

REGIONAL COOPERATION IN STORMWATER MANAGEMENT

FISCAL YEAR 2022

A STATUS REPORT

This report was included in the HRPDC Work Program for FY 2022, approved by the Commission at its Executive Committee Meeting on May 20, 2021

**Prepared by the staff of the
Hampton Roads Planning District Commission
in cooperation with the
Regional Stormwater Workgroup**

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REPORT DOCUMENTATION

TITLE

**Regional Cooperation in Stormwater
Management Fiscal Year 2022:
A Status Report**

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ABSTRACT

This document describes cooperative activities related to stormwater management undertaken by Hampton Roads local governments during Fiscal Year 2022. The activities described include the regional information exchange process, public information and education, legislative and regulatory issues, cooperative regional studies and related programs. This document is used by the region's eleven localities with municipal stormwater permits to assist them in meeting their permit requirements.

ACKNOWLEDGMENTS

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The seventeen-member local governments through the HRPDC Regional Stormwater Management Program provided funding.

INTRODUCTION

Working through the Hampton Roads Planning District Commission (HRPDC), the region's seventeen-member cities, counties, and town (Figure 1) cooperated on a variety of stormwater management activities during Fiscal Year 2022. This cooperative effort has been underway as a formal adjunct to the Virginia Pollutant Discharge Elimination System Permits (VPDES) for Municipal Separate Storm Sewer Systems (MS4) held by the Cities of Chesapeake, Hampton, Newport News, Norfolk, Portsmouth, and Virginia Beach since Fiscal Year 1996. The Cities of Suffolk, Poquoson, Williamsburg, and the Counties of James City County, Isle of Wight, and York joined in 2002 to coordinate Phase II MS4 permit applications. Cooperative activities documented in this report represent a continuation of an ongoing effort, which has involved concerted activity since 1992.

As of April 19, 2016, the Phase II MS4 permit for Isle of Wight County was terminated by the Department of Environmental Quality (DEQ). It was determined that the County does not own or operate a MS4 within the Census Urbanized Area.

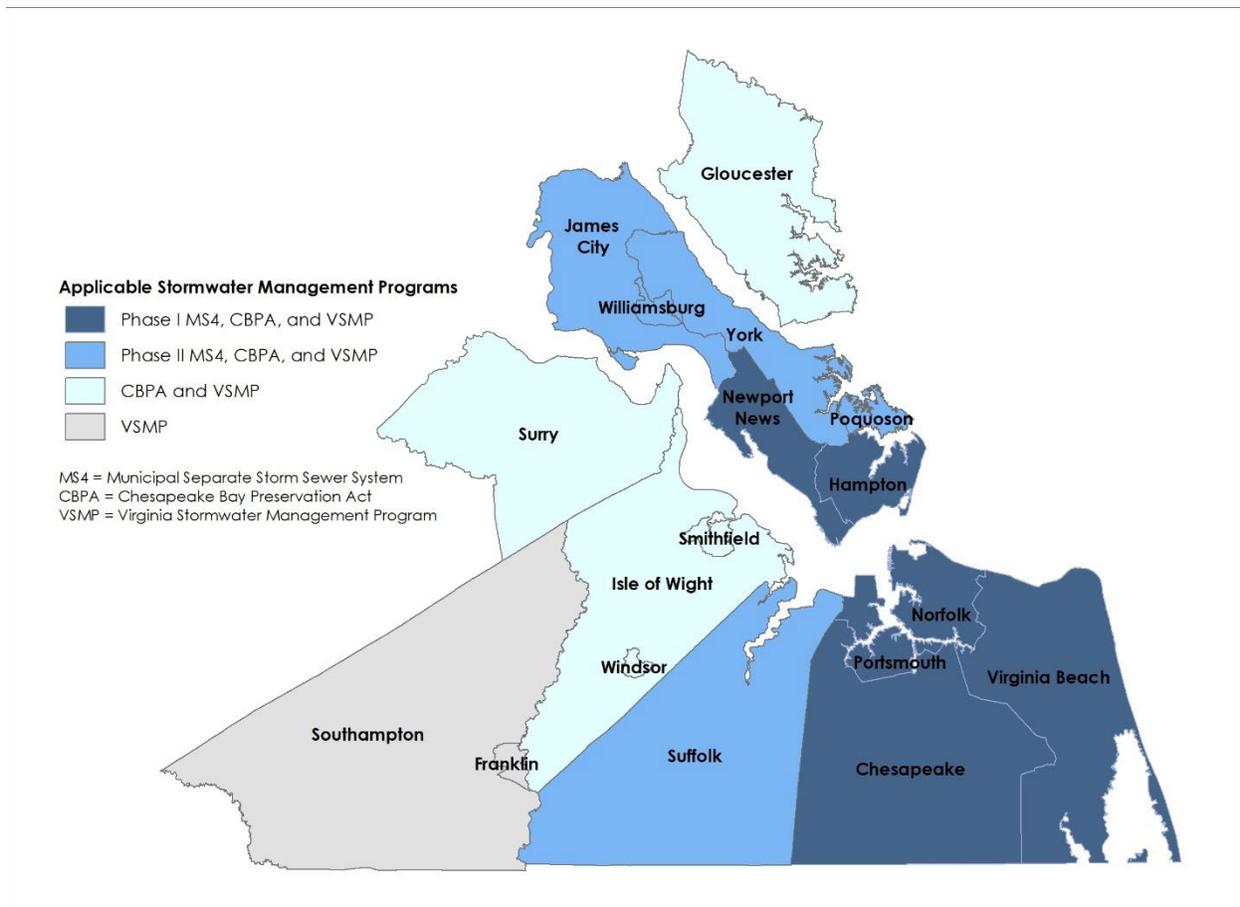


Figure 1

REGIONAL STORMWATER MANAGEMENT PROGRAM GOALS

The HRPDC and local stormwater staffs undertook a comprehensive effort in FY 1999, called the Regional Loading Study. The project included developing a set of regional stormwater management goals to guide the regional program. The goals were presented to and adopted by the HRPDC at its Executive Committee Meeting in September 1999. They were reaffirmed in the January 2003 approval of the “Memorandum of Agreement (MOA) Establishing the Hampton Roads Regional Stormwater Management Program” and the renewal of the MOA in 2008, 2013, and 2018. The adopted Regional Stormwater Management Program Goals, which guide the regional program, are:

- Manage stormwater quantity and quality to the maximum extent practicable (MEP).
 - Implement best management practices (BMPs) and retrofit flood control projects to provide water quality benefits.
 - Support site planning and plan review activities.
 - Manage pesticide, herbicide, and fertilizer applications.
- Implement public information activities to increase citizen awareness and support for the program.
- Meet the following needs of citizens:
 - Address flooding and drainage problems.
 - Maintain the stormwater infrastructure.
 - Protect waterways.
 - Provide the appropriate funding for the program.
- Implement cost-effective and flexible program components.
- Satisfy VPDES stormwater permit requirements.
 - Enhance erosion and sedimentation control.
 - Manage illicit discharges, spill response, and remediation.

THE REGIONAL PROGRAM

The Regional Stormwater Management Program initially focused on activities that supported the permit compliance efforts of the six communities with Phase I VPDES MS4 Permits, technical assistance to the region’s non-permitted communities and regional education and training to support all of the communities. The program has expanded to include the needs of the five communities with Phase II VPDES MS4 permits and the development of locally administered Stormwater Programs which were required starting July 1, 2014.

Phase I MS4 Permittees

The current Phase I MS4 permits became effective on July 1, 2016, were scheduled to expire on June 30, 2021, and were administratively continued. FY 2022 represented the sixth year in the

permit cycle. The annual regional coordination meeting with the Virginia Department of Transportation (VDOT) was held virtually on May 5, 2022.

Phase II MS4 Permittees

The Phase II General Permit was reissued on November 1, 2018. FY 2022 represents the fourth year in the permit cycle.

Both the Phase I and Phase II MS4 permittees continue to implement their local Stormwater Programs, train staff on stormwater issues, and meet education and outreach requirements. HRPDC staff provided information and coordinated trainings to assist with these efforts. More detailed descriptions are available in the *Training* section of this report. The regional environmental education initiative, askHRgreen.org, conducted stormwater outreach campaigns for pet waste pickup, environmentally friendly lawn care, and proper disposal of household hazardous waste.

INFORMATION EXCHANGE

The cornerstone of the Regional Stormwater Management Program continues to be the exchange of information. This is accomplished through regular monthly meetings to address topics of regional importance, as well as crosscutting issues that affect local stormwater, planning, public works, and public utilities staff. In addition, various agencies and organizations utilize this regional forum to engage and inform local governments, as well as to gather feedback.

Regional Environmental Committee

The seventeen communities participate in the HRPDC Regional Stormwater Management Program and their staffs meet regularly. The HRPDC Regional Environmental Committee meets monthly and includes local stormwater and planning staff plus cooperating agencies such as the DEQ, the Virginia Department of Forestry (VDOF), the Virginia Department of Transportation (VDOT), the Hampton Roads Sanitation District (HRSD), the Port of Virginia, local nonprofit organizations, and local consultants.

Representatives of state and federal agencies frequently brief the Committee on developing issues, regulatory guidance, and technical programs. In October 2021, the Committee was briefed by Ms. Bettina Bergoo and Mr. Allan Berryhill of the Virginia Department of Energy on clean energy financing options. Additionally, representatives from the DEQ, including Director Mike Rolband, Ms. Erin Belt, Ms. Laura McKay, and Mr. Jeff Flood, shared updates on DEQ's initiatives, including solar field plan review and programs to manage abandoned and derelict vessels.

Regional Stormwater Workgroup

The Regional Stormwater Workgroup typically meets monthly, and the meetings provide an opportunity for local stormwater managers to exchange information about successful program activities, utility structures and policies, and technical challenges.

During FY 2022, the Workgroup focused on topics such as funding sources like the Community Flood Preparedness Fund and the Stormwater Local Assistance Fund, the draft 2024 MS4 Phase II General Permit, and the new land use data from the Chesapeake Bay Program. More information on these initiatives is included in the Regional Studies section of the report.

Regional Chesapeake Bay Preservation Area Workgroup

Fifteen of the seventeen HRPDC member localities implement Chesapeake Bay Preservation Area (CBPA) programs, many of them since 1990. DEQ has completed compliance reviews of the region's local programs every five years since they were initiated.

The Regional CBPA Workgroup met several times during FY 2022, including in October, January, April, and a special meeting with DEQ Central Office staff in June. The Workgroup focused on the proposed guidance to implement the climate change amendments to the CBPA Designation and Management Regulations and the regional CBPA outreach campaign that is expected to launch in FY 2023. More information is presented in the Policy Monitoring section of this report.

Regional Water Quality Technical Workgroup

The objectives of the Water Quality Technical Workgroup are to discuss technical aspects of restoration projects, discuss research and development of stormwater management strategies, help set regional priorities for approval of BMPs for the Bay TMDL, identify needs for local TMDLs, and develop research priorities for filling data gaps. Meetings are open to the public.

In FY 2022, the first meeting was held in December and featured Dr. Raul Gonzalez and Mr. David Keeling from HRSD presenting an overview of the microbial source tracking program. In March, representatives from the Northern Virginia Regional Commission, Contech Engineered Solutions, and the DEQ joined us to discuss the 2021 guidance for the use of stormwater proprietary best management practices (BMPs). And finally, in May, Dr. Jon Hathaway from the University of Tennessee presented his research on smart stormwater controls.

HRPDC staff in conjunction with the regional Stormwater Managers decided to change the format of this Workgroup moving forward. Rather than have regularly scheduled meetings, HRPDC staff will instead host seminars and discussions of water quality technical topics as warranted and adjust the schedule based on speaker availability.

PUBLIC EDUCATION

askHRgreen.org

The HR STORM committee, consisting of local stormwater education/public information staff, was established in 1997 to support development and operation of the stormwater education program. Beginning in FY 2011, the HRPDC environmental education programs were combined into a single public awareness program and central resource for environmental education in Hampton Roads known as askHRgreen.org. FY 2022 marked the 10th anniversary of askHRgreen.org.

The stormwater education subcommittee of askHRgreen.org continues to meet monthly to develop strategies to fulfill the outreach requirements of the Phase II MS4 General Permit and many of the outreach objectives of the individual Phase I MS4 permits. During FY 2022, the committee updated the materials for scoop-the-poop messaging, developed new campaign materials for the proper disposal of household hazardous waste, created car wash kits, and hosted rain barrel workshops. More information is provided in the askHRgreen.org Annual Report.

TRAINING

Since 2004, HRPDC staff has worked with the MS4 permittees to develop and facilitate stormwater and resiliency training programs for local government staff.

Center for Watershed Protection Group Membership

Over the last several years, the Stormwater Managers have found the annual Center for Watershed Protection (CWP) webcast series to be useful and informative. The Regional Stormwater Workgroup purchased a group membership that made over 100 local government staff across the region members of CWP. Benefits of membership include access to the webcast series, access to lunch-and-learn presentations, and conference discounts. HRPDC staff manages the group membership, and the Hampton Roads localities take advantage of a discounted membership rate.

The CWP webcasts during FY 2022 covered the following topics of interest: 1) Public Involvement and Education Programs, 2) Post-Construction Stormwater Management, 3) Climate Resilience Strategies, 4) Tools and Technologies to Evaluate Watersheds, 5) Fertilizer Education, and 6) Using Drone Mapping for Water Quality Improvement Projects.

Training Resources

Due to concerns associated with COVID-19, several organizations shifted their training delivery methods from in-person workshops to webinars. In FY 2021, HRPDC staff began compiling information about these resources in one place to help Regional Stormwater Workgroup members take advantage of the opportunities. In FY 2022, some training continued to be offered virtually, while some events transitioned back to in-person formats. Each week throughout FY 2022, HRPDC staff distributed a combined list of online and in-person training events that include the provider, the schedule, the cost, and the registration links.

POLICY MONITORING

This element of the program involves monitoring state and federal legislative and regulatory activities that may impact local stormwater management programs. HRPDC staff, in cooperation with the Committee, develops consensus positions for consideration by the Commission and local governments. The level of effort devoted to this element has increased significantly over the years. During FY 2022, HRPDC staff has participated in the following state regulatory actions and guidance development: 1) 2023 Phase II MS4 General Permit negotiations, 2) Erosion and

Stormwater Management Program regulations, 3) Local Water Quality Protection guidance memo for nutrient trading, 4) the guidance to implement the climate change provisions of the CBPA regulations, 5) the regulatory update for changes to stormwater fees, 6) the revisions to the SLAF guidelines, 7) the guidance for proprietary BMP approval, 8) tree preservation and planting initiatives 9) the numeric turbidity criteria, and 10) revisions to the post-construction water quality criteria. HRPDC staff provided updates to the Regional Stormwater Workgroup and/or the Regional Environmental Committee, collected input from local practitioners, and when appropriate, submitted comments on behalf of the region.

2023 Phase II MS4 General Permit

The Phase II MS4 General Permit expires on October 31, 2023. The DEQ convened a Technical Advisory Committee (TAC), which includes representatives from the City of Suffolk and the HRPDC. The TAC met five times during FY 2022 and is continuing to meet into FY 2023. The DEQ has provided a few rounds of draft permit language for the TAC's review. Some of the changes proposed include: 1) using the e-reporting system for annual reporting, 2) adding clarification language that is specific to non-traditional permittees, 3) requiring more specific evaluation of stormwater outfalls, and 4) adding new requirements for pollution prevention standard operating procedures. The DEQ intends to submit a final draft to the USEPA in September 2022 and to the State Water Control Board (SWCB) in December 2022. Once approved, the DEQ will initiate the formal public comment period. After considering recommended changes, the DEQ will finalize the permit and seek SWCB approval. The new permit is expected to be effective on November 1, 2023.

Virginia Erosion and Stormwater Management Program Regulations

The DEQ convened a Regulatory Advisory Panel (RAP) to develop regulations in response to the 2016 consolidated law, the Virginia Erosion and Stormwater Management Act (VESMA). The intention was to develop a combined regulation that is easier to follow but does not change the technical requirements of the existing Erosion and Sediment Control (ESC) and Stormwater Management (VSMP) regulations. HRPDC staff and representatives from the Cities of Chesapeake and Suffolk serve on the RAP, which met five times between June and December in 2019. Due to staffing challenges and delays due to COVID-19, there was no activity for two-and-a-half years.

Then on June 22, 2022, for the first time in the process, the DEQ provided a comprehensive draft of the consolidated regulation for RAP members to review. The sixth meeting was held on July 15, 2022. The regulation is limited in scope and can only include the administrative updates that are part of the 2016 consolidated law. The proposed draft includes three sections: 1) definitions, 2) program administration, and 3) technical requirements.

Localities who are currently Virginia Stormwater Management Program (VSMP) Authorities will transition to Virginia Erosion and Stormwater Management Program (VESMP) Authorities, though the DEQ has indicated that they do not expect local programs to change the way they

administer their ESC and VSMP programs once the consolidated regulations are finalized. HRPDC staff will continue to provide regular updates.

Virginia Nutrient Trading Regulations

In 2012, the Virginia General Assembly passed legislation requiring the SWCB to adopt regulations for the certification of nonpoint source nutrient credits. With this regulation, Virginia's trading program now involves the following types of exchanges: 1) between point sources, 2) from point to nonpoint sources, and 3) from nonpoint sources to point or nonpoint sources. This expanded trading program is part of the overall goal of meeting the reductions assigned by the Chesapeake Bay TMDL.

The regulation establishes the process for the certification of nonpoint source nitrogen and phosphorus nutrient credits and assure the generation of the credits. The regulation includes application procedures, baseline requirements, credit calculation procedures, release and registration of credits, compliance and reporting requirements for nutrient credit-generating entities, enforcement requirements, application fees, and financial assurance requirements.

The regulation was in development for several years and included a few rounds of public comment. From FY 2013 to FY 2020, HRPDC staff served on the RAP established to assist the DEQ in developing the certification regulations. The new regulations became effective on September 1, 2020. However, the section detailing the impact of local water impairments on credit exchanges (9VAC25-900-91) was deferred by the SWCB. The SWCB directed DEQ to convene a stakeholder group to develop a Local Water Quality Protection guidance memo to provide instructions for how to implement section 91. The stakeholder group met six times during FY 2021. The guidance memo includes examples of credit use and instructions for using the DEQ's Nutrient Credit Viewer.

The deferred section became effective on January 1, 2021; however, the Local Water Quality Protections guidance memo was not approved until a year later. Once the guidance memo was published on the Virginia Register, the HRPDC submitted a regional comment letter reminding the DEQ of our continued interest in having a template or a checklist made available to localities for developing Comprehensive Stormwater Management Plans. By implementing these plans, Hampton Roads localities could provide nutrient credits and further protect the quality of their local waterways by providing internal banking opportunities.

Virginia CBPA Designation and Management Regulation

Chapter 1207 of the 2020 Acts of Assembly amended the Chesapeake Bay Preservation Act ("Bay Act") to include "coastal resilience and adaptation to sea level rise and climate change" and "the preservation of mature trees or planting of trees as a water quality protection tool and as a means of providing other natural resource benefits" to the criteria requirements for use by local governments in granting, denying, or modifying requests to rezone, subdivide, or use and develop land in CBPAs. Adding these new criteria necessitated updates to the CBPA Designation and Management regulation. The regulatory revisions were exempt from the traditional Notice

of Intended Regulatory Action and Regulatory Advisory Panel process in accordance with the provision.

The SWCB approved the revised regulation on June 29, 2021. The language was improved from the first draft; however, some concerns about the definition of adaptation measures and how to best assess storm surge on individual lots remain. The final regulatory amendments became effective on September 29, 2021 and localities have three years to implement the changes to their programs.

The DEQ has a grant to work with the Virginia Institute of Marine Science (VIMS) and the Virginia Coastal Policy Center (VCPC) to develop guidance to assist local governments in implementing the climate change provisions of the CBPA Designation and Management Regulations. The stakeholder group, including HRPDC staff and representatives from the Cities of Hampton and Virginia Beach, met twice during FY 2022. The first meeting, held October 7, 2021, was intended to provide input on what should be included in the guidance. The first draft of the proposed guidance was provided to the stakeholder group in early April ahead of the second meeting, which was held on April 20, 2022.

In conjunction with the Regional CBPA Workgroup, HRPDC staff submitted extensive comments on the draft, which featured the following priority concerns: 1) the lack of instructions for local government implementation, 2) overstepping the requirements included in the regulation, and 3) the need for examples and instructions for the resilience assessment. The DEQ Central Office staff requested a meeting with the Regional CBPA Workgroup to discuss the draft guidance. HRPDC staff arranged the meeting, which was held on June 16, 2022. It is anticipated that the DEQ will provide a revised final draft of the guidance for the stakeholder group to review prior to publishing it in the Virginia Register. HRPDC staff will continue to closely follow the development of the guidance.

After this guidance is finalized, the DEQ's next step will be to develop guidance for the implementation of the other aspect of the CBPA regulatory amendments, the mature tree provisions. It is anticipated that the effort to update the *Riparian Buffers Modification and Mitigation Manual* will begin in FY 2023.

Permitting and Application Fees for the Virginia Stormwater Management Program

During the 2021 Acts of Assembly, Special Session I, a budget amendment was approved that required DEQ to set VSMP and MS4 permit fees to “an amount representing no less than 60 percent, not to exceed 62 percent, of the direct costs for the administration, compliance, and enforcement...” The DEQ convened a RAP to review their administrative, compliance, and enforcement costs, the projected fee deficit, and the subsequent proposed increases to permit fees. HRPDC staff serve on the RAP, which met in February and April of FY 2022. Based on the cost data provided by the DEQ, fees could increase significantly, as much as 119% for MS4 annual permit maintenance and 86% for Construction General Permit fees. The DEQ has paused this effort for the time being. A third RAP meeting was scheduled for June, but it has been postponed

indefinitely. HRPDC staff will continue to monitor this initiative.

Stormwater Local Assistance Fund Guidelines

As required by the amendments to the Code of Virginia (§ 62.1-44.15:29.1) during the 2021 Special Session I Acts of Assembly, the DEQ is updating the Stormwater Local Assistance Fund Guidelines to allow for the award of grants for eligible projects in localities with high or above average fiscal stress to account for more than 50 percent of the costs of a project and to incorporate total nitrogen (TN) reductions in the scoring criteria. In FY 2022, the DEQ convened a stakeholder group, including representatives from the Cities of Norfolk and Suffolk, VAMSA, and the HRPDC. The group met four times in February and March of 2022. At first, the DEQ staff proposed using either TP or TN removal to determine the cost-effectiveness of a project; however, there was significant support to combine the pollutant removals by converting TN reductions to TP and then calculating the cost-effectiveness to make it easier to compare applications to one another.

In conjunction with the Regional Stormwater Workgroup, the HRPDC submitted a regional comment letter that suggested a sliding scale that would allow projects with cost effectiveness greater than \$50,000 per pound of nutrients to qualify for a smaller award, say 30% of the cost of the project, and conversely, allow particularly cost-effective projects that achieve lower than \$50,000 per pound of nutrients to receive more than 50% of the project cost. The letter also included a suggestion to award points for co-benefits so that water quality improvement projects that also help to address flooding would be more competitive.

The DEQ initiated a formal public comment period on the revised guidelines that closed on August 17, 2022. The solicitation for the 2022 SLAF grants is currently open and closes on October 3, 2022.

Proprietary BMPs for Stormwater Compliance

The post-construction water quality requirements require approval from the DEQ for use of proprietary BMPs in Virginia. The Stormwater BMP Clearinghouse Committee was established to provide guidance to the DEQ on BMP listing criteria, Clearinghouse website content, and database design.

The Committee met once in FY 2021, on December 10, 2020, and the agenda was focused on implementing House Bill 882, which passed during the 2020 General Assembly session. The bill requires manufacturers to submit certification documentation from either the Washington State TAPE program or from the NJ Department of Environmental Protection by December 31, 2021 to have their device remain listed on the BMP Clearinghouse. This change provided more consistent requirements for approval and prevented DEQ from having to take the time to review performance data. The DEQ presented a revised guidance during the meeting and asked for feedback.

The DEQ finalized the guidance in September 2021. Then the 2022 General Assembly passed

House Bill 1224, which now allows for the DEQ to certify manufactured treatment devices (MTDs). HRPDC staff hosted a webinar with Contech Engineered Solutions, Northern Virginia Regional Commission, and DEQ staff on March 24, 2022 to discuss the status of the MTD approval process, during which DEQ staff indicated that the 2021 guidance is inconsistent with state law and will be revised. The original guidance document (GM21-2008) has been rescinded with no replacement to date. Proprietary BMPs are a focus of the 2023 Virginia Stormwater Handbook, which is currently in development.

Tree Policy

Senate Bill 1393 of the 2021 General Assembly session directed the Secretaries of Natural Resources and Agriculture and Forestry to convene a stakeholder group to develop policy recommendations to encourage the conservation of mature trees and tree cover on sites being developed, increase tree canopy cover in communities, and encourage the planting of trees. This group included representatives from the Cities of Chesapeake, Hampton, and Norfolk, as well as the HRPDC, and the meetings were held on June 28, 2021 and August 25, 2021.

The report, *A Study of Tree Conservation and Preservation in Development*, was submitted to the Secretaries in November of 2021. The recommendations included: 1) grant all localities the authority to enact a tree canopy ordinance that requires preservation of trees during the development process, and 2) enable localities to increase the minimum tree canopy required beyond what is specified in the code.

Both recommendations were proposed in the 2022 General Assembly session. Senate Bill 537 passed and allows any locality to adopt an ordinance for the planting and replacement of trees during development. However, the proposal to remove the limit on the tree canopy provisions did not pass. Instead, the proposal is required to be reevaluated by another stakeholder group and will have to be reenacted by the 2023 General Assembly to become effective.

Trees as BMPs Stakeholder Advisory Group

The General Assembly passed House Bill 520 in 2020, which required the DEQ to convene a stakeholder group to study the planting or preservation of trees as: 1) an urban land cover type, and 2) a stormwater BMP. The SAG met twice, in September 2021 and October 2021, and HRPDC staff participated in both meetings.

Currently, there are three land cover types included in the Runoff Reduction Method spreadsheet, and the SAG discussed whether it would be appropriate to include urban tree canopy over impervious and/or urban tree canopy over pervious as new categories. The conclusion was that adding urban tree canopy over pervious should be considered but determining the runoff coefficient will require more study. The SAG also supported adding newly planted trees as BMPs on the Clearinghouse, recognizing that the pollutant load reductions are very small and likely only useful in ultra-urban environments. It was suggested that a subset of the SAG work together to develop the appropriate standards for the new BMP. HRPDC staff will continue to monitor this process.

Turbidity Criteria Development

The DEQ has narrative turbidity criteria in their regulations in combination with erosion and sediment protection measures for use in construction projects. The DEQ first held a stakeholder meeting in July 2020 to explore the various definitions for turbidity and available sources of data. The group also reviewed USEPA and state efforts to develop numeric criteria. The potential impact of numeric turbidity criteria on private and public construction projects is of concern to local governments.

In September 2020, the SWCB directed the DEQ to pursue regulatory action and create a RAP to amend existing water quality standards with numeric turbidity criteria. HRPDC is serving on the RAP, and the first meeting was held on August 10, 2021. The DEQ typically relies on federal guidelines for developing criteria, and the USEPA has not established numeric criteria for turbidity. Additionally, while most states have numeric turbidity criteria, few incorporate them into their stormwater construction permits so they are not often enforced. Several RAP members were reluctant to move forward, and there was interest in developing alternative approaches. No additional meetings have been scheduled for this RAP at this time.

Revisions to Post-construction Water Quality Criteria

New development projects must be designed to meet post-construction stormwater criteria not to exceed 0.41 lbs TP/acre/year, as required by the VSMP regulation (9VAC25-870-63). Within the regulation, this value, considered “nutrient neutral”, was to be reviewed following completion of the 2017 Chesapeake Bay Phase III Watershed Implementation Plan. The original standard was developed based on assumptions for land use and loading rates when the regulations were developed. Since new land use data was being developed by the Chesapeake Bay Program, the DEQ began discussions with a small stakeholder group to determine next steps.

Several discussions were held in the Summer and Fall of 2021 between the DEQ, representatives from the Chesapeake Bay Program, HRPDC, and the Northern Virginia Regional Commission. Once the land use data became available, a re-evaluation of the standard could be conducted. An alternative calculation was being developed by modelers with the Chesapeake Bay Program, using the Chesapeake Assessment and Scenario Tool (CAST) which represents the watershed model used by the Bay Program.

High-resolution land cover, land use, and land use change data between 2013/14 and 2017/18 was available in the Spring of 2022 and a meeting was held to work through calculations. HRPDC staff briefed stormwater managers of these developments. However, there has not been any additional meetings of the small stakeholder group, and it is unclear what the next steps will be for evaluation of the criteria. HRPDC staff will continue to follow up on the review of the criteria.

REGIONAL STUDIES

Regional Water Quality Monitoring Program

In FY 2014, the HRPDC and the Phase I MS4 localities partnered with the USGS and the HRSD to create the Hampton Roads Regional Water Quality Monitoring Program (RWQMP). The purpose of the study is to characterize the sediment and nutrient loadings from the major urban land-uses in the Hampton Roads region. The measured sediment and nutrient loads will be compared to the loading rates in the Chesapeake Bay Watershed Model and used to improve the accuracy of the model in the Coastal Plain. In FY 2015, the locations of the 12 stations (2 per Phase I MS4 permittee) were selected, and seven stations were installed. In FY 2016, three additional stations were installed. In FY 2017, the remaining two stations were brought online. Since then, all twelve stations continued to collect storm event and baseflow samples, which are analyzed for nutrients and sediments. The stations continuously monitor flow, turbidity, temperature, and conductivity. Additional information on the project objectives, site locations, and data collected can be viewed here: <http://va.water.usgs.gov/HRstormwater/index.html>.

The RWQMP was incorporated into the Phase I MS4 permits. HRPDC staff develops an Annual Report that includes the locations of monitoring stations, a summary of available data, and an interpretation of the data to include in the Phase I MS4 Annual Reports. The report is based on the annual update presented to the Regional Stormwater Workgroup by Mr. Aaron Porter (USGS). The data for FY 2022 continue to show similar trends as previous years, as detailed in the Annual Report.

The Science and Technical Advisory Committee (STAC) of the Chesapeake Bay Program regularly holds workshops designed to formulate recommendations from the scientific and technical community. In 2023, there will be a STAC workshop to identify how the data from the RWQMP, coupled with data from other urban networks, will be included in the next iteration of the Bay watershed model.

PCB TMDL

In FY 2014, the HRPDC partnered with the DEQ, Hampton Roads localities, and the HRSD to develop a study plan to collect stormwater samples from the Elizabeth River watershed and analyze them for polychlorinated biphenyl (PCB) concentrations to support the development of the Lower James and Elizabeth River PCB TMDL. Stations in the Cities of Chesapeake, Norfolk, Portsmouth, and Virginia Beach were selected because they met the criteria for representative land uses and watersheds where PCBs could be monitored. In FY 2015, water samples were collected at these stations by the HRSD and sent to the DEQ selected laboratory for PCB analysis. The MS4 permittees in Hampton Roads funded the data collection, and the DEQ paid for the analysis.

The DEQ was moving forward with the development of the Tidal James River, Elizabeth River, and Tidal Tributaries PCB TMDL in FY 2021. They released a public notice to solicit initial comments and requests to serve on the technical advisory committee (TAC). Several comments were submitted by the HRPDC on February 26, 2021, including: 1) a request to incorporate the

Hampton Roads data from FY 2015, 2) a request for the DEQ to conduct a thorough source identification analysis, 3) a request for more detail regarding the fish tissue and water quality attainment standards, 4) a request to incorporate PCB monitoring and pollutant reduction plans in industrial VPDES permits, and 5) a request for staff to serve on the TAC.

HRPDC staff arranged a meeting on June 8, 2021 for DEQ and regional Stormwater Managers to discuss: 1) how the development of the PCB TMDL will impact MS4 permits, 2) source identification, and 3) how inadvertent PCBs will be addressed in the TMDL. DEQ will take all of this into consideration when developing the TMDL but continues to use a land use-based approach for estimating loads and wasteload allocations.

The schedule for developing the TMDL has stalled, as the Upper James River TMDL needs to be determined before the TMDL for the Tidal James River can move forward.

Comparison of Stormwater Local Assistance Fund Awards

The Stormwater Local Assistance Fund (SLAF) has provided nearly \$140M for stormwater projects across the Commonwealth. The Stormwater Managers are interested in how the resources are distributed and which types of projects are most likely to be funded. During FY 2022, HRPDC staff conducted several analyses looking at trends in the program over the years. Staff compared the numbers of projects and dollars awarded to Hampton Roads, Northern Virginia, and Richmond-area localities, evaluated the most popular BMP types, and presented the results to the Regional Stormwater Workgroup.

Comparison of Community Flood Preparedness Fund Awards

In FY 2022, the Virginia Community Flood Preparedness Fund (CFPF) awarded over \$32M to regions and localities across Virginia to reduce the impacts of flooding. Several localities in Hampton Roads were awarded funding for resilience plans, stormwater upgrades, shoreline restoration, etc. HRPDC staff analyzed the numbers and types of projects awarded to Hampton Roads compared to other parts of the state for the first and second rounds of the program. The comparison was shared with the Regional Environmental Committee.

Stormwater Program Matrix

A comprehensive stormwater program matrix, including Phase I and Phase II MS4 permittees, was developed in FY 2000 to address both utility and programmatic issues. The matrix includes the rate structures, the type of bill, the frequency of billing, the number of utility customers, and program contact information. HRPDC staff coordinates with local government stormwater program staff to update the information in the matrix annually.

HRSD Microbial Source Tracking

HRSD began a pathogen program to conduct microbial source tracking in June 2015. The program was designed as a way to partner with local governments to focus source identification efforts. HRSD is providing sampling and analysis services while the local governments are providing staff time for the investigations. Several localities have taken advantage of the program including

Chesapeake, Hampton, Newport News, Norfolk, Virginia Beach, and Suffolk. Dr. Raul Gonzalez and Mr. David Keeling (HRSD) presented an update on the program in December 2021 to the Water Quality Technical Workgroup.

Updates to SSORS

The Hampton Roads localities and HRSD use the Sanitary Sewer Overflow Reporting System (SSORS) to report sanitary sewer overflows to the DEQ, the VDH, and local staff. The database automatically notifies those who are included on the list of spills within their locality. HRPDC staff reviewed the notifications list and identified several outdated or missing points-of-contact. The Directors of Utilities and Stormwater Managers had agreed that it was important for stormwater staff to be notified of sanitary sewer spills. Some localities have another internal communication system for making these notifications while others prefer to have stormwater staff on the SSORS notification list. HRPDC staff coordinated with each locality to update their individual list according to their preferences.

TECHNICAL ASSISTANCE

The HRPDC continues to serve as a clearinghouse for technical assistance to the localities, as well as a point of contact in arranging short-term assistance from one locality to another. The HRPDC Committee structure also provides a forum for state and federal regulatory agency staff to meet with the region's localities to discuss evolving stormwater management regulations and other emerging regulatory issues. In addition, HRPDC staff provides technical information and advice to all of the participating localities on a wide variety of issues upon request. In FY 2022, technical assistance to localities was focused on disseminating information related to implementation of and compliance with the Chesapeake Bay TMDL, providing training resources for local stormwater staff, and evaluating state regulatory activities for impacts to local government programs.

MEMORANDUM OF AGREEMENT

The Regional Stormwater Management Program was established in 1996 as a formal program of the Hampton Roads Planning District Commission with support and participation from the seventeen-member local governments, and FY 2021 marked the twenty-fifth anniversary of this collaboration. A MOA was created that outlines the basic regulatory and programmatic premises for the cooperative program, incorporating the Regional Program Goals, described earlier in this report. The MOA establishes a division of program responsibilities among the HRPDC and the participating localities, addresses questions of legal liability for program implementation, and includes other general provisions. The MOA is reauthorized by the signatories every five years and was most recently renewed in 2018.

RELATED PROGRAMS AND PROJECTS

In various combinations, the eleven MS4 communities, as well as their non-permitted counterpart communities, and HRPDC staff participate in a wide variety of related programs. These programs are noted here because of their relationship with stormwater management.

Chesapeake Bay Program Participation

The Chesapeake Bay Program (CBP) is a regional partnership that has led and directed the restoration of the Chesapeake Bay since 1983. CBP partners include federal and state agencies, local governments, non-profit organizations and academic institutions. Partners work together through the CBP's goal teams, workgroups, and committees to collaborate, share information, and set goals.

Since the development of the Chesapeake Bay TMDL in December 2010, the Hampton Roads region has devoted considerable attention to the research, developments, and decisions ongoing within the CBP. HRPDC and locality staff have participated in the deliberations of many CBP committees and workgroups focused on urban stormwater, watershed planning, land use development, modeling, and local government's role in the Bay Program. HRPDC staff serves as a local government representative of the Urban Stormwater Workgroup, the BMP ad-hoc Verification Committee, and the Climate Resilience Workgroup. Staff serves as co-chair of the Land Use Workgroup and at-large member of the Water Quality Goal Implementation Team. During FY 2022, staff focused on: 1) building resiliency into urban stormwater BMPs, particularly with the RAND Corporation study to develop local intensity, duration, and frequency (IDF) curves for precipitation, 2) the new land use/land cover data, and 3) Phase 7 of the Bay model.

Through the Urban Stormwater Workgroup, HRPDC staff are informing the Bay Partnership of the resilience work being done in the region, sharing findings of analyses and policies, and advocating for research on the co-benefits of BMPs for water quality and flooding concerns. Through the Land Use Workgroup and a local review process, high-resolution land cover and land use data was provided to the localities in the Bay watershed. This high-quality data set can be used by the localities for land use planning, tree canopy assessments, or site selection studies for a variety of projects. HRPDC staff presented several talks on the new land use data to Bay Program workgroups, regional committees, and the American Planning Association (APA) Virginia.

HRPDC staff also attends meetings of the Principal Staff Committee (PSC), Management Board, Local Government Advisory Committee (LGAC), Modeling Team Workgroup (MTWG), and Watershed Technical Workgroup (WTWG) on an as needed basis. These meetings provide a high-level overview of policy-level decisions as well as technical insights on model development. In addition, staff meets monthly with staff from the Northern Virginia Regional Commission and the DEQ staff directly involved in decision-making for the Bay Program.

DEQ Contract with Planning District Commissions in the Bay Watershed

In partnership with the other Virginia planning districts in the Chesapeake Bay watershed, HRPDC continued the contract agreement with DEQ to provide support for implementation efforts related to Virginia's Chesapeake Bay TMDL Phase III Watershed Implementation Plan (WIP). The 2022 contract, which runs from January 1 to December 31, primarily focuses on efforts to evaluate the CBPA regulations in a changing climate and promote the program to the public. Work is primarily conducted in conjunction with the CBPA Workgroup with input from the Regional Stormwater Management Workgroup. The contract was used to fund the regional CBPA public outreach campaign, which includes partnering with Red Chalk Studios to create rack card brochures, short social-media friendly videos, targeted emails, display ads, and updates to the content on askHRgreen.org. The message is targeted to homeowners living near the water and residential contractors working in the Resource Protection Area. The campaign is expected to launch in early FY 2023.

In addition to these efforts, this contract supported the small watershed technical assistance grant through the National Fish and Wildlife Federation (NFWF) received by HRPDC, which is focused on tracking pollutant reductions from industrial property along local waterways that directly discharge to surface waters. More information on this project is provided below. Additionally, the contract helped HRPDC staff to coordinate with the Hampton Roads localities to review the new high-resolution land cover and land use data sets provided by the Chesapeake Conservancy and to identify ways to enhance diversity, equity, and inclusion as related to project implementation in the region.

Small Watershed Technical Assistance Grant

The HRPDC received a grant in September 2020 from the NFWF to conduct an evaluation of private industries willing to voluntarily implement and report large-scale BMPs on their property to reduce nutrients and/or mitigate flooding. Staff hired a NFWF Technical Service Provider, Whitman, Requardt & Associates, LLP for the evaluation. The project was completed in FY 2022, and staff presented the project at the 2022 Environment Virginia Symposium. The industrial partners indicated a willingness to report existing BMPs and were interested in implementing new projects especially those with multiple benefits and financial incentives. In May 2022, HRPDC staff expanded on this effort and submitted a Small Watershed Implementation proposal to implement a living shoreline and other BMPs on an industrial property. The intent of the project, if funded, is to develop a pilot for implementing and reporting BMPs and also to explore a mechanism for growing a coalition of the willing for industrial properties across the region.

Trading with HRSD

HRSD, HRPDC staff, and the MS4 permittees collaborated to develop a regional template for MOAs to establish the framework for trading pollutant reduction credits to comply with the Bay TMDL pollutant reduction requirements. Individual MOAs with each of the eleven MS4 permittees were signed in 2017.

Currently HRSD treatment plants operate well below design flows, as those were established to ensure capacity to support regional population projections in 2040 and beyond. Annual average flows in 2015 were approximately 60% of design flows. As a result of plant flows well below design flows in combination with significant investment in nutrient removal technologies, HRSD currently discharges nutrients and sediment significantly below permitted limits and is projected to do so for the foreseeable future. The difference between permitted mass load limits and current performance provides ample capacity to absorb load reductions required from stormwater dischargers in Hampton Roads through at least 2036. As mentioned above, a portion of the capacity credits available from HRSD's efforts are still available for MS4 needs to achieve TMDL compliance.

HRSD continues to move forward with their Sustainable Water Initiative for Tomorrow (SWIFT) project, their multi-year initiative that takes treated wastewater, purifies it to drinking water standards, and then injects it into the Potomac Aquifer. In addition to replenishing the water in the aquifer, the SWIFT project will significantly reduce the volume of treated wastewater reaching the James, York, and Elizabeth Rivers. The project will generate enough permanent nutrient and sediment credits to meet nearly all of the regional urban stormwater waste load allocations in the Chesapeake Bay TMDL. HRSD representatives have given several presentations on the project at the Regional Environmental Committee and Regional Stormwater Workgroup meetings.

Trading with HRSD, first using the capacity credits and then using the permanent credits from SWIFT, provides a cost-effective option for MS4 permittees to meet a portion of the waste load allocations of the Chesapeake Bay TMDL.

Resilient Stormwater Design Standards

In FY 2022, HRPDC staff continued to work with its member localities to develop recommendations for regional resilient design standards for stormwater and floodplain management. This includes sea level rise planning scenarios, future projected floodplains, tailwater elevations, rainfall intensity-duration-frequency values, and joint probability events. The ultimate goal of this effort is to develop regional analysis products and recommendations that can be used by localities to adopt climate-informed policies that account for future conditions. This effort builds on existing resources and tools from USACE, FEMA, the Chesapeake Bay Program, and individual localities.

Virginia Municipal Stormwater Association

Nine of the eleven MS4 permittees in Hampton Roads are members of the Virginia Municipal Stormwater Association (VAMSA). In FY 2022, those Stormwater Managers and HRPDC staff actively participated in VAMSA by presenting at member meetings, contributing to regulatory comment letters, and serving on several committees, including the Phase I MS4, Phase II MS4, Chesapeake Bay TMDL Tracking Team, and Grants committees.

Lower James River and York River Roundtables

During FY 2022, HRPDC staff have participated in meetings of the Lower James River and York River and Small Coastal Basins Roundtables. The Lower James Roundtable met three times during FY 2022. The discussions have been focused on pet waste education, VDOF's Trees for Clean Water grant program, and per- and polyfluoroalkyl substances (known as PFAS).

The York River and Small Coastal Basins Roundtable met in December 2021 and May 2022. The group is focused on public education, recognizing business practices for watershed resilience, grant applications to synthesize regional information on the health of the watershed, and habitat restoration. HRPDC staff are also part of the Habitat Restoration Committee, which meets monthly. This group is developing a plan to identify and prioritize wetland restoration and conservation practices in the York River coastal basins.

Living Shoreline Collaborative

The Living Shoreline Collaborative (LSC) is a partnership including non-profits, state agencies, local governments, HRPDC, Master Gardeners, contractors, and consultants whose goals are to build and share knowledge of living shorelines and promote their implementation in the tidal James River watershed. There are three focus areas: 1) monitoring, 2) training, and 3) implementation and outreach. The LSC presents an annual summit, holds quarterly meetings, and offers field visits. The partnership has also implemented three demonstration living shorelines and a floodplain restoration project. HRPDC staff has been participating with the Training Team, who is focused on developing content for a workshop to train contractors, property owners, and designers.

Virginia Bay Enhancement Working Group

HRPDC staff have been involved in efforts to identify needs for the beneficial reuse of dredge materials throughout the region. Starting in 2020, a Virginia Bay Enhancement Working Group (VA BEWG) was created, on behalf of Virginia's administration, to investigate the potential reuse of dredge materials from several deep channels in the lower main-stem of the Chesapeake Bay. As part of that group, local, regional, state, and federal entities tried to identify sites for beneficial reuse throughout the region, and a final matrix prioritizing sites was developed. While some sites were selected in the region, there was not enough information for a comprehensive assessment of needs for all of Hampton Roads. Additionally, a further assessment of other dredging opportunities beyond the main channels of the Bay was needed.

HRPDC staff are pursuing the development of a desktop analysis to determine the scope and extent of dredging projects in the Hampton Roads region. This will identify opportunities for the beneficial reuse of dredged material for shoreline rehabilitation and coastal resilience. The analysis would consist of the identification of dredge channels including location, type, material, schedule, and frequency. In addition, there are needs for: 1) an assessment of appropriate beneficial uses for different types of dredge material, 2) the identification of shorelines that could be appropriate placement sites, and 3) the identification of shorelines in need of material based on erosion or locality needs. In FY 2022, HRPDC staff engaged the US Army Corps of Engineers,

Norfolk District but determined that a Planning Assistance to States (PAS) funding opportunity was not a viable option. While the PAS funding wasn't a good fit, HRPDC staff are seeking other funds to move this project forward. The goal would be to develop a mapping tool for locality use that would connect dredge material with resilience needs across the region.

Elizabeth River Project's Initiatives

HRPDC staff served on several sub-committees, including Education, Water Quality, and Resilience and Sea Level Rise, contributing to the development of the updated Elizabeth River Watershed Action Plan. Through these efforts, HRPDC staff is assisting Elizabeth River Project (ERP) staff to identify financing strategies for implementation efforts throughout the Elizabeth River watershed. Mr. Joe Rieger (ERP) presented an overview of the plan to the Regional Environmental Committee in April 2022. The actions in the plan include achieving fair and equitable restoration of the River, collaborating with regional partners to become a model for resilience, restoring clean water, and cleaning up the contaminated river bottom sediments.

External Training Committee

The Office of Training Services of the DEQ established a new Committee, the External Training Committee, to serve the training needs of Erosion and Sediment Control (ESC) and Stormwater certified professionals. The Committee was tasked with identifying priority training topics and ensure training topics are prioritized, efficiently developed, and meet the needs of certified professionals. Representatives from DEQ, the consultant community, and local governments, including the City of Norfolk, Gloucester County, James City County, and HRPDC, make up the Committee. Using a survey tool, the Committee developed a preliminary list of priority training topics for Inspectors, Plan Reviewers, and Program Administrators, including energy balance examples, typical design site constraints, effective enforcement measures, and new ESC practices. The Committee reviewed these topics at a meeting on May 19, 2020; however, there has been no activity since then.

CONCLUSION

Through the Hampton Roads Planning District Commission, the seventeen localities of Hampton Roads have established a comprehensive Regional Stormwater Management Program. This program provides technical assistance, coordination, comprehensive technical studies and policy analyses, and stormwater education. The Regional Stormwater Management Program enables the region's localities to participate actively and effectively in state and federal regulatory matters. It has enhanced the ability of the eleven localities with VPDES Permits for their Municipal Separate Storm Sewer Systems to comply with permit requirements.

The Regional Stormwater Management Program provides a mechanism through which the strengths of the seventeen local stormwater programs can be mutually supportive. It allows for cost-effective compliance with permit requirements, resolution of citizen concerns with stormwater drainage and water quality matters, promotes regional consistency, and achievement of improved environmental quality throughout the Hampton Roads region.