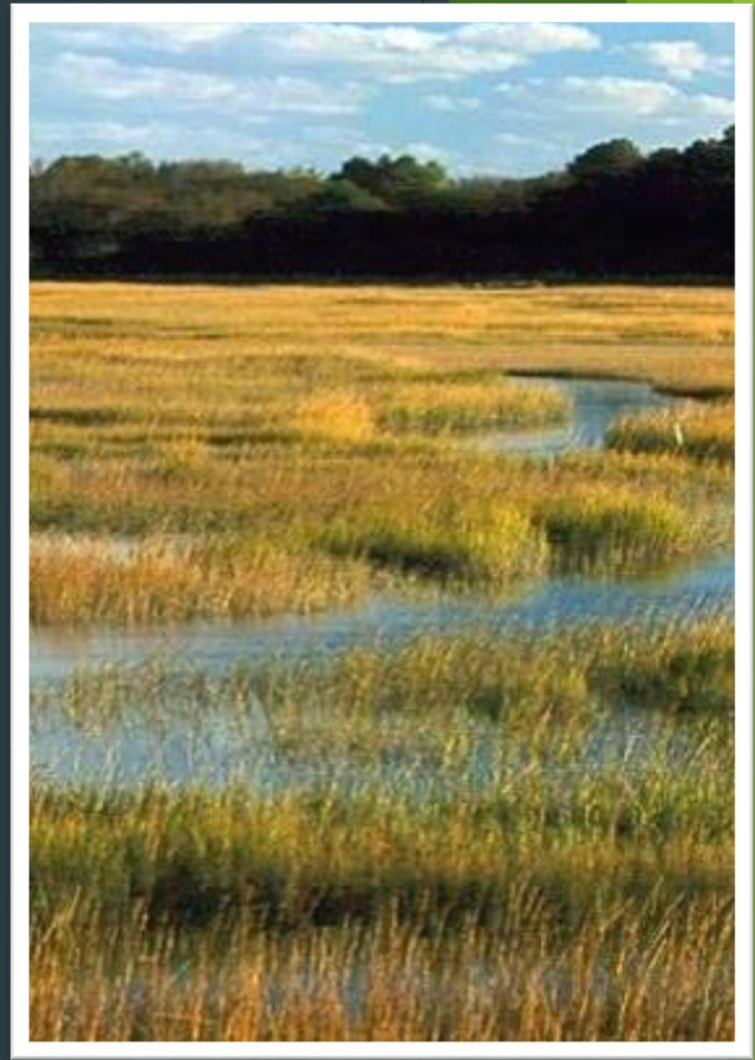


State Agency Consultant Training April 16, 2019

Critical Area Commission for the
Chesapeake and Atlantic Coastal Bays

What Is the Critical Area Program?

- Based on Chesapeake Bay Critical Area Act passed in 1984
- Land use and resource protection program implemented at the local level
- Involves additional regulatory requirements for development activity and changes in land use within the Critical Area



Goals of the Critical Area Act



- Minimize adverse impacts to water quality from run-off
- Conserve fish, wildlife, and plant habitat
- Accommodate growth and address the number, movement and activities of people in the Critical Area

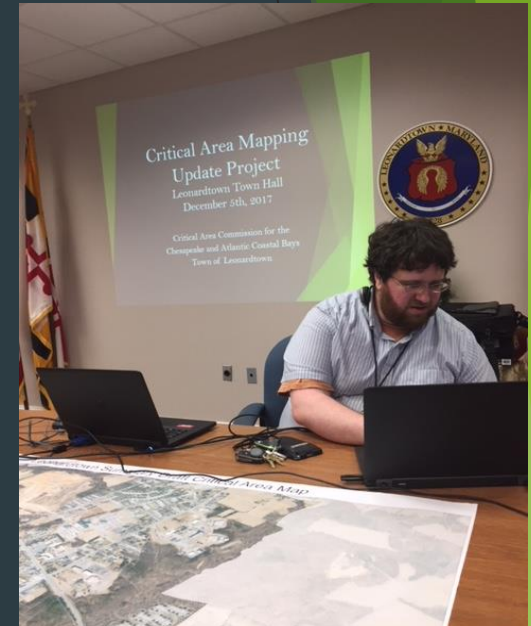
What is the Critical Area Commission?

- Appointed by the Governor – 29 members representing counties, towns and State agencies
- Approve State projects, approve amendments to local programs,

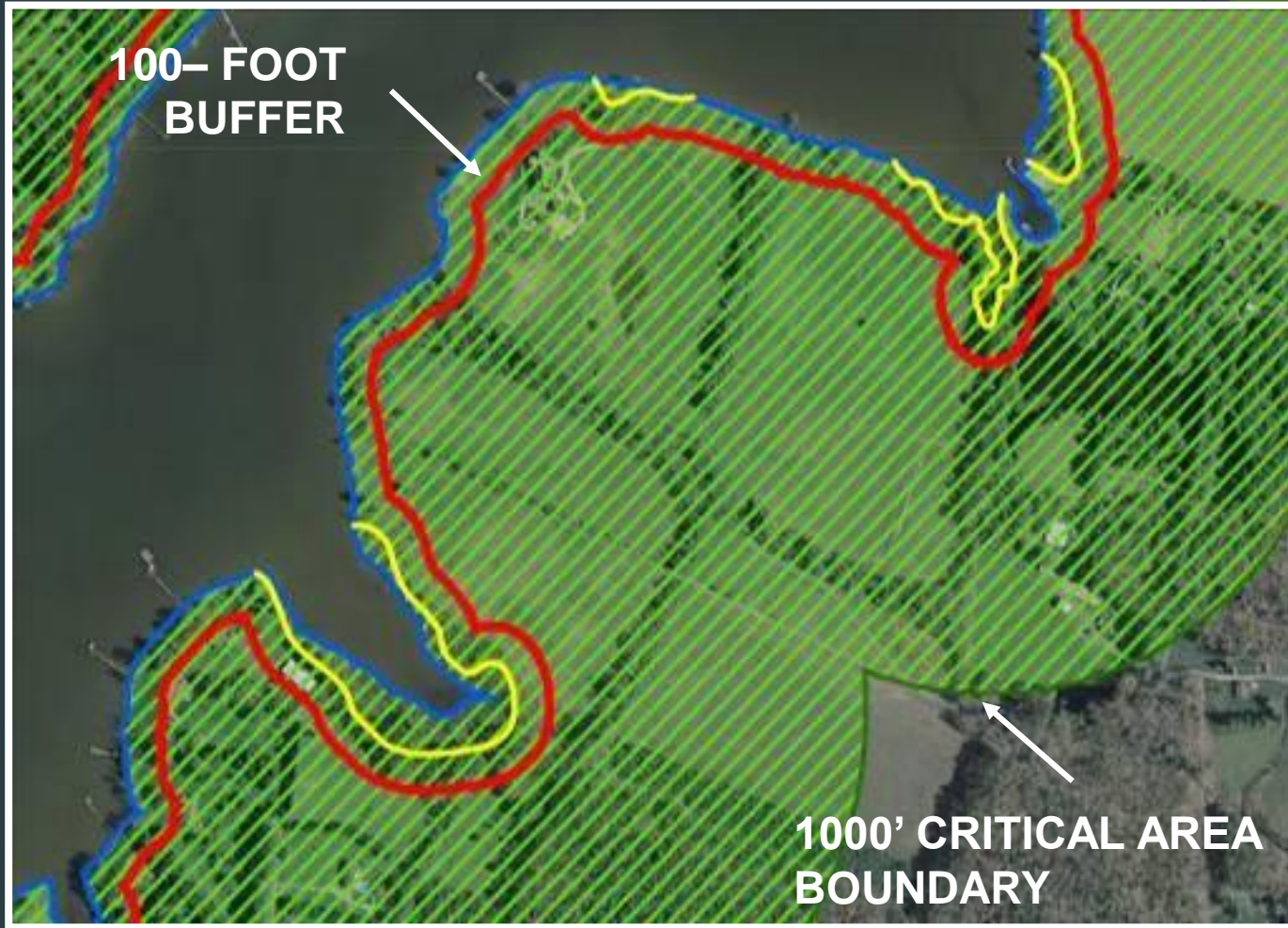


The Critical Area Commission Staff

- Assist local governments with project review
- Review State projects and present them to the Commission for approval
- Review changes to local programs
- Conduct workshops and training
- Provide technical assistance

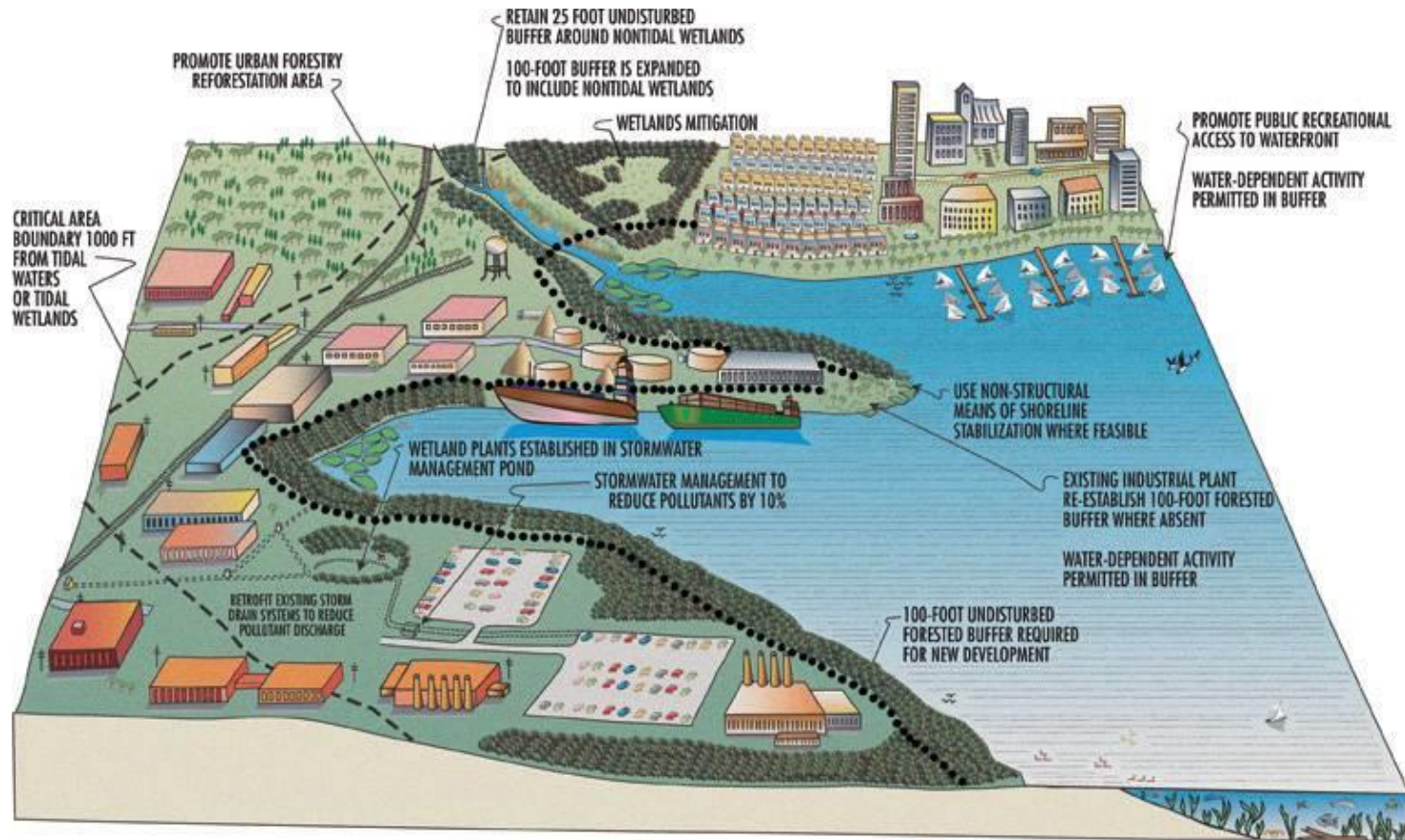


100-Foot Buffer and 1,000-Foot Boundary



Critical Area Designations

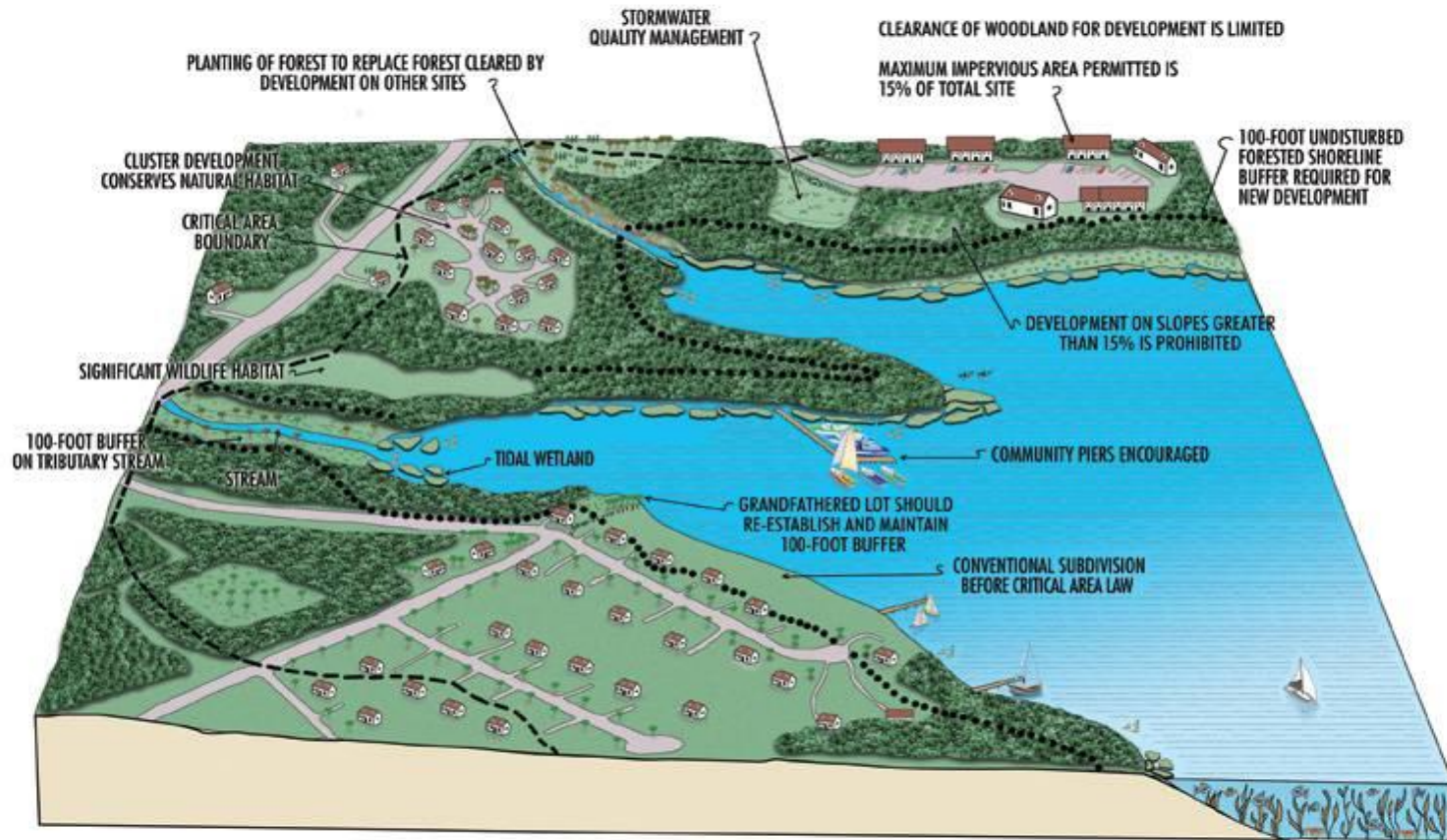
Intensely Developed Areas



INTENSELY DEVELOPED AREA (IDA)
RESIDENTIAL, COMMERCIAL, INDUSTRIAL AND INSTITUTIONAL USES DOMINATE

Critical Area Designations

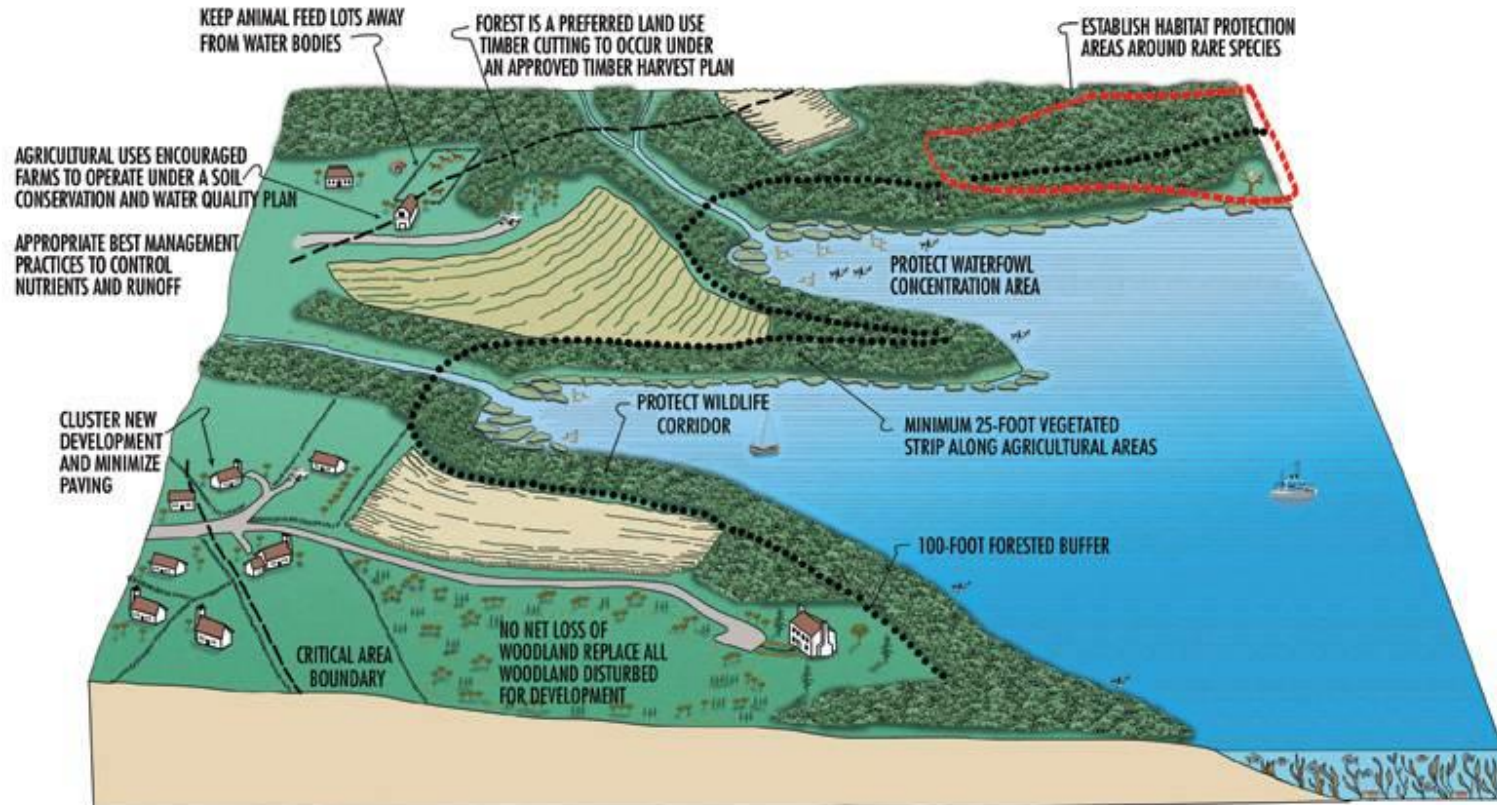
Limited Development Area



LIMITED DEVELOPMENT AREA (LDA)
LOW OR MODERATE INTENSITY DEVELOPMENT IS PERMITTED

Critical Area Designations

Resource Conservation Area



RESOURCE CONSERVATION AREA (RCA)
NATURAL ENVIRONMENT PREDOMINATES

2008 - House Bill 1253

Mapping Provisions

- Requires change from Critical Area delineated on 1972 Tidal Wetlands Maps to Critical Area delineated on Statewide Base Map

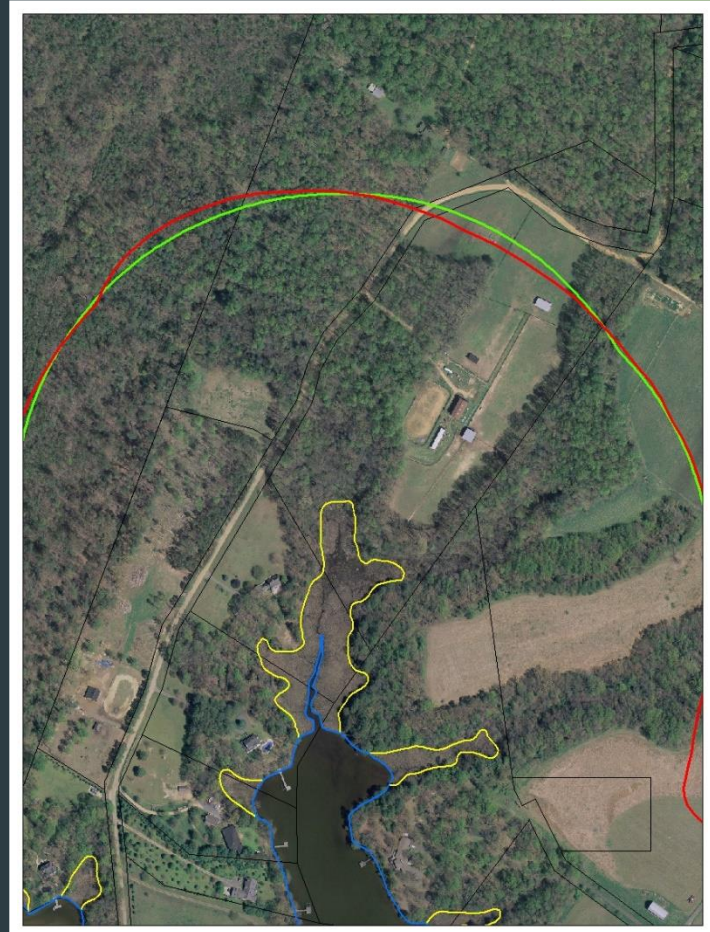


Map Update

- Base maps were 1972 Tidal Wetlands Maps that were not ortho-rectified or georeferenced
- Boundary was drawn manually – inherent inaccuracies
- Extensive changes to the landscape, shoreline, and wetlands; maps must match the landscape
- Electronic maps are now the industry standard
- Critical Area boundary needs to be web-accessible
- Original 1,000-foot boundary not always consistent, and uniform

Mapping Process

- The maps are prepared and reviewed by the State and the local government.
- Notification and public information meetings occur.
- Draft maps are delivered to the local government for final approval.
- The Critical Area Commission approves the locally adopted maps.



Mapping Process

Digitize Shoreline

Factors to Consider:

- Edge of open water
- Location of water at time of image capture
- Consideration given to tree canopy / shadows
- Width of channel

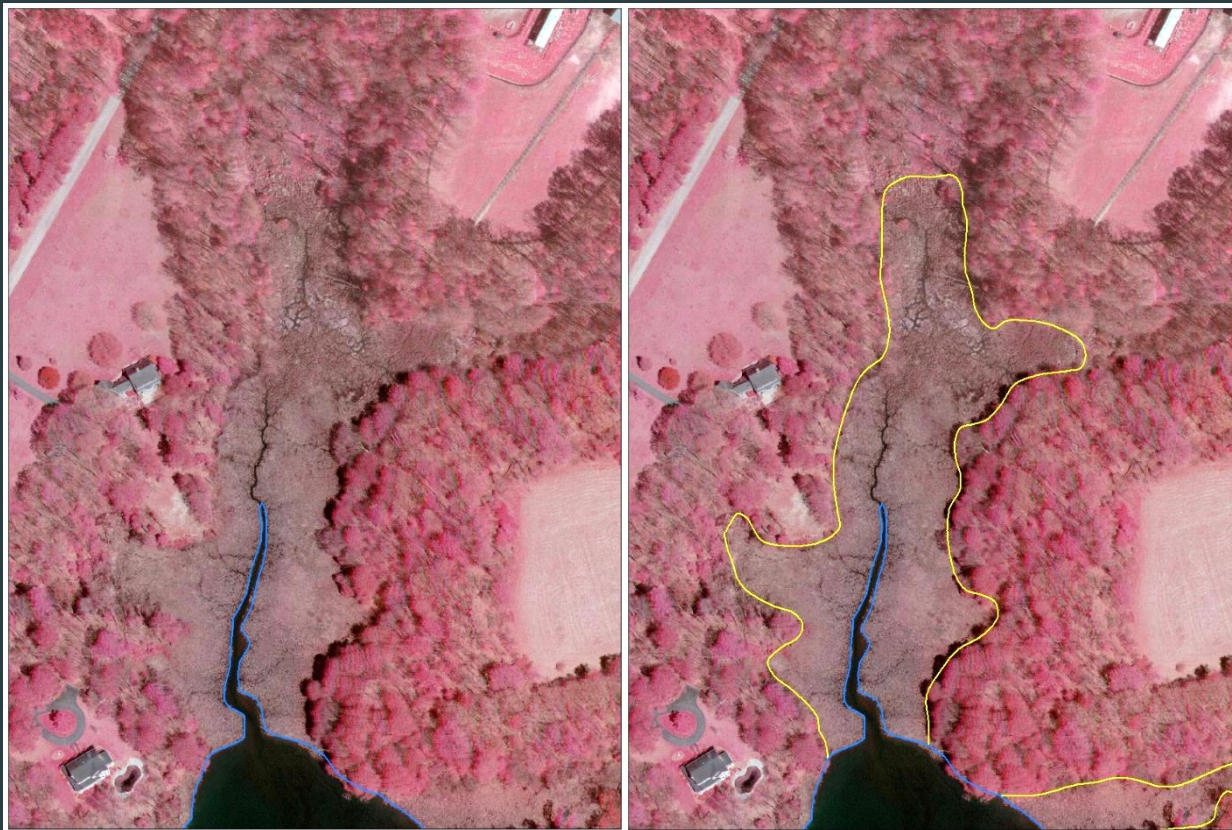


Mapping Process

Digitize Wetlands

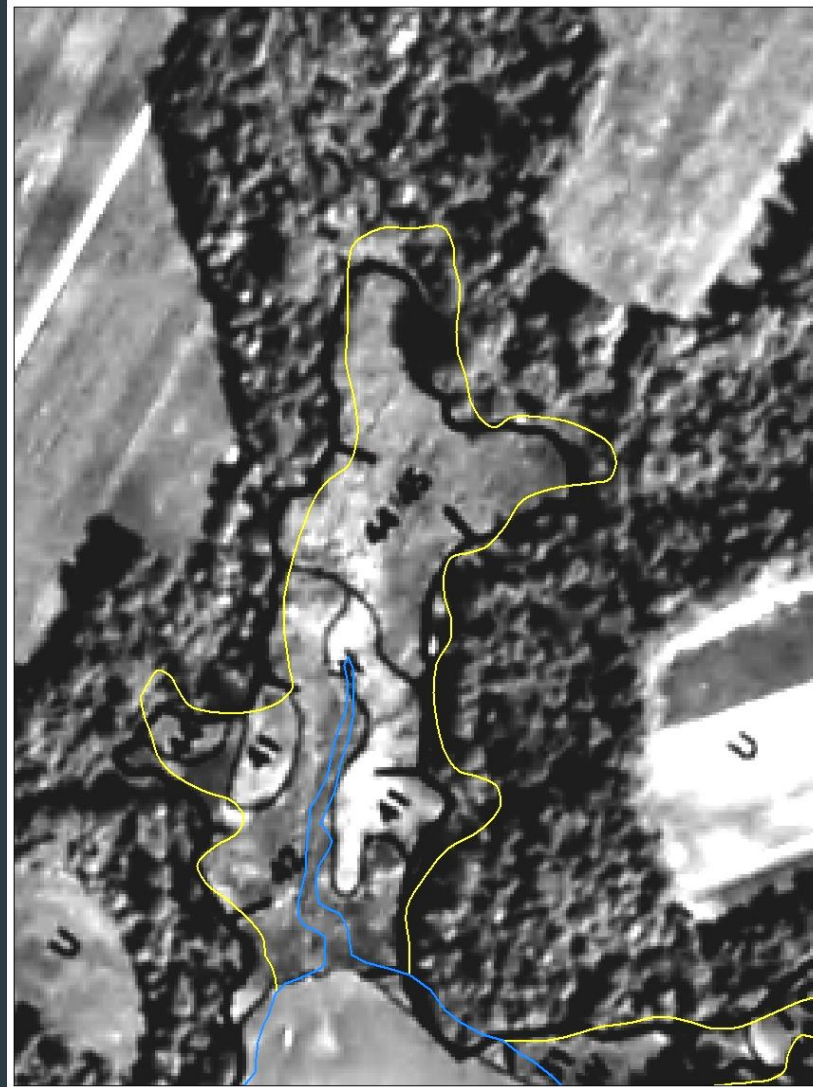
Factors to Consider:

- Vegetation patterns
- Consideration given to tree canopy / shadows
- Multiple data sources needed to confirm



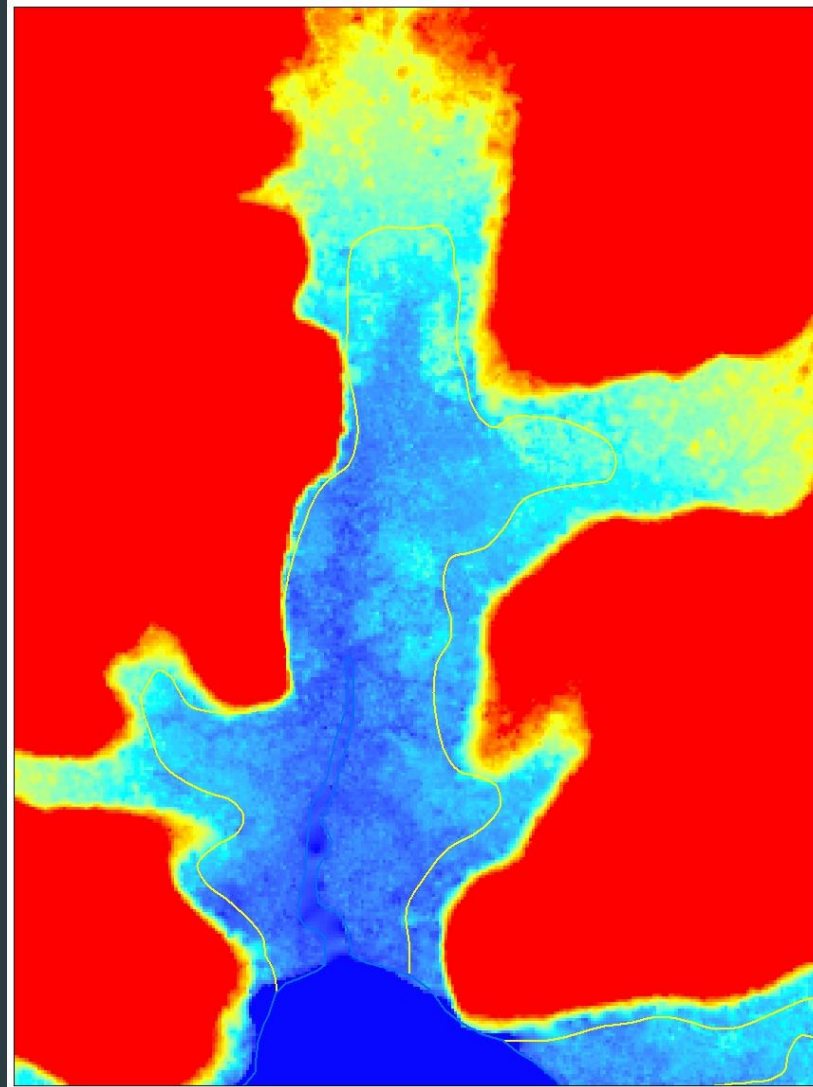
Mapping Process

Digitize Wetlands



Mapping Process

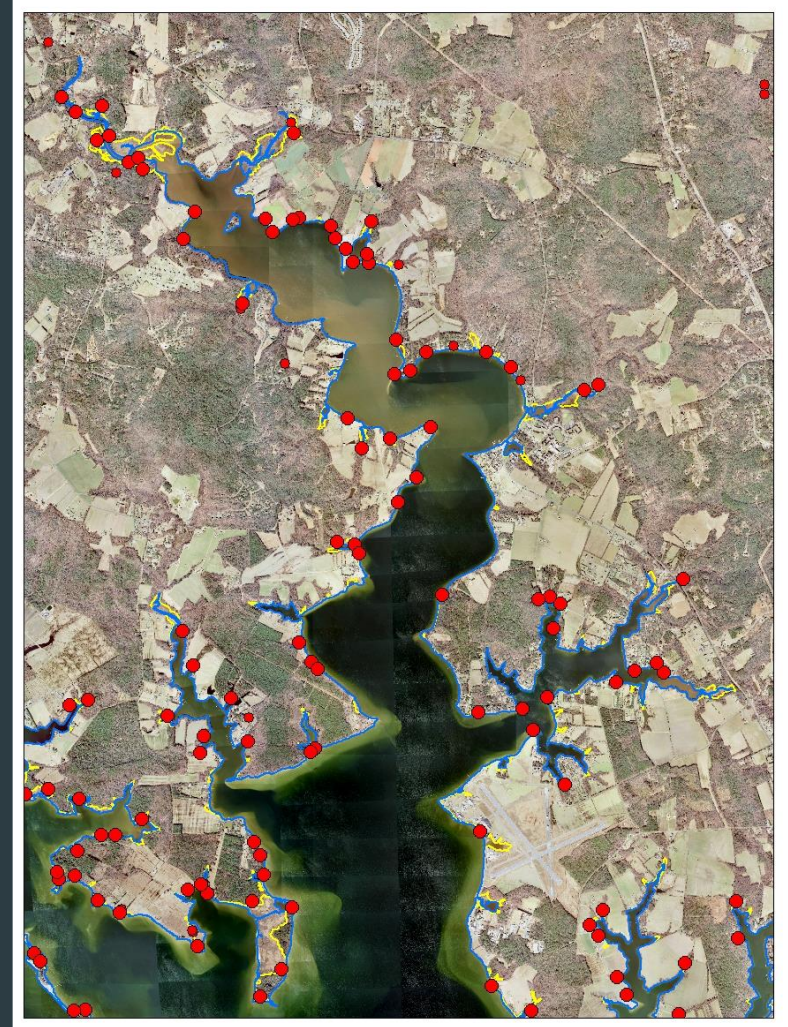
Digitize Wetlands



Mapping Process

Review Process

- Discrepancies, anomalies, inconsistencies identified by ESRGC, CAC, and local jurisdictions as review points
- WebEx/conference calls, review points are jointly analyzed
- Additional resources (permits, historical aerials, etc.) help resolve issues
- Ground truthing
- Multiple rounds
 - Shoreline/wetlands
 - Designations



Mapping Process

Current Critical Area



Mapping Process

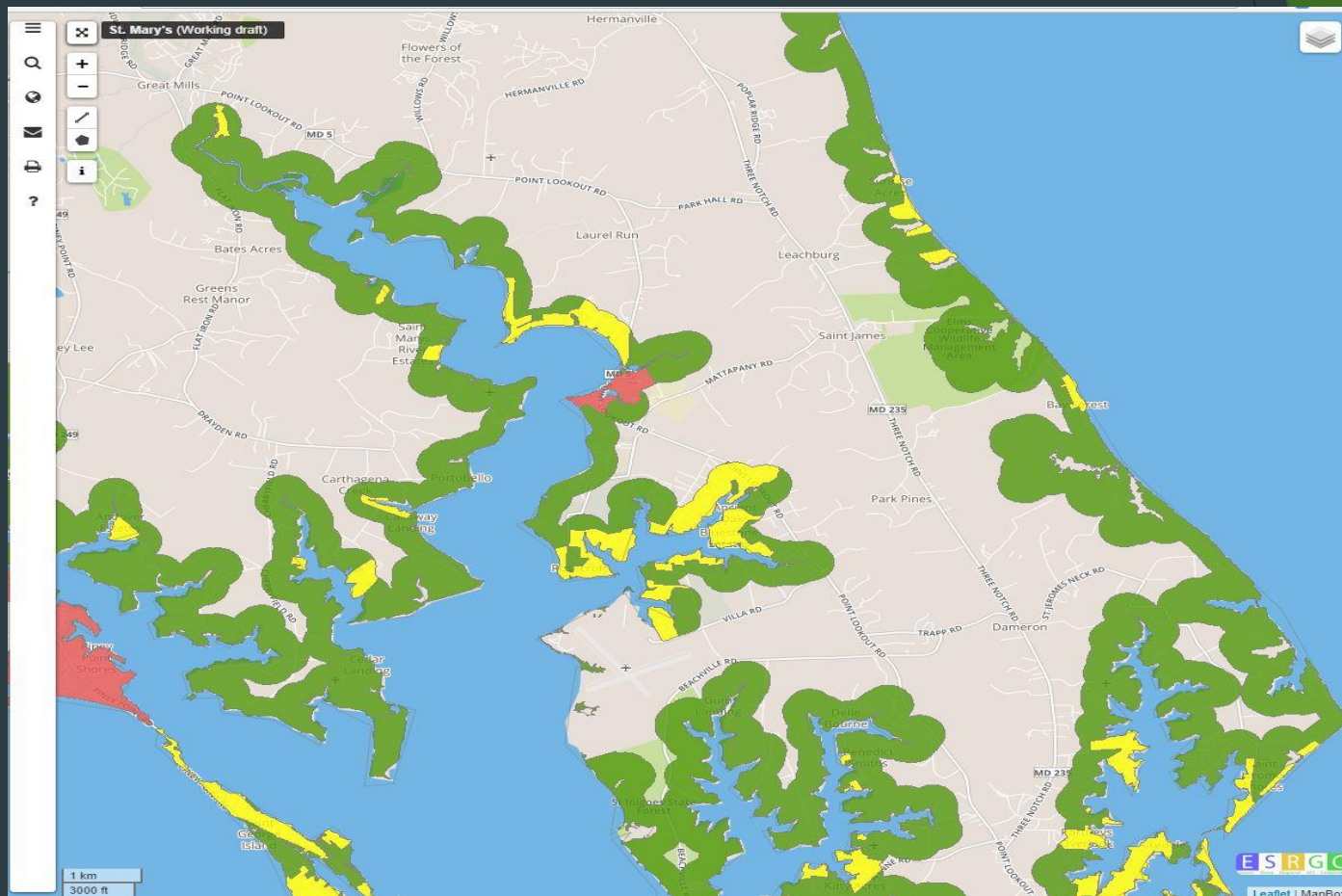
Proposed Critical Area



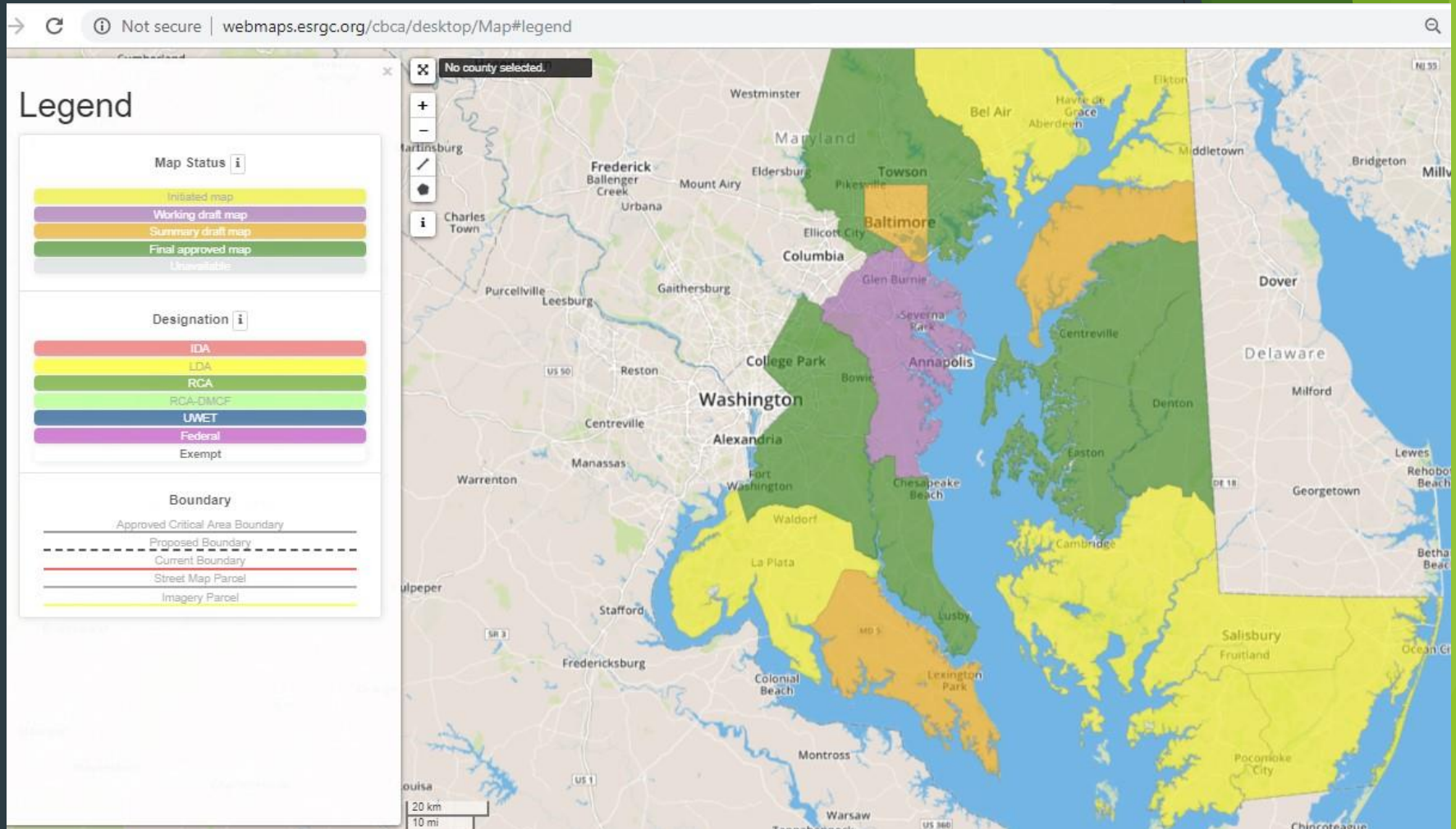
Interactive Mapping Tool

<http://webmaps.esrgc.org/cbca/desktop/Map>

Allows the public to easily determine if their property is in the Critical Area



Current Status of Mapping Project



MD I-Map

Updated as the Critical Area Maps are Updated

- ▶ https://data.imap.maryland.gov/datasets/5e3a92c992494c7aa441375df24f1a49_1

The screenshot shows the Maryland GIS Data Catalog website. The browser address bar displays the URL: https://data.imap.maryland.gov/datasets/5e3a92c992494c7aa441375df24f1a49_1. The page header features the Maryland GIS Data Catalog logo and a search bar containing the text "Crit". Navigation links for "My Data" and "Sign In" are visible. The main content area displays a map of Maryland and surrounding regions, including West Virginia, Virginia, and New Jersey. The map shows critical areas for towns near the Chesapeake Bay, with labels for various towns such as Baltimore, Annapolis, Washington, and Richmond. Below the map, there are tabs for "Overview", "Data", and "API Explorer". The "Data" tab is selected, and the page title is "Maryland Critical Areas - Critical Area Towns". The page includes a "Custom License" icon, a date "1/24/2018", a "Spatial Dataset" icon, and a "243 Rows" indicator. The description states: "This data set represents the Department of Natural Resources interpretation of the location, land cover/land use type and geographic extent of the critical land areas for towns near the Chesapeake Bay. A Critical Area includes all land within 1,000 feet of tidal waters and wetlands in Maryland, as well as the waters of Maryland's Chesapeake Bay and coastal bay area. This data file Critical Areas Towns only contains Critical Areas in 14 Maryland Towns:". There are also buttons for "Favorite", "Download", and "APIs". An "About" section is visible on the right side of the page.

Maryland GIS Data Catalog

Search: Crit

My Data Sign In

Overview Data API Explorer

Maryland Critical Areas - Critical Area Towns

Custom License 1/24/2018 Spatial Dataset 243 Rows

This data set represents the Department of Natural Resources interpretation of the location, land cover/land use type and geographic extent of the critical land areas for towns near the Chesapeake Bay. A Critical Area includes all land within 1,000 feet of tidal waters and wetlands in Maryland, as well as the waters of Maryland's Chesapeake Bay and coastal bay area. This data file Critical Areas Towns only contains Critical Areas in 14 Maryland Towns:

More ▾

About

Maryland GIS Data Catalog: Environment
Shared By: mdimapdatacatalog
Data Source: geodata.md.gov

[View Metadata](#)
[Create Webmap](#)

Mapping Resources

DNR MERLIN <http://dnrweb.dnr.state.md.us/MERLIN/>

The screenshot displays the MERLIN web application interface. At the top, the browser address bar shows the URL <https://gisapps.dnr.state.md.us/MERLIN/index.html>. The application header includes the Maryland Department of Natural Resources logo and the title "MERLIN-Marylands Environmental Resource & Land Information Network".

On the left side, there is a list of map layers with checkboxes. The following layers are checked:

- Critical Areas
- Critical Area Towns

Other layers listed but unchecked include: Historical Submerged Aquatic Vegetation, Wetlands, Wetlands - U.S. Fish and Wildlife Service, 1972 Wetland Maps, Wildlands Preservation System, Protected Lands, SSURGO Soils, Green Infrastructure, DNR Focal Areas, Federal Lands (Military and Non-Military), Land Use Land Cover - MD Dept of Planning, and Historical Land Use Land Cover.

The central map shows a portion of Baltimore, Maryland, with various colored overlays representing different environmental resources. Key features include the Patapago River, the Harbor Tunnel, and several residential areas like North Linthicum, City View, and West Brooklyn. The map is overlaid with a grid and includes a scale bar (0.2mi, 0.4km) and navigation controls.

On the right side, there is a "Legend" panel. It includes a "State Boundary Mask" section with a checkbox for "State Boundary Mask". Below that, the "Critical Areas" section lists the following categories with corresponding color swatches:

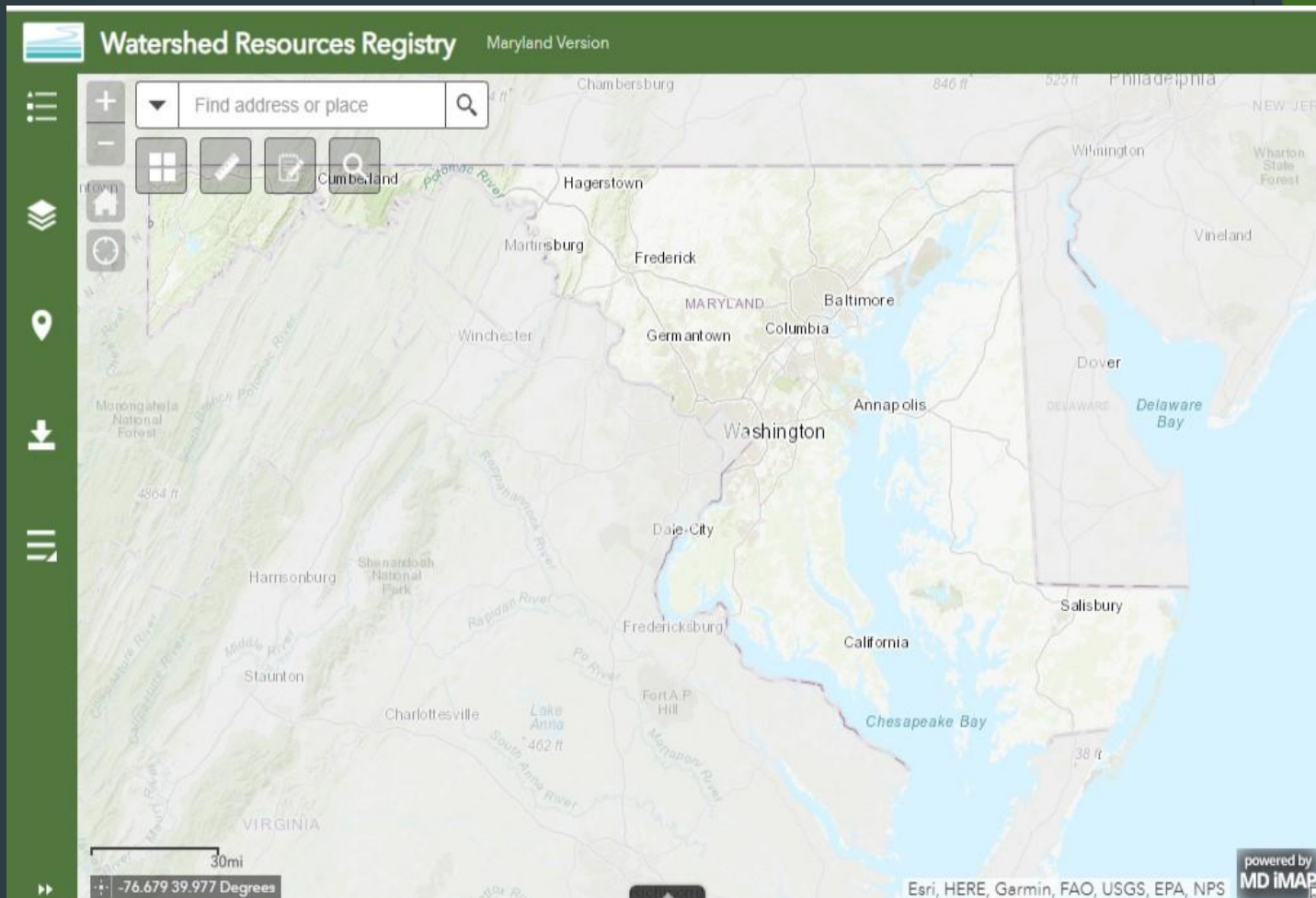
- Corporate Limit (Orange)
- Federal Lands (Pink)
- Intensely Developed Area (Red)
- Limited Development Area (Yellow)
- Resource Conservation Area (Green)
- Wetland Area (Blue)

The "Critical Area Towns" section lists:

- Intensely Developed Area (Red)
- Limited Development Area (Yellow)
- Resource Conservation Area (Green)
- Wetland Area (Blue)

Water Resources Registry

<https://watershedresourcesregistry.org/map/?config=stateConfigs/maryland.json>



County or Town Websites

<https://www.aacounty.org/departments/planning-and-zoning/critical-area-map/index.html>

The screenshot displays a web browser window with the URL <https://www.aacounty.org/departments/planning-and-zoning/critical-area-map/index.html>. The browser's address bar shows the URL, and the page title is "Critical Area Map Index | Anne Arundel County".

The website header features the Anne Arundel County Maryland logo on the left and a search bar on the right. Below the logo, there are navigation tabs for "GOVERNMENT", "DEPARTMENTS", "SERVICES & PROGRAMS", "COMMUNITY", and "BUSINESS". The "DEPARTMENTS" tab is selected, and a sub-menu is visible with "Home", "Departments", "Planning and Zoning", and "Critical Area Maps".

The main content area is titled "Critical Area Map Index" and displays a map of Anne Arundel County divided into 17 numbered critical areas. The map shows a network of roads and boundaries within each area. A sidebar on the left lists various planning and zoning resources, including "About Us", "Vision & Mission", "County Code & Bill Updates", "Community Revitalization", "Cultural Resources Division", "Development Division", "Long Range Planning Division", "Research & GIS Division", and "Zoning Division".

The browser's taskbar at the bottom shows the Windows Start button, search icon, and several application icons (Edge, File Explorer, Chrome, PowerPoint). The system tray on the right indicates the time as 9:09 AM on 4/2/2019.

HABITAT PROTECTION AREAS (HPAs)

- ▶ Buffer
- ▶ Nontidal Wetlands
- ▶ Threatened & Endangered Species



- ▶ Plant & Wildlife Habitat
 - ▶ Anadromous Fish Habitat
 - ▶ Forest Interior Dwelling Bird (FID) Habitat
 - ▶ Waterfowl Staging & Concentration Areas
 - ▶ Colonial Water Bird Nesting Sites
 - ▶ Natural Heritage Area
 - ▶ Areas of Local Significance

What's so great about the Buffer?



A tree canopy can intercept up to 40% of the precipitation that falls on it.

Leaf litter left in place to decay provides food for wildlife and makes the soil spongier.

Vegetation filters pollutants in surface and subsurface runoff

HPAS

Nontidal Wetlands



Threatened & Endangered Species



HPAS

Colonial Nesting Waterbirds



Anadromous Fish

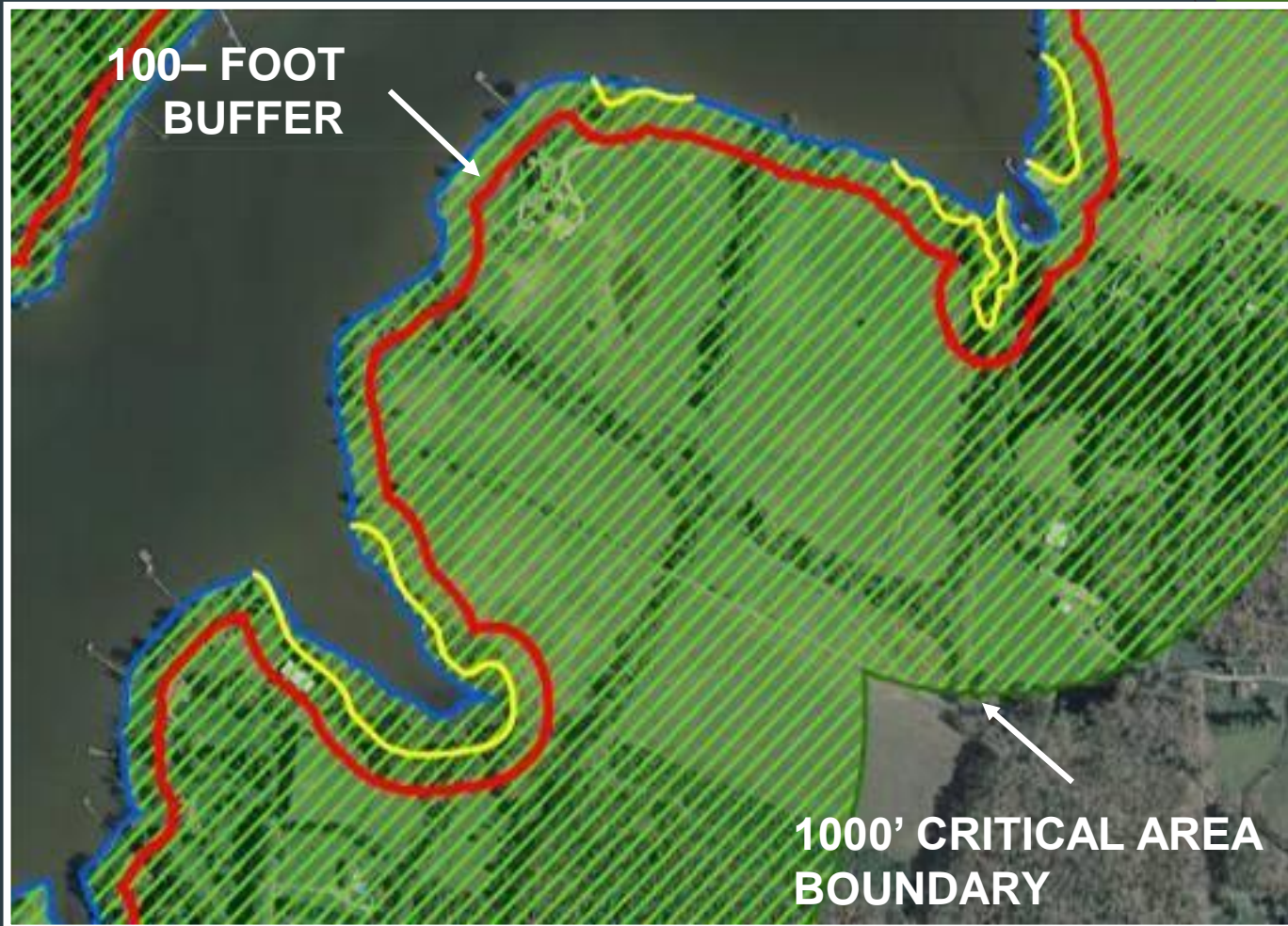


HPA's - Plant & Wildlife Habitat

Forest Interior Dwelling Birds (FIDS)

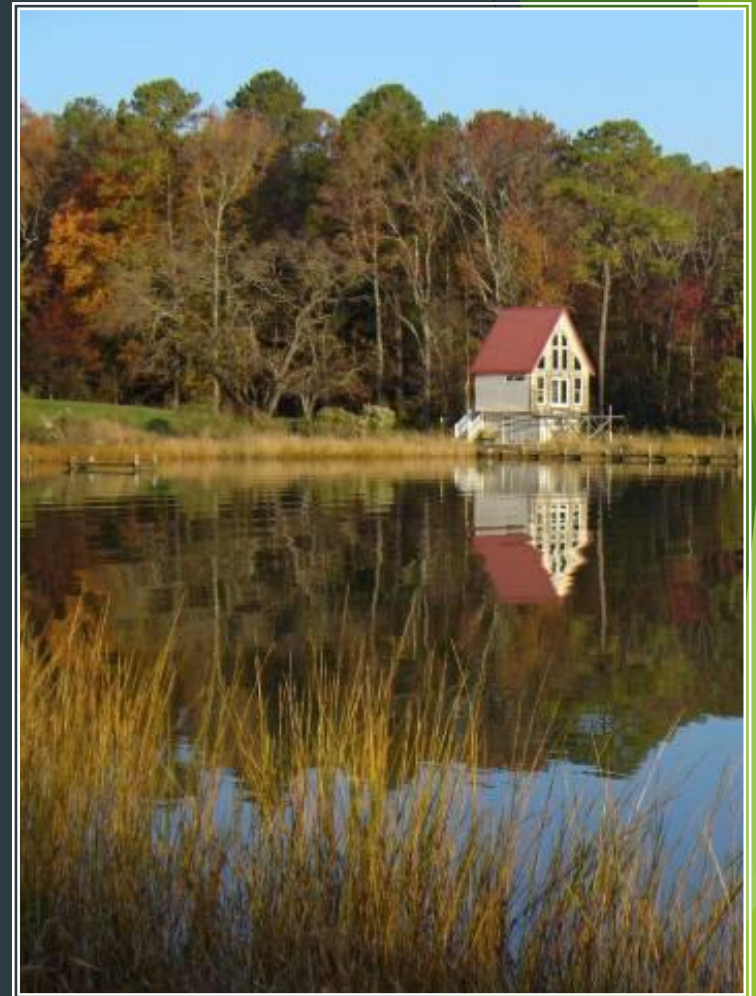


Buffer Delineation



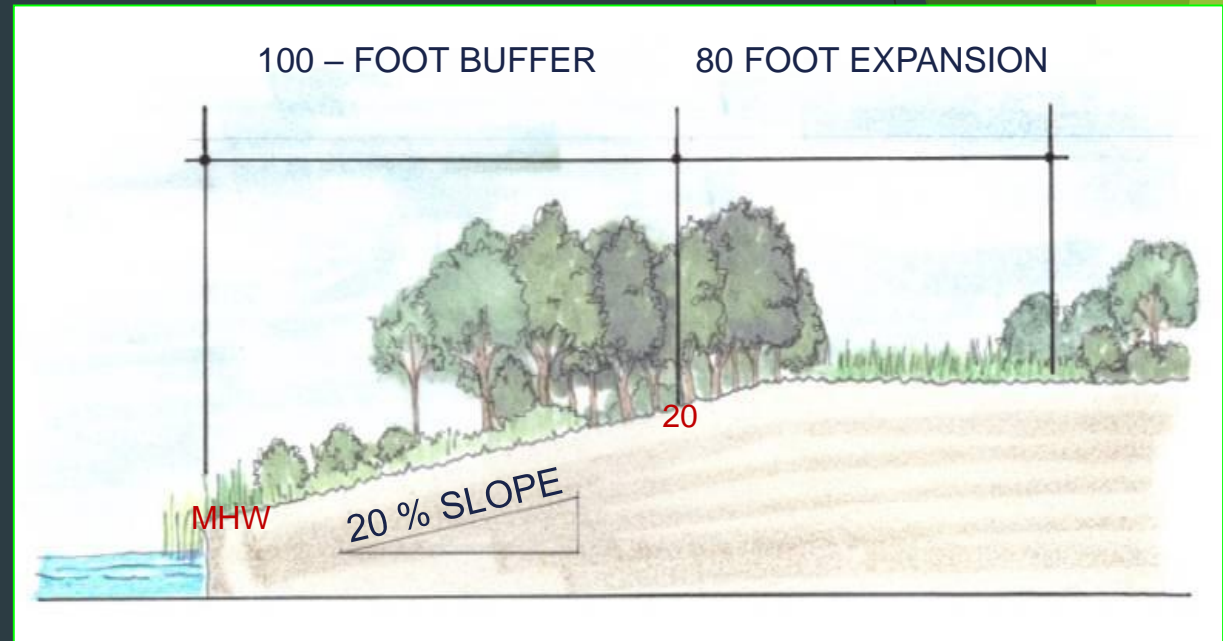
Standard Buffer Delineation

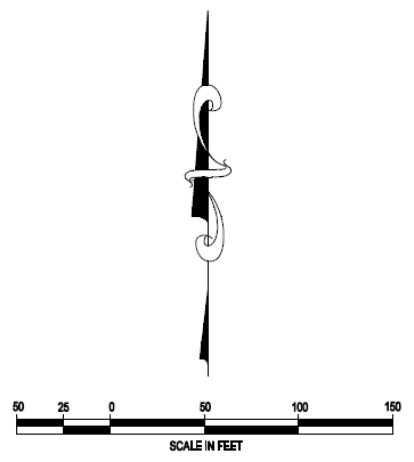
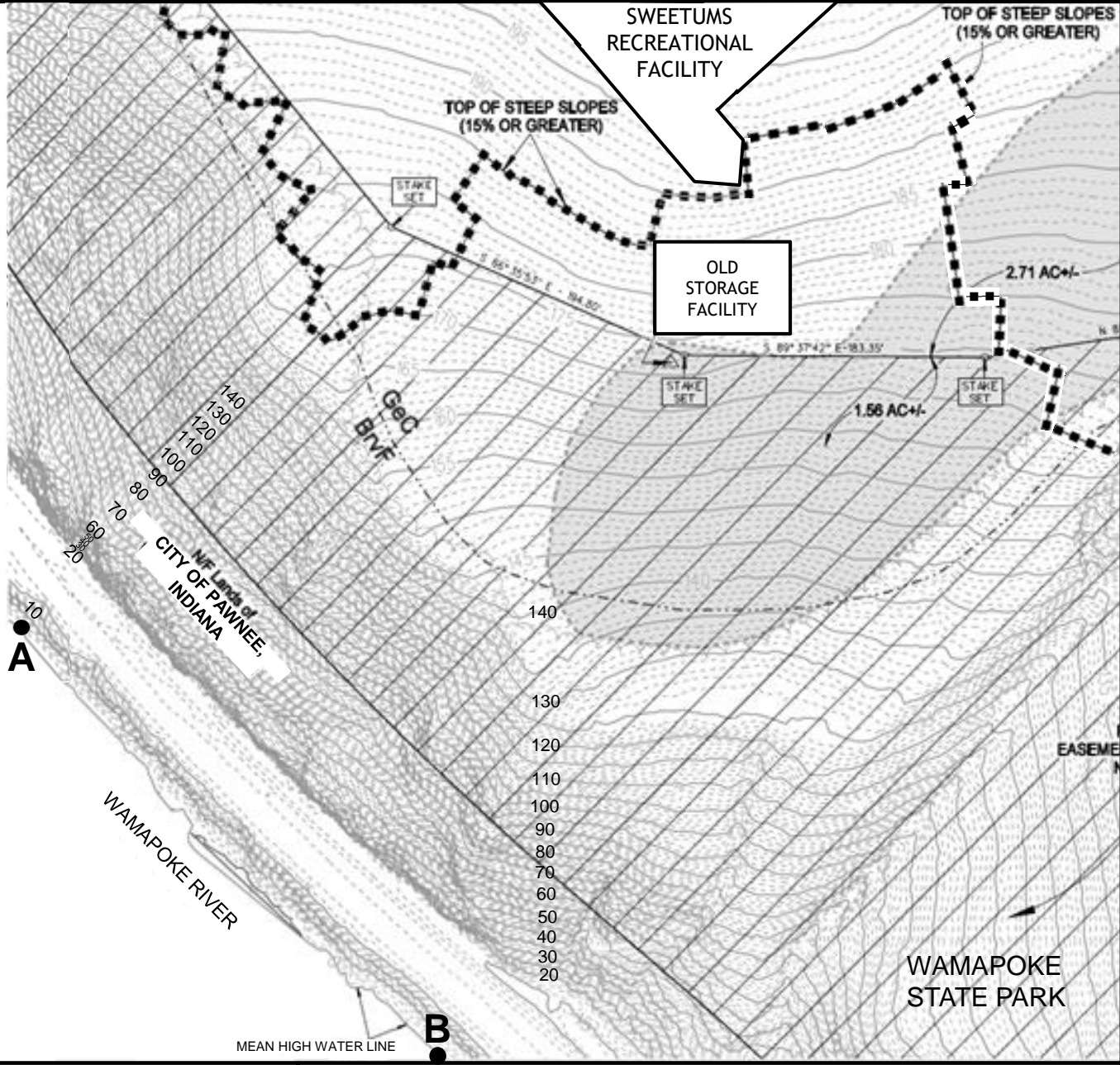
- ▶ Field delineated based on current site conditions
- ▶ 100 feet minimum, from:
 - ▶ Mean high water of tidal waters
 - ▶ Upland boundary of tidal wetlands
 - ▶ Edge of tributary stream bank



Buffer Expansion – Steep Slopes

- ▶ Steep slopes $> 15\%$
- ▶ When the Buffer is contiguous to a steep slope - expand 4 feet for every 1% of slope, or to the top of the slope - **whichever is greater**
- ▶ No expansion when steep slope is contained

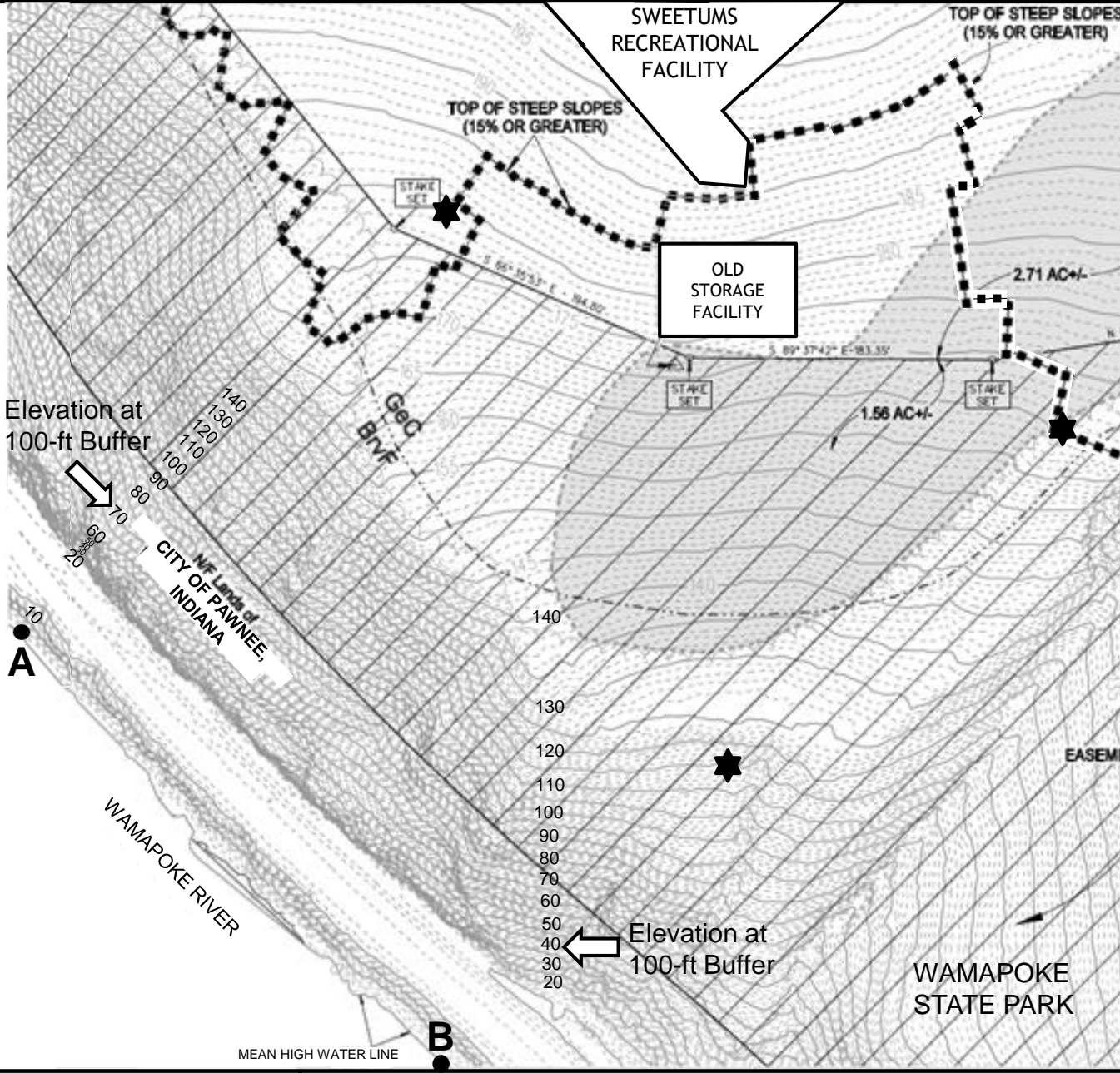






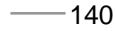

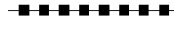
LEGEND	
	EXISTING DISTURBED AREA (FIELD LOCATED 7/21/2017)
	SOILS DELINEATION LINE (W/SOIL TYPES)
	INDEX CONTOUR
	INTERMEDIATE CONTOUR
	TOP OF STEEP SLOPES (15% OR GREATER)

VGBDC VERY GOOD BUILDING AND DEVELOPMENT COMPANY, INC.

Buffer Expansion - Steep Slopes
SWEETUMS RECREATIONAL FACILITY EXPANSION
 JERRY GARY GERGICH ROAD, PAWNEE, INDIANA



LEGEND

-  EXISTING DISTURBED AREA (FIELD LOCATED 7/21/2017)
- MaD**
BrvF  SOILS DELINEATION LINE (W/SOIL TYPES)
-  140 INDEX CONTOUR
-  INTERMEDIATE CONTOUR
-  TOP OF STEEP SLOPES (15% OR GREATER)

A: $\frac{70}{100} = 70\% \times 4 = 280 \text{ ft expansion}$

$280 \text{ ft} + 100 \text{ ft} = 380 \text{ ft} \star$

B: $\frac{40}{100} = 40\% \times 4 = 160 \text{ ft expansion}$

$160 \text{ ft} + 100 \text{ ft} = 260 \text{ ft} \star$

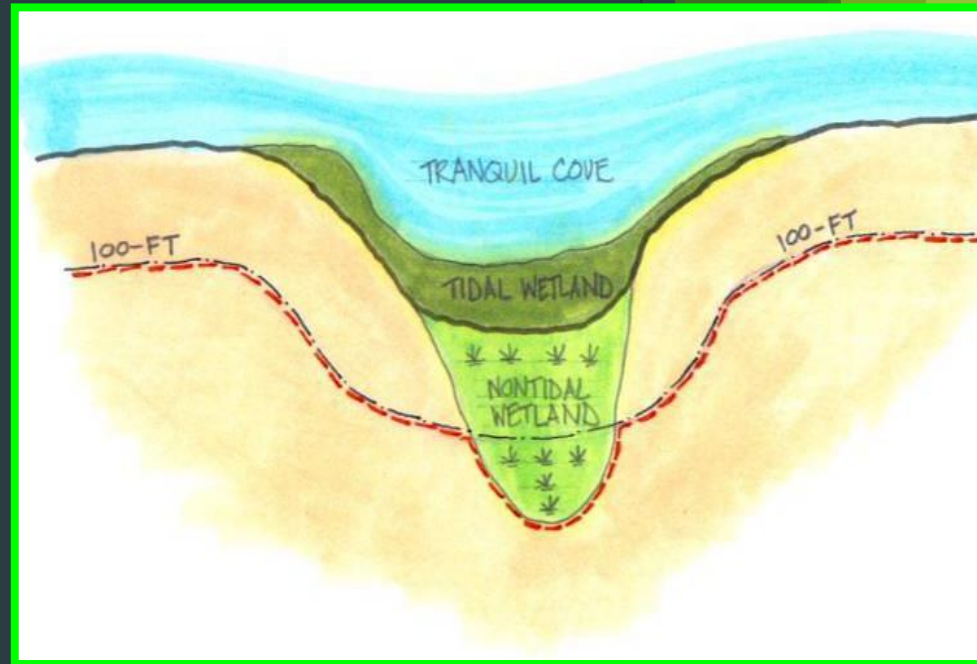
B is expanded to top of steep slope

VGBDC VERY GOOD BUILDING AND DEVELOPMENT COMPANY, INC.

Buffer Expansion - Steep Slopes
SWEETUMS RECREATIONAL FACILITY EXPANSION
 JERRY GARY GERGICH ROAD, PAWNEE, INDIANA

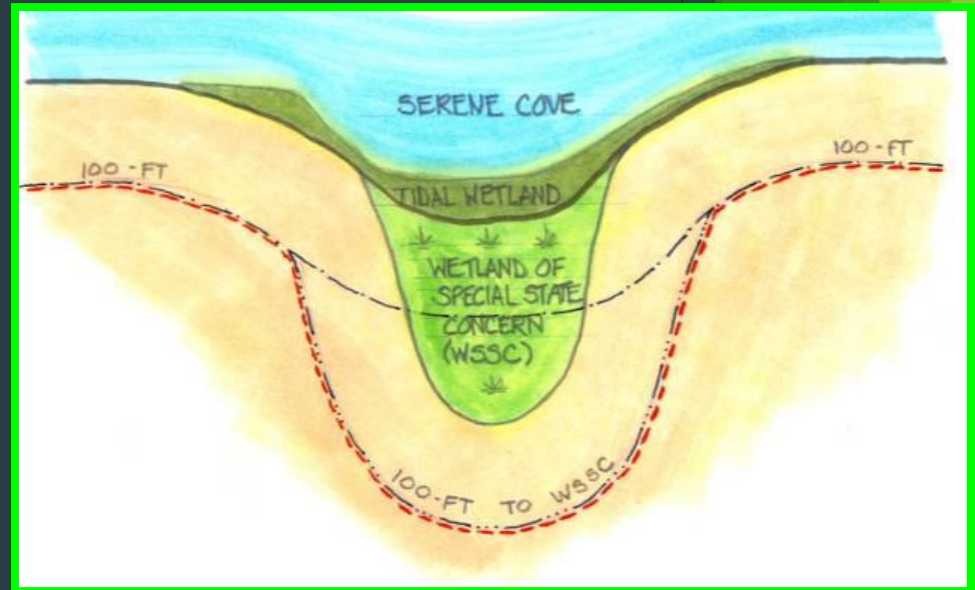
Buffer Expansion – Nontidal Wetlands

- ▶ When the Buffer is contiguous to a nontidal wetland - expand Buffer to include entire wetland



Buffer Expansion – Nontidal Wetlands

- ▶ If the nontidal wetland is of special State concern – expand Buffer to include the wetland and the MDE-required 100 foot Buffer



Buffer Expansion – Hydric & Highly Erodible Soils

USDA United States Department of Agriculture Natural Resources Conservation Service

Web Soil Survey

Home About Soils Help Contact Us

You are here: Web Soil Survey Home

Search
Enter Keyword
All NRCS Sites

Browse by Subject

- Soils Home
- National Cooperative Soil Survey (NCSS)
- Archived Soil Surveys
- Status Maps
- Official Soil Series Descriptions (OSD)
- Soil Series
- Extent Mapping Tool
- Geospatial Data Gateway
- eFOTG
- National Soil Characterization Data
- Soil Health
- Soil Geography

The simple yet powerful way to access and use soil data.

START WSS

Welcome to Web Soil Survey (WSS)

 Web Soil Survey (WSS) provides soil data and information produced by the National Cooperative Soil Survey. It is operated by the USDA Natural Resources Conservation Service (NRCS) and provides access to the largest natural resource information system in the world. NRCS has soil maps and data available online for more than 95 percent of the nation's counties and anticipates having 100 percent in the near future. The site is updated and maintained online as the single authoritative source of soil survey information.

Soil surveys can be used for general farm, local, and wider area planning. Onsite investigation is needed in some cases, such as soil quality assessments and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center at the following link: [USDA Service Center](#) or your NRCS State Soil

I Want To...

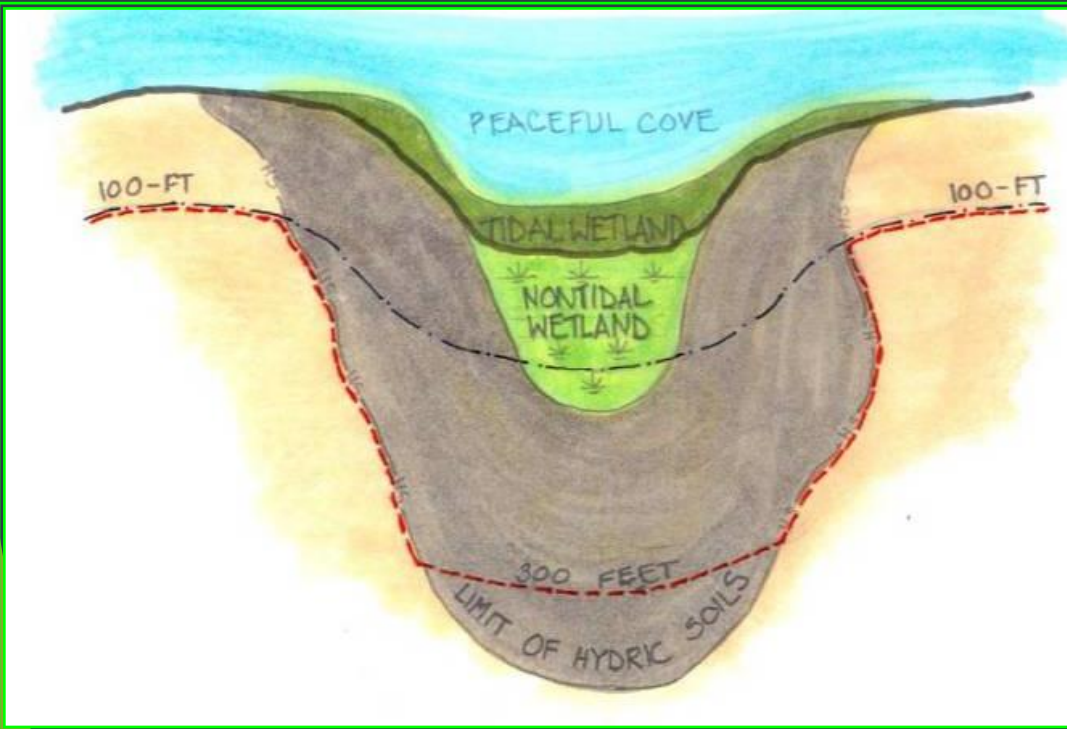
- Start Web Soil Survey (WSS)
- Know Web Soil Survey Requirements
- Know Web Soil Survey operation hours
- Find what areas of the U.S. have soil data
- Find information by topic
- Know how to hyperlink from other documents to Web Soil Survey
- Know the SSURGO data structure

Announcements/Events

- Web Soil Survey 3.3 has been released! [View new features and fixes](#)

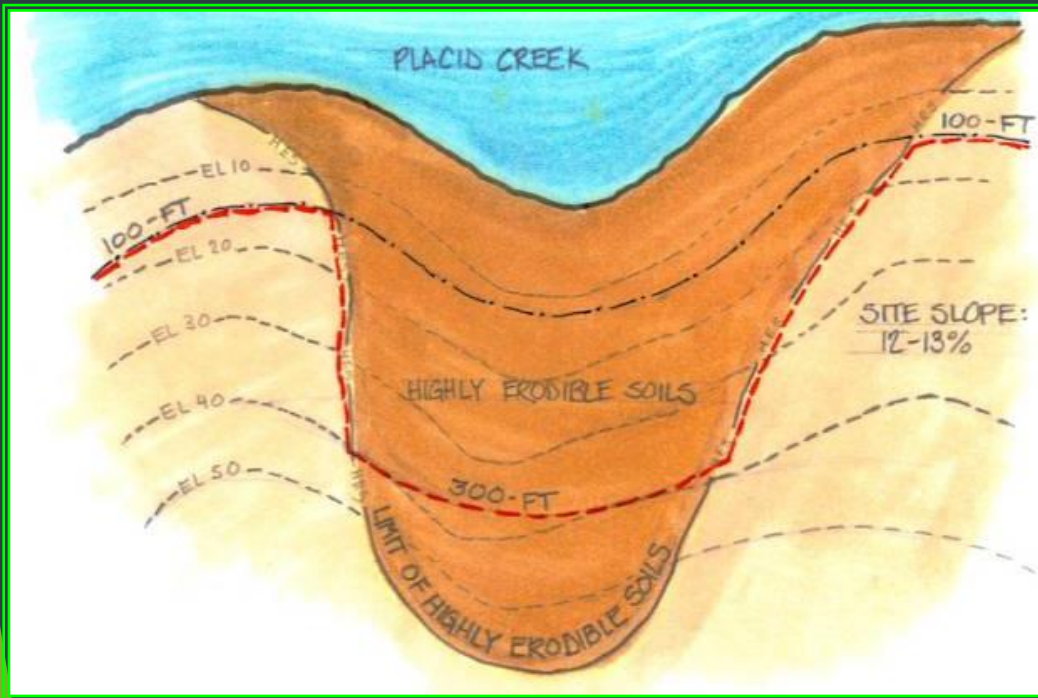
- ▶ When the Buffer is contiguous to highly erodible soils on a slope less than 15%, or a hydric soil – expand to the landward edge, or 300 feet total – **whichever is less**

Buffer Expansion – Hydric Soils



- ▶ Hydric Soils – are wet frequently enough to periodically produce anaerobic conditions, influencing plant species and growth

Buffer Expansion – Highly Erodible Soils



- ▶ Highly Erodible Soils – soils with a slope $> 15\%$, or with K value > 0.35 and slope $> 5\%$

Resources Demonstration

Merlin

Questions?

