT AGREEMENT
FOR CHESAPEAKE BAY RESTORATION
ATTACHMENT A**

Water Quality Credit Needs for Second & Third Bay TMDL Permit Cycles

***Section 1: Initial Estimate of Credit Needs (lbs/yr)
[As Estimated by City as of Effective Date of this Agreement]***

Parameter	James River Basin			Little Creek Watershed		
	2nd Permit Cycle	3rd Permit Cycle	Total Both Cycles	2nd Permit Cycle	3rd Permit Cycle	Total Both Cycles
TN	3,585	6,146	9,731	981	1,682	2,663
TP	789	1,352	2,141	193	332	525
TSS	463,719	794,947	1,258,666	80,018	137,174	217,192

***Section 2: City-Calculated and HRSD-Accepted Credit Needs (lbs/yr)
Under DEQ-Approved TMDL Action Plan and Subparagraph 1.c. of this Agreement
[As Accepted by HRSD After DEQ Approval of City's TMDL Action Plan]***

Parameter	James River Basin			Little Creek Watershed		
	2nd Permit Cycle	3rd Permit Cycle	Total Both Cycles	2nd Permit Cycle	3rd Permit Cycle	Total Both Cycles
TN	TBD	TBD	TBD	TBD	TBD	TBD
TP	TBD	TBD	TBD	TBD	TBD	TBD
TSS	TBD	TBD	TBD	TBD	TBD	TBD

For any credit need noted as “To Be Determined” or “TBD,” please refer to Paragraph 1.c. for process for updating and reissuing this Attachment A.

Little Creek Watershed credits as shown in Section 1 above and to be determined in Section 2 above will become part of this Agreement upon inclusion of the Little Creek Watershed as part of the James River Basin for the purposes of the Chesapeake Bay TMDL by DEQ and credits provided effective upon HRSD receiving notice of such action.

**HAMPTON ROADS WATER QUALITY CREDIT AGREEMENT
FOR CHESAPEAKE BAY RESTORATION
ATTACHMENT B**

Annual Water Quality Credit Transfer Form

Instructions: To be completed and executed by HRSD and delivered to the City on or before each May 20 immediately following the calendar year of credit generation by HRSD.

By execution and delivery of this Annual Credit Transfer Form, HRSD transfers the following water quality credits in the amounts specified to the City in accordance with, and for the specific and limited purposes of, the Hampton Roads Water Quality Credit Agreement for Chesapeake Bay Restoration.

Transferor: Hampton Roads Sanitation District

Transferee (MS4): City of Norfolk, Virginia

Year Credits Generated: _____

Date Credits Transfer: _____

River Basin	TN (lbs/yr)	TP (lbs/yr)	TSS (lbs/yr)
James			
Little Creek			

Signed (for HRSD): _____

Name (Print): _____

Title: _____

HAMPTON ROADS WATER QUALITY CREDIT AGREEMENT
FOR CHESAPEAKE BAY RESTORATION
ATTACHMENT C

Draft Provision for the use of HRSD-Generated Water Quality Credits for MS4
Chesapeake Bay TMDL Action Plan Development

The intent of this plan is the generation and use of TN, TP and TSS credits before and during operation of the SWIFT Project in collaboration with HRSD pursuant to the Hampton Roads Water Quality Credit Agreement for Chesapeake Bay Restoration to which the City and HRSD are signatories. This compliance method is in lieu of more traditional stormwater retrofit projects, which may not be feasible to execute on a condensed 10-year schedule (i.e., Second and Third Bay TMDL Permit Cycles). Not only does this method have the advantage of more reliably meeting the MS4 Permit's short deadlines, but it is also beneficial to the public in that it will meet the City's Chesapeake Bay TMDL reduction goals more cost-effectively than otherwise possible. This component of the plan is fully in accordance with Virginia Code §62.1-44.19:21 (TN and TP) and §62.1-44.19:21.1 (TSS). the quantity of reduction credits from the SWIFT Project that are allocated to this TMDL Action Plan for the James River Basin are _____ lbs/yr TN, _____ lbs/yr TP, and _____ lbs/yr TSS and for the Little Creek Watershed are _____ lbs/yr TN, _____ lbs/yr TP, and _____ lbs/yr TSS (subject to the Little Creek Watershed inclusion as part of the James River Basin by DEQ).