

Healthy Watersheds GIT meeting January 30, 2020



Management response:

How can managers respond to
“signals of change” in watershed
health?

Adapted from Maryland Water Monitoring Conference – Dec 6th, 2019

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Healthy Watershed and Land Use Outcomes

Through the Chesapeake Bay Watershed Agreement, the Chesapeake Bay Program has committed to...

Healthy Watersheds Goal:



- Goal: Sustain state-identified healthy waters and watersheds recognized for their high quality and/or high ecological value
- Outcome: 100 percent of state-identified healthy waters and watersheds remain healthy.

Land Conservation Goal:

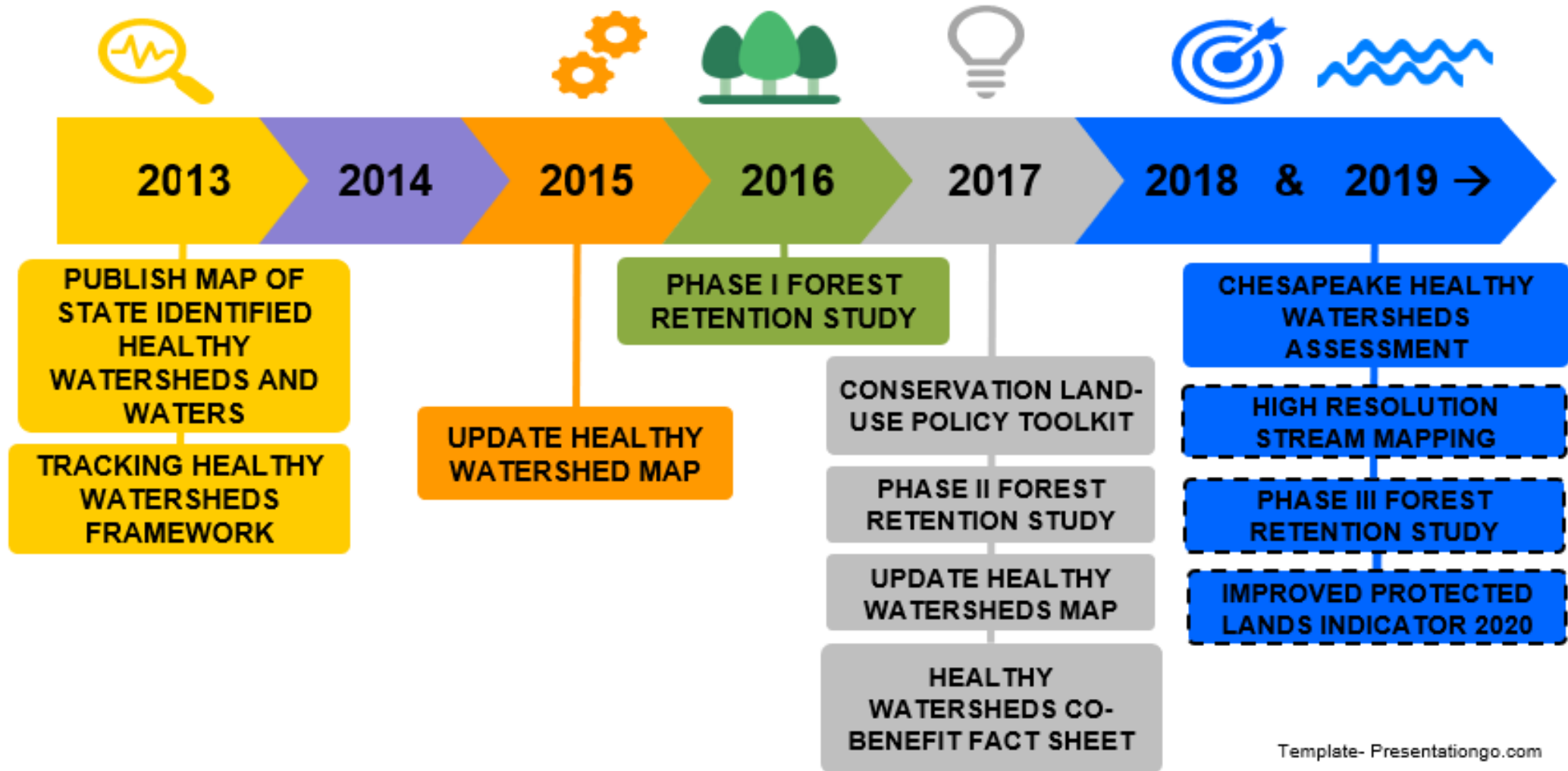
Land Use Options Evaluation Outcome:

- *policy options, incentives and planning tools for local governments reduce the rate of conversion of agricultural lands, forests and wetlands*
- *Development of strategies to support local government efforts in reducing land conversion*

Land Use Methods and Metrics Outcome:

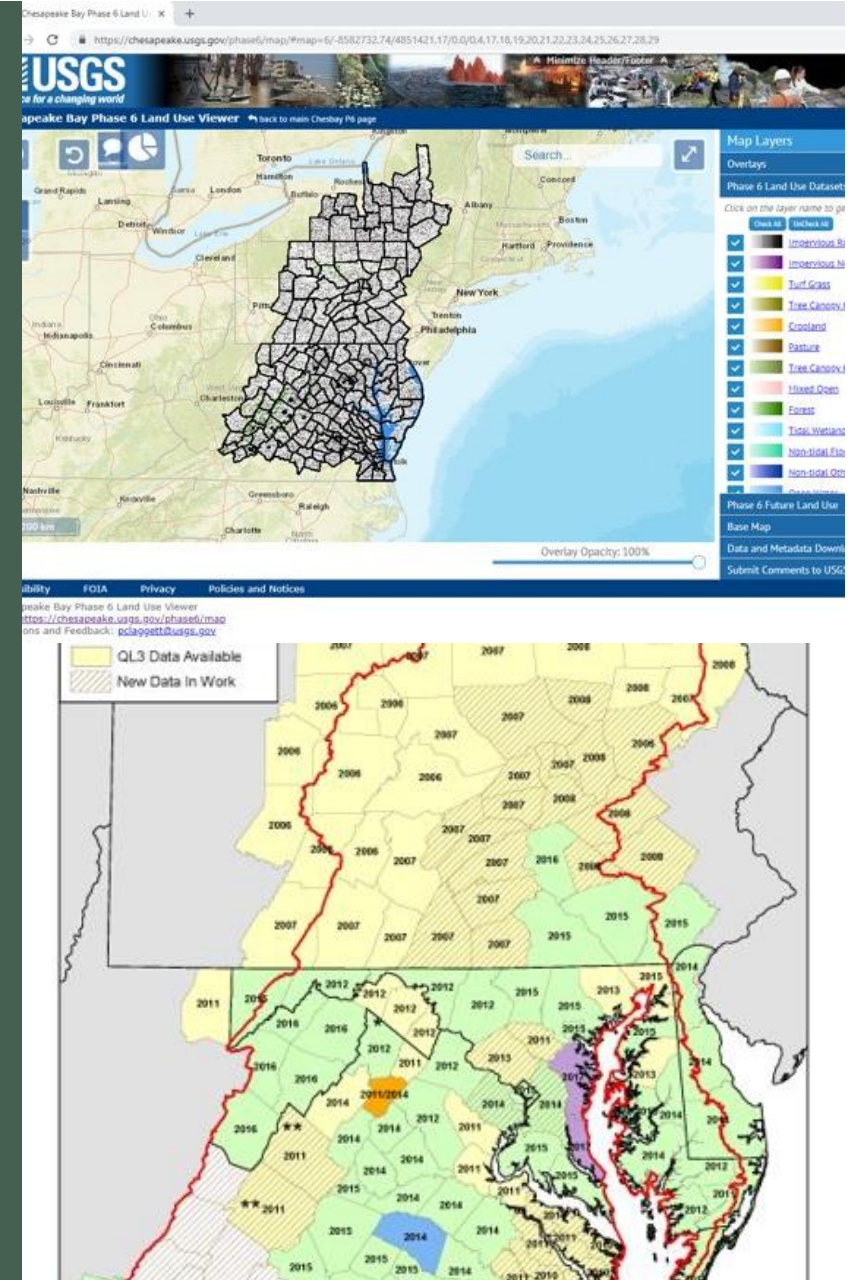
- *improve the knowledge of land conversion and impacts throughout the watershed.*
- *methodology and local level metrics for rate of farmland, forest and wetland conversion,impervious surface*
- *public awareness campaign to citizens, local governments, elected officials and stakeholders.*

Healthy Watersheds Goal Team Milestones

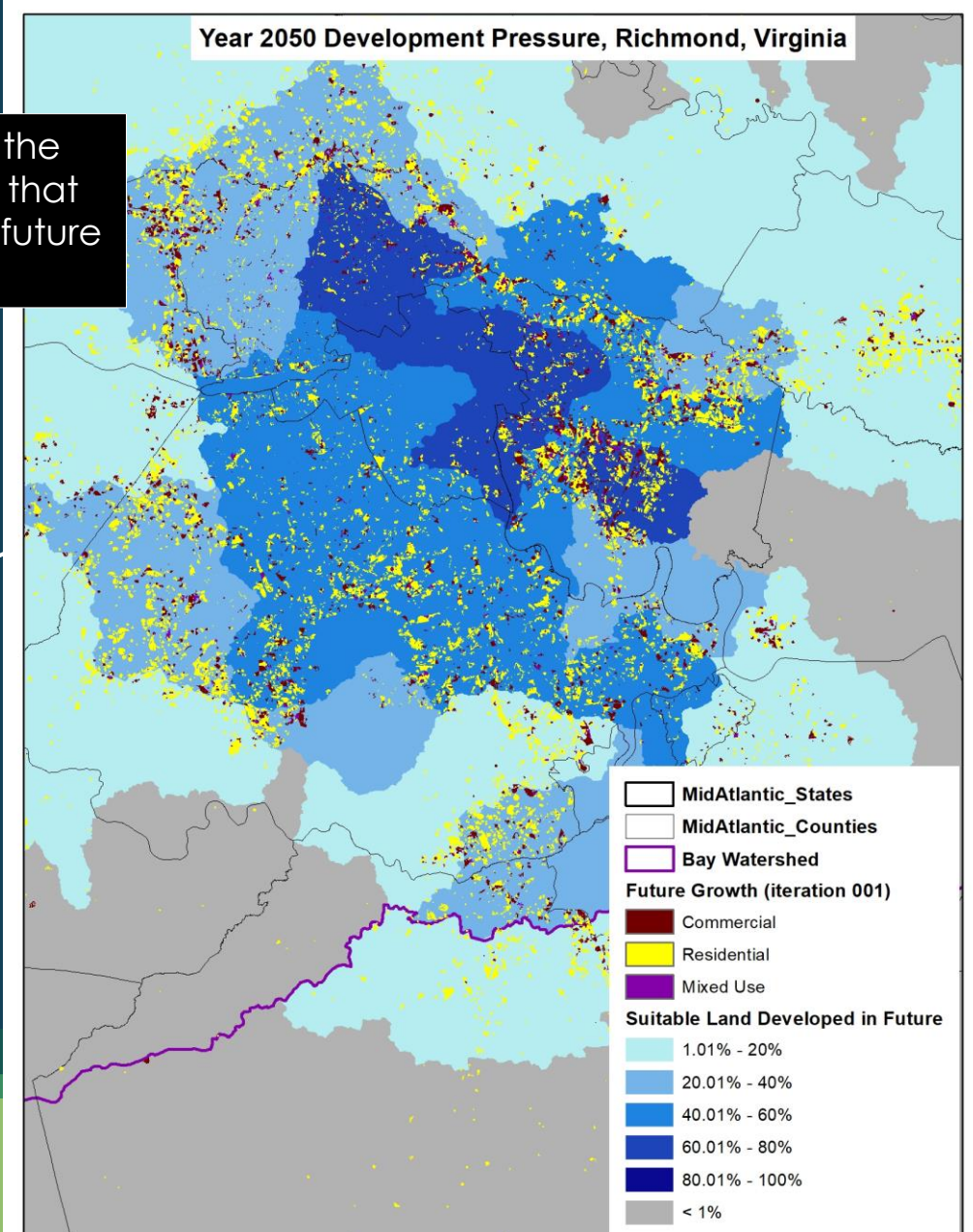
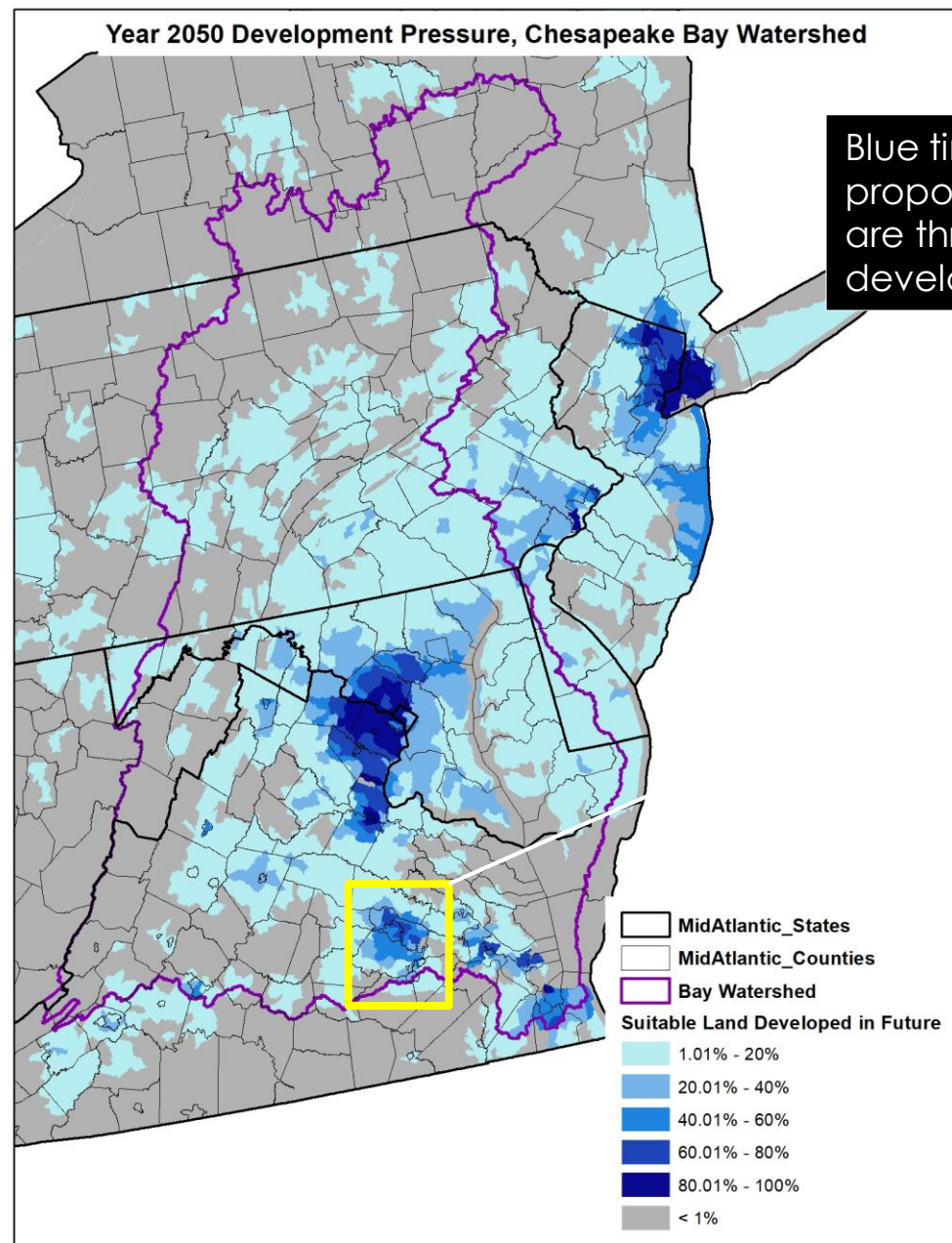


Land Use Methods and Metrics Progress:

- USGS funding for LiDAR acquisitions in the Bay watershed.
- Establishment of a 2013 baseline for monitoring land cover and land use change.
- USGS and CBP support for developing the Chesapeake Bay Land Change Model.
- Forecasts of future development to “account for growth” (TMDL) and to help assess vulnerability of habitats, streams, and watersheds to impairment.



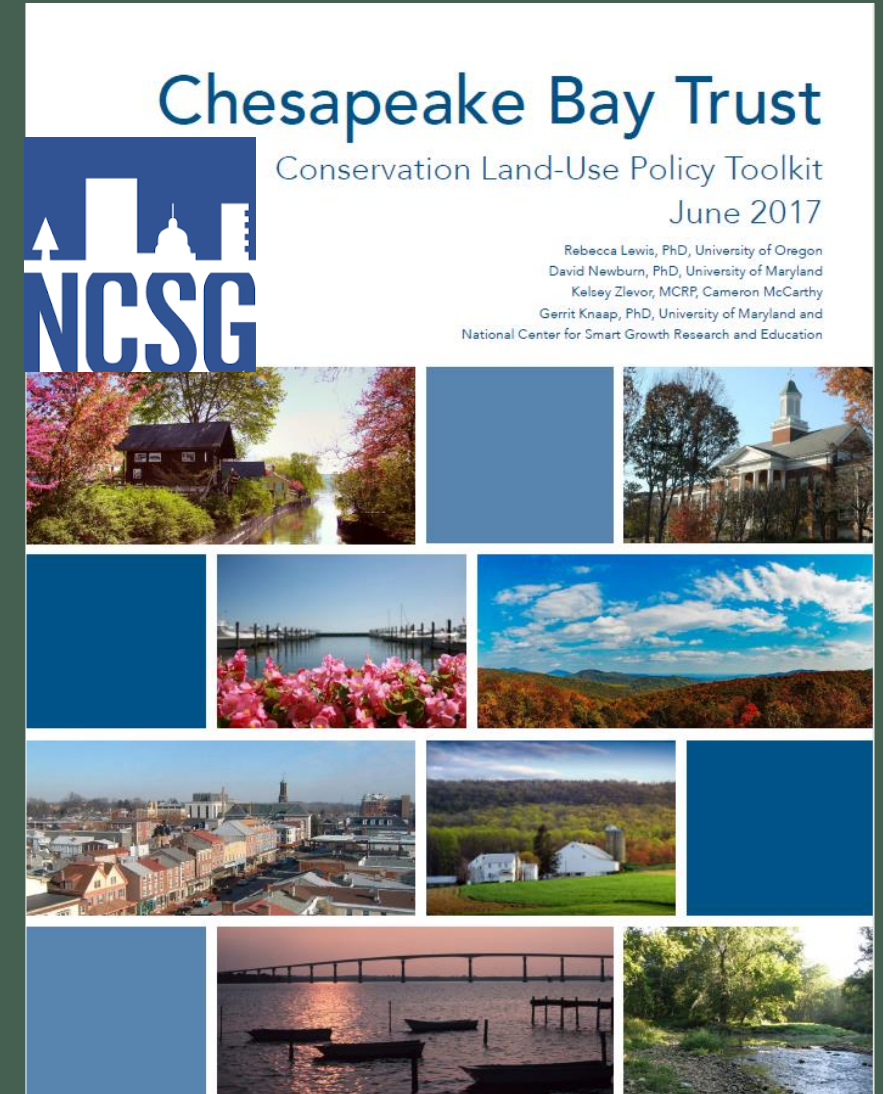
Vulnerability to Land Conversion



Policies, incentives, and planning tools...



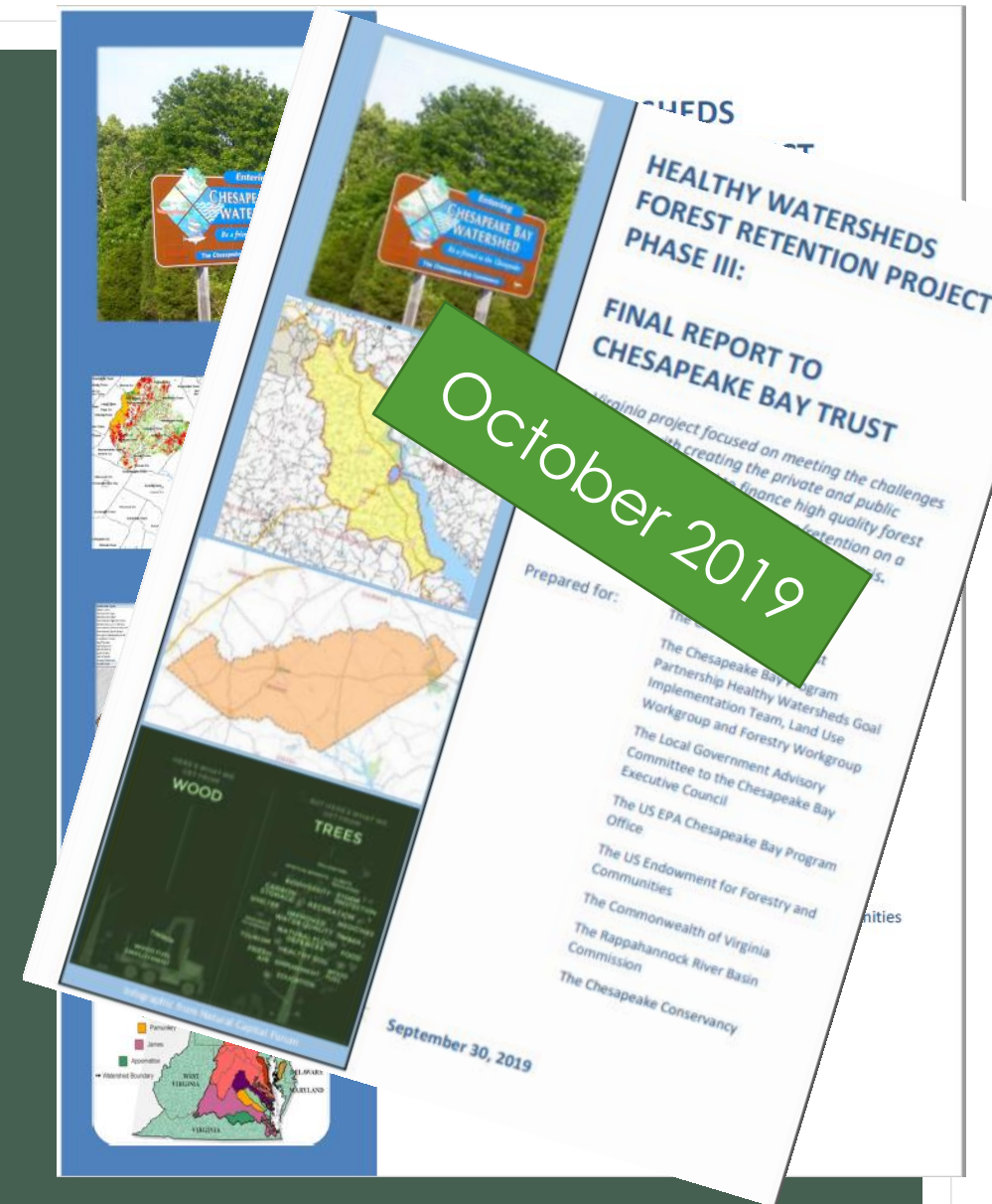
- Conservation Land-Use Policy Toolkit (2017)
- Determined existing policy options, incentives, and planning tools that could be used by local government planners to reduce the rate of ag, forest, and wetland conversion
- Deliverables: [Toolkit](#), [Webinar](#)



Policies, incentives, and planning tools...

Healthy Watersheds Forest Retention Project (2014 – 2019)

- Phase I: Quantified the value of retaining forestland (economic case for “crediting conservation”)
- Phase II: VA/PA partnership – Worked with localities to identify policy tools and incentives
- Phase III: Implement tools in the field and develop large-scale private sector financing model




- Deliverables: Toolbox

What's in the "Toolboxes"?

A green metal toolbox with a silver handle and latch.

Land Use Policies,
Zoning and
Regulations

A green metal toolbox with a silver handle and latch.

Land Acquisition /
Conservation

A green metal toolbox with a silver handle and latch.

Local Spending and Tax
Policies

A green metal toolbox with a silver handle and latch.

Voluntary Land Protection
Techniques

A Local Engagement Strategy

from the Chesapeake Bay Program

Local Engagement Strategy

Audience



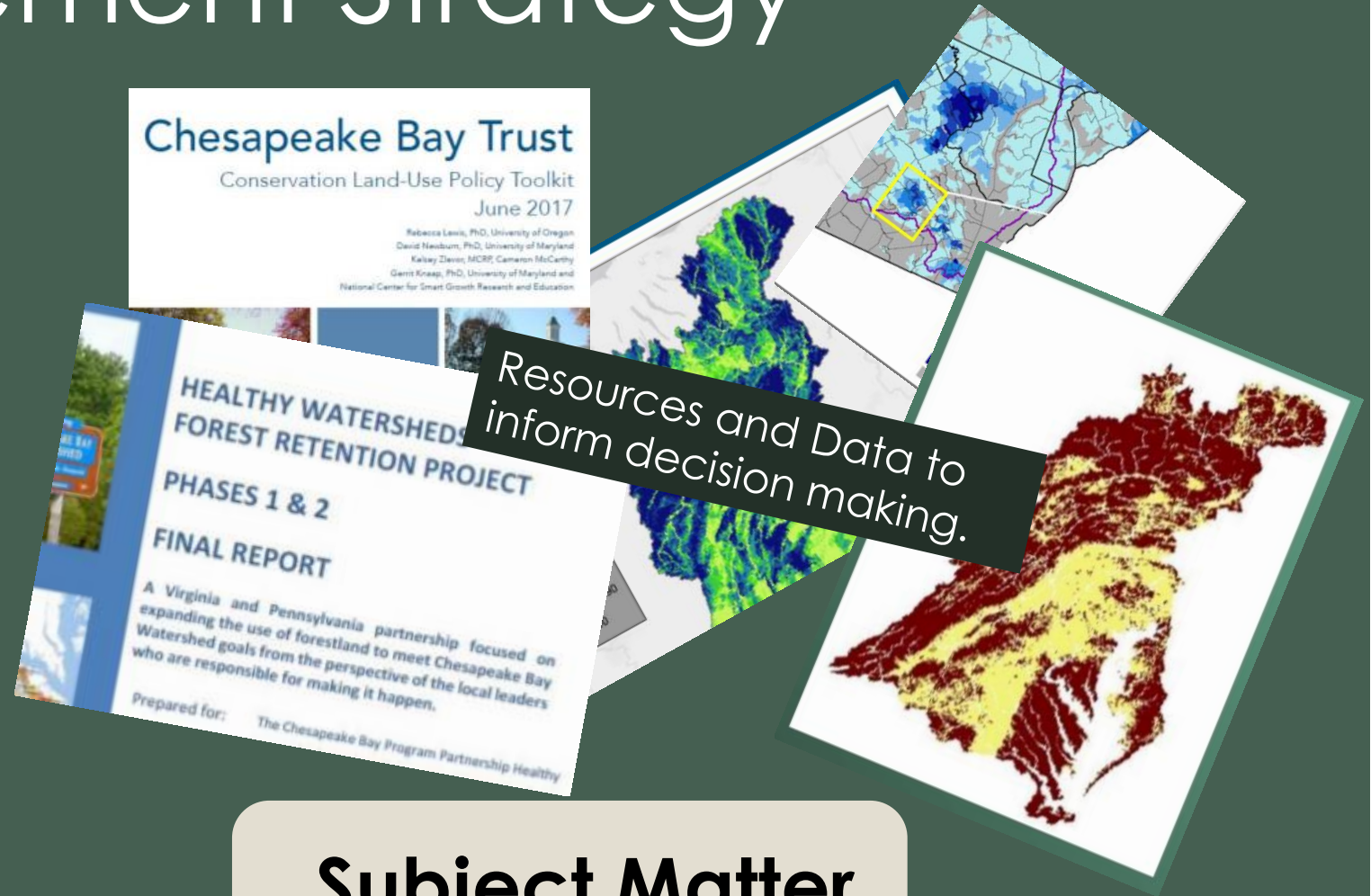
Trusted Sources



Translators



Subject Matter Experts



HWGIT Audience

People and entities that influence land use change (policies, restoration, conservation decisions)

- State / Jurisdictional leads in Healthy Watershed programs
- WIP developers
- Local governments
- Planning district commissions
- Watershed organizations
- Others?

Examples of Trusted Sources



State level associations

Maryland Association of Counties
Virginia Municipal League
Pennsylvania Association of Township Supervisors



Council of Governments

Metropolitan Washington Council of Governments



State Universities

Maryland Sea Grant
Virginia Water Resources Center
Penn State Extension Service



Conservation Districts and Planning Districts

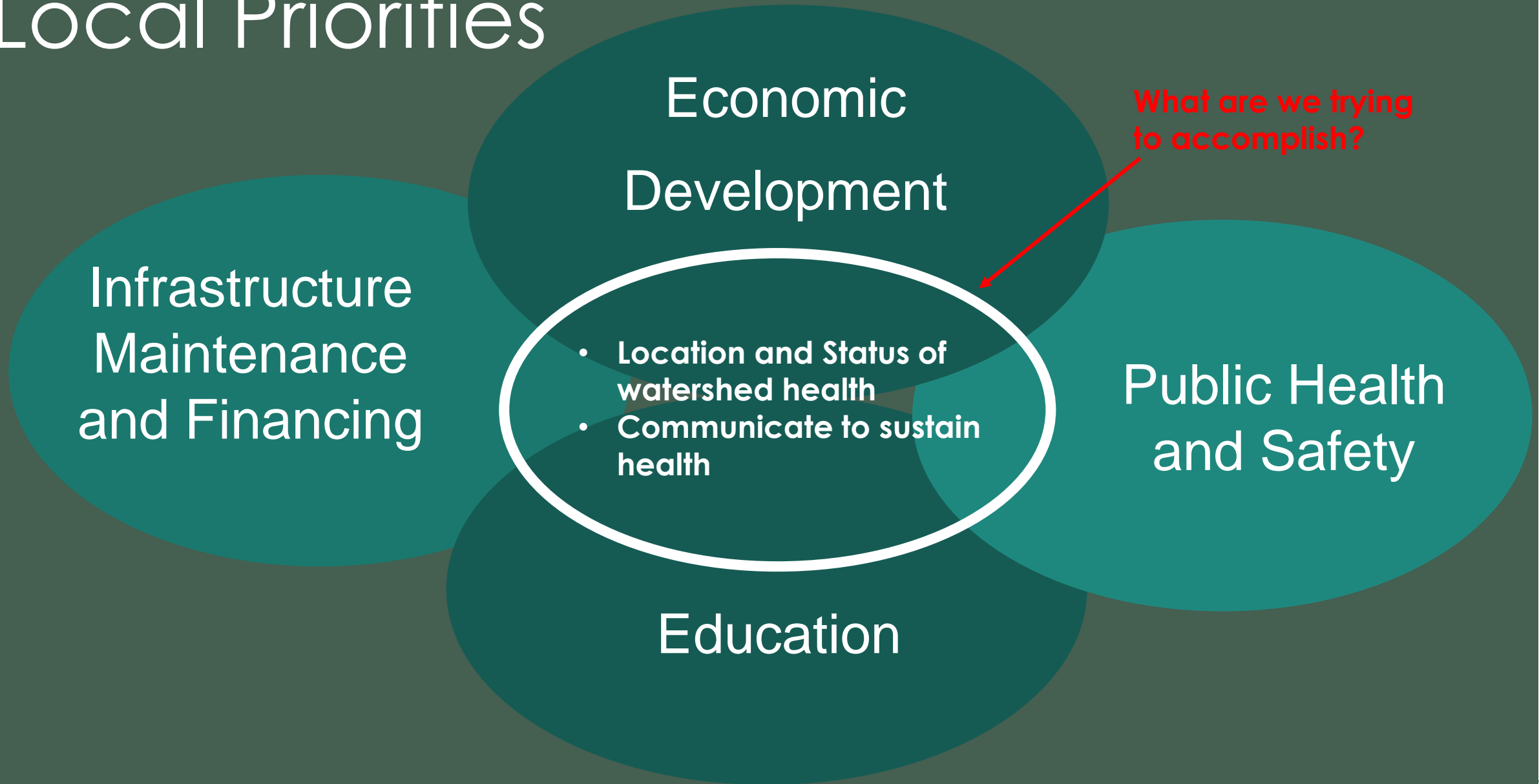


River Basin Commissions

HW GIT Trusted Sources

- State / Jurisdictional leads overseeing Healthy Watershed programs
- WIP Developers
- National Land Conservation groups (e.g., Land Trust Alliance)
- LGAC and Local Leadership workgroup membership (and their trusted sources)
- Others?

Local Priorities



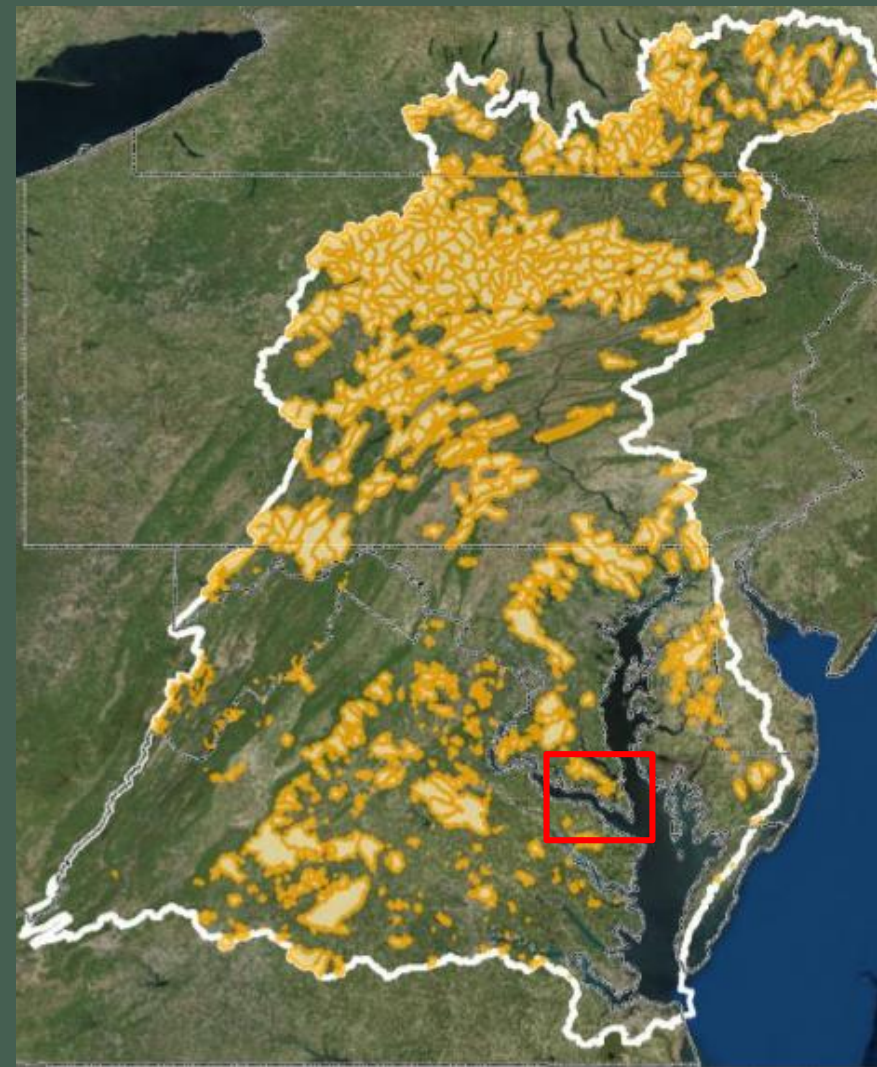
Example Fisherman's Creek St. Mary's County Maryland

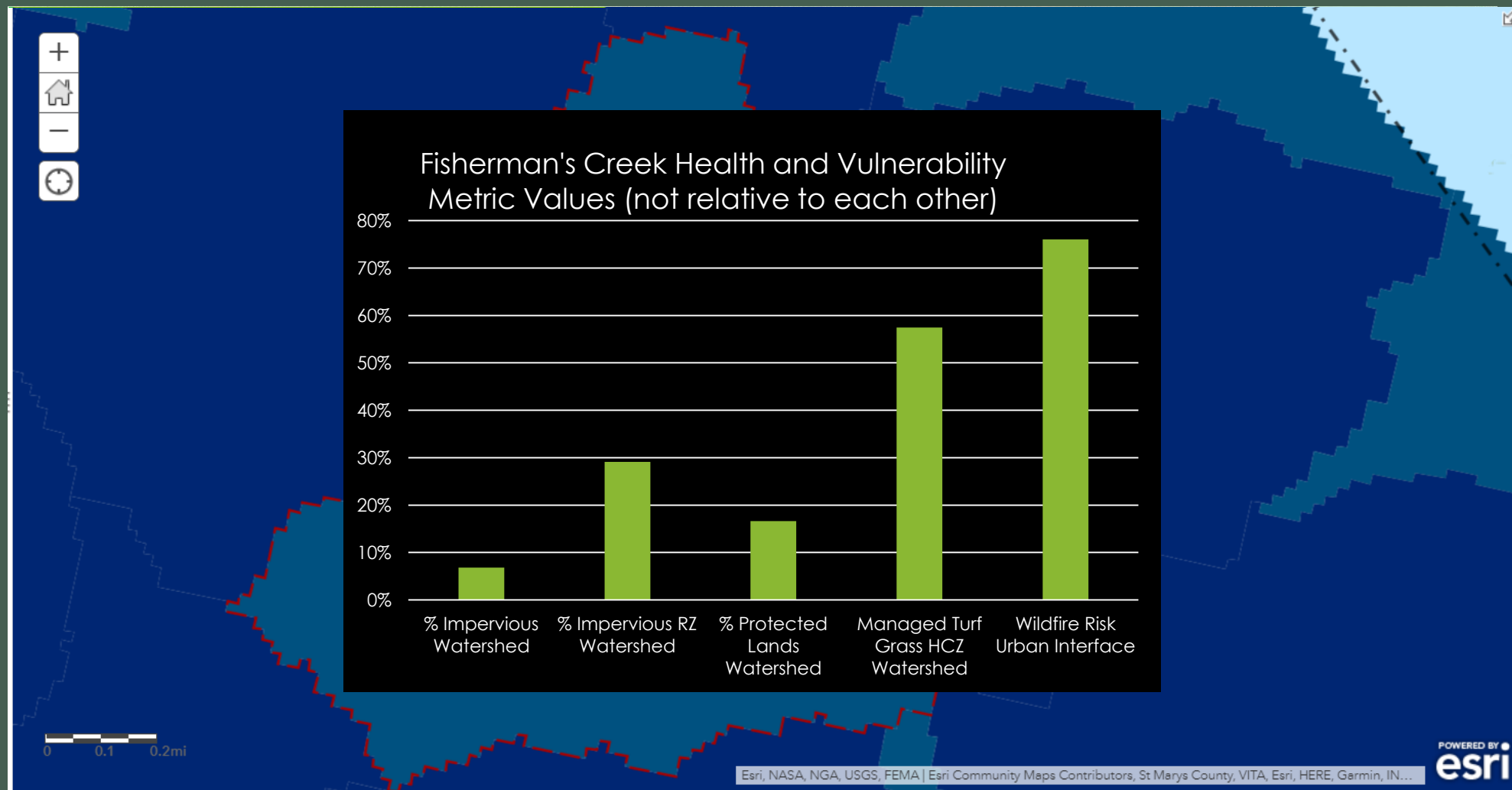
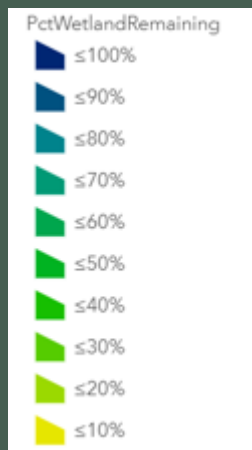
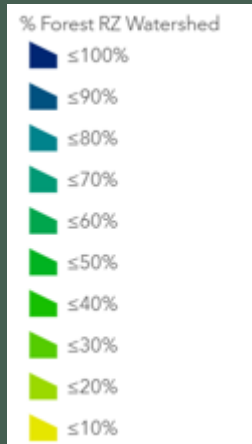
- Assessment of the current health as informed by the CHWA
- What are the stressors/vulnerabilities there?
- Can any other work or data also inform what is happening in this watershed?
- What are the potential management responses based on the current health and vulnerabilities
- How can those messages be framed to put them on terms of also meeting local priorities?

This information is preliminary or provisional and is subject to revision. It is being provided to meet the need for timely best science. The information has not received final approval by the U.S. Geological Survey (USGS) and is provided on the condition that neither the USGS nor the U.S. Government shall be held liable for any damages resulting from the authorized or unauthorized use of the information. Any use of trade, firm, or product names is for descriptive purposes only and does not imply endorsement by the U.S. Government.

Chesapeake Watershed Assessment Example:

Fisherman's Creek St. Mary's County Maryland





Next Steps, Available and Forthcoming Resources

Current / Future Efforts

GIT funding project:

**Cross-outcome Watershed Educational Materials for Local Governments
(March 2020 – December 2020)**

- Work with CBP Coordinators and Staffers (C/S) to understand and inventory the breadth and depth of available information
- compile summary information on local benefits into a *shareable, organized, and easily accessible* online information matrix
- Develop Watershed 101 Module to help local elected officials understand the basics of watersheds and local waterways, the importance and benefits of watershed management for local communities, and their own impact on the larger Chesapeake Bay watershed and ecosystem (Plus 4-8 additional modules)

Current / Future Efforts, cont.

Improved Technical Service Delivery to Landowners: Achieving Multiple CBP Outcomes: (March 2020 – December 2020)

Improve technical service delivery across the Bay watershed through the design of a coordinated system that facilitates knowledge exchange between technical service providers (TSPs) and the restoration community

Objectives:

- Collecting and analyzing feedback from TSPs and other stakeholders
 - landowner attitudes toward habitat BMPs
 - current reach and gap of existing services and resources to the diverse
 - population of landowners in the region
 - the effectiveness of existing resources, and
 - creating greater awareness of their availability to improve the design and delivery of these resources and tools over time;



Chesapeake Bay Phase 6 land use viewer



Chesapeake Bay Open Data Portal

Science, Restoration, Partnership

🔍 Search for Data, Maps, Stories & Apps...

The Chesapeake Bay Program Open Data Portal is designed for exploring and downloading the Open Data catalog of the Chesapeake Bay Program GIS Team.

<http://data-chesbay.opendata.arcgis.com/>

Watershed Implementation Plan Data Dashboard

Watershed Implementation Plan Data Dashboard

Chesapeake Bay Program



[Start Here!](#) [Water Quality of Streams](#) [Tidal Water Quality](#) [Targeting Restoration Efforts](#) [Management Practice Implementation](#) [Planning for Change](#) [Build A Storyline](#)

Get started here...

Understanding Sources

Use the Dashboard at the right to explore land use and the estimated sources of nitrogen, phosphorus, and sediment across the Chesapeake Bay watershed.

Follow the instructions on the page to explore the data and populate graphs and tables with your selections. You may need to scroll the page horizontally and vertically to view all content.

What can you do in this module?

Identify important local sources of nutrients and sediment by sector and land use (load source) that reach local streams or the Bay.

Understand important drivers of water quality such as land cover/land use and sector.

Learn the status of nutrient and sediment loads entering local streams and the Bay.

Target or prioritize watersheds for restoration efforts.



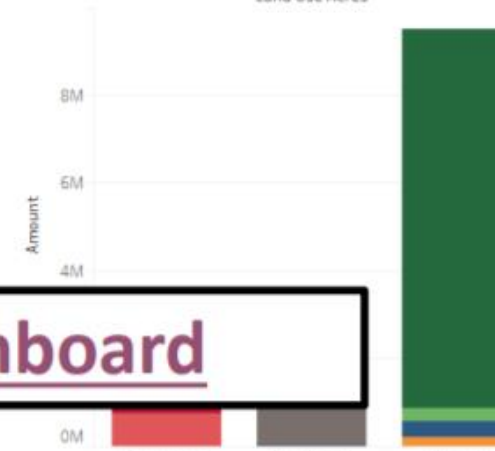
Watersheds with more developed, agricultural, and urban land tend to have higher nutrients and sediment levels in streams than more natural or forested watersheds.



Breakdown of Land Use



Land Use Acres



Tidal Segment

(All)

River

(All)

Major River Basin

(All)

County Name

(All)

State

VA

Load Source Minor

(All)

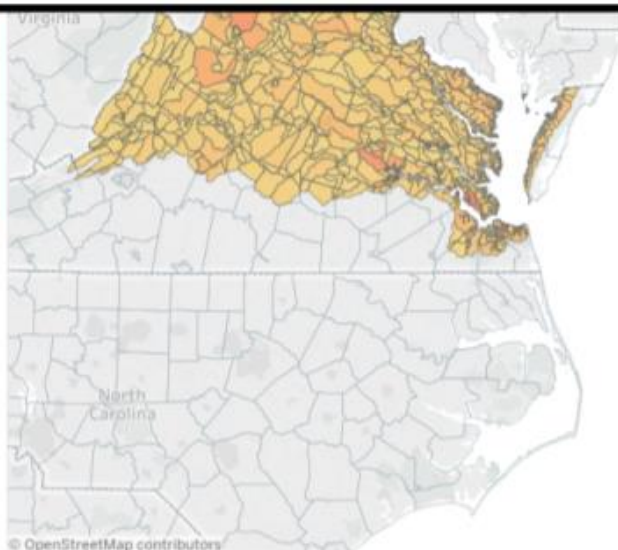
NPS

☒ Nitrogen
☐ Phosphorous
☐ Sediment

EOTS

Delivered to the Bay

<http://gis.chesapeakebay.net/wip/dashboard>



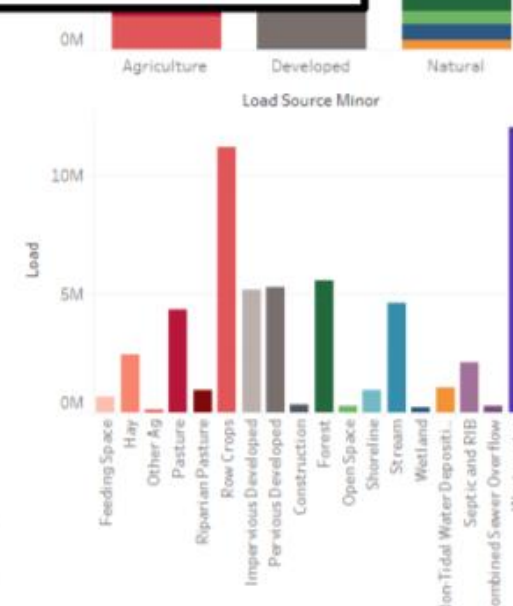
Breakdown of Loads



Total Load: 57,720,421

Load Source Minor

Feeding Space Hay Other Ag Pasture Riparian Pasture Row Crops Impervious Devel... Pervious Devel... Construction Forest Open Space Shoreline Stream Wetland Non-Tidal Water... Septic and RIB Combined Sew... Wastewater



Thank you!!

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