Demonstrating the Value of Retaining Forestland in the Chesapeake Bay Watershed

Helping Localities Reduce the Offset Requirements of Development
Why Keeping and Expanding Forest Cover is Important to the Bay

Riparian forest buffers (RFBs) rank second of all nonpoint source BMPs needed to meet TMDL targets according to data at the Chesapeake Bay Program.

Conversion of forest to other land uses generates persistent increases in stormwater runoff, even without addition of impervious surfaces.

Without forests, runoff increases 10 to 30% or more, carrying more pollutants and increasing risk of flooding.
Project Approach

- Determine if forest retention actions by localities, private land owners and others will result in a decrease in actual load over the 2025 projected TMDL load allocation land cover.

- If the answer is “yes” determine way to credit localities and others for retaining forestland through the Chesapeake Bay TMDL Model.
Project Partners

- Virginia Department of Forestry
- Virginia Department of Environmental Quality
- The Rappahannock River Basin Commission
- The George Washington Regional Commission
- The Nature Conservancy
- Chesapeake Bay Commission
- Virginia Water Resources Research Center at Virginia Tech
- Experts from the financial community
Project Sites

Rappahannock River Basin

First Module Test Site
First Module Project Site

Rappahannock River Basin

Reasons for Choice:
- First module will focus on GWRC geographic area
- Area of high density development
- Includes: forest, agriculture, urban
- Strong participation from jurisdictions
- Growth scenario data available
Phase II Project Site

Rappahannock River Basin

Reasons for Choice:

- Basin mirrors most attributes of CB watershed
- Headwaters to coast
- Forest, Agriculture, Urban
- Area of high density development
- 100% in VA Chesapeake Bay Watershed
Project Objectives

- Model alternative growth trend scenarios in pilot region to:
  - Determine load changes from conversion of agriculture and forests to a mix of pervious and impervious lands.
  - Model resulting load increases
  - Compare to TMDL model projections and assess costs associated with offsetting these increases

- Conduct literature review of forest types and attributes to evaluate spatial variability of water related ecosystem service values

- Share findings with localities and state officials to inform land use planning and decision making

- Provide information to EPA for consideration in 2017 TMDL model revisions
Alignment with 2014 CBWA Outcomes & Management Strategy Goals/Activities

- **Healthy Watersheds**
  - Maintain local watersheds at optimal health across a range of landscape contexts.
  - Vulnerability: Threat of land conversion and the ecological impacts of conversion

- **Land Conservation**
  - Protected Lands
  - Expanding federal, state and local funding and incentives for conservation
  - Land use methods and metrics development

- **Protect and Restore Water Quality**
  - Nutrient and sediments reduction

- **Activity Categories**
  - Regulation, Program Management, Information Management, Technical Support, Management Tool Development, TMDL Development, Enforcement, Assessment
Project Plan

- First module funded
  - Work has begun and will be completed by end of 2015
  - Goal is to be able to provide scenario data in timely fashion for consideration in 2017 TMDL model adjustments

- Second phase not yet funded
  - Expand to entire river basin and work with localities to implement forest retention land use options to reduce projected 2025 TMDL loads in return for offset credits and other incentives
  - Capture lessons learned and develop land use planning tool box for use by localities across CB watershed
Module 1 Project Schedule

1. Evaluate growth trends in pilot region
2. Compare to TMDL model land use change projections
3. Model alternative growth patterns
4. Conduct literature review and factor in findings
5. Provide data to EPA for possible 2017 TMDL model revisions
6. Share findings with localities and state officials

April - May | June – July – August | September - December
Phase II Objectives

- Raise benefit expectations among local governments and citizens regarding value of forestland retention in the design and planning of new development
- Set effective standards and guidance
- Meet both development and water quality needs for localities
- Pay attention to aesthetics and quality of life needs, e.g. views, recreation, etc.
- Provide incentives and flexibility
- Plan for the risk of failure
Questions That Need Answers

- What is the most effective way to quantify and offset development impacts that go beyond the borders of one jurisdiction?
- What are the biggest challenges associated with designing TMDL credits resulting from forestland retention actions taken now that may result in reduced offset expenditures in 2025?
- What tools and policies do local governments need to encourage compact development patterns that conserve forestland resources, promote reforestation, and tree planting infill of RPA riparian buffer gaps?
Successful Outcomes

- Governments empowered with planning tools and incentives to balance growth and forestland retention goals capable of initiating change locally to create quality communities.

- State and local statutes contain mix of incentives and requirements to promote forestland retention.
For further information

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