

Sustainable Shorelines and Community Management

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Virginia Coastal Partners Workshop

December 7, 2010



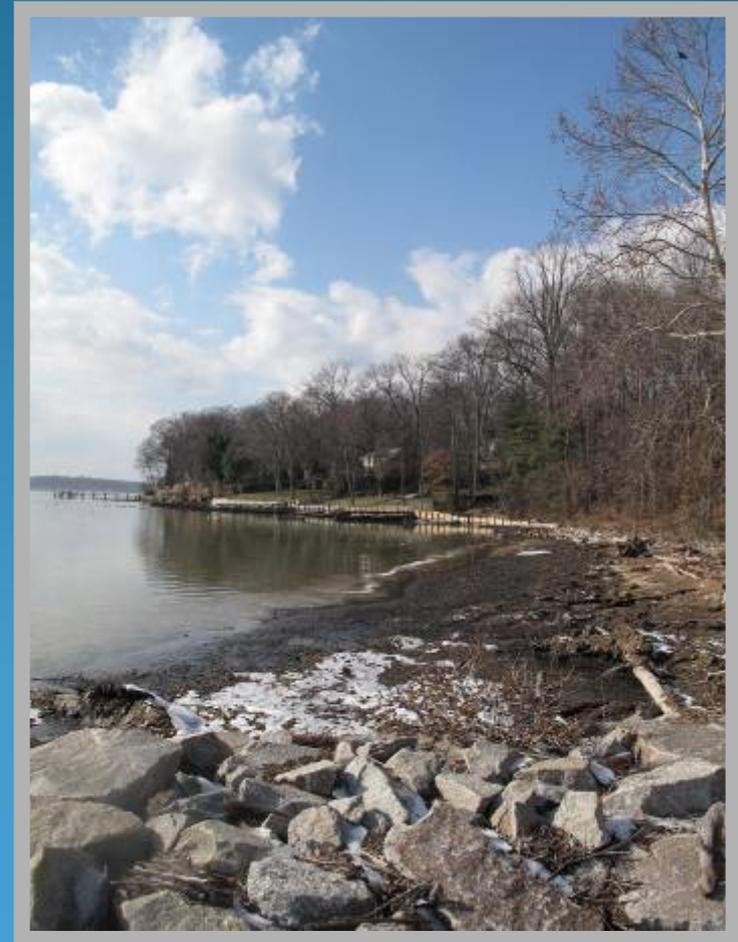
Northern Virginia Regional Commission



Sustainable Shorelines & Community Management



- Collecting Data
- Assessing Vulnerability
 - Sea Level Rise
 - Storm Surge
- Developing Strategies
 - Protect
 - Accommodate
 - Retreat
- Adapting to Change



Scope of Work

Phase I

Oct 08 – Sep 09

- Workgroup Establishment;
- Broad Vulnerability Analysis;
- Policy Review



Phase II

Oct 09 – Sep 10

- Assessment Refinement;
- Strategy Development
 - Best Practices
 - Community Awareness



Phase III

Oct 10 – Sep 11+

- Strategy Refinement;
- Implementation Framework;
- Outreach, as appropriate





Photo courtesy of Fairfax County Police Department



Northern Virginia Regional Commission



Photo courtesy of Fairfax County Police Department



Overall End Products

- Maps showing areas at risk of inundation from SLR and Storm Surge in the region.
- Quantification of specific elements vulnerable for both the built and natural environments.
 - Building, roadways, parks, tidal wetlands, critical infrastructure, wells, septic fields, etc...
 - Economic value/Ecosystem services
- Strategies to protect, adapt or retreat communities located in areas at risk.



Workgroup

- Mostly land use planners
- Identify key targeted planning areas
- Provide data and information
- Shape the strategy and recommendations



Arlington County
City of Alexandria
Fairfax County
Prince William County
Town of Quantico
Town of Occoquan
George Mason University
Virginia Tech
NPS – Center for Urban Ecology
NPS – GW Memorial Parkway
Fort Belvoir
Quantico Marine Corps Base
VA DCR – Mason Neck
USFWS – Mason Neck Refuge
VA Dept of Transportation

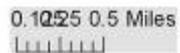
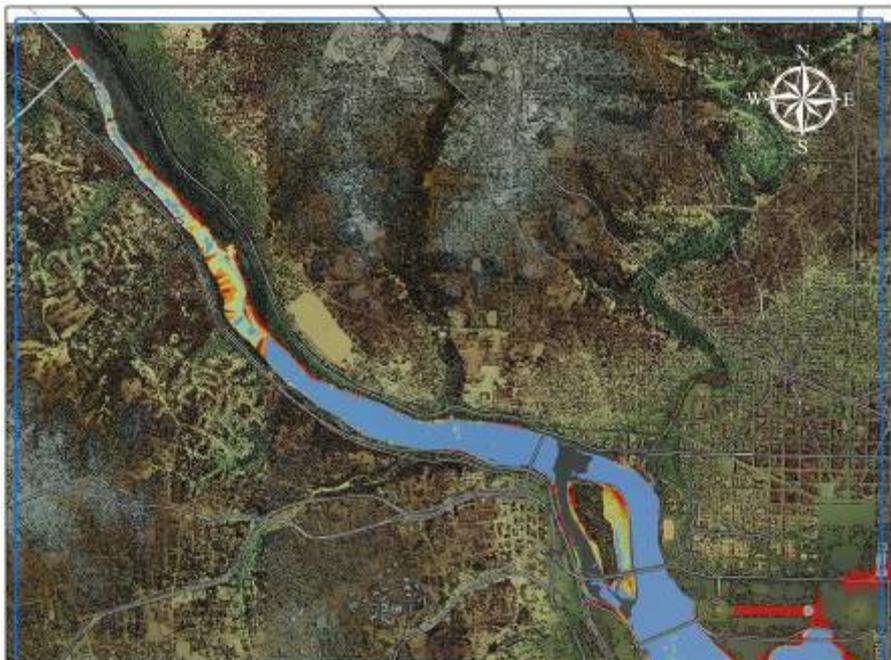
Areas at Risk - SLR

- Sea Level Rise = Hot Spots (i.e. the lowest lying areas in the region)

Areas Most Impacted by Potential Sea Level Rise	
Arlington	<ul style="list-style-type: none">• National Airport• Four Mile Run
Alexandria	<ul style="list-style-type: none">• Four Mile Run• Dangerfield Island• Old Town• Jones Point
Fairfax County	<ul style="list-style-type: none">• Huntington• Belle Haven/New Alexandria• Dyke Marsh• Several Tidal Embayments• Hallowing Point
Prince William County	<ul style="list-style-type: none">• Occoquan NWR• Tidal Embayments• Town of Quantico• Occoquan River

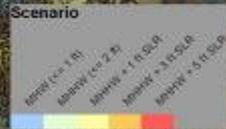
Relative Sea Level Rise

Arlington County

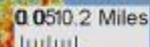


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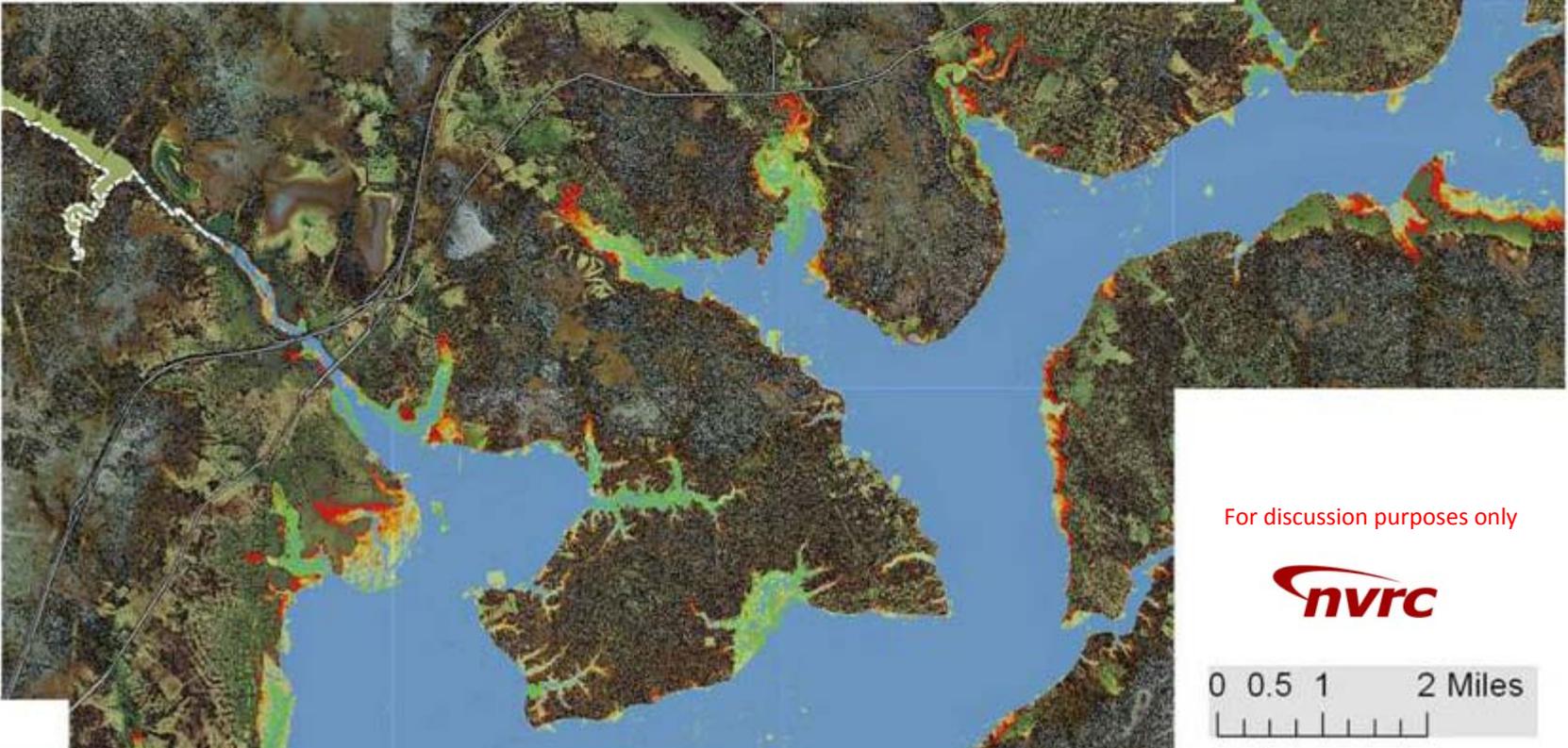
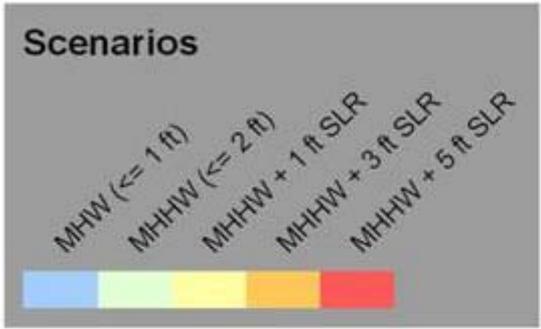
City of Alexandria



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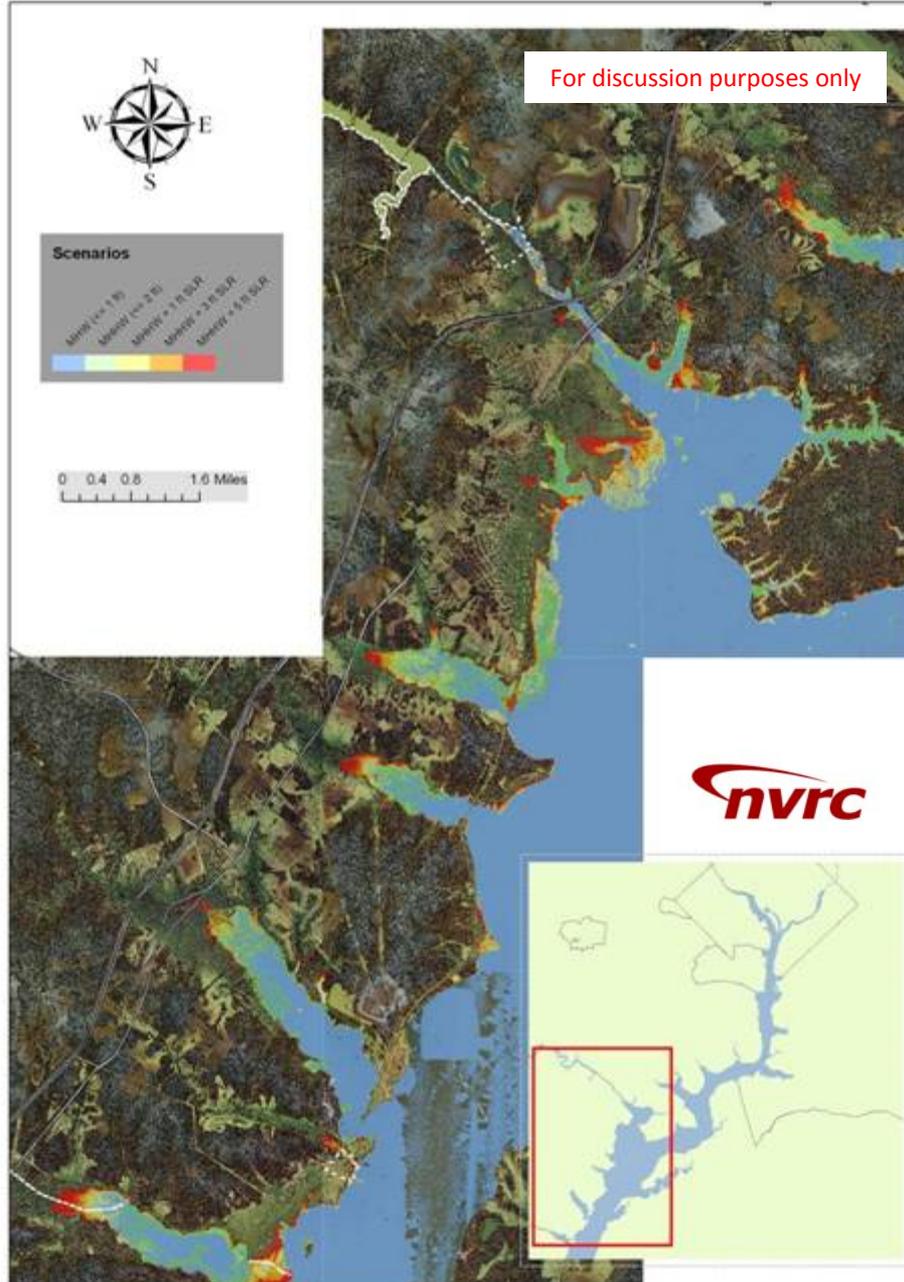
Relative Sea Level Rise



For discussion purposes only



Relative Sea Level Rise Prince William County





Thames Barrier, London England
Photo credit: Marc Pinter (flickr.com)



Local Government Responsibilities

Health
Safety
Welfare



Adaptation Approach

Built Environment

Existing Development

Future Development

Natural Environment

Health, Safety, and
Awareness

Protect

Accommodate

Retreat



Policy Inventory - Existing Toolbox

Public Health
Programs

Hazard Mitigation
Planning

Land Use Planning



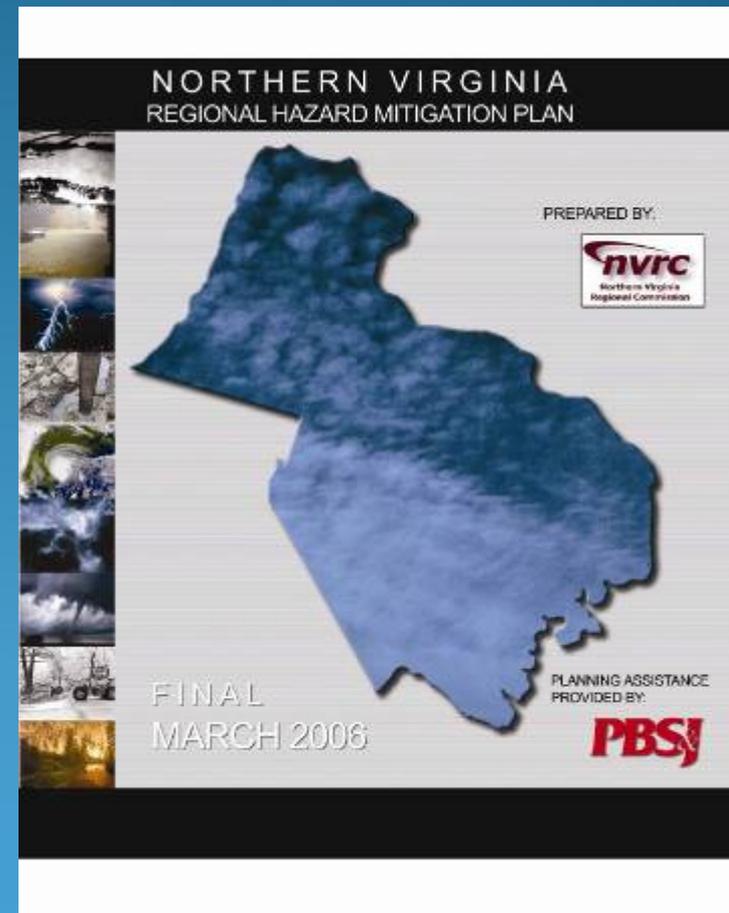
Public Health Programs

 AIR QUALITY ACTION GUIDE Your "how to" guide for cleaner air	
Air Quality Rating	Steps to Protect Your Health and Our Environment
GOOD 0-50	Enjoy the great outdoors
MODERATE 51-100	Some Pollution - poses risk to the highly sensitive <ul style="list-style-type: none">• Carpool, use public transit, bike, or walk• Limit driving, consolidate trips• Reduce car idling
UNHEALTHY for Sensitive Groups 101-150	Pollution levels harmful to children, the elderly, and anyone with respiratory or heart conditions - limit activity outdoors <ul style="list-style-type: none">• Follow all action steps above• Refuel after dusk, use fuel-efficient vehicles• Avoid driving, use transit, telework• Avoid using aerosol products
UNHEALTHY 151-200	Pollution levels harmful to all - sensitive groups should avoid outdoor activities, others should limit outdoor exertion <ul style="list-style-type: none">• Follow all action steps above• Avoid using any gas-powered equipment• Wait to paint until air quality improves
VERY UNHEALTHY 201-300	Pollution levels very unhealthy for everyone - avoid any physical activity outdoors

- Awareness & Alerts
 - Air Quality
- Immunizations & Vaccinations
- Pollution Prevention
- Pest Surveillance & Control

Hazard Mitigation Planning

- Natural Hazards
 - Flooding
 - Winter Storms
 - Drought
 - Wildfires
- Mitigation Goals & Objectives
- Implementation Strategy



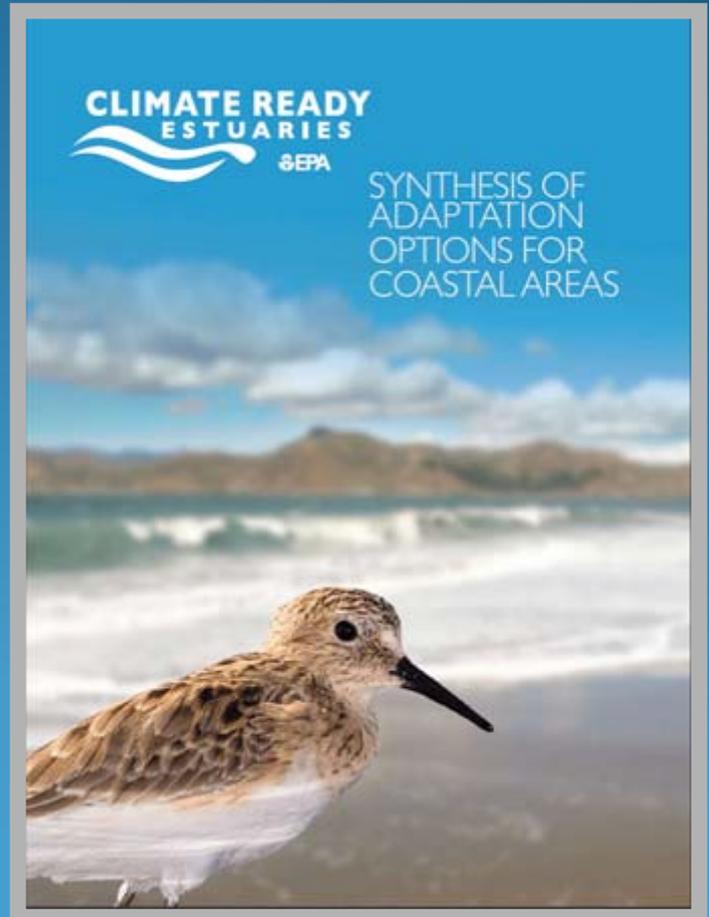
Land Use Planning

- Comprehensive Plan
 - Floodplain Management
 - Shoreline Management
 - Zoning Ordinances
 - Overlay Districts
 - Subdivision Ordinances
 - Wetlands Ordinances
 - Open Space & Recreation
 - Chesapeake Bay Preservation
- Master Plans
 - Public Space
 - Waterfront/Shoreline
 - Watershed
- Local Initiatives
 - Eco-City Charters
 - Smart Growth
 - Cool Counties
 - Cool Cities



Common Strategies & Resources

- Educating & reaching out
- Integrating vulnerability assessment and adaptation options into HazMit planning processes
- Increasing freeboard and setback requirements
- Encouraging the transfer of development rights
- Creating rolling easements or specific overlay districts



www.epa.gov/CRE



Challenges to Implementation

- “Climategate” & Skeptics
- Enabling Authority
- Private Land Rights & By-Right Development
- Land Use Nomenclature
- Maintenance & Service Politics
- Engineering & Tradeoffs
- Funds

One size does not fit all.



Current Efforts

- Regional Hazard Mitigation Plan development
 - Economic Evaluation
- VIMS Shoreline Situation Report update
 - Data collection, Spring 2010
- Knowledge, attitudes, opinions of residents

20 percent
of Northern Virginia's shorelines
are artificially stabilization

Source: Tidal Shoreline Erosion in Northern Virginia, NVPDC, Sept 1992



Acknowledgements



This project would not be possible, without

the financial support from NOAA and Virginia CZM,
the generous assistance from Chesapeake/Virginia NEMO, and
the insights, perspective, and dedication of the Workgroup



Northern Virginia Regional Commission



Thank you!

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