Healthy Waters Program and the VNEMO in the Coastal Zone

FY12 Task 9

Final Report, Grant Period October 1, 2012 to June 30, 2014

Grant# NA12NOS4190168

Compiled by Todd Janeski, VCU, Department of Life Sciences

Virginia Department of Conservation and Recreation,

Division of Natural Heritage

This project was funded by the Virginia Coastal Program at the Department of Environmental Quality through Grant FY12: NA12NOS4190168 of the National Oceanic and Atmospheric Administration, Office of Ocean and Coastal Management, under the Coastal Zone Management Act of 1972, as amended.

Healthy Waters Program and the VNEMO in the Coastal Zone
FY12 Task 9
Final Report, Grant Period October 1, 2012 to June 30, 2014
Grant# NA12NOS4190168
Compiled by Todd Janeski, VCU, Department of Life Sciences
Virginia Department of Conservation and Recreation,
Division of Natural Heritage

Executive Summary

The VCU Environmental Scientist/Analyst, as retained by the Virginia Department of Conservation and Recreation (DCR) Division of Natural Heritage, continued to serve as the Program Manager of the Virginia Healthy Waters Program and the Virginia Coastal Nonpoint Source Pollution Control Program (CNP), Virginia Network of Education of Municipal Officials Program (VNEMO) at the Virginia Department of Conservation and Recreation. The VCU Environmental Analyst/ Program Manager focused these efforts to expand the implementation of the programs and directs workshops and educational opportunities to local decision makers. Through the VNEMO Program, the Program Manager also directs research and education on innovative stormwater management technologies at the Science Museum of Virginia.

Overview

The Environmental Analyst, at the Virginia Commonwealth University, continued to serve as the Program Manager at the Virginia Department of Conservation and Recreation. Due to the lack of dedicated NOAA Section 310 funding to support the 56 Management Measures as outlined in the 6217 Guidance, the focus of the Coastal NPS Program is the management and implementation of the Virginia Healthy Waters Program (HWP) and the administration and implementation of the Virginia Network for Education of Municipal Officials Program (VNEMO). The VCU Environmental Analyst/ Program Manager directs both the HWP and the VNEMO Program, focusing support to the regional planning district commissions and through regional educational and training events. During the reporting period, the Program Manager also directed the research development and outreach opportunities for innovative stormwater management technologies at the Science Museum of Virginia.

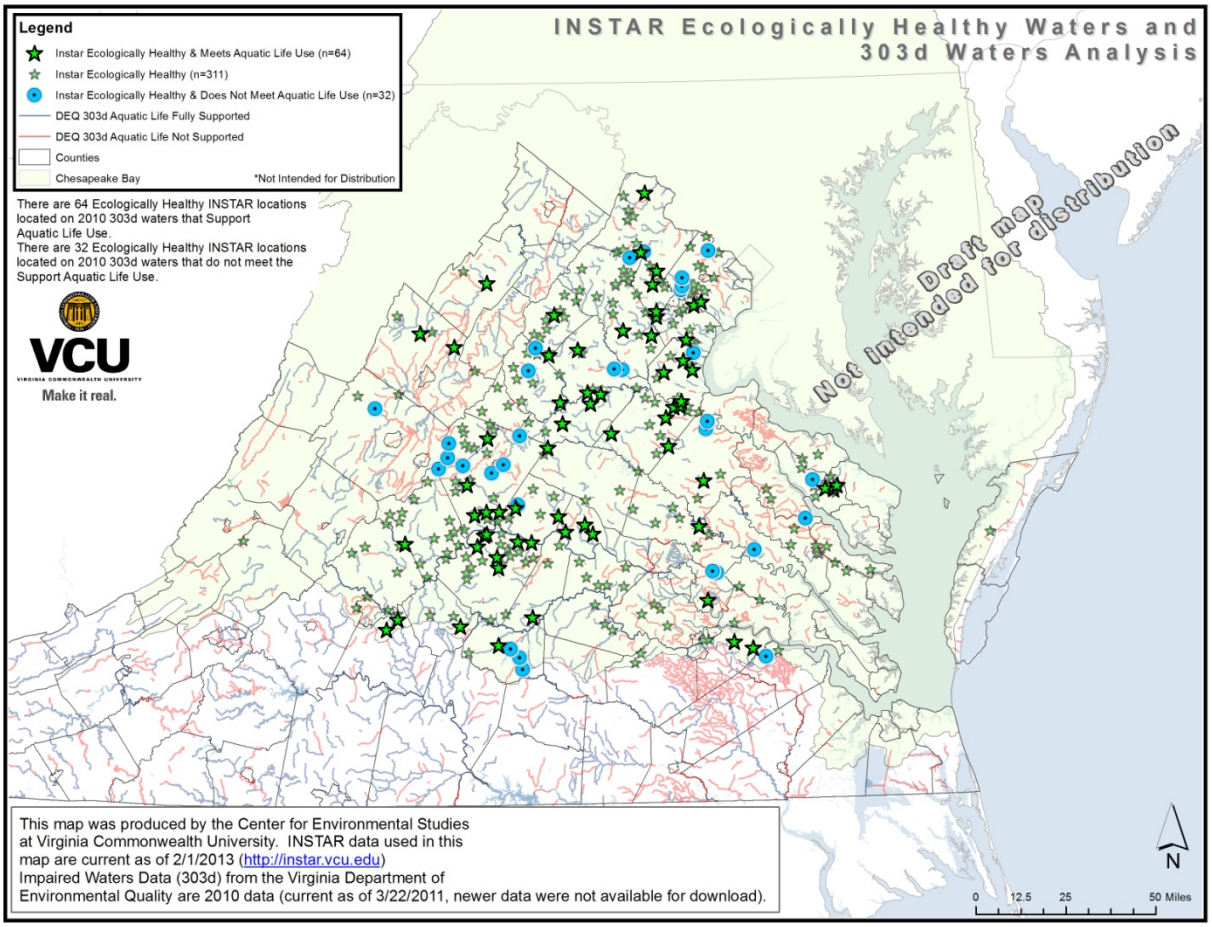
During the reporting period, the Program was formally moved from the Virginia DCR Division of Stormwater to the VDCR Division of Natural Heritage as the Program is currently focused on the development of data, identification of valuable natural areas and protection of those resources. The program functions in form as a land conservation effort. The Program Manager participated in the Chesapeake Bay Program Goal Implementation Team 4 Healthy Watersheds (GIT4) as the sole Virginia representative and HW Program Manager. The Goal Implementation Team 4 focused discussions on the development of state identified healthy resources. For the Commonwealth, the Program Manager produced and provided the Virginia ecologically healthy waters list for use in the Chesapeake Bay Program outreach documents. Included was the clarification that the Virginia Healthy Waters Program does not include those waters as identified in the VA Antidegredation Program such as Tier 2 or 3. During the reporting period, the Program Manager coordinated with the US EPA Healthy Watersheds Program manager to obtain services to assist in the development of a strategic plan to guide the expansion and growth of the Program. However, due to the re-organization of the Department of Conservation and

Recreations, the effort was tabled by upper level management. The Program Manager responded to a solicitation by the USEPA to provide technical assistance to advance the Virginia Healthy Waters Program. The Program Manager responded with a request for the EPA contractors to acquire specific biotic data to inform the development of a statewide modified Index of Biotic Integrity. The USEPA verbally committed to this support, however, in the final negotiations with the USEPA, an effort re-allocation process was implemented that resulted in the USEPAS not providing the promised support. This setback has been significant due to the lack of a statewide comparable database that this effort would have supplied.

The Program Manager continued the management of the +$2M, NFWF funded, project at the Virginia Science Museum. The Manager shares the Project Management role with the Director of Science at the Museum to facilitate full coverage of all aspects of project implementation. During the reporting period, the Program Manager directed the research aspects of the project, refining the treatment structures, modifying for enhanced performance and coordinating with outside interests for expanded monitoring research. The project was awarded a Virginia Green Award in October, 2012.

Trainings, Technical Assistance Delivery and Capacity Building

The Environmental Scientist supported the continued growth of the Healthy Waters Program by coordinating directly with the VA Department of Environmental Quality, the USEPA, NOAA, Nature Conservancy and other partners in the refinement of the definition and application of the Program. Continued discussions with staff from the DEQ included the Water Division Director, Office of Ecology and Infrastructure, Office of Water Monitoring and Assessments, and Office of Water Quality Programs; the USEPA Healthy Watersheds Program Manager and the Virginia State Chapter of the Nature Conservancy. The Program Manager responded to a solicitation by the USEPA to provide technical assistance to advance the Virginia Healthy Waters Program. The Program Manager responded with a request for the EPA contractors to acquire specific biotic data to inform the development of a statewide modified Index of Biotic Integrity. The USEPA verbally committed to this support, however, in the final negotiations with the USEPA, an effort re-allocation process was implemented that resulted in the USEPAS not providing the promised support. This setback has been significant due to the lack of a statewide comparable database that this effort would have supplied. During this period, the Program Manager met with the VA DEQ Water Division to illustrate a requested overlay of the VAHWI designated waterbodies to the VA 303d Impaired Waters list. The result of such was shown that the VAHWI data when compared to the VA DEQ 303d Aquatic Life use Standard (closest to an aquatic assessment) there was less than 15% of the impaired waters identified as Healthy by the INSTAR Program. Upon further discussions, it was determined there were variables included in the DEQ assessment that would skew the data; removing such concluded there to be less than 10% of the impaired waters as Healthy. In attendance at this meeting were DEQ representatives from the Water Division including the Division Director, Office of Ecology and Infrastructure, Office of Water Monitoring and Assessments, and Office of Water Quality Programs.



Project Management and Implementation

During the grant cycle, the Program Manager continued to co-manage the National Fish and Wildlife Foundation funded project to develop a low impact development research, testing, certification and training facility at the Virginia Science Museum. During this phase of the project, the Program Manager took the role of Research Director to guide the collection, analysis and expansion of data relevant to the treatment of urban stormwater. This project purpose is to demonstrate, teach and monitor such practices as bioretention, porous pavement, tree well filters, rainwater harvesting and green roof technologies in a controlled environment. The focus of the Project Manager has been the refinement of the treatment structures modifying for enhanced performance, and coordinating with outside interests for expanded monitoring research. The Program Manager provided direct TA to a land developer in the implementation of LID to address their stormwater management needs as part of their development proposal. This included the direct review and guidance in the design of the development proposal including revisions to lot layouts, incorporation of bioretention, porous pavement and reduction of impervious surfaces. The reporting period also included a detailed field tour of the installed stormwater treatment structures and presentation for the Middle James Roundtable on the economic and ecological benefits of low impact development.

The project has included an analysis of the City of Richmond Combined Sewer Overflow (CSO)

system and development of a CSO management plan that focuses on source control utilizing LID as a means of managing CSO events. A cost-benefit analysis communicating the economic benefits of using LID to solve the challenges of CSO issues was conducted by the Science Museum of Virginia Project Team, directed and lead by the Program Manager, concluding LID has significant positive impacts. The benefits of LID are multifold; the project demonstrates the environmental benefits of LID, the economic benefits of source control and the ability to address the hydrologic changes due to changes in climate.

Additionally, the Program Manager oversaw the installation of a 4000sq ft, green roof retrofitted on the IMAX theater roof demonstrating the environmental and economic benefits of this technology.

Science Museum of Virginia Green roof installation

The VCU Environmental Specialist/Analyst and Program Manager continues to partner with the Science Museum of Virginia, Virginia Tech, University of New Hampshire, VA Dept of Conservation, Alliance for the Chesapeake Bay, NOAA Coastal Services Center and Chesapeake Bay Program Office, and the City of Richmond. This diverse partnership has permitted the project to reach to industry, association, private businesses and the public sector by demonstrating on-the-ground retrofits of LID.

The VNEMO Program Manager participated in the Chesapeake Bay Program Goal Implementation Team Four (GIT4) Healthy Watersheds. This working group has brought together the various state Healthy Waters programs and developed communication materials illustrating the location of identified health resources. In addition, the GIT4 worked to develop a set of goals and strategies to inform the development of the 2014 Chesapeake Bay Watershed Agreement. The GIT 4 concluded Healthy Watersheds are defined as: *Many small watersheds in the Bay region are currently healthy but also at risk of degradation as the demand for local lands and resources increased. Promoting the long-term conservation and protection of healthy watershed systems through stakeholder engagement, collaboration and education is critical to the health of the larger ecosystem.*

Through this grant period, VCU continued to manage and provide a more user-friendly, updated version of the INSTAR online stream assessment decision support tool to be used by state, regional, and local planners to identify healthy streams and associated living resources within their jurisdiction. INSTAR and the Healthy Waters Program is an Inter-agency partnership led by VDCR, VCU, and VDEQ to identify and maintain watersheds with high ecological integrity. INSTAR is a multi-metric, biological and physical assessment of aquatic resources where field collected data is analyzed and compared against the data density to create a modeled reference condition (Virtual Stream Score) by which all other data is compared. The results of such an analysis produce a result which categorizes such data into Poor, Restorative, and Healthy.

Additionally, funding through this grant was reprogrammed to support the development of the Virginia Oyster Shell Recycling Program at the VCU Rice Rivers Center. Last summer, the Program Manager, through the Rice Rivers Center, piloted a near-zero budget project in the Richmond region as a proof-of-concept to collect business-generated shell and return it to the Virginia portion of the Bay. In four months, nearly six tons of shell was collected from four Richmond restaurants, and partnerships were developed with Virginia Green, Virginia Coastal Zone Management, Chesapeake Bay Foundation, City of Richmond, Tidewater Fiber Corporation and the Virginia Master Naturalists.

Since then, more than 15 tons of shell have been collected and currently is coming from 14 restaurants with three public collection locations (Yellow Umbrella Provisions, Little House Green Grocery and the Farmer’s Market at St. Stephen’s). The VOSRP also partners with Anderson's Neck Oyster Co., Ruby Salts Oyster Co., Chapel Creek Oyster Co., and Rappahannock Oyster Co., and many more. During this time, nearly 300 volunteer hours have been amassed, Whole Foods hosted the Program for a fund raiser, Starbucks has become an engaged partner and the Program is working toward an expansion beyond Richmond. It is estimated that the Richmond region and the valley can generate 50-70 tons annually. All the

Program partners will be listed on the VCU Rice Rivers Web page. Communication is conducted through the VCU Center for Environmental Studies and VCU Rice Rivers Center Communication Director and often shared through Twitter and Facebook.

All of the VOSRP shell will be used as part of Virginia oyster restoration work. The shell is delivered to the CBF Gloucester Point facility to be aged, seeded and returned to the Bay at sanctuary sites. It is hoped that some of this shell can be used as part of the comprehensive restoration in the Piankatank River. On June 26, the Richmond CBS affiliate, WTVR, did a segment on "Powering Virginia" about the VA Oyster Shell Recycling Program highlighting the partnerships that make the Program a success. This segment can be viewed at: www.wtvr.com/poweringvirginia.

Virginia Green volunteer deposit shells

Participant adding shells at Shockoe on Half-Shell

Jan 29 Shell shoveling event

Jan 29 Shell shovelling event

Jan 29 Shell shovelling event, Jackie Shanon CBF, Todd Janeski VCU, Tommy Leggett CBF

Jan 20 Shell shovelling event

Jan 29 Shell shovelling event

Whole Foods Short Pump Fundraiser

WVTR CBS6 Empowering Virginia shoot

WVTR CBS6 Empowering Virginia shoot

WVTR CBS6 Empowering Virginia shoot

WVTR CBS6 Empowering Virginia shoot, , Chef Bundy, Lemaire

WVTR CBS6 Empowering Virginia shoot, Chef Bundy, Lemaire

Policy Development

To continued growth of the Virginia Healthy Waters Program, the VCU Analyst/HW Program Manager has worked with the Division of Natural Heritage Director to integrate the data and build new data sources. Partnerships between the DCR and DEQ have been critical to be nurtured to ensure the Program continues to be successful. Currently, the most pressing issue is the lack of statewide data demonstrating water resources-based ecological integrity.

This project was funded by the Virginia Coastal Program at the Department of Environmental Quality through Grant FY012: NA12NOS4190168 of the National Oceanic and Atmospheric Administration, Office of Ocean and Coastal Management, under the Coastal Zone Management Act of 1972, as amended.