# Hampton Roads Coastal Resources Technical Assistance Program

## Fiscal Year 2011 - 2012

Virginia Coastal Zone
MANAGEMENT PROGRAM

HAMPTON ROADS PDC
PLANNING DISTRICT COMMISSION

JANUARY 2013

PEP13-03

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# HAMPTON ROADS TECHNICAL ASSISTANCE PROGRAM
# REGIONAL COASTAL RESOURCES MANAGEMENT PROGRAM
# FOR HAMPTON ROADS

## FISCAL YEAR 2011 – 2012
## FINAL REPORT

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**Preparation of this report was included in the HRPDC Unified Planning Work Program for FY 2011 – 2012, approved by the Commission at its Executive Committee Meeting of June 16, 2011, and in the HRPDC Unified Planning Work Program for FY 2012 – 2013, approved by the Commission at its Quarterly Commission Meeting of April 19, 2012.**

**Prepared by the staff of the**
**Hampton Roads Planning District Commission**

**JANUARY 2013**

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**ABSTRACT**

This report describes the environmental technical assistance program conducted by the Hampton Roads Planning District Commission during FY 2011 – 2012 through its Coastal Resources Management Program. This program encompasses environmental impact review, participation in state and federal programs, coordination of regional environmental programs addressing environmental issues, including the Chesapeake Bay, wetlands, and the Albemarle-Pamlico Estuaries in North Carolina, public information and education, and technical assistance to Hampton Roads localities. It contains representative examples of the reports, comment letters, newsletters, and associated materials generated and used in assisting the region's sixteen local governments, supporting the Virginia Coastal Zone Management Program, and working with the other Planning District Commissions in the Coastal Zone.

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Virginia Coastal Zone
MANAGEMENT PROGRAM

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# INTRODUCTION

In March 2011, the Hampton Roads Planning District Commission submitted a proposal to the Virginia Coastal Zone Management Program (VCZMP) for funding to continue the HRPDC's Technical Assistance Program. Through this program, the HRPDC provides technical assistance on a variety of environmental and coastal resources management issues to the sixteen cities and counties of the Hampton Roads region and to coordinate their response to those issues. It also provides assistance to the eleven incorporated towns in the region as well as to a wide variety of private entities. This Program has operated successfully with financial assistance from the Virginia Coastal Zone Management Program since the Program's inception in 1986. In October 2011, the HRPDC was awarded financial assistance to maintain its Technical Assistance Program through September 2012; this program was later extended to December 2012. This report provides an overview of the activities and accomplishments of the Hampton Roads Technical Assistance (Regional Coastal Resources Management) Program during that period.

The Hampton Roads Technical Assistance Program is a comprehensive, interrelated initiative, providing on-call staff capability, a regional coordination mechanism, and related technical studies. It assists the region's localities on short-term local issues, ensures a collective response to regional, state and federal issues as they arise, and facilitates cooperation and coordination among the localities. The ideas for major technical studies, such as the Hampton Roads Tributary Strategy Program (including the Hampton Roads Watershed Roundtable), ongoing analysis of the impacts of the Chesapeake Bay Agreement and related regulatory initiatives, the regional green infrastructure project, coordination of regional involvement in the state's TMDL process, the Energy Efficiency and Conservation Block Grant Program and other energy issues, and the climate change initiative, as well as the staff follow-up to carry them to fruition, have been provided through the Technical Assistance Program.

Of particular significance, VCZMP funding for this program has provided seed money allowing the region to undertake new environmental initiatives, such as the Regional Water Supply, Groundwater, Wastewater and Stormwater Management Programs, including the public information and education components of each. These regional initiatives, which continue to evolve, are now institutionalized and have been enhanced through dedicated local funding. These regional programs are unique examples of intergovernmental cooperation in management of coastal resources in the Commonwealth.

The Hampton Roads Technical Assistance Program also enables the HRPDC to participate in and support a number of core elements of the Virginia Coastal Zone Management Program, such as the environmental impact review program, wetlands and dune regulations, Chesapeake Bay Preservation Act (CBPA) regulations, air quality regulations, and the large number of state water quality programs. This participation results in cost savings to the state through educating localities about state and federal initiatives and coordinating local government input to these efforts. Over the past twenty-six (26) years,

several hundred local government staff members from the region's sixteen local governments have received technical training in wetlands regulations and delineation, CBPA implementation, erosion and sediment control, stormwater management, low impact development and better site design, flood hazard management, geographic information systems, land conservation, sea level rise, and watershed management. Local government board members, staff from other PDCs, and representatives of the private sector have also participated. As a result, the effectiveness of local government implementation has increased.

Through review of environmental impact documents and coastal zone consistency determinations, the regional program has also facilitated rapid resolution of local government concerns with the impacts of state projects proposed by the Virginia Department of Transportation (VDOT), the Community College System, state supported colleges and universities and others, as well as federal projects such as port security and inspection systems, harbor dredging, military facility construction and operations, Base Realignment and Closure decisions and encroachment issues, Outer Continental Shelf Energy Development, and related resource management programs.

The Technical Assistance Program allows the HRPDC to serve as a central source of environmental data and information, ranging from wetlands and soils mapping to aerial photographs, water and wastewater data and information about potential hazardous waste disposal activities for local governments and the private sector. HRPDC also houses and collects a wide variety of GIS datasets from various federal, state, and local partners, including LIDAR elevation data, as well as datasets developed by HRPDC staff.

The FY 2011 – 2012 Hampton Roads Technical Assistance Program enabled the region's localities to continue to address, in a comprehensive and integrated fashion, all aspects of coastal resources management - the Chesapeake Bay Program, implementation of the Albemarle-Pamlico National Estuary Program with North Carolina, environmental impact review, local comprehensive planning, CBPA and Chesapeake Bay TMDL implementation, wetlands protection, shoreline management, climate change/sea level rise and energy initiatives, public access, and environmental database development and analysis through the HRPDC's Geographic Information System (GIS). The program has allowed the continuation of regional support for and participation in the VCZMP, regional participation in other state and federal initiatives, completion of necessary technical studies, technical assistance to the region's localities and conduct of public information and education activities.

## PROGRAM OBJECTIVES

At the outset of the FY 2011 – 2012 Hampton Roads Technical Assistance Program, the HRPDC, in cooperation with staff from its member local governments, established six (6) objectives for the Program. These overall objectives, while expanded in scope, have remained largely the same since program inception. They are:

1. To assist the localities of Hampton Roads Virginia to implement the recommendations of the Virginia Coastal Zone Management Program, related state and federal environmental management programs as well as the Chesapeake Bay Program and related state legislation and regulations.

2. To support the Commonwealth of Virginia in implementing the VCZMP through coordination of local and regional review of environmental impact assessments/statements, applications for state and federal environmental permits and related environmental documents and by serving as an information conduit between the state and localities on coastal resource management issues.

3. To complete regional environmental studies, necessary to support local government consideration of the Chesapeake Bay Agreement priorities, including development and implementation of the Chesapeake Bay Total Maximum Daily Load (TMDL).

4. To enable Hampton Roads, Virginia to continue to play an active role in the development, implementation and refinement of the Virginia Coastal Zone Management Program, Chesapeake Bay Agreement, Chesapeake Bay Preservation Act, and related environmental initiatives.

5. To improve the coordination and quality of local and regional decision-making concerning coastal and related environmental resources.

6. To increase public awareness of the value of coastal resources and of the local and regional efforts to manage them.

To accomplish these objectives, a comprehensive program was structured involving a range of activities in the following categories: VCZMP Program Support, Technical Studies, Local Assistance and Coordination, and Public Information and Education.

# PROGRAM ACCOMPLISHMENTS

## VIRGINIA COASTAL ZONE MANAGEMENT PROGRAM SUPPORT

### Environmental Impact Review

The HRPDC staff reviews and comments on all applications for state and federal regulatory permits and the associated Environmental Impact Assessments/Statements. On a monthly basis, the Hampton Roads Planning District Commission is apprised of all EIA/EIS projects that are under review. Generally, no formal action is taken by the Commission as a result of this notification; however, historically, the Commission has requested more extensive HRPDC staff and local government review of particular issues. HRPDC staff responds to nearly all requests for comments from the Department of Environmental Quality (DEQ).

From October 1, 2011 through December 31, 2012, the HRPDC staff reviewed and commented on sixty-seven (67) environmental impact assessments and statements for both state and federal projects; fifty-seven (57) of these reviews occurred between January 1, 2012 and December 31, 2012. Projects reviewed in FY 2011– 2012 ranged widely in complexity. The HRPDC, in cooperation with the localities, worked to ensure that these projects were coordinated and met local government requirements. HRPDC's responses are combined with any others from state agencies when DEQ makes its final determinations. While these determinations (and the collected comments) are conveyed back to HRPDC, DEQ staff does not generally identify any specific impacts to projects based on HRPDC staff comments. However, in several cases DEQ staff has followed up with HRPDC staff to have comments clarified. Occasionally, HRPDC staff also submits scoping comments for environmental impact studies which have been addressed in draft documents (an example would be scoping comments submitted for the Camp Peary Range 37 Shoreline Stabilization Project in York County, which are included in Appendix A).

In addition to environmental impact reviews and assessments, HRPDC staff also reviews grant proposals for federal and state funding. These proposals are reviewed for local and regional impacts and significance, as well as to ensure that tasks are not duplicated. From October 1, 2011 through December 31, 2012, the HRPDC staff reviewed and commented on seventeen (17) grant proposals; fifteen (15) of these reviews occurred between January 1, 2012 and December 31, 2012.

Appendix A contains a listing of all projects reviewed through this program component during the period from October 1, 2011, through December 31, 2012, as well as sample comment letters on representative projects. To improve the information available for consideration by the Commission and to facilitate tracking of local and state actions on environmental documents, the HRPDC staff developed a database and reporting system during a previous grant year. All environmental documents reviewed since July 2001 have been entered into the database.

Coordination of review and comment on environmental documents with the region's localities is frequently problematic, because of time constraints placed on the review process by the state and, in some cases, by project applicants who request expedited review from the state. Historically, environmental documents were distributed by the state to the Chief Administrative Officers in the localities. Internal distribution did not always go to the same local government staff person and frequently prevented the locality and the HRPDC from commenting within the state's time constraints. In May 2003, local government and HRPDC staff recommended that the region's Chief Administrative Officers designate specific staff persons to coordinate internal review of environmental documents. Following the internal designation of contact points, the DEQ was formally requested to distribute all documents to the designated staff contact/coordinator. After more than nine years of experience with the modified review system, it appears that the review process works much more efficiently.

Based on legislation enacted during the 1996 Session of the General Assembly, all public notices for Virginia Pollutant Discharge Elimination System, Ground Water Withdrawal, Virginia Water Protection, Hazardous Waste, and Air Emissions Permits are provided to local governments and PDCs for review. To facilitate this effort, the staff developed and maintains a tracking system and database for all five types of permits.

**Participation in State and Federal Programs**

Several state and federal environmental programs encourage use of PDCs as a cost effective mechanism for informing local governments and seeking their input for state and federal program development and accomplishment. For example, the Chesapeake Bay Program in both its 1996 and 2002 Local Government Participation Action Plans recommended better use of technical assistance providers, such as PDCs, to serve as vehicles to distribute information and outreach on Chesapeake Bay-related issues. It also suggested development of a network of local officials and staff with expertise in dealing with resource protection issues. Virginia's Regional Cooperation Act strongly recommends this type of role for PDCs. Several programs, including the Virginia Coastal Zone Management Program, do use the PDCs in this manner. Historically, NOAA's Section 312 evaluation of the Virginia Coastal Zone Management Program has recognized the benefits and cost-effectiveness of the network of PDCs in supporting the VCZMP and in assisting their member local governments. During the 2006 NOAA evaluation of the Virginia Coastal Zone Management Program, the Evaluation Team provided favorable comments on the role and activities of PDCs. Those comments were formalized in the final Section 312 Evaluation Report.

In the Hampton Roads region, the Hampton Roads Technical Assistance Program and its associated committees provide such a network. Both HRPDC staff and local government members of the HRPDC Advisory Committees frequently serve on state and federal advisory groups. On a regular basis, the participating localities request that the HRPDC staff serve as their representative to these advisory groups. Alternatively, the Committees may select a local government member to represent the region. In both cases, the HRPDC Committees provide all sixteen member localities with a mechanism to participate, at least indirectly, in the state or federal program(s). Also, data and information on Hampton Roads conditions are provided by the Hampton Roads representative (HRPDC or local government staff) to state and federal agencies on behalf of the localities, thus minimizing state and federal agency data collection and input costs. During FY 2011-2012, this program included regional participation on state regulatory panels addressing stormwater management, the Chesapeake Bay TMDL and Virginia Watershed Implementation Plans, expansion of nutrient credit exchange, groundwater, and water supply.

The HRPDC staff worked closely with state and federal agencies on coordination of programs as they affect the Hampton Roads region. This work involved follow-up to previous studies conducted by the HRPDC with VCZMP-funding, serving on advisory committees supporting plan and regulatory development, and development of new cooperative initiatives involving state, local, federal and private entities.

## Virginia Coastal Zone Management Program

During the grant period, the HRPDC staff continued to participate in Coastal Zone PDC meetings, contributing to the ongoing refinement of the Virginia Coastal Zone Management Program. The HRPDC staff participated in the 2012 Coastal Partners Workshop and in Coastal Policy Team meetings on December 1, 2011 and September 17, 2012. HRPDC also attended two Coastal PDC meetings during the term of the grant in March and June, 2012.

The Coastal PDCs provide a network linking all regional agencies and localities in the Coastal Zone to address environmental issues. Although somewhat more limited in scope, similar networks exist among the Coastal PDCs and their non-coastal counterparts in the southern watersheds insofar as interstate environmental issues with the State of North Carolina are concerned, and with their counterparts throughout the Chesapeake Bay Watershed on Chesapeake Bay related issues. The HRPDC staff has played an integral role in the development and enhancement of these larger networks as well.

Efforts to coordinate activities with the other Coastal PDCs in all facets of environmental planning continued throughout the year. Representative activities focused on exchanging information among the PDCs on the Chesapeake Bay Program, the Chesapeake Bay TMDL and Virginia Watershed Implementation Plans, Special Area Management Planning, Blue and Green Infrastructure, climate change and sea level rise, flooding, septic tanks, erosion and sediment control, stormwater management, financial issues, energy conservation, training for local government staff, and general planning issues.

These efforts also involved coordination with non-coastal PDCs on the Chesapeake Bay Agreement, the Chesapeake Bay TMDL, stormwater management and follow-up activities with the State of North Carolina Albemarle-Pamlico National Estuary Program (APNEP), which is funded through the EPA National Estuary Program.

## Chesapeake Bay Program

The Hampton Roads Technical Assistance Program continues to support the HRPDC's participation, on behalf of its member localities, in the Chesapeake Bay Program. Beginning in FY 1998-1999, this element of the Program received greatly increased emphasis through several initiatives, including the renewal of the Chesapeake Bay Local Government Advisory Committee, establishment of a Metropolitan Areas Work Group, development of the Chesapeake Bay Agreement 2000 and development of new and revised Chesapeake Bay Program Implementation Strategies. The Commission's involvement with the Chesapeake Bay Program continued with participation in the development of the Tributary Strategies and the Chesapeake Bay Watershed Model. The importance of this area of emphasis was stressed by the Commission in its reaction to staff presentations on the Chesapeake Bay TMDL and related issues throughout 2011-2012.

## Chesapeake Bay Program Committees

The HRPDC monitors the work of key Chesapeake Bay Program committees including the Water Quality Goal Implementation Team, BMP technical review and the Local Government Advisory Group. In addition, HRPDC staff serves on the Urban Stormwater Workgroup, Land Use Workgroup, and Illicit Discharge Elimination Expert Panel, and participates in regular conference calls and face to face meetings. Through the HRPDC Joint Environmental (Hampton Roads Chesapeake Bay and Regional Stormwater Management) Committees, the region's localities receive regular updates on the activities of these committees. In addition, three local government elected officials from Hampton Roads participate as representatives on the Chesapeake Bay Program's Local Government Advisory Committee. HRPDC staff provides background information and data to the region's representatives on the committee. In FY 2011 – 2012, HRPDC staff continued to participate in conference calls of the Urban Stormwater workgroup and disseminated essential information to Joint Environmental Committee members.

## Other State and Federal Advisory Committees

The HRPDC staff represents the region's localities on a number of other state and federal agency advisory committees. They include:

1. DEQ, Coastal Policy Team

2. DCR, BMP Clearinghouse Committee

3. DCR, Stormwater Local Government Stakeholder Advisory Group

4. DEQ, Water Supply Planning Advisory Committee

5. DEQ, Groundwater Reuse Committee

6. DCR, Chesapeake Bay TMDL Phase II WIP Stakeholder Advisory Group

7. DEQ, Pesticide General Permit 2013 Reissuance Technical Advisory Committee

8. DCR, Nutrient Trading Expansion Regulatory Advisory Panel

Involvement on these Committees includes participation in meetings, review of extensive draft materials, briefing and coordination with local government staff and the Commission, and provision of input reflecting the views of those groups to the Advisory Committee and state or federal agency staff.

In addition, local government staffs have frequently been chosen through the regional coordination process to serve on advisory committees addressing a number of concerns, including stormwater management, water supply planning, dam safety, wetlands

regulations, nutrient reduction technology for wastewater, nutrient trading, and CBPA implementation. In each of these cases, the HRPDC staff provides support to the region's representative and ensures that the local governments have an opportunity through the regional coordination process to have input to the state effort.

## SPECIAL PROJECTS AND TECHNICAL STUDIES

HRPDC staff worked with local and regional partners to identify appropriate special projects and technical studies that would benefit the region. HRPDC staff worked on three such studies and projects between October 1, 2011 and December 31, 2012.

HRPDC staff met with the members of the Elizabeth River Steering Committee, including the Cities of Chesapeake, Norfolk, and Virginia Beach, the U.S. Army Corps of Engineers (USACE), and the Virginia Institute of Marine Science (VIMS), to discuss the possibility of upgrading a previously developed methodology for assessing and prioritizing wetlands restoration projects. This working group met several times and developed a grant proposal and project scope of work to be used as future grant opportunities become available.

HRPDC staff completed a digital terrain model (bare earth) of the Hampton Roads Planning District. Several HRPDC projects have utilized elevation data for various purposes. Consistent, high-resolution elevation data was not available for the region as a whole; the only dataset available was from the National Elevation Dataset at a 1/3 arc-second (approximately 10 meters) resolution, which is not sufficient for most analyses. HRPDC staff identified the best available elevation data for the region, including LIDAR, and processed these datasets to create a single merged model. This new model has a horizontal resolution of approximately 5 feet, which will be far more useful for regional analyses. This analysis is discussed further in Appendix B.

HRPDC staff also provided key support for Reality Check Hampton Roads, a regional visioning and planning exercise sponsored by the Urban Land Institute in partnership with HRPDC, the Hampton Roads Transportation Planning Organization (HRTPO), Old Dominion University, the Center for Real Estate and Economic Development, and the Hampton Roads Partnership. A goal of this exercise was to help in the development of a regional vision for the future of Hampton Roads, in terms of recognizing and capitalizing on existing assets, including coastal resources, and identifying where future growth should occur. HRPDC's role was in the development of the GIS and map products used during the exercise as well as general planning assistance for the event. HRPDC developed the large map used by participants to create future growth scenarios for Hampton Roads in 2035. Several other maps developed by HRPDC staff for the participant guidebook were based on previous projects funded by VCZMP. These maps provided critical information on coastal natural resources and hazards for game participants to consider. HRPDC collaborated with ODU on the GIS analysis of the game results. The map developed for this event is included as Appendix C. Reality Check Hampton Roads was held May 17, 2012 at Old Dominion University in Norfolk, Virginia. More information on Reality Check Hampton Roads can be found at http://www.realitycheckhr.org.

## LOCAL ASSISTANCE AND COORDINATION

### Technical Assistance

This element of the Hampton Roads Technical Assistance Program entails staff support and assistance to local governments and private entities as they address key coastal resources and other environmental issues such as TMDLs, habitat restoration, riparian buffer creation and protection, energy, climate change, aspects of the Chesapeake Bay Program, wetlands and dune protection, and nonpoint source pollution in their comprehensive planning process and related activities. Specific local projects to be addressed through this element are identified by the localities throughout the grant year. These requests encompass assistance on grant proposals, assistance on permit issues, identification of state or federal agencies that may be of assistance for local projects, information about legislation or regulations, identification of technical resources that may be useful to a locality in developing a study, and responding to an elected official's request for information. The localities and others frequently turn to the HRPDC for assistance on GIS mapping and analysis projects. Through this element of the program, the HRPDC staff also assists private entities, such as the Back Bay Restoration Foundation, Elizabeth River Project, Friends of Powhatan Creek, Hoffler Creek Wildlife Foundation, Lynnhaven River NOW, and others in their environmental planning and restoration initiatives. Aerial photographs and additional technical information on wetlands, hazardous waste sites, and soils are provided to private consultants.

The HRPDC staff continued to work with representatives of the affected local governments in their review, evaluation and use of recent PDC environmental management reports. The focus of this effort has been on the review and use of the region’s green infrastructure plan, regional climate change research and analysis, and various stormwater and water resource management studies. Discussions have also taken place regarding regional land use and land cover data to be collected for use in various technical analyses.

The HRPDC staff continued to advise the region's sixteen localities on environmental issues in conjunction with development of and revisions to local comprehensive plans, development regulations and related issues. The primary issues addressed through this program continue to be state and federal Wetlands Regulatory Programs, Stormwater Management Programs, groundwater issues and all facets of the Chesapeake Bay Program. Most of the region’s member localities have received individual assistance through this program during the past year. An increasing emphasis of local government support on environmental issues has been in the legislative and regulatory arena. During FY 2011 – 2012, the areas of emphasis included stormwater management, groundwater issues, and the Chesapeake Bay TMDL.

The HRPDC staff continued development and enhancement of the region's Geographic Information System, using ARCGIS software. The HRPDC staff continued to work with the localities, other PDCs, and state agencies in both Virginia and North Carolina in coordination of GIS planning and implementation. With the HRPDC system now fully

functional, a concerted effort is being made to take advantage of this technology in all HRPDC technical studies. GIS development activities have focused on support for ongoing grant-funded technical studies, comprehensive planning services, local government requests, and other ongoing HRPDC programs. A specific example is a series of regional maps developed for public outreach; three maps (political, transportation, and physical landscape) were developed and are included as Appendix D.

**Regional Coordination Process**

The Hampton Roads Technical Assistance Program enables the HRPDC to maintain the regional coordination process on environmental issues through the Hampton Roads Joint Environmental Committee, comprised of the Chesapeake Bay Committee and the Regional Stormwater Management Committee, while also providing links to other ongoing regional environmental programs. This element supports local government implementation of the Chesapeake Bay Preservation Act, Chesapeake Bay TMDL, coastal resources management, and other state and federal environmental programs. Links to other HRPDC environmental committees, addressing stormwater, wastewater, water supply, and groundwater management, as well as the Chesapeake Bay Program and North Carolina environmental initiatives are maintained through HRPDC staff support and common Committee memberships from both the region's localities and state agencies.

Historically, a major emphasis of the regional coordination process has been on work with the local governments in responding to the Chesapeake Bay Preservation Act implementation process, while ensuring that local efforts may take advantage of other related initiatives. The Hampton Roads Chesapeake Bay Committee is the primary institutional mechanism for accomplishing this. The Chesapeake Bay Committee has worked to coordinate development, refinement, and implementation of local programs to comply with the Bay Act Regulations. During FY 2011 – 2012, the Committee primarily focused on the Chesapeake Bay TMDL.

During the course of the grant year, the HRPDC staff continued coordination of the ongoing consideration by the region's localities of various watershed issues. Because of issues associated with stormwater regulations and the Chesapeake Bay TMDL, the HRPDC staff and Committees focused on them during the year. In addition to the Chesapeake Bay Committee, HRPDC staff coordinated local government and non-governmental responses to environmental issues through the Chesapeake Bay TMDL Steering Committee and the Hampton Roads Watershed Roundtable.

The following points summarize the activities of the Hampton Roads Chesapeake Bay Committee during the year. Most meetings were joint meetings with the Regional Stormwater Management Committee. (To simplify this discussion, joint meetings of these committees are referred to as meetings of the HRPDC Joint Environmental Committee.) Because of the close link between the activities of those Committees, this section also addresses the activities of the Regional Chesapeake Bay Steering Committee.

- October 6, 2011 – This was a meeting of the Joint Environmental Committee. Staff from James City County gave a presentation to the Committee on the status of the Chesapeake Bay Watershed Nutrient Credit Exchange Program. Staff from the Institute for Environmental Negotiation gave a presentation on a potential dialogue between EPA, the Navy, and the Cities of Chesapeake, Norfolk, Portsmouth, and Virginia Beach that would address stormwater issues in the Elizabeth River watershed. HRPDC staff updated the Committee on the Chesapeake Bay TMDL Phase II Watershed Implementation Plan.

- October 6, 2011 – This was a meeting of the Chesapeake Bay Steering Committee. The meeting included a presentation from Richmond city staff on efforts to encourage private property owners to install BMPs, as well as a report on needed septic system legislation.

- November 3, 2011 – This was a meeting of the Joint Environmental Committee. Virginia Department of Forestry staff gave a presentation to the Committee on urban tree canopy analysis. HRPDC staff gave a presentation to the Committee on the Great American Cleanup and a kickoff event that will be hosted in Hampton Roads. HRPDC staff also updated the Committee on regional trails and the Chesapeake Bay TMDL Phase II Watershed Implementation Plan.

- November 3, 2011 – This was a meeting of the Chesapeake Bay Steering Committee. The meeting included presentations on the use of monitoring data to measure the effectiveness of management actions and the impact of reducing or eliminating sanitary sewer overflows on urban stormwater loads. HRPDC staff updated the Steering Committee on the status of the Phase II WIP.

- November 28, 2011 – This was a meeting of the Hampton Roads Watershed Roundtable. The meeting included presentations from Virginia Clean Cities, TFC Recycling, and Chesapeake city staff on their efforts to promote the use of and develop the capacity to use alternative fuels, specifically compressed natural gas.

- December 1, 2011 – This was a meeting of the Joint Environmental Committee. Staff from DCR gave a presentation to the Committee on new requirements for local stormwater management programs. HRPDC staff updated the Committee on regional climate change initiatives, working waterfronts work with VIMS, and the Chesapeake Bay TMDL Phase II Watershed Implementation Plan. HRPDC staff also led discussions with the Committee on the impact of new water quality regulations on local plans and policies and on the Commission's legislative agenda.

- December 1, 2011 – This was a meeting of the Chesapeake Bay Steering Committee. The meeting included a presentation from HRPDC staff on identifying cost effective BMPs and a draft BMP decision matrix developed by HRPDC staff. HRPDC staff also updated the Steering Committee on the federal/state lands GIS analysis and the status of the Phase II WIP.

- January 5, 2012 – This was a meeting of the Joint Environmental Committee. HRPDC staff updated the Committee on the Chesapeake Bay Phase II Watershed Implementation Plan. Ms. Peggy Sanner, from the Chesapeake Bay Foundation, gave a presentation on local government authority to enact ordinances to improve water quality. Mr. Clay Bernick, from the City of Virginia Beach, gave a presentation on various ordinances and policies Virginia Beach has enacted to protect and improve water quality. HRPDC staff also led a discussion of the various impacts of water quality regulations on local governments.

- January 5, 2012 – This was a meeting of the Chesapeake Bay Steering Committee. HRPDC staff updated the Committee on the process and status of the Phase II Watershed implementation Plan (WIP), including work on a regional appendix, consisting of a narrative and preferred scenarios, to be used by localities in their WIP submissions. The Committee reviewed and discussed the draft regional narrative and scenario data. Several Committee members updated the group on the status of local plans. DCR staff also provided an update on various Phase II WIP-related issues.

- February 2, 2012 – This was a meeting of the Joint Environmental Committee. HRPDC staff updated the Committee on the Chesapeake Bay Phase II Watershed Implementation Plan. HRPDC staff also informed the Committee about several Sustainable Communities grants from HUD and Hampton Roads' selection as a kickoff location for the Great American Cleanup™ by Keep America Beautiful. HRPDC staff updated the Committee on various legislative items of interest, and CZM staff gave a presentation and workshop on Coastal GEMS.

- March 1, 2012 – This was a meeting of the Joint Environmental Committee. HRPDC staff briefed the Committee on the results of HRPDC's application for a Sustainable Communities Regional Planning Grant. Ms. Janit Llewellyn, DCR, gave a presentation on the 2013 Virginia Outdoors Plan. HRPDC staff also presented on some initial findings regarding a Section 309 grant project focused on water quality protection.

- April 5, 2012 – This was a meeting of the Joint Environmental Committee. HRPDC staff updated the Committee on the Chesapeake Bay Phase II Watershed Implementation Plan. HRPDC staff also presented information on the activities of askHRgreen.org, the region's environmental education resource, the Hampton Roads Watershed Roundtable, aquaculture, HRPDC applications for Coastal Zone Management Program grants, and the FY10-11 HRPDC Climate Change final report.

- April 5, 2012 – This was a meeting of the Chesapeake Bay Steering Committee. This meeting included updates from HRPDC staff on the Phase II WIP Regional Process and from DCR staff on the Virginia Final Phase II WIP. HRPDC staff also discussed draft comments with the Committee on Virginia's Draft Phase II WIP and led a discussion on future direction of the Committee.

- May 3, 2012 – This was a meeting of the Joint Environmental Committee. HRPDC staff updated the Committee on the Chesapeake Bay Phase II Watershed Implementation Plan. The meeting featured a presentation from Shereen Hughes, Wetlands Watch, on a HRPDC study of "Opportunities and Constraints for Nutrient Reductions on Private Property". HRPDC staff also briefed the Committee on the Great American Cleanup™, Reality Check Hampton Roads, Stormwater Regulations, and PDC competitive grants from the Coastal Zone Program.

- June 7, 2012 – This was a meeting of the Joint Environmental Committee. The meeting featured three presentations as well as several briefings. HRPDC staff gave presentations to the Committee on the results of Reality Check Hampton Roads and on the FY10-11 HRPDC Climate Change Final Report. Ms. Barbara Brumbaugh, from the City of Chesapeake, updated the Committee on state stormwater regulations and local programs. The Committee also received brief updates on CZM grants and the 2012 Hampton Roads Sustainable Living Expo.

- July 12, 2012 – This was a meeting of the Joint Environmental Committee. HRPDC staff gave a presentation to the Committee on the FY10-11 HRPDC Climate Change Final Report. HRPDC staff also updated the Committee on the possible acquisition of regional LIDAR elevation data and the HRPDC's Section 309 grant project.

- September 6, 2012 – This was a meeting of the Joint Environmental Committee. HRPDC staff updated the Committee on stormwater regulations. The Committee received a presentation on a redevelopment study commissioned by the HRPDC that focused on the potential for redevelopment to be used in local Chesapeake Bay TMDL compliance efforts. HRPDC staff also updated the Committee on the Great American Cleanup™, and led a discussion with the Committee on the regional legislative agenda for the 2013 General Assembly session.

- October 4, 2012 – This was a meeting of the Joint Environmental Committee. HRPDC staff updated the Committee on state stormwater regulations and developments with the Chesapeake Bay Program. HRPDDC staff also presented several reports for consideration and recommendations as well as the stormwater budget for the Committee's approval. HRPDC staff also briefed the Committee on the Section 309 project as well as a Sea Level Rise and Extreme Event Workshop held at the College of William and Mary in Williamsburg, Virginia.

- November 1, 2012 – This was a meeting of the Joint Environmental Committee. This meeting featured a presentation from Dewberry on various modeling tools that can be used to assess the impacts of sea level rise on coastal communities. Mr. Clay Bernick, from the City of Virginia Beach, gave a presentation on the Virginia Beach Sustainability Plan. HRPDC staff updated the Committee on a Bacteria Study being conducted to study ways to identify the sources of bacteria in surface water. HRPDC

staff also briefed the Committee on the development of a stormwater BMP decision matrix and comments on the MS4 Phase II General Permit.

- December 13, 2012 – This was a meeting of the Joint Environmental Committee. HRPDC staff updated the Committee on regional comments related to the Small MS4 General Permit. HRPDC staff also briefed the Committee on the Coastal Partners Workshop, MARCO Climate Change Adaptation Workshop, and the status of the Section 309 grant project.

Through the regional coordination process, the HRPDC works to ensure that local government planning and implementation activities in the areas of stormwater management, water supply and groundwater management, wastewater, Chesapeake Bay Preservation Act and Virginia Coastal Zone Management Program are coordinated and mutually supportive. The synergy inherent in this coordination process provides opportunities for local government innovation and enhancement of activities in each of these areas.

**Environmental Strategic Planning Process**

The HRPDC staff continues to work with the HRPDC Hampton Roads Chesapeake Bay, Regional Stormwater Management, and Directors of Utilities Committees, as well as the four regional environmental education programs, to evaluate and enhance the HRPDC Environmental Planning Program. This effort is directed at ensuring that HRPDC activities assist the localities in the most cost-effective and comprehensive fashion. This has resulted in a number of improvements to HRPDC program management and direction and has enhanced the effectiveness of several regional positions.

Accomplishments of this ongoing strategic planning effort include:

- Preparation of several environmental education materials through askHRgreen.org.

- Review, analysis, and preparation of regional comments regarding water quality standards, nutrients, stormwater regulations, and the Chesapeake Bay restoration.

- Increased involvement of the Commission in addressing these issues.

- Examination of cross-cutting issues, such as watershed management planning, bacteria source tracking, sea level rise, and selection of BMPs to meet local planning objectives for green space, minimizing encroachment, and protecting drinking water reservoirs.

## PUBLIC INFORMATION, EDUCATION AND TRAINING

An integral component of the Hampton Roads Technical Assistance Program is the provision of public information and education on environmental issues in the Hampton Roads region. Provision of public information and education was identified by the participating localities at the outset of the program in 1986 as a critical need that could be met cooperatively through the HRPDC. Since that time, the HRPDC staff has provided written communications and briefings to the Commission and a wide range of interest groups on environmental issues and has provided regular briefings to many of those groups. These efforts continued during the grant year.

To ensure that the members of the HRPDC are kept informed about the status of ongoing HRPDC environmental program activities and pending environmental issues that may affect the Hampton Roads region, Project Status Reports on the HRPDC Coastal Resources Management Program and related issues are included in the Monthly Agendas for the HRPDC Executive Committee and Commission Meetings. In addition to the written Agenda materials, the HRPDC staff also routinely briefs the Commission on environmental issues of importance. During the year, briefings were given to the HRPDC on the following topics: the Chesapeake Bay TMDL, climate change and sea level rise, the Sustainable Communities Regional Planning Grant Program and sustainability initiatives, stormwater management, solid waste, sanitary sewer overflows, the regional water supply plan, and HR Green, the HRPDC's environmental education and outreach program.

The HRPDC staff has provided briefings on regional environmental programs, environmental issues and state and federal regulations to a variety of groups. They include civic leagues, business and professional organizations, service clubs, schools and interest groups. The HRPDC staff has presented papers on related HRPDC technical studies and programs at several state, regional, and national conferences. A number of briefings were also provided to state agency Boards, Legislative Commissions, local government Planning Commissions, City Councils/County Boards, and Town Councils on regional environmental projects and issues.

During the grant period, HRPDC staff represented the region in several major panels and presentations on environmental issues. These include stormwater management, the Chesapeake Bay TMDL, groundwater, climate change and sea level rise, water supply, and pesticides. A number of these presentations addressed multiple programs. Programs and activities covered included water supply planning, green infrastructure, TMDL regulations, pollution prevention, the overall HRPDC water resources program, watershed modeling, wetlands regulations, regional environmental education initiatives, and the regional stormwater management program. These meetings and presentations included:

- Presentation to NOAA Hydrographic Services Review Panel, "Regional Planning for Sea-Level Rise in Hampton Roads" – October 26, 2011 (This presentation is included as part of Appendix E).

- APA Webinar Presentation on the Chesapeake Bay TMDL – November 1, 2011

- Presentation at ODU GIS Day, "Using GIS to Plan for Sea Level Rise in Hampton Roads" – November 11, 2011

- Presentation to Current Issues in Storm Water Regulation Seminar (Lorman Education Services) – December 8, 2011

- Presentation to Norfolk Flooding Advisory Group, "Regional Planning for Sea-Level Rise in Hampton Roads" – February 16, 2012

- Presentation to Norfolk Flooding Task Force Meeting, "Regional Planning for Sea-Level Rise in Hampton Roads" – February 29, 2012

- Presentation to Norfolk Flood Awareness Expert Advisory Group, "Regional Planning for Sea-Level Rise in Hampton Roads" – May 31, 2012

- Presentation to Hampton City Staff, "HRPDC FY2010-2011 Climate Change Final Report" – June 12, 2012

- Session Presentation at APA-Virginia Annual Conference, "Water Quality, the Chesapeake Bay TMDL, and Planning" – July 20, 2012

- Presentation at VIMS Blue-Green Infrastructure Workshop, "Green Infrastructure Planning in Hampton Roads" – September 27, 2012

- Presentation at Oceans '12 MTS/IEEE Panel, "Regional Planning for Sea-Level Rise in Hampton Roads" – October 15, 2012

In 2011-2012, askHRgreen.org, the regional environmental education organization, continued to work together to address common issues and to enhance the effectiveness of their educational programs in the areas of water efficiency and awareness; stormwater pollution prevention; recycling and beautification; and fats, oils, and grease prevention. This is an ongoing effort, which requires consensus among a wide range of local government departments. To date, these efforts have focused on improving the cost-effectiveness of media contracts, distributing funding through an educational mini-grant program, the purchase of educational giveaways such as reusable shopping bags, and production of joint advertising in regional publications.

On a quarterly basis through July 2010, the HRPDC prepared and distributed a newsletter, Hampton Roads Review, to nearly 3,000 individuals and groups throughout Hampton Roads. In August 2010, HRPDC replaced the newsletter with an online publication (www.hrpdcva.gov/HamptonRoadsReview) and an e-mailed "HRPDC Weekly Update," which is distributed to nearly 4,000 individuals. To enhance the effectiveness of all HRPDC

public information materials, HRPDC Special Reports on specific topics may be developed and distributed to supplement the regular newsletter. All newsletters and special reports are now distributed electronically. In addition, HRPDC staff regularly places articles on the HRPDC website discussing items of regional relevance. Examples of these articles are included in Appendix E.

The HRPDC staff has devoted considerable attention and effort over the past year to the continued refinement of the Commission's web page (www.hrpdcva.gov). The website contains copies of all newsletters, complete copies of HRPDC technical reports and an overview of Commission activities. All Commission and most committee meeting agenda materials are now posted and available on the HRPDC website. It now contains an extensive section devoted to the HRPDC environmental planning program, including links to a number of other federal, state, local, and private sector sites. Efforts to further enhance the website remain ongoing. A Commission Action Summary is posted to the Hampton Roads Review online publication after each meeting, and the meetings can be viewed on YouTube in their entirety.

Through the Hampton Roads Joint Environmental Committee, HRPDC staff has provided, facilitated, or hosted training on a variety of topics to localities. Subjects over the past year included:

- Virginia Coastal Geospatial and Educational Mapping System (GEMS)
- Stormwater Management Regulations
- VIMS Real-time Storm Tide Observation and Forecasting System

## CONCLUSIONS

Through the Hampton Roads Technical Assistance Program, the HRPDC has provided technical assistance to its member local governments and others; has delivered public information and education to the citizens and government officials of the region; has conducted important technical studies; and has coordinated a regional approach to participation in state and federal environmental programs, while also providing cost-effective support to the Virginia Coastal Zone Management Program.

The Hampton Roads Technical Assistance Program conducted through the VCZMP is a cost-effective solution to the need for environmental cooperation and coordination in the Hampton Roads Region of 3,000 square miles and 1.7 million residents. It provides a vehicle for the sixteen member local jurisdictions, eleven towns, a number of state and federal agencies and others to exchange information and develop coordinated approaches to environmental management issues, while concurrently providing technical support for routine local government planning and management activities. Based on state and federal legislative and executive branch responses to comments and recommendations developed

through this process, it is an effective means for the region's localities to communicate their views on environmental issues. It also provides a cost-effective means of ensuring that this region can participate in and support important environmental initiatives of the Commonwealth, such as the Virginia Coastal Zone Management Program and the Chesapeake Bay Program. It also appears to be a cost-effective mechanism for the Virginia Coastal Zone Management Program and related state environmental programs to use in communicating with and soliciting input from local government. Over the years, funding from the VCZMP through the Hampton Roads Technical Assistance Program has provided the region with the seed to establish a number of new regional programs in the areas of water supply planning and coordination, watershed management, stormwater management and environmental education. The HRPDC and its member local governments continue to believe that the Hampton Roads Technical Assistance Program is an extremely valuable and cost-effective approach to environmental planning and management in the Hampton Roads Region.

# APPENDIX A
# LISTING OF ENVIRONMENTAL IMPACT REVIEWS, PROPOSAL REVIEWS, AND REPRESENTATIVE COMMENT LETTERS

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# 2011-2012 Environmental Impact Reviews

| Received | DEQ # | Name | Sponsor | Affected Localities | Sent |
|---|---|---|---|---|---|
| 9/8/2011 | 11-160F | Airfield Clear Zone Management Plan, Naval Auxiliary Landing Field Fentress | DOD/U.S. Navy | Chesapeake | 10/6/2011 |
| 9/19/2011 | 11-163F | Oil, Gas, & Sulphur Operations in the Outer Continental Shelf - Revisions to Safety & Environmental | DOI/BOEMRE | HRPDC | 10/14/2011 |
| 9/19/2011 | 11-162F | Force Structure Changes at Langley Air Force Base | DOD/U.S. Air Force | Hampton | 10/4/2011 |
| 9/23/2011 | 11-165F | Princess Anne Nursing Home | U.S. Department of Housing and Urban Development | Virginia Beach | 10/21/2011 |
| 10/11/2011 | 11-170F | Demolition of Aircraft Landing Dynamics Facility, NASA Langley Research Center | National Aeronautics and Space Administration | Hampton | 10/27/2011 |
| 10/13/2011 | 11-171F | Streets of Greenbrier | U.S. Housing and Urban Development | Chesapeake | 11/4/2011 |
| 11/4/2011 | 11-182F | Heron's Landing Apartments | U.S. Department of Housing and Urban Development | Chesapeake | 11/15/2011 |
| 11/7/2011 | 11-184F | Force Structure Change, Langley Air Force Base | DOD/U.S. Air Force | Hampton | 12/2/2011 |
| 11/14/2011 | 11-189F | Oceana Salvage Yard Access Road and Burial Unit, Naval Air Station Oceana | DOD/U.S. Navy | Virginia Beach | 12/9/2011 |
| 12/5/2011 | 11-199F | Demolition and Installation of Transmitter Antennae | DHS/U.S. Coast Guard | Virginia Beach | 12/29/2011 |
| 12/8/2011 | 11-204S | Demolition of the Aircraft Landing Dynamics Facility Complex, Langley Research Center | National Aeronautics and Space Administration | Hampton | 1/9/2012 |
| 12/8/2012 | 11-200S | Community Solar Power Program and Certification of Proposed Distributed Solar Generation | State Corporation Commission | HRPDC | 1/9/2012 |
| 12/14/2012 | 11-205F | Air Field Clear Zone Management Plan at Naval Air Station Oceana | DOD/Department of the Navy | Virginia Beach | 1/11/2012 |
| 12/21/2012 | 11-210F | MultidisciplinaryBiomedical Research Center II, Hampton University | DHHS/National Institutes of Health | Hampton | 1/9/2012 |
| 12/30/2012 | 11-215F | Camp Peary Bulkhead Repair and Pilings Removal | DOD/Department of the Navy | York County | 1/27/2012 |
| 1/19/2012 | 12-007F | Air Field Clear Zone Management Plan, Naval Station Norfolk | DOD/Department of the Navy | Norfolk | 2/13/2012 |
| 1/19/2012 | 12-008F | Commercial Renewable Energy Transmission on the Outer Continental Shelf Offshore | DOI/BOEMRE | Virginia Beach | 2/14/2012 |
| 2/9/2012 | 12-027F | Commercial Leasing for Wind Power Development on the Outer Continental Shelf Offshore | DOI/BOEMRE | Virginia Beach | 3/2/2012 |
| 2/16/2012 | 12-030F | Revision and Reissuance of Regional Permit 20 | DOD/U.S. Army Corps of Engineers | HRPDC | 3/9/2012 |
| 2/28/2012 | 12-042S | Band Room Building | Christopher Newport University | Newport News | 3/23/2012 |
| 2/28/2012 | 12-043S | New Warehouse & Rail Track Upgrade at Portsmouth Marine Terminal | Virginia Port Authority | Portsmouth | 3/23/2012 |
| 3/5/2012 | 12-046F | Pierside Testing of Signal Analysis System | DOD/U.S. Navy | Newport News; Norfolk; Portsmouth | 3/27/2012 |
| 3/5/2012 | 12-047F | Reissuance of Nationwide Permits & Virginia Regional Conditions | DOD/U.S. Army Corps of Engineers | HRPDC | 4/2/2012 |

| Received | DEQ # | Name | Sponsor | Affected Localities | Sent |
|---|---|---|---|---|---|
| 3/6/2012 | 12-050F | Management of Vulture Damage in Virginia | USDA/Animal & Plant Health Inspection Service/WS | HRPDC | 4/2/2012 |
| 3/26/2012 | 12-061S | University Entrance/Interior Roads | Christopher Newport University | Newport News | 4/24/2012 |
| 4/4/2012 | 12-066F | The Grove at Arboretum | U.S. Department of Housing and Urban Development | Chesapeake | 4/30/2012 |
| 4/5/2012 | 12-065F | Star-Spangled Banner National Historic Trail and Scenic Byway | Department of the Interior: National Park Service | HRPDC | 4/24/2012 |
| 4/6/2012 | 12-069S | Integrated Science Center, Phase 3 | College of William and Mary | Williamsburg | 5/4/2012 |
| 4/6/2012 | 12-075F | Dam Neck Main Entry Control Point | DOD/U.S. Navy | Virginia Beach | 5/2/2012 |
| 4/9/2012 | 12-073F | Geologic & Geophysical Exploration on the Atlantic Outer Continental Shelf | DOI/BOEMRE | HRPDC | 4/30/2012 |
| 4/11/2012 | 12-077F | Tactical Vehicle Training Course, Fort Story | DOD/U.S. Navy | Virginia Beach | 5/11/2012 |
| 4/23/2012 | 12-080F | Downtown Tunnel/Midtown Tunnel/MLK Extension Project | USDOT/Federal Highway Adminstration | Norfolk; Portsmouth | 5/18/2012 |
| 4/25/2012 | 12-081S | New Education Building | Old Dominion University | Norfolk | 5/18/2012 |
| 4/25/2012 | 12-082F | Ironbound Square Redevelopment Project | U.S. Department of Housing and Urban Development | James City County | 5/18/2012 |
| 5/7/2012 | 12-095F | Reissuance of State Programmatic General Permit | DOD/Army/U.S. Army Corps of Engineers | HRPDC | 5/23/2012 |
| 5/8/2012 | 12-094F | Anti-Terrorism/Force Protection Upgrades to Naval Special Warefare Development Group | DOD/Department of the Navy | Virginia Beach | 6/1/2012 |
| 5/8/2012 | 12-093F | Shoreline Restoration and Protection Project at Joint Expeditionary Base Little Creek/Fort Story | DOD/Department of the Navy | Virginia Beach | 6/1/2012 |
| 5/8/2012 | 12-092F | Repairs to the Shoreline Protection System at Naval Air Station Oceana, Dam Neck Annex | DOD/Department of the Navy | Virginia Beach | 6/1/2012 |
| 5/14/2012 | 12-099F | Atlantic Fleet Training and Testing | DOD/Department of the Navy | HRPDC | 6/8/2012 |
| 5/22/2012 | 12-105F | Power Distribution Upgrades at Joint Expeditionary Base Little Creek/Fort Story | DOD/Department of the Navy | Virginia Beach | 6/14/2012 |
| 5/29/2012 | 12-111F | Expansion of Sector Engineer Facility, Coast Guard Base Support Unit, Portsmouth | DHS/U.S. Coast Guard | Chesapeake | 6/29/2012 |
| 6/5/2012 | 12-115F | Bravo Concourse Security Checkpoint Expansion | USDOT/Federal Aviation Administration | Norfolk | 6/29/2012 |
| 6/15/2012 | 12-119F | Princess Anne WMA - Canal Maintenance Dredge and Wave Screen - Virginia Beach | U.S. Fish and Wildlife Service | Virginia Beach | 7/13/2012 |
| 6/28/2012 | 12-125S | Modified EIR for Master Plan Parking Lots and Acquisition | Christopher Newport University | Newport News | 7/27/2012 |
| 6/29/2012 | 12-120F | Project CH12 POD-005, Columbia Gas Transmission | DOE/Federal Energy Regulatory Commission | Isle of Wight County | 7/13/2012 |
| 7/9/2012 | 12-128S | Surry-Skiffes Creek 500 kV Transmission Line, Skiffes Creek-Whealton 230 kV Transmission Line | State Corporation Commission | Surry County; James City County; York County; Hampton; Newport News | 8/2/2012 |

| Received | DEQ # | Name | Sponsor | Affected Localities | Sent |
|---|---|---|---|---|---|
| 7/19/2012 | 12-138F | Kenley Commons Habitat for Humanity Housing | U.S. Department of Housing and Urban Development | Virginia Beach | 8/13/2012 |
| 7/30/2012 | 12-140 | Control of Common Reed (Phragmites australis) at Joint Base Langley-Fort Eustis, Virginia | DOD/Department of the Air Force | Newport News | 8/16/2012 |
| 7/30/2012 | 12-141F | Maintenance Dredging of the Skiffes Creek Federal Navigation Channel at Joint Base Langley-Fort Eustis, Virginia | DOD/Department of the Air Force | Newport News | 8/16/2012 |
| 8/2/2012 | 12-144F | Camp Peary Range 37 Shoreline Stabilization | DOD/Department of the Navy | York County | 8/27/2012 |
| 8/13/2012 | 12-150F | Repair and Stabilize the York River Shoreline to Protect the Colonial Parkway, Colonial NHP | DOI/National Park Service | York County | 9/7/2012 |
| 8/15/2012 | 12-151F | The Pointe at Pickett Farms Phase I | U.S. Department of Housing and Urban Development | Norfolk | 9/13/2012 |
| 9/1/2012 | 12-155F | Tier 1 FEIS for the Richmond/Hampton Roads Passenger Rail Project | DRPT/Federal Railroad Administration | HRPDC; Norfolk; Suffolk | |
| 9/14/2012 | 12-162F | E-2/C-2 Field Carrier Landing Practice Operations | DOD/Department of the Navy | HRPDC | 10/10/2012 |
| 9/20/2012 | 12-164S | Development at Existing Norfolk Community Hospital | Norfolk State University | Norfolk | 10/17/2012 |
| 9/25/2012 | 12-166S | Sadler Center Dining Hall Addition | College of William and Mary | Williamsburg | 10/23/2012 |
| 9/27/2012 | 12-172F | Proposed Replacement/Repair of Bldg. V52 at NAS Norfolk | DOD/U.S. Navy | Norfolk | 10/23/2012 |
| 9/28/2012 | 12-168F | Construction and Operation of U.S. Army Reserve Center in Suffolk | DOD/U.S. Army | Suffolk | 10/23/2012 |
| 10/12/2012 | 12-183F | Witchduck Road and Mac Street Roadway Improvements | USDOT/Federal Highway Adminstration | Virginia Beach | 11/13/2012 |
| 10/15/2012 | 12-182F | Lesner Bridge Replacement Project | USDOT/Federal Highway Adminstration | Virginia Beach | 11/13/2012 |
| 10/16/2012 | 12-085F | Fendering System Upgrade at USCG Station Little Creek | DHS/U.S. Coast Guard | Virginia Beach | 11/14/2012 |
| 10/18/2012 | 12-186F | Installation & Operation of the Z-312 Cogeneration-Retrofit Facility, Naval Station Norfolk | DOD/Department of the Navy | Norfolk | 11/14/2012 |
| 11/2/2012 | 12-191F | Merdian Parkside | DOD/U.S. Army Corps of Engineers | Newport News | 11/21/2012 |
| 11/9/2012 | 12-193F | Dam Neck Car Care Center Expansion | DOD/Army/U.S. Army Corps of Engineers | Virginia Beach | 12/3/2012 |
| 11/13/2012 | 12-194F | Airfield Electrical Improvements, Norfolk International Airport | USDOT/Federal Aviation Administration | Norfolk | 12/4/2012 |
| 11/13/2012 | 12-196F | Transfer of Interest in Real Property of the U.S. to the Commonwealth for Highway Construction | DOD/Department of the Navy | Norfolk | 12/4/2012 |
| 11/20/2012 | 12-204F | Woodlake Drive Extension, City of Chesapeake | DOD/U.S. Army Corps of Engineers | Chesapeake | 12/20/2012 |
| 12/7/2012 | 12-212F | PER Properties, Inc. | DOD/Army/U.S. Army Corps of Engineers | Portsmouth | 12/28/2012 |

# 2011-2012 Proposal Reviews

| Date | Number | Title | Applicant | Program | Impact |
|---|---|---|---|---|---|
| 10/27/2011 | VA121014-0923760 | Franciscan Brethren of St. Philip Application for Federal Assistance | Franciscan Brethren of St. Philip | United States Department of Agriculture Rural Development | York County |
| 12/2/2011 | VA121130-1023760 | Assistance Proposal for Abex Corporation (RIFS OU-2) | Virginia Department of Environmental Quality | Hazardous Substance Response Trust Fund | Portsmouth |
| 1/4/2012 | VA121222-1123xxx | Chesapeake Media Service - Bay Journal | Chesapeake Media Service, Inc. | Chesapeake Bay Program | Statewide |
| 2/1/2012 | VA120125-1223740 | Empowering Low Income Students to Restore the Elizabeth River | The Elizabeth River Project | Environmental Protection Agency | Elizabeth River watershed |
| 2/29/2012 | VA120209-1323760 | Virginia's NO2 Near-Road Monitoring Program | Virginia Department of Environmental Quality | Air Pollution Control Program Support (EPA) | Hampton Roads |
| 4/5/2012 | VA120312-1423760 | Section 103 PM 2.5 Air Monitoring Program | Virginia Department of Environmental Quality | Air Pollution Control Program Support (EPA) | Statewide |
| 4/5/2012 | VA120404-1523095 | Neighbors Drive/Richmond Road Neighborhood Improvements Grant Application | James City County | Virginia Community Development Block Grant | James City County |
| 5/11/2012 | VA120419-1723760 | FY2013 Chesapeake Bay Monitoring Program (CWA 117d) | Virginia Department of Environmental Quality | Chesapeake Bay Program (CBP) - Environmental Protection Agency (EPA) | Chesapeake Bay watershed |
| 5/11/2012 | VA120419-1623760 | FY2013 Chesapeake Bay Monitoring Program - CWA 117 (e)(1)(B) | Virginia Department of Environmental Quality | Chesapeake Bay Program (CBP) - Environmental Protection Agency (EPA) | Chesapeake Bay watershed |
| 5/15/2012 | VA120425-1823760 | Safe Drinking Water Act - FY 2013 Public Water System Supervision Grant | Virginia Department of Health - Office of Drinking Water | Environmental Protection Agency | Statewide |
| 6/1/2012 | VA120507-1923760 | FY12-14 VADEQ Technical Review and Services for Defense Environmental Restoration Program (DERP) Activities at Active DOD Facilities and Environmental Restoration at Base Closure Sites | Virginia Department of Environmental Quality | US Department of Defense | Statewide |

| Date | Number | Title | Applicant | Program | Impact |
|---|---|---|---|---|---|
| 6/5/2012 | VA120510-2123760 | FY2012 State Revolving Loan Funds Capitalization Application | Virginia Department of Environmental Quality | Capitalization Grants for Clean Water State Revolving Funds | Statewide |
| 6/5/2012 | VA120510-2023760 | 27th Year VA CZM Implementation Application | Virginia Department of Environmental Quality | NOAA - Coastal Management Programs | Coastal Zone |
| 6/7/2012 | VA120529-2223760 | Virginia DEQ DERA2 Project | Virginia Department of Environmental Quality | EPA - State Clean Disel Grant Program | Coastal Zone |
| 7/5/2012 | VA120621-2423760 | FY 2012 Drinking Water State Revolving Fund Program - Safe Drinking Water Act | Virginia Department of Health | EPA - Safe Drinking Water Revolving Fund | Statewide |
| 7/30/2012 | VA120730-2523710 | Marine Engine Repower of the Tug Boat G.M. McAllister | Virginia Maritime Association (VMA) | Environmental Protection Agency | Newport News, Hampton, Portsmouth |
| 8/29/2012 | VA120802-2623760 | VA DEQ Pollution Prevention Enhancements | Virginia Department of Environmental Quality | EPA/Pollution Prevention Grant Program | Statewide |

HAMPTON ROADS PDC
PLANNING DISTRICT COMMISSION
STAN D. CLARK, CHAIRMAN • THOMAS G. SHEPPERD, JR., VICE CHAIR • JAMES O. McREYNOLDS, TREASURER
DWIGHT L. FARMER, EXECUTIVE DIRECTOR/SECRETARY

MEMBER JURISDICTIONS
CHESAPEAKE
FRANKLIN
GLOUCESTER
HAMPTON
ISLE OF WIGHT
JAMES CITY
NEWPORT NEWS
NORFOLK
POQUOSON
PORTSMOUTH
SOUTHAMPTON
SUFFOLK
SURRY
VIRGINIA BEACH
WILLIAMSBURG
YORK

October 13, 2011

Christine F. Conrad, Ph.D.
Senior Regulatory Specialist
Williamsburg Environmental Group, Inc.
5209 Center Street
Williamsburg, VA 23188

Re: Camp Peary Range 37 Shoreline Stabilization - York County, Virginia
Armed Forces Experimental Training Activity, Camp Peary
(ENV:GEN)

Dear Dr. Conrad:

Pursuant to your request, the staff of the Hampton Roads Planning District Commission has reviewed the information provided on the proposed shoreline stabilization project at Camp Peary in Yorktown. Based on this review, we recommend the following be addressed in the required Environmental Assessment.

The HRPDC recognizes the potentially harmful impacts of climate change, particularly sea level rise. High rates of relative sea level rise have been documented by NOAA tide gauges across the Hampton Roads region (e.g. 3.81±0.47mm/year at Gloucester Point; 4.44±0.27mm/year at Sewell's Point). Climate change could result in even higher rates of sea level rise. The project site appears to be in an area that would be vulnerable to sea level rise of at least 1 meter (Attachment 1). In addition, the project site appears to be located in an area of very high ecological value, according to the Virginia Ecological Value Assessment (Attachment 2).

Due to these potential impacts, the HRPDC considers it important to incorporate the expected impacts of climate change into long-range planning and development decisions. Specifically, we recommend that the required Environmental Assessment address the potential impacts of sea level rise on the proposal's effectiveness and life expectancy. We recommend that the Environmental Assessment also include discussion of impacts to ecologically significant resources as well as any impacts on the ability of wetlands to migrate inland in response to sea level rise.

We appreciate the opportunity to comment on this proposal. If you have any questions, please do not hesitate to call.

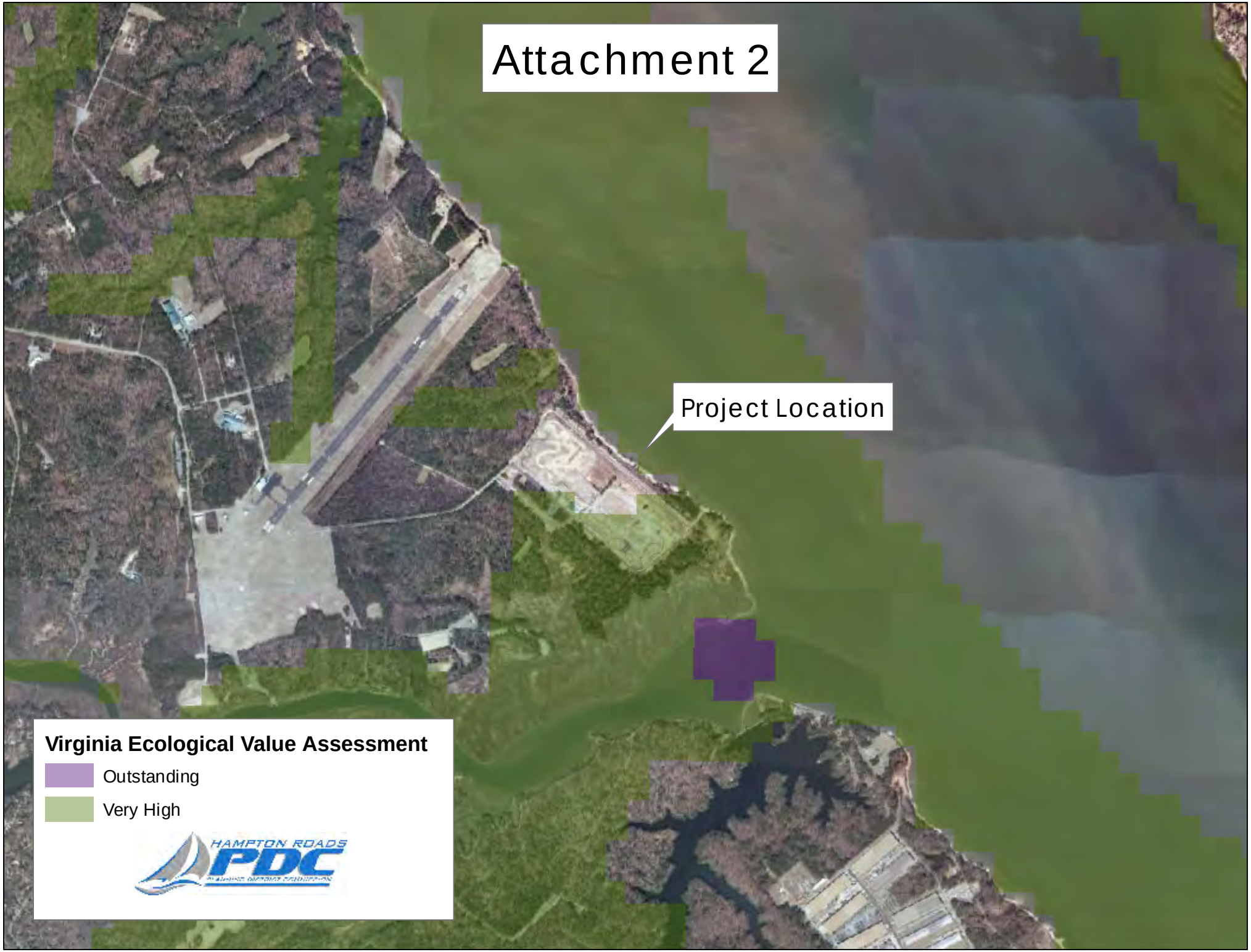
Sincerely,

John M. Carlock, AICP
Deputy Executive Director

BJM/fh

Attachments

Attachment 1
Project Location
Sea Level Rise Vulnerability
Vulnerable to 1 Meter of Sea Level Rise
HAMPTON ROADS
PDC


Attachment 2
Project Location
Virginia Ecological Value Assessment
Outstanding
Very High
HAMPTON ROADS
PDC

HAMPTON ROADS PDC
PLANNING DISTRICT COMMISSION
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WILLIAMSBURG

YORK

February 14, 2012

Mr. John E. Fisher
Virginia Department of Environmental Quality
Office of Environmental Impact Review
629 East Main Street, Sixth Floor
Richmond, VA 23219

Re: DEQ #12-008F, Commercial Renewable Energy Transmission on the Outer Continental Shelf Offshore Mid-Atlantic States (ENV: GEN)

Dear Mr. Fisher:

Pursuant to your request, the staff of the Hampton Roads Planning District Commission has reviewed the Request for Information from Interested or Affected Parties for the proposed project, Commercial Renewable Energy Transmission on the Outer Continental Shelf Offshore Mid-Atlantic States. We have consulted with city staff regarding this project.

Based on this review, the proposal appears to be consistent with local and regional plans and policies. Both the Hampton Roads Planning District Commission and the City of Virginia Beach support the development of offshore wind energy facilities as an important part of the nation's energy infrastructure. Integrating offshore facilities into the existing grid involves significant planning issues. Any specific proposal to establish an interconnection point in the City of Virginia Beach will need to be addressed through the City's existing planning processes and policies as well as reviewed for consistency with the Virginia Coastal Zone Management Program.

We appreciate the opportunity to review this project. If you have any questions, please do not hesitate to call.

Sincerely,

Dwight L. Farmer

John M. Carlock, AICP
Deputy Executive Director

BJM/fh

Copy: Clay Bernick, VB

HAMPTON ROADS PDC
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April 24, 2012

Mr. Charles H. Ellis III
Virginia Department of Environmental Quality
Office of Environmental Impact Review
629 East Main Street, Sixth Floor
Richmond, VA 23219

Re: DEQ #12-065F, Star-Spangled Banner National Historic Trail and Scenic Byway (ENV: GEN)

Dear Mr. Ellis:

Pursuant to your request, the staff of the Hampton Roads Planning District Commission has reviewed the environmental assessment and federal consistency determination for the proposed project, Star-Spangled Banner National Historic Trail and Scenic Byway (Star-Spangled Banner Trail).

Based on this review, the proposal appears to be consistent with local and regional plans and policies. The preferred alternative for the trail does not itself appear to enter the Hampton Roads region. The Hampton Roads Planning District Commission encourages the National Park Service and Virginia Department of Conservation and Recreation to provide connections between existing and future trails in Virginia and the Star-Spangled Banner Trail. Such Virginia trails in Hampton Roads or along the Chesapeake Bay could potentially be designated as connecting or side trails under the third interpretive theme described in Appendix Q to the Comprehensive Management Plan and Corridor Management Plan and Environmental Assessment: "natural and economic resources of the Chesapeake Bay region that created and have sustained the region as a hub for trade, industry, and government". Linking trails and similar resources together could further local, state, and federal goals regarding the protection of natural resources, historic preservation and education, and outdoor recreation. Specific resources in Hampton Roads that could eventually be linked to the Star-Spangled Banner Trail include the recently-designated Fort Monroe National Monument, the Captain John Smith Chesapeake National Historic Trail, and the Virginia War of 1812 Heritage Trail.

We appreciate the opportunity to review this project. If you have any questions, please do not hesitate to call.

Sincerely,

John M. Carlock, AICP
Deputy Executive Director

BJM/fh

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August 2, 2012

Mr. John E. Fisher
Virginia Department of Environmental Quality
Office of Environmental Impact Review
629 East Main Street, Sixth Floor
Richmond, VA 23219

Re: DEQ #12-128S, Surry-Skiffes Creek 500kV Transmission Line, Skiffes Creek-Whealton 230 kV Transmission Line, & Skiffes Creek 500 kV-230 kV-115 kV Switching Station, PUE 2012-00029 (ENV: GEN)

Dear Mr. Fisher:

Pursuant to your request, the staff of the Hampton Roads Planning District Commission has reviewed State Corporation Commission Application No. 257, submitted by Virginia Electric and Power Company (Dominion Virginia Power), for the following project, Surry-Skiffes Creek 500kV Transmission Line, Skiffes Creek-Whealton 230 kV Transmission Line, & Skiffes Creek 500 kV-230 kV-115 kV Switching Station, PUE 2012-00029, which would potentially affect the Cities of Hampton and Newport News and the Counties of James City, Surry, and York. We have consulted with staff from all five localities regarding this application.

The proposed project has the potential to result in several adverse impacts to Hampton Roads localities and residents. The proposed transmission line could result in negative impacts to important natural, cultural, historic, recreational, and economic resources of local, state, and national importance. The preferred proposal of an overhead transmission line could cause severe visual impacts to areas and properties along the James River, which is designated as a Virginia Scenic River and is listed on the Nationwide Rivers Inventory. The river is also part of the Captain John Smith Chesapeake National Historic Trail. The proposed alternative route beginning in Charles City County would cause significant environmental impacts, as well as impacts to numerous properties along the route.

Based on this review, staff recommends that Dominion Virginia Power reconsider an underground crossing of the James River. In addition, staff recommends that Dominion Virginia Power work with affected localities to eliminate or mitigate any unavoidable impacts to properties and resources affected by the project.

We appreciate the opportunity to review this project. If you have any questions, please do not hesitate to call.

Sincerely,

John M. Carlock, AICP
Deputy Executive Director

BJM/fh

Copy: Keith Cannady, HA
Michael King, NN
Rhonda Mack, SY
Albert Maddalena, YK
Allen Murphy, JC

HAMPTON ROADS PDC
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YORK

August 27, 2012

Mr. John E. Fisher
Virginia Department of Environmental Quality
Office of Environmental Impact Review
629 East Main Street, Sixth Floor
Richmond, VA 23219

Re: DEQ #12-144F, Camp Peary Range 37 Shoreline Stabilization (ENV: GEN)

Dear Mr. Fisher:

Pursuant to your request, the staff of the Hampton Roads Planning District Commission has reviewed the Environmental Assessment and Federal Consistency Determination for the following project, Camp Peary Range 37 Shoreline Stabilization, in York County. We have consulted with county staff regarding this project.

Based on this review, the proposal appears to be consistent with local and regional plans and policies, as long as all necessary permits and permissions are acquired, including a wetlands permit from the York County Wetlands Board.

We appreciate the opportunity to review this project. If you have any questions, please do not hesitate to call.

Sincerely,

John M. Carlock, AICP
Deputy Executive Director

BJM/kg

Cc: Al Maddalena, YK

HAMPTON ROADS PDC
PLANNING DISTRICT COMMISSION
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YORK

September 13, 2012

Mr. John E. Fisher
Virginia Department of Environmental Quality
Office of Environmental Impact Review
629 East Main Street, Sixth Floor
Richmond, VA 23219

Re: DEQ #12-151F, The Pointe at Pickett Farms Phase I (ENV: GEN)

Dear Mr. Fisher:

Pursuant to your request, the staff of the Hampton Roads Planning District Commission has reviewed the Federal Consistency Determination for the following project, The Pointe at Pickett Farms Phase I, in the City of Norfolk. We have consulted with city staff regarding this project.

Based on this review, the proposal as presented appears to be inconsistent with the Coastal Lands Management enforceable policy of the Virginia Coastal Resources Management Program. Specifically, the project, as presented on the CBPA Buffer Conceptual Impact Plan and the Preliminary Site Plan, does not appear to be consistent with Norfolk's Chesapeake Bay Preservation Ordinance, which states that "indigenous vegetation shall be preserved to the maximum extent possible." The proposal appears to negatively impact a tidal pond that extends from Broad Creek eastward; no buffer is provided as required. In addition, the project appears to be partly within FEMA-designated AE and 0.2 percent annual chance flood hazard flood zones. However, it is our understanding that the project's developer is currently working with Norfolk city staff to address these issues.

We appreciate the opportunity to review this project. If you have any questions, please do not hesitate to call.

Sincerely,

John M. Carlock, AICP
Deputy Executive Director

BJM/fh

Copy: Lee Rosenberg, NO
Seamus McCarthy, NO

# APPENDIX B
# DEVELOPMENT OF SEAMLESS REGIONAL DIGITAL ELEVATION MODEL (DEM)

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# Development of a Seamless Regional Digital Elevation Model (DEM) for Hampton Roads, Virginia

In July 2012 the Hampton Roads Planning District Commission published its final report for a three-year focal area grant project focused on identifying and planning for the impacts of climate change on the Hampton Roads region. The main feature of this report was a map book for the entire region that showed which areas could be either inundated or regularly flooded with a meter of sea level rise. While this effort was appreciated by the region, comments from both Commission members and local government staff showed that the maps were useful, but that improved products were needed. The comments received on the maps focused on the elevation data used in the analysis; this data was coarse (30-meter pixel size) and relatively inaccurate (with a Root Mean Square Error of either 76cm or 152cm). Recognizing that useful sea level rise inundation maps would require more accuracy and precision, HRPDC staff sought to identify and acquire the best available elevation data for the entire planning district. This data was acquired from several sources, including individual localities, the Department of Defense (DOD), the U.S. Geological Survey National Elevation Dataset (NED), the National Geospatial-Intelligence Agency (NGA), the Virginia Geographic Information Network (VGIN), and the Federal Emergency Management Agency (FEMA).

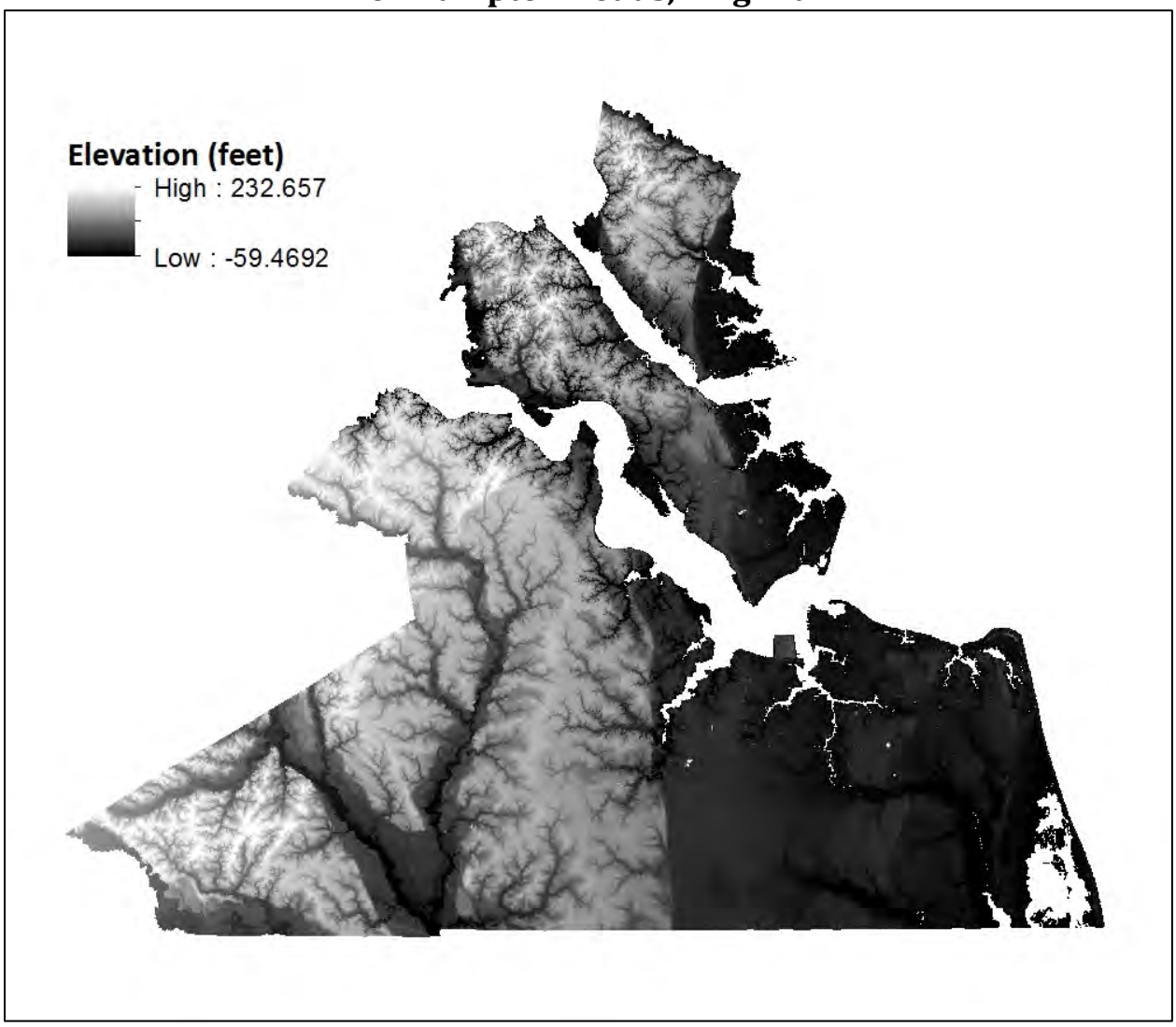
## ELEVATION DATASETS USED IN THE SEAMLESS DEM

| Coverage Area | Source or Provider |
|---|---|
| Craney Island | NED |
| Ft. Eustis/Mulberry Island | NED |
| Upper Peninsula (parts of James City County, Newport News, Williamsburg, and York County) | DOD/NGA |
| Chesapeake | Chesapeake/DOD |
| Newport News | Newport News |
| South Hampton Roads (parts of Chesapeake, Norfolk, Portsmouth, and Virginia Beach) | DOD/NGA |
| Upper York County | York County |
| Western Tidewater (including Gloucester County, Isle of Wight County, James City County, Suffolk, Surry County, and Williamsburg) | VGIN |
| Southampton County | VGIN/FEMA |
| Franklin | VGIN/FEMA |
| Portsmouth | Portsmouth/VGIN/FEMA |
| Virginia Beach | Virginia Beach/DOD |

Only two areas in the region were not covered by high-resolution, LIDAR (Light Detection and Ranging) elevation data: Ft. Eustis/Mulberry Island in Newport News and the western shore of Craney Island in Portsmouth. 1/3 arc-second elevation data from the U.S. Geological Survey's National Elevation Dataset (NED) was used to fill in these gaps. Once all the datasets were acquired, they were processed to have the same horizontal and vertical

datums and units and to prepare them for mosaicking. Existing datasets were reprojected as needed to the Virginia State Plane South coordinate system and then resampled (using cubic convolution) to the same horizontal resolution (5-foot pixel size). Datasets using meters as the vertical unit were converted to feet using the raster calculator function and a conversion factor of 3.28084. The two NED datasets were also converted from NGVD29 to NAVD88 (which was the original vertical datum for all of the other datasets) using conversion factors from the VERTCON tool developed by NOAA. Once all processing of individual datasets was completed, they were all mosaicked into a new, seamless coverage, using the BLEND function to reconcile overlapping datasets. The final product is shown below.

**Seamless Regional Digital Elevation Model (DEM)**
**for Hampton Roads, Virginia**



# APPENDIX C
# REALITY CHECK HAMPTON ROADS

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# Reality Check Hampton Roads

Reality Check Hampton Roads was a regional land use visioning and planning exercise sponsored by the Urban Land Institute in partnership with Old Dominion University (ODU), the Center for Real Estate and Economic Development (CREED), the Hampton Roads Planning District Commission (HRPDC), the Hampton Roads Transportation Planning Organization (HRTPO), and the Hampton Roads Partnership (HRP). HRPDC staff actively participated in the planning and preparation for the exercise, which took place on May 17, 2012 at ODU's campus in Norfolk, Virginia. Nearly 300 stakeholders from around the region with a variety of backgrounds participated in the event. In addition to helping organize the event, several HRPDC staff members participated in the exercise as stakeholders.

HRPDC staff produced the game map, which was used by the participants to designate where future growth in employment and population in Hampton Roads, Virginia should go, using LEGO® blocks. The map featured an index grid as well as several layers of data: land use, military and federal lands, other lands protected from development, and several base layers (hydrology/wetlands, transportation, and points of interest). A special feature of this map, and of the Reality Check game, is that there are no political boundaries shown within the sixteen-locality Hampton Roads region, which encouraged participants to think and plan regionally. Also of note is that the land use layer is actually derived from U.S. Census population data and land cover from NOAA's Coastal Change Analysis Program. This combination resulted in a regionally consistent layer showing both intensity of development and population density. The map was also presented as part of a poster on the event at the 2012 International Esri User Conference in San Diego, California, where it earned 2nd place for Best Data Integration in the Map Gallery competition.

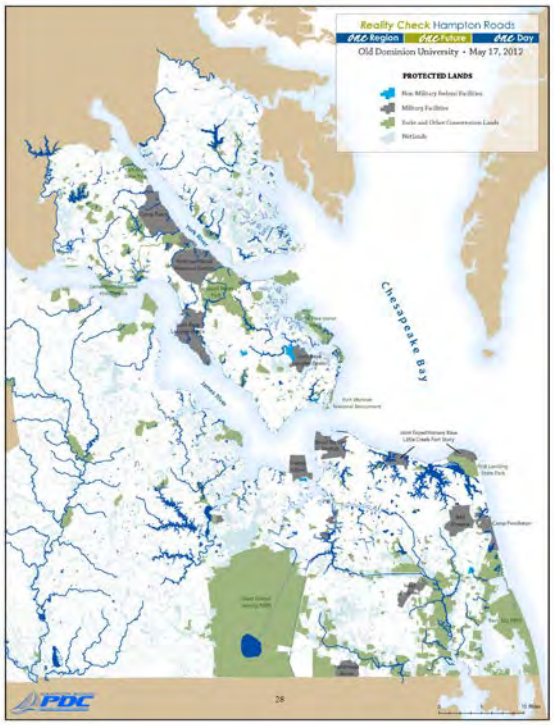
HRPDC staff was also heavily involved in planning the technical GIS requirements for the day of the game, in cooperation with staff from ODU. The HRPDC also assisted ODU in developing the methodology to analyze the LEGO® block placement for each of the 30 tables at the event.

As part of this effort, HRPDC staff made several presentations on the exercise and the geographic analysis involved. This appendix includes two of those presentations: one given to the Hampton Roads Joint Environmental Committee as a summary of the Reality Check exercise, and another given at ODU's GIS Day, which focused on the analysis. Also included is a scaled-down version of the poster and map presented at the Esri conference.

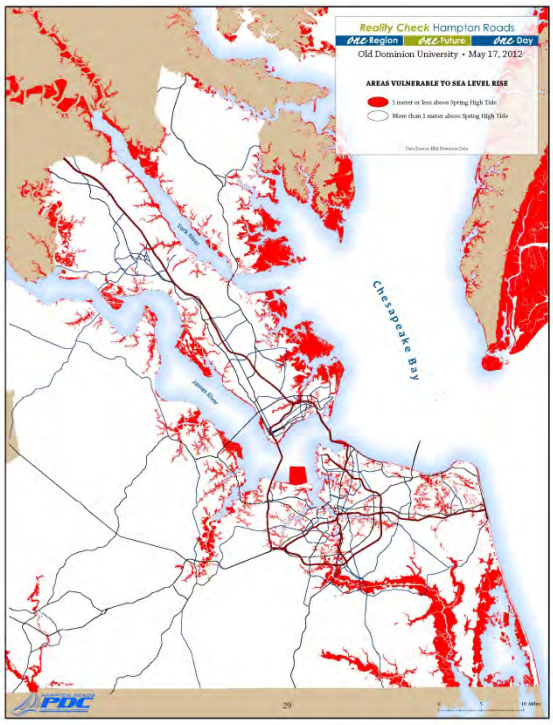
**Reality Check Hampton Roads participants allocate future growth around the region (Credit: Sara J. Kidd, HRPDC)**

# Reality Check Hampton Roads and Coastal Zone Management

HRPDC's coastal resources management work provided a significant amount of background information for Reality Check Hampton Roads. In addition to the game map, HRPDC staff developed several maps for the Reality Check Hampton Roads Participant Guidebook, which was distributed to each game participant. These maps documented basic information such as existing transportation infrastructure, current employment, and population density. In addition, two maps were based directly on HRPDC's coastal zone management work. The first combined data from HRPDC's Green Infrastructure and Coastal Resources Technical Assistance projects to create a map showing military and other federal facilities in Hampton Roads, as well as wetlands and various protected lands, such as parks and conservation easements. This information was also included on the main game map. The second map showed areas vulnerable to sea level rise, which was the subject of a focal area grant project for HRPDC between 2008 and 2012. These maps provided needed background information for game players trying to determine where future growth in Hampton Roads should be directed.




**A map produced by HRPDC staff for Reality Check Hampton Roads showing military and federal facilities and protected lands in Hampton Roads. The map and data were developed as part of HRPDC's FY10-11 Coastal Resources Management Program, which was funded in part by the Virginia Coastal Zone Management Program.**




**A map produced by HRPDC staff for Reality Check Hampton Roads showing areas vulnerable to sea level rise in Hampton Roads. The map was produced as part of HRPDC's FY10-11 Climate Change Adaptation project, which was funded in part by the Virginia Coastal Zone Management Program.**

## What is Reality Check?

- Day long regional visioning exercise to develop land use principles and alternative growth scenarios through 2035
- Gathering of 300 stakeholders from across region representing sectors like housing, business, transportation, environmental, etc.
- Produces a document to guide current and future regional leaders

*How should we grow? Where should we grow?*

## Projected Growth

- By 2035
  - 350,000 new residents
  - 140,000 housing units (2.5 people/unit)
    - 28,000 workforce housing units
    - 112,000 other housing units
  - 175,000 new jobs (1 job/2 people)

## Reality Check Game

- Each table developed Guiding Principles to follow
- Using LEGOs and string on the map, each group created a future growth scenario for Hampton Roads

## Reality Check Game

- LEGOs represent density:
  - Blue = 1, 000 jobs
  - Yellow = 500 housing units
  - Tan = 500 workforce housing units
- 455 LEGOs total per table

## Top Guiding Principles

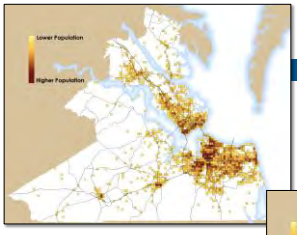
- Develop Multi-Modal, Connected Transportation Systems
- Foster Diversity in Business and Housing and Maintain Local Character
- Promote Mixed Use Development with Diversity of Housing Types
- Preserve Natural Areas, Open Space, Agricultural and Historic Resources

## Top Guiding Principles

- Redevelop and Infill Areas with Existing Infrastructure
- Maintain Compatibility and Collaboration with Military
- Regional Approach to Environmental Stewardship and Transportation

## Barriers and Challenges

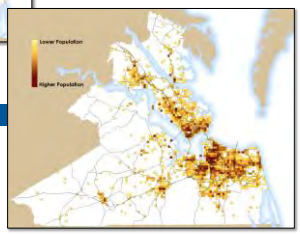
- Lack of multi-jurisdictional collaboration
- Potential loss of military presence
- Cultural inertia, suburban mentality
- Environmental regulations and changes
- Light Rail
- Resistance to raising new revenue
- Retention and attraction of talent




Reality Check Hampton Roads
One Region | One Future | One Day

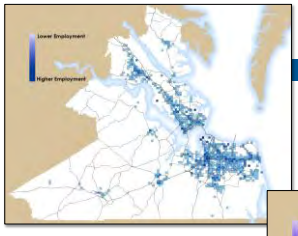
**2010 Population Distribution**

Current population distributed on regional map grid




**2035 Population Distribution**

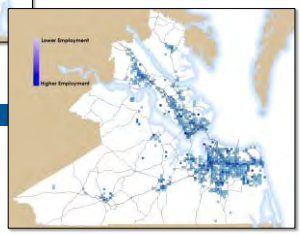
Future population growth areas determined by the median number of LEGOs from all 30 tables (preliminary only)




Reality Check Hampton Roads
One Region | One Future | One Day

**2010 Employment Distribution**

Current employment distributed on regional map grid

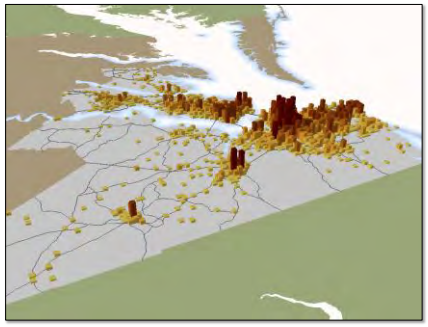



**2035 Employment Distribution**

Future job growth areas determined by the median number of LEGOs from all 30 tables (preliminary only)

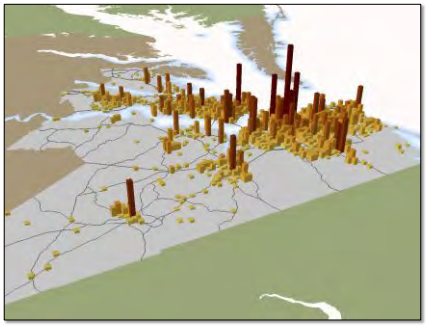
Reality Check Hampton Roads
One Region | One Future | One Day

**2010 Population Distribution**



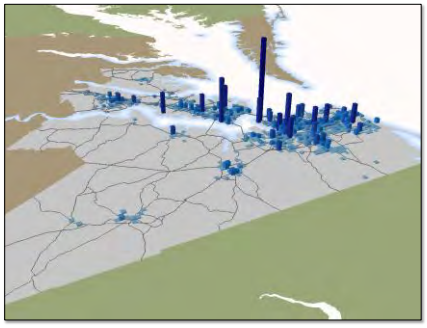
Reality Check Hampton Roads
one Region | one Future | one Day

2035 Population Distribution (Preliminary)



Reality Check Hampton Roads
one Region | one Future | one Day

2010 Employment Distribution



Reality Check Hampton Roads
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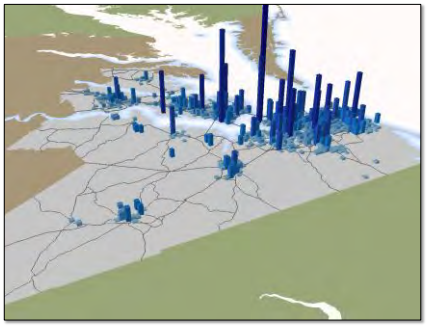
2035 Employment Distribution (Preliminary)

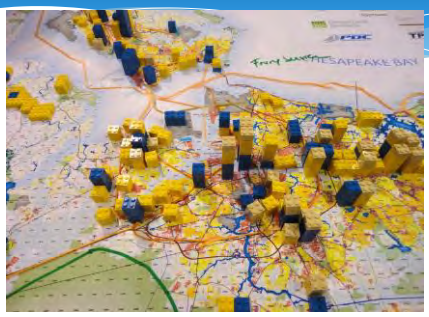


## Growth Scenario A: Compact Infill

## Growth Scenario B: Horizontal Expansion

## Growth Scenario C: Polycentric Centers

## Transportation



## Final Results

- GIS will analyze LEGO placement and prepare various maps
- Analyze Guiding Principles
- Summarize scenarios the tables developed
- CREED will prepare the final report to fully analyze the results

## Reality Check Presenters

http://www.realitycheckhr.org

# Reality Check Hampton Roads

One Region | One Future | One Day

Produced and Conducted by:

Urban Land Institute Hampton Roads

In Partnership with:

Old Dominion University and the E.V. Williams Center for Real Estate and Economic Development (CREED), Hampton Roads Partnership, Hampton Roads Planning District Commission, Hampton Roads Transportation Planning Organization

Sara J. Kidd, GISP
*Hampton Roads Planning District Commission*

George M. McLeod, GISP
*Old Dominion University*

2012 ODU GIS Day

## What is Reality Check?

- Gathering of 300 stakeholders from across region representing sectors like housing, business, real estate, transportation, environmental, etc.
- Day long regional visioning exercise to develop land use principles and alternative growth scenarios through 2035
- Produces a document to guide current and future regional leaders

***How should we grow?***

***Where should we grow?***

## Previous Reality Check Regions

Urban Land Institute

Urban Land Institute Hampton Roads

## Projected Growth in Hampton Roads

- 350,000 new residents
  - 140,000 total housing units
    - 28,000 workforce housing units
    - 112,000 regular housing units
- 175,000 new jobs

## Reality Check Game Day

- Each table (30) developed Guiding Principles to follow
- Using LEGOs and string on the map, each table created a future growth scenario for Hampton Roads

## Reality Check Game Day

- LEGOs represent density
  - Blue = 1, 000 jobs
  - Yellow = 500 housing units
  - Tan = 500 workforce housing units
- 455 LEGOs total per table

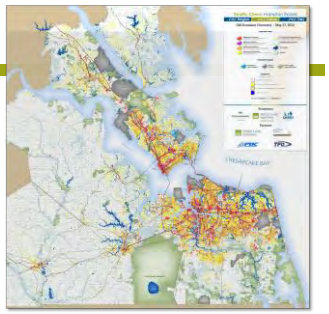
## How Was GIS Used?

- Creating the base map for "game board"
- Developing land use data for base map
- Game Day mapping of the results
- Post-game analysis of the results

## Developing the Game Map

## Game Map

- Index Grid
- Land Use
- Military/Federal
- Other Protected Lands
- Base Layers
  - Hydrology/Wetlands
  - Transportation
  - Points of Interest
- No Boundaries

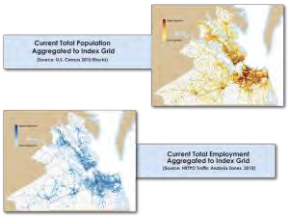


## Regional Land Use

Kaufman, S. (2011, April). Spatial Analysis for Smart Growth. Paper presented at the 2011 National Planning Conference of the American Planning Association, Boston, MA.

## Index Grid Preparation

- Each square is the same size as a standard LEGO
- Aggregated population and employment data to grid for ease of analysis



## Reality Check Hampton Roads

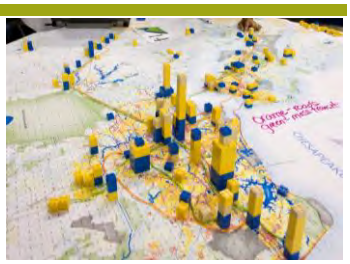
Old Dominion University
May 17, 2012

## Reality Check Game Play

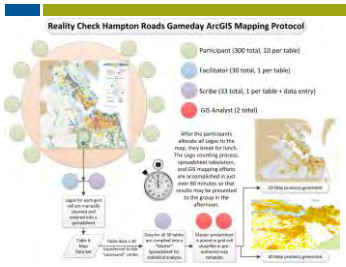
- Participants allocate population, jobs, transportation improvements, and preservation areas based on group consensus

## Reality Check Game Play

- **LEGOs:**
  yellow=housing
  tan= workforce housing
  blue=jobs
- **String:**
  orange = roads
  green = mass transit
- **Green marker** was used to draw "preservation" areas



## Reality Check Game Day Analysis




- Participants "do lunch"
- LEGOs are counted into spreadsheets
- All spreadsheet data are merged
- GIS analysis is performed
- Graphical outputs are shown to the group

…in only about 60 minutes

## Reality Check Game Day Analysis

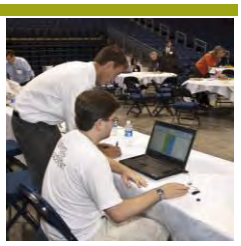
- *Facilitators* manually count the LEGOs on each grid cell
- *Scribes* enter these counts into simple spreadsheets

## Reality Check Game Day Analysis

- Scribes transfer spreadsheet data via USB keys to the GIS data center
- Spreadsheets from all 30 tables are merged into a "Master" Spreadsheet

163 columns →

← 5400 + rows



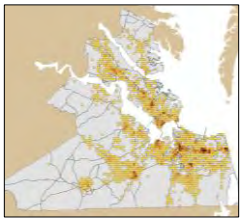
**Dylan Coolbaugh**, ODU student and GIS Technician

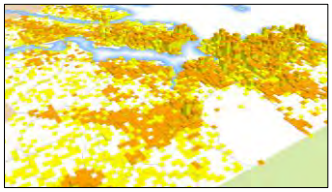
## Reality Check Game Day Analysis

- Simple statistics are calculated to find the average number of LEGOs allocated to each grid cell for all tables
- The master spreadsheet is then *joined* to a preexisting polygon grid cell shapefile using a common field ("GIS_OID")
- 2D and 3D Symbology are used to show the results

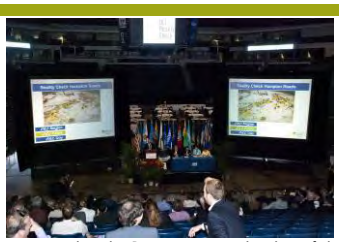
| PageName | GIS_OID |
|---|---|
| A64 | 64 |
| A65 | 65 |
| B64 | 192 |
| B65 | 193 |
| B66 | 194 |
| B67 | 195 |

## Reality Check Game Day Analysis





## Reality Check Game Day



- Results are presented to the Participants on the day of the event

…and then the real GIS work begins.

## Analyzing Reality Check Results

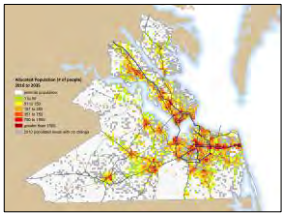
- ODU's GIS Team, working closely with the HRPDC, is performing a more in-depth analysis of the data recorded for each table
- Our GOAL was to assist the ULI in answering a few basic questions:

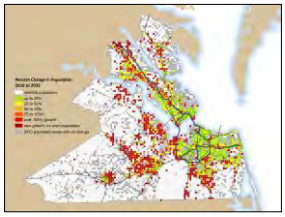
  What is the **consensus** among **ALL** participants regarding future the location of housing and job growth?

  Which transportation improvements are favored by the **majority**?

  Is there **consensus** regarding which areas should be preserved as "green" space? If so, where?

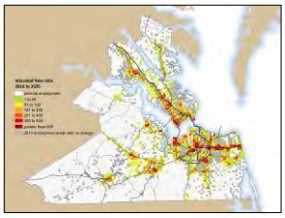
## Reality Check Post-game Analysis

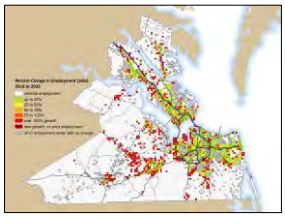




Numerical change (counts) vs. Percent Change

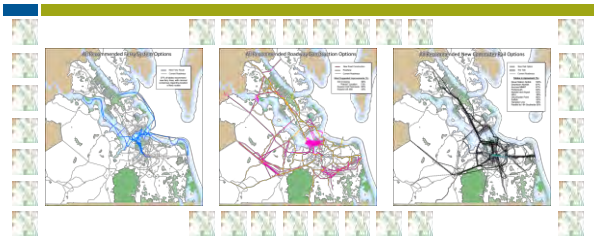
## Reality Check Post-game Analysis





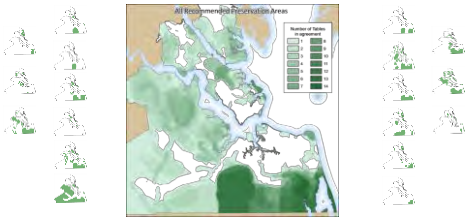
Numerical change (counts) vs. Percent Change

## Reality Check Post-game Analysis



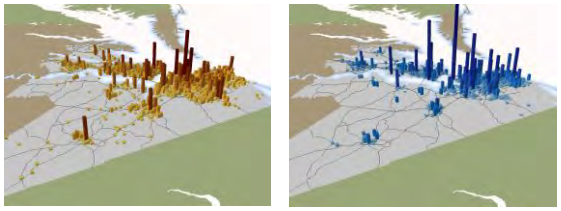
Transportation "Averaging" is more challenging

## Reality Check Post-game Analysis




Green Space "Averaging" is another challenge (Raster Math)

## Reality Check Final Results



What will Hampton Roads look like in 2035?

## Reality Check FINAL RESULTS are…

The ULI Hampton Roads will announce the full results of Reality Check at an event to be scheduled for late Fall of this year (2012).

## Reality Check Presenters

http://www.realitycheckhr.org

## LEGO Ninjas

Sara Kidd
*Hampton Roads Planning District Commission*
skidd@hrpdcva.gov

George McLeod
*ODU*
gmcleod@odu.edu

Special Thanks to "GIS Ninja" **Christopher Contreras,** *Senior GIS Technician at ODU,* for creating well over 100 maps (and counting) for this project!

# *Reality Check* Hampton Roads

**one Region** **one Future** **one Day**

www.realitycheckhr.org

## WHAT IS REALITY CHECK?

Over the past 15 years, regional visioning has emerged as a dynamic and important tool for building regional consensus related to growth issues. The **Urban Land Institute's (ULI)** regional visioning program of work assists regional entities such as district councils and regional commissions as they plan, build upon, and implement regional exercises and visions.

***Reality Check*** is a visioning exercise developed by ULI that allows approximately **300 participants** working in diverse groups of 8-10 regional leaders to allocate projected growth using LEGO blocks on large scale regional maps. It asks the questions :

Reality Check Regions

*How should we grow?*

*Where should we grow?*

***Four Goals of Reality Check***

1. Increase region wide awareness of future growth in population, employment, and housing;
2. Recognize and understand different points of view of a variety of stakeholders;
3. Envision how and where to accommodate future growth to ensure a viable region and sustainable environment;
4. Lay the foundation for an ongoing, informed, and transparent debate on future growth issues impacting the region.

## HAMPTON ROADS, VIRGINIA

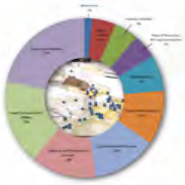
The Hampton Roads region is found in southeastern Virginia at the mouth of the Chesapeake Bay. The region is comprised of **16 independent cities and counties**, the largest of which are Norfolk and Virginia Beach. The Hampton Roads Planning District Commission (HRPDC) serves as the regional council for this area. Regional transportation issues are facilitated by the Hampton Roads Transportation Planning Organization (HRTPO).

2,900 square miles

Hampton Roads is known as **"America's First Region"** because of it's unique 400+ years of American history. In 1607, English settlers first landed in Virginia Beach at the mouth of the Chesapeake Bay. Shortly after they founded the Jamestown colony on the James River in what is now James City County. Hampton Roads is home not only to Jamestown, but also Colonial Williamsburg, the Yorktown Battlefield as well as many other important historical sites.

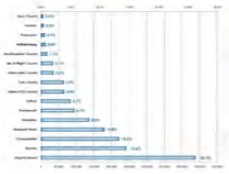
Due to the advantageous position of Hampton Roads' harbor, today the region is home to several dozen military facilities, including the largest naval complex in the world: Naval Station Norfolk. Hampton Roads is also the 8th busiest container port in North America (2011).

***Employment by Industry***



***Current Population of Hampton Roads (2010)***

1,671,683



+350,000 people and
+175,000 jobs by 2035

## ACKNOWLEDGMENTS


***Reality Check Hampton Roads*** was conducted by the Hampton Roads ULI chapter and presented by Old Dominion University (ODU) and the E.V. Williams Center for Real Estate and Economic Development (CREED). Other partner include the Hampton Roads Planning District Commission (HRPDC), Hampton Roads Transportation Planning Organization (HRTPO), and the Hampton Roads Partnership.


## AUTHORS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**John R. Lombard, PhD** is Associate Professor and Chair of the Department of Urban Studies & Public Administration and Executive Director of the E. V. Williams Center for Real Estate & Economic Development (CREED) at Old Dominion University in Norfolk, Virginia. Email: jlombard@odu.edu

**George M. McLeod, GISP** is the GIS Systems Engineer and Adjunct Professor of Geography at Old Dominion University in Norfolk, Virginia. He is also the GIS Program Coordinator at Tidewater Community College in Virginia Beach, Virginia. Email: gmcleod@odu.edu


## REGIONAL MAP PREPARATION

**The Reality Check game board was a large map of Hampton Roads *without jurisdictional boundaries*. It did include general information such as existing land use, military and other federal facilities, protected/managed lands, wetlands, and an index grid. The game board is 5 feet long and 5 feet wide.**

### INDEX GRID

An index grid was created in ArcGIS to match the size of a standard square LEGO block. Each grid square represents approximately 0.5 square miles. Prior to the game, the current population and employment numbers were aggregated to the index grid using Business Analyst tools. This allowed the distribution of LEGOs placed on the map at each of the 30 tables to be analyzed after the ***Reality Check Hampton Roads*** event took place.

**Current Total Population Aggregated to Index Grid**
(Source: U.S. Census 2010 Blocks)

**Current Total Employment Aggregated to Index Grid**
(Source: HRTPO Traffic Analysis Zones, 2010)

### REGIONAL LAND USE

A regional existing land use layer was created using ArcGIS specifically for the *Reality Check Hampton Roads* game map. By combining land cover data with population density, the resulting land use layer is a consistent representation of land use across the region. The land use layer takes into account the intensity of development on the ground with the actual number of people who live there in order to tease out more refined categories such as low, medium, and high density residential areas.

Population Density
(Source: U.S. Census Blocks 2010)

+

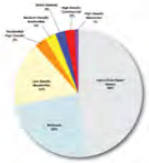
2006 C-CAP Land Cover
(Source: NOAA Coastal Services Center)

=

Regional Land Use with Categories Defined by Density of Population and Intensity of Development

| C-CAP Land Cover Category | Population Density (people/sq mi) | New Land Use Category |
|---|---|---|
| [illegible] | [illegible] | [illegible] |
| [illegible] | [illegible] | [illegible] |
| High-Intensity Developed | 3000 - Maximum | High-Density Mixed Use |
| Medium-Intensity Developed | 2001 - Maximum | High-Density Mixed Use |
| Low-Intensity Developed | 4000 - Maximum | High-Density Residential |
| Developed-Open Space | 4000 - Maximum | High-Density Residential |
| Low-Intensity Developed | 2000 - 4000 | Medium-Density Residential |
| Developed-Open Space | 2000 - 4000 | Medium-Density Residential |
| Agriculture | 130 - Maximum | Low-Density Residential/Mixed Use |
| Forest | 130 - Maximum | Low-Density Residential/Mixed Use |
| Low-Intensity Developed | 0 - 2000 | Low-Density Residential/Mixed Use |
| Developed-Open Space | 0 - 2000 | Low-Density Residential/Mixed Use |
| Agriculture | 0 - 130 | Agriculture, Open Space |
| Forest | 0 - 130 | Agriculture, Open Space |

Land Use Density Matrix



Hampton Roads Land Use Proportions

## REALITY CHECK GAME DAY

### MAY 17, 2012: GAME DAY

On May 17, 2012, over 300 participants from across the region gathered at Old Dominion University and were grouped into **30 diverse teams of 8 to10 stakeholders**. They were asked to discuss and debate how and where they should accommodate projected increases in Hampton Roads' population, housing, and employment over the next 25 to 30 years.

Each team was equipped with identical regional land use maps showing current density and land use patterns for the region. A unique aspect of the regional map was the **absence of local jurisdictional boundaries** so that team members would not be constrained by existing political boundaries.

### GUIDING PRINCIPLES

Each table's first task was to establish, through team consensus, guiding principles and guidelines for allocation of growth.

#### Major Themes in Guiding Principles

- **Multimodal transportation to improve flow of people and goods**
- **Environmental sustainability and stewardship**
- **Protect and enhance coastal access and recognize sea level rise**
- **Promote redevelopment and infill growth in jobs and housing**
- **Preserve open space**

### FUTURE GROWTH SCENARIOS

Using an interactive and hands on method of overlaying housing and employment growth scenarios on the map, each team developed their version of what Hampton Roads will look like by 2035. LEGOs were allocated and stacked on the index grid to depict growth in **housing and jobs**. Teams were also tasked to show increases or improvements in **future transportation corridors and/or mass transit** to accommodate their growth scenarios.

**455 Total LEGOs per Table**

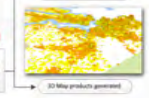
1 Yellow LEGO = 500 dwelling units (1,250 residents)
1 Tan LEGO = 500 dwelling units (1,250 residents)
1 Blue LEGO = 1,000 jobs

## GAME DAY DATA ANALYSIS

- **Participant (300 total, 10 per table)**
- **Facilitator (30 total, 1 per table)**
- **Scribe (33 total, 1 per table + data entry help)**
- **GIS Analyst (2 total)**

After the participants allocated all LEGOs to the maps, they broke for lunch. The LEGO counting process, spreadsheet tabulation, and GIS mapping efforts were accomplished in just over 60 minutes so that preliminary results could be presented to the group in the afternoon.

2D Map products generated



3D Map products generated

## PRELIMINARY RESULTS

**LEGO counts were averaged across all 30 tables in order to understand in general how the participants allocated growth for 2035.**

POPULATION

EMPLOYMENT

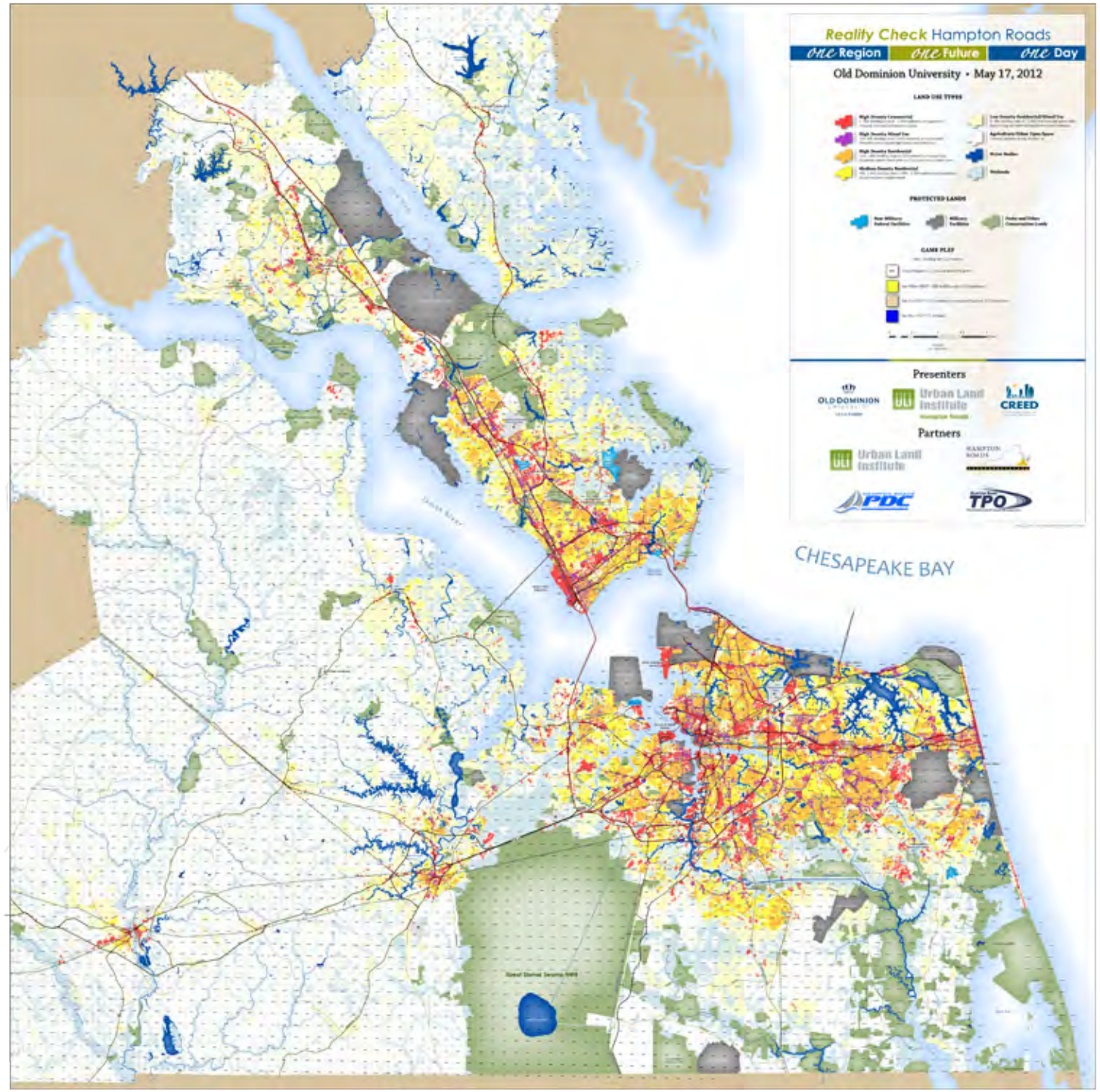
***Which areas received new development?***

Percent change in population and employment between 2010 and proposed 2035 growth highlights which grid cells acquired the most new development relative to 2010 values. Areas to the west and north of existing highly developed areas were preferred by the participants for new growth.

***Which areas received the most development overall?***

The average new population and employment values allocated on the map highlights which grid cells acquired the most new development overall. Existing high density population and employment areas were allocated new growth in higher numbers than areas that currently have low density or no development.

Brief analysis of the ***Reality Check Hampton Roads*** game is ongoing and will be completed by Fall 2012.


Reality Check Hampton Roads
one Region
one Future
one Day
Old Dominion University • May 17, 2012
LAND USE TYPES
PROTECTED LANDS
GAME PLAY
Presenters
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Partners
Urban Land Institute
HAMPTON ROADS
PDC
TPO
CHESAPEAKE BAY

# APPENDIX D
# ENVIRONMENTAL GEOGRAPHIC INFORMATION SYSTEM – SAMPLE MAPS

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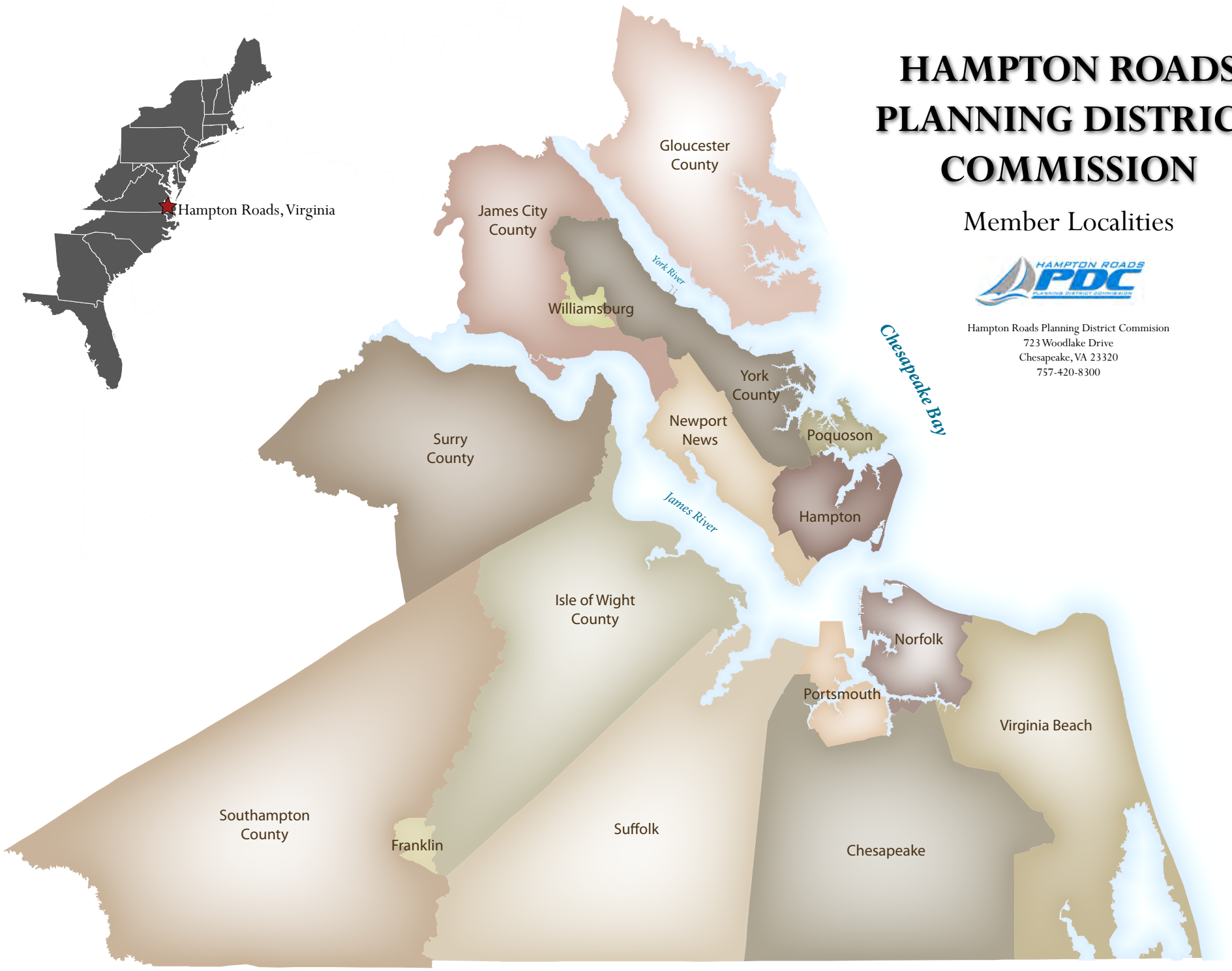
# HAMPTON ROADS PLANNING DISTRICT COMMISSION

## Member Localities

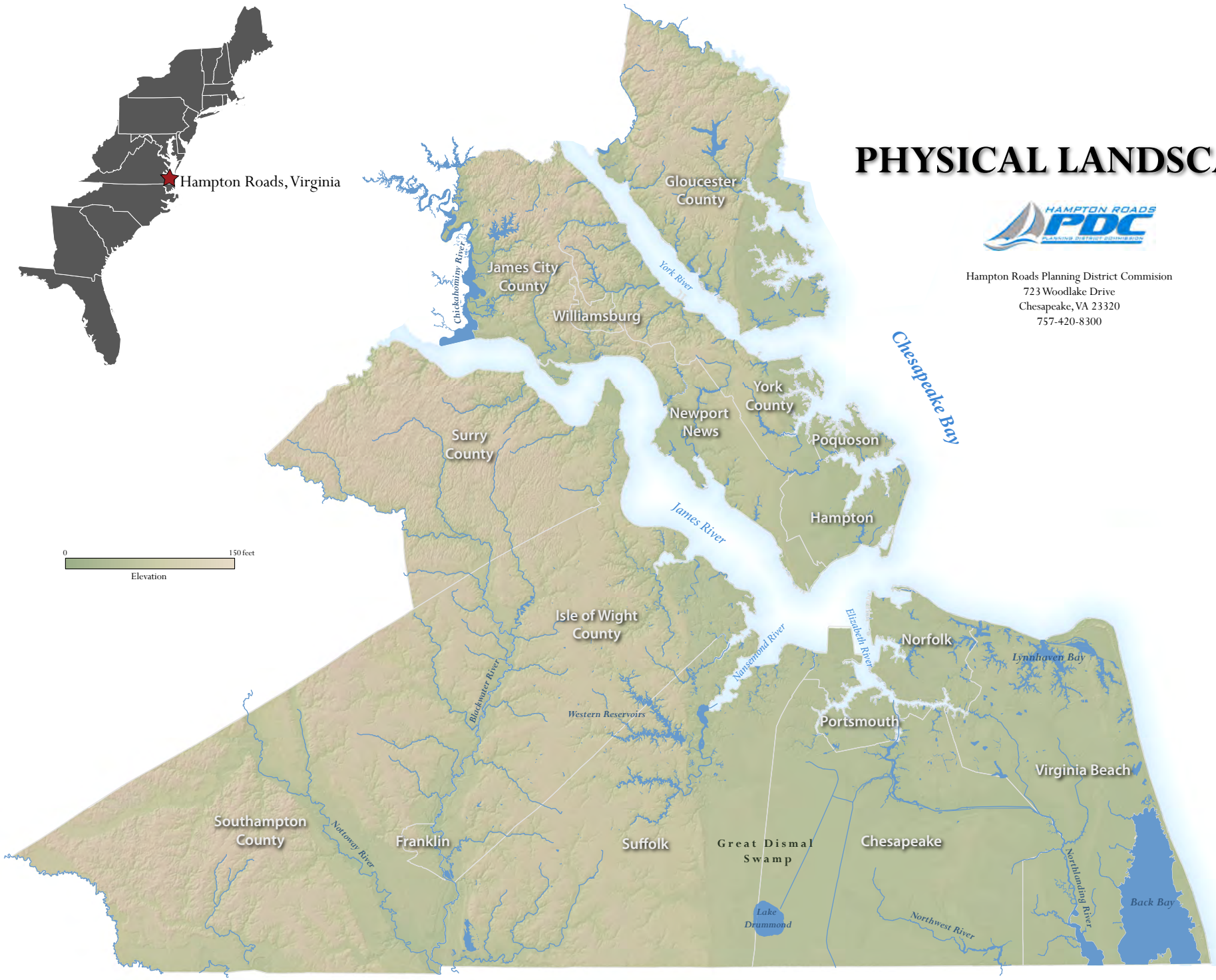



Hampton Roads Planning District Commision
723 Woodlake Drive
Chesapeake, VA 23320
757-420-8300

Last Updated: January 2012

# PHYSICAL LANDSCAPE

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723 Woodlake Drive
Chesapeake, VA 23320
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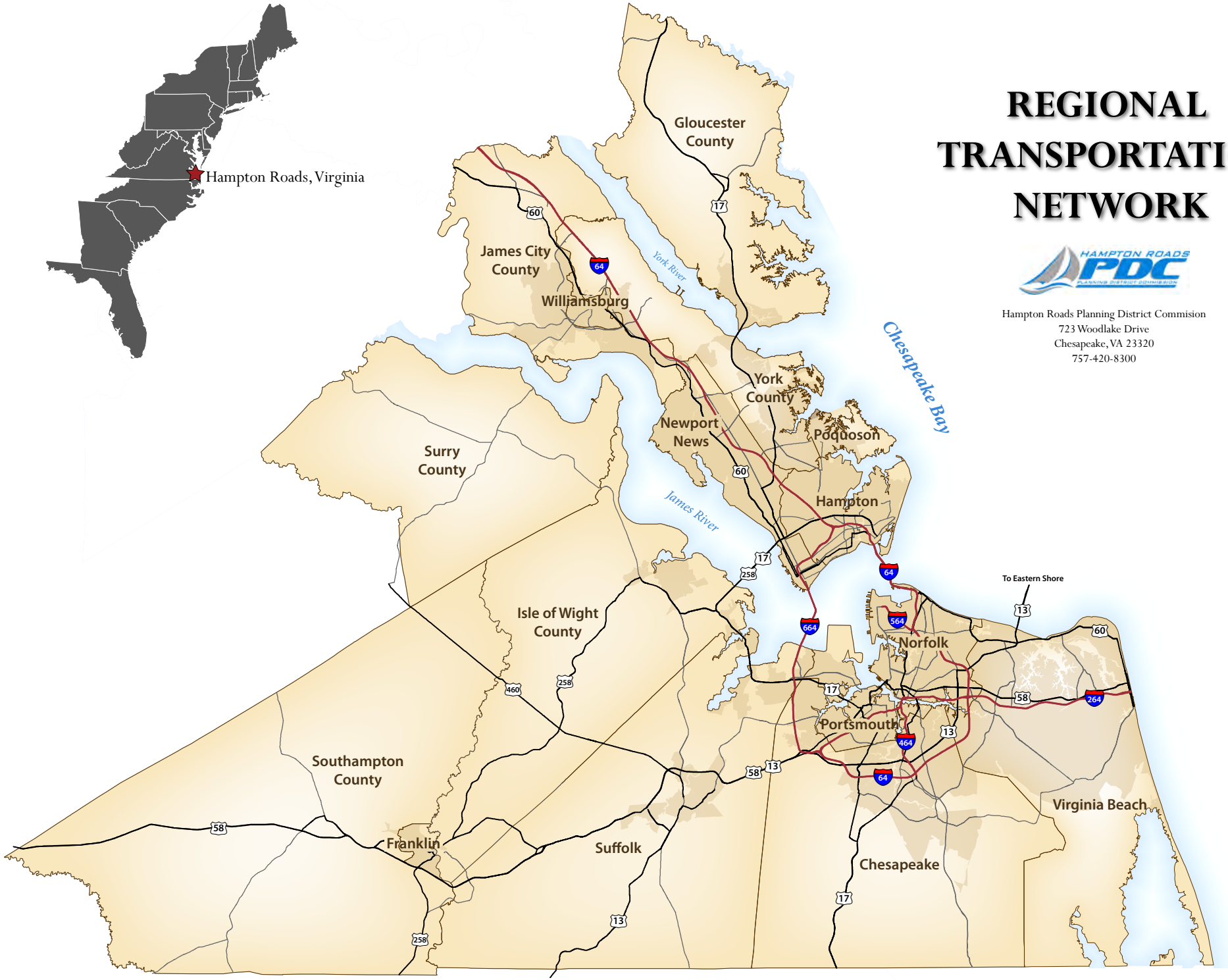
Last Updated: January 2012

# REGIONAL TRANSPORTATION NETWORK




Hampton Roads Planning District Commision
723 Woodlake Drive
Chesapeake, VA 23320
757-420-8300

Last Updated: January 2012

# APPENDIX E
# REPRESENTATIVE EDUCATIONAL AND OUTREACH MATERIALS

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**Article Name:** "Virginia Coastal Zone Management Celebrates 25 Years"
**Author:** Jai McBride, Principal Regional Planner
**Date:** December 21, 2011
**Web Location:** http://www.hrpdcva.gov/news/index/view/id/1189



## Virginia Coastal Zone Management Celebrates 25 Years

Posted by Jai McBride, Principal Regional Planner on December 21, 2011
Planning News

HRPDC would like to congratulate the Virginia Coastal Zone Management Program (Virginia CZM Program) for celebrating its 25th year. Virginia CZM Program was established in 1986 to protect and manage Virginia's 'coastal zone.' This program is part of a national coastal zone management program, a voluntary partnership between the National Oceanic and Atmospheric Administration (NOAA) National Ocean Service Office of Ocean and Coastal Resource Management (OCRM) and U.S. coastal states and territories authorized by the federal Coastal Zone Management Act.

VDEQ administers the program's annual grant award to state agencies, PDCs and local governments for implementation of the Virginia Coastal Zone Management Program. The program utilizes a network of state agencies, PDCs, and local governments which administer the following enforceable laws, regulations and policies that protect our coastal resources: Tidal and Nontidal Wetlands, Fisheries, Subaqueous Lands, Dunes and Beaches, Point Source Air Pollution, Point Source Water Pollution, Nonpoint Source Water Pollution, Shoreline Sanitation, & Coastal Lands.

The HRPDC has actively participated in the Virginia's CZM Program since its inception. HRPDC staff serves on the Coastal Policy Team, which advises DEQ on program activities. An annual CZM grant supports the HRPDC environmental technical assistance program. Through regular competitive grants, the HRPDC has completed numerous technical studies and public outreach initiatives addressing wetlands, water quality, green infrastructure, water based recreation and sea level rise.

HRPDC looks forward to continuing its partnership with the Virginia's CZM program to protect and restore coastal resources.

Press Room
Communication
Economics
Emergency Management
Housing
Planning
Water Resources

What's New

Unemployment Rate Increases Slightly
March 26, 2013 - James Clary, Economist

Hampton Roads MSA : Analysis of Recent Delineation
March 25, 2013 - Sara Kidd, Senior Regional Planner

Construction Employment Returns!
March 25, 2013 - James Clary, Economist

View More News »

Archive

2013 (29)
2012 (121)
2011 (190)
2010 (96)
2009 (13)
2008 (3)
2007 (4)

**Article Name:** "Climate Change Organization Releases New Sea Rise Vulnerability Report; Video Features Middle Peninsula"
**Author:** Benjamin McFarlane, Regional Planner
**Date:** March 20, 2012
**Web Location:** http://www.hrpdcva.gov/news/index/view/id/1167



## Climate Change Organization Releases New Sea Level Rise Vulnerability Report; Video Features Middle Peninsula

Posted by Benjamin McFarlane Regional Planner on March 20, 2012
Planning News

Climate Central, a non-profit climate change research and journalism organization, has released a new report, titled "Surging Seas", which aims to show the combined risks of sea level rise and storm surge to coastal areas of the contiguous United States. The analysis estimates the amount of land, housing, and population in areas vulnerable to flooding and sea level rise. The project also includes a website featuring an interactive map showing vulnerable areas and the likelihood of inundation and fact sheets for each state included in the study. The same organization also produced a short video including interviews with Virginians living on the Middle Peninsula who are already having to address flooding and sea level rise. The video can be seen here: http://vimeo.com/38473953. The project website is http://sealevel.climatecentral.org/.

Press Room
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What's New

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Archive

2013 (29)
2012 (121)
2011 (190)
2010 (96)
2009 (13)
2008 (3)
2007 (4)

**Article Name:** "Recreation Survey Reveals Walking is Number One Activity in Hampton Roads"
**Author:** Sara Kidd, Senior Regional Planner
**Date:** April 4, 2012
**Web Location:** http://www.hrpdcva.gov/news/index/view/id/1161



## Recreation Survey Reveals Walking is Number One Activity in Hampton Roads

Posted by Sara Kidd, Senior Environmental Planner on April 4, 2012
Planning News

The Virginia Department of Conservation and Recreation (DCR) recently released the results of the 2011 Virginia Outdoors Demand Survey which is conducted every five years in order to prepare the Virginia Outdoors Plan (VOP). The survey is designed to gauge the attitudes of Virginia citizens regarding outdoor recreation resources, estimate participation in recreational activities, estimate demand for recreational activities, and provide a means for citizens to supply input into the 2012 VOP. The survey asked questions on approximately 50 outdoor recreation activities as well as future planning for parks and natural preserves. The survey results are used to strategically plan future facilities, help improve existing facilities, and identify ways to help protect Virginia's natural resources.

Statewide, the results show that nearly 9 out of 10 respondents believe that access to outdoor recreation is "very important" or "important." Also, a majority of respondents across the state felt that the most needed recreational opportunities in Virginia are trails for hiking and walking (68%), public access to state waters (60%), and access to natural areas (55%).

Listed below are the top 20 recreational activities enjoyed by residents of Hampton Roads as compared to residents across the state.

To learn more about the 2012 Virginia Outdoors Plan, visit http://www.dcr.virginia.gov/recreational_planning/vop.shtml

| Activity | % of households | |
|---|---|---|
| | Hampton Roads | Statewide |
| Walking for pleasure | 83 | 82 |
| Historic sites | 54 | 64 |
| Visiting parks (local, state, national) | 46 | 51 |
| Sunbathing/relaxing at beach | 45 | 41 |
| Swimming/beach | 41 | 38 |
| Natural area, preserve or refuge | 39 | 50 |
| Swimming/pool | 37 | 43 |
| Jogging/running | 36 | 34 |

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**Article Name:** "Celebrate National Trails Day on June 2, 2012"
**Author:** Sara Kidd, Senior Regional Planner
**Date:** May 9, 2012
**Web Location:** http://www.hrpdcva.gov/news/index/view/id/1156



## Celebrate National Trails Day on June 2, 2012

Posted by Sara Kidd, Senior Environmental Planner on May 9, 2012
Planning News

Saturday, June 2, 2012, will mark the 20th anniversary of National Trail Day. Each year, the American Hiking Society presents this celebration with events taking place in all 50 states. The purpose of National Trails Day is to increase national awareness of trails and celebrate all of the hard work that has gone in to creating over 200 miles of trails in America. Typical events include activities such as hiking, dog walking, bike riding, trail maintenance, birding, wildlife photography, geocaching, paddle trips, trail running, trail dedications, health-focused programs, and children's activities.

Currently, one event is scheduled in Hampton Roads for June 2 at 9:00am to clean up the beach and trails at Back Bay Wildlife Refuge. Individuals and groups can still register an event at http://www.americanhiking.org/NTDRegisterYourEvent.aspx

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**Article Name:** "Hampton Roads Gets a Reality Check on Future Growth"
**Author:** Sara Kidd, Senior Regional Planner
**Date:** May 30, 2012
**Web Location:** http://www.hrpdcva.gov/news/index/view/id/1161



# Hampton Roads Gets a Reality Check on Future Growth

Posted by Sara Kidd, Senior Regional Planner on May 30, 2012
Planning News

Photos by Sara Kidd

Nearly 300 regional leaders and citizens from both the Peninsula and the Southside gathered at Old Dominion University's (ODU) Ted Constant Center on May 17, 2012 for the Hampton Roads Reality Check event. The task at hand was to decide where the 350□ more people projected to live in Hampton Roads by 2035 will live, work, and play. That is equivalent to adding another Hampton and Chesapeake to the region.

There were 30 different tables and each group discussed how to distribute housing units and jobs by placing LEGOs on a large map of the region without any jurisdictional boundaries. The participants were also encouraged to use markers and string to indicate where they wanted to plan new roads, mass transit, or preserve conservation areas.

The preliminary results of the exercise were compiled during the lunch hour and presented to the participants in the afternoon. There was a strong consensus among all the tables toward urban redevelopment and development along existing transportation corridors. The participants also highly favored more mass transit, envisioning high speed rail extensions not only to the Oceanfront in Virginia Beach but also up the I-64 corridor on the Peninsula as well. Some tables got creative and proposed a high speed ferry system throughout Hampton Roads.

The final results from the event will be compiled into a report to be distributed later this summer. The results will also be shared with local elected officials at a future HRPDC board meeting. ODU's E.V. Williams Center for Real Estate and Economic Development (CREED) will be analyzing and summarizing the results and producing the final report.

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# Regional Planning for Sea-Level Rise in Hampton Roads

NOAA Hydrographic Services Review Panel
October 26, 2011

Benjamin McFarlane, AICP
Regional Planner

## What is the HRPDC?

2

- 1 of 21 Regional Planning Agencies
- State enabled; locally created
- 16 Cities & Counties; several Towns; 1.7 million people; 3,000 square miles; 5,000 miles shoreline
- Commission – 45 local elected officials & CAO
- Staff – Executive Director & 45 staff
- Funding – Local contributions, grants, and contracts
- Functions – Economics, Housing, Transportation, Environmental, Emergency Management
- Budget $12,000,000 +
- Role – Policy & Technical Analysis, Planning & Engineering Studies, Cooperative Problem Solving, Coordination

## What does HRPDC do?

3

- The Commission:
  - "**serves as a forum** for local and elected officials and chief administrators to **deliberate** and **decide** issues of **regional importance**"
- The Staff:
  - "provides the local governments and citizens of Hampton Roads credible and timely **planning, research, and analysis** on matters of mutual concern, and"
  - "**provides leadership and offers strategies and support services** to other public and private, local, and regional agencies, in their efforts to improve the region's quality of life."

## HRPDC and NOAA

5

- Coastal resources management is a major emphasis of the HRPDC's planning efforts
- HRPDC coordinates regional emergency management planning and hazard mitigation planning
- HRPDC is a partner in the Virginia Coastal Zone Management Program (VCZMP) and receives funding on an annual basis
  - Technical Assistance Grants
  - Focal Area Grants

## Hazard Mitigation Planning

6

- Two regional efforts
  - Peninsula
  - Southside
- This process seeks to better prepare the region when hazards occur
- High quality and accurate data is essential to effectively identify, analyze, and reduce risks
  - Floodplain management
  - Hurricane evacuation

## Technical Assistance

7

- Environmental impact review
- Local and regional coordination of environmental programs
- Data analysis and research on specific issues
  - GIS

## Focal Area Grants

8

- Focal Areas are designated by the Commonwealth on a multi-year schedule and are designed to address specific issues
- For FY08-09 to FY10-11, VCZMP selected Climate Change Adaptation as one of two focal areas for grants to PDCs
  - Hampton Roads, Middle Peninsula, Northern Virginia

## HRPDC Climate Change Initiative

9

- Year 1: Begin stakeholder process and identify broad impacts of climate change on Hampton Roads
- Year 2: Assessment of impacts and development of policy recommendations
- Year 3: Analysis of infrastructure and economic impacts and completion of the regional framework for mitigation and adaptation to climate change

## HRPDC Climate Change Initiative

10

- Three parts:
  1. Coordination
  2. Outreach
  3. Research and Analysis

## Coordination

11

- Working with other organizations and institutions to promote awareness of sea level rise and flooding issues in Hampton Roads
- ODU Initiative
- UVA-CRMES: Vulnerability of transportation infrastructure
- ODU: Economic impacts of flooding and sea level rise
- Storm Surge modeling with VIMS

## Outreach

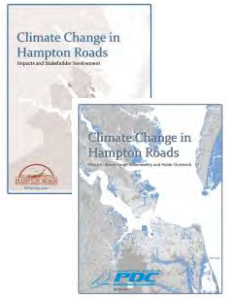
12

- Engaging local governments, citizens, and stakeholders through public meetings
- UVA-IEN/Wetlands Watch: Listening sessions in Virginia Beach
- Other public meetings to city councils and citizen groups

## Research and Analysis

13

- Year 1: Natural Resources focus
- Year 2: Storm Surge Exposure




## Data and Methodology

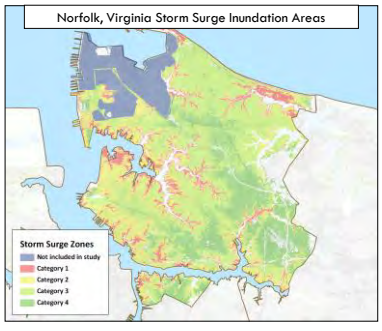
14

- Developed based on case study research and available data
- Use asset datasets from several sources with storm surge areas to estimate regional and local vulnerability to hurricane storm surge flooding and sea level rise
- Use geographic information systems (GIS) analysis to show which assets are in vulnerable areas and sum the results by locality and storm surge category

## Results – Norfolk (example)

15

- Local results are included for each of the twelve Hampton Roads localities included in the 2008 Virginia Hurricane Evacuation Study




## Results – Norfolk (example)

16

Roads and Critical Infrastructure Vulnerable to Storm Surge in Norfolk, Virginia

## Results – Norfolk (example)

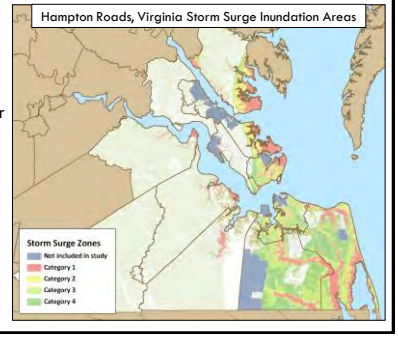
17

Businesses Vulnerable to Storm Surge in Norfolk, Virginia

## Results – Region

18

- Overall, high level of exposure to storm surge across the region
- Southside is more vulnerable to larger events than the Peninsula
- Significant population, infrastructure, critical facilities, and businesses at risk



## Conclusions

19

- Hampton Roads is significantly vulnerable to storm surge and sea level rise
- Baseline assumption of sea level rise equal to historical trend is appropriate
- Acceleration of sea level rise will depend on many factors, so it should be monitored and planning assumptions updated as needed
- New data should be incorporated as available

## HRPDC and NOAA

20

- HRPDC and the region rely on NOAA's data and services
  - NGS provides accurate reference information, which provides a foundation for all our geographic analysis
  - CO-OPS provides tidal data and predictions and sea level trends
  - HRPDC also utilizes resources from the Coastal Services Center

## HRPDC and NOAA

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- Data from *Tides and Currents* are a major part of research and analysis of sea level rise in Hampton Roads
- Accurate data on trends of sea-level rise are an essential part of adaptation planning
  - The historical record helps gain public support for planning
  - Past trends are used in modeling future change
  - Continuous observations and predictions of tides add to the existing record while also providing needed services to the region

## NOAA Tide Stations

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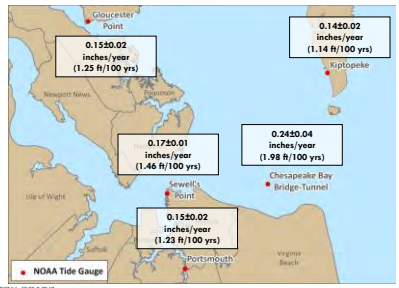


## Chesapeake Bay Bridge-Tunnel

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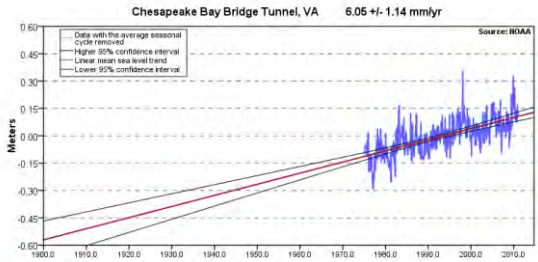
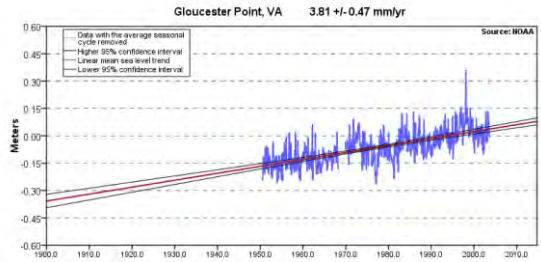



## Gloucester County, VA

24



## Kiptopeke, VA

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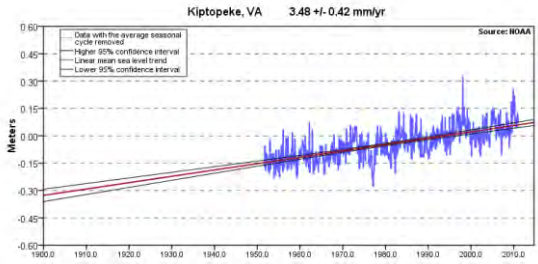


## Portsmouth, VA

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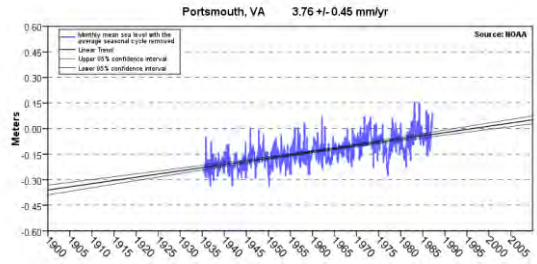


## Sewell's Point, VA

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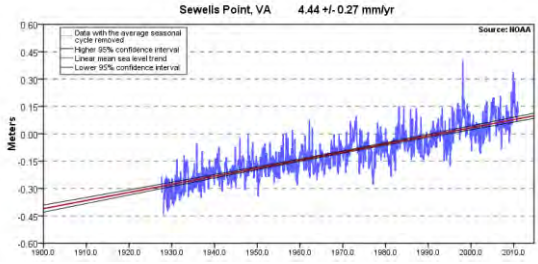


## HRPDC and NOAA

28

- In Hampton Roads, absolute sea level rise rates seem to be lower than average, but "local subsidence more than makes up for it."
- *Tides and Currents* data help separate local and global causes of sea level rise

## HRPDC and NOAA

29

- Continuation and enhancement of *Tides and Currents* is essential for the Hampton Roads region in planning for sea level rise
- Integration and cooperation with other federal agencies to develop complementary datasets and services
  - USGS, FEMA
- Standards for shoreline mapping are needed
  - Sea level benchmarks
  - LIDAR minimum standards

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