



Semi-Annual Success Story ("Section C")
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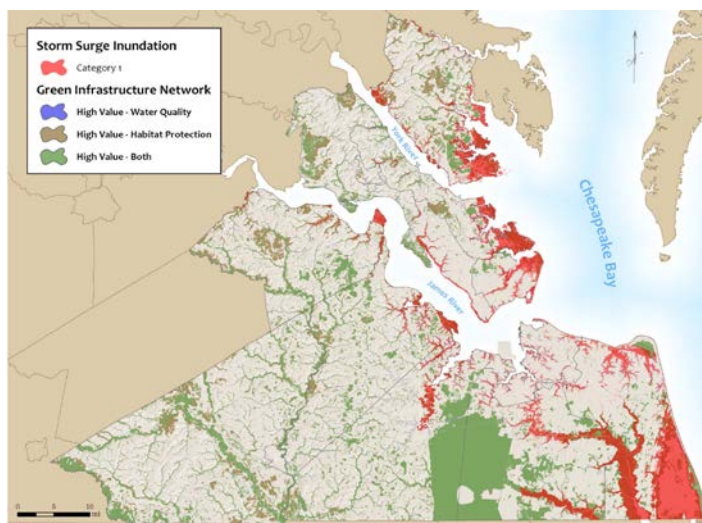
Virginia CZM Climate Change Adaptation in Hampton Roads

CZMA Performance Measure Areas:

Coastal Hazards, Government Coordination & Decision-Making, Coastal Dependent Uses & Community Development

Identification & Description of Issue:

Climate change will have several impacts on the Hampton Roads region of Virginia's Coastal Zone. Higher temperatures, rising sea level, and changing precipitation patterns will have significant effects on many sectors and environments in the region. Rising sea levels and land subsidence are of particular concern and make the Hampton Roads region the second most vulnerable area to floods and storm surge in the nation, behind only New Orleans. To prepare for these impacts, localities across the Hampton Roads region need to assess their economic, social, and environmental vulnerability to sea level rise and develop strategies to mitigate or adapt to these changes and improve coastal resiliency. State-level initiatives to assist localities in adaptation planning efforts have been very limited.



Geographic Location: Hampton Roads Planning District; VA Congressional Districts 1, 2, 3, & 4.

How the Virginia CZM Program Was Involved:

Improving coastal resiliency and promoting effective long-term planning for sea level rise and flooding adaptation have been identified as priorities by the Virginia CZM Program's Coastal Policy Team, which consists of representatives from the network of agencies and institutions that make up the Program. In response, the Virginia CZM Program offered three years of "focal area" grants to regional planning district commissions (PDCs) to address this issue. The Hampton Roads Planning District Commission (HRPDC) was one of three coastal PDCs to receive funding through federal fiscal years 2008 – 2010. HRPDC's Focal Area Project work on climate change adaptation focused on research into the impacts of climate change on the Hampton Roads region, including adaptation options and the identification of research and data needs. These projects laid the groundwork for current CZM-funded adaptation efforts in the region, and helped generate greater interest in coastal resiliency in the region.

The first post-focal area project for the Hampton Roads region was to develop a coastal resiliency and climate adaptation plan. The plan built on the previous Focal Area Projects' research into climate change impacts and adaptation options as well as their public outreach and stakeholder engagement components. The first task was to expand public outreach efforts by combining direct engagement through a series of meetings, with a new effort to engage the general public using HRPDC's ongoing environmental education efforts under the HRGreen program. The second was an assessment of sector-specific impacts and planning efforts to assess where and how climate change impacts can be incorporated into the region's many long-range planning efforts. The third was the development of an adaptive management plan. The Plan identified: 1) expected impacts and when they were expected to occur, 2) planning horizons for infrastructure and planning decisions, and 3) best practices and recommendations for incorporating adaptive management for climate change into existing planning processes.



The next CZM-funded climate adaptation project for HRPDC was designed to build on previous efforts in order to increase the region's knowledge base and technical capacity to plan for sea level rise. In particular, this project includes the development of new sea level rise inundation maps based on updated LIDAR elevation data, the establishment of a sea level rise adaptation technical working group, case study analyses of sea level rise impacts and vulnerability, the establishment of a technical assistance program for local governments, and continued outreach, education, and coordination efforts on this and related issues such as flooding, hazard mitigation, and planning for sustainable communities.

The Virginia CZM Program is also supporting HRPDC's efforts to assist the City of Virginia Beach in development of a climate change adaptation plan that can serve as a model for other localities to use when preparing for sea level rise. This project consists of three main parts. The first is a review of codes, ordinances, and plans inside and outside of the City of Virginia Beach related to flooding and sea level rise. The second is the development of sophisticated maps and an online map viewer showing projected impacts of sea level rise. The third is the creation of a strategy for public outreach to share projected sea level rise impacts and solicit public input for developing the sea level rise plan.

Qualitative Summary of Accomplishments and Outcomes:

Perhaps the most important outcome of the Virginia CZM Program's climate change adaptation efforts in the Hampton Roads region has been a heightened awareness of sea level rise issues by the general public and a better understanding of potential adaptation strategies by local officials. Virginia CZM grants to HRPDC have provided much better information and an on-going forum for discussion of an issue that was not being addressed elsewhere in state government at the time. The Hampton Roads region experiences widespread flooding, both from storms and from certain more common tidal events, and citizens affected by flooding have expressed their concern to their elected officials. The combination of this citizen interest and the CZM-funded adaptation projects has led to the Hampton Roads region taking a leadership role in addressing this issue that has now gained momentum at the state level. Other organizations have joined forces to expand the effort within the region, and political leaders from the region have been successful in renewing interest within the administrative branch of state government as well as the Virginia General Assembly. The General Assembly first requested a report from the Virginia Institute of Marine Science on Recurrent Flooding, and in their 2014 session passed a resolution for creation of a Joint Legislative Subcommittee on Recurrent Flooding. The Subcommittee's charge is to undertake a "comprehensive and coordinated planning effort." The administrative branch of state government has also begun initiatives, first with the creation of the Recurring Coastal Flooding Subpanel of the Secure Commonwealth Panel, and now with a recent announcement that the previously disbanded Governor's Climate Change Commission will be reconvened. The Virginia CZM Program will continue to support local, regional and state climate change adaptation and coastal resiliency efforts, many of which were jump-started through previous initiatives.

According to Skip Stiles, Executive Director of Wetlands Watch, and a member of former Governor Tim Kaine's Climate Change Commission, "In the absence of state government action in recent years, the momentum on sea level rise adaptation in Virginia was carried forward by the strategic investments made by our Coastal Zone Management Program. Their funding of tidewater's planning district commissions, especially grants to the Hampton Roads Planning District Commission, have fueled progress on adaptation planning that is paying off, now that state and local government interest is growing. Instead of having to re-start adaptation work in Virginia after the hiatus in state agency interest, the CZM investments have created a momentum that will drive this resurgence of activity."

Quantitative Summary of Accomplishment and Outcomes:

In addition to the more qualitative outcomes, Virginia CZM-funded projects in the Hampton Roads region have resulted in:

- Development and adoption of the document “Coastal Resiliency: Adapting to Climate Change in Hampton Roads”
<http://www.deq.virginia.gov/Programs/CoastalZoneManagement/Funds,Initiatives,Projects/2011Projects/2011VirginiaCZMGrantProjectTask5111.aspx>
- Development of educational materials, including presentations, handouts, and summaries for use in public presentations or as website material.
- Policy research on incorporating climate change adaptation into local and regional planning efforts, including descriptions of policies which local governments can adopt to improve their resiliency to coastal hazards such as flooding and sea level rise.
- Development of a climate change adaptive management plan for Hampton Roads, including a series of policies and steps which can be used to begin addressing climate change adaptation at local and regional scales based on various levels of sea level rise.
- Presentations by HRPDC staff to various groups throughout Hampton Roads and coordination efforts with other stakeholders, including the Virginia Institute of Marine Science, Old Dominion University, Virginia Sea Grant, and others, to promote coastal resiliency.
- Refinement and updating of sea level rise inundation maps for HRPDC localities.

CZM Funds Expended & Other Funds Leveraged:

FY 11 Task 51: HRPDC Climate Change - \$20,000 (completed July, 2013)
“Coastal Resiliency: Adapting to Climate Change in Hampton Roads”

FY 11 Task 57: HRPDC Virginia Beach - \$15,927 (currently underway; due October, 2014)

FY 13 Task 54: HRPDC SLR Planning and Technical Assistance - \$19,834 (currently underway; due February, 2015)

Total CZM climate adaptation funding to HRPDC through grants open during the reporting period: \$55,761.

In addition to the CZM funded projects completed or underway during the reporting period, leveraged efforts have included:

- Virginia Sea Grant, the Hampton Roads PDC and Old Dominion University, have sponsored the Hampton Roads Sea Level Rise Adaptation Forum to institutionalize regular meeting between local government staff, academic researchers, and other stakeholders and experts. (HRPDC participation supported by an annual technical assistance grant from the Virginia CZM Program)
- The City of Virginia Beach, HRPDC, Wetlands Watch and the UVA Institute for Environmental Negotiation have hosted a series of recurrent flooding / sea level rise listening session and

workshops to receive feedback on experiences with flooding, attitudes toward planning and potential adaptation strategies.

Prior to the reporting period, the Virginia CZM Program provided “focal area” climate adaptation grants to the Hampton Roads PDC, the Middle Peninsula PDC and the Northern Virginia Regional Commission for three years (FY 08, 09 and 10) for a total of \$435,345. The Accomack-Northampton PDC has also addressed climate adaptation through its annual technical assistance grant from the Program. They have created a Climate Adaptation Workgroup which meets regularly and has worked with The Nature Conservancy and the Coastal Services Center to secure funding for LiDAR and to create stunning new elevation models and sea level rise scenarios that have been shared publicly. A-N PDC is also creating an innovative “Coastal Change Archive” that engages residents using pGIS tools to compile their stories and observations to serve as a historical resource for current and future generations to better understand how seascapes, landscapes, and organisms are responding to changes in the natural environment. The Archive will also serve as a baseline for evaluating the impacts of future changes to our climate and water levels.