

Accomack – Northampton Coastal Resources Technical Assistance Program



Virginia Coastal Zone Management Program

Accomack-Northampton Planning District Commission

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On the cover – Aerial photograph of Tangier Island in Accomack County. The town is located in the middle of the Chesapeake Bay just south of the Maryland border and is renowned for its rich history, unique culture, and water-based economy. Buildings are located on a series of ridges that stand less than ten feet above sea level. The island and its residents have been impacted by degradation of water quality in the Bay and increased erosion and inundation of low-lying lands due to storm events and sea level rise. Photograph from Smithsonian.com, 2009.



Virginia Coastal Zone
MANAGEMENT PROGRAM



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1.0 Introduction

The Accomack-Northampton Planning District Commission (A-NPDC) was formed in 1970 to provide planning and housing services on the Eastern Shore of Virginia. A-NPDC is a regional commission consisting of Accomack and Northampton Counties and the Town of Chincoteague. Additionally, the A-NPDC assists 19 incorporated towns on the Eastern Shore.

In response to increased development of the region between 1990 and 2000, the A-NPDC formed the Eastern Shore of Virginia Coastal Management Committee in 2004 to coordinate local efforts to better manage coastal development and its impacts. The A-NPDC coordinates the Coastal Management Committee and offers coastal management training opportunities for local government staff. The A-NPDC also staffs the Eastern Shore of Virginia Groundwater Committee, provides GIS services, conducts state and federal environmental reviews, and works with local governments and organizations to address coastal management issues. The expected outcome is to improve coastal management on the Eastern Shore of Virginia.

As part of the overall mission, the A-NPDC maintains a coastal program with the assistance and support of the Virginia Coastal Zone Management Program and the National Oceanic and Atmospheric Administration (NOAA).

2.0 Executive Summary

The 2010 Fiscal Year (FY2010) program included staff support of the Eastern Shore Coastal Management Committee, coordination of six training and outreach programs; technical assistance to local, state, and federal government organizations; staff support of the Eastern Shore Ground Water Committee; and technical assistance to the Friends of Onancock School non-profit group for renovation and preservation of a critical coastal property on the Eastern Shore. Over \$124,000 in grant funds and staff time were leveraged

to aid the completion of multiple projects related to the goals presented in the scope of work for FY2010.

3.0 Products

The following sections describe the activities completed during FY2010 by the A-NPDC.

3.1 Coastal Management Committee Report

The Coastal Management Committee is comprised of local government staff and officials and met four times during FY2010 to coordinate coastal management efforts, provide information and solicit input from localities on state and federal initiatives, and allow the exchange of information between localities. This task implements Executive Order 23, Goal 8.

3.1.1 *Summary of Accomplishments*

In FY2010 the Coastal Management Committee:

- ◆ Coordinated coastal management efforts related to:
 - newly developed LiDAR topographical surveys for the Eastern Shore
 - training opportunities for local government staff
 - climate change vulnerability assessments at the Eastern Shore of Virginia National Wildlife Refuge
 - offshore wind energy development
 - development of a regional spill preparedness team to ensure rapid response in the event of a hazardous spill in the coastal zone
- ◆ Provided information and solicited input from localities on state and federal initiatives and regulatory actions including:
 - local governments involvement in the Chesapeake Bay TMDL-WIP process
 - federal efforts to promote sustainable aquaculture
 - state efforts to promote the use of living shorelines
 - shoreline stabilization at the NASA Wallops Flight Facility

- ◆ Trained and educated local government officials regarding:
 - geological evolution and relative importance of the existence and location of Carolina Bays
 - impacts of sea level rise including review of recent research efforts
- ◆ local research involving remote sensing techniques that depict sediment transport process in the region

3.1.2 Quarterly Meeting Reports

January 18, 2011 Meeting

- Carolina Bays Presentation/Discussion
 - ◆ A-NPDC staff presented an overview of the geology and hydrology of Carolina Bays. The presentation focused on Carolina Bays on the Eastern Shore and their impacts on ground and surface water and potential land use.
- Summary of ESVA Spill Preparedness Team Meeting
 - ◆ A-NPDC staff presented a summary of the most recent ESVA Spill Preparedness Team meeting on January 7, 2011. The team met to prioritize sensitive habitats and natural resources for protection in the event of a spill. The information is to be used by the Coast Guard in the development of a Geographic Response Plan.
 - ◆ Key outcomes were as follows:
 - The Barrier Island system was addressed quadrangle by quadrangle from Fisherman’s Island north to Ocean City Inlet.
 - Priority environments were ranked as marshes, oyster reefs, and mudflats in that order. Areas with both marshes and oyster reefs were given top priority in each coastal bay.
 - “Choke points” were selected where a small amount of boom across guts or creeks could protect much larger areas.
 - Beaches were essentially given lowest priority with the caveat that certain specific piping plover nesting sites be protected during nesting season.
 - Access points were flagged and characterized from Wise Point Ramp to Chincoteague Harbor.

- ◆ Discussion resulted in the identification of Tom’s Cove and its exclusion from the prioritization list. The Committee requested that the team consider prioritizing prime aquaculture growing lands such as Tom’s Cove at the next meeting.
- LiDAR/Flood Inundation Mapping Training for Localities
 - ◆ A-NPDC staff presented the draft plan developed by the ESVA LiDAR Working Group entitled “Eastern Shore LiDAR Data – Plan for Distribution, Storage, and Use”. The group identified a potential opportunity to have the NOAA Coastal Services Center (CSC) conduct a Flood Inundation Mapping Training session for Eastern Shore GIS users. Local GIS users would have the opportunity to learn more about flood inundation mapping and potentially assist in the development of Flood Inundation Maps for the entire Eastern Shore.
- ESVA National Wildlife Reserve Resource Vulnerability Assessment
 - ◆ Staff informed the Committee that the National Park Service is developing a process for vulnerability assessment with regards to climate change that is to be published in a manual for refuges and environmental management groups to use nationwide. The ESVA NWR is one of two case studies that have been chosen by the NPS to develop their assessment strategy. The assessment meeting determined the list of natural resources to be included in the assessment and to identify key environmental stressors expected to be introduced by climate change.
- NASA-WFF Shoreline Restoration and Infrastructure Protection Program (SRIPP)
 - ◆ Staff indicated that NASA has issued a Record of Decision (ROD) for the SRIPP. NASA selected its preferred alternative, beach fill only and seawall extension, for implementation. NASA will now apply for all necessary permits such that seawall construction can begin in spring 2011. Beach fill is expected to begin in winter 2011.

April 19, 2011 Meeting

- Chesapeake Bay TMDL-WIP
 - ◆ Chesapeake Bay Accountability & Recovery Act (HR-258) - A-NPDC staff presented a summary of the proposed act, sponsored by Rep. Wittman of VA, which would

require a financial report be submitted to Congress that includes an interagency budget, all State and Federal funds received and spent, and description of restoration activities.

- ◆ USACE Regional Permit 5 for Construction of Small Impoundments 2011 Revision - A-NPDC staff presented the final draft for the permit regarding the construction of water control structures, which would allow Virginians to construct earthen dams/impoundments on non-tidal streams for general farm use, irrigation, livestock watering, fire prevention, etc. as long as no more than 0.5 acres of wetlands or 1,000 linear feet of a stream are impacted. Example images of impoundments were presented and discussion ensued on potential impacts to the Eastern Shore.
- ◆ Hampton Roads Localities Lawsuit Update – A-NPDC staff reviewed the article *“Hampton Roads Steps Away from the Courthouse...for Now”* from the April 1 *Bay Daily*, which summarizes the meeting between the EPA and the Hampton Roads PDC (HRPDC) to more fully explain the cleanup plan and clarify expectations. HRPDC submitted a list of questions regarding the Bay TMDL and have delayed legal action against the EPA to date.
- Northam Living Shorelines Bill
 - ◆ Senator Northam’s bill SB-964, which proposes regulations requiring the VMRC, DCR, and VIMS to implement a general permit regulation that authorizes and encourages the use of living shorelines as the preferred alternative for stabilizing tidal shorelines was reviewed. The bill made it through to the Governor, who proposed amendments which were rejected on April 6 by the Senate.
- LiDAR Update
 - ◆ A-NPDC staff indicated that the release date for the final quality control data that meets USGS specs has been pushed back to the end of May/beginning of June. It was indicated that a LiDAR Rollout Session is planned to present the data to the public and stakeholders on the Shore.
- NOAA Coastal Services Center ESVA Flood Inundation Mapping Training

- ◆ A-NPDC staff reported that the training course has been set for August 17-18 at ESCC for members of the ESVA LiDAR Working Group.
- Cape Charles Offshore Wind
 - ◆ A-NPDC staff presented the article “Virginia approves offshore wind testing in Chesapeake Bay” from the March 31 Daily Press, which summarizes initial plans to install a test wind turbine three miles west of Cape Charles in the Bay. Discussion regarding the proposed project and potential impacts on the Shore resulted in engaging local elected officials to consider potential of wind industry in the region.
- Maryland Offshore Wind Update
 - ◆ A-NPDC staff presented the article “Lawmakers table offshore wind bill for further study” from the April 7 Baltimore Sun, which summarizes the current status of offshore wind in Maryland.
- VA Coast Reserve Remote Sensing Experiment
 - ◆ A-NPDC staff presented a summary of TNC’s project with the Naval Research Lab’s (NRL) Coastal & Ocean Remote Sensing Branch on a large remote sensing experiment at the VCR beginning in June. NRL developed a timeline of VCR images taken via hyperspectral imagery aboard the International Space Station. NRL images taken during and after a storm event in September 2010 on the Shore were presented resulting in increased understanding of sediment transport dynamics amongst local elected officials.
- VA Sea Level Rise Planning Project Proposal
 - ◆ A-NPDC staff updated the Committee that the A-NPDC partnered with the UVA Institute for Environmental Negotiation (IEN) and other agencies on a proposal for funding through VA Sea Grant. The project proposes to conduct private invitation-only Focus Groups in 3 regions - main focus on Virginia Beach (because it continues current work with the City), with Phase 2 expanding to the Middle Peninsula and Eastern Shore. The goal is to bring together local planners with private property owners, to explore pragmatic, doable strategies to assist, encourage or incentivize

private property owners to protect living shorelines.

August 16, 2011 Meeting

- Chesapeake Bay TMDL-WIP
 - ◆ DCR Responses to A-NPDC Questions - State responses to questions concerning the WIP Phase II process were reviewed and discussed by the Committee.
 - ◆ Memorandum of Agreement (MOA) between ESVA Plasticulture and Eastern Shore Soil & Water Conservation District (ESSWCD) - A MOA regarding the use of BMPs in tomato production to control sediment loss to the Bay agreed upon ESVA tomato growers and ESSWCD was presented. A-NPDC staff discussed how the MOA could be included as part of the reductions required by the Bay TMDL-WIP.
 - ◆ A-NPDC Maps Illustrating DCR Draft Allocations – A-NPDC staff developed and presented maps to the Committee that resulted in guiding discussions on responses to the state WIP.
- Sea Level Rise Items
 - ◆ Strong El Nino Could Bring Increased Sea Levels, Storm Surges to U.S. East Coast - A-NPDC staff presented a study by NOAA indicating the Atlantic Coast may be at increased risk to higher sea levels and greater storm surges during future El Nino events. Analysis of sea levels and storm surge events during the past five decades revealed a pattern that strong El Nino years produced three times as many storm surge events and sea levels approximately 4 inches greater than predicted conditions.
 - ◆ A New Way of Thinking as Sea Levels Rise – A-NPDC staff presented an article discussing the impending issues facing Hampton Roads as rising sea levels continue to impact communities. The article describes alternative methods of protecting infrastructure from sea level rise aside from the 50 year old USACE manual on how to protect shorelines, which includes costly seawalls and dikes. Recent EPA publications spell out less expensive alternatives.
 - ◆ Fastest Sea Level Rise in 2,000 Years Linked to Increasing Global Temperatures – A-

NPDC staff discussed a study that produced the first continuous sea-level reconstruction for the Atlantic coast and discovered a continuous link between changes in global temperatures and sea level. Sea level has been relatively stable during two periods from 200 BC – 1000 AD and 1400 – late 1800s AD. The periods correspond with cooler periods including the Little Ice Age. Sea level rose by about 0.5 mm/year during the Medieval Warm Period from 1000 – 1400 AD and is now rising by greater than 2 mm/yr since the late 19th century.

- LiDAR Update

- ◆ A-NPDC staff updated the Committee on the ESVA LiDAR data. After repeated corrections to the data with USGS, Sanborn submitted the final lidar point cloud and bare earth DEMs to Dewberry for final review at the end of July. Dewberry expedited their review and the final product should be ready in early August. Dewberry, the USGS contractor, found numerous issues and inaccuracies with the data that resulted from the extensive tidal nature of the area and the numerous delays. Staff plans to work with TNC to schedule a LiDAR Rollout Session to present the data to the public and stakeholders on the Shore in Fall or Winter of 2011.

- NOAA Coastal Services Center ESVA Coastal Inundation Mapping Course

A-NPDC staff briefed the Committee on the course and its benefits for local governments. It was indicated that the Eastern Shore is privileged for receiving this free training that is conducted by NOAA-CSC. The training provides an understanding of coastal inundation issues and GIS mapping methods and should enhance coastal inundation planning efforts for the entire Shore.

- NOAA to Promote Sustainable Aquaculture

- ◆ Staff presented an article from the Chesapeake Bay Journal detailing NOAA's new aquaculture policy that calls for a substantial increase in the supply of domestic aquaculture to the U.S. market. NOAA seeks to partner with businesses to enhance this effort.

September 20, 2011 Meeting

- Chesapeake Bay TMDL-WIP
 - ◆ Virginia Assessment and Scenario Tool (VAST) Training – A-NPDC staff briefed the Committee on training hosted by VDCR for local government staffers. VDCR also indicated that a new deadline for submittal of local data and suggested changes for incorporation into the Phase II WIP had been set for February 1, 2012. New allocations for localities were also disclosed.
 - ◆ Chesapeake Bay Foundation (CBF) Article on Bay TMDL-WIP - A-NPDC staff presented an article by CBF regarding the Bay TMDL-WIP process and its potential impacts on the Eastern Shore.
- NOAA Coastal Services Center ESVA Coastal Inundation Mapping Course
 - ◆ Staff briefed the Committee on training hosted by NOAA-CSC and A-NPDC for local GIS users. The training provided an understanding of coastal inundation issues and GIS mapping methods and enhanced coastal inundation planning capabilities for the Shore. An additional outcome of the course was the reformation of the ESVA GIS Users Group, which will develop flood mapping products using the new ESVA LiDAR data and serve as a forum for sharing Bay TMDL-WIP data.

3.2 Coastal Management Training Report

The A-NPDC coordinated six training and outreach sessions during FY2010. The sessions are summarized in the following sections. This task implements Executive Order 23, Goal 10.

3.2.1 October 13, 2010 Ground Water Committee “Our Eastern Shore Ground Water “Public Workshop Series

A-NPDC staff coordinated the Ground Water Committee’s second presentation in the “Our Eastern Shore Ground Water” presentation series at the Shore Bank Financial Headquarters Building in Onley. Britt McMillan of Arcadis-Malcolm Pirnie presented “Water Supply Planning on the Eastern Shore: An overview of the draft Water Supply Plans

for Accomack and Northampton County” to 25 persons from town and county governments and planning commissions, private citizens, and businesses.

The workshop presented an overview of the Water Supply Plans for Accomack and Northampton County and included an overview of the planning process, discussed the benefits of water supply planning, and described the requirements of residents and local governments as described in the plans.

The workshop was advertised in local newspapers, on the radio, and on the internet. Britt’s presentation was received with great enthusiasm and prompted many questions and discussions. Photos from the workshop and the announcement flyer are included in **Appendix A.**

3.2.2 2010 Eastern Shore Native American Heritage Festival

The Sixth Annual Native American Heritage Festival was held on Chincoteague Island at the Downtown Waterfront Park on November 13, 2010. Regional tribes including the Assateagues, and Accohannocks came together to share their heritage and culture in honor of Native American Heritage Month. The event included displays of local artifacts and demonstrations of traditional skills such as flint knapping, storytelling, beading, primitive technology, and Native flute and dance styles. The festival was very well attended by 300 people and has become a favorite of Chincoteague and regional residents. The VCZM and NOAA logos were credited on the announcement posted to the Chincoteague Cultural Alliance website (www.chincoteagueculturalalliance.org) and on all event flyers and posters. Photographs and event announcements from the Festival are included in **Appendix B.**

3.2.3 Chincoteague Island Electronics Recycling Event

The A-NPDC partnered with the Chincoteague Mother Earth Day Festival Committee to hold an electronics recycling event at the Mother Earth Day Festival at the Robert Reed

Downtown Waterfront Park on Chincoteague on May 14, 2011. Public service departments within the region do not regularly accept electronic waste at local landfills and this event offered Eastern Shore residents an opportunity to properly dispose of electronic waste at no cost. Electronic waste poses a threat to coastal resources in the region including contamination of surface and ground water. Electronics Recycling of Virginia assisted A-NPDC staff in collecting electronic waste, performing an inventory of items collected, and taking all collected materials off-site for recycling and proper disposal.

The collection garnered nearly 3,800 pounds of electronic waste brought in by 52 local residents. All types of electronics were accepted including computers, keyboards, monitors, printers, scanners, TVs, gaming systems, MP3 players, iPods, cell phones, digital clocks, batteries, stereos, telephones, answering machines, etc. The overall outcomes included coastal water quality preservation and protection and improved public understanding of potential hazards to coastal resources. Photographs of the collection are included in **Appendix C**. NOAA/VCZM funds supported A-NPDC staff time.

3.2.4 June 16, 2011 Ground Water Committee “Our Eastern Shore Ground Water “Public Workshop Series

A-NPDC staff coordinated the Ground Water Committee’s third presentation in the “Our Eastern Shore Ground Water” presentation series at the Eastern Shore Chamber of Commerce in Melfa. Britt McMillan of Arcadis-Malcolm Pirnie presented “How safe is our ground water and are there ways we can protect it and our health?” to 30 persons from town and county governments and planning commissions, private citizens, and businesses. The workshop presented topical information on ground water related issues for the Shore including:

- A review of the Eastern Shore Ground Water System including description of our source water aquifers.

- A description of the water quality of our source water aquifers including potential vulnerability of our source water and threats to ground water quality on the Eastern Shore.
- A summary of ground water tools used to evaluate ground water quality including ground water monitoring and modeling.
- An explanation of what can be and is being done to protect and preserve our ground water.

The workshop was advertised in local newspapers, on the radio, and on the internet. Britt's presentation was received with great enthusiasm and prompted many questions and discussions. Photos from the workshop and the announcement flyer are included in **Appendix D**.

3.2.5 Coastal PDC Meeting

On July 7, 2011, A-NPDC staff coordinated a Coastal PDC meeting at the Eastern Shore of Virginia National Wildlife Refuge Visitor Center. The meeting was attended by 16 persons from 10 different agencies and provided a forum for communication amongst coastal PDCs and government agencies. A-NPDC staff worked closely with VCZM staff to develop the meeting agenda, facilitated the meeting, and helped VCZM staff lead a field trip to offer participants the opportunity to view Plant ES Natives native plant demonstration gardens. Photographs of the meeting and field trip and the meeting agenda are included in **Appendix E**.

3.2.6 Coastal Inundation Mapping Training Course

Staff coordinated and hosted a Coastal Inundation Mapping Training course for 30 local GIS users on August 17-18 at the Eastern Shore Community College. This 2-day, hands-on course provided an introduction to coastal inundation and coastal inundation mapping and consisted of a combination of lectures and exercises that allowed attendees to gain a better understanding of the following topics:

- Types of coastal inundation
- Coastal inundation products
- Elevation data
- Integration of elevation data
- Creation of inundation maps
- New visualization techniques
- Adapting to Coastal Risks

The course was conducted by the NOAA Coastal Services Center and was offered at no cost to participants. The training provided both informational and hands-on experience with the end result being enhancement our community’s capability to prepare for future potential flood hazard mapping. Participating agencies included the following:

- Local/regional governments/agencies (A-NPDC, Accomack and Northampton Counties, Towns of Chincoteague and Cape Charles, ES Soil & Water Conservation District)
- State agencies/universities (VA Coastal Zone Management Program, VA Department of Transportation, VA Institute of Marine Science, University of VA Long Term Ecological Research, University of North Carolina, VA Commonwealth University)
- Federal agencies (NASA Wallops Flight Facility, USDA Natural Resource Conservation Service, Farm Service Authority, US Fish and Wildlife Service)
- Other (The Nature Conservancy).

Another major outcome of the training was the reformation of the ESVA GIS Users Group per agreement of training attendees. The GIS Users Group made plans convene during Fall/Winter 2011 to utilize new LiDAR data to create flood maps to show to local governments during the ESVA LiDAR Rollout. Photos from the workshop and the announcement flyer are included in **Appendix F**.

3.3 Technical Assistance Report

The A-NPDC provided technical assistance to local, state, and federal organizations on numerous occasions including environmental review, GIS, and information services during FY2010. Technical assistance activities are summarized in the following sections. This task implements Executive Order 23, Goals 1, 4, and 10.

3.3.1 Partnerships

The A-NPDC partnered with 12 agencies during FY2010 to complete projects aimed to complete the Scope of Work. **Table 1** summarizes A-NPDC partnerships for FY2010.

Table 1 FY2010 Partnerships		
ID	Agency/Group	Partnership Activity
1	VA DEQ	A-NPDC staff partnered with the VA DEQ to develop Water Supply Plans for Accomack and Northampton County.
2	Accomack County and 13 Towns	A-NPDC staff worked with localities to develop and adopt Water Supply Plans and the Eastern Shore of VA Hazard Mitigation Plan.
3	Northampton County and 5 Towns	A-NPDC staff worked with localities to develop and adopt Water Supply Plans and the Eastern Shore of VA Hazard Mitigation Plan.
4	The Nature Conservancy	A-NPDC staff coordinated the Eastern Shore of VA Climate Adaptation Working Group and LiDAR Working Group in partnership with TNC. Outcomes included development of a LiDAR Public Rollout Campaign and Potential Uses Report and enhanced coastal resiliency amongst local governments.
5	Chesapeake Bay Foundation, Resource Conservation & Development Council, ES Soil & Water Conservation District. USDA-NRCS, VA Tech AREC	A-NPDC staff participated in the development of the Onancock Creek Restoration Project which resulted in improved water quality in the creek and Chesapeake Bay. Staff collaborated on a storm water assessment for the Town of Onancock.
6	Middle Peninsula PDC & Northern Neck PDC	A-NPDC collaborated to develop a Working Waterfronts Coalition and attain funding through VCZM to ensure and enhance working waterfronts in the VA coastal zone.
7	UVA-Institute of Environmental Negotiation, Hampton Roads PDC, Middle Peninsula PDC	A-NPDC collaborated to develop a public education campaign on sea level rise which included the development of local focus groups to educate local residents.

8	Chincoteague Cultural Alliance & Chincoteague Mother Earth Day Festival Committee	A-NPDC collaborated to hold an Electronics Recycling Event for Eastern Shore residents to ensure and protect water quality in the coastal zone.
9	ESVA Environmental Education Council, USDA-NRCS, ESVA Soil & Water Conservation District	A-NPDC staff coordinated to produce educational items for the Eastern Shore Watershed Walk held at the Onancock Harbor Fest in September 2011. The handouts and posters developed educated local youth on potential impacts from household hazardous wastes. The display received over 300 visitors.
10	Friends of Onancock School	A-NPDC staff developed a working relationship with FOS in FY2010 to develop a strategic plan for renovating the Historic Onancock School located on 13 waterfront acres in the heart of Onancock and the ESVA.
11	Eastern Shore Watersheds Network	A-NPDC staff served on the Steering Committee of the ESVA Watersheds Network in FY2010. The network is a local watershed group that began meeting annually in 2001 to address pollution reduction strategies for ESVA watersheds through public education and outreach, data sharing, and research communication.
12	NOAA Coastal Services Center	A-NPDC partnered to develop and host a Coastal Inundation Mapping Training Course for 30 GIS users from local, state, and federal agencies to enhance GIS capabilities and mitigation of coastal hazards on the Eastern Shore.

3.3.2 Leveraged Funds

The A-NPDC used NOAA/VCZM grant funds to leverage services and complete projects aimed at improving coastal management on the Eastern Shore of Virginia. **Table 2** summarizes instances where NOAA/VCZM grant funds were leveraged during FY2010. Over \$124,000 was leveraged in FY2010 utilizing NOAA /VCZM grant funds.

Table 2			
FY2010 Leveraged Funds			
ID	Group/ Event	Activity	FY2010 Amount
1	Hazard Mitigation Planning	Staff completed an update to the ESVA Hazard Mitigation Plan which identified coastal hazard risks and vulnerability and developed mitigation actions for lessening future hazard impacts.	\$54,800
2	Malcolm Pirnie, Inc.	Eastern Shore Ground Water Committee funds used to support consulting hydrogeologist to the Eastern Shore Ground Water Committee.	\$21,666
3	Chesapeake Bay TMDL/WIP Technical Assistance	Staff reviewed TMDL items, analyzed regional allocation data, and assisted local governments by providing information and facilitating meetings regarding the TMDL planning process and implementation process resulting in increased communication with state and federal agencies, increased local knowledge, and ultimately improved water quality.	\$15,100
4	Water Supply Planning	Funds used to support completion of Water Supply Plans for Accomack and Northampton Counties.	\$14,000
5	Seaside Special Area Management Project Phase 3 Technical Assistance	Funds used to leverage the completion of grant proposal and attend project development meetings. Leveraged funds resulted in solicitation of public input in marine spatial planning process for Seaside with the end result being improved coastal management and increased economic development opportunities.	\$11,457
6	Coastal Inundation Mapping Training Course	A-NPDC leveraged training for 29 participants from local, state, and federal government agencies and coastal management/conservation NGOs. Outcomes included improved capability for mitigation planning, improved understanding of potential flooding impacts, improved coastal management capability, and reformation of regional GIS Users Group.	\$600 for meeting facility rental and supplies; \$900 in staff time.
7	Kings Creek TMDL/WIP Advisory Committee	A-NPDC served on the advisory committee to develop a TMDL and implementation plan resulting in improved water quality in the Kings Creek watershed.	\$300 in staff time
8	Mill Creek TMDL/WIP Advisory	A-NPDC served on the advisory committee to develop a TMDL and implementation plan resulting in improved water quality in the Kings Creek watershed.	\$150 in staff time

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	Committee		
9	ESVA Adaptation Working Group	A-NPDC staff served on a regional group focused on developing adaptation and outreach strategies for improving the Eastern Shore’s ability to prepare and manage climate change and sea level rise.	\$1,000 in staff time
10	ESVA LiDAR Working Group	A-NPDC staff served on a regional group focused on overseeing the development of LiDAR data for the region. Staff identified potential uses for the data and developed public outreach strategies for introducing the data.	\$200 in staff time
11	Maryland/Virginia Spill Preparedness Coalition	A-NPDC staff served on a team of coastal managers from Maryland and Virginia to develop an emergency response strategy to protect coastal resources in the event of hazardous spills.	\$250 in staff time
12	NRCS Farm Bill Local Working Group	A-NPDC staff served on a local working group to develop strategies for implementing Farm Bill funds to most efficiently improve water quality in the region.	\$200 in staff time
13	VIMS-Wachapreague Seminar Series	A-NPDC staff attended seminars on water quality issues on the Eastern Shore as a training opportunity for staff resulting in improved ability for coastal management for A-NPDC.	\$150 in staff time
14	Envirothon Competition	A-NPDC staff judged the Eastern Shore regional Envirothon Competition held at the Eastern Shore of Virginia National Wildlife Refuge on April 12, 2010. Three local high school teams gave presentations on Northampton County’s ground water resources and designed manage strategies to sustain the resource while allowing for development.	\$200 in staff time
15	Onancock Creek Water Trail Brochure	A-NPDC staff assisted in the development of maps and information for inclusion in a water trail brochure for Onancock Creek to be distributed to local and visiting paddlers.	\$100 in staff time
16	Virginia Offshore Wind Conference	A-NPDC staff attended the conference resulting in identified economic opportunities and potential energy savings and environmental impacts.	\$350 in staff time
17	Marine Trades Workshop	A-NPDC staff participated in workshop at VIMS-Gloucester to learn more about boating infrastructure grant program resulting in the development of a Marina Needs Assessment Project to improve transient boating opportunities, improve marina facilities, and improve water quality in the region.	\$300 in staff time
18	VCZM Coastal Partners Workshop	A-NPDC staff participated in the workshop resulting in improved state-wide project networking and improved communication amongst coastal managers.	\$600 in staff time
19	Coastal Seminars and Workshops	A-NPDC staff participated in multiple seminars and webinars to receive training regarding coastal issues including storm water	\$1,000 in staff time

		management, water quality conditions, grant funding opportunities, coastal geology, coastal hazards, and habitat restoration.	
20	ESRI GIS Subscription	An annual subscription to GIS services was leveraged using VCZM funds. The subscription allows for A-NPDC staff to provide critical GIS services to all regional localities.	\$400
21	VDHR Data Sharing System Subscription	An annual subscription to the VDHR-DSS historical review online tool was leveraged using VCZM funds. The tool allows the A-NPDC to serve the region by performing historical reviews.	\$500
FY2010 Total Leveraged Funds: \$124,223			

3.3.3 Historical Searches

Ten historical searches were performed by A-NPDC staff during FY2009. Nine of the ten searches were performed for properties in Camille Run Housing Development near the Town of Exmore. VCZM and NOAA funds were used to partially subscribe to the Department of Historic Resources Data Sharing System (DSS). Without local availability of DSS, numerous agencies on the Eastern Shore would be required to pay \$100 to \$150 per search. Each environmental review corresponds with a historical search. **Table 3** summarizes the historical searches.

Table 3		
FY2010 Historical Searches		
ID	Search Description	Outcomes
1	Nine searches were completed for individual properties within the Camille Run Housing Development near the Town of Exmore. Searches were performed to supplement a grant proposal for federal funding to replace nine dilapidated substandard houses lacking indoor plumbing with new standard houses with wells and septic systems.	Improved water quality in the regularly impaired waters of Occohannock Creek. Upgraded living conditions in the coastal zone.
2	One search was completed for the Mill Run Apartment Complex in Belle Haven as part of the environmental review for Section 8 project based vouchers. The environmental review resulted in a finding of no significant impact.	Assured water quality in the Occohannock Creek and Chesapeake Bay watersheds. Allowance of 26 Section 8 payment vouchers to be distributed to Mill Run Apartments.

3.3.4 Information Requests

The A-NPDC responded to thirty information requests from private, local, state, and federal organizations and private citizens during FY2010. These requests are summarized in **Table 4**. Additional information requests were completed, but not documented.

Table 4				
FY2010 Information Requests				
ID	Date	Agency/Group	Contact	Request Description
1	10/1/2010	Accomack Co. Parks & Recreation Dept.	Wayne Burton	Population query for central and southern Accomack County
2	10/5/2010	Sunset Bay Homeowner's Association	Bonnie Picard	Historic real estate transaction query.
3	11/5/2010	Shoreline Surveyors	Mike Sterling	Belle Haven Zoning and Subdivision Ordinance request
4	11/8/2010	Accomack County	Jim McGowan	Subdivision Ordinance request
5	11/17/2010	Eastern Shore RC&D	Jane Corson-Lassiter	Print environmental education poster
6	11/29/2010	Bojangles	John Bridgeforth	Topographic map request for property.
7	12/14/2010	VA DCR	Todd Herbert	Septic Pumpout Program query.
8	1/13/2011	Accomack County	Yvonne Pennell	Ground water queries regarding the proposed Mary Nottingham Smith school project
9	2/11/2011	VA DEQ	Jennifer Howell	Chincoteague Bay watershed demographics query
10	3/21/2011	Accomack County Resident	Andrea Benda	Household Hazardous Waste Collection query
11	3/29/2011	Earth 911		Household Hazardous Waste Collection query
12	4/11/2011	Town of Chincoteague	Bill Neville	Print town zoning maps with plotter
13	4/11/2011	Chesapeake Bay Foundation	Kristen Evans	Onancock Creek watershed GIS data
14	4/26/2011	Town of Onley	Jamie Salazar	Accomack Co. Ethnicity Census data
15	4/28/2011	Eastern Shore News	Bill Sterling	Eastern Shore Census data inquiry
16	6/8/2011	Accomack County Resident	Roy Reynolds	Water quality inquiry
17	6/10/2011	Delmarva Poultry Industry, Inc.	Bill Satterfield	Chesapeake Bay TMDL-WIP inquiry

18	6/13/2011	Northampton County Resident	Unknown resident	Ground water inquiry
19	6/16/2011	Accomack County Resident	Gene Ward	Eastern Shore Ground Water Inquiry
20	6/24/2011	Accomack County Resident	Scott Mears	Household Hazardous Waste Collection query
21	7/5/2011	Eastern Shore Health Department	James Davis	Eastern Shore pit privy inquiry
22	7/8/2011	Accomack County Resident	Michael Harris	Household Hazardous Waste Collection query
23	7/13/2011	Bowman Consulting Groupq	Nancy Thompson	Belle Haven Zoning Map and Zoning Ordinance request
24	7/20/2011	Waste Watchers the Eastern Shore	Jenny O'Neill	Print 250 copies of brochures for local non-profit group
25	7/28/2011	Accomack County Resident	Joe Valentine	Chesapeake Bay TMDL-WIP inquiry
26	8/3/2011	Waste Watchers the Eastern Shore	Jenny O'Neill	Print 125 copies of brochures for local non-profit group
27	8/10/2011	Draper Aden & Assoc.	Cheryl Stevens	Water Supply Plan inquiry
28	9/22/2011	Carter Financial	Jimmie Carter	Tangier income inquiry
29	9/26/2011	Waste Watchers the Eastern Shore	Jenny O'Neill	Print 100 copies of brochures for local non-profit group
30	9/28/2011	Eastern Shore Master Naturalists	Nancy Peterson	Assistance with ESVA ground water presentation development

3.4 Ground Water Committee Report

The A-NPDC staffed the Eastern Shore of Virginia Ground Water Committee and managed the Ground Water Committee's consulting hydrogeologist during FY2010.

3.4.1 Summary of Accomplishments

A-NPDC staff coordinated ground water permit reviews with DEQ and local aspects of the ground water model update developed by USGS. A-NPDC staff also maintained and updated the Ground Water Committee web site and conducted educational programs including two public workshops held in October 2010 and June 2011. During FY2010, the Ground Water Committee held 10 meetings, awarded the 2010 Eastern Shore Ground Water Award, commented on multiple regulatory actions, reviewed 23 ground water

withdrawal permits, served on the state Shellfish TMDL Implementation Advisory Committee, began the process of updating the Eastern Shore of Virginia Ground Water Supply Protection and Management Plan, and produced a summary table of permitted ground water withdrawals on the Eastern Shore. The Committee served on the Virginia Ground Water Withdrawal Regulatory Advisory Panel. The consulting hydrologist to the Ground Water Committee produced the *Eastern Shore Ground Water Committee FY2010 Annual Progress Report*. The Ground Water Committee Report implements Executive Order 23, Goals 2 and 10.

The following sections summarize activities related to Committee organization; statutory, regulatory, and permit tracking/review; research and investigation; and implementation of ground water protection.

Committee Organization

Committee Officers elected for FY 2011. Ms. Wanda Thornton was elected as Chairman; Mr. Larry Trala as Vice Chairman.

Statutory, Regulatory, and Permit Tracking/Review

- Routine review and tracking of Ground Water Withdrawal Applications and Permits.
- Regulatory Advisory Panel (RAP) formed to consider changes to the Groundwater Withdrawal Regulations and Groundwater Management Area. Britt McMillan represented the Eastern Shore of Virginia Groundwater Committee on the RAP.
- Draft Groundwater Withdrawal Regulations were presented to and approved by the State Water Control Board. The draft Regulations are currently in the Governors Office for review.

Research and Investigation

- USGS published final report titled “Groundwater-Quality Data and Regional Trends in the Virginia Coastal Plain, 1906-2007”. Full text is available at:
<http://pubs.usgs.gov/pp/1772/pdf/pp1772.pdf>

Implementation of Ground Water Protection

- Ground Water Resource presentation at the AWWA/VWEA Joint Conference.
Presentation titled: ***“A New Era for Groundwater Supply in the Coastal Plain of Virginia”***
- Second and Third of Semi-Annual Series of Public Workshops on Groundwater Resource Issues on the Eastern Shore of Virginia.
 - ◆ October presented paper titled ***“Eastern Shore of Virginia Water Supply Plan Summary”***
 - ◆ June presented paper titled ***“Our Eastern Shore Ground Water Part II – Ground Water Quality on the Eastern Shore: Should I be worried about the quality of my drinking water and what is being done to ensure it is safe?”***
- Published article in the Citizens for a Better Eastern Shore June news letter titled: ***“A Short Introduction to Ground Water Resources and Resource Protection on the Eastern Shore”***.
- Continued Ground Water Awards Program to recognize actions that protect and/or preserve the ground water resource.
- Pesticide and Household Hazardous Waste Collections.

3.4.2 Monthly Progress Reports

October 13, 2010 Meeting

- Ground water withdrawal permits
 - ◆ No new ground water withdrawal permits
- A Public Workshop was held on October 13 from 6:30 to 8:30 pm. Britt McMillan presented the Northampton County and Accomack County Water Supply Plans to the public (presentation attached).

November 16, 2010 Meeting

- Ground water withdrawal permits
 - ◆ No new ground water withdrawal permits

- A-NPDC staff presented an overview of the *Eastern Shore of Virginia Land Use and Ground Water Resources Report*. The report considers zoning, existing development, soils, and ground water to attempt to identify potential trends for residential growth that best complement efforts being made to protect and conserve the limited natural resources on the Eastern Shore. The presentation included growth potential maps for Accomack and Northampton Counties. Discussion ensued regarding the analysis included in the report. It was suggested that conservation lands be distinguishable in the report and growth potential maps. Discussion ensued regarding Carolina Bays on the Shore and their potential effects on future development and ground water.
- The Committee reviewed ground water impacts at the NASA-WFF Old Aviation Fuel Tank Farm Project and the Jaycee Cleaners facility in Nelsonia, which is an EPA Environmental Cleanup project.
- Britt McMillan continued the detailed presentation of the Northampton County and Accomack County Water Supply Plans with detailed discussion on the following final changes to the plan by the Committee:
 - ◆ Updated demand estimates
 - ◆ Removal of Chincoteague (separate water supply plan) and Wallops Flight Facility (not required to submit a plan) from the projected demands.
 - ◆ Refine drought response triggers:
 - Groundwater use and groundwater levels relative to pump intakes would be primary criteria
 - Precipitation and relative groundwater level change would be secondary criteria

December, 2010 Meeting

- No Ground Water Committee Meeting held.
- Britt McMillan discussed questions associated with the Accomack County Landfill Land Treatment System as part of the Sole Source Aquifer Review with the County and their consultant. Additional information and new design details were provided to address the issues identified in the August 2010 review.

January 18, 2011 Meeting

- Ground water withdrawal permits
 - ◆ Town of Chincoteague (renewal)
- Britt McMillan discussed questions associated with the Accomack County Landfill Land Treatment System as part of the Sole Source Aquifer Review (see attached review). Based on these discussions and updated design information provided by the County and their consultant many of the original questions were adequately addressed. Remaining questions were:
 - ◆ Average flow design to accommodate wet weather.
 - ◆ Available storage capacity.
- Britt McMillan discussed potential ground water impacts that could be associated with a proposed housing development at the Mary Nottingham Smith school including measures that could minimize impacts.
- Ground water committee elected Only Wal-Mart to receive an award recognizing the significant efforts in water conservation and management that far exceed State and Federal Requirements
- A-NPDC staff presented an application for Wellhead Protection Program funding to support the Household Hazardous Waste Collection for Committee approval.
- A-NPDC staff indicated that neighboring counties in Maryland were invited to participate in Ground Water Committee actions.

February 15, 2011 Meeting

- Ground water withdrawal permits
 - ◆ Town of Chincoteague
 - ◆ Kuzzens Housing Complex in Painter
 - ◆ Two Agricultural Permits
- Ground Water Committee presented the Annual Ground Water Award to Managers Frank Durst and Lisa Lindberg of the Wal-Mart Supercenter in Only for the following conservation practices that far exceeded State and Federal requirements:

- ◆ Additional controls during construction including:
 - Temporary sedimentation basins,
 - Additional rock-checks in swales,
 - Additional silt fencing,
 - Use of bio-degradable materials to control runoff including use of mulch
 - Construction of new ditches to protect adjacent wetland
 - Ultra low flow plumbing fixtures
- The Committee moved to approve a partnership with the Eastern Shore RC&D Council to develop a proposal for funding through the EPA Environmental Justice Program focusing on assessing water quality in impoverished areas on the Eastern Shore.
- Britt McMillan represented a final review of the Accomack County Landfill Land Application Sole Source Aquifer Review with comments addressed to the Environmental Protection Agency (see attached).

March 15, 2011 Meeting

- Ground water withdrawal permits
 - ◆ Kiptopeke State Park
 - ◆ Van Kesteren Farms, Tasley
 - ◆ Outten Farm, Machipongo
 - ◆ Kuzzens Farm Complex, Painter
- Britt McMillan presented a draft letter to the Ground Water Committee to submit to the Department of Environmental Quality as public comment on the Accomack Landfill Land Treatment System (see attached).
- Britt McMillan presented a draft letter of support to the Ground Water Committee for the Town of Chincoteague Ground Water Withdrawal Permit (see attached).
- As part of Ground water withdrawal permit review Britt McMillan presented the following:
 - ◆ Kiptopeke State Park is a very small withdrawal with use only for public water supply. There is no expected impact on residences or saltwater intrusion as a result

of the proposed withdrawal. The Ground Water Committee requested that a letter of support be submitted to DEQ as a public comment.

- ◆ Van Kesteren Farms is for an existing withdrawal that was not previously permitted. The information provided indicates two irrigation wells screened in the water table (Columbia) aquifer. Withdrawal impacts from the Columbia aquifer are generally considerably less than the Yorktown-Eastover aquifer owing to the much greater recharge rates.
- ◆ Otten Farm is for an existing withdrawal that was not previously permitted. The withdrawal is from the Yorktown-Eastover aquifer and is used to recharge an irrigation pond. Impacts from this withdrawal will be greater since the withdrawal is from the confined Yorktown-Eastover aquifer.
- ◆ Kuzzens Farm Complex is an existing permitted withdrawal for a moderately large amount (90,000 gpd average). Five of the wells are screened in the Columbia aquifer and 17 in the Yorktown-Eastover aquifer.

April 19, 2011 Meeting

- Ground water withdrawal permits
 - ◆ Scott Farm – a moderately low use historically based permit with one well screened in the Columbia (water table) aquifer, where potential impacts are significantly less than the confined aquifer.
 - ◆ Long Farm – a low use historically based permit with one well screened in the Yorktown-Eastover aquifer.
 - ◆ Kuzzens KMC Camp – public water supply for approximately 300 people residing at the Camp. The withdrawal amount is low (2.3 MG/year) from two wells screened in the Yorktown-Eastover aquifer. A draft Public Comment letter for VDEQ was presented and approved by the Ground Water Committee.
- Britt McMillan presented a draft Agenda for the June 2011 Public Workshop for Ground Water Committee Approval.
- Britt McMillan presented a summary table of all permitted ground water withdrawal on

the Eastern Shore of Virginia for use by the Committee. This summary table was posted on the A-NPDC Web Site for public access at the request of the Ground Water Committee

- Using a GIS system, Britt McMillan presented an interactive update of ground water level trends in the Coastal Plain of Virginia following cessation of pumping at rates greater than 30 MGD at the International Paper Franklin Mill. The presentation provided an illustration of the aquifer response once pumping including the rise in groundwater levels of over 30 feet shortly after pumping ceased.

May 17, 2011 Meeting

- Ground water withdrawal permits
 - ◆ No new ground water withdrawal permits
- The Committee completed the procurement process for the Ground Water Consultant contract and re-awarded the contract to Arcadis-Malcolm Pirnie.
- The Committee submitted a letter of support to the new director of the VA Cooperative Extension.
- Britt McMillan presented a summary on Safe Drinking Water Act Community Water System Monitoring Requirements (presentation attached).
- Britt McMillan provided an overview of the June Public Workshop to the Ground Water Committee for comment and approval.
- Britt McMillan prepared an article for publication in the Citizens for a Better Eastern Shore June 2011 news letter (see attached).

June 16, 2011 Meeting

- Ground water withdrawal permits
 - ◆ No new ground water withdrawal permits
- Committee met as a workshop to for the public at the Eastern Shore of Virginia Chamber of Commerce from 6:30pm to 8:00pm. This was the third of a series of Semi-Annual Public Workshops, presenting topical information on ground water related

issues for the Shore (presentation attached).

- ◆ A review of the Eastern Shore Ground Water System including description of our source water aquifers.
- ◆ A description of the water quality of our source water aquifers including potential vulnerability of our source water and threats to ground water quality on the Eastern Shore.
- ◆ A summary of ground water tools used to evaluate ground water quality including ground water monitoring and modeling.
- ◆ An explanation of what can be and is being done to protect and preserve our ground water.

July, 2011 Meeting

No meeting was held during this month.

August 16, 2011 Meeting

- Ground water withdrawal permits
 - ◆ *Seybolt Farm* - Britt McMillan reviewed this new application for an existing previously not-permitted withdrawal to be used for irrigation. No significant impacts on the ground water resource were expected.
 - ◆ *Hog Neck Farm* - Britt McMillan reviewed this renewal application for an existing withdrawal to be used for irrigation. No significant impacts on the ground water resource were expected.
 - ◆ *Nine Agricultural Withdrawal applications* – Britt McMillan reviewed nine other applications which were required due to change of ownership.
- The Committee held elections for FY2012. Vice Chairman Larry Trala was elected as Chairman by acclamation. Chairman Wanda Thornton was elected as Vice Chairman by acclamation.
- A-NPDC staff reviewed a VPA Permit Reissuance for Cherrystone Campground, which practices wastewater reuse as ground water recharge. Staff explained the positive benefits of this practice to the Committee.

- A-NPDC staff presented a review of a petroleum storage tank cleanup project at the former Dulaney Property in Exmore and reported no expected impacts to the Yorktown Aquifer.
- Britt McMillan presented modeling scenarios produced by the ESVA Ground Water Model. A scenario was generated for the Captains Cove development using data included in the 2007 withdrawal application and showing potential impacts from varying projected population and water-use growth scenarios. Model outputs included regional ground water elevations and chloride concentrations for each growth scenario. Interpretation of the model suggested that the area could potentially experience salt water intrusion in the lower aquifer if build-out is attained.

September 20, 2011 Meeting

- Ground water withdrawal permits
 - ◆ *Ames Farm* - an existing previously not-permitted withdrawal to be used for irrigation. No significant impacts on the ground water resource were expected.
 - ◆ *Middleton Farm* - an existing previously not-permitted withdrawal to be used for irrigation. No significant impacts on the ground water resource were expected.
- A-NPDC staff reviewed the NASA Routine Payload Draft Environmental Assessment and reported potential ground water impacts as unlikely, but potentially harmful to ground water supplies.

3.5 Onancock School Technical Assistance Report

In response to growing pressure for the Town of Onancock to privatize the 13-acre Onancock School property in the center of town on Onancock Creek, the Friends of Onancock School (FOS) non-profit group was formed by a group of local volunteers to preserve the rich history, environment, and culture associated with the Onancock School property. A-NPDC provided technical assistance to develop strategic plans to attain the funding necessary to rehabilitate and renovate the building and campus grounds. The A-

NPDC assisted FOS in defining uses for the property, determining appropriate funding options based on uses, and completing grant applications to attain funding. FOS is utilizing the strategic plans by implementing developed fundraising efforts to attain funding for building rehabilitation and renovation. A-NPDC submitted grant applications to attain funding for the development of an Outdoors Environmental Education Classroom. The technical assistance provided should ensure the successful mission of FOS to ensure the historical and cultural values and preserve the environmental resources of the Onancock School property.

The report has been made available to project stakeholders and VCZM as a resource to consider in future planning endeavors. The report is available upon request through A-NPDC and VCZM.

Appendix A

Ground Water Committee “Our Eastern Shore Ground Water” Public Workshop Series Part II Photographs and Announcement – October 13, 2010



Photograph 1 – Britt McMillan addressing the crowd at the Public Workshop.



Photograph 2 – Britt McMillan addressing the crowd at the Public Workshop.

EASTERN SHORE of VIRGINIA GROUND WATER COMMITTEE PUBLIC WORKSHOP SERIES

Our Eastern Shore Ground Water

Part II – Water Supply Planning on the Eastern Shore: An overview of the draft Water Supply Plans for Accomack and Northampton County

The Eastern Shore of Virginia Ground Water Committee invites you to the second in a series of public workshops aimed at providing specific information on the Shore's ground water resource used in each of our lives daily. Britt McMillan, Consulting Hydrologist to the Ground Water Committee of Malcolm Pirnie, Inc. will be presenting. Britt has consulted the Ground Water Committee for over a decade and has a broad understanding of the Shore's ground water resource. His enthusiastic presentation covers the following:

1. An introduction to water supply planning.
2. A review of existing water sources and water use on the Shore.
3. A review of existing water resource conditions on the Shore.
4. A presentation of projected water demand on the Shore.
5. A review of water demand management.
6. A presentation of the drought response and contingency plan.

**The seminar will be held at the Shore Bank Financial HQ Building,
25020 Shore Parkway, Onley, Virginia, on Wednesday, October
13th, from 6:30 to 8:30 p.m. Refreshments will be served.**

To learn more, contact Curt Smith, Accomack-Northampton Planning District Commission at
(757) 787-2936, ext 114.



Virginia Coastal Zone
MANAGEMENT PROGRAM



Appendix B

Eastern Shore Native American Heritage Festival
Announcement Flyer and Photographs



Native American Heritage Festival

Chincoteague Island, VA

Saturday, November 13, 2010
Noon to 5 p.m. Downtown Waterfront Park
Parks & Recreation Building on Church Street in case of rain

Demonstrations of Native Crafts & Skills
Food • Music • Dancing • Historical Artifacts
Storytelling • Children's Activities

12 pm: Veterans Honoring Ceremony
All veterans, those currently serving
and those who wish to honor them
are invited to take part

Sponsored in part by grants from :



Virginia Coastal Zone
MANAGEMENT PROGRAM





Photograph 1 – Participants at the Heritage Festival.



Photograph 2 – Participants dancing at the Heritage Festival.



Photograph 3 – Participants viewing demonstration at the Heritage Festival.



Photograph 4 – Participants dancing at the Heritage Festival.

Appendix C

Chincoteague Island Electronics Recycling Event Photographs



Photograph 1 – Collection contractor loading up collected recyclable electronics.



Photograph 2 – Electronics loaded in recycling truck to be taken away for proper disposal.

Appendix D

Ground Water Committee “Our Eastern Shore Ground Water” Public Workshop Series Part II Photographs and Announcement – October 13, 2010



Photograph 1 – Britt McMillan addressing the crowd at the Public Workshop.



Photograph 2 – Britt McMillan addressing the crowd at the Public Workshop.

EASTERN SHORE of VIRGINIA GROUND WATER COMMITTEE PUBLIC WORKSHOP SERIES

Our Eastern Shore Ground Water

Part III – Ground Water Quality on the Eastern Shore: Should I be worried about the quality of my drinking water and what is being done to ensure it is safe?

The Eastern Shore of Virginia Ground Water Committee invites you to the third in a series of public workshops aimed at providing specific information on the Shore's ground water resource used in each of our lives daily. This presentation will provide information on the quality of local ground water and what is being done to manage it. Attendees will have opportunities to ask any questions they may have. Britt McMillan, Consulting Hydrologist to the Ground Water Committee of Malcolm Pirnie, Inc. will be presenting. Britt has consulted the Ground Water Committee for over a decade and has a broad understanding of the Shore's ground water resource. His enthusiastic presentation covers the following:

1. A review of the Eastern Shore Ground Water System including description of our source water aquifers.
2. A description of the water quality of our source water aquifers including potential vulnerability of our source water and threats to ground water quality on the Eastern Shore.
3. A summary of ground water tools used to evaluate ground water quality including ground water monitoring and modeling.
4. An explanation of what can be and is being done to protect and preserve our ground water.

The seminar will be held at the Eastern Shore of Virginia Chamber of Commerce, 19056 Parkway, Melfa, Virginia, on Thursday, June 16th, from 6:30 to 8:00 p.m. Refreshments will be served.

To learn more, contact Curt Smith, Accomack-Northampton Planning District Commission at (757) 787-2936, ext 114.



Virginia Coastal Zone
MANAGEMENT PROGRAM



Appendix E

Coastal PDC Meeting Photographs and Meeting Agenda



Photograph 1 – Participants at the Coastal PDC Meeting.



Photograph 2 – Coastal PDC meeting participants visiting Plant ES Natives demonstration garden at Kiptopeke State Park.

Coastal PDC Meeting

July 7, 2011

10:30 a.m. – 3:00 p.m.

Eastern Shore of VA National Wildlife Refuge Visitor's Center
32205 Seaside Road, Cape Charles, VA

DRAFT AGENDA

- 10:30 Call to Order and Welcome**
- 10:35 PDC/State Agency Updates (~10 minutes per PDC/Agency)**
- 12:15 Working Lunch – Provided at meeting**
- 12:30 VIMS Wetlands Program Updates – Shep Moon, VCZM**
- 12:45 Trainings**
- NOAA Climate Change Trainings Discussion - Shep Moon, VCZM
 - Conflict Management Training Discussion - Laura M., Lewie, Laura G.
 - Coastal GEMS Training - Nick Meade, VCZM
- 1:00 Semiannual & Final Product Guidance Update – April Bahen, VCZM**
- 1:20 Land Acquisition/Habitat Restoration/Plant ES Natives Campaign Discussion – Laura McKay and Virginia Witmer, VCZM**
- 1:50 Open Discussion**
- 2:15 Site Visits to Plant ES Natives Demo Gardens (Kiptopeke State Park & ESVA NWR)**
- 3:00 Adjourn**



Virginia Coastal Zone
MANAGEMENT PROGRAM



Appendix F

Coastal Inundation Mapping Training Course Photographs and Agenda



Photograph 1 – Participants receiving instruction from NOAA Coastal Services Center personnel.



Photograph 2 – Participants reviewing and discussing new LiDAR data for the Eastern Shore.



Virginia Coastal Zone
MANAGEMENT PROGRAM



NOAA Coastal Inundation Mapping Course

August 17 & 18, 2011

Eastern Shore Community College Workforce Development Building
29300 Lankford Highway, Melfa, VA

Driving Directions: ESCC is located on the west side of U.S. Route 13 approximately 1 mile south of Melfa. Once on campus, take first left turn and proceed to parking lot behind the Workforce Development Building. Enter the building and look for Mapping Course signage leading to computer lab.

DRAFT AGENDA

Wednesday, August 17

- | | |
|--------------------|---|
| 8:00-8:30 | Arrival (**All participants using personal laptops need to arrive early to install necessary programs and/or course data**) |
| 8:30-9:00 | Course Introduction - Matt Pendleton & Billy Brooks, NOAA Coastal Services Center <ul style="list-style-type: none"> ▪ Welcome and Introductions ▪ Overview of NOAA including Coastal Services Center ▪ Overview of Course Schedule |
| 9:00-9:30 | Introduction to Coastal Inundation |
| 9:30-10:30 | Coastal Inundation Products |
| 10:30-10:45 | Morning Break |
| 10:45-12:00 | Coastal Inundation Products (Cont.) |
| 12:00-1:00 | Lunch |
| 1:00-2:30 | Elevation Data for Coastal Inundation Mapping |
| 2:30-2:45 | Afternoon Break: 10 - 15 Minutes |
| 2:45-4:30 | Elevation Data for Coastal Inundation Mapping (Cont.) |

Thursday, August 18

- | | |
|--------------------|--|
| 8:00-8:30 | Arrival |
| 8:30-10:30 | Integrating Elevation Data |
| 10:30-10:45 | Morning Break |
| 10:45-12:00 | Coastal Inundation Mapping |
| 12:00-1:00 | Lunch |
| 1:00-2:30 | Adapting to Coastal Risks |
| 2:30-2:45 | Afternoon Break |
| 2:45-4:00 | Adapting to Coastal Risks (Cont.) |
| 4:00-4:30 | Course Wrap-Up and Discussion |