

Critical Issues Analysis: Baltimore County Batavia Park 2.6 MW DC Solar System, Rosedale, MD

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 DATE: March 4, 2016

1.1 Introduction

The following memorandum includes the results of the Critical Issues Analysis prepared by SolarCity's Environmental Permitting and Civil Engineering (EPCE) team. The information contained in this memorandum provides background and guidance on siting and permitting the proposed 11.6 MW DC ground mount solar system, located in Rosedale, MD.

A desktop environmental resource and permitting analysis was completed for the proposed project. The following online resources were queried for potential siting and permitting hurdles:

- Federal Emergency Management Agency (FEMA) floodplain maps
- US Geological Survey (USGS) topographical maps
- US Fish and Wildlife Service (USFWS) lists of rare, threatened, and endangered (RTE) species
- USFWS National Wetland Inventory maps
- Maryland's Environmental Resources and Land Information Network (MERLIN)
- Baltimore County zoning maps and zoning code
- Environmental Protection Agency (EPA) program maps
- Aerial imagery from Google Earth
- Federal Aviation Administration (FAA) obstruction evaluation and airport/airspace analysis tool

1.2 Project Details

Customer	Baltimore County
System	2.6 MW Ground Mount
Address	Batavia Farm Road
Town/City, County, State	Rosedale, MD 21237
Parcel Number(s)	0089-0024-0029
Coordinates	39°18'57.23"N, 76°29'59.87"W

1.3 Summary

1. There are wetlands located within the site boundary. A wetland delineation survey must be conducted to map out the boundaries of these features. To the greatest extent possible, these wetlands should be avoided through design. If wetlands will be impacted through development of this project, a joint wetland permit from the United States Army Corps of Engineers and Maryland Department of Environment (MDE) will be required.
2. A topographic and boundary survey will be required to confirm the property boundary and slope of the site.
3. As the site is an inactive and closed landfill both a Landfill Disruption Approval and a Post-Closure Use Permit will be required. Each of these is administered by the MDE.
4. For the projects to be eligible for remote net metering, no more than 2MW AC can be sited on each parcel of land. Subdivision may be required to given the large project capacity.
5. If any project exceeds 2MW at the point of interconnection, than a Certificate of Public Convenience and Necessity (CPCN) will be required from the Maryland Public Utilities Commission (PUC).
6. The project may require compliance under the Maryland Forest Conservation Act and reforestation mitigation requirements may be necessary. It is possible that these requirements are waived if the project must obtain a CPCN.

1.4 Recommendations

1. **PDM:** Based on local utility regulation, as well project capacity; determine if subdivision of the parcel is required.
2. **SE:** Ensure that project budget is sufficient for environmental permitting work required for this project.
3. **EPCE/COM:** Pre-application meetings to be held with Maryland PUC, MDE, and Baltimore County.
4. **EPCE:** Retain a consultant to complete work related to RTE species, CPCN and MDE Landfill permits and approvals.
5. **COM/EPCE:** COM coordinates boundary and topography surveys to take place on site. EPCE to use boundary and topography data to create civil plans and Stormwater Pollution Prevention Plan.

1.5 Estimated EPCE Survey and Permit Cost/Timeline

Item	Estimated Cost	Estimated Timeline
Certificate of Public Convenience and Necessity (required for each 2MW AC project, measured at point of interconnection)	\$20,000 for each certificate required	12 months
Wetland Delineation and Permitting	\$10,000	1 month
Wetland Permit	\$7,500	6 months
Landfill Disruption Approval and a Post-Closure Use Permit	\$20,000	5 months
Local Approvals	\$7,500	6 months
Civil Designs and Stormwater Pollution Prevention Plan	\$17,000	2 months
Boundary and Topographic Survey	\$9,000	1 month
Total	\$91,000 + 20,000 for each additional CPCN required	12 months

1.6 Resource Matrix

Resource Areas	Present	Absent	
Floodplains		X	No floodplains identified on site.
Wetlands	X		Wetlands were identified within the site boundary.
Waters of the U.S.		X	No waterbodies identified within the site boundary.
Wildlife / Critical Habitat		X	No RTE issues identified on site.
Protected Lands	X	X	The site is listed as a protected land as it is a park. The county should be consulted to determine if solar development is an allowed use within this park.
Cultural Sites		X	Nearest site on the National Register of Historic Places identified is located over a mile away.
Land Use Restrictions	X		Land may need to be subdivided if project exceeds 2MW AC capacity on any individual parcel. Rosedale, MD is also considered an unincorporated community, which means it has no local zoning. It must be determined if zoning requirements then fall under the jurisdiction of the county.
Tree Removal	X		Site is partially forested so a forest stand delineation and forest conservation plan will be required. Reforestation mitigation may be required if not waived under CPCN.
Contamination	X		Site has a history as a landfill, though it is not mentioned on the MDE's list of inactive and closed landfills.

1.7 Permit Matrix

Permits	Required	Not Required	
FAA 7460-1		X	FAA notice not required – project does not exceed notice criteria.
NEPA		X	Not required.
Water permits	X		Wetland permits may be required if impact to onsite water features cannot be avoided.
Local Land Use	X		As Rosedale, MD is an unincorporated community, zoning requirements are administered by Baltimore County. Forest Conservation regulation may be a compliance requirement if not waived under CPCN.
State Siting Process	X		CPCN is required from Maryland PUC if the project is larger than 2 MW AC.
Stormwater / Sediment / Erosion Control	X		NPDES permits must be obtained before any earth is disturbed at the site.
Contamination	X		Site is a landfill so Landfill Disruption Approval and a Post-Closure Use Permit will likely be required, as determined by MDE.

1.8 Surveys

Surveys	Required	Not Required	
Wetland Delineation	X		Wetlands have been identified within the site boundary. A wetland delineation survey will be required.
Professional Land Survey	X		Required for all ground mounted projects, per SCTY internal guidance.
Biological Reconnaissance		X	No RTE issues identified on site.
Cultural Resource Survey		X	No cultural resources issues identified on site.

Aerial Image



Todds Ln

Batavia Farm Rd

Lacotta Ln

Sumter Ave

Windlass Fwy



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Google earth

Array Layout

BALTIMORE COUNTY BATAVIA PARK

SYSTEM SIZE: 2,557.17 KW DC
SITE ADDRESS: BATAVIA FARM RD, ROSEDALE, MD 21237

DATE: 2/18/16

MODULE: POLY 315W

INVERTER: SOLECTRIA

DRAWN BY: D. SMITH

DESCRIPTION:

PV ARRAY

PILE DRIVEN FIXED TILT RACKING SYSTEM

STRINGS OF 18 MODULES

PRELIMINARY DRAWING – NOT FOR CONSTRUCTION

ARRAY INFORMATION

MOUNTING METHOD	MODULE COUNT	TILT	AZIMUTH	KW DC
GROUND MOUNT	8118	15°	180°	2,557.17

GENERAL NOTES

- THIS SYSTEM IS GRID-INTERIED VIA A UL-LISTED POWER-CONDITIONING INVERTER.
- THIS SYSTEM HAS NO BATTERIES, NO UPS.
- ALL INVERTERS AND ARRAYS ARE NEGATIVELY GROUND.
- SOLAR MOUNTING FRAMES ARE TO BE GROUND.
- ALL WORK TO BE DONE TO 2010 UBC
- ALL ELECTRICAL WORK SHALL COMPLY WITH THE NATIONAL ELECTRIC CODE.

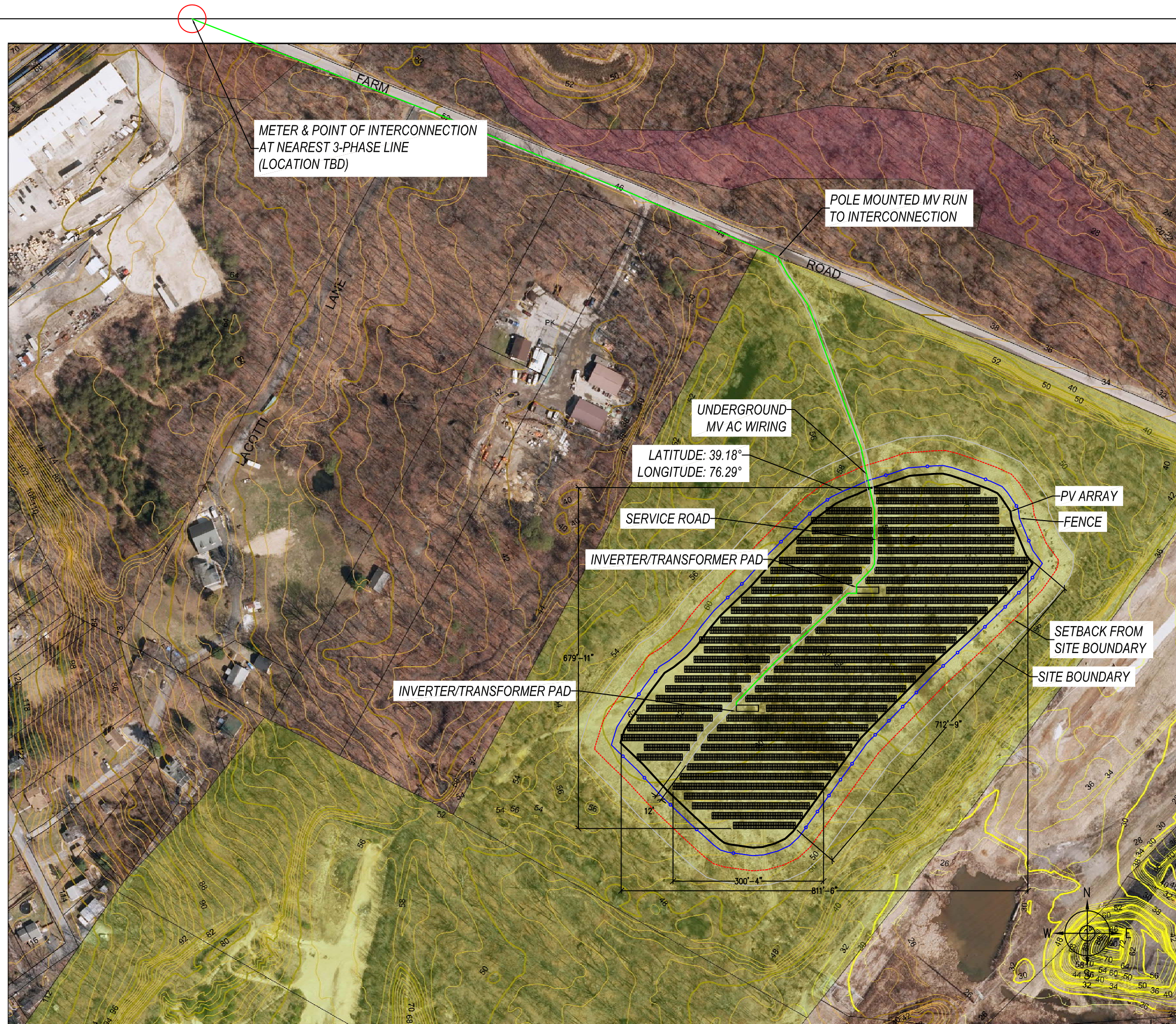
LEGEND

- (E) UTILITY METER
- INVERTER W/ INTEGRATED DC DISCO & WARNING LABELS.
- DC DISCONNECT
- AC DISCONNECT
- JUNCTION BOX
- DC COMBINER BOX
- DISTRIBUTION PANEL
- LOAD CENTER
- DEDICATED PV SYSTEM METER
- CONDUIT RUN ON EXTERIOR
- CONDUIT RUN ON INTERIOR
- GATE
- INTERIOR EQUIPMENT

SHEET NOTES

- INVERTER.
- DEDICATED PV SYSTEM METER.
- AC DISCONNECT.
- UTILITY METER.
- DC DISCONNECT.

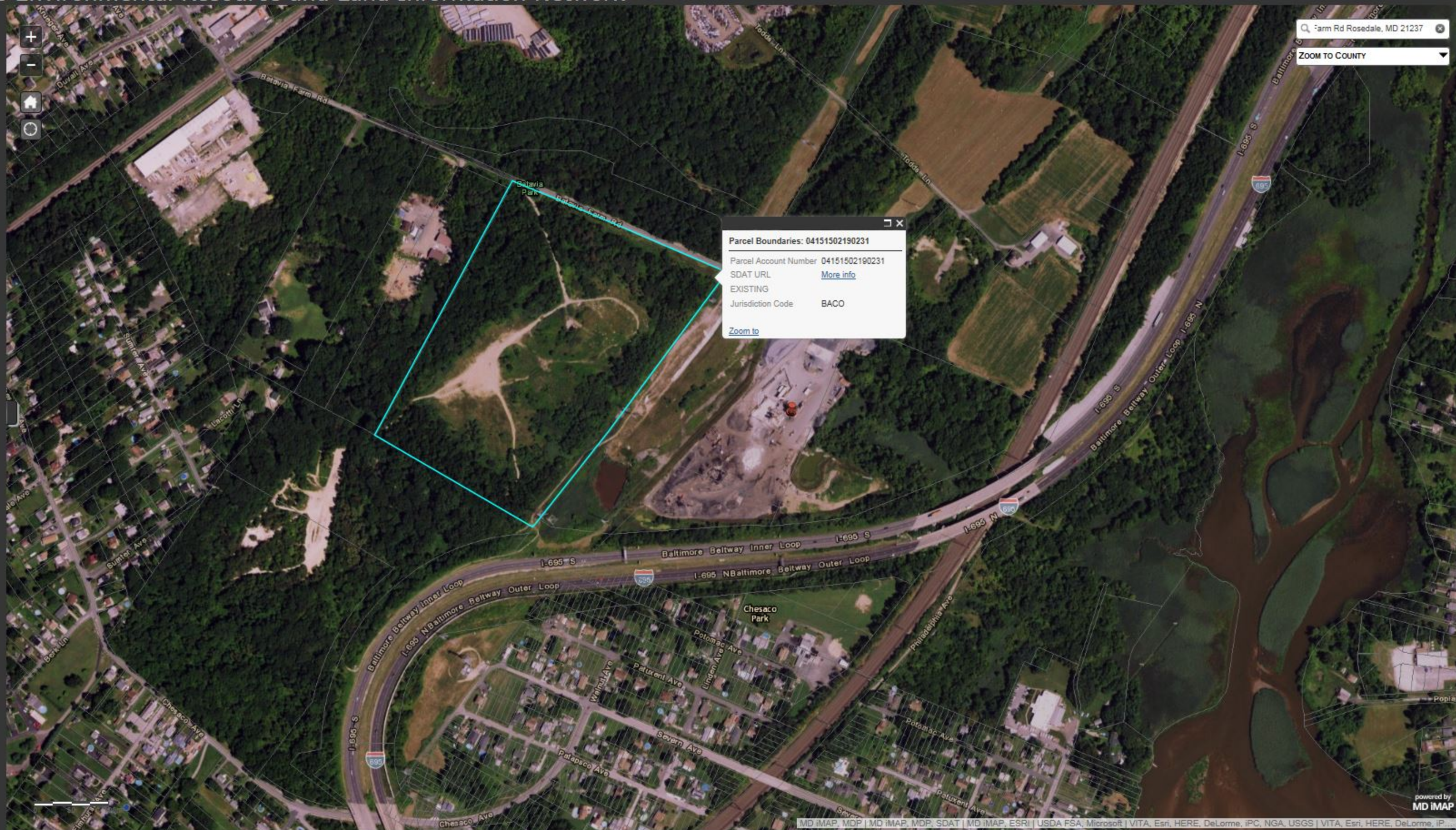
3055 Clearview Way
San Mateo, CA 94402
(888)-SOL-CITY (765-2489)
www.solarcity.com



Parcel

Details Contents Query Add Data

- Legend
- Historical Shorelines
 - Road Names
 - State Boundary Mask
 - State Boundary Mask
 - Physical Boundaries
 - Parcel Boundaries/SDAT Data
 - Parcel Boundaries
 - Election Boundaries
 - Political Boundaries
 - National Estuarine Research Reserves
 - Watersheds
 - Shellfish
 - Living Resources
 - Trail Data
 - Floodplain
 - Sea Level Rise Vulnerability
 - Waterbodies
 - Submerged Aquatic Vegetation
 - Historical Submerged Aquatic Vegetation
 - Wetlands
 - Critical Areas
 - Protected Lands
 - Agricultural Designations
 - SSURGO Soils
 - Green Infrastructure



Parcel Boundaries: 04151502190231

Parcel Account Number	04151502190231
SDAT URL	More info
EXISTING	
Jurisdiction Code	BACO

[Zoom to](#)

Search: Farm Rd Rosedale, MD 21237

ZOOM TO COUNTY

Topograpy



4353

Catawba Park Rd

6950

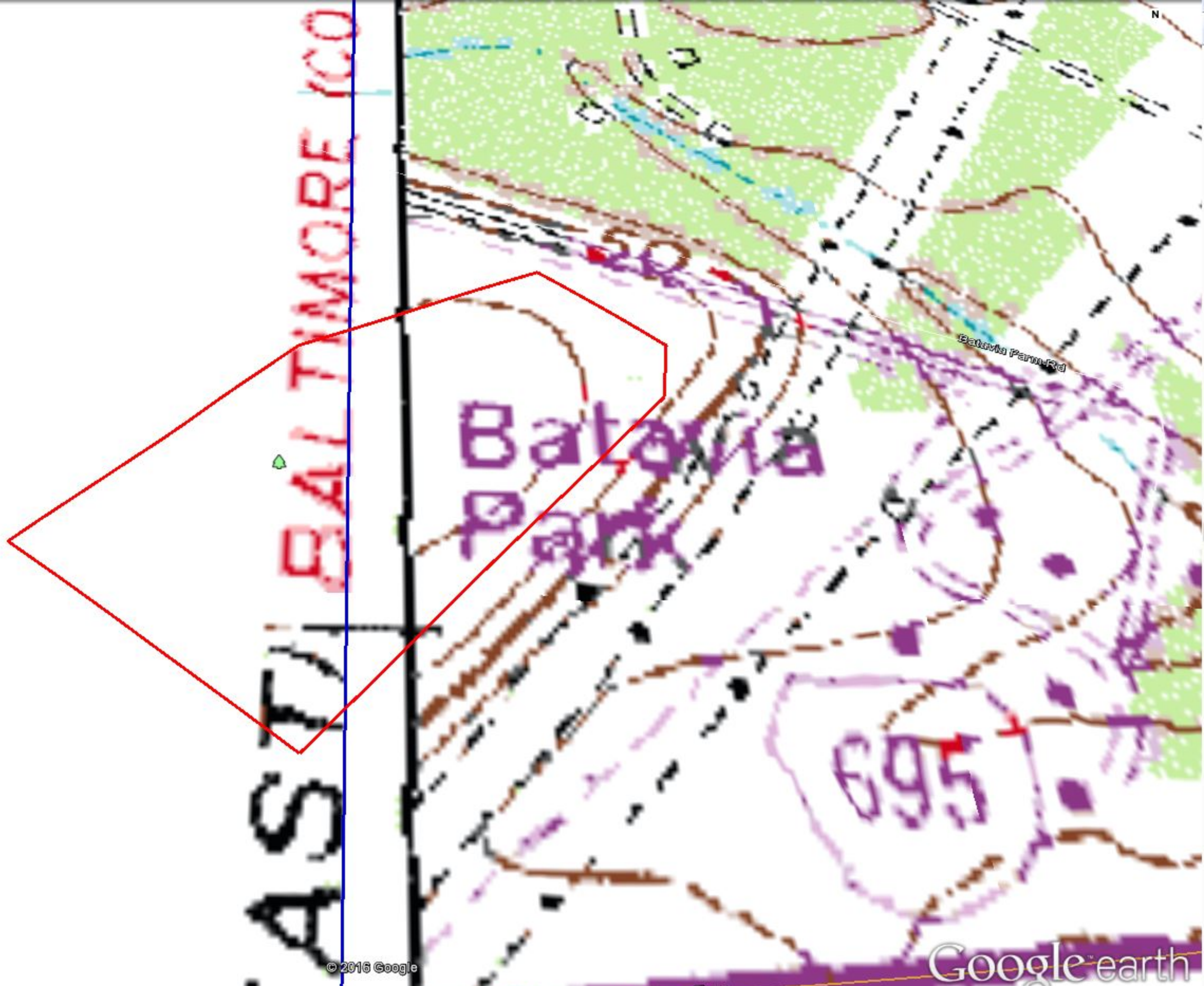
WINDASS

Windlass Fwy

© 2016 Google

Google earth





ASTORIA BALTIMORE CO

Batavia

695

Batavia Park Rd

© 2016 Google

Google earth

695

Windlass Fwy

Imagery Date: 10/23/2014 39°18'56.49" N 76°29'59.50" W elev 61 ft eye alt 1927 ft

Floodplain Mapping

Legend

NFHL (click to expand)

LOMRs

- Effective

LOMAs

-

FIRM Panels

-

Coastal Gages

-

Gages

-

Cross-Sections

-

Base Flood Elevations

-

Coastal Barrier Resources System Area

-

Levees

- Unaccredited Levee
- Accredited Levee

General Structures

- Flood Structure
- Bridge
- Dam, Weir, Jetty
- Other Structure

Flood Hazard Boundaries

- Limit Lines
- SFHA / Flood Zone Boundary
- Other Boundaries

Flood Hazard Zones

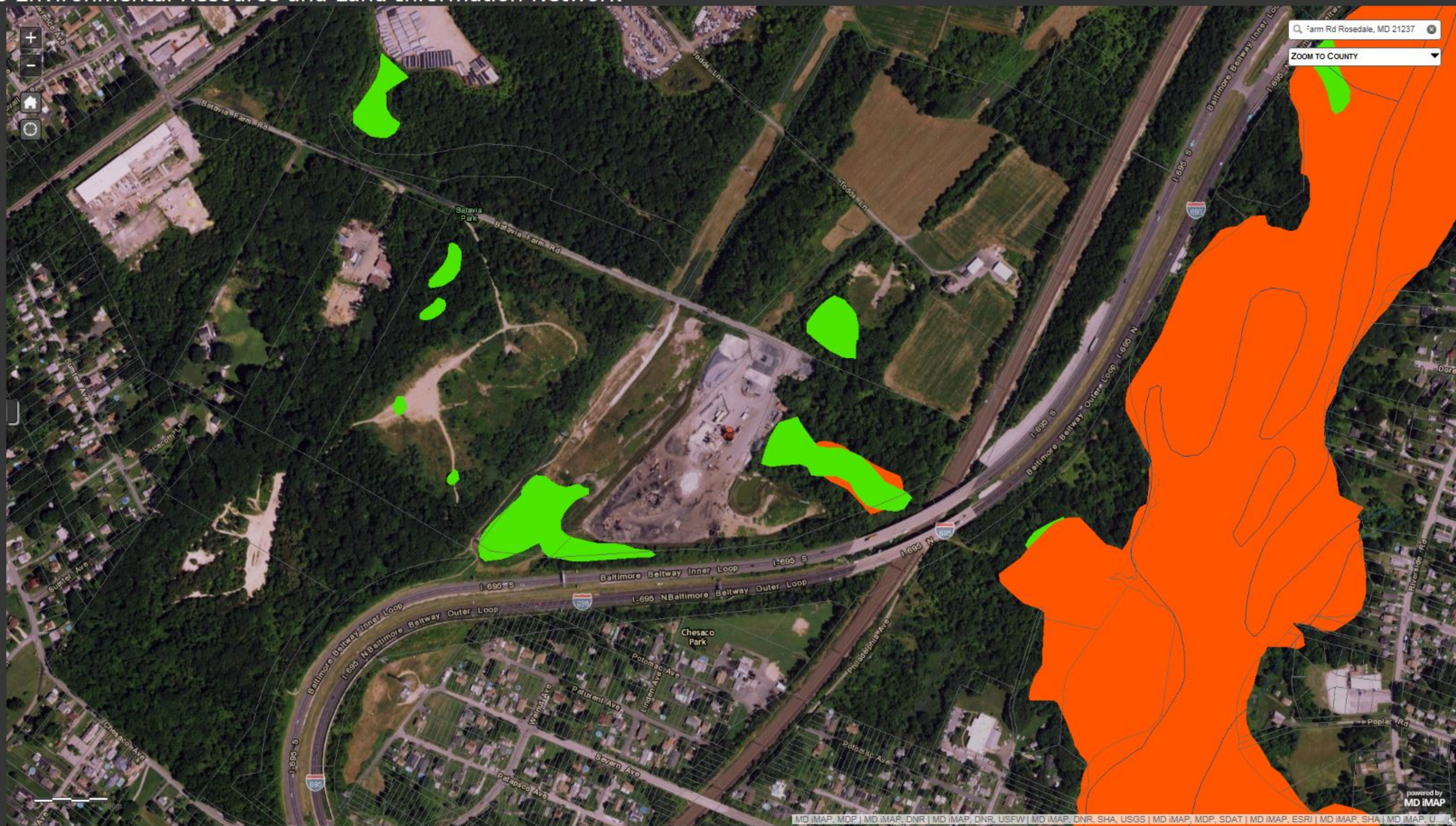
- 1% Annual Chance Flood Hazard
- Regulatory Floodway
- Special Floodway
- Area of Undetermined Flood Hazard
- 0.2% Annual Chance Flood Hazard
- Future Conditions 1% Annual Chance Flood Hazard
- Area with Reduced Risk Due to Levee



Wetlands Mapping

Details Contents Query Add Data

- Legend**
- Political Boundaries
 - National Estuarine Research Reserves
 - Watersheds
 - Shellfish
 - Living Resources
 - Trail Data
 - Floodplain
 - Sea Level Rise Vulnerability
 - Waterbodies**
 - Rivers and Streams - Generalized
 - Lakes - Generalized
 - Rivers and Streams - Detailed
 - Lakes - Detailed
 - Submerged Aquatic Vegetation
 - Historical Submerged Aquatic Vegetation
 - Wetlands**
 - Wetlands - Linear - Department of Natural Resources
 - Estuarine
 - Palustrine
 - Riverine
 - Wetlands - Polygon - Department of Natural Resources
 - Estuarine
 - Lacustrine
 - Marine
 - Palustrine
 - Riverine
 - Wetlands - National Wetlands Inventory
 - Estuarine
 - Lacustrine
 - Marine
 - Palustrine
 - Riverine
 - Wetlands - Polygon - Special State Con
 - Palustrine



Species & Habitat

Details true Query Add Data

Legend

- Chesapeake Bay Horseshoe Crab Habitat
- beach
- structure
- vegetated
- waters edge
- Coastal Bays Horseshoe Crab Habitat
- MD Amphibian and Reptile Atlas Grid
- Sensitive Species Project Review Areas
- Waterfowl Areas
- Natural Heritage Areas
- Coastal Bays Shorebirds
- Forest Interior Dwelling Species
- Floodplain
- Sea Level Rise Vulnerability
- Waterbodies
- Submerged Aquatic Vegetation
- Historical Submerged Aquatic Vegetation
- Wetlands
- Critical Areas
- Protected Lands
- Agricultural Designations
- SSURGO Soils
- Green Infrastructure
- DNR Focal Areas
- Federal Lands (Military and Non-Military)
- Land Use Land Cover
- Historical Land Use Land Cover
- MD Inventory of Historic Properties



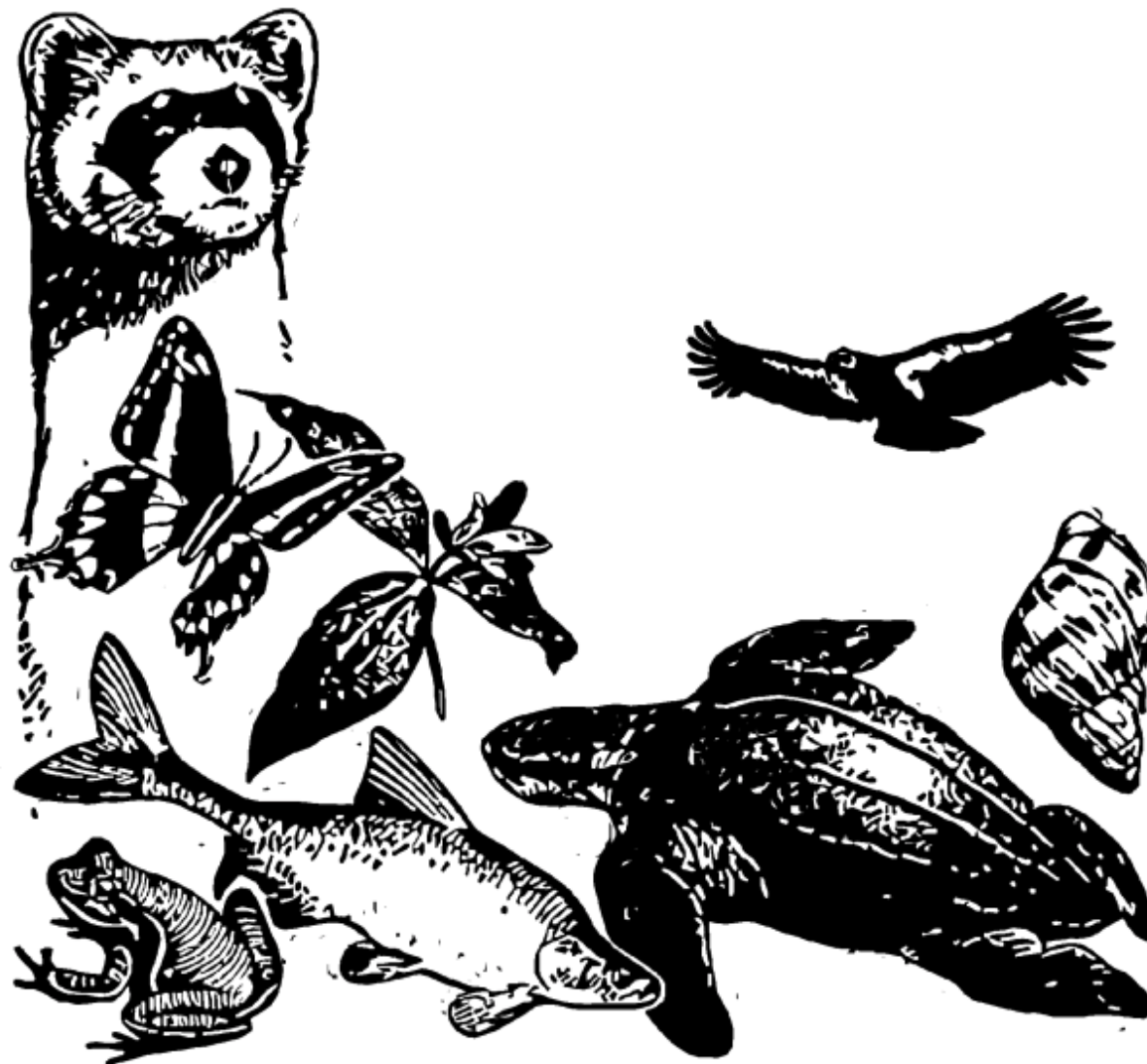
619 Batavia Farm Rd 21237
ZOOM TO COUNTY

Batavia Park

IPaC Trust Resource Report

Generated February 23, 2016 12:33 PM MST, IPaC v2.3.2

This report is for informational purposes only and should not be used for planning or analyzing project level impacts. For project reviews that require U.S. Fish & Wildlife Service review or concurrence, please return to the IPaC website and request an official species list from the Regulatory Documents page.



US Fish & Wildlife Service

IPaC Trust Resource Report



NAME

Batavia Park

LOCATION

Baltimore County, Maryland

IPAC LINK

<http://ecos.fws.gov/ipac/project/DUZTC-4YXEZ-C2PEA-O5SRC-P7CG7I>



U.S. Fish & Wildlife Contact Information

Trust resources in this location are managed by:

Chesapeake Bay Ecological Services Field Office

177 Admiral Cochrane Drive

Annapolis, MD 21401-7307

(410) 573-4599

Endangered Species

Proposed, candidate, threatened, and endangered species are managed by the [Endangered Species Program](#) of the U.S. Fish & Wildlife Service.

This USFWS trust resource report is for informational purposes only and should not be used for planning or analyzing project level impacts.

For project evaluations that require FWS concurrence/review, please return to the IPaC website and request an official species list from the Regulatory Documents section.

[Section 7](#) of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency.

A letter from the local office and a species list which fulfills this requirement can only be obtained by requesting an official species list from the Regulatory Documents section in IPaC.

There are no endangered species in this location

Critical Habitats

There are no critical habitats in this location

Migratory Birds

Birds are protected by the [Migratory Bird Treaty Act](#) and the [Bald and Golden Eagle Protection Act](#).

Any activity which results in the take of migratory birds or eagles is prohibited unless authorized by the U.S. Fish and Wildlife Service (1). There are no provisions for allowing the take of migratory birds that are unintentionally killed or injured.

Any person or organization who plans or conducts activities that may result in the take of migratory birds is responsible for complying with the appropriate regulations and implementing appropriate conservation measures.

Additional information can be found using the following links:

- Birds of Conservation Concern
<http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>
- Conservation measures for birds
<http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>
- Year-round bird occurrence data
<http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/akn-histogram-tools.php>

The following species of migratory birds could potentially be affected by activities in this location:

American Oystercatcher <i>Haematopus palliatus</i> Year-round https://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0G8	Bird of conservation concern
American Bittern <i>Botaurus lentiginosus</i> Season: Wintering https://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0F3	Bird of conservation concern
Bald Eagle <i>Haliaeetus leucocephalus</i> Year-round https://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B008	Bird of conservation concern
Black Rail <i>Laterallus jamaicensis</i> Season: Breeding https://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B09A	Bird of conservation concern
Black-billed Cuckoo <i>Coccyzus erythrophthalmus</i> Season: Breeding https://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0HI	Bird of conservation concern
Blue-winged Warbler <i>Vermivora pinus</i> Season: Breeding	Bird of conservation concern

Cerulean Warbler <i>Dendroica cerulea</i> Season: Breeding https://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B09I	Bird of conservation concern
Fox Sparrow <i>Passerella iliaca</i> Season: Wintering	Bird of conservation concern
Gull-billed Tern <i>Gelochelidon nilotica</i> Season: Breeding https://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B0JV	Bird of conservation concern
Kentucky Warbler <i>Oporornis formosus</i> Season: Breeding	Bird of conservation concern
Least Bittern <i>Ixobrychus exilis</i> Season: Breeding	Bird of conservation concern
Least Tern <i>Sterna antillarum</i> Season: Breeding	Bird of conservation concern
Marbled Godwit <i>Limosa fedoa</i> Season: Wintering https://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B0JL	Bird of conservation concern
Nelson's Sparrow <i>Ammodramus nelsoni</i> Season: Wintering	Bird of conservation concern
Peregrine Falcon <i>Falco peregrinus</i> Season: Wintering https://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B0FU	Bird of conservation concern
Pied-billed Grebe <i>Podilymbus podiceps</i> Season: Breeding	Bird of conservation concern
Prairie Warbler <i>Dendroica discolor</i> Season: Breeding	Bird of conservation concern
Prothonotary Warbler <i>Protonotaria citrea</i> Season: Breeding	Bird of conservation concern
Purple Sandpiper <i>Calidris maritima</i> Season: Wintering	Bird of conservation concern
Red Knot <i>Calidris canutus rufa</i> Season: Wintering https://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B0DM	Bird of conservation concern
Red-headed Woodpecker <i>Melanerpes erythrocephalus</i> Year-round	Bird of conservation concern
Rusty Blackbird <i>Euphagus carolinus</i> Season: Wintering	Bird of conservation concern
Saltmarsh Sparrow <i>Ammodramus caudacutus</i> Year-round	Bird of conservation concern
Short-eared Owl <i>Asio flammeus</i> Season: Wintering https://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B0HD	Bird of conservation concern
Snowy Egret <i>Egretta thula</i> Season: Breeding	Bird of conservation concern

Willow Flycatcher *Empidonax traillii*

Season: Breeding

https://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B0F6

Bird of conservation concern

Wood Thrush *Hylocichla mustelina*

Season: Breeding

Bird of conservation concern

Worm Eating Warbler *Helmitheros vermivorum*

Season: Breeding

Bird of conservation concern

Refuges

Any activity proposed on [National Wildlife Refuge](#) lands must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

There are no refuges in this location

Wetlands in the National Wetlands Inventory

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal Statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

DATA LIMITATIONS

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

DATA EXCLUSIONS

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

DATA PRECAUTIONS

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

Wetland data is unavailable at this time.

Zoning



Map navigation and utility icons including a home button, search, pan, zoom, and a 'Select A Property' button.

Identify Results

- Property (1)
- Zoning (1)

ZONE CLASS	MLR
ZONING	MLR
URL	http://bamaps1.baltimorecountymd.gov/ReportManager/zoningrpt.aspx?servername=bamaps1.baltimorecountymd.gov&id=MLR&objectid=MLR

EPA Programs

Back

Program Systems >> TRI
Results 1 - 1 of 1
1 Redland Genstar Rosedale

