



WATERSHED RESOURCES REGISTRY



Introductory Workshop, October 16th and 17th 2014

Evaluating Proposed Wetland and Waterway Impacts and Compensatory Mitigation





The WRR can be used by regulatory agencies and applicants to evaluate impacts . . .

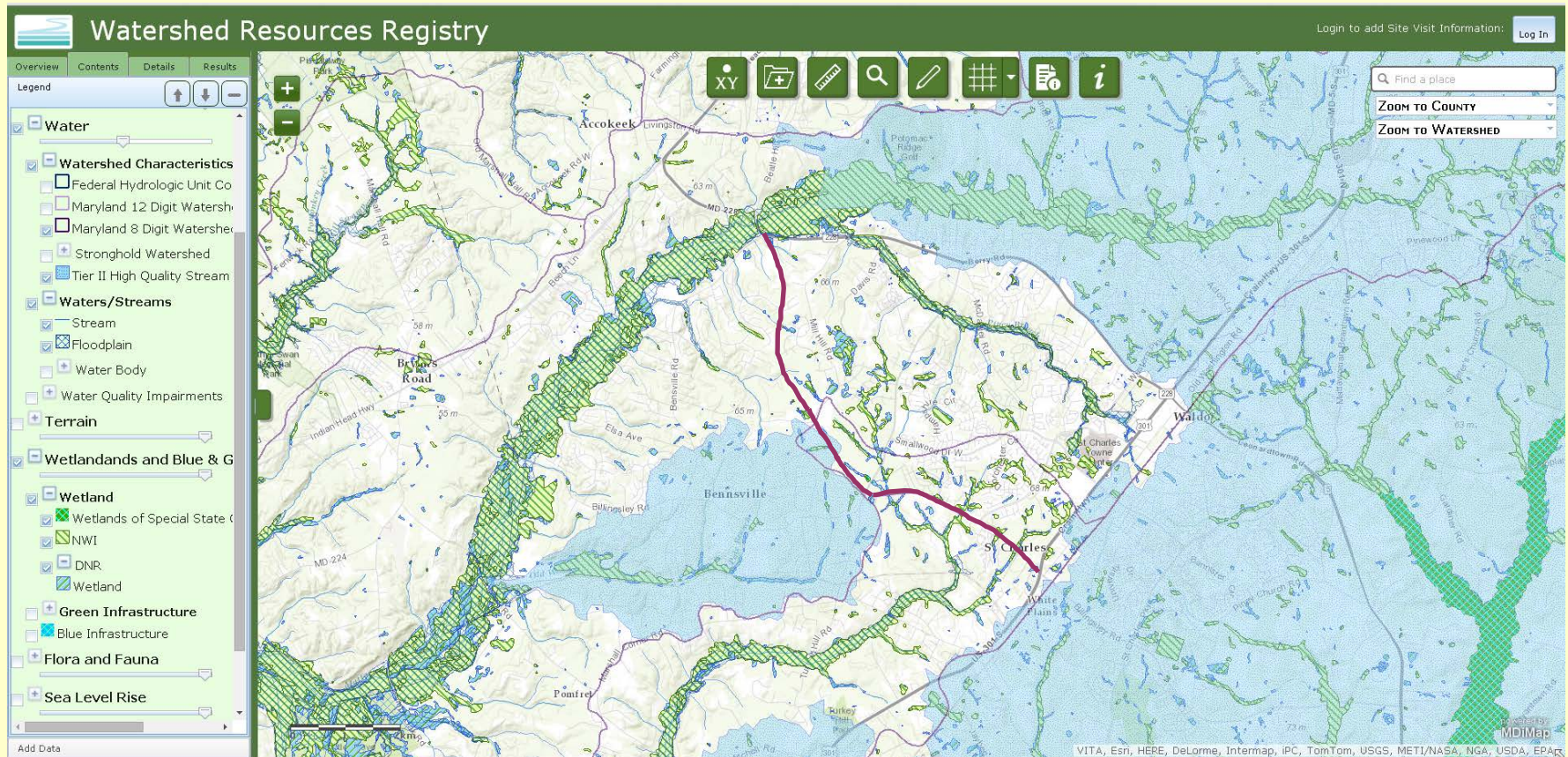
- Proposed impacts (e.g., linear projects)
- Impact alternatives (e.g., alternate alignments)
- Screen site before site visit



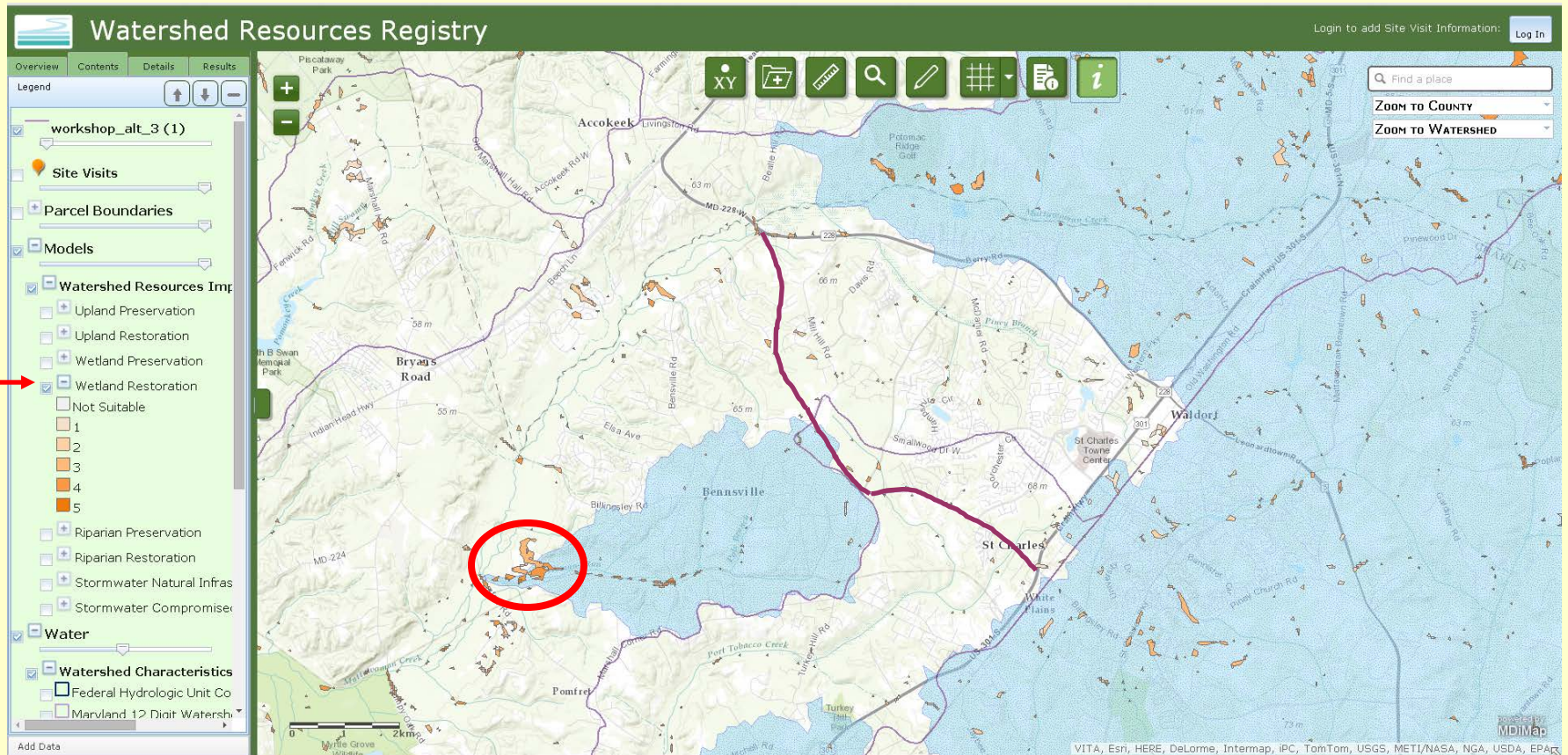
The WRR can be used by regulatory agencies and applicants to evaluate compensatory mitigation . . .

- Assist in finding a mitigation site
- Evaluate ecological benefits of a proposed mitigation site (permittee, bank, or In-Lieu Fee)
- Compare different proposed mitigation sites

Proposed impacts = 1.03 acres PFO wetland, 940 lf stream
Wetland mitigation required = 2.06 acres
Some Tier II
Watersheds - Mattawoman Creek and Port Tobacco River



Wetland mitigation search . . . Using the models





Wetland Restoration Suitability Analysis Summary

Map and score areas that are not currently wetlands but which have site conditions that would support wetland creation.

Assessed Layers - Absolute Factors

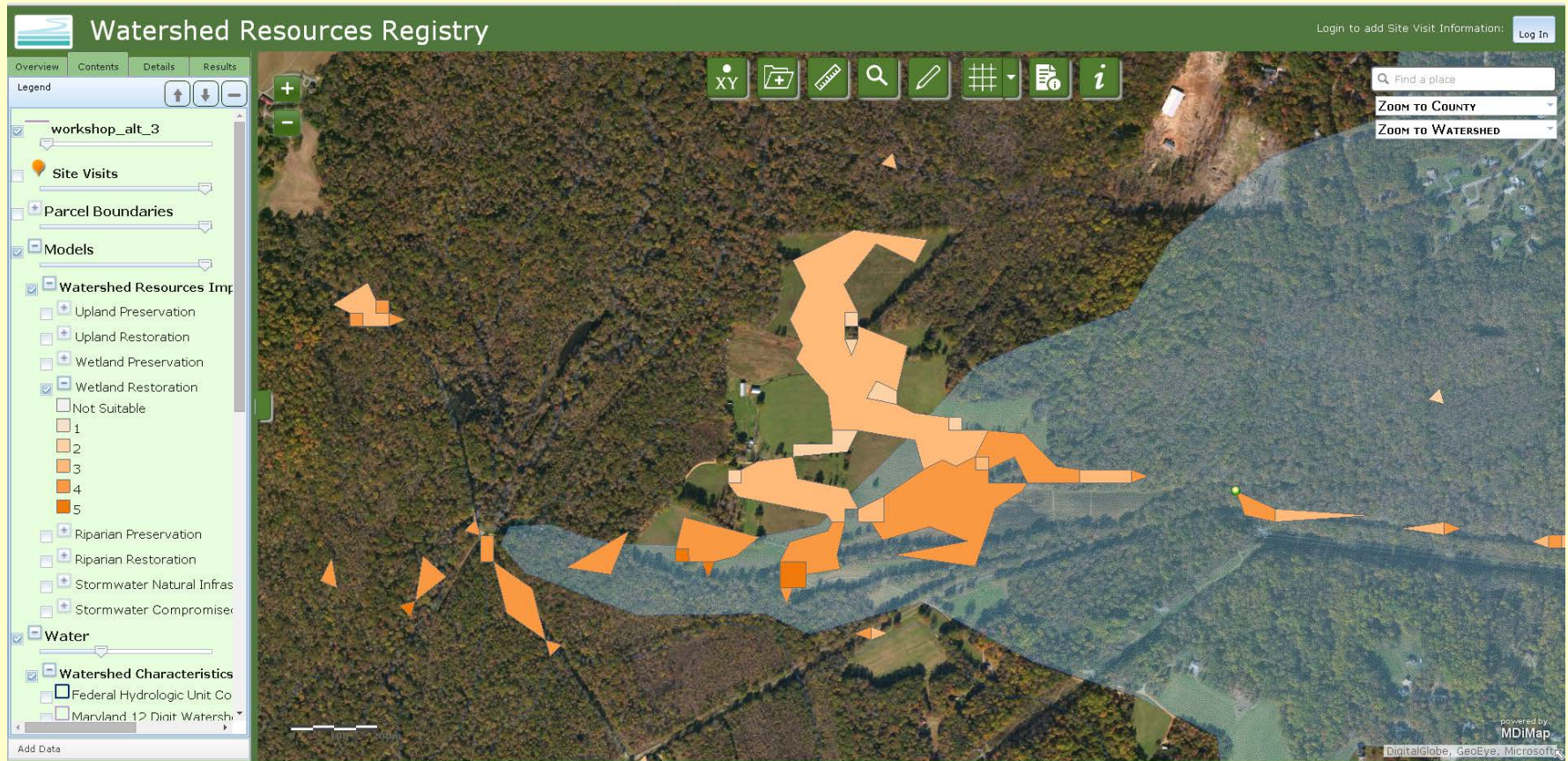
- cannot be a wetland
- cannot be forested and
- must be on a very poorly drained soils, somewhat poorly drained soils or poorly drained soil

Relative factors

- in a Blue Infrastructure priority watershed
- in a Biological Restoration Initiative (BRI) watershed
- in Chesapeake Bay Commission Critical Area (LDA or RCA only)
- near (200') or in a Green Infrastructure hub or corridor
- in a Green Infrastructure "gap" area
- in a 100-year (1 point) or 500-year (½ point) flood plain
- in an impaired watershed (as indicated by §303-d)
- in or near (200 feet) of a GreenPrint Targeted Ecologic Area
- near (200') but not in a protected land
- near (within 200') but not in a Sensitive Species Project Review Area (SSPRA)
- near (200') but not in a stream or wetland
- within 200' (1 point) or within 600' (½ point) of a stream designated for uses II, II or IV
- in a Stronghold Watershed area 1 (1 point) or 2 (½ point)
- in a Tier II "watershed"
- in a Trust Fund Watershed - High Priority (1 point) or Medium Priority (½ point)
- is near (200') but not in a Wetland of Special State Concern



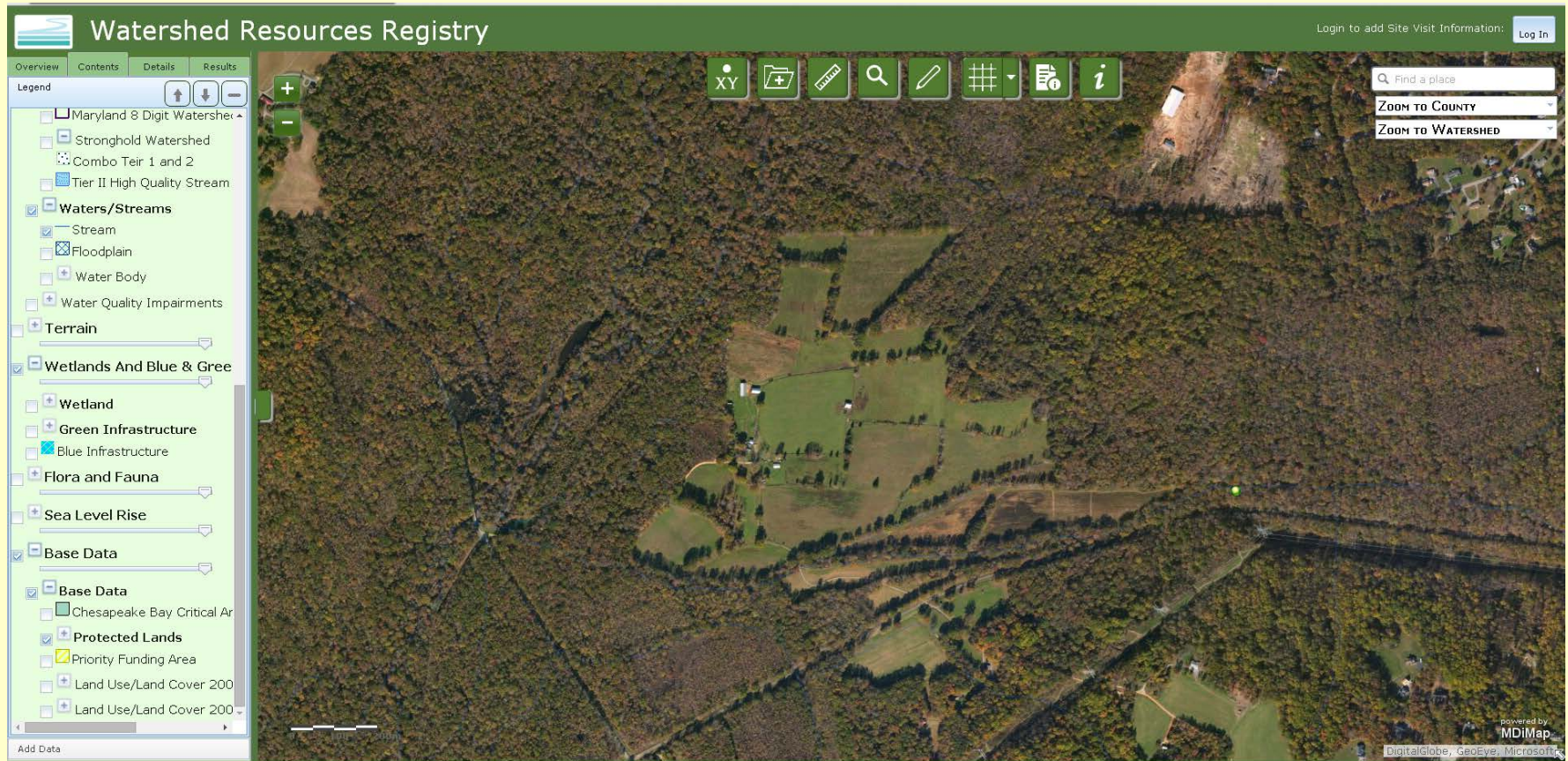
Evaluate site . . .





Evaluate site . . .

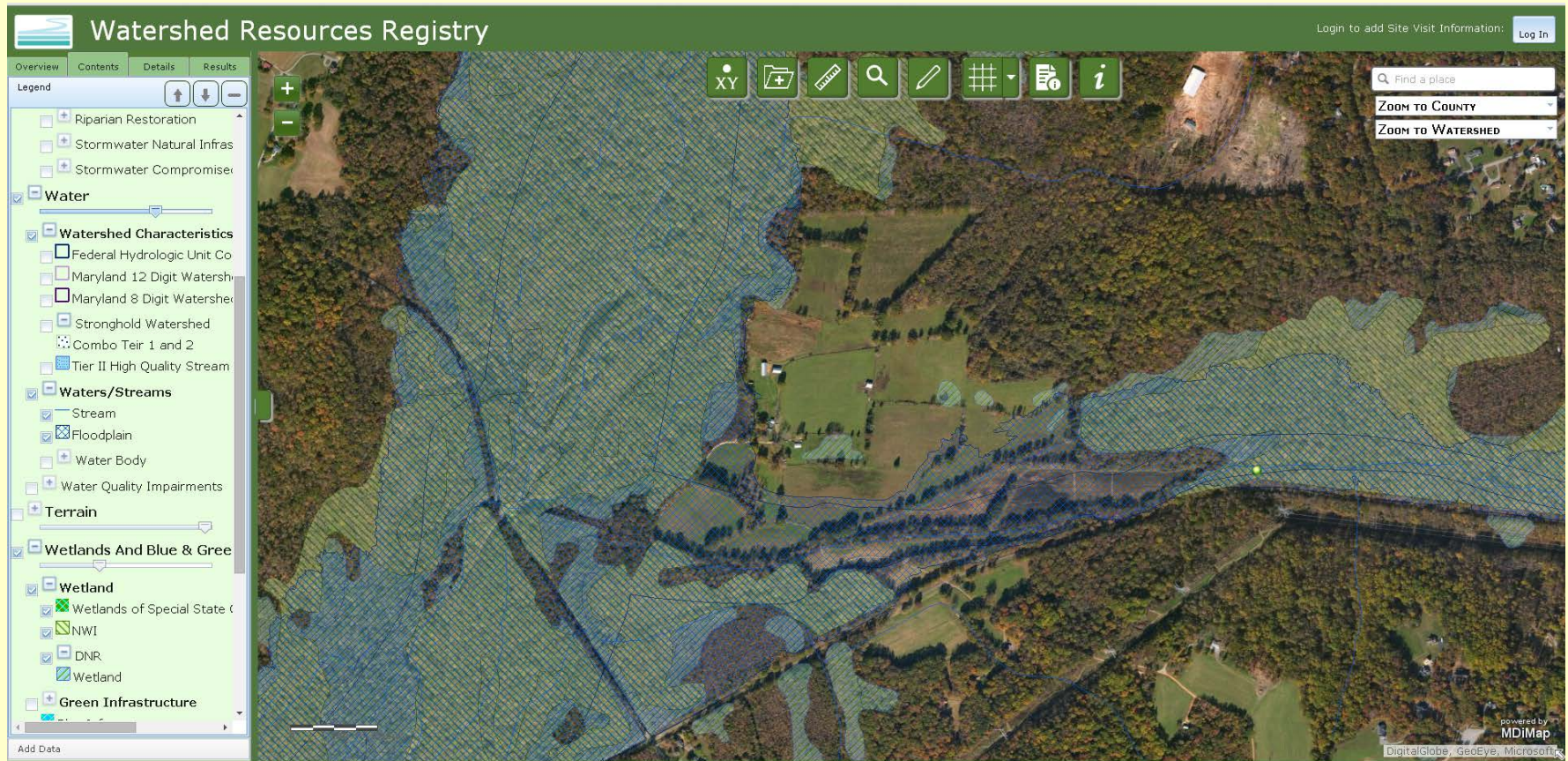
Look at imagery



The screenshot displays the Watershed Resources Registry web application. The interface includes a header with the AASHTO Innovation Initiative logo and the title "WATERSHED RESOURCES REGISTRY". Below the header, there are tabs for "Overview", "Contents", "Details", and "Results". A "Legend" panel on the left lists various data layers, including "Maryland 8 Digit Watersher", "Stronghold Watershed", "Combo Teir 1 and 2", "Tier II High Quality Stream", "Waters/Streams", "Stream", "Floodplain", "Water Body", "Water Quality Impairments", "Terrain", "Wetlands And Blue & Gree", "Wetland", "Green Infrastructure", "Blue Infrastructure", "Flora and Fauna", "Sea Level Rise", "Base Data", "Base Data", "Chesapeake Bay Critical Ar", "Protected Lands", "Priority Funding Area", "Land Use/Land Cover 200", and "Land Use/Land Cover 200". The main map area shows a satellite image of a watershed with a green dot indicating a specific location. A toolbar at the top right of the map includes icons for "XY", "Add", "Measure", "Search", "Edit", "Grid", "Layers", and "Info". A search bar on the right side of the map allows users to "Find a place" and includes buttons for "ZOOM TO COUNTY" and "ZOOM TO WATERSHED". The bottom right corner of the map area includes a scale bar and a note "powered by MDIMap" and "DigitalGlobe, GeoEye, Microsoft".

Evaluate site . . .

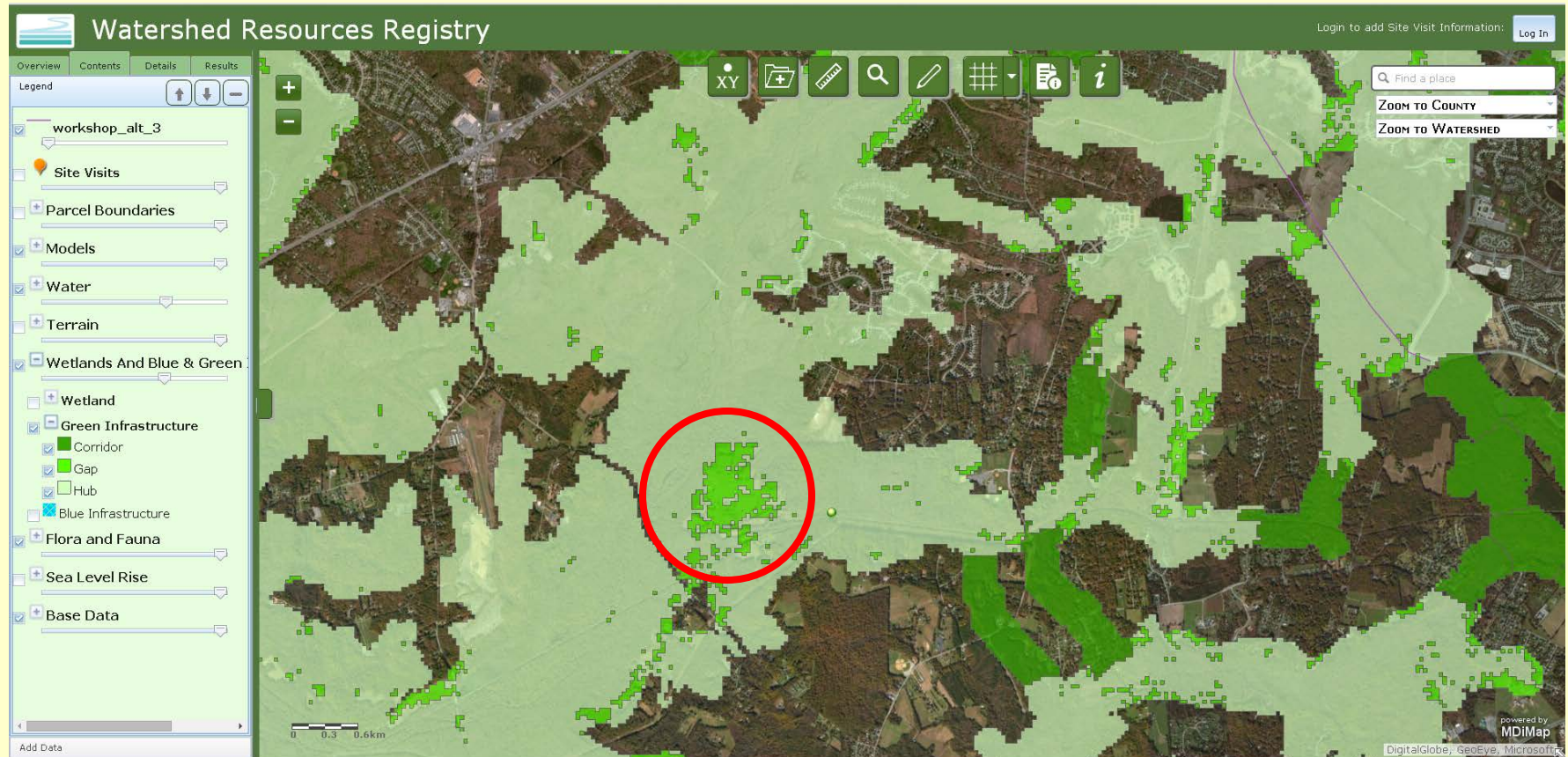
Existing resources



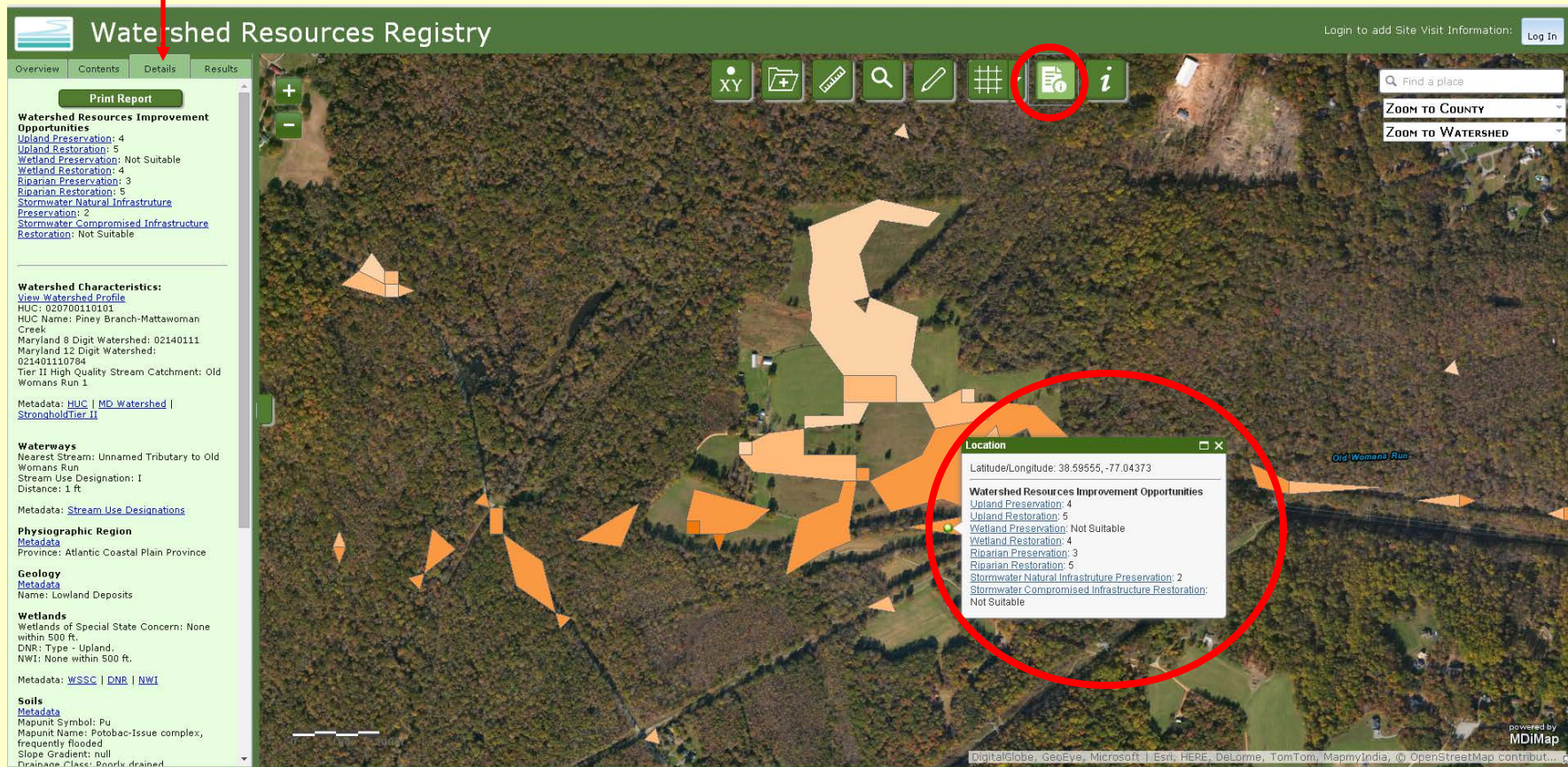


Evaluate site . . .

Is the mitigation site connected to the landscape?



Evaluate site . . . Using Location Details



Watershed Resources Registry

Overview Contents **Details** Results

[Print Report](#)

Watershed Resources Improvement Opportunities
 Upland Preservation: 4
 Upland Restoration: 5
 Wetland Preservation: Not Suitable
 Wetland Restoration: 4
 Riparian Preservation: 3
 Riparian Restoration: 5
 Stormwater Natural Infrastructure Preservation: 2
 Stormwater Compromised Infrastructure Restoration: Not Suitable

Watershed Characteristics:
[View Watershed Profile](#)
 HUC: 020700110101
 HUC Name: Piney Branch-Mattawoman Creek
 Maryland 8 Digit Watershed: 02140111
 Maryland 12 Digit Watershed: 021401110784
 Tier II High Quality Stream Catchment: Old Womans Run 1
 Metadata: [HUC](#) | [MD Watershed](#) | [StrongholdTier II](#)

Waterways
 Nearest Stream: Unnamed Tributary to Old Womans Run
 Stream Use Designation: I
 Distance: 1 ft.
 Metadata: [Stream Use Designations](#)

Physiographic Region
 Metadata
 Province: Atlantic Coastal Plain Province

Geology
 Metadata
 Name: Lowland Deposits

Wetlands
 Wetlands of Special State Concern: None within 500 ft.
 DNR: Type - Upland.
 NWI: None within 500 ft.
 Metadata: [WSSC](#) | [DNR](#) | [NWI](#)


Soils
 Metadata
 Mapunit Symbol: Pu
 Mapunit Name: Potobac-Issue complex,
 frequently flooded
 Slope Gradient: null
 Drainage Class: Poorly drained

Location
 Latitude/Longitude: 38.59555, -77.04373
Watershed Resources Improvement Opportunities
 Upland Preservation: 4
 Upland Restoration: 5
 Wetland Preservation: Not Suitable
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powered by
MDIMap



Evaluate site . . . Property owner information



DEPARTMENT OF
ASSESSMENTS & TAXATION

SOCIAL MEDIA DIRECTORY

HOME ABOUT SDAT BUSINESSES REAL PROPERTY TAX & ASSESSMENTS FORMS & APPLICATIONS SDAT/STATS SERVICES

Real Property Data Search (w2) [Guide to searching the database](#)

Search Result for CHARLES COUNTY

[View Map](#)

[View GroundRent Redemption](#)

[View GroundRent Registration](#)

Account Identifier: District - 06 Account Number - 037232

Owner Information

Owner Name:

Use: AGRICULTURAL

Principal Residence: YES

Mailing Address:

Deed Reference: /01984/ 00209

Location & Structure Information

Premises Address:

Legal Description: 220.075 ACRES
N/E S1 RT 227

Map:	Grid:	Parcel:	Sub District:	Subdivision:	Section:	Block:	Lot:	Assessment Year:	Plat No:
0013	0019	0146		0000				2014	Plat Ref:

Special Tax Areas:

Town: NONE

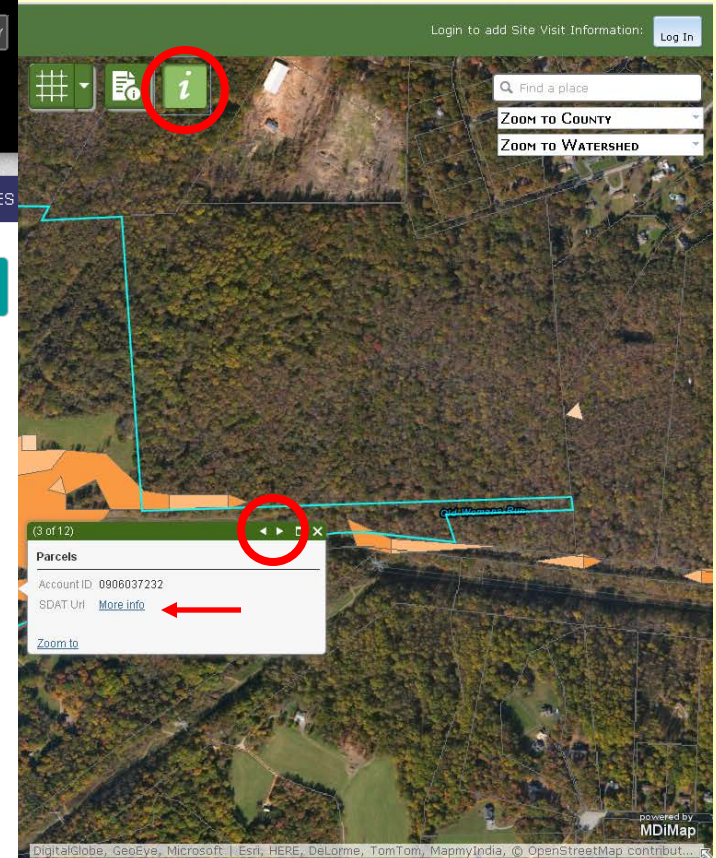
Ad Valorem:

Tax Class:

Primary Structure Built	Above Grade Enclosed Area	Finished Basement Area	Property Land Area	County Use
1905	5,138 SF		225.1550 AC	

Stories	Basement	Type	Exterior	Full/Half Bath	Garage	Last Major Renovation
2 1/2	NO	STANDARD UNIT	FRAME	1 full/ 1 half		

Value Information



Evaluate site . . .

Site Visit Information

Site Visit Information

First Name: Kelly
Date of Site Visit: 3/20/2010
Entity:
Project Name:
Email: kelly.neff@maryland.gov
Site Description:

Last Name: Neff
Approximate Size of Site:
Organization: MDE
Phone: 410-537-4018

Consent to having contact information being made public? ☒

Looking for the following opportunities:

<input type="checkbox"/> Upland Preservation	<input type="checkbox"/> Upland Restoration
<input type="checkbox"/> Wetland Preservation	<input checked="" type="checkbox"/> Wetland Restoration
<input type="checkbox"/> Riparian Preservation	<input type="checkbox"/> Riparian Restoration
<input type="checkbox"/> Stormwater Natural Infrastructure Preservation	<input type="checkbox"/> Stormwater Compromised Infrastructure Restoration

Landscape Characteristics

Land Use:

<input type="checkbox"/> Commercial	<input type="checkbox"/> Low Density Residential
<input type="checkbox"/> Medium Density Residential	<input type="checkbox"/> High Density Residential
<input type="checkbox"/> Industrial	<input checked="" type="checkbox"/> Agricultural
<input type="checkbox"/> Open Space	

Land Type:

<input type="checkbox"/> Forested	<input type="checkbox"/> Wetland
<input type="checkbox"/> Aquatic	<input type="checkbox"/> Grassland
<input type="checkbox"/> Marsh	<input type="checkbox"/> Barren/Open
<input type="checkbox"/> Urban	<input type="checkbox"/> Rural
<input checked="" type="checkbox"/> Agricultural	<input type="checkbox"/> Other

Natural Land Features:

<input type="checkbox"/> Riverine Waters	<input type="checkbox"/> Tidal Waters
<input type="checkbox"/> Pond	<input type="checkbox"/> Lake
<input type="checkbox"/> Mountain	<input type="checkbox"/> Beach
<input checked="" type="checkbox"/> Floodplain	<input checked="" type="checkbox"/> Ditch
<input type="checkbox"/> N/A	<input type="checkbox"/> Other

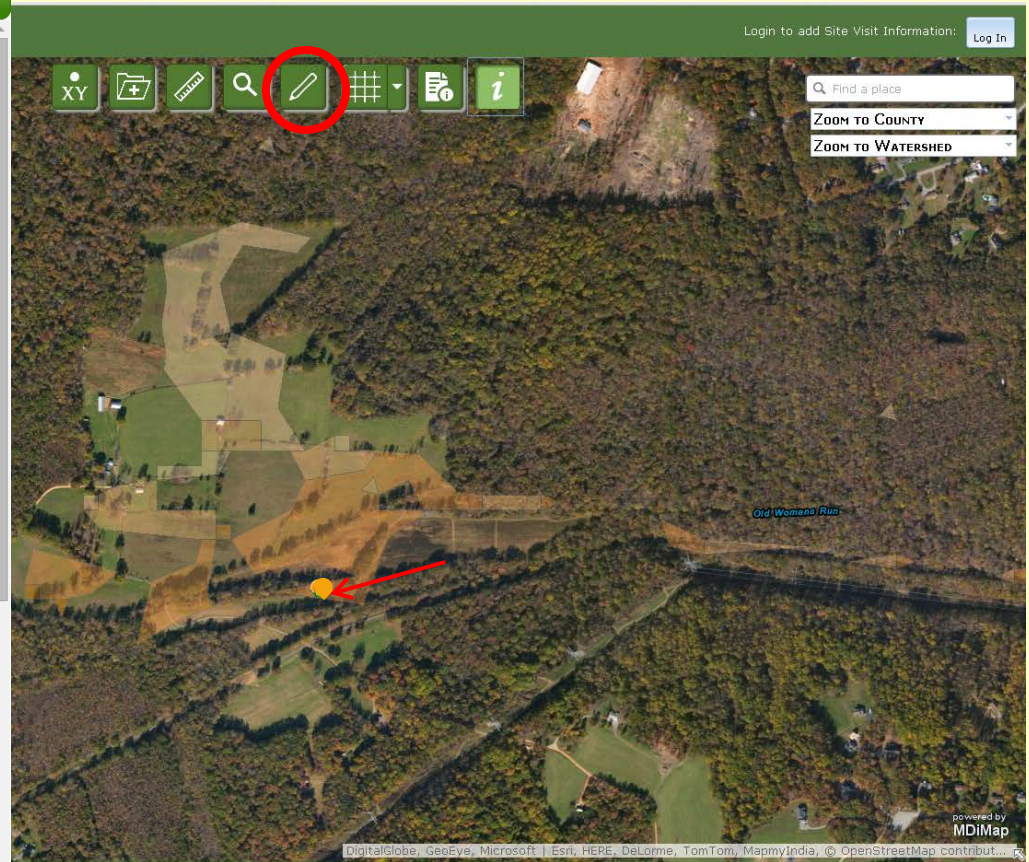
Visible Stormwater Infrastructure:

<input type="checkbox"/> Inlet	<input type="checkbox"/> Outfall
<input type="checkbox"/> Stormwater Manhole	<input type="checkbox"/> Culvert
<input type="checkbox"/> Drainage Pond	<input type="checkbox"/> Natural Stream Channel
<input type="checkbox"/> Concrete Stream Channel	<input type="checkbox"/> Riser
<input type="checkbox"/> Rip Rap Channel	<input type="checkbox"/> Check Dam
<input type="checkbox"/> Monitoring Well	<input type="checkbox"/> Underground Storm Pipe

Invasive Species:
null

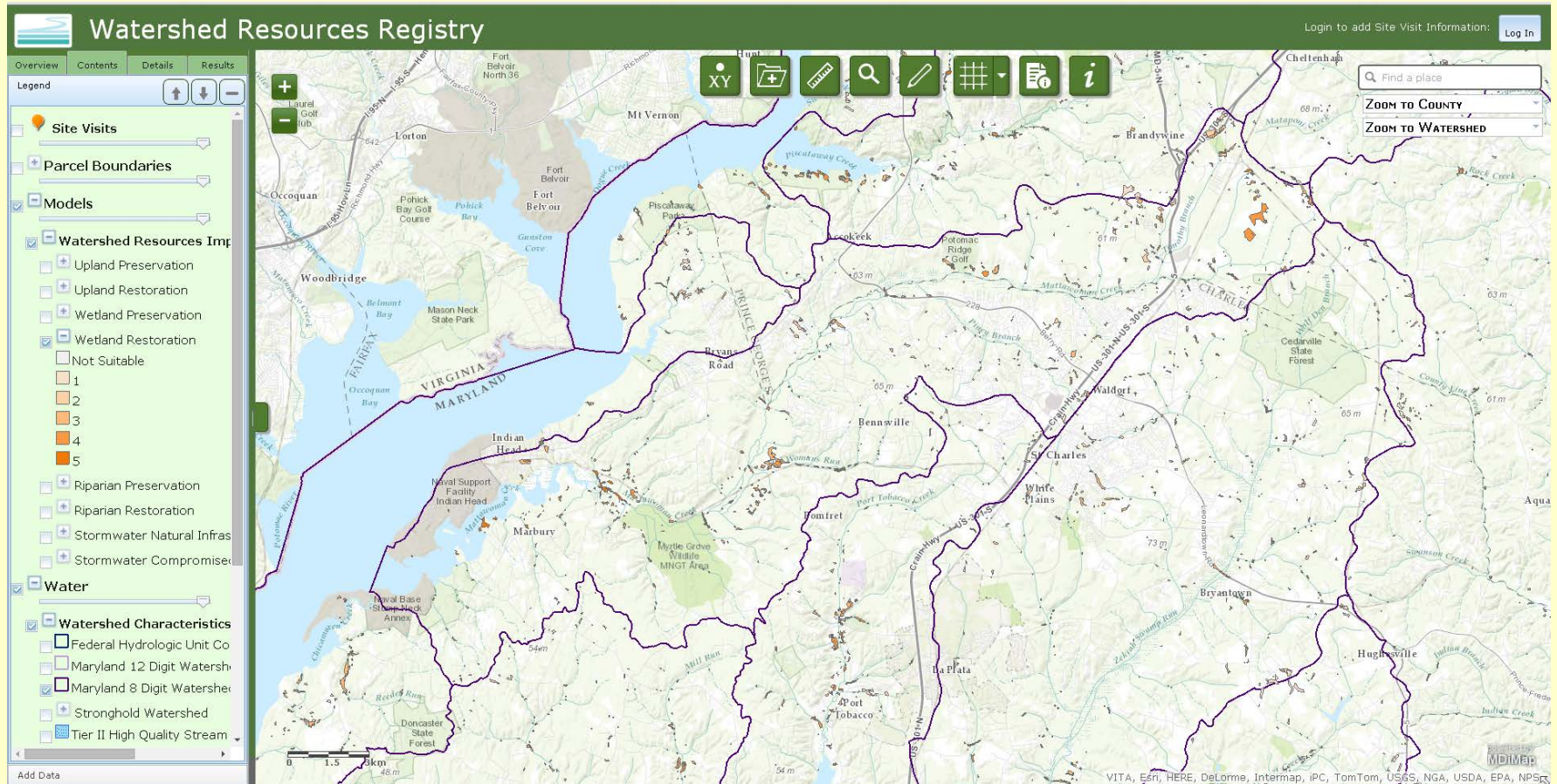
Common Identifiable Species:

Print Close

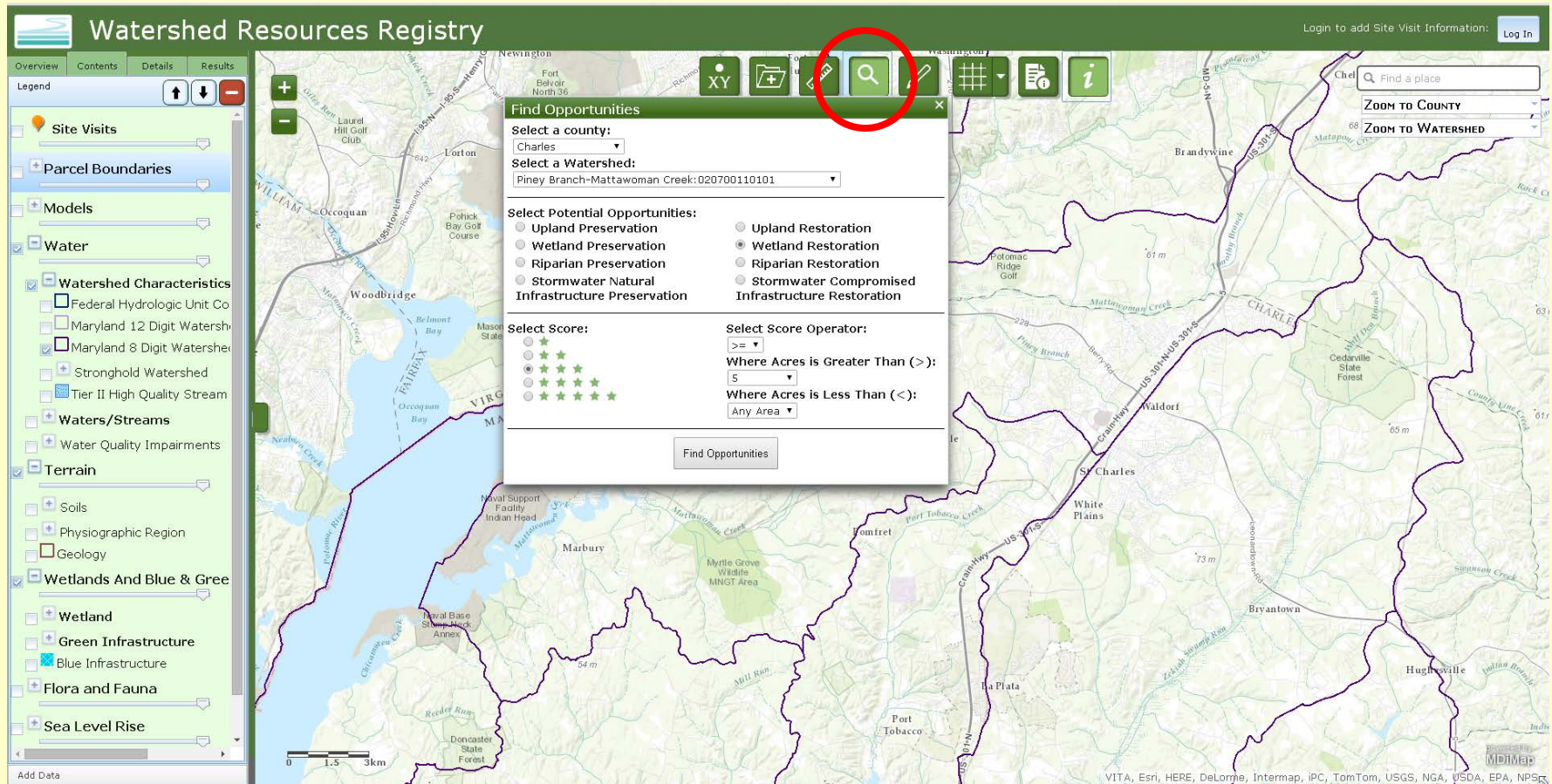




**Look for additional wetland restoration within the watershed . . .
using “Contents”**



Look for additional wetland restoration within the watershed . . .
using “Find opportunities”



The screenshot displays the Watershed Resources Registry web application. The interface includes a top navigation bar with 'Overview', 'Contents', 'Details', and 'Results' tabs. A left sidebar contains a 'Legend' section with various categories: Site Visits, Parcel Boundaries, Models, Water, Waters/Streams, Terrain, Wetlands And Blue & Green, and Sea Level Rise. The main map area shows a watershed in Charles County, Maryland, with various geographical features and labels. A 'Find Opportunities' dialog box is open in the center, allowing users to search for restoration opportunities based on county, watershed, and specific criteria.

Find Opportunities

Select a county:
Charles

Select a Watershed:
Piney Branch-Mattawoman Creek: 020700110101

Select Potential Opportunities:

- ☐ Upland Preservation
- ☐ Wetland Preservation
- ☐ Riparian Preservation
- ☐ Stormwater Natural Infrastructure Preservation
- ☐ Upland Restoration
- ☒ Wetland Restoration
- ☐ Riparian Restoration
- ☐ Stormwater Compromised Infrastructure Restoration

Select Score:
☐ 1 star
☐ 2 stars
☐ 3 stars
☐ 4 stars
☐ 5 stars

Select Score Operator:
 >=
 Where Acres is Greater Than (>):
 5
 Where Acres is Less Than (<):
 Any Area

Find Opportunities

Look for additional wetland restoration within the watershed . . .
using “Find opportunities”

Watershed Resources Registry


Overview Contents Details Results

Found Opportunities
Using the following criteria
Model: Wetland Restoration
County: Charles
Watershed: 020700110101
Acrage > 1

Zoom	Remove	Code	Acres
		3	22.23
		4	11.29
		3	11.27
		3	8.33
		1	6.82
		2	5.78
		3	5.39
		4	3.53
		2	3.42
		4	2.94
		3	2.66
		4	2.48
		4	2.45
		3	2.32
		3	2.30
		3	2.24
		3	2.18
		3	2.15
		4	1.99
		1	1.90
		2	1.87
		3	1.81
		3	1.47
		2	1.37
		4	1.34
		3	1.33

Map interface showing a satellite view of a watershed area with various land parcels highlighted in orange and yellow. The map includes a toolbar with icons for XY, Add, Measure, Search, Edit, Grid, and Information. A search bar on the right allows users to find a place, with options to zoom to the county or watershed. The map is powered by MDIMap, DigitalGlobe, GeoEye, and Microsoft.

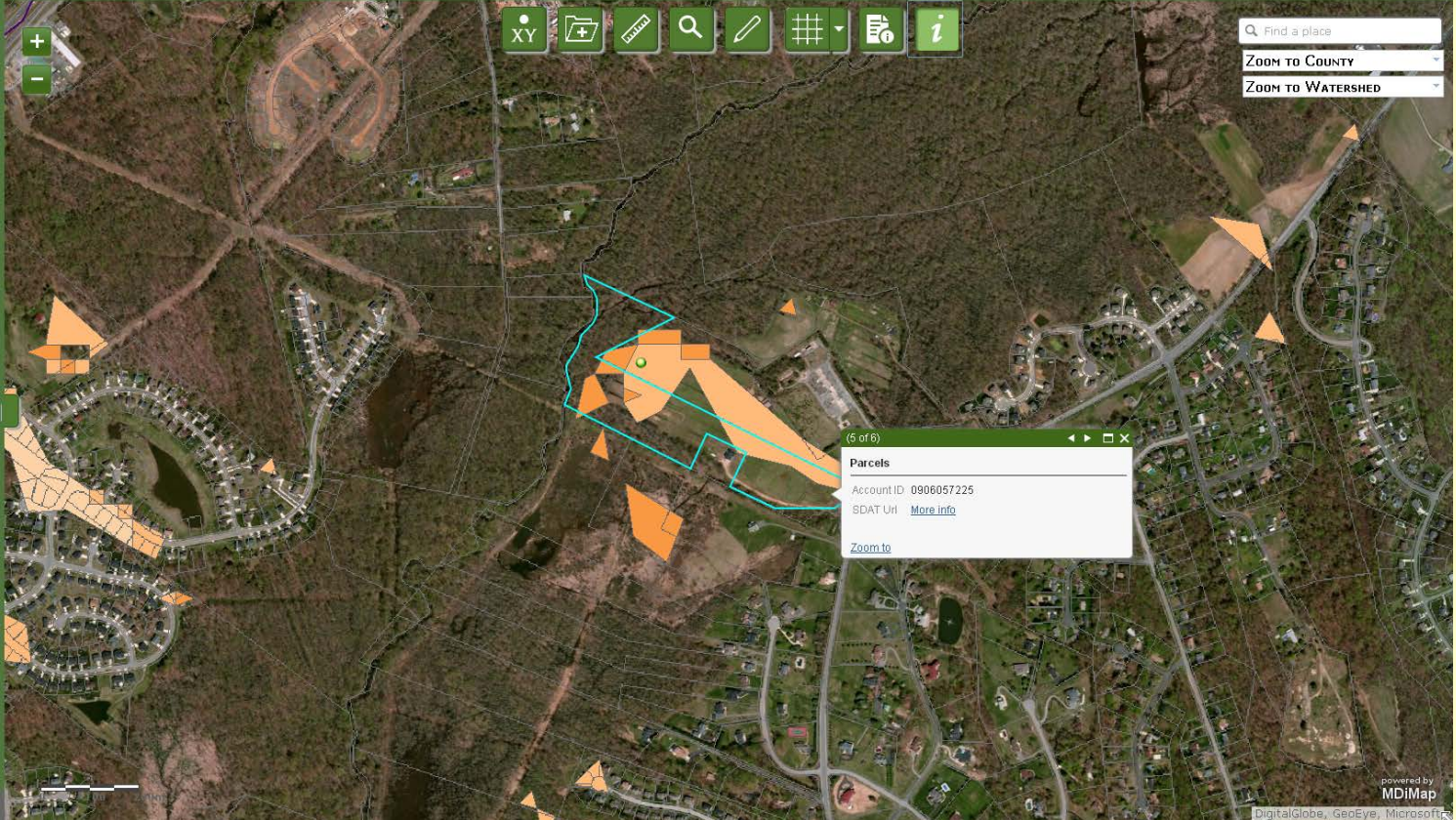
Compare potential mitigation sites


Watershed Resources Registry
Log in to add Site Visit Information: [Log In](#)

[Overview](#)
[Contents](#)
[Details](#)
[Results](#)

Found Opportunities
 Using the following criteria
 Model: Wetland Restoration
 County: Charles
 Watershed: 020700110101
 Acreage > 1

Zoom	Remove	Code	Acres
		3	22.23
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		2	3.42
		4	2.94
		3	2.66
		4	2.48
		4	2.45
		3	2.32
		3	2.30
		3	2.24
		3	2.18
		3	2.15
		4	1.99
		1	1.90
		2	1.87
		3	1.81
		3	1.47
		2	1.37
		4	1.34
		3	1.33
		2	1.26



[ZOOM TO COUNTY](#)
[ZOOM TO WATERSHED](#)

(5 of 6)

Parcels

Account ID: 0906057225

SDAT Url: [More info](#)

[Zoom to](#)

powered by
MDIMap

DigitalGlobe, GeoEye, Microsoft



Potential Mitigation Savings – Estimated by MD State Highway Administration

	Cost without WRR	Cost with WRR	Cost Savings with WRR	Time without WRR	Time with WRR	Time Savings with WRR
Site Search	\$50,000	\$15,000	\$35,000	6 months	2 months	4 months
Design	\$400,000	\$355,000	\$45,000	18 months	15 months	1 to 3 Months
Agency Coordination/ Regulatory Review	\$8,000	\$5,500	\$2,500	6 months	4 months	2 months
Total	\$458,000	\$375,500	\$82,500	30 months	21 months	7 to 9 Months

*Cost/time savings includes only mitigation site approval tasks and does not include construction phase. Agency savings as shown includes their role in Site Search and Design approvals.



Additional Benefits

- Help meet Federal Mitigation Rule requirements
 - Site selection based on watershed approach
 - “12 Elements” requirements
 - In-lieu Fee Programs - Compensation Planning Framework
- Allows multiple users to enter site data – registry
- Improves likelihood of agency concurrence on proposed projects



Summary

- WRR is a good screening tool to locate and evaluate proposed impacts and mitigation
- Site assessments are still required = sites are not pre-approved
- While it shows technical feasibility of projects, the main goal of the WRR is to show the landscape value



WATERSHED RESOURCES REGISTRY



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Mitigation and Technical Assistance Section, Chief
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