

Managing Bay TMDL Requirements in the City of Norfolk

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Overview

- Position on Bay TMDL
- Response to Phase II WIP requirements
 - Strategies
 - Implementation Plan
 - Other Factors to Consider
- Current Progress
- Current Goals



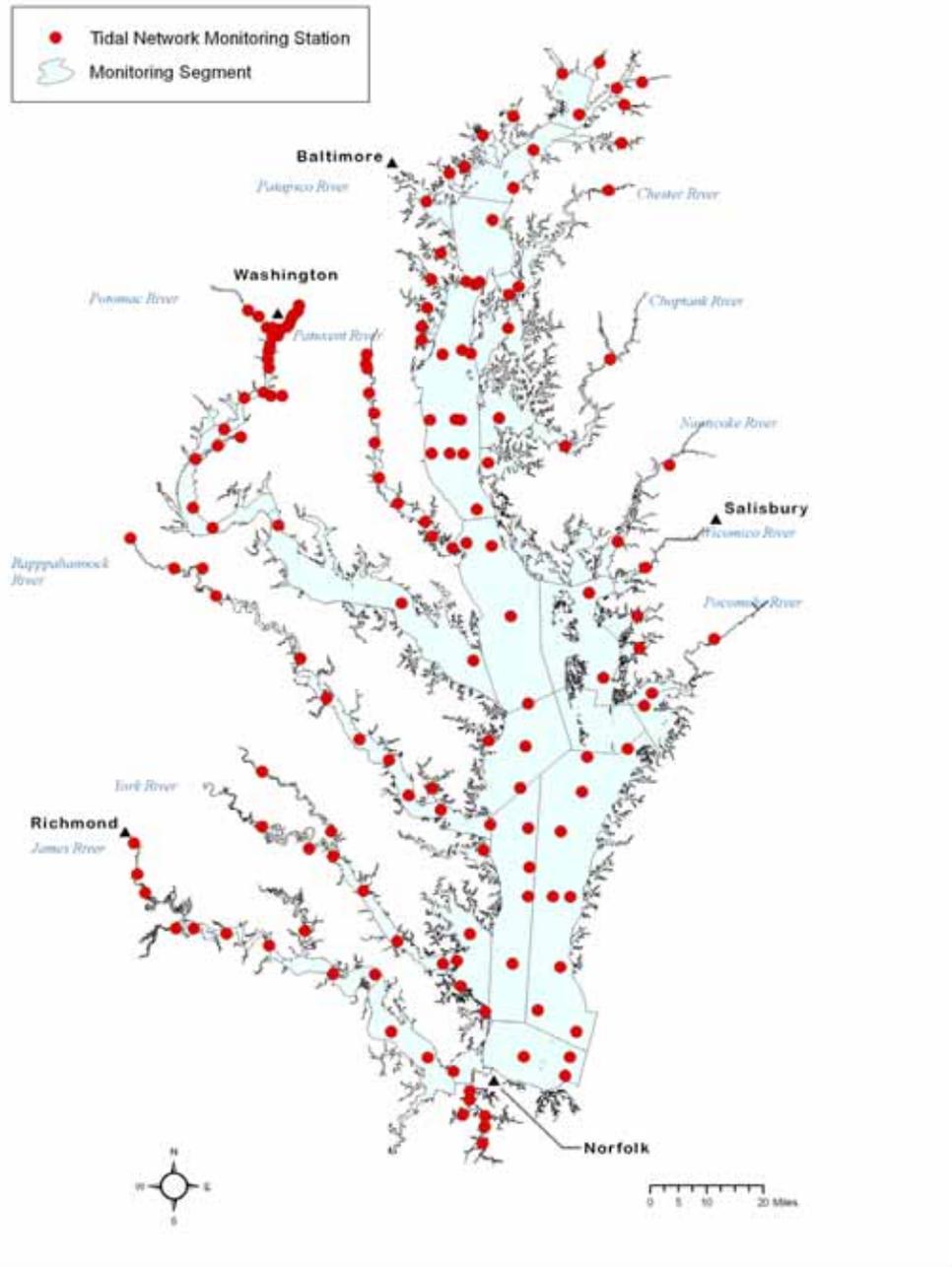
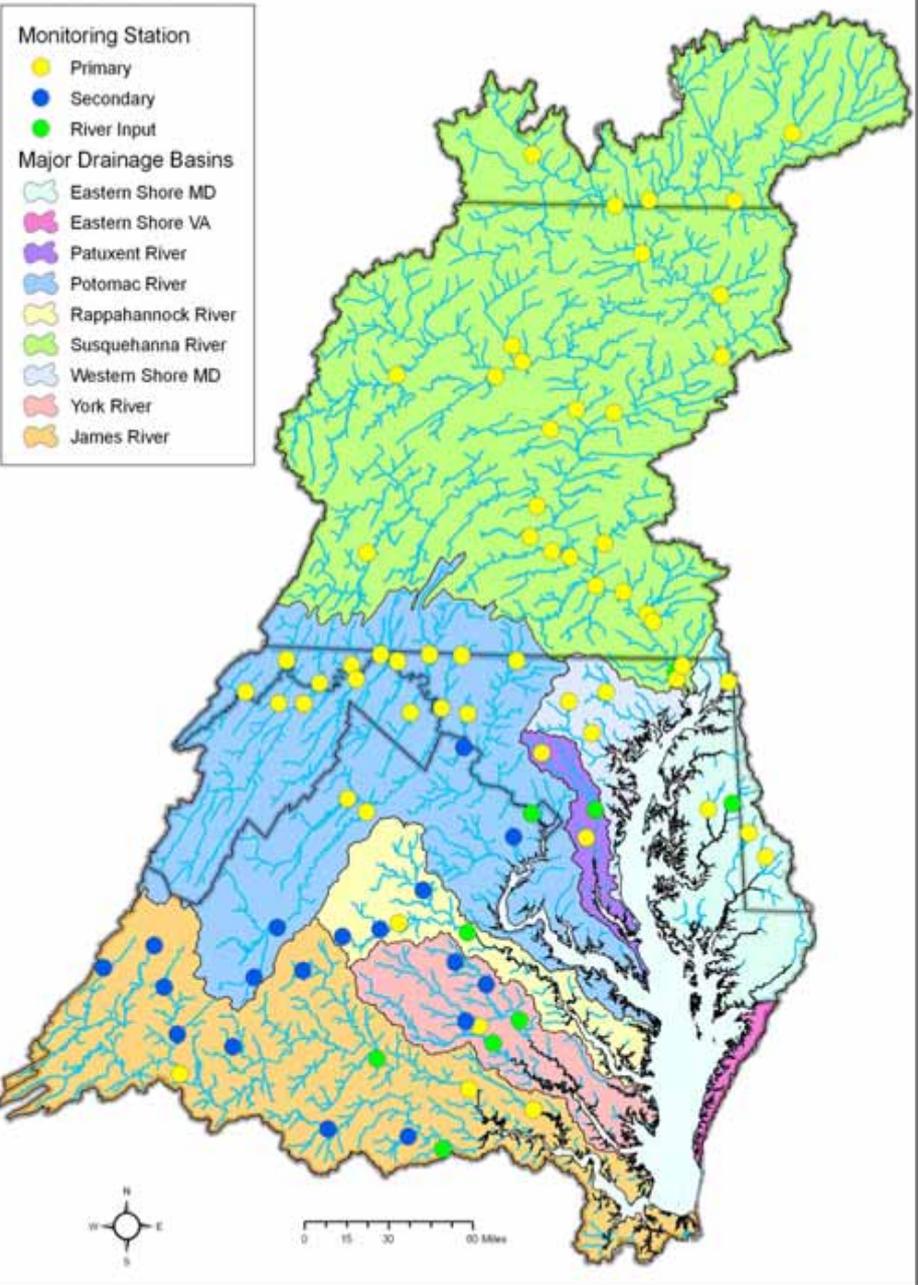
Benefits of the TMDL for Norfolk

- Integrate environmental planning in short- and long-term City plans
- Sustainable practices can be cost-effective
- Preserve and restore resources for the future
- Change now will lead to better environmental protection when development increases again
- Coincides with new State regulations

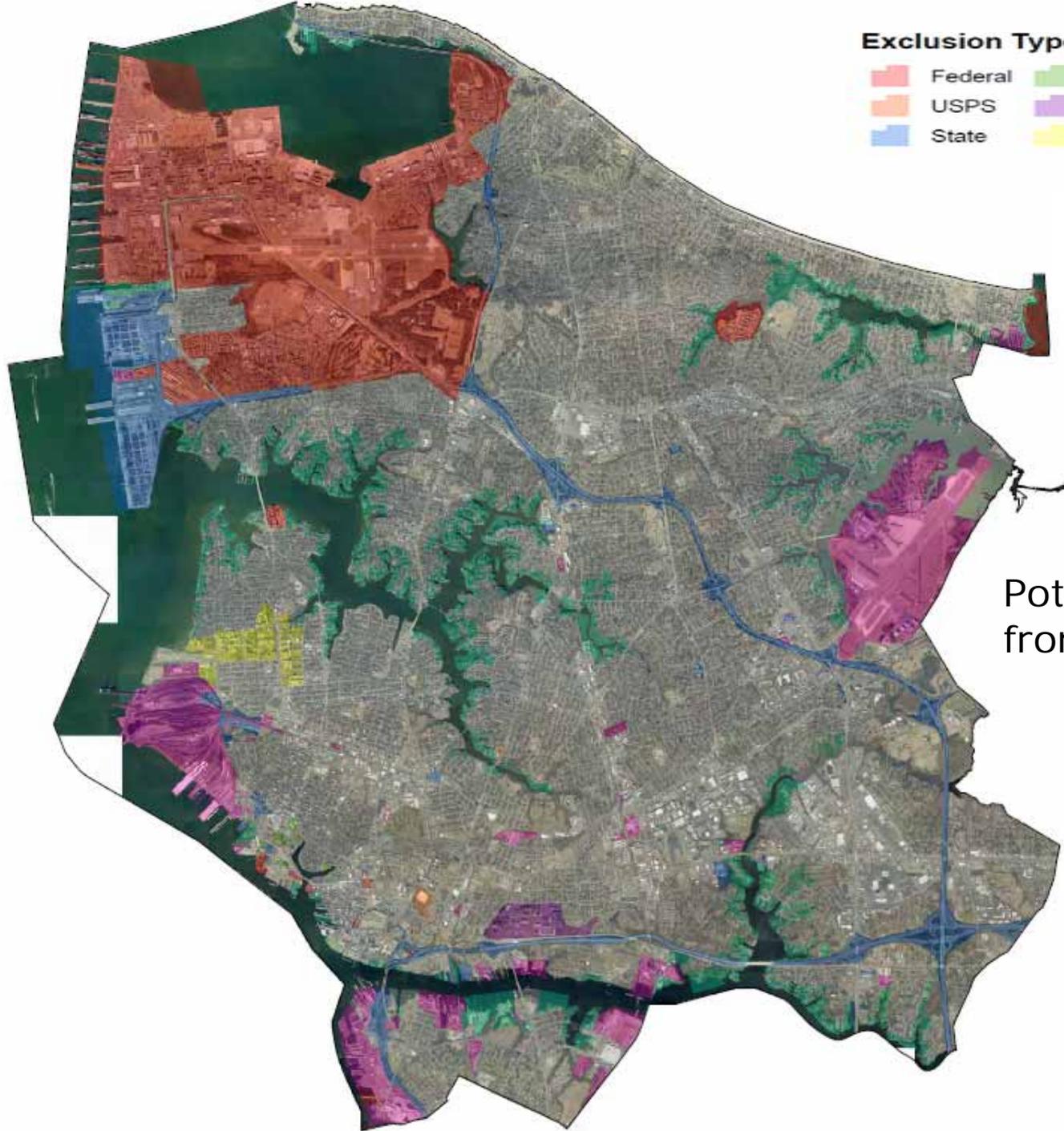


Norfolk's Concerns with the Bay Model

- Short time frame
- Occurring during weak economy and cost estimates exceed \$400m
- Inaccurate at local scale
- Limited localized baseline monitoring
- Limited treatment options
- Results may not be measureable by 2025
- Compliance vs actual water quality improvements



Limited Local Model Inputs



Exclusion Type

- Federal
- USPS
- State
- EVMS MS4
- NSU MS4
- ODU MS4
- VPDES
- Direct Discharge
- All Other Areas

Potential Areas Exempt from City Management



Implementation Goals

- Meet Bay TMDL requirements through adaptive planning and management
- Improve long-term environmental sustainability in Norfolk
- Meet multiple goals where possible
- Restore the economic and quality-of-life value of Norfolk's shorelines and waters
- Do our part in limiting pollutants to the Bay



Improve Existing Programs & Practices

- Increase tracking of storm water system cleaning and debris removal
- Review City relevant ordinances, ie: parking, street design, tree planting/protection
- Establish No Discharge Zones
- Review and improve septic system track and management
- Implement and expand nutrient and pesticide management plans
- Expand pet waste management disposal station program
- Grow school and community outreach programs



Restoration and Preservation

- Expand Living Shorelines and Restore Wetlands
- Increase Forested and Grass Buffers
- Increase Tree Planting program in ROWs and City owned land
- Augment and enhance Oyster Reefs in the Elizabeth and Lafayette Rivers

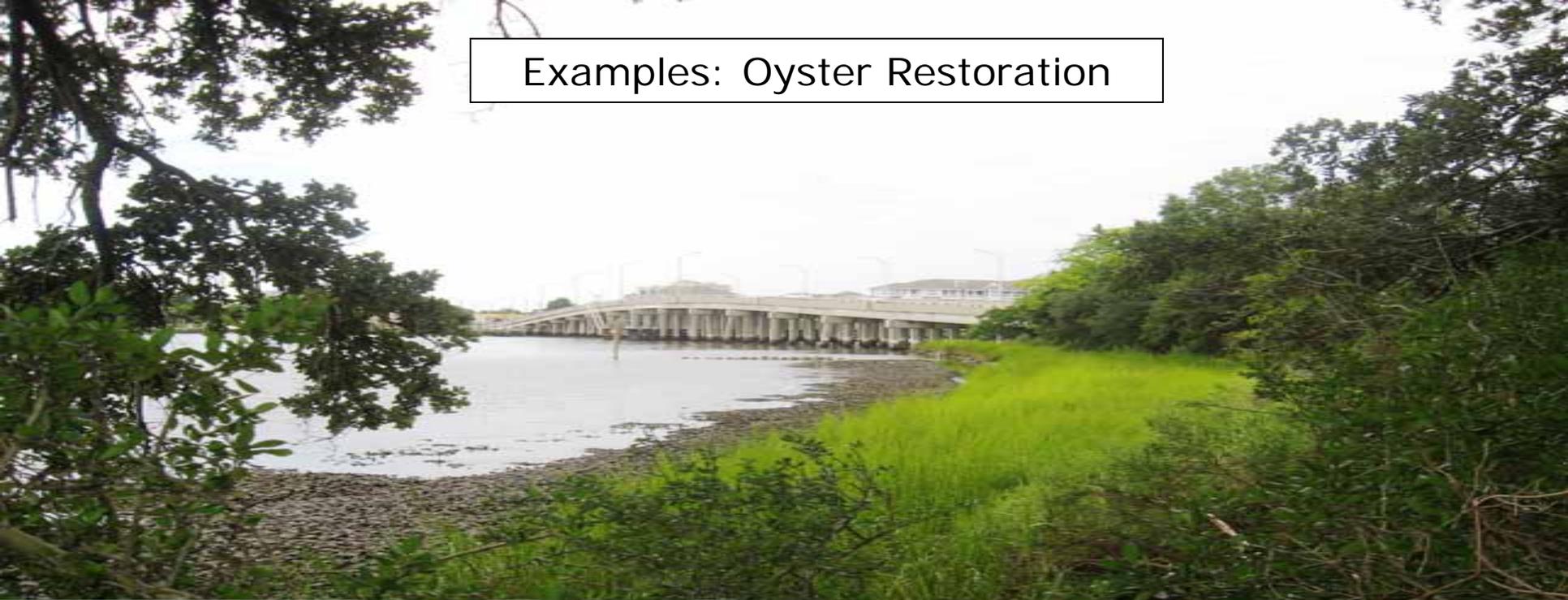
Examples: Wetland Restoration



Examples: Groves and Buffers



Examples: Oyster Restoration

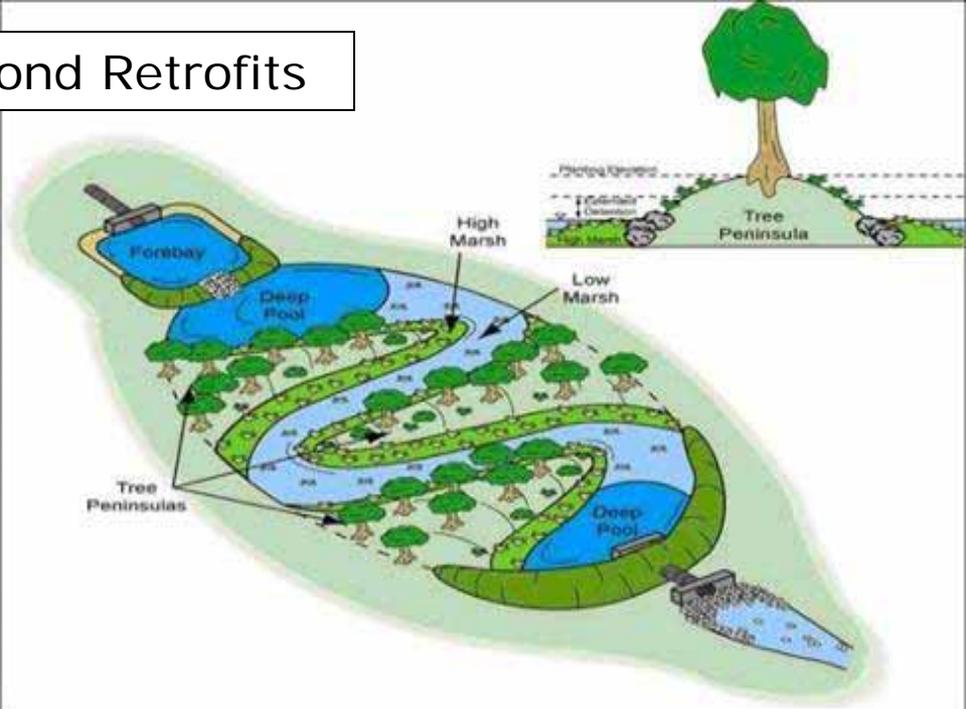




Retrofit Existing Systems & Structures

- Retrofit City storm water basins and drinking water reservoirs to improve removal of nutrients and sediments
- Stabilize outfalls to reduce shoreline erosion
- Improve storm water ditches to promote removal of sediment and nutrients
- Review options to utilize pump stations for treatment of storm water

Examples: Pond Retrofits



Examples: Outfall and Stream Maintenance





Create New Structures

- Promote voluntary residential BMPs
 - Rain Gardens, Rain Barrels, Buffers, Tree Planting
- Incentivize private commercial BMPs on private property
- Expand BMP placement on City ROWs and at public facilities
- Upgrade City properties with LID practices and LEED certifications

Examples: LID Retrofits



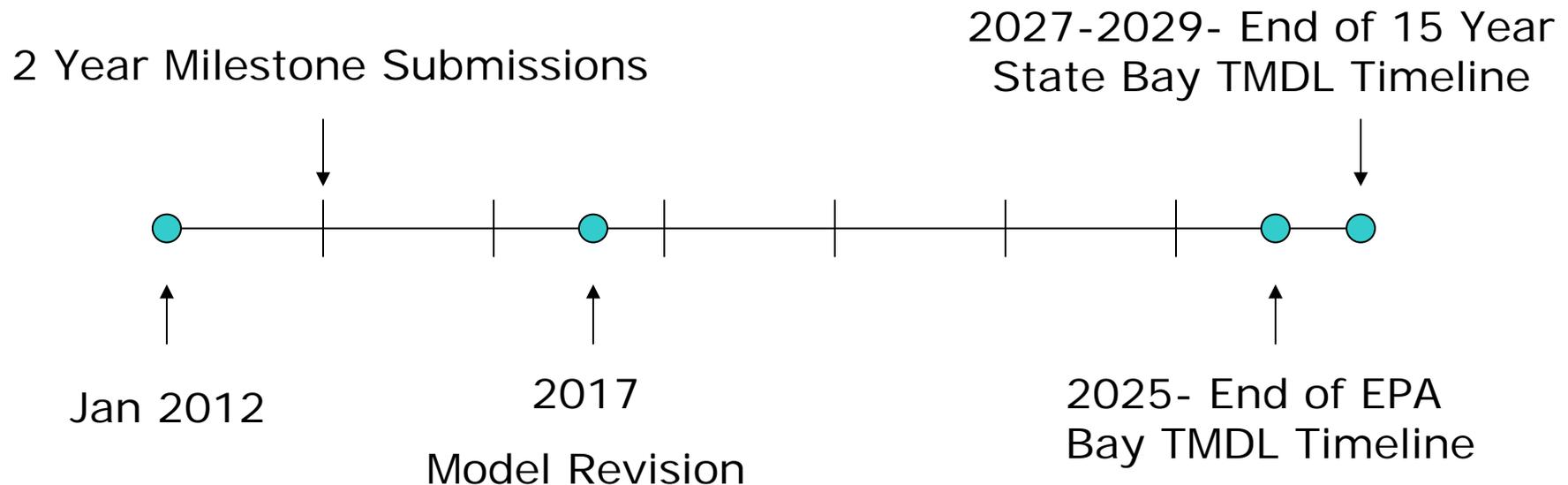


Expand Public Education and Outreach

- Adapt existing programs to include TMDL: flood control, BMPs, fertilizer, pet waste mgmt, E&SC, tree preservation, wetlands, buffers, dunes, reservoirs
- Develop new initiatives: wildlife mgmt, boat discharge, oysters
- Promote Virginia Clean Marina program
- Promote existing workshops (wetland, buffer, beach) and develop a water quality session
- Develop water quality website
- Expand studies and collaborations with NGO, universities, and private industries
- Grow school outreach programs to include high school and college clubs

Implementation Plan

- Push construction of existing projects in FY13 and FY14
- Set up numerous studies at onset
- Establish cycle of study → design → construct through remainder of timeline





Other Considerations

- Flooding- Precip, Tidal, Storm Surge
- Other TMDLs- Bacteria, PCB, ????
- New State Storm Water Regulations
- New MS4 permits
- Coastal Plain limitations



Current Progress

- Studies in progress or scheduled for FY13
 - Large “pond” retrofits
 - Restoration of City-owned shoreline
 - Review of City ordinances
 - Mason Creek restoration
 - Lafayette River and Broad creek outfall maintenance/retrofits
 - City drainage ditch inventory and retrofits
 - Lafayette River oyster restoration
 - Voluntary private-property BMPs for TMDL credit
 - Monitoring of basin “pump-out” materials



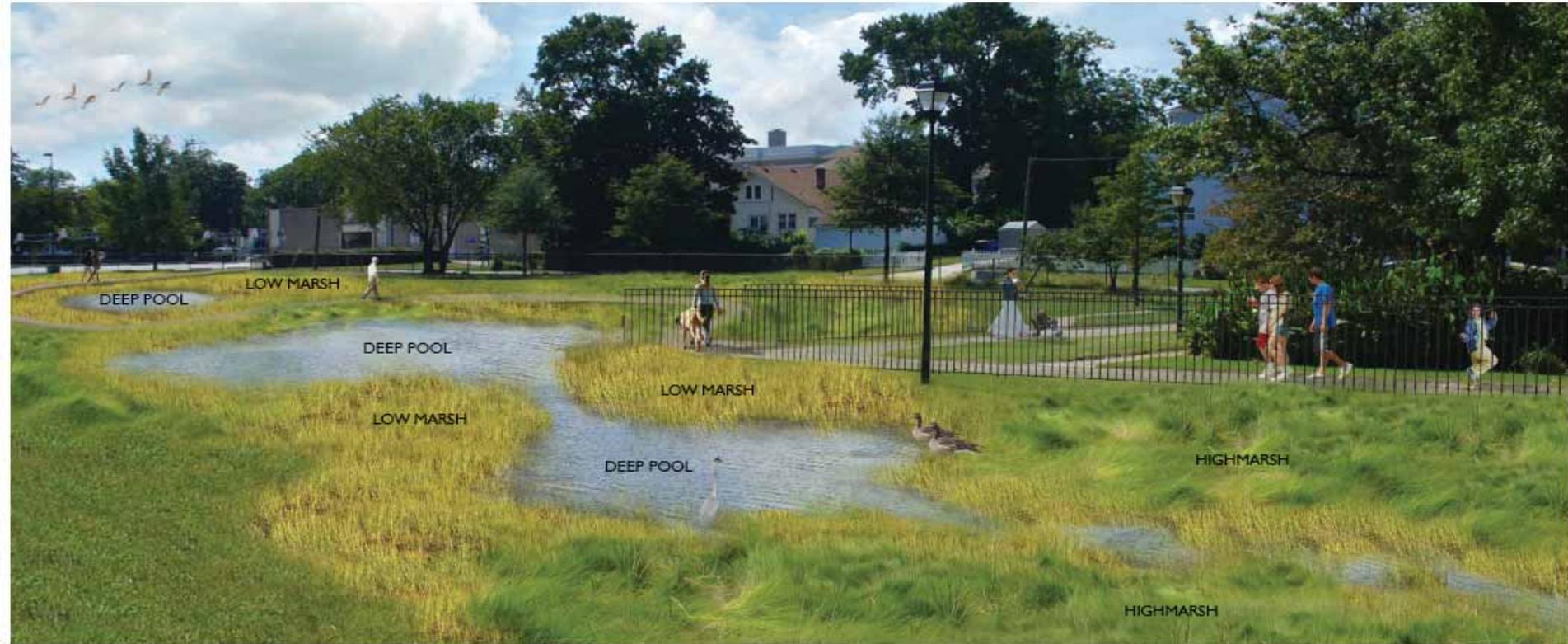
Current Progress

- Projects in progress or planned for FY13
 - Greenway Park
 - Richmond/Surry Crescent
 - Barraud Park
 - LaValette Ave
 - Colley Bay
 - Luxembourg Ave
 - Holly/Columbus Ave
 - Palmetto St

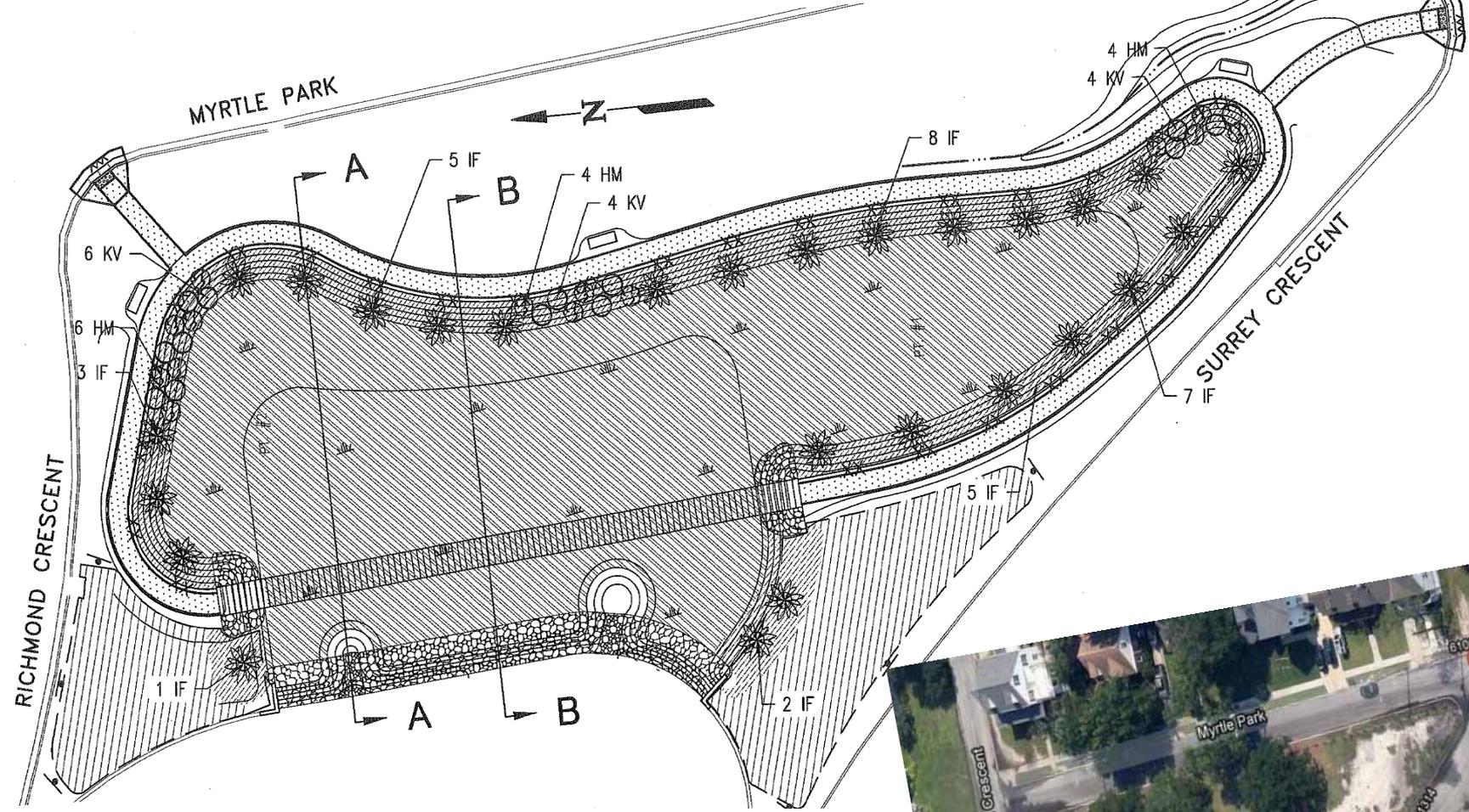


EXISTING CONDITIONS

PROPOSED PLAN



Greenway Park Wetland Restoration



Myrtle Park Restoration



LaValette Ave Kayak and Fishing Area



Colley Bay Living Shoreline



Current Goals

- Continue sitting/commenting on Urban Stormwater Workgroup advisory panels to ensure all possible treatment options receive reasonable credit, ie: illicit discharge elimination, street sweeping, oyster reefs, education/outreach
- Initiate remaining studies: median retrofits, fertilizer/pesticide management, reservoir retrofits, restoration dredging
- Utilize stormwater fund, CIP, grants, voluntary efforts, and partnerships to ensure construction of water quality practices continues at an adequate pace
- Develop formal implementation plan once new MS4 permit is issued, providing details of requirements
- Develop watershed master plans utilizing findings of all studies and incorporating requirements of all permits, TMDLs, regulations, and City goals.



Contact Information

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Photo Credits

- US EPA
- Lafayette Wetlands Partnership
- The Hermitage Museum
- Virginia DCR
- Lynnhaven River Now
- Chesapeake Bay Foundation
- Clemson University Cooperative Extension
- Virginia Water Resources Research Center
- The Connection Newspapers
- Norfolk Botanical Gardens
- Elizabeth River Project
- Greenroofs.com
- Chisago Soil and Water Conservation District