

Coastal Nonpoint Program Management

FY09 Task 81

Final Report, Grant Period October 1, 2009 to December 31, 2009

Grant# NA09NOS4190163

Compiled by Todd Janeski, VCU, Department of Life Sciences

Virginia Department of Conservation and Recreation, Division of Soil and Water

This project was funded by the Virginia Coastal Program at the Department of Environmental Quality through Grant FY09: NA09NOS4190163 of the National Oceanic and Atmospheric Administration, Office of Ocean and Coastal Management, under the Coastal Zone Management Act of 1972, as amended.



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Executive Summary

The VCU Environmental Analyst, as retained by the Virginia Department of Conservation and Recreation (DCR), continued to serve as the Coastal Nonpoint Source Pollution Control Program (CNPS) Manager to administer and implement the NOAA Section 310 Virginia Coastal Nonpoint Source Pollution Program at the Virginia Department of Conservation and Recreation. The focus of the implementation of the Coastal NPS Program includes the oversight of programs, projects, grants and grant budgets, providing technical support to VDCR Division of Soil and Water and the Virginia Coastal Zone Management Program, as it relates to coastal zone ecology, management, and restoration. The VCU Environmental Analyst serves other roles and provides additional support to the Virginia DCR in nonpoint source pollution issues, Chesapeake Bay TMDL, grant administration, program and project development and implementation and policy development.

Overview

The Environmental Analyst, at the Virginia Commonwealth University, continued to serve as the Coastal Nonpoint Source Pollution Control Program (CNPS) Manager for the Virginia Department of Conservation and Recreation. Due to the extremely limited funding to support the 56 Management Measures as outlined in the 6217 Guidance, the focus of the Coastal NPS Program is the administration and implementation of the Virginia Network for Education of Municipal Officials Program (VNEMO). The VCU Environmental Analyst/ Coastal NPS Program Manager is the lead of the VNEMO Program, and under this Task is focused on the continued expansion beyond the pilot site to the Coastal Zone and support of the regional Sustainable Shoreline and Green Infrastructure Projects. This role is to lead in the development and implementation of a coordinated, collaborative approach to delivering technical assistance to localities to achieve VDCR, VCZM and associated Bay Program goals.

The Virginia NEMO Program is a partnership between the Chesapeake Bay Office of NOAA/EPA/NPS (Chesapeake NEMO), the Virginia CZM Program, and the state of Virginia to provide request-based education and/or technical assistance to localities in Virginia. The program relies upon the DCR Regional Offices (Regional Managers and Watershed/TMDL Coordinators), DCR Division of Chesapeake Bay Local Assistance (DCBLA), Planning District Commissions, Soil and Water Conservation Districts, Watershed groups and other traditional and nontraditional partners as the local government service delivery mechanism. Assistance providers may provide process and planning assistance, ordinance development, buildout analysis, comprehensive planning assistance, technical analysis, economic analysis, or other specialized planning assistance.

Virginia Network for Education of Municipal Officials (VNEMO) is a request-based program to provide local decision makers with the information, tools and capacity to make informed local land use decisions. Through the network approach, the Virginia NEMO Program assists the

focus and prioritization of limited resources, taking advantage of a wide range of expertise available, and increase the reach of messaging. It will also help reduce duplicative services and minimize conflicting messages. Network partners currently include:

- Virginia Commonwealth University;
- Virginia Department of Conservation and Recreation Divisions of
 - Soil and Water,
 - Chesapeake Bay Local Assistance,
 - Natural Heritage;
- Virginia Coastal Zone Program;
- Chesapeake Network for Education of Municipal Officials;
- National Fish and Wildlife Federation;
- Center for Watershed Protection
- Virginia Tech and the Virginia Cooperative Extension Community Viability Program;
- Virginia Department of Forestry;
- Coastal Planning District Commissions;
- Soil and Water Conservation Districts;
- Southern Environmental Law Center;
- Non-Governmental Watershed Groups.

The VA NEMO Program provides assistance in three broad areas of expertise:

- 1) developing community vision and goals;
- 2) assessing and inventorying natural resources; and
- 3) developing and implementing natural resource and land use management tools.

Within these three areas of expertise, initial NEMO partners can commit the following types of assistance:

- 1) developing stakeholder involvement strategies
- 2) facilitating community visioning and goal setting
- 3) strategic planning
- 4) natural resource and conservation planning
- 5) urban forestry master planning
- 6) low-impact development
- 7) code and ordinance development

Trainings and Capacity Building

Through continued efforts to improve and expand the capacity of the VNEMO Program, a reporting period focus was to develop continued internal capabilities of State personnel to meet the demands locally and future potential due to Virginia Stormwater Management Program implementation and the Chesapeake Bay TMDL Watershed Implementation Plan, Phase 2. The increase in capacity was provided through three directed trainings in group process, facilitation and conflict resolution. The NOAA Coastal Services Center was secured to provide training and technical assistance. Participants included the VDCR field staff from the Divisions of Soil and Water, Chesapeake Bay Local Assistance, and Natural Heritage; VDEQ Education and Outreach Program; VIMS Coastal Resources Center and the Coastal Planning District Commissions.

The expansion of capacity continued to include the services of the Center for Watershed Protection through the Circuit Rider project of the Local Government Advisory Committee (LGAC) of the Chesapeake Bay Program, funded by EPA. For numerous years, the LGAC has requested of EPA to develop a program that directly provides technical assistance to local government in achieving various Bay focused water quality goals. In 2009, the EPA awarded the Center for Watershed Protection the grant to provide such services, contingent in Virginia that the partner directly with the Virginia NEMO Program due to it fitting the requested role from LGAC. This expanded capacity provide services to communities under the VNEMO banner in areas outside of the Coastal Zone but in the Chesapeake Bay watershed. Additional funding through USEPA 319 assisted in delivering services in the Chesapeake Bay Watershed.

During the project duration, The CNP Program Manager partnered with the Chesapeake NEMO, Maryland Chesapeake and Coastal Program, NOAA OCRM and others to develop a Pre-Forum workshop on Climate Change Adaptation Planning that was held prior to the Chesapeake Watershed Forum in Shepherdstown, WVA, in October 2009. The CNP Program Manager provided an overview presentation of various US case studies presenting local government responses to climate change as well as an introduction to climate change adaptation planning. Participants were from local government. Also at the Chesapeake Watershed Forum, the CNP Program Manager presented the draft NEMO Presentation on Climate Change Adaptation.

Technical Assistance Delivery

During the grant cycle, the CNP Program Manager successfully implemented to the National Fish and Wildlife Foundation grant for \$700,000 to develop a low impact development research, testing, certification and training facility at the Virginia Science Museum. This project purpose is to demonstrate, teach and monitor such practices as porous pavement. As part of the project installation of a 12000sf green roof, 22,000sf of porous pavement, two bioretention cells, four tree well filters and a rainwater harvesting system that will serve the museums exterior water needs.

The project includes an analysis of the CSO system and develops a CSO management plan that focuses on source control as a means of managing CSO events. A cost benefit analysis will be done to communicate the economic benefits of using LID to solve the challenges of CSO issues. The project will include a significant climate change adaptation component evaluating the cost benefit of utilizing LID as an adaptation strategy to address CSOs. The VCU Climatologist, NOAA CSC, NOAA Weather and other project partners are modeling the hydrologic changes due to climate change for the region and modify the LID CSO Study to compare the potential changes in hydrology that may affect the Richmond region and demonstrate how a proactive approach can reduce the costs to the City in their CSO program.

The CNP Program Manager partnered with the Science Museum of Virginia and the Science Museum of Virginia Foundation to develop the proposal and included such partners as: Virginia Commonwealth University, 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. Currently, the total budget is approximately in excess of \$2M and will be complete in 2012. The site will has served as a training facility for the VDCR SWM Program training component as well as other educational presentations on water

quality, environmental management, the Chesapeake Bay TMDL and land planning. The CNP Program Manager/ VNEMO Program Manager will continue to implement trainings specifically for local officials to inform on the benefits of LID and climate change adaptation planning using LID. The museum staff and the CNP Program manager are developing educational programs tailored to meet the Virginia standards for learning and general public.

In addition, the CNP Program Manager worked closely with the regional planning commissions in support of the Sustainable Shoreline Focal Area projects. Specifically, under the guidance of the Northern Virginia Regional Commission, VNEMO provided a Program partner, Virginia Tech Cooperative Extension Economist, to assist in the economic analysis portion of the project. The VNEMO program also assisted in the development of the facilitation process for project and public meeting and engagement efforts as well as directly assisted in the facilitation of public meetings.

VNEMO secured the participation NOAA Coastal Services Center to provide survey development and data analysis for the residential survey portion of the project. The NVRC collected the relevant data utilizing a web based approach and the NOAA CSC developed a data cataloging form and is assisting in the analysis of the data. The survey was to obtain an understanding of the waterfront residents' knowledge of shoreline issues mostly related to climate change but also sought additional information regarding other issues of concern.

The VNEMO Program Manager also began to work with the NVRC to develop a series of public listening sessions around Climate Change and Sea Level Rise in Northern Virginia to obtain direct feedback from the community's potential challenges, modeling the efforts of the Sea Grant project in the Hampton Roads area. NVRC and VNEMO acquired the services of the University of Virginia's Institute for Environmental Negotiation (IEN) to provide planning and facilitation services in support of climate change listening sessions in Northern Virginia to be conducted outside of this reporting period. However, when the partners introduced the Hampton Roads approach with the Sustainable Shorelines and Community Management workgroup, responses were lukewarm as localities in Northern Virginia do not see sea level rise as an immediate issue, in the same way that Virginia Beach perceive this issue to be since Virginia Beach residents experience frequent periods of inundation. Therefore, the planning team of NVRC, VNEMO and IEN may have to take a different approach to engaging the Northern Virginia communities. Currently, Prince William County and the City of Alexandria have expressed interest in pursuing listening sessions. Based on the lessons-learned, the NVRC planning team will develop a program that best fits the needs of Northern Virginia's localities, allowing them to get the information that is most relevant for local planning needs.

The VNEMO Program Manager provided assistance to the University of Virginia Institute for Environmental Negotiation as a process facilitator in the sea level rise public listening sessions in the Virginia Beach in the spring, 2011.

The VNEMO Program directly assisted both Charles City and Richmond Counties with their Comprehensive Planning efforts. Charles City County requested assistance with the identification of urban growth areas and conducting a build-out analysis and Richmond County has been in the process of a Comprehensive Plan revision. The VNEMO Program lead the

public, community visioning session played a lead role in the building of local capacity to achieve community goals.

The CNP Program Manager partnered with the Middle Peninsula Planning District Commission to develop a NFWF proposal to implement a nutrient management strategy based upon a working waterfront model. Partners included: VCU, Virginia Tech, Rappahannock River Oyster Co and MPPDC. The model proposed the use of oyster aquaculture as a nutrient management measure as part of community economic development and resource management planning efforts.

The VNEMO Program Manager directly assisted the VDCR Division of Natural Heritage in the development of an outreach and engagement strategy around the Priority Conservation Areas data, later to be named the VA Ecological Valuable Areas. This database effectively integrates the INSTAR stream database at VCU and makes a user friendly format of identifying valuable coastal resources.

Policy Development

The CNP Program Manager participated or planned various meetings including the Coastal Policy Team, Coastal PDC meetings, Virginia Stream Alliance, and Healthy Waters. The CNP Program Manager is actively playing a role in the development of the Chesapeake Bay Watershed Implementation Plan, Phase 2 efforts, specifically as it relates to engaging and involving the local government staff and general public in reaching natural resource based goals.

Partnership Building

Funding within this reporting cycle was directed to the Virginia Department of Forestry to support the development of the Virginia Urban Tree Canopy assessment. The Virginia Urban Tree Canopy Project has been implemented to support the needs of Virginia's localities to establish and attain canopy cover goals. The first step in this project is to estimate the baseline tree canopy cover for each jurisdiction. The next step is to summarize the baseline estimate by property parcels and zoning categories provided by the localities. Finally a report is generated. This report summarizes the results of the UTC analysis. The locality is provided with all new and used spatial data layers. The summary report is published to the Virginia Urban Tree Canopy Analysis website (http://www.gep.frec.vt.edu/VA_utc.html).

To support this effort, geospatial analysts with the Virginia Geospatial Extension Program and the Virginia Department of Forestry are using 1-meter resolution imagery acquired through the United States Department of Agriculture's (USDA) National Agriculture Imagery Program (NAIP) <http://www.fsa.usda.gov/FSA/apfoapp?area=home&subject=prog&topic=nai>. This multispectral imagery consists of 4-bands (three visible bands and one near infrared band) that were acquired during the summer of 2008. Virginia UTC analysts then classify the imagery, using ERDAS Imagine, into four land cover classes. The four classes consist of water, impervious, non-tree vegetation, and tree canopy. The resulting land cover layer is then checked for accuracy using 2006 – 2007 Virginia Base Mapping Program Imagery for the area. The land cover classification must exceed 90 percent overall accuracy before it is ready for summarization by parcels and zoning boundary data layers.

Urban Tree Canopy analysis was conducted for Newport News (57.7 sq mi), Ashland (7.2 sq mi) and Fredericksburg (10.5 sq mi) All lands excluding military and federal lands were analyzed totaling 75.4 square miles.

Newport News was determined to have 38 percent tree canopy cover when associated with all land area within the locality. This assessment achieved an overall accuracy of 93.6 percent. When summarized by parcels, Newport News has 40.6 percent Existing UTC with a theoretically possible increase in vegetated areas of 28.3 percent. All the reports are located at http://gep.frec.vt.edu/va_utc.html.

Ashland was determined to have 52 percent tree canopy cover when associated with all land area within the locality. This assessment achieved an overall accuracy of 95.6 percent. When summarized by parcels, Ashland has 54.3 percent Existing UTC with a theoretically possible increase in vegetated areas of 26.2 percent.

Fredericksburg was determined to have 44 percent tree canopy cover when associated with all land area within the locality. This assessment achieved an overall accuracy of 93 percent. When summarized by parcels, Fredericksburg has 44.3 percent Existing UTC with a theoretically possible increase in vegetated areas of 24 percent.

With additional funding from the Chesapeake Bay Program and USDA Forest Service U&CF funds, we have been able to implement UTC assessments for other communities in the tidewater region of Virginia including, Richmond, Arlington, Chesapeake, Norfolk, Virginia Beach and Portsmouth is in process

Suggested changes to the CNP—due to the uncertain funding outlook, DCR has determined the highest and best utilization and focus of the program is on local land use technical assistance with the remaining funding. However the current negotiated 50% support for the position from Section 306 of the CZMA will reduce the overall need for funding. The VDCR has committed to matching that 50% with other funding to continue to support the position and program. In addition, the future prospects of the Coastal funding from FY11 are zeroed for the Coastal NPS Program, funding diversity is being sought to support the activities to support the VNEMO Program, these may include funding from Chesapeake Bay Program, USEPA 319 Nonpoint Source Pollution Program, NFWF, Sea Grant or other public grant offerings.

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