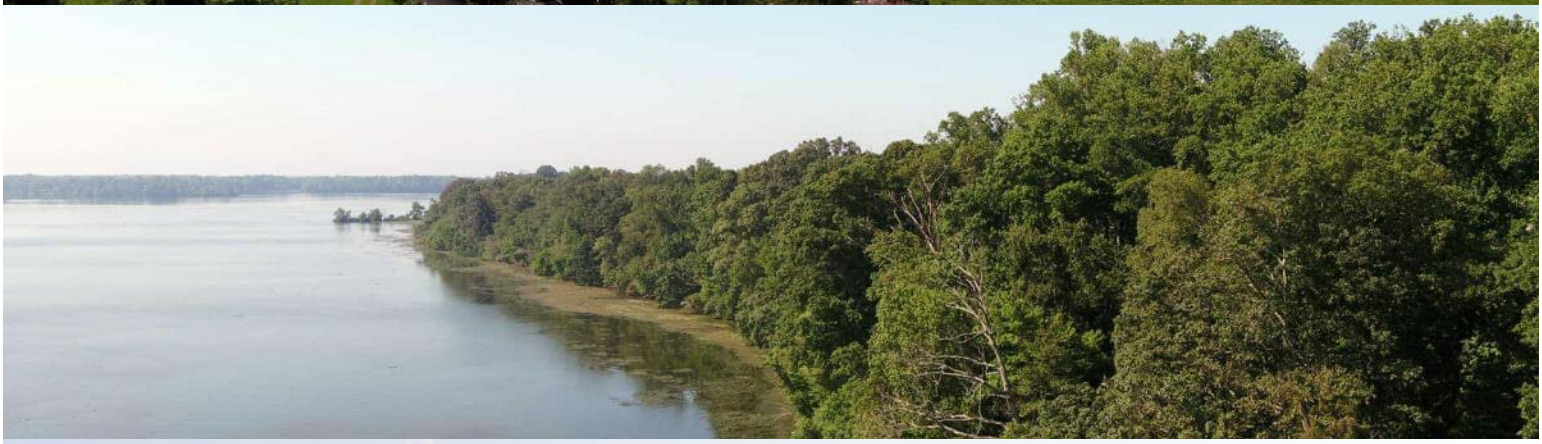
OAKINGTON PENINSULA PARK SYSTEM

SITE ASSESSMENT REPORT

May 19, 2023
(Revised through November 29, 2023)



Report prepared by Site Resources, Inc. for Harford County Parks and Recreation

SITE RESOURCES

CONTENTS

EXECUTIVE SUMMARY

Background

The Oakington Peninsula Park System is an assemblage of properties, now owned by Harford County. After decades of thoughtful planning, patience and cooperation with local agencies, jurisdictions and non-profit groups of like mind, Harford County had a rare opportunity to preserve and utilize the Oakington Peninsula for future generations. The Oakington Peninsula Park System consists of six properties known as Swan Harbor Farm (2 parcels), Belle Vue Farm, Mullins Park (2 parcels), and Millard Tydings Park (1 parcel, divided by an adjoining private property parcel). The properties encompass approximately 1,430 acres and 2.5 miles of shoreline just south of the Havre de Grace area of Harford County, Maryland. Each is rich in environmental, historic and agrarian features and heritage.

Harford County Parks and Recreation engaged Site Resources, Inc., in collaboration with Eco-Science Professionals, Inc., to perform a Preliminary Natural Resource Assessment of the tract, and to compile base information of its opportunities and constraints in preparation for a future master planning process. The assessment was performed to provide a preliminary high-level assessment of the nature and extent of the regulated natural resources on the property, to establish baseline documentation of flora and fauna present on the site, and to provide a general assessment of vegetative communities including an overview of invasive species colonization. In addition to the preliminary natural resource assessment and environmental compliance discussion, this report includes a compilation of site historical information and identifies documented historical features and structures of the various parcels. The significant variety of habitats and regulated natural resources on the combined park system properties results in several restrictions for development; however, those same diverse habitats and natural resources, in combination with the historical resources, provide valuable opportunities. Recommendations for compatible potential uses are offered for future consideration.

The subject properties occur partially within the Chesapeake Bay Critical Area (CBCA), which extends 1000 feet landward of the tidal limits and encompasses all of the park system's waterfront. Areas outside the Critical Area are subject to the Forest Conservation Act and Natural Resource District (NRD) regulations. The Forest Conservation Act (FCA) limits forest clearing and establishes forest acreage goals, both for retention and creation, and reforestation requirements for forest clearing. The Natural Resource District regulations establish buffer requirements for the protection of wetlands and streams.

Park System Programming and Development

The Oakington Peninsula properties combine to create a unique opportunity for active and passive recreation, nature study, and resource preservation and enhancement. Master plan improvements for the properties should consider the existing and potential uses for human activities, habitat restoration and wildlife. By adhering to development restrictions attributable to the many natural resources found within the park system properties and engaging in an invasive species management program, the County can develop park facilities and programs in a way that respects the unique attributes of the site, with minimal negative impacts, and protects the rich biodiversity and cultural heritage of these properties. Soil and water conservation plans and practices shall be implemented, and provisions should be included to reduce surface runoff and associated pollutants from entering the property's wetlands, streams and the bay.

Agricultural Heritage

The agrarian heritage of Oakington Peninsula makes agricultural park programming a natural fit. Many areas within the properties have been historically farmed and could continue to be leased for agricultural crop production and/or on-farm educational demonstrations.

Historical and Archaeological Opportunities

The recent addition of Belle Vue Farm as one of the Freedom Sites to the National Underground Railroad Network to Freedom provides a prime opportunity to open the site for public visitation. This Freedom Site has the potential to become a venue for educational and interpretive programs about the Underground Railroad and its history in Maryland. Further exploration into the potential American Indian archaeological significance of the farm and adjoining properties also provides opportunities for educational programming.

Natural Living Classroom

The park system contains a variety of habitats, including upland forest, upland meadow, forested/shrub/emergent non-tidal wetlands, tidal wetlands, streams and shoreline. The diversity of habitat results in a large amount of biodiversity and provides a unique opportunity for nature study and observation. The park system ecosystem could provide a living classroom for visitors to learn about all these habitats and the services healthy ecosystems provide to life on Earth. The variety of wetlands on the properties provides a great opportunity for educating people on how important wetlands are and why we should work to protect and restore them.

Development for Park Visitation and Programming

Designating a site for a visitor's center and/or nature center could provide a primary landing point for park visitors within the large and somewhat disconnected overall park property. From there, visitors could be directed to the park's amenities and programming.

Passive Recreation

Placing minimal stress on a site's resources, passive recreational activities are highly compatible with the protection of natural resources and the restoration of ecosystem services. The disturbance required for the creation of passive recreation and foot and walking trails is one of the few types allowed within the NRD; and new development for County-owned parks and recreation facilities is one of the few types allowed within the CBCA. Various passive recreational activities, including some already occurring on one or more properties, would be compatible with the park system property and its resources. Significant active recreation is not envisioned for the site.

Land & Water Trails

Land trails are fundamental to all the passive recreational activities appropriate for the park system. While simply necessary for some activities, they will also serve as non-vehicular access to many park amenities. Creating a well-mapped comprehensive trail system would provide visitors with access to all the park has to offer. Linking the park system's various parcels with vehicular access and pedestrian trails, while also developing a comprehensive and cohesive wayfinding system, including maps and interpretive signage, will help unify the peninsula properties.

Access from the Havre de Grace area to a land trail system within the park's properties is supported by an existing easement which provides a connection for foot and bicycle traffic between existing Lower Susquehanna Heritage Greenways trails and the park system's Swan Harbor Farm, an existing event venue.

This park system also has the unique opportunity to provide water trails along its extensive shoreline and connect to the three National Trails which follow the Chesapeake Bay and Susquehanna River. The park system's nearly 2.5 combined miles of shoreline along the Chesapeake Bay provide the opportunity for a Chesapeake Bay "ridge" trail along the eastern edge of the park's peninsula, offering views toward the Bay, the adjoining National Historic Trails (NHTs') water routes, North Sand Island, South Sand Island, and Battery Island (Susquehanna National Wildlife Refuge).

Investigating the feasibility of kayak/canoe launch sites is highly recommended. If launch sites prove feasible along Swan Creek and/or the Chesapeake Bay, they would provide more opportunities for fishing, bird watching, wildlife viewing, observing and photographing nature.

Future Stewardship & Invasive Species Management

Significant farmed non-tidal wetlands are present on the property. These resources could be enhanced and expanded to increase water quality benefit, wildlife habitat and passive recreational opportunities. The properties' position adjacent to the Susquehanna National Wildlife Refuge makes it an excellent location for wildlife enhancement projects.

Control of invasive species is a critical element to increasing the habitat function and viability of the vegetative communities. Invasive species colonization is prevalent in the vine and shrub layers in the forest and in many emergent wetlands areas. Some invasive species are out-competing native shrub species in wetlands and open fields. Controlling the invasive species will be a significant and long term effort. It would be recommended to focus control efforts in areas where potential restoration of native species can be undertaken. A combination of techniques may prove the most successful.

Harford County continues to have a unique opportunity to leverage their foresightedness to preserve and enhance an amenity for future generations in the Oakington Peninsula Park System.

The subsequent Master Planning will include more specific investigations about development potential, constraints, budgets and phasing, and will include conversations about programming and prioritization of future uses.

OAKINGTON PENINSULA PARK SYSTEM

The Environmental, Scenic, Historic and Agrarian Value of Harford County's Conservation Jewel

700+ ACRES OF CHESAPEAKE BAY CRITICAL AREA

Preserving water quality of the bay as well as the wildlife habitat along the shoreline by reducing runoff pollution and associated impacts

4 MARYLAND "BIG TREES"

Belle Vue Farm: American Holly (*Ilex opaca*), American Sycamore (*Platanus occidentalis*)
Swan Harbor Farm: American Sycamore, Kentucky Coffeetree (*Gymnocladus dioicus*)

210+ ACRES OF WETLANDS

Tidal wetlands: Over 170 combined acres
Non-tidal wetlands: Over 40 combined acres

500+ ACRES OF FOREST

Forest cover varies from young wetland forests to mature upland forest and multiple variations of community types and compositions. Native tree species include white oak, chestnut oak, southern red oak, American beech, tulip poplar, black cherry, pignut hickory, American holly, black gum, red maple, American sycamore, American sweetgum, pin oak, pawpaw, sassafras, black willow

2 WETLANDS OF SPECIAL STATE CONCERN (WOSSC)

Gashey Creek and Oakington Shores were designated as WOSSC due to historic and/or current records of rare, threatened, endangered (RTE) species or unique habitat

4 RARE, THREATENED AND ENDANGERED (RTE) SPECIES

Plants: Maryland Bur-marigold (*Bidens bidentoides*), Parker's Pipewort (*Eriocaulon parkeri*)
Fish: Maryland Darter (*Etheostoma sellare*), American Brook Lamprey (*Lethenteron appendix*)

260+ BIRD SPECIES & FOREST INTERIOR DWELLING BIRDS

Four eBird "hot spots": Swan Harbor Farm Park (275 species), Oakington (175 species), Mullins Park (167 species), and Battery Island (142 species), including American Bald Eagles, migrating waterfowl and migrating shorebirds
Forest interior dwelling species include red-shouldered hawk, barred owl, ovenbird, parula warbler, Acadian flycatcher, red-eyed vireo, pileated woodpecker, hairy woodpecker, wood thrush, and scarlet tanager.

2+ MILES OF CHESAPEAKE BAY SHORELINE

Nearly 2.5 combined miles of shoreline overlooking the Bay, adjoining water routes of 3 National Historic Trails, offering views to nearby islands

FIRST ALL-WATER NATIONAL HISTORIC TRAIL

National Park Service's Captain John Smith Chesapeake National Historic Trail
(In addition to two other National Historic Trails: the Star-Spangled Banner National Historic Trial's land and water routes, and the Washington-Rochambeau Revolutionary Route's land and water routes)

NATIONAL UNDERGROUND RAILROAD NETWORK TO FREEDOM

Eliza Parker's Escape Site at Belle Vue Farm: "Eliza Howard, her mother and siblings fled to freedom from this farm in 1846-1847. Eliza and husband William Parker established a new home in Pennsylvania where the battle of the Christiana Resistance ensued on September 11, 1851."

HISTORICAL PROPERTIES & STRUCTURES

Swan Harbor Farm and its primary structure & Belle Vue Farm and its primary structure and numerous outbuildings are included in the Maryland Inventory of Historical Properties

400+ YEARS OF AGRICULTURAL HISTORY

The buildings and grounds of current-day Swan Harbor Farm, Belle Vue Farm, Millard Tydings Park and other adjoining properties were all included on the C.P. Hauducoeur's 1799 Map of the Head of the Chesapeake Bay and Susquehanna River. These farms were originally settled in the early 1600s.

INTRODUCTION

Site Resources, Inc. was contracted by Harford County Parks and Recreation to perform a site assessment and compile base information of the County-owned properties that make up the Oakington Peninsula Park System in preparation for the future master planning process. The park system includes six properties known as Swan Harbor Farm (2 parcels), Belle Vue Farm, Mullins Park (2 parcels), and Millard Tydings Park (1 parcel, divided by an adjoining private property parcel). The properties encompass approximately 1,430 acres in the Havre de Grace area of Harford County, Maryland. As part of this site assessment, Site Resources, Inc. contracted Eco-Science Professionals, Inc. to perform a Preliminary Natural Resource Assessment. The natural resource study was performed to provide a preliminary assessment of the nature and extent of the regulated natural resources on the property, to establish baseline documentation of flora and fauna present on the site, and to provide general assessment of vegetative communities including an overview of invasive species colonization.

The subject properties occur partially within the Chesapeake Bay Critical Area. The Critical Area extends 1000 feet landward of the tidal limits and encompasses all of the waterfront of the park system. This portion of the Critical Area has been designated for Resource Conservation. Regulatory limitations to development include forest clearing limits, reforestation requirements for any forest clearing, expanded buffers for tidal wetlands/waters and tributaries, and limitation on lot coverage (impervious) surface that can be created.

Areas outside the Critical Area are subject to the Forest Conservation Act and Natural Resource District regulations. The Forest Conservation Act (FCA) limits forest clearing and establishes forest acreage goals, both for retention and creation, and reforestation requirements for forest clearing. The FCA also regulates the removal of specimen trees. The Natural Resource District regulations establish buffer requires for wetlands and streams.

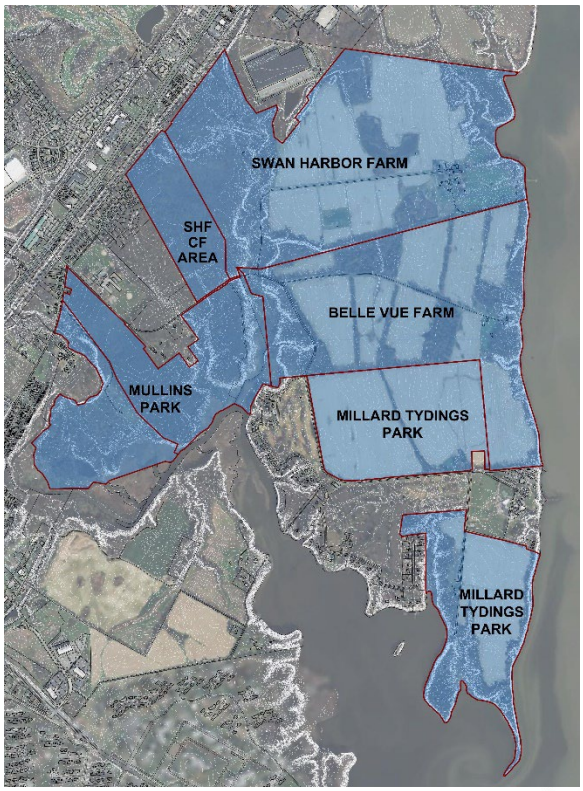
In addition to the preliminary natural resource assessment and environmental compliance discussion, this report includes a compilation of historical site information and identifies documented historical features and structures of the various park properties.

The significant variety of habitats and regulated natural resources on the combined park system properties results in several restrictions for development, however those same diverse habitats and natural resources, in combination with the historical resources, provide valuable opportunities for park programming, some of which will likely be unique to the Oakington Peninsula Park System.

PROJECT AREA OVERVIEW

The project area includes six properties which combined create a 1,430 +/- acre park complex on the Oakington Peninsula in Harford County, Maryland. The park complex includes the following properties:

Property	Address	Acreage	Tax Map	Parcel
Swan Harbor Farm (1)	401 Oakington Road	464.9	52	211
Swan Harbor Farm (2)	SS Route 40	67.7	52	146
Belle Vue Farm	415 Oakington Road	347.4	52	322
Millard Tydings Park	701 Oakington Road	312.3	59	0002
Mullins Park (1)	SS Post Road	102.0	52	0062
Mullins Park (2)	SS Route 635	136.3	52	148



OAKINGTON PENINSULA PARK SYSTEM PROPERTIES

The park properties are generally adjacent but are not entirely contiguous. The properties create a patchwork of parkland that occupies the majority of the land known as the Oakington Peninsula. The "peninsula" is created by a large cove at the confluence of Swan Creek and the Chesapeake Bay. The southern end of the Millard Tydings Park extends into an actual peninsula; the remaining properties do not actually occur on the peninsula. Swan Harbor Farm and Belle Vue Farm have frontage along the Chesapeake Bay; and Mullins Park includes substantial frontage along tidal wetlands and waters of Swan Creek.

The bayfront properties, Swan Harbor Farm, Belle Vue Farm and Millard Tydings Park, have all been historically used for agricultural production. The farms continue to be leased for that purpose and include a mix of farmed land and forest. The Mullins Park property is primarily forested and was historically utilized for sand/gravel production.

PARK PROPERTY EXISTING CONDITIONS

Swan Harbor Farm – 532.65 Acres

Swan Harbor Farm is made of two parcels that occur across the north end of the project area. The old farm/homestead of the property has been developed into a multi-use area. An event venue is present in the old homestead; educational and office facilities are also present. A paved trail and access drive provide access through a large waterfront lawn to a waterfront gazebo and pier.

A dredge spoil area and wetland habitat area are also present on the property. These areas contain walking trails and are favored areas for bird and nature watching. These features were created within former crop fields near the center of the site. A small model airplane field was also created from former agricultural land along the entrance drive. Approximately 190 acres of the property continues to be utilized for agriculture and roughly 180 acres is forested. A 24 +/- acre block of forest is present along the bayfront, the balance of the site is located along the western edge of the property.

This property abuts industrial and agricultural lands to the north.


Walking trail near wetland habitat area


View from pier back to the gazebo

Belle Vue Farm – 347.35 Acres

The majority, roughly 200 acres, of this property continues to be farmed. Large individual fields are separated by forest blocks and hedgerows. The shoreline of this property is forested with steep slopes descending to the water's edge along the bay. Additional forest is located on the western end of the site, along the riparian edge of Gashey's Creek. Total forest acreage on this property is approximately 93 acres. A small homestead and farmyard is present along the waterfront portion of the site, roughly halfway along its mile of shoreline.

Unfarmed field near main house

Main house, north façade

Millard Tydings Park – 312.31 Acres

This property is identified by only one tax map/parcel number but occurs as two distinct properties. The northern body of the property is a 150+/- acre area that is almost entirely farmed. Hedgerows are present along the perimeter of the property and along a stream channel that bisects the field. This portion of the property has no water frontage, being blocked from the Chesapeake Bay waterfront by Belle Vue Farm. There are no improvements on this portion of the site.

The southern portion of the property occurs on the peninsula between the Chesapeake Bay and Swan Creek. This portion is separated from the main body of the Millard Tydings Park parcel by the Ashley, Inc. Property which includes the former Swan Harbor Golf Club and the Ashley Addiction Treatment Maryland Rehabilitation Center campus. This portion of the property contains the former home/farmstead of the property. Approximately 73 acres of this property is maintained as crop fields; the balance of the property, roughly 60 acres, occurs as forested lands along the slopes that descend to the bay and Swan Creek. The northwestern corner of this portion of the property abuts residential development along Country Club Road.

Barn along Tydings Lane

Crop field along Tydings Lane

Mullins Park – 238.30 Acres

This portion of the park property is also made up of two distinct adjoining properties in the western portion of the overall park complex. The eastern property includes forested uplands and nontidal wetlands and a large tidal wetland that connects to Swan Harbor Farm and Belle Vue Farm along its northern/northeastern boundary. There are no formal improvements on the property, however some pedestrian trails were noted. This property adjoins residential lots to the east/southeast and has extensive frontage along Oakington Road.

The western parcel can be accessed by a paved road (Mullins Road) that runs to the central portion of the property. An old field/wetland complex is present in this portion of the site. Soil mapping indicates that this portion of the property was previously utilized for sand and gravel mining. The balance of the site includes forested slopes that descend to tidal and nontidal wetlands associated with Swan and Gashey's creeks. No current improvement, other than the access road, are present on this lot.

Approximately 180 acres of these properties is forested. Tidal wetlands, open water and an old field meadow make up the balance of the coverage.

Wild turkey on the Mullins Park property, photograph by iNaturalist observer, dated April 2020

GEOGRAPHY AND SOILS

The subject property is located along the western edge of the Coastal Plain Provence. In Harford County, the Coastal Plain is characterized by flat to gently rolling slopes and elevations ranging from 40-200 feet above sea level. The Coastal Plain has mostly poorly drained soils.

The Web Soils Survey indicates that the following soil types are present on or adjacent to the subject property:

BeA	Beltsville silt loam, 0 to 2 percent slopes
BeB	Beltsville silt loam, 2 to 5 percent slopes
BeC	Beltsville silt loam, 5 to 10 percent slopes
Cu	Codorus silt loam
Cv	Comus silt loam
Cx	Cut and fill land
DcA	Delanco silt loam, 0 to 3 percent slopes
DcB	Delanco silt loam, 3 to 8 percent slopes
En	Elkton silt loam
EsA	Elsinboro loam, 0 to 2 percent slopes
EsB2	Elsinboro loam, 2 to 5 percent slopes, moderately eroded
EsC2	Elsinboro loam, 5 to 10 percent slopes, moderately eroded
HcA	Hatboro-Codorus complex, 0 to 3 percent slopes, frequently flooded
KpA	Keyport silt loam, 0 to 2 percent slopes
KpB	Keyport silt loam, 2 to 5 percent slopes
Lr	Leonardtown silt loam
MkA	Matapeake silt loam, 0 to 2 percent slopes
MkB	Matapeake silt loam, 2 to 5 percent slopes

MlaA Mattapex silt loam, 0 to 2 percent slopes, northern coastal plain
MlaB Mattapex silt loam, 2 to 5 percent slopes, northern coastal plain
Ot Othello silt loams, 0 to 2 percent slopes, northern coastal plain
Sa Sand and gravel pits
SlB2 Sassafras loam, 2 to 5 percent slopes
SlC2 Sassafras loam, 5 to 10 percent slopes, moderately eroded
SsD Sassafras and Joppa soils, 10 to 15 percent slopes
SsE Sassafras and Joppa soils, 15 to 30 percent slopes
Sw Swamp
Tm Tidal marsh
W Water
WoaB Woodstown loam, 2 to 5 percent slopes, Northern Coastal Plain

VEGETATION, WETLANDS, AND WILDLIFE

The Oakington Peninsula Park System occupies approximate 1,430 acres that includes a variety of habitats. Lawn, cropland, upland forest, upland meadow, forested/shrub/emergent nontidal wetlands, farmed nontidal wetlands, tidal wetlands and streams. The diversity of habitat provides a unique opportunity for nature study and observation. The diversity of habitat results in a large amount of biodiversity on the site.

The Oakington Peninsula properties occur along the western shore of the Chesapeake Bay and the tidal mouth of Swan Creek. The shoreline along the bayfront is typically steep with a highly eroded water line situated below steep forested slopes. A portion of the waterfront on the Swan Harbor Farm property has been improved, the balance of the shoreline remains relatively natural. Tidal wetlands are not present along the bay frontage, but they are extensive along Swan and Gashey's creeks.

Vegetative Cover

Review of field conditions and aerial photography has been used to assess and map vegetative cover types. Roughly 390 acres of the site is forested. This forest occurs within the Critical Area, 205.5 acres, and outside the Critical Area, 184.5 acres. The Critical Area boundary establishes different regulatory authority over the forest, but does not impact the forest type.

Forest cover on the site varies from young wetland forest to mature upland forest and includes multiple variations of community types and composition.

Drier ridgelines and forest patches are dominated by older mixed oak/tulip poplar communities. This includes white oak, chestnut oak, southern red oak, American beech, and tulip poplar. Black cherry, pignut hickory black gum and American holly are common understory associates in this community. Canopy trees in this stand are generally 20-30 inch diameter at breast height (dbh) with larger individuals present.

Younger more successional communities are present across much of the site. These stands include tulip poplar, red maple, sweet gum, and sycamore. Pawpaw, black cherry, black gum and American holly are common understory species in these communities. Canopy trees in these stands are generally 10-18" dbh.

Wetland forests are present across the peninsula as well. Red maple, pin oak, sweet gum, sycamore and black gum are common in these wetlands. Black willow occurs in open wetlands and along forested wetland edges.

Hedgerows between crop fields and along roads contain a diverse community of species. Black locust, black cherry, red cedar and sassafras are common in dry habitats. Red maple, black gum, sweet gum, sycamore and black willow occur in hedgerow areas influenced by notable groundwater and along drainage ditches.

Native shrub species on the site are somewhat limited. Spicebush, arrowwood, and winterberry are notable in wetland communities. Blackhaw viburnum is common in upland habitats. Young canopy and understory trees, especially pawpaw are common in the shrub layer as well.

The development of a native herbaceous community is limited in most areas of the site. Early spring wildflowers including Virginia spring beauty, toothwort, and trout lily were noted. Jack-in-the-pulpit and May-apple are also found across the site in established woodland areas. Wetland pockets within the forest communities provide the best habitat for native herbaceous species such as false nettle, jewelweed, cinnamon fern, royal fern, wood reed and skunk cabbage. Christmas fern and New York fern are also notable on the site.

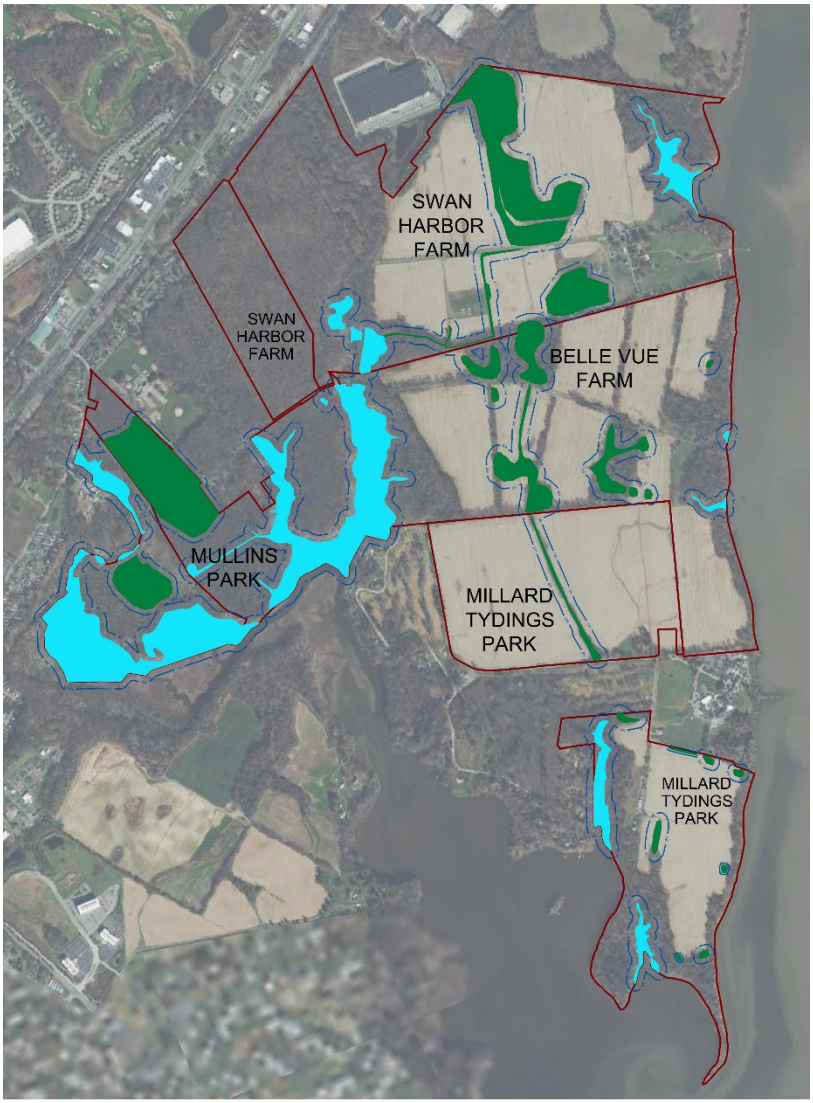
Wetlands

The Oakington Peninsula Park System properties are situated along a bluff that overlooks the Chesapeake Bay and the tidal marshes along Swan Creek and Gashey's Creek. The shoreline along the bay, along Swan Harbor Farm and Belle Vue Farm, is generally defined by steeply sloping and eroding slopes that support little tidal wetland development. Tidal wetlands are present within stream valleys that drain into the bay. These areas are primarily emergent wetlands that include both tidal and nontidal areas, depending on elevation.

Much of the southern end of the peninsula, along the waterfront of the Millard Tydings Park is also steep and well defined by topography. Large tidal wetlands do extend up broad stream valleys in the southern end and southwestern edge of this property. Submerged aquatic vegetation was also notable along the shallow waters in the coves along the southern waterfront.

A large tidal wetland complex also extends up into Swan Creek along the shorelines of both Mullins Park parcels.

Tidal wetland vegetation is generally dominated by emergent vegetation.



Pickerelweed, lizard tail, duck potato, narrow leaved cattail, and common reed are common in the emergent tidal areas. Japanese knotweed has colonized some outer edges along these tidal wetlands. Though most of the tidal wetlands are dominated by native species, common reed (*Phragmites*) has established itself in several large colonies.

Nontidal wetlands are present across the elevated bluffs and along stream valleys that drain to the tidal waters and wetlands. The wetland systems vary from farmed wetlands to seasonally saturated forest wetlands. Field reviews occurring prior to farm activity found extensive wetland development in the crop fields. These areas are defined by a vegetative community dominated by hydrophytic vegetation and evidence of hydrologic activity, surface water ponding or groundwater influence. Vegetation typical of these farmed wetlands include water smartweed, water purslane, soft rush, chufa, lurid sedge and creeping Jenny. Cattails and woolgrass were noted in the less disturbed margins of these farmed wetland areas.

The farmed wetlands occur as isolated patches within the crop fields and as extensions from forested wetlands that occur in forest patches between and adjacent to the fields. It is likely that the forested wetlands have too much hydrologic activity to successfully be farmed and were allowed to go fallow.

The park properties contain extensive forested wetland communities. Most of these wetlands occur as broad, intermixed wetland/upland complexes but several large contiguous forested wetland areas are present. These forested wetlands are typically dominated by red maple, sweet gum, willow oak, pin oak and sycamore. Tulip poplar is also common in these areas, occurring mostly on upland inclusions and hummocks within the overall wetland community. Sweetbay magnolia and black willow are also notable within the forested wetland areas. Adjacent uplands are defined by a higher percentage of upland species including white, black, and southern red oak, black cherry, and pignut hickory.

Black gum, American holly, and pawpaw are common species within the forested wetland complexes, occurring in and out of wetland areas. Shrubs found commonly in the wetland communities include spicebush, arrowwood viburnum, silky dogwood, summersweet and winterberry. Invasive species including multiflora rose, border privet and Morrow's honeysuckle are common in the wetland/upland complexes. As upland species, these species can be used to help define the wetland/upland boundary, though their presence alone is not sufficient to define an area as an upland. Consideration of the prevalence of wetland species in the canopy and herbaceous layers is required to make a final wetland community determination.

Herbaceous species within nontidal forested wetland communities on the site include false nettle, jewelweed, skunk cabbage, wood reed, cinnamon fern and sensitive fern. Soft rush, lurid sedge, creeping Jenny, fringed sedge were also noted in forested wetlands, especially those in open canopy areas. Open canopy areas have developed within forested wetlands where green ash has been killed off by emerald ash borer activity. In these areas, the reduced canopy has allowed more herbaceous community development to occur.

Manmade wetland areas are present on Swan Harbor Farm. This includes a large open water/emergent wetland complex that is present along the access drive (Timber Lane) and a nearby dredge spoil facility. The wetland complex includes a diverse mix of open water, herbaceous wetland and forested fringe. Natural wetland development around the manmade wetlands have create an even greater diversity of contiguous wetland cover types that now also includes farmed and forested wetlands.

The dredge spoil area is dominated by common reed but also contains black willow, red maple, pin oak, cattails and open water areas. The shrubby upland edges of the spoil area provide additional cover and habitat opportunities.

Wildlife

The diverse nature of the habitat types within and adjacent to the park properties provides excellent opportunity for wildlife. This diversity has allow the Oakington Park Peninsula to become a prime area for nature and wildlife study. Data collection sources include eBird, iNaturalist and the MD Biodiversity Project; they provide substantial observation records within the park.

EBird maintains checklists for bird sightings across the world. Special areas, known as hotspots are created for areas that are known for high bird concentration and high bird watching activity. Four hotspots have been created in and adjacent to the park properties. This includes hot spots identified as Swan Harbor Farm Park (275 species), Oakington (175 species), Mullins Park (167 species), and Battery Island (142 species). Battery Island is located within the open waters of the bay east of the park properties. These checklists are updated constantly and can accessed via eBird at (https://ebird.org/hotspots). Copies of recent checklist are included in the appendices of the report.

The Maryland Biodiversity Project and iNaturalist maintain joint records for all observations of wildlife and plants in Maryland. A special project area, Oakington Peninsula Open Space, has been set up as part of this effort to capture observations made on and immediately adjacent to the park properties. A total of 951 observations resulting in 461 confirmed species records have been made as of August 11, 2022. This list will continue to expand as observations are added within the project area. A list of the records made to date is included in the appendices of the report. The checklist of observations and records can be accessed at (https://www.inaturalist.org/observations?place_id=182511&subview=map)

Invasive Species

The forest, meadows, and fields on the Oakington Peninsula contain a diverse community of native trees, shrubs and herbs. The community is, however, heavily influenced by invasive species. Invasive species have become a major problem for the maintenance and management of natural habitats and ecosystems. The threats created by invasive species are varied. Invasive plants can overrun native plant communities pushing out native species creating monocultures that have limited habitat function or value. Invasive animals and insects can damage plant communities and feed on native animal species, adversely impacting populations.

Significant invasive species colonization by plants is present on the park properties. Species of note include: multiflora rose, Japanese barberry, border privet, Morrow's bush honeysuckle, Oriental bittersweet, Japanese honeysuckle, stilt grass, garlic mustard, Japanese knotweed, are common across the site. These species are especially common along forest edges and hedgerows.

Common reed, *Phragmites*, is common in and adjacent to tidal and nontidal wetlands. This species is very common in the dredge spoil area and in other disturbed areas across the property. Large stands of common reed were also noted in tidal wetlands along the shoreline of Mullins Park.

A dense stand of fishpole bamboo was noted south of the homestead on Belle Vue Farm.

Purple loosestrife was noted in nontidal wetlands on the property.

Large colonies of wisteria are present along the shoreline of Millard Tydings Park. These vines are growing into the canopy of the adjacent forest and spreading out into the adjacent farm field.

Tree-of-heaven and Norway maple are also present within the park. These species are scattered through the forest and hedgerows. Tree-of-heaven is a rapidly reproducing tree that spreads from root shoots and seed. This species can produce large stands on disturbed and vacant land.

Yellow flag iris is an invasive herbaceous species that was once planted for landscaping purposes. This iris was noted within emergent wetlands in several locations around the site.

Invasive insects, especially the emerald ash borer, have left their mark on the property. The ash borer has killed off most of the older green ash trees on the property. Young successional development of the ash is occurring, but the borer populations remain viable. The University of Maryland, College Park is currently undertaking population monitoring and control projects on the park property.

Spotted lanternflies are now becoming common in the park. The lanternfly populations have been expanding in the area, and their presence is becoming more and more evident in the park and surrounding community. Lanternflies will utilize a large number of tree species, but they are most attracted to tree-of-heaven. Feeding lanternflies drip honeydew on areas below the trees in which they are feeding. This honeydew is a sticky substance that creates mold growth and attracts other insects. The lanternflies have the potential to kill the trees they feed on, but they are primarily an agricultural pest. Their presence, especially in high numbers, can make outdoor areas unpleasant.

Reports from fishermen encountered on the park property and adjacent areas have indicated that Northern snakehead fish are now common in the streams and open waters. These fish are non-native species that feed heavily on smaller fish, other aquatic animals, and possibly even ducklings and small mammals that may fall into the water. The presence of snakehead may be viewed as a benefit by anglers, but is of concern to fishery managers.

Rare, Threatened and Endangered Species

The Maryland Department of Natural Resources maintains records and data for all plant and animal species considered to be rare, threatened or endangered (RTE) in the State. A request for RTE data for the site revealed the following information relative to the area within or adjacent to the Oakington Peninsula Park system properties:

Maryland Bur-marigold

At the very southern point of the property is an area of intertidal habitat on the west side of Swan Creek Point that supports a population of Maryland bur-marigold (*Bidens bidentoides*) which is globally rare and only found in Maryland. This area is designated as a habitat protection area and is regulated by the local jurisdiction's Critical Area Program.

Bidens bidentoides

Parker's Pipewort and Maryland Bur-marigold

Eriocaulon parkeri

The shoreline of the Swan Harbor Farm Property is part of another habitat protection area known as the Oakington Shore Natural Area. The most notable feature of this habitat protection is two tidal coves which open directly into the Chesapeake Bay. These coves are designated as Wetlands of Special State Concern, which are regulated by Maryland Department of the Environment. These sandy coves along the tidal shoreline support occurrences of state-listed threatened Parker's Pipewort (*Eriocaulon parkeri*), as well as an occurrence of Maryland Bur-marigold.

Maryland Darter and American Brook Lamprey

On the Mullins property, there is a portion of Swan Creek which is designated as a Wetland of Special State Concern. This designation is due, in part, to the historical occurrence of the state- and federally-listed endangered Maryland Darter (*Etheostoma sellare*) and a record of the state-listed threatened American Brook Lamprey (*Lethenteron appendix*).

Etheostoma sellare

Forest Interior Habitat

Remote analysis suggests that the forested area on this property contains Forest Interior Dwelling Bird habitat. Populations of many bird species which depend on this type of forested habitat are declining in Maryland and throughout the eastern United States. The conservation of this habitat is mandated within the Chesapeake Bay Critical Area and must be addressed by the project plan.

Though a formal breeding bird survey was not performed on the site, numerous interior dwelling birds were observed or heard during the field review. Noted species observed on the site include: red-shouldered hawk, barred owl, pileated woodpecker, hairy woodpecker, red-eyed vireo, Acadian flycatcher, wood thrush, ovenbird, parula warbler and scarlet tanager.

ENVIRONMENTAL COMPLIANCE

The Oakington Peninsula Park System properties occur along the tidal waterfront of the Chesapeake Bay and Swan Creek. The area between high tide and 1000 feet landward is considered to be part of the Chesapeake Bay Critical Area (Critical Area). This area is subject to specific State regulations intended to preserve and enhance the quality of the bay. The park properties are within the Resource Conservation Area overlay district with the Critical Area and are subject to the greatest resource protection.

Critical Area – Forest & Forest Interior Dwelling Species

Limitations for development on properties within the Resource Conservation Area include forest clearing and lot coverage. All forest cleared within the Critical Area requires reforestation. Reforestation is required at a ratio of 1 acre planted per each acre cleared (1:1) up to 20 percent of the existing forest on the site. If forest clearing exceeds 20 percent, the reforestation rate increases to 1.5:1 with a limit of forest clearing being set a 30 percent of existing forest. Properties with less than 15 percent existing forest will be required to provide afforestation to meet that threshold.

CHESAPEAKE BAY CRITICAL AREA (CBCA) - FOREST

Further, because the onsite forest is considered to be Forest Interior Dwelling Species (FIDS) habitat, the following guidelines will be enforced for new development:

1. Restrict development to nonforested areas.
2. If forest loss or disturbance is unavoidable, concentrate or restrict development to the following areas:
    a. the perimeter of the forest (i.e., within 300 feet of existing forest edge)
    b. thin strips of upland forest less than 300 feet wide
    c. small, isolated forests less than 50 acres in size
    d. portions of the forest with low quality FIDS habitat, (i.e., areas that are already heavily fragmented, relatively young, exhibit low structural diversity, etc.)
3. Maximize the amount if forest "interior" (forest area >300 feet from the forest edge) within each forest tract (i.e., minimize the forest edge:area ratio). Circular forest tracts are ideal and square tracts are better than rectangular or long, linear forests.
4. Minimize forest isolation. Generally, forests that are adjacent, close to, or connected to other forests provide higher quality FIDS habitat than more isolated forests.
5. Limit forest removal to the "footprint" of houses and to that which is necessary for the placement of roads and driveways.
6. Minimize the number and length of driveways and roads.
7. Roads and driveways should be as narrow and as short as possible; preferably less than 25 and 15 feet, respectively.
8. Maintain forest canopy closure over roads and driveways.
9. Maintain forest habitat up to the edges of roads and driveways; do not create or maintain mowed grassy berms.
10. Maintain or create wildlife corridors.
11. Do not remove or disturb forest habitat during April-August, the breeding season for most FIDS. This seasonal restriction may be expanded to February-August if certain early nesting FIDS (e.g., Barred Owl) are present.
12. Landscape homes with native trees, shrubs and other plants and/or encourage homeowners to do so.
13. Encourage homeowners to keep pet cats indoors or, if taken outside, kept on a leash or inside a fenced area.
14. In forested areas reserved from development, promote the development of a diverse forest understory by removing livestock from forested areas and controlling white-tailed deer populations. Do not mow the forest understory or remove woody debris and snags.
15. Afforestation efforts should target a) riparian or streamside areas that lack woody vegetative buffers, b) forested riparian areas less than 300 feet wide, and c) gaps or peninsulas of nonforested habitat within or adjacent to existing FIDS habitat.

Critical Area - Buffers

Tidal wetlands will generate buffer requirements within the Critical Area.

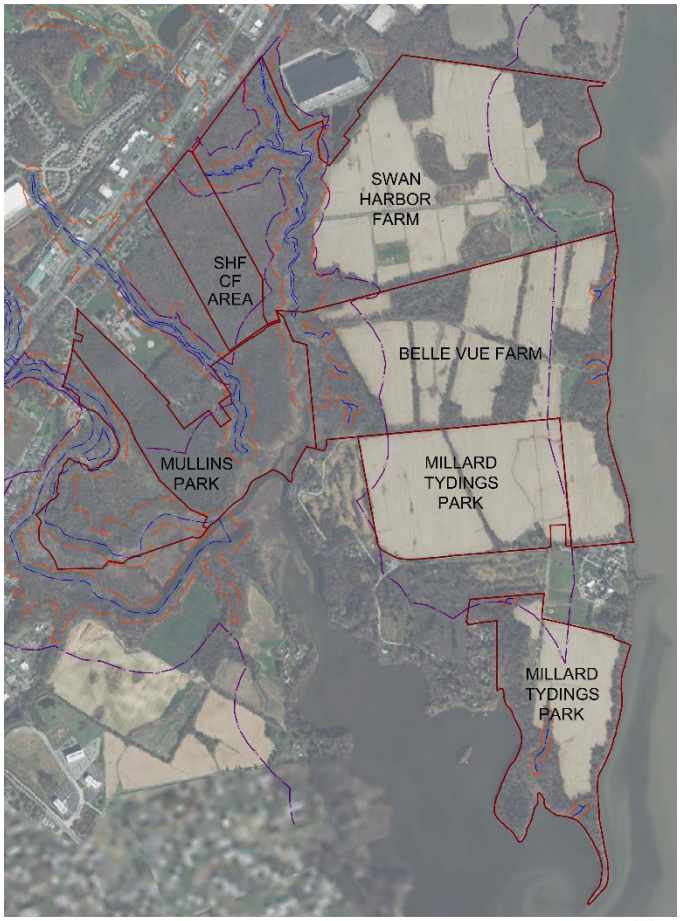
Per the County Code the Critical Area buffer is an area that:

1. Based on conditions present at the time of development, is immediately landward from mean high water of tidal waters, the edge of bank of a tributary stream or the edge of a tidal wetland; and,
2. Exists or may be established in natural vegetation to protect a stream, tidal wetland, tidal waters or terrestrial environment from human disturbance.

A "buffer" includes an area of:

1. At least 100 feet, even if that area was previously disturbed by human activity; and
2. Expansion for contiguous areas, including a steep slope, hydric soil, highly erodible soil, nontidal wetland or a nontidal wetland of special state concern as defined in COMAR 26.23.01.01.

Within the Resource Conservation Area, any application for subdivision or site plan approval, not involving the use of growth allocation, shall have a minimum buffer of 200 feet from tidal waters or a tidal wetland unless subdivision of the property at a density of one dwelling unit per 20 acres would be precluded and all other state and local requirements will be satisfied.



STREAMS, NATURAL RESOURCE DISTRICT, CBCA

Critical Area – Habitat Protection Area

The open waters of the Chesapeake Bay and the tidal portion of Swan Creek that are adjacent to or are part of the site are known historical waterfowl concentration areas. If there is to be any construction of water-dependent facilities the project must be reviewed by the Maryland Department of Natural Resources Wildlife and Heritage Service.

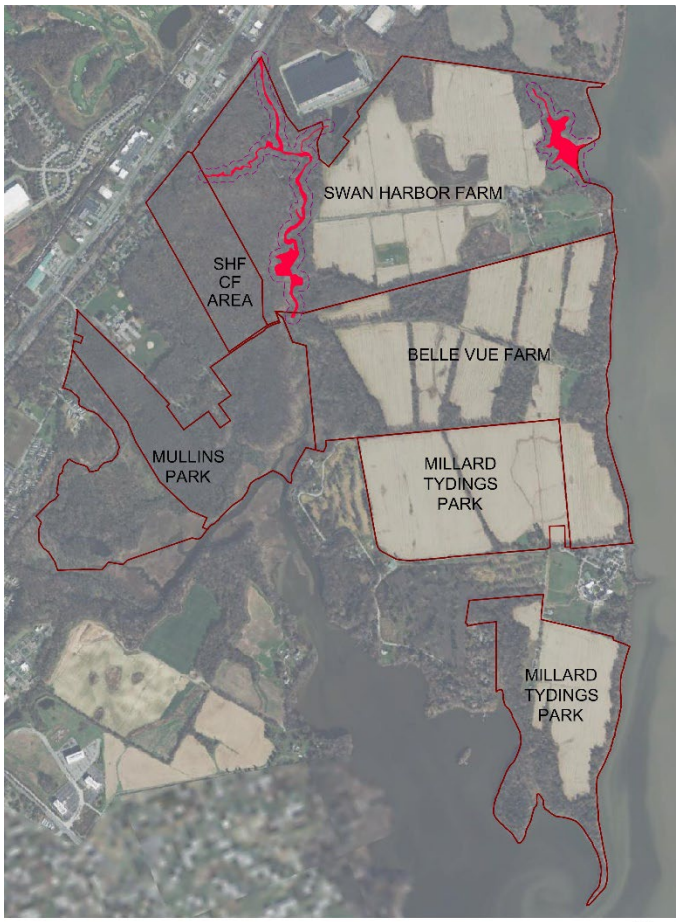
Natural Resource District

Nontidal wetlands within and outside the Critical Area are subject to the Natural Resource District regulations that establish buffer requirements for streams and wetlands, which limit disturbance. Nontidal wetlands shall not be disturbed by development. A buffer of at least 75 feet shall be maintained in areas adjacent to nontidal wetlands except isolated nontidal wetlands that are less than 10,000 square feet, which shall be subject to the 25 foot buffer requirement set forth in the Code of Maryland Regulations.

The Natural Resource District (NRD) for all perennial and intermittent streams outside the Critical Area shall be a minimum of 75 feet on both sides, measured from the top of the streambank or 50 feet beyond the 100-year floodplain, whichever is greater. For all streams that have a drainage area of more than 400 acres, as depicted on the Harford County Hydrology/Drainage Area Map, the NRD shall be expanded to a minimum distance of 150 feet on both sides, measured from the top of the streambank or 50 feet beyond the 100-year floodplain, whichever is greater. The NRD boundaries under this provision shall include the buffer requirements of nontidal wetlands.

Wetlands of Special State Concern

The Maryland Department of the Environment identifies and regulates Wetlands of Special State Concern. This designation is assigned to certain wetlands with rare, threatened, endangered (RTE) species or unique habitat, and therefore, these wetlands receive special attention. The Code of Maryland Regulations (COMAR) Title 26, Subtitle 23, Chapter 06, Sections 01 & 02 identify these Wetlands of Special State Concern (WSSC) and affords them certain protections including a 100 foot buffer from development.



WETLANDS OF SPECIAL STATE CONCERN (WOSSC) & BUFFER

Two areas of Wetlands of Special State Concern (WOSSC) are present within the Oakington Peninsula Park System:

The Gashey Creek WOSSC extends along Gashey's Creek and its associated wetlands and tributaries. This system impacts Mullins Park, Belle Vue Farm and Swan Harbor Farm. This area has been designated due to its historical records of the federally endangered Maryland Darter.

The Oakington Shores WOSSC is located within a large tributary stream valley to the Chesapeake Bay just north of the public access area of Swan Harbor Farm. This wetland contains two RTE species and is known to have unique intertidal soil conditions with a mix of cobbles, gravel, sand and mud.

Forest Conservation Act

Areas landward of 1000 feet from the mean high tide are outside the Critical Area and are subject to standard development regulations including the Forest Conservation Act (FCA). The FCA regulations establish thresholds based on the existing site zoning and forest cover that determine the forest retention, allowed forest clearing, and reforestation requirements. Forest retention and reforestation areas are prioritized such that large forested tracts, forest in wetlands and on steep slopes, and forest interior dwelling bird habitat are considered high priority. Most of the onsite forest would be considered a high priority for retention. Certain forest clearing can be performed onsite without generating a reforestation obligation, but that area would be calculated based on project area, forest and zoning. Zoning within the Oakington Peninsula Park system ranges from agricultural to high density residential to general industrial district. The high density residential and general industrial district zoning statuses allow for increased area of forest clearing without requiring reforestation.

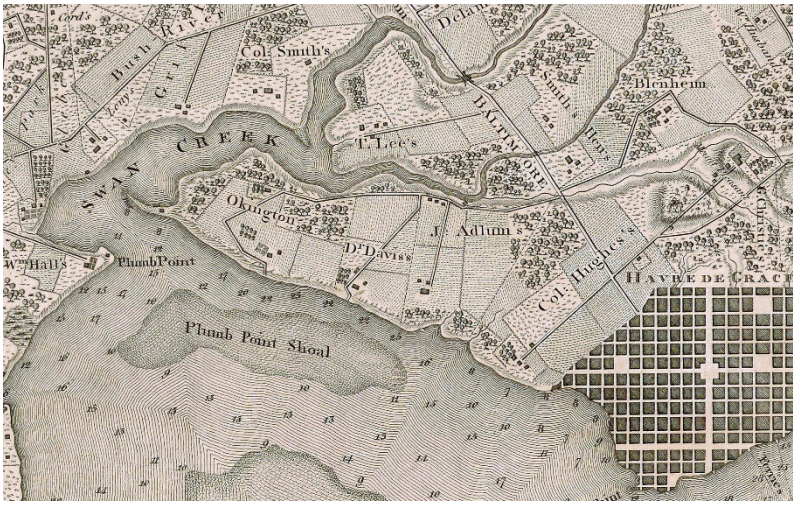
Steep Slopes

Steep slope areas (any land area exceeding 40,000 square feet with a slope in excess of 25%) are considered to be part of the Natural Resource District and protected from disturbance.

HISTORICAL RESOURCES

Historical Properties / Structures

The Swan Harbor Farm and Belle Vue Farm properties are Harford County inventoried historic sites containing buildings/structures/features of historical significance. The buildings and grounds of both properties are included on C.P. Hauducoeur's 1799 Map of the Head of the Chesapeake Bay and Susquehanna River. What is now the Millard Tydings Park and other adjoining properties were also included on the Hauducoeur Map as "Oakington Farm." These, and neighboring farms, were originally settled in the early 1600s.



Enlargement of Oakington Peninsula on the Hauducoeur Map

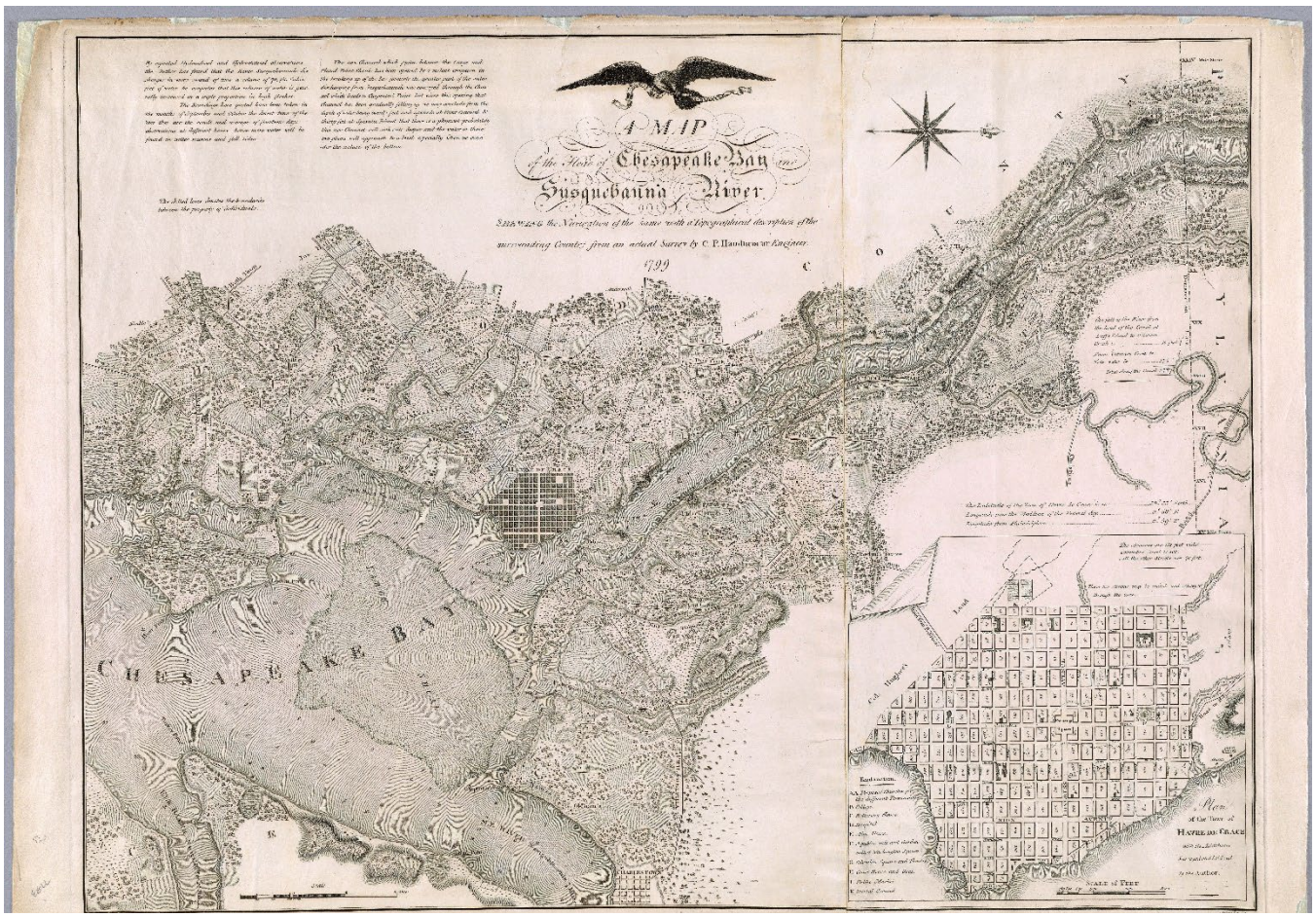


Image of original map in the John Carter Brown Library at Brown University

Houses on Swan Harbor Farm, Belle Vue Farm, and a now demolished house ("Old Mullins House") on the Mullins Park property are included in the Maryland Historical Trust (MHT) Maryland Inventory of Historic Properties (MIHP). Their MIHP record numbers are HA-243, HA-242, and HA-244, respectively. (Interesting to note: In the HA-244 record, the MIHP inventory form for the Old Mullins House, with a form creation date of Dec. 1968 and accompanying photos dated 1970, reported "Now on land owned by Harford County for a sanitary landfill, it might be worth restoration.")

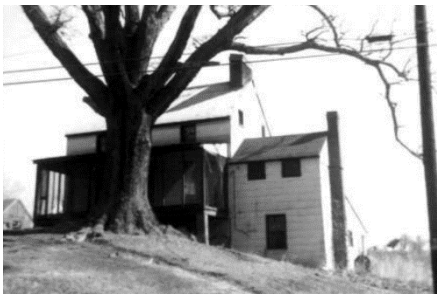


Photo of "Old Mullins House" from MIHP record, 1970

The primary structure situated on Swan Harbor Farm is an 18th century frame stucco and brick house with additions, overlooking the Chesapeake Bay. A notable early owner of the property was John Adlum, who is credited with pioneering wine making in Maryland. According to Maryland Historic Trust documentation, the house "represents one of Harford County's tidewater plantations and is one of only two English Bond Brick structures known to exist in the County." Specific interior details of the building and secondary structures/outbuildings on the property also hold historical significance.

Swan Harbor Farm main house, 2022

Main house, 1977

Originally granted in 1661, the land that comprises Belle Vue Farm was continuously owned and farmed by the same family until 2020 when it was purchased by Harford County. The primary structure on the property was home to the Davis family for over 200 years. Facing southeast and situated only 300 feet from the Chesapeake Bay, the mid-18th century Georgian style, two-story brick house was built using the Flemish bond pattern, and the windows on the front façade have semi-elliptical brick header arches. Numerous outbuildings are indicated on tax rolls from the early 1800s. The 1814 tax roll also notes as many as 34 enslaved people lived at Belle Vue Farm.


Belle Vue Farm main house, southeast façade, 1977 (left) & 2022 (right)


Belle Vue Farm main house, north façade, 1977 (left) & 2022 (right)

National Underground Railroad Network to Freedom

In 2021 Belle Vue Farm was added to the National Underground Railroad Network to Freedom Listings under the site name "Eliza Parker's Escape Site at Belle Vue Farm." The Network lists sites, facilities, and programs with a verifiable connection to the Underground Railroad. According to the Maryland Office of Tourism's Maryland Network to Freedom Sites, Programs and Tours webpage: "Eliza Howard, her mother and siblings fled to freedom from this farm in 1846-1847. Eliza and husband [William] Parker established a new home in Pennsylvania where the battle of the Christiana Resistance ensued on September 11, 1851."

Archeological Resources

According to the Harford Land Trust website, the Belle Vue Farm property may have archeological significance, particularly for American Indian artifacts.

National Historic Trails

The Captain John Smith Chesapeake National Historic Trail – the National Park Service's (NPS) first all-water national historic trail – runs along the Oakington Peninsula shoreline. The trail commemorates Captain Smith's exploration of the Chesapeake Bay from 1607 through 1609, and is accessible to boaters of all types of vessels and skill levels. According to the Chesapeake Conservancy, the principal partner for trail development for the NPS, the Chesapeake Trail provides significant conservation, recreation and education resources that stretches over 3,000 miles.

Telling the story of the War of 1812, the Star-Spangled Banner National Historic Trail is comprised of 560 miles of land and water routes within the Chesapeake Bay region. One of its water trails runs along the Oakington Peninsula shoreline, highlighting several historic buildings and significant sites that survived the 1813 British attacks in Havre de Grace to the peninsula's north.

The Washington-Rochambeau Revolutionary Route is another National Historic Trail with over 680 miles of land and water routes that connect state and national parks, historic and scenic trails, and hundreds of historic sites from Massachusetts to Virginia. The Trail's network of roads and waterways commemorate the 1781 joint military offensive of the French and the United States of America's alliance during the Revolutionary War. Land and water routes of the French and Continental Armies pass adjacent the Oakington Peninsula along Route 40 and Old Post Road and the Chesapeake Bay, respectively.

PARK SYSTEM DEVELOPMENT AND PROGRAMMING RECOMMENDATIONS

By adhering to development restrictions attributable to the many natural resources found within the park system properties and engaging in an invasive species management program, the County can develop park facilities and programs in a way that least negatively impacts the overall site and protects the rich biodiversity within these properties. The Oakington Peninsula properties combine to create a unique opportunity for active and passive recreation, nature study, and resource enhancement. Master plan improvements for the properties should consider the existing and potential uses for human activities, habitat restoration and wildlife.

Agricultural Heritage

The agrarian heritage of Oakington Peninsula makes agricultural park programming a natural fit. Many areas within the properties that have been historically farmed could continue to be leased for agricultural crop production and/or be used for on-farm educational demonstrations. Much of the park system property is part of the Chesapeake Bay Critical Area (CBCA) and Natural Resource District (NRD), and, while agriculture is a permitted use within the CBCA and NRD, accepted and approved soil and water conservation plans and practices shall be implemented, and provisions should be included to reduce surface runoff and associated pollutants from entering the property's wetlands, streams and the bay. The specific details for agricultural activities within the CBCA and NRD can be found in Article VII Section 267-62 and Section 267-63 of the County Code. The location of existing farmed wetlands and any associated regulated buffers will need to be considered when designating land for continued agricultural use.

Historical and Archaeological Opportunities

The recent addition of Belle Vue Farm as one of the Freedom Sites to the National Underground Railroad Network to Freedom provides a prime opportunity to open the site for public visitation. As part of the Oakington Peninsula Park System, this Freedom Site has the potential to become a facility for educational and interpretive programs that pertain to the Underground Railroad and its history in Maryland. The Belle Vue Farm property's historic buildings and family and agrarian histories could be shared and supported by signage and/or educational programming on the site. Like Swan Harbor Farm's historic house and property, the Belle Vue Farm house and grounds could be used as an event venue.

Further exploration into the potential American Indian archaeological significance of the Belle Vue Farm and adjoining properties could provide opportunities for additional educational programming.

Natural Living Classroom

The park system properties contain a variety of habitats – including upland forest, upland meadow, forested/shrub/emergent nontidal wetlands, tidal wetlands and streams. The diversity of habitat results in a large amount of biodiversity and provides a unique opportunity for nature study and observation. The park system ecosystem could provide a living classroom for visitors to learn about all these habitats, their flora and fauna, their seasonal changes, and the services healthy ecosystems provide to life on Earth. Wetlands are one of the most threatened ecosystems in the United States, and the variety of wetlands on the park system properties provides a great opportunity for educating people on how important wetlands are and why we should work to protect and restore them.

Development for Park Visitation and Programming

Linking the park system's various properties via park roads/drives for vehicular access and pedestrian trails, while also developing a comprehensive and cohesive wayfinding system including maps and signage will help create a singular regional park system. Due to the large and somewhat disconnected overall park property, designating a site for a visitor's center and/or nature center could provide a primary landing point for park visitors. From there they could be directed to other sites within the park as well as the park's amenities and programming. Studying potential visitor traffic (numbers, frequency, length of stay, etc.) could be used to inform minimum number and size of parking areas associated with potential amenity sites/destination points.

Public Event Opportunities

Introducing a public event venue on the peninsula would help attract additional visitors to the park system who may not live locally or know about the peninsula's recreational amenities, history, and natural beauty and value. Investigating the feasibility of a public event venue on the peninsula is recommended.

Understanding the type of public events the County is interested in hosting would aid decision-making regarding type, size and location of facilities. Parking areas and associated driveways, permanent structures such as pavilions, restroom facilities, indoor event spaces, and necessary utilities should be considered when locating developments for a public event venue. These facilities could provide for a variety of events, and the addition of an amphitheater with a grass lawn for seating could specifically support music and/or theater performances.

Swan Harbor Farm currently hosts events on the peninsula. While primarily private events, the Farm hosts over 100 outdoor events each year, and its outdoor tent can accommodate up to 250 guests. To aid the Farm's ability to continue providing covered outdoor event space, investigating the feasibility of replacing the outdoor tent with a permanent structure is recommended.

Passive Recreation

Placing minimal stress on a site's resources, passive recreational activities are highly compatible with the protection of natural resources and the restoration of ecosystem services. The disturbance required for the creation of passive recreation and foot and walking trails is one of the few types allowed within the NRD; and new development for County-owned parks and recreation facilities is one of the few types allowed within the CBCA. Below is a list of passive recreational activities (including some already occurring on one or more properties) that would be compatible with the park system property and its resources:

- Hiking / walking
- Bird watching
- Observing and photographing nature
- Picnicking
- Historical and archaeological exploration
- (Flying model/RC airplanes)
- Trail running
- Wildlife viewing
- Fishing
- Camping
- Kayaking / canoeing

The combined size and the primarily undeveloped nature of the park system properties allow for the possibility of creating one or more camping sites. Tent camping, versus RV camping, may be more feasible due to the ability to provide smaller clusters of camp sites without needing to develop larger driveways and parking areas for RVs. The smaller scale of tent camp sites may also be more conducive to limiting development impacts on the natural resources and ecosystems that make the park properties special. Several other camp sites in Maryland include bath houses, which require

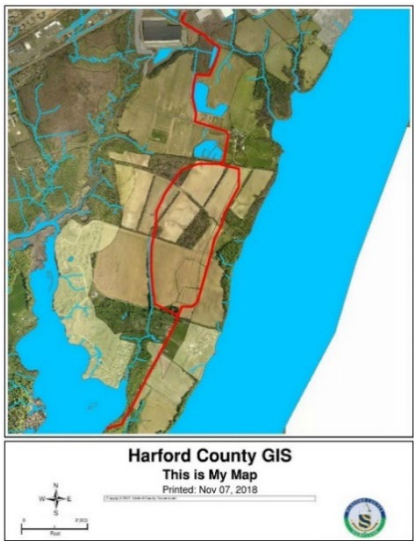
utilities such as electricity, water, and sewer/septic; these factors should be considered when locating possible camping sites within the park properties.

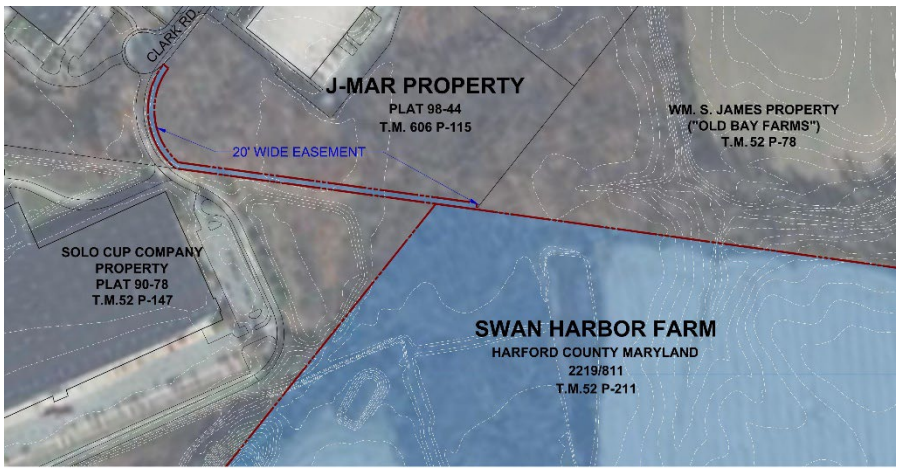
Creating a beach area may not be feasible simply due to the shoreline's steep topography and may be incompatible with the development restrictions within the Critical Area and in proximity to tidal wetlands. However, access to the water for fishing and water views is a commonly sought-after amenity, and therefore investigating the possibility of creating a useable beach along the park's extensive waterfront is recommended. If creating a beach area proves unfeasible, building additional fishing piers along the shoreline may be another option to give visitors more opportunities to interact with the water and its beautiful views.

Land & Water Trails

Land trails are fundamental to all the passive recreational activities appropriate for the park system. While simply necessary for some activities, they will also serve as non-vehicular access to many park destinations and amenities. This park system also has the unique opportunity to provide water trails along its extensive shoreline and connect to the three National Trails whose water trails follow the Chesapeake Bay and Susquehanna River. As such, creating a well-mapped and comprehensive trail system would provide visitors with opportunities for and/or access to all the park has to offer.

A land trail system could include a mixture of long-distance trails that can be divided into shorter loops or stems for visitors who only want to access specific destinations and/or can only handle shorter walks. Consider smooth, compacted pavement and/or poured-in-place pavement options for these shorter loops and stems in order to support the use of strollers and/or ADA accessibility. Trails within the system could also be highlighted by programmatic themes to aid visitors interested in exploring the park via specific historical, agricultural, and or natural resources.
The figure shown below (left) is an exhibit provided by Harford County for a possible trail concept. Access from the Havre de Grace area to a land trail system within the park's properties is supported by an existing easement connecting the end of Clark Road and the Swan Harbor Farm property. The existing easement, granted to the City of Havre de Grace and documented in a Deed of Easement, dated November 12, 2014, is a 20 foot wide easement for the Lower Susquehanna Heritage Greenway (LSHG) Trail. The easement provides a connection between existing LSHG trails and the park system's Swan Harbor Farm parcel, and it allows foot and bicycle traffic consistent with the use of the LSHG Trail. Refer to the Deed of Easement document for details of allowed improvements and their construction. See the figure below (right) for the approximate location of the easement; further work by land surveyors will be required to reflect the precise location of the easement on future Master Plan documents.





CITY OF HAVRE DE GRACE EASEMENT FOR LOWER SUSQUEHANNA HERITAGE GREENWAY TRAIL (APPROXIMATE LOCATION)

The park system's nearly 2.5 combined miles of shoreline along the Chesapeake Bay, many of which run along a sort of ridge above the water, provide the opportunity for a Chesapeake Bay "ridge" trail. This trail could follow along the eastern edge of the park's peninsula properties, potentially offering views towards and/or overlooking the Bay, the adjoining National Historic Trails (NHTs') water routes, and North Sand Island, South Sand Island, and Battery Island (Susquehanna National Wildlife Refuge). Continuity of a trail along the Bay's shoreline would be broken by the Ashley property, however the northern and southern trail sections could be connected by a walking trail along Tydings Lane.

Investigating the feasibility of kayak/canoe launch sites is highly recommended. Compatibility of kayak and canoe launches will depend on the specific environmental compliance restrictions for each proposed site, and any proposed development within the CBCA and other buffers will require additional review processes. If launch sites prove feasible along Swan Creek and/or the Chesapeake Bay, they would provide more opportunities for fishing, bird watching, wildlife viewing, observing and photographing nature, and would further support programming linked to any or all of the three NHTs' water routes. A kayaking/canoeing water trail along the Peninsula's shoreline could include signage visible from the water's edge relating to the historic sites beyond the ridge above and/or nature-related information about the park's tidal wetlands and WOSSC. Signage could also link the park's relationship to any or all of the NHT routes.

While potentially incompatible with the park's environmental resources and their associated development restrictions, constructing a motor boat launch might be another desired amenity for the park. If a motor boat launch site is possible and desired, not only would it provide similar recreational opportunities as those of a kayak/canoe launch, it would also provide access from the park to the North Sand, South Sand, and Battery Islands, which are all within two miles from the Peninsula's eastern shoreline of the Millard Tydings Park parcel. In addition to investigating the feasibility and compatibility of constructing a motor boat launch and its associated parking lots, the County would need to decide whether or not the motor boat launch would be manned, and if so, for which hours/days, as well as whether or not to require a fee for using the launch site.

Future Stewardship & Invasive Species Management

Significant farmed non-tidal wetlands are present on the property. These resources could be enhanced and expanded to increase water quality benefit, wildlife habitat and passive recreational opportunities. Maintenance of a diversity of wetland cover types (forested, scrub/shrub, emergent and non-tidal open water) will maximize the habitat potential and wildlife usage of the park. The properties position adjacent to the Susquehanna National Wildlife Refuge makes it an excellent location for wildlife enhancement projects.

Control of invasive species is a critical element to increasing the habitat function and viability of the vegetative communities. Invasive species colonization is prevalent in the vine and shrub layers in the forest and in many emergent wetlands areas. Within the forest, multiflora rose, bush honeysuckle, Japanese barberry, and privet are common. These species are out-competing native shrub species. In wetlands and open fields common reed and Japanese stilt grass are common. Oriental bittersweet, Japanese honeysuckle, and wisteria are notable invasive vines.

Controlling the invasive species will be a significant and long term effort. It would be recommended to focus control efforts in areas where potential restoration of native species can be undertaken. Invasive species removal often include mechanical removal of vegetative portions of the plant (mowing or cutting), herbicide treatments, and a combination of these two techniques. Care will be required for use of chemical herbicides due to the proximity to the Bay, wetlands and the potential adverse impact to park visitors. Other possible control efforts could include the use of prescribed burns and use of goats for plant removal. A combination of all these techniques may prove the most successful in the long run.

Removal of the wisteria vines growing along the shoreline of Millard Tydings Park would be a manageable initial project for the properties. These pockets, though substantial, could be contained and removed before they spread further into the forest. In addition, the bamboo stand on the Belleview Farm is a defined community that could be targeted for removal.

Septic System Planning

The properties have been serviced by a variety of septic methods throughout their history, including dry wells and more conventional septic systems. As programming is developed in the Master Plan phase, abandonment of some existing systems and installation of new systems designed to current standards will need to be located in proximity to specific uses. Opportunities to connect to existing off-site sewer systems are limited and would be a function of access, topography and cost.

NATURAL RESOURCES STUDY AUTHORSHIP

The natural resources study and future stewardship and invasive species management portions of this report are comprised of information contained within the "Oakington Peninsula Park System Preliminary Natural Resources Assessment Report" prepared by Eco-Science Professionals, Inc. The wetland study for the aforementioned report was performed by John Canoles and Henry Leskinen. Messrs. Canoles and Leskinen have extensive experience in natural resources assessments and inventories. Mr. Canoles received his B.S. in Natural Sciences with an Environmental Conservation Concentration from Towson State University in Towson, Maryland. Mr. Leskinen received his B.S. in Biological Sciences from St. Marys College of Maryland in St. Marys City, Maryland. Messrs Canoles and Leskinen have each received their Provisional Wetland Certification from the U.S. Army Corps of Engineers, Baltimore District (See Appendix A).

REFERENCES

Cover photos by Harford County Government, found at Harford Land Trust Belle Vue Farm webpage.

Chesapeake Conservancy. (n.d.). *Chesapeake National Historic Trail, About the Trail*. https://www.chesapeakeconservancy.org/what-we-do/explore/find-your-chesapeake/about-the-trail/

Cowardin, Lewis et.al. *Classification of Wetlands and Deepwater Habitats of the United States*. U.S. Dept. of Interior, Fish and Wildlife Service, Washington, D.C. FWS/OBS-79/31. December, 1979.

Critical Area Regulations. Harford County Code

eBird. 2022. eBird: An online database of bird distribution and abundance. eBird, Cornell Lab of Ornithology, Ithaca, New York. Available: http://www.ebird.org.

Environmental Laboratory. 1987. *Corps of Engineers Wetland Delineation Manual*, Technical Report Y-87-1, U.S. Army Engineer Waterways Experiment Station, Vicksburg, Mississippi.

Forest Conservation Regulations. Harford County Code

Harford County WebGIS

Harford Land Trust. (n.d.). *Belle Vue Farm*. https://www.harfordlandtrust.org/preserved-land/belle-vue-farm/

iNaturalist 2022 - An online data base of species reports
https://www.inaturalist.org/observations?place_id=182511&subview=map&user_id=johncanoles&verifiable=any

Inventoried Historic Sites. Harford County WebGIS

John Carter Brown Library, JCB Map Collection. (n.d.). *A map of the head of Chesapeake Bay and Susquehanna River shewing the navigation of the same with a topographical description of the surrounding country from an actual survey by C. P. Hauducoeur Engineer, 1799*. https://jcb.lunaimaging.com/luna/servlet/detail/JCBMAPS~1~1~2851~101317:A-map-of-the-head-of-Chesapeake-Bay

Maryland Big Tree Program. (n.d.). *Tree Listings*. https://www.mdbigtrees.org/websitedata

Maryland Department of Natural Resources. (n.d.) *Camping & Picnic Shelter Reservations*. https://parkreservations.maryland.gov/

Maryland Department of Natural Resources. (n.d.) *Rare, Threatened, and Endangered Species – Plants & Animals*. https://dnr.maryland.gov/wildlife/Pages/plants_wildlife/rte/espaa.aspx

Maryland Historical Trust. (n.d.). *Search the Maryland Inventory of Historic Properties*. https://mht.maryland.gov/mihp/MIHP.aspx

Maryland Office of Tourism. (n.d.). *Maryland Network to Freedom Sites, Programs and Tours*. https://www.visitmaryland.org/article/maryland-network-to-freedom-sites-programs-and-tours

National Park Service. (2022, April 26). *Explore Network to Freedom Listings*. https://www.nps.gov/subjects/undergroundrailroad/ntf-listings.htm

National Wildlife Federation. (n.d.). *Ecosystem Services*. https://www.nwf.org/Educational-Resources/Wildlife-Guide/Understanding-Conservation/Ecosystem-Services

Swan Harbor Farm. (n.d.). *About*. http://www.swanharborfarm.org/27/About

Swan Harbor Farm. (n.d.). *Site Amenities*. http://www.swanharborfarm.org/152/Site-Amenities

U.S. Department of Agriculture, Soil Conservation Service. *Soil Survey for Harford County*. July 1968.

Web Soil Survey. 2022. Specific site search

APPENDICES

A. CERTIFICATIONS

DEPARTMENT OF THE ARMY
BALTIMORE DISTRICT, U.S. ARMY CORPS OF ENGINEERS
P.O. BOX 1715
BALTIMORE, MD 21203-1715

U.S. ARMY CORPS OF ENGINEERS

CERTIFIES THAT

JOHN PRESTON CANOLES

CERTIFICATE NUMBER: WDCP93MD0610044B

has successfully demonstrated to the U.S. Army Corps of Engineers, Baltimore District, sufficient understanding of, and the capability to perform satisfactory wetland delineations consistent with, the Corps 1987 Wetland Delineation Manual and supplemental guidance. This verifies that wetland delineations performed by the certified wetland delineator named above will receive expedited consideration and acceptance by the certifying district, for purposes of the Corps' final determination of wetland jurisdiction pursuant to Section 404 of the Clean Water Act.

Donald W. Roeseke
Chief, Regulatory Branch

August 19, 1993
Date

Baltimore District

*This is a provisional certification for the purposes of the demonstration phase of the Corps Wetland Delineator Certification Program

William Donald Schaefer
Governor

Maryland Department Of Natural Resources
Public Lands and Forestry
Tawes State Office Building
580 Taylor Avenue
Annapolis, MD 21401

Torrey C. Brown, M.D.
Secretary

January 12, 1993

Mr. John Canoles
Eco-Science Professionals, Inc.
P.O. Box 5006
Glen Arm, MD 21057

Dear Mr. Canoles,

We of the Maryland Department of Natural Resources have reviewed your application for qualified professional status for the purpose of developing Forest Stand Delineations and Forest Conservation Plans. We are happy to inform you that our review found you met the requirements of COMAR 08.19.06.01 for this status. Your name will be included on a list of qualified professionals to be sent to jurisdictions with power to review Forest Stand Delineations and Forest Conservation Plans.

Participation by professionals like you is key to successful implementation of the Forest Conservation Act. Thank you for submitting your application.

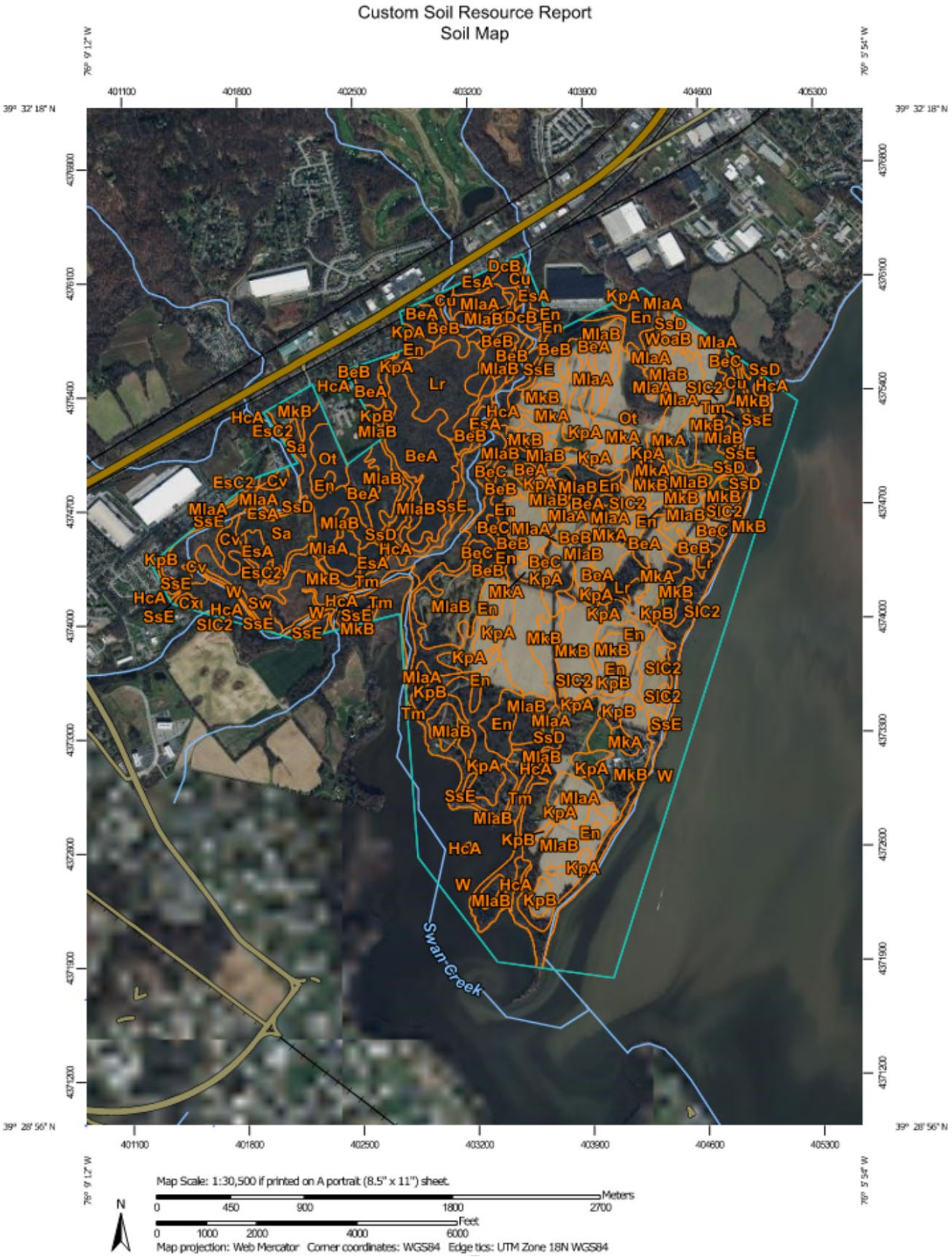
Sincerely,

Eric Schwaab
Director, Forestry Programs

c:\letters\qualpro.apr

Telephone:_____
DNR TTY for the Deaf: 410-974-3683

B. SOIL SURVEY DATA AND RESOURCE MAPPING DATA


Custom Soil Resource Report
Soil Map
76° 9' 12" W
76° 5' 54" W
39° 32' 18" N
39° 28' 56" N
401100
401800
402500
403200
403900
404600
405300
4376800
4376100
4375400
4374700
4374000
4373300
4372600
4371900
4371200
Swan Creek
Map Scale: 1:30,500 if printed on A portrait (8.5" x 11") sheet.
Meters
0
450
900
1800
2700
Feet
0
1000
2000
4000
6000
N
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Prince George's County, Maryland
Survey Area Data: Version 19, Aug 27, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Nov 23, 2020—Nov 28, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
BeA	Beltsville silt loam, 0 to 2 percent slopes	149.6	6.7%
BeB	Beltsville silt loam, 2 to 5 percent slopes	69.7	3.1%
BeC	Beltsville silt loam, 5 to 10 percent slopes	24.1	1.1%
Cu	Codorus silt loam	10.3	0.5%
Cv	Comus silt loam	13.1	0.6%
Cx	Cut and fill land	2.7	0.1%
DcA	Delanco silt loam, 0 to 3 percent slopes	0.1	0.0%
DcB	Delanco silt loam, 3 to 8 percent slopes	7.8	0.3%
En	Elkton silt loam	128.5	5.8%
EsA	Elsinboro loam, 0 to 2 percent slopes	26.8	1.2%
EsB2	Elsinboro loam, 2 to 5 percent slopes, moderately eroded	4.9	0.2%
EsC2	Elsinboro loam, 5 to 10 percent slopes, moderately eroded	5.7	0.3%
HcA	Hatboro-Codorus complex, 0 to 3 percent slopes, frequently flooded	111.2	5.0%
KpA	Keyport silt loam, 0 to 2 percent slopes	132.3	5.9%
KpB	Keyport silt loam, 2 to 5 percent slopes	32.1	1.4%
Lr	Leonardtown silt loam	62.6	2.8%
MkA	Matapeake silt loam, 0 to 2 percent slopes	51.1	2.3%
MkB	Matapeake silt loam, 2 to 5 percent slopes	201.6	9.1%
MlaA	Mattapex silt loam, 0 to 2 percent slopes, northern coastal plain	167.9	7.5%
MlaB	Mattapex silt loam, 2 to 5 percent slopes, northern coastal plain	266.8	12.0%
Ot	Othello silt loams, 0 to 2 percent slopes, northern coastal plain	58.8	2.6%
Sa	Sand and gravel pits	28.1	1.3%
SlB2	Sassafras loam, 2 to 5 percent slopes	0.1	0.0%

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
SlC2	Sassafras loam, 5 to 10 percent slopes, moderately eroded	22.3	1.0%
SsD	Sassafras and Joppa soils, 10 to 15 percent slopes	30.0	1.3%
SsE	Sassafras and Joppa soils, 15 to 30 percent slopes	174.6	7.8%
Sw	Swamp	27.4	1.2%
Tm	Tidal marsh	70.3	3.2%
W	Water	331.2	14.9%
WoaB	Woodstown loam, 2 to 5 percent slopes, Northern Coastal Plain	15.5	0.7%
Totals for Area of Interest		**2,227.1**	**100.0%**

Report—Paths, Trails, and Golf Fairways

[Onsite investigation may be needed to validate the interpretations in this table and to confirm the identity of the soil on a given site. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. The table shows only the top five limitations for any given soil. The soil may have additional limitations]

Paths, Trails, and Golf Fairways–Harford County Area, Maryland							
Map symbol and soil name	Pct. of map unit	Golf fairways		Off-road motorcycle trails		Paths and trails	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
BeA—Beltsville silt loam, 0 to 2 percent slopes							
Beltsville	75	Very limited		Somewhat limited		Somewhat limited	
		Aluminum saturation	1.00	Dusty	0.07	Dusty	0.07
		Depth to cemented pan	0.99				
		Low exchange capacity	0.75				
		Depth to saturated zone	0.19				
		Dusty	0.07				
BeB—Beltsville silt loam, 2 to 5 percent slopes							
Beltsville	70	Very limited		Somewhat limited		Somewhat limited	
		Aluminum saturation	1.00	Dusty	0.07	Dusty	0.07
		Depth to cemented pan	0.99				
		Low exchange capacity	0.75				
		Depth to saturated zone	0.19				
		Dusty	0.07				
BeC—Beltsville silt loam, 5 to 10 percent slopes							
Beltsville	70	Very limited		Somewhat limited		Somewhat limited	
		Aluminum saturation	1.00	Dusty	0.07	Dusty	0.07
		Depth to cemented pan	0.99				
		Low exchange capacity	0.75				
		Depth to saturated zone	0.19				
		Dusty	0.07				

Paths, Trails, and Golf Fairways–Harford County Area, Maryland							
Map symbol and soil name	Pct. of map unit	Golf fairways		Off-road motorcycle trails		Paths and trails	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Cu—Codorus silt loam							
Codorus	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Low exchange capacity	0.75	Dusty	0.07	Dusty	0.07
		Flooding	0.60				
		Depth to saturated zone	0.19				
		Dusty	0.07				
Cv—Comus silt loam							
Comus	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Low exchange capacity	0.75	Dusty	0.01	Dusty	0.01
		Flooding	0.60				
		Dusty	0.01				
Cx—Cut and fill land							
Cut and fill land	100	Not rated		Not rated		Not rated	
DcA—Delanco silt loam, 0 to 3 percent slopes							
Delanco	85	Very limited		Somewhat limited		Somewhat limited	
		Low exchange capacity	1.00	Dusty	0.04	Dusty	0.04
		Depth to saturated zone	0.19				
		Dusty	0.04				
DcB—Delanco silt loam, 3 to 8 percent slopes							
Delanco	85	Very limited		Somewhat limited		Somewhat limited	
		Low exchange capacity	1.00	Dusty	0.04	Dusty	0.04
		Depth to saturated zone	0.19				
		Dusty	0.04				

Paths, Trails, and Golf Fairways–Harford County Area, Maryland							
Map symbol and soil name	Pct. of map unit	Golf fairways		Off-road motorcycle trails		Paths and trails	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
En—Elkton silt loam							
Elkton	85	Very limited		Very limited		Very limited	
		Ponding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Ponding	1.00	Ponding	1.00
		Aluminum saturation	1.00	Dusty	0.08	Dusty	0.08
		Low exchange capacity	0.50				
		Dusty	0.08				
EsA—Elsinboro loam, 0 to 2 percent slopes							
Elsinboro	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Low exchange capacity	0.75	Dusty	0.05	Dusty	0.05
		Dusty	0.05				
EsB2—Elsinboro loam, 2 to 5 percent slopes, moderately eroded							
Elsinboro	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Low exchange capacity	0.75	Dusty	0.05	Dusty	0.05
		Dusty	0.05				
EsC2—Elsinboro loam, 5 to 10 percent slopes, moderately eroded							
Elsinboro	85	Somewhat limited		Very limited		Very limited	
		Low exchange capacity	0.75	Water erosion	1.00	Water erosion	1.00
		Slope	0.37	Dusty	0.05	Dusty	0.05
		Dusty	0.05				

Paths, Trails, and Golf Fairways–Harford County Area, Maryland							
Map symbol and soil name	Pct. of map unit	Golf fairways		Off-road motorcycle trails		Paths and trails	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
HcA—Hatboro-Codorus complex, 0 to 3 percent slopes, frequently flooded							
Hatboro, frequently	60	Very limited		Very limited		Very limited	
		Ponding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Flooding	1.00	Ponding	1.00	Ponding	1.00
		Depth to saturated zone	1.00	Flooding	0.40	Flooding	0.40
		Low exchange capacity	0.50	Dusty	0.06	Dusty	0.06
		Dusty	0.06				
Codorus, occasional	35	Somewhat limited		Somewhat limited		Somewhat limited	
		Low exchange capacity	0.75	Dusty	0.06	Dusty	0.06
		Flooding	0.60				
		Depth to saturated zone	0.19				
		Dusty	0.06				
KpA—Keyport silt loam, 0 to 2 percent slopes							
Keyport	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Low exchange capacity	0.50	Dusty	0.08	Dusty	0.08
		Aluminum saturation	0.39				
		Depth to saturated zone	0.19				
		Dusty	0.08				
KpB—Keyport silt loam, 2 to 5 percent slopes							
Keyport	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Low exchange capacity	0.50	Dusty	0.08	Dusty	0.08
		Aluminum saturation	0.39				
		Depth to saturated zone	0.19				
		Dusty	0.08				

Paths, Trails, and Golf Fairways–Harford County Area, Maryland							
Map symbol and soil name	Pct. of map unit	Golf fairways		Off-road motorcycle trails		Paths and trails	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Lr—Leonardtown silt loam							
Leonardtown	75	Very limited		Very limited		Very limited	
		Ponding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Ponding	1.00	Ponding	1.00
		Depth to cemented pan	0.97	Dusty	0.08	Dusty	0.08
		Low exchange capacity	0.75				
		Aluminum saturation	0.23				
MkA—Matapeake silt loam, 0 to 2 percent slopes							
Matapeake	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Low exchange capacity	0.75	Dusty	0.08	Dusty	0.08
		Dusty	0.08				
		Aluminum saturation	0.08				
MkB—Matapeake silt loam, 2 to 5 percent slopes							
Matapeake	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Low exchange capacity	0.75	Dusty	0.08	Dusty	0.08
		Dusty	0.08				
		Aluminum saturation	0.08				
MlaA—Mattapex silt loam, 0 to 2 percent slopes, northern coastal plain							
Mattapex	80	Very limited		Somewhat limited		Somewhat limited	
		Low exchange capacity	1.00	Dusty	0.06	Dusty	0.06
		Depth to saturated zone	0.19				
		Aluminum saturation	0.09				
		Dusty	0.06				

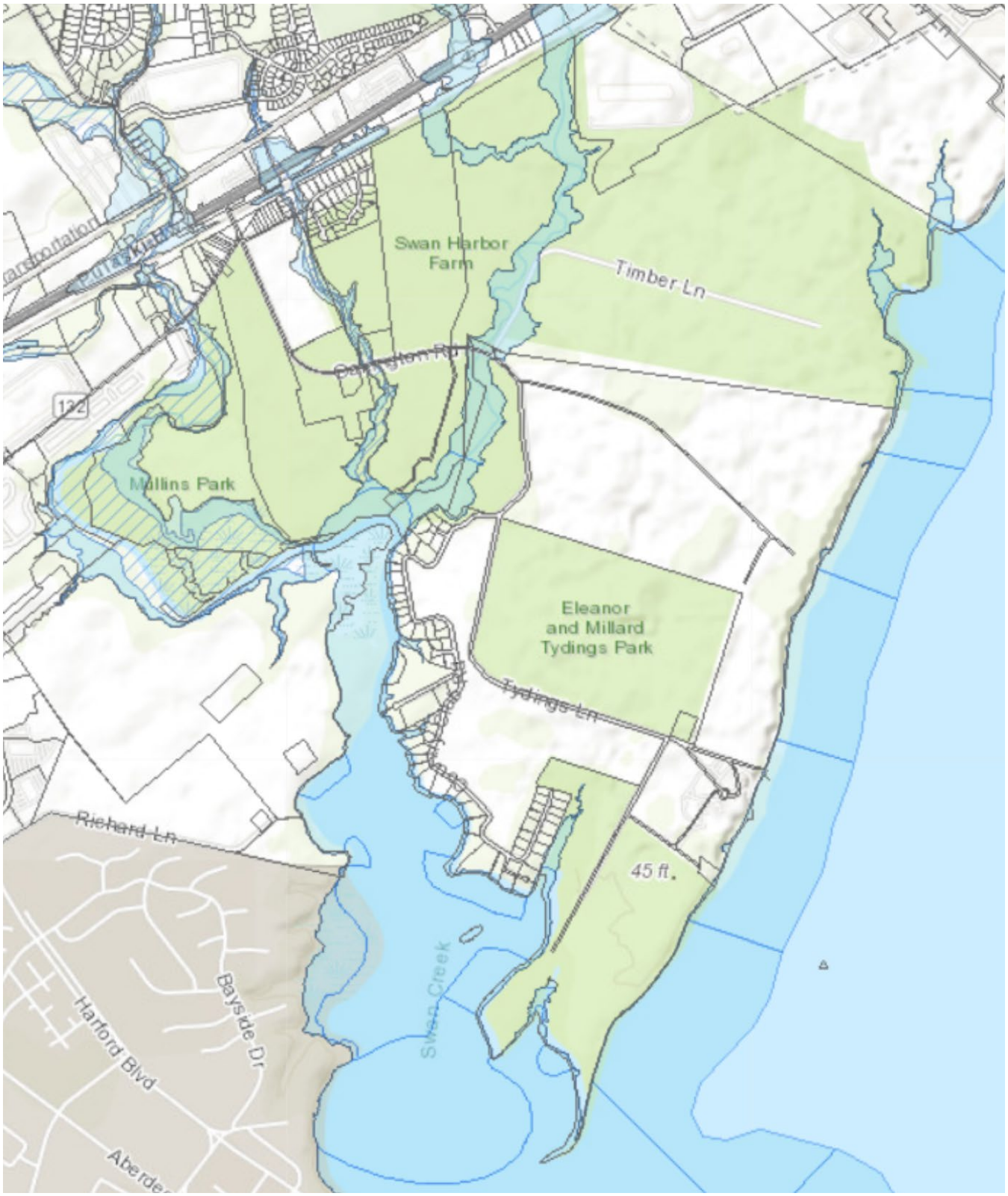
Paths, Trails, and Golf Fairways–Harford County Area, Maryland							
Map symbol and soil name	Pct. of map unit	Golf fairways		Off-road motorcycle trails		Paths and trails	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
MlaB—Mattapex silt loam, 2 to 5 percent slopes, northern coastal plain							
Mattapex	80	Very limited		Somewhat limited		Somewhat limited	
		Low exchange capacity	1.00	Dusty	0.08	Dusty	0.08
		Depth to saturated zone	0.19				
		Aluminum saturation	0.09				
		Dusty	0.08				
Ot—Othello silt loams, 0 to 2 percent slopes, northern coastal plain							
Othello, drained	50	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.96	Depth to saturated zone	0.92	Depth to saturated zone	0.92
		Low exchange capacity	0.75	Dusty	0.06	Dusty	0.06
		Aluminum saturation	0.37				
		Dusty	0.06				
Othello, undrained	30	Very limited		Very limited		Very limited	
		Ponding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Ponding	1.00	Ponding	1.00
		Aluminum saturation	0.37	Dusty	0.06	Dusty	0.06
		Dusty	0.06				
Sa—Sand and gravel pits							
Pits, gravel	100	Not rated		Not rated		Not rated	
SlB2—Sassafras loam, 2 to 5 percent slopes							
Sassafras	80	Very limited		Somewhat limited		Somewhat limited	
		Too dense	1.00	Dusty	0.02	Dusty	0.02
		Low exchange capacity	0.75				
		Aluminum saturation	0.19				
		Dusty	0.02				

Paths, Trails, and Golf Fairways–Harford County Area, Maryland							
Map symbol and soil name	Pct. of map unit	Golf fairways		Off-road motorcycle trails		Paths and trails	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
SIC2—Sassafras loam, 5 to 10 percent slopes, moderately eroded							
Sassafras	85	Very limited		Somewhat limited		Somewhat limited	
		Too dense	1.00	Dusty	0.04	Dusty	0.04
		Low exchange capacity	0.75				
		Aluminum saturation	0.14				
		Dusty	0.04				
SsD—Sassafras and Joppa soils, 10 to 15 percent slopes							
Sassafras	51	Very limited		Somewhat limited		Somewhat limited	
		Too dense	1.00	Dusty	0.02	Dusty	0.02
		Slope	0.84				
		Low exchange capacity	0.75				
		Aluminum saturation	0.19				
		Dusty	0.02				
Joppa	49	Very limited		Somewhat limited		Somewhat limited	
		Low exchange capacity	1.00	Dusty	0.01	Dusty	0.01
		Slope	0.84				
		Gravel content	0.61				
		Droughty	0.03				
		Dusty	0.01				

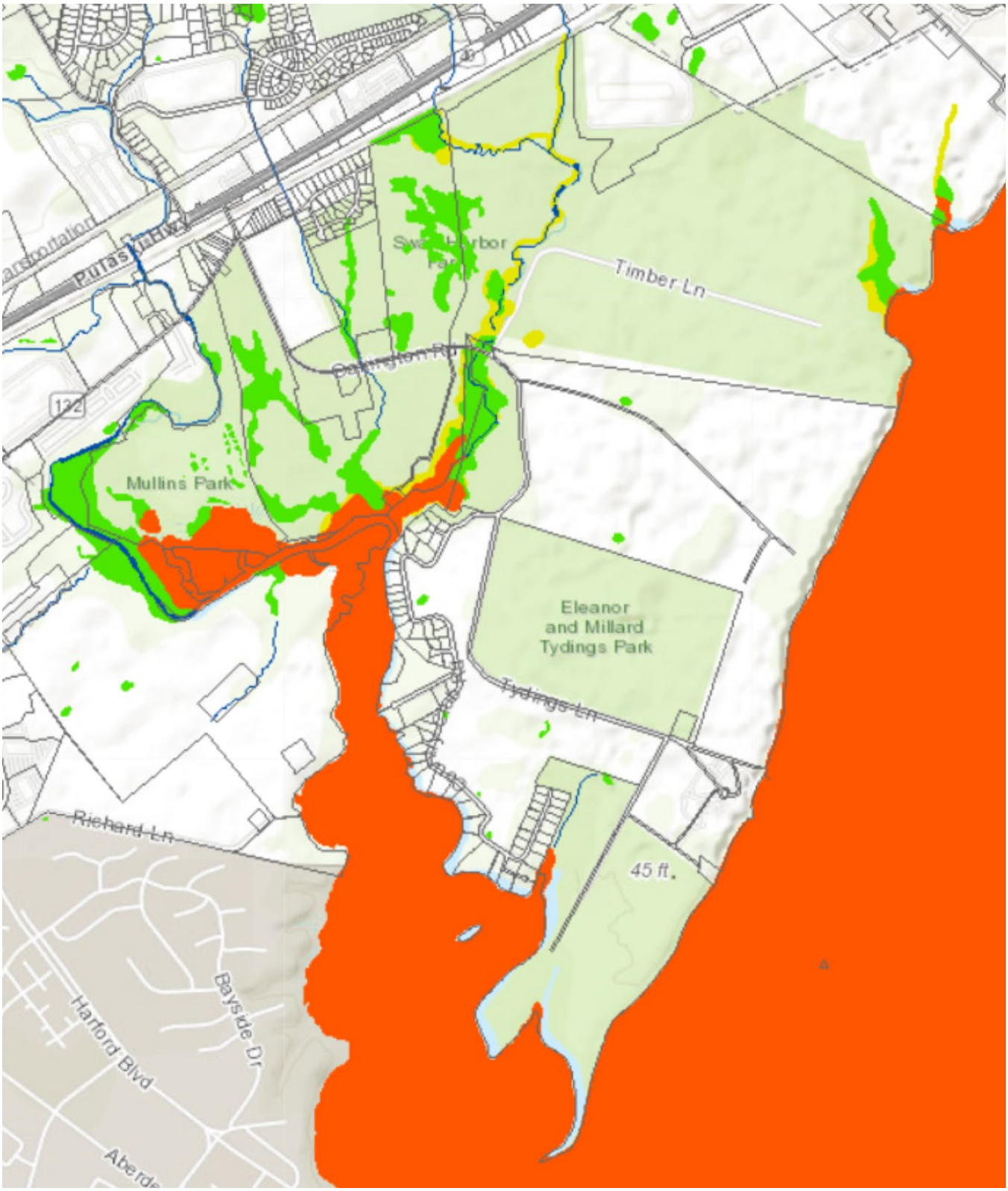
Paths, Trails, and Golf Fairways–Harford County Area, Maryland							
Map symbol and soil name	Pct. of map unit	Golf fairways		Off-road motorcycle trails		Paths and trails	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
SsE—Sassafras and Joppa soils, 15 to 30 percent slopes							
Sassafras	51	Very limited		Somewhat limited		Somewhat limited	
		Slope	1.00	Dusty	0.02	Slope	0.92
		Too dense	1.00			Dusty	0.02
		Low exchange capacity	0.75				
		Aluminum saturation	0.19				
		Dusty	0.02				
Joppa	49	Very limited		Somewhat limited		Somewhat limited	
		Slope	1.00	Dusty	0.01	Slope	0.92
		Low exchange capacity	1.00			Dusty	0.01
		Gravel content	0.61				
		Droughty	0.03				
		Dusty	0.01				
Sw—Swamp							
Swamp	100	Not rated		Not rated		Not rated	
Tm—Tidal marsh							
Tidal marsh	100	Very limited		Very limited		Very limited	
		Flooding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Organic matter content	1.00	Organic matter content	1.00	Organic matter content	1.00
		Depth to saturated zone	1.00	Dusty	0.50	Dusty	0.50
		Sulfur content	1.00	Flooding	0.40	Flooding	0.40
		Salinity	1.00				
W—Water							
Water	100	Not rated		Not rated		Not rated	

Paths, Trails, and Golf Fairways–Harford County Area, Maryland							
Map symbol and soil name	Pct. of map unit	Golf fairways		Off-road motorcycle trails		Paths and trails	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
WoaB—Woodstown loam, 2 to 5 percent slopes, Northern Coastal Plain							
Woodstown	81	Very limited		Somewhat limited		Somewhat limited	
		Too dense	1.00	Dusty	0.01	Dusty	0.01
		Low exchange capacity	0.75				
		Aluminum saturation	0.21				
		Depth to saturated zone	0.19				
		Dusty	0.01				

Property Mapping per MD Merlin website
Aerial photograph of site per MD Merlin website – 2018 photo date



100-year floodplain mapping per MD Merlin website



Wetland mapping per MD Merlin website

Wetlands

Wetlands - Linear - Department of Natural Resources

- Estuarine
- Palustrine
- Riverine

Wetlands - Polygon - Department of Natural Resources

- Estuarine
- Lacustrine
- Marine
- Palustrine
- Riverine

Wetlands - Polygon - Special State Concern

Wetlands - Linear - Special State Concern

Wetlands of Special State Concern mapping per MD Merlin website

C. OBSERVATION CHECKLISTS – eBird/iNaturalist

eBird Field Checklist

Swan Harbor Farm Park

Harford, Maryland, US

ebird.org/hotspot/L446446

species 6 other ta a ear ro nd, ll years

Date: _____
Start time: _____
Duration: _____
Distance: _____
Party size: _____
Notes:

This checklist is generated with data from eBird ebird.org , a global database of bird sightings from birders like yo . If yo enjoy this checklist, please consider contrib ting yo r sightings to eBird. It is 100% free to take part, and yo r observations will help s pport birders, researchers, and conservationists worldwide.

Go to ebird.org to learn more!

Waterfowl

___Black-bellied Whistling-Duck
___Snow Goose
___Greater White-fronted Goose
___Barnacle Goose
___Cackling Goose
___Canada Goose
___goose sp.
___Mute Swan
___Trumpeter Swan
___Tundra Swan
___swan sp.
___Muscovy Duck (Domestic type)
___Wood Duck
___Blue-winged Teal
___Northern Shoveler
___Gadwall
___Eurasian Wigeon
___American Wigeon
___Mallard
___Mallard (Domestic type)
___American Black Duck
___Mallard x American Black Duck (hybrid)
___Mallard/American Black Duck
___Northern Pintail
___Green-winged Teal
___Anas sp.
___dabbling duck sp.
___Canvasback
___Redhead
___Ring-necked Duck
___Tufted Duck
___Greater Scaup
___Lesser Scaup
___Greater/Lesser Scaup
___Aythya sp.
___White-winged Scoter
___Long-tailed Duck
___Bufflehead
___Common Goldeneye
___Hooded Merganser
___Common Merganser
___Red-breasted Merganser
___Common/Red-breasted Merganser
___Ruddy Duck
___duck sp.
___waterfowl sp.

Grouse, Quail, and Allies

___Wild Turkey

Grebes

___Pied-billed Grebe
___Horned Grebe
___Red-necked Grebe

Pigeons and Doves

___Rock Pigeon
___Eurasian Collared-Dove
___Mourning Dove

Cuckoos

___Yellow-billed Cuckoo
___Black-billed Cuckoo

___Yellow-billed/Black-billed Cuckoo

Nightjars

___Common Nighthawk

Swifts

___Chimney Swift

Hummingbirds

___Ruby-throated Hummingbird

Rails, Gallinules, and Allies

___King Rail
___Clapper Rail
___King/Clapper Rail
___Virginia Rail
___King/Virginia Rail
___Sora
___Common Gallinule
___American Coot
___Yellow Rail

Cranes

___Sandhill Crane

Shorebirds

___American Avocet
___Black-bellied Plover
___American Golden-Plover
___Semipalmated Plover
___Killdeer
___Upland Sandpiper
___Whimbrel
___Hudsonian Godwit
___Marbled Godwit
___Ruddy Turnstone
___Red Knot
___Ruff
___Stilt Sandpiper
___Curlew Sandpiper
___Dunlin
___Least Sandpiper
___White-rumped Sandpiper
___Pectoral Sandpiper
___Semipalmated Sandpiper
___Western Sandpiper
___peep sp.
___Calidris sp.
___Short-billed Dowitcher
___Long-billed Dowitcher
___Short-billed/Long-billed Dowitcher
___American Woodcock
___Wilson's Snipe
___Red-necked Phalarope
___Red Phalarope
___Spotted Sandpiper
___Solitary Sandpiper
___Greater Yellowlegs
___Willet
___Lesser Yellowlegs
___Greater/Lesser Yellowlegs
___shorebird sp.

Gulls, Terns, and Skimmers

___Bonaparte's Gull
___Little Gull
___Laughing Gull
___Ring-billed Gull
___Herring Gull
___Lesser Black-backed Gull
___Glaucous Gull
___Great Black-backed Gull
___gull sp.
___Least Tern
___Caspian Tern
___Black Tern
___Forster's Tern
___tern sp.

Loons

___Red-throated Loon
___Common Loon

Cormorants and Anhingas

___Great Cormorant
___Double-crested Cormorant
___Great/Double-crested Cormorant

Herons, Ibis, and Allies

___American Bittern
___Least Bittern
___Great Blue Heron
___Great Egret
___Snowy Egret
___Little Blue Heron
___Tricolored Heron
___Cattle Egret
___white egret sp.
___Green Heron
___Black-crowned Night-Heron

This field checklist was generated using eBird (ebird.org)

___Glossy Ibis
___Glossy/White-faced Ibis

Vultures, Hawks, and Allies

___Black Vulture
___Turkey Vulture
___Osprey
___Golden Eagle
___Northern Harrier
___Sharp-shinned Hawk
___Cooper's Hawk
___Sharp-shinned/Cooper's Hawk
___Accipiter sp.
___Bald Eagle
___Red-shouldered Hawk
___Broad-winged Hawk
___Red-tailed Hawk
___Red-shouldered x Red-tailed Hawk (hybrid)
___Rough-legged Hawk
___Buteo sp.
___hawk sp.

Owls

___Eastern Screech-Owl
___Great Horned Owl
___Snowy Owl
___Barred Owl
___Short-eared Owl
___owl sp.

Kingfishers

___Belted Kingfisher

Woodpeckers

___Yellow-bellied Sapsucker
___Red-headed Woodpecker
___Red-bellied Woodpecker
___Downy Woodpecker
___Hairy Woodpecker
___Downy/Hairy Woodpecker
___Pileated Woodpecker
___Northern Flicker
___woodpecker sp.

Falcons and Caracaras

___American Kestrel
___Merlin
___Peregrine Falcon
___falcon sp.
___diurnal raptor sp.

Tyrant Flycatchers: Pewees, Kingbirds, and Allies

___Olive-sided Flycatcher
___Eastern Wood-Pewee
___Yellow-bellied Flycatcher
___Acadian Flycatcher
___Alder Flycatcher
___Willow Flycatcher
___Alder/Willow Flycatcher (Traill's Flycatcher)
___Least Flycatcher
___Empidonax sp.
___Eastern Phoebe
___Great Crested Flycatcher
___Western Kingbird
___Eastern Kingbird
___Gray Kingbird
___flycatcher sp. (Tyrannidae sp.)

Vireos

___White-eyed Vireo
___Yellow-throated Vireo
___Blue-headed Vireo
___Philadelphia Vireo
___Warbling Vireo
___Philadelphia/Warbling Vireo
___Red-eyed Vireo
___vireo sp.

Jays, Magpies, Crows, and Ravens

___Blue Jay
___American Crow
___Fish Crow
___crow sp.
___Common Raven

Tits, Chickadees, and Titmice

___Carolina Chickadee
___Black-capped Chickadee
___Carolina/Black-capped Chickadee
___Tufted Titmouse

Larks

___Horned Lark

Martins and Swallows

___Northern Rough-winged Swallow
___Purple Martin
___new world martin sp. (Progne sp.)
___Tree Swallow
___Bank Swallow

5/9/22, 10:24 AM Checklist for Swan Harbor Farm Park

___Barn Swallow
___Cliff Swallow
___swallow sp.

Kinglets

___Ruby-crowned Kinglet
___Golden-crowned Kinglet

Nuthatches

___Red-breasted Nuthatch
___White-breasted Nuthatch

Treecreepers

___Brown Creeper

Gnatcatchers

___Blue-gray Gnatcatcher

Wrens

___House Wren
___Winter Wren
___Sedge Wren
___Marsh Wren
___Carolina Wren
___wren sp.

Starlings and Mynas

___European Starling

Catbirds, Mockingbirds, and Thrashers

___Gray Catbird
___Brown Thrasher
___Northern Mockingbird

Thrushes

___Eastern Bluebird
___Mountain Bluebird
___Veery
___Gray-cheeked Thrush
___Gray-cheeked/Bicknell's Thrush
___Swainson's Thrush
___Hermit Thrush
___Catharus sp.
___Wood Thrush
___American Robin

Waxwings

___Cedar Waxwing

Old World Sparrows

___House Sparrow

Wagtails and Pipits

___American Pipit

Finches, Euphonias, and Allies

___Evening Grosbeak
___House Finch
___Purple Finch
___Common Redpoll
___Red Crossbill
___Pine Siskin
___American Goldfinch

Longspurs and Snow Buntings

___Lapland Longspur
___Snow Bunting

New World Sparrows

___Grasshopper Sparrow
___Chipping Sparrow
___Clay-colored Sparrow
___Field Sparrow
___Spizella sp.
___Lark Sparrow
___American Tree Sparrow
___Spizella sp./American Tree Sparrow
___Fox Sparrow
___Dark-eyed Junco
___White-crowned Sparrow
___White-throated Sparrow
___Vesper Sparrow
___LeConte's Sparrow
___Nelson's Sparrow
___Savannah Sparrow
___Song Sparrow
___Lincoln's Sparrow
___Swamp Sparrow
___Eastern Towhee
___sparrow sp.

Yellow-breasted Chat

___Yellow-breasted Chat

Blackbirds

___Yellow-headed Blackbird
___Bobolink
___Eastern Meadowlark
___Orchard Oriole
___Baltimore Oriole
___Red-winged Blackbird
___Brown-headed Cowbird
___Rusty Blackbird
___Common Grackle
___blackbird sp.

This field checklist was generated using eBird (ebird.org)

Wood-Warblers

___Ovenbird
___Worm-eating Warbler
___Louisiana Waterthrush
___Northern Waterthrush
___Golden-winged Warbler
___Blue-winged Warbler
___Black-and-white Warbler
___Prothonotary Warbler
___Tennessee Warbler
___Orange-crowned Warbler
___Nashville Warbler
___Connecticut Warbler
___Mourning Warbler
___Connecticut/MacGillivray's/Mourning Warbler
___Kentucky Warbler
___Common Yellowthroat
___Hooded Warbler
___American Redstart
___Cape May Warbler
___Cerulean Warbler
___Northern Parula
___Magnolia Warbler
___Bay-breasted Warbler
___Blackburnian Warbler
___Yellow Warbler
___Chestnut-sided Warbler
___Blackpoll Warbler
___Bay-breasted/Blackpoll Warbler
___Black-throated Blue Warbler
___Palm Warbler
___Pine Warbler
___Yellow-rumped Warbler
___Yellow-throated Warbler
___Prairie Warbler
___Black-throated Green Warbler
___Canada Warbler
___Wilson's Warbler
___warbler sp. (Parulidae sp.)

Cardinals, Grosbeaks, and Allies

___Scarlet Tanager
___Northern Cardinal
___Rose-breasted Grosbeak
___Blue Grosbeak
___Indigo Bunting
___Dickcissel

Others

___passerine sp.

This field checklist was generated using eBird (ebird.org)

eBird Field Checklist

Oakington

Harford, Maryland, US

ebird.org/hotspot/L1155272

175 species (+17 other taxa) - Year-round, All years

Date: _____
Start time: _____
Duration: _____
Distance: _____
Party size: _____
Notes:

This checklist is generated with data from eBird (ebird.org), a global database of bird sightings from birders like you. If you enjoy this checklist, please consider contributing your sightings to eBird. It is 100% free to take part, and your observations will help support birders, researchers, and conservationists worldwide.

Go to ebird.org to learn more!

Waterfowl

___Snow Goose
___Domestic goose sp. (Domestic type)
___Barnacle Goose
___Cackling Goose
___Canada Goose
___Tundra Swan
___Wood Duck
___Northern Shoveler
___American Wigeon
___Mallard
___American Black Duck
___Northern Pintail
___Green-winged Teal
___Canvasback
___Ring-necked Duck
___Greater Scaup
___Lesser Scaup
___Greater/Lesser Scaup
___Aythya sp.
___Bufflehead
___Common Goldeneye
___Hooded Merganser
___Common Merganser
___Ruddy Duck
___duck sp.

Grouse, Quail, and Allies

___Wild Turkey

Grebes

___Pied-billed Grebe
___Horned Grebe

Pigeons and Doves

___Rock Pigeon
___Mourning Dove

Cuckoos

___Yellow-billed Cuckoo

Nightjars

___Common Nighthawk

Swifts

___Chimney Swift

Hummingbirds

___Ruby-throated Hummingbird

Shorebirds

___Black-bellied Plover
___Semipalmated Plover
___Killdeer
___Whimbrel
___Least Sandpiper
___Semipalmated Sandpiper
___American Woodcock
___Wilson's Snipe
___Spotted Sandpiper
___Solitary Sandpiper
___Greater Yellowlegs
___Lesser Yellowlegs

Gulls, Terns, and Skimmers

___Bonaparte's Gull
___Laughing Gull
___Ring-billed Gull
___Herring Gull

___Great Black-backed Gull
___gull sp.
___Least Tern
___Caspian Tern
___Forster's Tern

Loons

___Common Loon

Cormorants and Anhingas

___Double-crested Cormorant

Herons, Ibis, and Allies

___Great Blue Heron
___Great Egret
___Green Heron
___Glossy Ibis

Vultures, Hawks, and Allies

___Black Vulture
___Turkey Vulture
___Osprey
___Northern Harrier
___Sharp-shinned Hawk
___Cooper's Hawk
___Bald Eagle
___Red-shouldered Hawk
___Red-tailed Hawk
___hawk sp.

Owls

___Eastern Screech-Owl
___Great Horned Owl
___Barred Owl

Kingfishers

___Belted Kingfisher

Woodpeckers

___Yellow-bellied Sapsucker
___Red-headed Woodpecker
___Red-bellied Woodpecker
___Downy Woodpecker
___Hairy Woodpecker
___Pileated Woodpecker
___Northern Flicker
___woodpecker sp.

Falcons and Caracaras

___American Kestrel
___Merlin
___Peregrine Falcon

Tyrant Flycatchers: Pewees, Kingbirds, and Allies

___Eastern Wood-Pewee
___Acadian Flycatcher
___Alder/Willow Flycatcher (Traill's Flycatcher)
___Least Flycatcher
___Empidonax sp.
___Eastern Phoebe
___Great Crested Flycatcher
___Eastern Kingbird
___flycatcher sp. (Tyrannidae sp.)

Vireos

___White-eyed Vireo
___Yellow-throated Vireo
___Blue-headed Vireo
___Philadelphia Vireo
___Warbling Vireo
___Red-eyed Vireo

Jays, Magpies, Crows, and Ravens

___Blue Jay
___American Crow
___Fish Crow
___crow sp.
___Common Raven

Tits, Chickadees, and Titmice

___Carolina Chickadee
___Tufted Titmouse

Larks

___Horned Lark

Martins and Swallows

___Northern Rough-winged Swallow
___Purple Martin
___Tree Swallow
___Bank Swallow
___Barn Swallow
___swallow sp.

Kinglets

___Ruby-crowned Kinglet
___Golden-crowned Kinglet

Nuthatches

___Red-breasted Nuthatch
___White-breasted Nuthatch

Treecreepers

___Brown Creeper

Gnatcatchers

___Blue-gray Gnatcatcher

5/9/22, 10:25 AM Checklist for Oakington

Wrens

___House Wren
___Winter Wren
___Carolina Wren
___wren sp.

Starlings and Mynas

___European Starling

Catbirds, Mockingbirds, and Thrashers

___Gray Catbird
___Brown Thrasher
___Northern Mockingbird

Thrushes

___Eastern Bluebird
___Veery
___Hermit Thrush
___Wood Thrush
___American Robin

Waxwings

___Cedar Waxwing

Old World Sparrows

___House Sparrow

Wagtails and Pipits

___American Pipit

Finches, Euphonias, and Allies

___House Finch
___Purple Finch
___Pine Siskin
___American Goldfinch

New World Sparrows

___Chipping Sparrow
___Field Sparrow
___American Tree Sparrow
___Fox Sparrow
___Dark-eyed Junco
___White-crowned Sparrow
___White-throated Sparrow
___Savannah Sparrow
___Song Sparrow
___Lincoln's Sparrow
___Swamp Sparrow
___Eastern Towhee

Blackbirds

___Bobolink
___Orchard Oriole
___Baltimore Oriole
___Red-winged Blackbird
___Brown-headed Cowbird
___Rusty Blackbird
___Common Grackle
___blackbird sp.

Wood-Warblers

___Ovenbird
___Blue-winged Warbler
___Black-and-white Warbler
___Tennessee Warbler
___Nashville Warbler
___Common Yellowthroat
___American Redstart
___Cape May Warbler
___Northern Parula
___Magnolia Warbler
___Bay-breasted Warbler
___Blackburnian Warbler
___Yellow Warbler
___Chestnut-sided Warbler
___Blackpoll Warbler
___Bay-breasted/Blackpoll Warbler
___Black-throated Blue Warbler
___Palm Warbler
___Pine Warbler
___Yellow-rumped Warbler
___Yellow-throated Warbler
___Prairie Warbler
___Black-throated Green Warbler
___Canada Warbler
___Wilson's Warbler
___warbler sp. (Parulidae sp.)

Cardinals, Grosbeaks, and Allies

___Scarlet Tanager
___Northern Cardinal
___Blue Grosbeak
___Indigo Bunting

Others

___passerine sp.

This field checklist was generated using eBird (ebird.org)

eBird Field Checklist

Mullins Park

Harford, Maryland, US

ebird.org/hotspot/L7687852

167 species (+18 other taxa) – Year-round, All years

Date: _____
Start time: _____
Duration: _____
Distance: _____
Party size: _____
Notes:

This checklist is generated with data from eBird (ebird.org), a global database of bird sightings from birders like you. If you enjoy this checklist, please consider contributing your sightings to eBird. It is 100% free to take part, and your observations will help support birders, researchers, and conservationists worldwide.

Go to ebird.org to learn more!

Waterfowl

___Snow Goose
___Cackling Goose
___Canada Goose
___goose sp.
___Tundra Swan
___swan sp.
___Wood Duck
___American Wigeon
___Mallard
___American Black Duck
___Mallard/American Black Duck
___Northern Pintail
___Green-winged Teal
___Hooded Merganser
___Common Merganser
___duck sp.

Grouse, Quail, and Allies

___Wild Turkey

Grebes

___Pied-billed Grebe

Pigeons and Doves

___Rock Pigeon
___Mourning Dove

Cuckoos

___Yellow-billed Cuckoo
___Black-billed Cuckoo

Swifts

___Chimney Swift

Hummingbirds

___Ruby-throated Hummingbird

Rails, Gallinules, and Allies

___Virginia Rail
___American Coot

Shorebirds

___Killdeer
___American Woodcock
___Wilson's Snipe
___Spotted Sandpiper
___Greater Yellowlegs
___Greater/Lesser Yellowlegs

Gulls, Terns, and Skimmers

___Bonaparte's Gull
___Ring-billed Gull
___Herring Gull
___Great Black-backed Gull
___gull sp.
___Least Tern

Loons

___Common Loon

Cormorants and Anhingas

___Double-crested Cormorant

Herons, Ibis, and Allies

___American Bittern
___Great Blue Heron
___Great Egret
___Green Heron

Vultures, Hawks, and Allies

___Black Vulture

___Turkey Vulture
___Osprey
___Northern Harrier
___Sharp-shinned Hawk
___Cooper's Hawk
___Sharp-shinned/Cooper's Hawk
___Bald Eagle
___Red-shouldered Hawk
___Broad-winged Hawk
___Red-tailed Hawk
___Buteo sp.

Owls

___Eastern Screech-Owl
___Great Horned Owl
___Barred Owl
___owl sp.

Kingfishers

___Belted Kingfisher

Woodpeckers

___Yellow-bellied Sapsucker
___Red-bellied Woodpecker
___Downy Woodpecker
___Hairy Woodpecker
___Pileated Woodpecker
___Northern Flicker

Falcons and Caracaras

___American Kestrel
___Peregrine Falcon

Tyrant Flycatchers: Pewees, Kingbirds, and Allies

___Eastern Wood-Pewee
___Yellow-bellied Flycatcher
___Acadian Flycatcher
___Willow Flycatcher
___Least Flycatcher
___Pacific-slope/Cordilleran Flycatcher (Western Flycatcher)
___Empidonax sp.
___Eastern Phoebe
___Great Crested Flycatcher
___Eastern Kingbird

Vireos

___White-eyed Vireo
___Yellow-throated Vireo
___Blue-headed Vireo
___Philadelphia Vireo
___Warbling Vireo
___Red-eyed Vireo

Jays, Magpies, Crows, and Ravens

___Blue Jay
___American Crow
___Fish Crow
___crow sp.
___Common Raven

Tits, Chickadees, and Titmice

___Carolina Chickadee
___Black-capped Chickadee
___Tufted Titmouse

Martins and Swallows

___Northern Rough-winged Swallow
___Purple Martin
___Tree Swallow
___Bank Swallow
___Barn Swallow
___swallow sp.

Kinglets

___Ruby-crowned Kinglet
___Golden-crowned Kinglet

Nuthatches

___Red-breasted Nuthatch
___White-breasted Nuthatch

Treecreepers

___Brown Creeper

Gnatcatchers

___Blue-gray Gnatcatcher

Wrens

___House Wren
___Winter Wren
___Marsh Wren
___Carolina Wren

Starlings and Mynas

___European Starling

Catbirds, Mockingbirds, and Thrashers

___Gray Catbird
___Brown Thrasher
___Northern Mockingbird

Thrushes

___Eastern Bluebird
___Veery
___Gray-cheeked Thrush
___Swainson's Thrush
___Hermit Thrush

This field checklist was generated using eBird (ebird.org)

___Wood Thrush
___American Robin

Waxwings

___Cedar Waxwing

Old World Sparrows

___House Sparrow

Finches, Euphonias, and Allies

___House Finch
___Purple Finch
___Pine Siskin
___American Goldfinch

New World Sparrows

___Chipping Sparrow
___Field Sparrow
___American Tree Sparrow
___Fox Sparrow
___Dark-eyed Junco
___White-crowned Sparrow
___White-throated Sparrow
___Savannah Sparrow
___Song Sparrow
___Lincoln's Sparrow
___Swamp Sparrow
___Eastern Towhee
___sparrow sp.

Yellow-breasted Chat

___Yellow-breasted Chat

Blackbirds

___Orchard Oriole
___Baltimore Oriole
___Red-winged Blackbird
___Brown-headed Cowbird
___Rusty Blackbird
___Common Grackle
___blackbird sp.

Wood-Warblers

___Ovenbird
___Worm-eating Warbler
___Northern Waterthrush
___Blue-winged Warbler
___Golden-winged x Blue-winged Warbler (hybrid)
___Black-and-white Warbler
___Prothonotary Warbler
___Tennessee Warbler
___Orange-crowned Warbler
___Nashville Warbler
___Connecticut Warbler
___Common Yellowthroat
___Hooded Warbler
___American Redstart
___Cape May Warbler
___Cerulean Warbler
___Northern Parula
___Magnolia Warbler
___Bay-breasted Warbler
___Blackburnian Warbler
___Yellow Warbler
___Chestnut-sided Warbler
___Blackpoll Warbler
___Bay-breasted/Blackpoll Warbler
___Black-throated Blue Warbler
___Palm Warbler
___Pine Warbler
___Yellow-rumped Warbler
___Prairie Warbler
___Black-throated Green Warbler
___Canada Warbler
___Wilson's Warbler
___warbler sp. (Parulidae sp.)

Cardinals, Grosbeaks, and Allies

___Scarlet Tanager
___Northern Cardinal
___Rose-breasted Grosbeak
___Blue Grosbeak
___Indigo Bunting

eBird Field Checklist

Battery Island

Harford, Maryland, US

ebird.org/hotspot/L4643295

142 species (+20 other taxa) - Year-round, All years

Date: _____
Start time: _____
Duration: _____
Distance: _____
Party size: _____
Notes:

This checklist is generated with data from eBird (ebird.org), a global database of bird sightings from birders like you. If you enjoy this checklist, please consider contributing your sightings to eBird. It is 100% free to take part, and your observations will help support birders, researchers, and conservationists worldwide.

Go to ebird.org to learn more!

Waterfowl

___Canada Goose
___Greater White-fronted x Canada Goose (hybrid)
___Mute Swan
___Tundra Swan
___Blue-winged Teal
___Northern Shoveler
___Gadwall
___Eurasian Wigeon
___American Wigeon
___Mallard
___American Black Duck
___Northern Pintail
___Green-winged Teal
___dabbling duck sp.
___Canvasback
___Ring-necked Duck
___Greater Scaup
___Lesser Scaup
___Greater/Lesser Scaup
___Aythya sp.
___Bufflehead
___Common Goldeneye
___Hooded Merganser
___Common Merganser
___Red-breasted Merganser
___Ruddy Duck
___duck sp.
___waterfowl sp.

Grebes

___Pied-billed Grebe
___Horned Grebe

Pigeons and Doves

___Mourning Dove

Swifts

___Chimney Swift

Hummingbirds

___Ruby-throated Hummingbird

Rails, Gallinules, and Allies

___American Coot

Shorebirds

___Black-bellied Plover
___American Golden-Plover
___Semipalmated Plover
___Killdeer
___Whimbrel
___Hudsonian Godwit
___Ruddy Turnstone
___Stilt Sandpiper
___Curlew Sandpiper
___Sanderling
___Dunlin
___Least Sandpiper
___White-rumped Sandpiper
___Buff-breasted Sandpiper
___Pectoral Sandpiper
___Semipalmated Sandpiper
___Western Sandpiper
___peep sp.

___Calidris sp.
___Short-billed Dowitcher
___Long-billed Dowitcher
___Spotted Sandpiper
___Solitary Sandpiper
___Greater Yellowlegs
___Willet
___Lesser Yellowlegs
___Greater/Lesser Yellowlegs
___shorebird sp.

Gulls, Terns, and Skimmers

___Bonaparte's Gull
___Laughing Gull
___Ring-billed Gull
___Herring Gull
___Lesser Black-backed Gull
___Great Black-backed Gull
___gull sp.
___Least Tern
___Caspian Tern
___Black Tern
___Common Tern
___Forster's Tern
___large tern sp.
___tern sp.
___Black Skimmer

Loons

___Common Loon

Cormorants and Anhingas

___Double-crested Cormorant

Pelicans

___American White Pelican

Herons, Ibis, and Allies

___Great Blue Heron
___Great Egret
___Snowy Egret
___Tricolored Heron
___Green Heron
___Black-crowned Night-Heron
___Glossy Ibis

Vultures, Hawks, and Allies

___Black Vulture
___Turkey Vulture
___Osprey
___Northern Harrier
___Sharp-shinned Hawk
___Cooper's Hawk
___Bald Eagle
___Red-shouldered Hawk
___Red-tailed Hawk
___hawk sp.

Owls

___Short-eared Owl

Kingfishers

___Belted Kingfisher

Woodpeckers

___Northern Flicker

Falcons and Caracaras

___American Kestrel
___Merlin
___Peregrine Falcon

Tyrant Flycatchers: Pewees, Kingbirds, and Allies

___Alder/Willow Flycatcher (Traill's Flycatcher)
___Least Flycatcher
___Eastern Phoebe
___Eastern Kingbird

Vireos

___Red-eyed Vireo

Jays, Magpies, Crows, and Ravens

___Blue Jay
___American Crow
___Fish Crow
___crow sp.

Martins and Swallows

___Northern Rough-winged Swallow
___Purple Martin
___Tree Swallow
___Bank Swallow
___Barn Swallow
___Cliff Swallow
___swallow sp.

Kinglets

___Ruby-crowned Kinglet
___Golden-crowned Kinglet

Gnatcatchers

___Blue-gray Gnatcatcher

Wrens

___House Wren
___Winter Wren
___Marsh Wren

5/9/22, 10:27 AM Checklist for Battery Island

___Carolina Wren

Starlings and Mynas

___European Starling

Catbirds, Mockingbirds, and Thrashers

___Gray Catbird
___Northern Mockingbird

Wagtails and Pipits

___American Pipit

Finches, Euphonias, and Allies

___American Goldfinch

Longspurs and Snow Buntings

___Snow Bunting

New World Sparrows

___Fox Sparrow
___White-crowned Sparrow
___White-throated Sparrow
___Savannah Sparrow
___Song Sparrow
___Swamp Sparrow
___Eastern Towhee
___sparrow sp.

Blackbirds

___Orchard Oriole
___Red-winged Blackbird
___Brown-headed Cowbird
___Common Grackle

Wood-Warblers

___Black-and-white Warbler
___Tennessee Warbler
___Nashville Warbler
___Common Yellowthroat
___American Redstart
___Cape May Warbler
___Northern Parula
___Magnolia Warbler
___Yellow Warbler
___Blackpoll Warbler
___Black-throated Blue Warbler
___Palm Warbler
___Yellow-rumped Warbler
___Black-throated Green Warbler
___Canada Warbler
___warbler sp. (Parulidae sp.)

Cardinals, Grosbeaks, and Allies

___Northern Cardinal

Others

___passerine sp.

This field checklist was generated using eBird (ebird.org)

iNaturalist Species List

AMPHIBIANS	
Acris crepitans	Northern Cricket Frog
Ambystoma maculatum	Spotted Salamander
Anaxyrus fowleri	Fowler's Toad
Hyla versicolor	Gray Treefrog
Lithobates clamitans	Green Frog
Lithobates palustris	Pickerel Frog
Pseudacris crucifer	Spring Peeper
BIRDS	
Acanthis flammea	Common Redpoll
Accipiter cooperii	Cooper's Hawk
Accipiter striatus	Sharp-shinned Hawk
Agelaius phoeniceus	Red-winged Blackbird
Aix sponsa	Wood Duck
Anas crecca	Green-winged Teal
Anas rubripes	American Black Duck
Anser caerulescens	Snow Goose
Anthus rubescens	American Pipit
Ardea alba	Great Egret
Ardea herodias	Great Blue Heron
Aythya affinis	Lesser Scaup
Aythya americana	Redhead
Aythya collaris	Ring-necked Duck
Aythya fuligula	Tufted Duck
Aythya marila	Greater Scaup
Aythya valisineria	Canvasback
Baeolophus bicolor	Tufted Titmouse
Bombycilla cedrorum	Cedar Waxwing
Botaurus lentiginosus	American Bittern
Branta canadensis	Canada Goose
Branta hutchinsii	Cackling Goose
Buteo jamaicensis	Red-tailed Hawk
Buteo lineatus	Red-shouldered Hawk
Calcarius lapponicus	Lapland Longspur
Calidris ferruginea	Curlew Sandpiper
Calidris fuscicollis	White-rumped Sandpiper
Calidris himantopus	Stilt Sandpiper
Calidris melanotos	Pectoral Sandpiper
Calidris minutilla	Least Sandpiper
Calidris pusilla	Semipalmated Sandpiper
Cardellina canadensis	Canada Warbler
Cardellina pusilla	Wilson's Warbler
Cathartes aura	Turkey Vulture
Catharus guttatus	Hermit Thrush
Catharus minimus	Gray-cheeked Thrush
Certhia americana	Brown Creeper
Charadrius semipalmatus	Semipalmated Plover
Charadrius vociferus	Killdeer
Chondestes grammacus	Lark Sparrow
Cistothorus stellaris	Sedge Wren

Coccyzus americanus	Yellow-billed Cuckoo
Colaptes auratus	Northern Flicker
Columba livia domestica	Feral Pigeon
Contopus virens	Eastern Wood-Pewee
Corvus ossifragus	Fish Crow
Dolichonyx oryzivorus	Bobolink
Dryobates pubescens	Downy Woodpecker
Dumetella carolinensis	Gray Catbird
Empidonax virescens	Acadian Flycatcher
Eremophila alpestris	Horned Lark
Falco sparverius	American Kestrel
Fulica americana	American Coot
Gallinago delicata	Wilson's Snipe
Gallinula galeata	Common Gallinule
Geothlypis trichas	Common Yellowthroat
Haemorhous mexicanus	House Finch
Haliaeetus leucocephalus	Bald Eagle
Icteria virens	Yellow-breasted Chat
Icterus spurius	Orchard Oriole
Ixobrychus exilis	Least Bittern
Junco hyemalis	Dark-eyed Junco
Leiothlypis celata	Orange-crowned Warbler
Leiothlypis peregrina	Tennessee Warbler
Leucophaeus atricilla	Laughing Gull
Limnodromus g. griseus	Atlantic Short-billed Dowitcher
Lophodytes cucullatus	Hooded Merganser
Mareca americana	American Wigeon
Megaceryle alcyon	Belted Kingfisher
Melospiza georgiana	Swamp Sparrow
Melospiza melodia	Song Sparrow
Mergus merganser	Common Merganser
Mimus polyglottos	Northern Mockingbird
Mniotilta varia	Black-and-white Warbler
Molothrus ater	Brown-headed Cowbird
Oxyura jamaicensis	Ruddy Duck
Pandion haliaetus	Osprey
Passer domesticus	House Sparrow
Passerculus sandwichensis	Savannah Sparrow
Passerina caerulea	Blue Grosbeak
Passerina cyanea	Indigo Bunting
Phalacrocorax carbo	Great Cormorant
Piranga olivacea	Scarlet Tanager
Pluvialis squatarola	Black-bellied Plover
Podilymbus podiceps	Pied-billed Grebe
Poecile atricapillus	Black-capped Chickadee
Poecile carolinensis	Carolina Chickadee
Pooecetes gramineus	Vesper Sparrow
Porzana carolina	Sora
Progne subis	Purple Martin
Quiscalus quiscula	Common Grackle
Rallus crepitans	Clapper Rail
Rallus limicola	Virginia Rail
Regulus satrapa	Golden-crowned Kinglet

Riparia riparia	Bank Swallow
Sayornis phoebe	Eastern Phoebe
Setophaga americana	Northern Parula
Setophaga coronata	Yellow-rumped Warbler
Setophaga discolor	Prairie Warbler
Setophaga magnolia	Magnolia Warbler
Setophaga palmarum	Palm Warbler
Setophaga p.palmarum	Western Palm Warbler
Setophaga petechia	Yellow Warbler
Setophaga pinus	Pine Warbler
Setophaga ruticilla	American Redstart
Setophaga striata	Blackpoll Warbler
Setophaga tigrina	Cape May Warbler
Sialia sialis	Eastern Bluebird
Spatula clypeata	Northern Shoveler
Spatula discors	Blue-winged Teal
Sphyrapicus varius	Yellow-bellied Sapsucker
Spiza americana	Dickcissel
Spizella passerina	Chipping Sparrow
Spizella pusilla	Field Sparrow
Spizelloides arborea	American Tree Sparrow
Stelgidopteryx serripennis	Northern Rough-winged Swallow
Streptopelia decaocto	Eurasian Collared-Dove
Sturnella magna	Eastern Meadowlark
Tachycineta bicolor	Tree Swallow
Thryothorus ludovicianus	Carolina Wren
Toxostoma rufum	Brown Thrasher
Tringa flavipes	Lesser Yellowlegs
Tringa melanoleuca	Greater Yellowlegs
Tringa solitaria	Solitary Sandpiper
Troglodytes aedon	House Wren
Turdus migratorius	American Robin
Tyrannus dominicensis	Gray Kingbird
Vermivora cyanoptera	Blue-winged Warbler
Vireo gilvus	Warbling Vireo
Vireo olivaceus	Red-eyed Vireo
Vireo solitarius	Blue-headed Vireo
Zenaida macroura	Mourning Dove

FISH

Cyprinus carpio	European Carp
Fundulus heteroclitus	Mummichog

INSECTS

Acericecis ocellaris	Ocellate Gall Midge
Aculops rhois Poison	Ivy Leaf Mite
Agrilus ruficollis	Red-necked Cane Borer Beetle
Anax junius	Common Green Darner
Antheraea polyphemus	Polyphemus Moth
Asterocampa celtis	Hackberry Emperor
Atalopedes campestris	Sachem
Boloria bellona	Meadow Fritillary
Bombus griseocollis	Brown-belted Bumble Bee

Burnsius communis	Common Checkered-Skipper
Calycopis cecrops	Red-banded Hairstreak
Celastrina neglecta	Summer Azure
Celithemis eponina	Halloween Pennant
Ceratomia undulosa	Waved Sphinx
Cercyonis pegala	Common Wood-Nymph
Chauliognathus marginatus	Margined Leatherwing Beetle
Chauliognathus pensyl.	Goldenrod Soldier Beetle
Chlaenius aestivus	
Chlosyne nycteis	Silvery Checkerspot
Chlosyne nycteis	Silvery Checkerspot
Cicindela punctulata	Punctured Tiger Beetle
Colias eurytheme	Orange Sulphur
Colias philodice	Clouded Sulphur
Conchylodes ovulalis	Zebra Conchylodes Moth
Cupido comyntas	Eastern Tailed-Blue
Danaus plexippus	Monarch
Enallagma civile	Familiar Bluet
Enallagma durum	Big Bluet
Epargyreus clarus	Silver-spotted Skipper
Erynnis baptisiae	Wild Indigo Duskywing
Erynnis horatius	Horace's Duskywing
Erynnis juvenalis	Juvenal's Duskywing
Estigmene acrea	Salt Marsh Moth
Euaresta aequalis	
Euphyes vestris	Dun Skipper
Euptoieta claudia	Variegated Fritillary
Eurytides marcellus	Zebra Swallowtail
Flatormenis proxima	Northern Flatid Planthopper
Haematopis grataria	Chickweed Geometer Moth
Hagenius brevistylus	Dragonhunter
Halyomorpha halys	Brown Marmorated Stink Bug
Halysidota	
Halysidota harrisii	Sycamore Tussock Moth
Harmonia axyridis	Asian Lady Beetle
Hemaris diffinis	Snowberry Clearwing
Hemaris thysbe	Hummingbird Clearwing
Hydrophilus triangularis	Giant Water Scavenger Beetle
Hylephila phyleus	Fiery Skipper
Hypena scabra	Green Cloverworm Moth
Hypercompe scribonia	Giant Leopard Moth
Ischnura hastata	Citrine Forktail
Ischnura posita	Fragile Forktail
Junonia coenia	Common Buckeye
Leptinotarsa juncta	False Potato Beetle
Lestes rectangularis	Slender Spreadwing
Lethe appalachia	Appalachian Brown
Libellula cyanea	Spangled Skimmer
Libellula luctuosa	Widow Skimmer
Libellula needhami	Needham's Skimmer
Libellula pulchella	Twelve-spotted Skimmer
Libytheana carinenta	American Snout
Limenitis archippus	Viceroy

Limenitis arthemis	Red-spotted Admiral
Limenitis arthemis astyanax	Red-spotted Purple
Lon zabulon	Zabulon Skipper
Lycorma delicatula	Spotted Lanternfly
Malacosoma americana	Eastern Tent Caterpillar Moth
Megalopyge opercularis	Southern Flannel Moth
Nymphalis antiopa	Mourning Cloak
Oncopeltus fasciatus	Large Milkweed Bug
Panoquina ocola	Ocola Skipper
Papilio glaucus	Eastern Tiger Swallowtail
Papilio polyxenes	Black Swallowtail
Papilio troilus	Spicebush Swallowtail
Parrhasius m-album	White M Hairstreak
Pelidnota punctata	Grapevine Beetle
Phoebis sennae	Cloudless Sulphur
Pholisora catullus	Common Sootywing
Phyciodes tharos	Pearl Crescent
Pieris rapae	Cabbage White
Plathemis lydia	Common Whitetail
Poanes viator	Broad-winged Skipper
Polygonia comma	Eastern Comma
Polygonia interrogationis	Question Mark
Polygrammate hebraeicum	Hebrew Moth
Popillia japonica	Japanese Beetle
Prosapia bicincta	Two-lined Spittlebug
Pyrrharctia isabella	Isabella Tiger Moth
Renia adspergillus	Speckled Renia Moth
Rhodobaenus quinquepunc.	Cocklebur Weevil
Scolia bicincta	Double-banded Scoliid Wasp
Staphylus hayhurstii	Hayhurst's Scallopwing
Strymon melinus	Gray Hairstreak
Sympetrum ambiguum	Blue-faced Meadowhawk
Sympetrum vicinum	Autumn Meadowhawk
Tetraopes tetrophthalmus	Red Milkweed Beetle
Trichopoda pennipes	Swift Feather-legged Fly
Ululodes quadripunctatus	Four-spotted Owlfly
Urbanus proteus	Long-tailed Skipper
Urbanus proteus	Long-tailed Skipper
Vanessa atalanta	Red Admiral
Vernia verna	Little Glassywing

MAMMALS

Blarina brevicauda	Northern Short-tailed Shrew
Canis latrans	Coyote
Castor canadensis	American Beaver
Lontra canadensis	North American River Otter
Odocoileus virginianus	White-tailed Deer
Ondatra zibethicus	Muskrat
Sylvilagus floridanus	Eastern Cottontail
Vulpes vulpes	Red Fox

PLANTS

Acer platanoides	Norway maple

Acer rubrum	red maple
Ambrosia artemisiifolia	common ragweed
Amorpha fruticosa	desert false indigo
Apocynum cannabinum	hemp dogbane
Asclepias syriaca	common milkweed
Asimina triloba	common pawpaw
Barbarea vulgaris	garden yellowrocket
Betula nigra	river birch
Boehmeria cylindrica	false nettle
Campsis radicans	American trumpet vine
Cardamine concatenata	cut-leaved toothwort
Celastrus orbiculatus	Oriental bittersweet
Chelone lyonii	Pink turtlehead
Claytonia virginica	Virginia spring beauty
Conoclinium coelestinum	blue mistflower
Conopholis americana	American cancer-root
Cornus florida	Flowering dogwood
Corydalis flavula	Yellow Corydalis
Dactylis glomerata	orchard grass
Daktulosphaira vitifoliae	grape phylloxera
Datura stramonium	jimsonweed
Daucus carota	Queen Anne's lace
Dennstaedtia punctilobula	hay-scented fern
Diospyros virginiana	common persimmon
Dittrichia graveolens	Stinkwort
Eclipta prostrata	false daisy
Elaeagnus umbellata	autumn olive
Erigeron philadelphicus	Philadelphia fleabane
Eupatorium serotinumlate	boneset
Geranium molle	Dove's-foot crane's-bill
Helianthus annuus	Common Sunflower
Heteranthera dubia	water star-grass
Hibiscus laevis	Halberd-leaf Rosemallow
Hibiscus moscheutos	swamp rose mallow
Impatiens capensis	common jewelweed
Ipomoea hederacea	ivy-leaved morning-glory
Ipomoea lacunosa	White Morning-glory
Juglans nigra	eastern black walnut
Justicia americana	American water-willow
Lamium amplexicaule	henbit deadnettle
Lamium purpureum	red deadnettle
Lespedeza cuneata	Chinese bushclover
Liquidambar styraciflua	American sweetgum
Liriodendron tulipifera	tulip tree
Lysimachia lanceolata	Lanceleaf Loosestrife
Lysimachia nummularia	creeping Jenny
Lythrum salicaria	purple loosestrife
Morus alba	white mulberry
Mummenhoffia alliacea	garlic penny-cress
Nelumbo lutea	American lotus
Onoclea sensibilis	sensitive fern
Ornithogalum umbellatum	common star-of-Bethlehem
Osmundastrum cinnamom.	cinnamon fern

Parthenocissus quinquefolia	Virginia creeper
Perilla frutescens	beefsteak plant
Persicaria perfoliata	mile-a-minute weed
Phoradendron leucarpum	American Mistletoe
Phragmites australis	common reed
Physcomitrium pyriforme	common bladder moss
Phytolacca americana	American pokeweed
Platanus occidentalis	American sycamore
Pluchea odorata	marsh fleabane
Pontederia cordata	pickerelweed
Potentilla indica	mock strawberry
Pyrus calleryana	Callery pear
Quercus phellos	willow oak
Ranunculus repens	Creeping buttercup
Robinia pseudoacacia	black locust
Rumex crispus	curly dock
Sassafras albidum	sassafras
Saururus cernuus	lizard's tail
Scirpus cyperinus	woolgrass
Setaria faberi	giant foxtail
Setaria pumila	yellow foxtail
Sicyos angulatus	Bur-cucumber
Solanum carolinense	Carolina horsenettle
Solidago gigantea	giant goldenrod
Sorghum halepense	Johnson grass
Strophostyles helvola	trailing fuzzy-bean
Taxodium distichum	baldcypress
Toxicodendron radicans	poison ivy
Trifolium pratense	red clover
Trifolium repens	white clover
Triodanis perfoliata	clasping Venus's looking glass
Verbascum blattaria	moth mullein
Verbesina alternifolia	wingstem
Veronica hederifolia	Ivy-leaved Speedwell
Veronica persica	bird's-eye speedwell
Veronica serpyllifolia	thyme-leaved speedwell
Viola sororia	common blue violet
Xanthium strumarium	rough cocklebur

REPTILES

Chelydra serpentina	Common Snapping Turtle
Chrysemys picta picta	Eastern Painted Turtle
Nerodia sipedon sipedon	Northern Watersnake
Thamnophis sirtalis sirtalis	Eastern Garter Snake

MUSHROOMS

Agrocybe molesta	Bearded Fieldcap
Amanita muscaria	Fly Agaric
Calvatia gigantea	Giant Puffball
Conocybe apala	milky conecap
Gymnosporangium juniperi-v.	Juniper-apple Rust
Phallus rugulosus	Wrinkly Stinkhorn

D. PRELIMINARY ENVIRONMENTAL SITE ASSESSMENT MAPPING

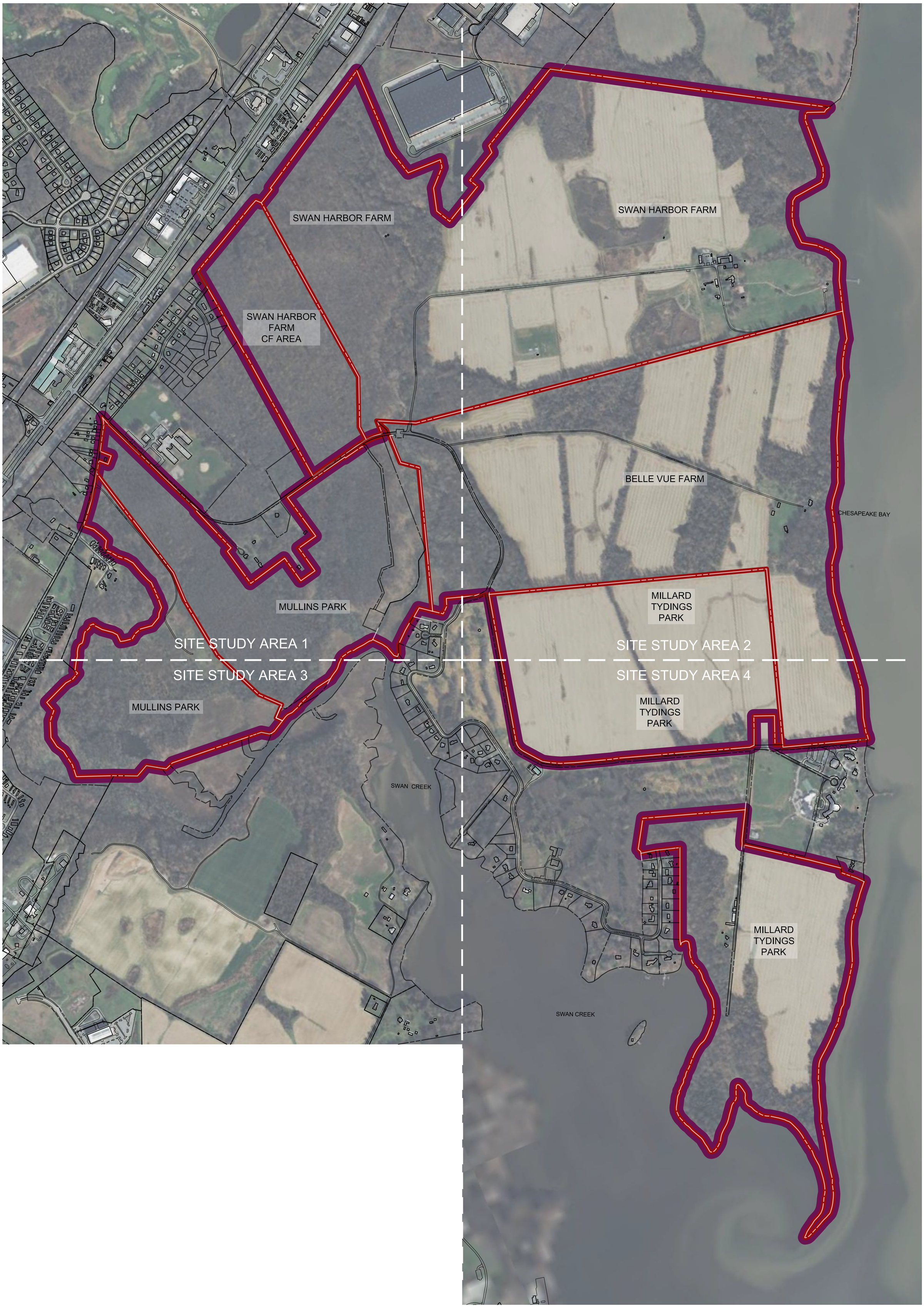
Site Context Map

Site Study Area 1

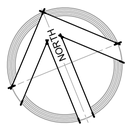
Site Study Area 2

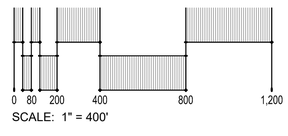
Site Study Area 3

Site Study Area 4



OAKINGTON PENINSULA PARK SYSTEM SITE CONTEXT MAP





SCALE: 1" = 400'

PULASKI HIGHWAY

CLARK RD

SWAN HARBOR FARM

SWAN HARBOR FARM
CF AREA

PULASKI HIGHWAY

TIMBER LANE

DARLINGTON ROAD

BELLE
VUE
FARM

MULLINS PARK
SS RT. 635

MULLINS PARK
SS POST ROAD

MANOR CIRCLE

FOX CHURCH ROAD

PARCEL BOUNDARY

NON-TIDAL WETLAND

STREAM

FOREST LINE

FOREST AREA -
OUTSIDE CBCA BOUNDARY

TIDAL WETLAND

NATURAL RESOURCE
DISTRICT

FLOOD PLAIN

FOREST AREA -
WITHIN CBCA BOUNDARY

WETLAND BUFFER

CHESAPEAKE BAY
CRITICAL AREA BUFFER

INVASIVE FLORA

WOSSC BUFFER

WETLAND OF SPECIAL
STATE CONCERN (WOSSC)

SITE STUDY AREA 1

MASON

0 40 100 200 400 600

SCALE: 1" = 200'

SWAN HARBOR FARM

WETLAND CREATION AREA

WETLAND CREATION AREA

TIMBER LANE

TIMBER LANE

MODEL AIR STRIP

DREDGE SPOIL AREA

PRIVATE DRIVE

PRIVATE DRIVE

BELLE VUE FARM

MILLARD TYDINGS PARK

CHESAPEAKE BAY

PARCEL BOUNDARY

NON-TIDAL WETLAND

STREAM

FOREST LINE

FOREST AREA - OUTSIDE CBCA BOUNDARY

TIDAL WETLAND

NRD — NATURAL RESOURCE DISTRICT

FP — FLOOD PLAIN

FOREST AREA - WITHIN CBCA BOUNDARY

WB — WETLAND BUFFER

CBCA — CHESAPEAKE BAY CRITICAL AREA BUFFER

INVASIVE FLORA

SITE STUDY AREA 2

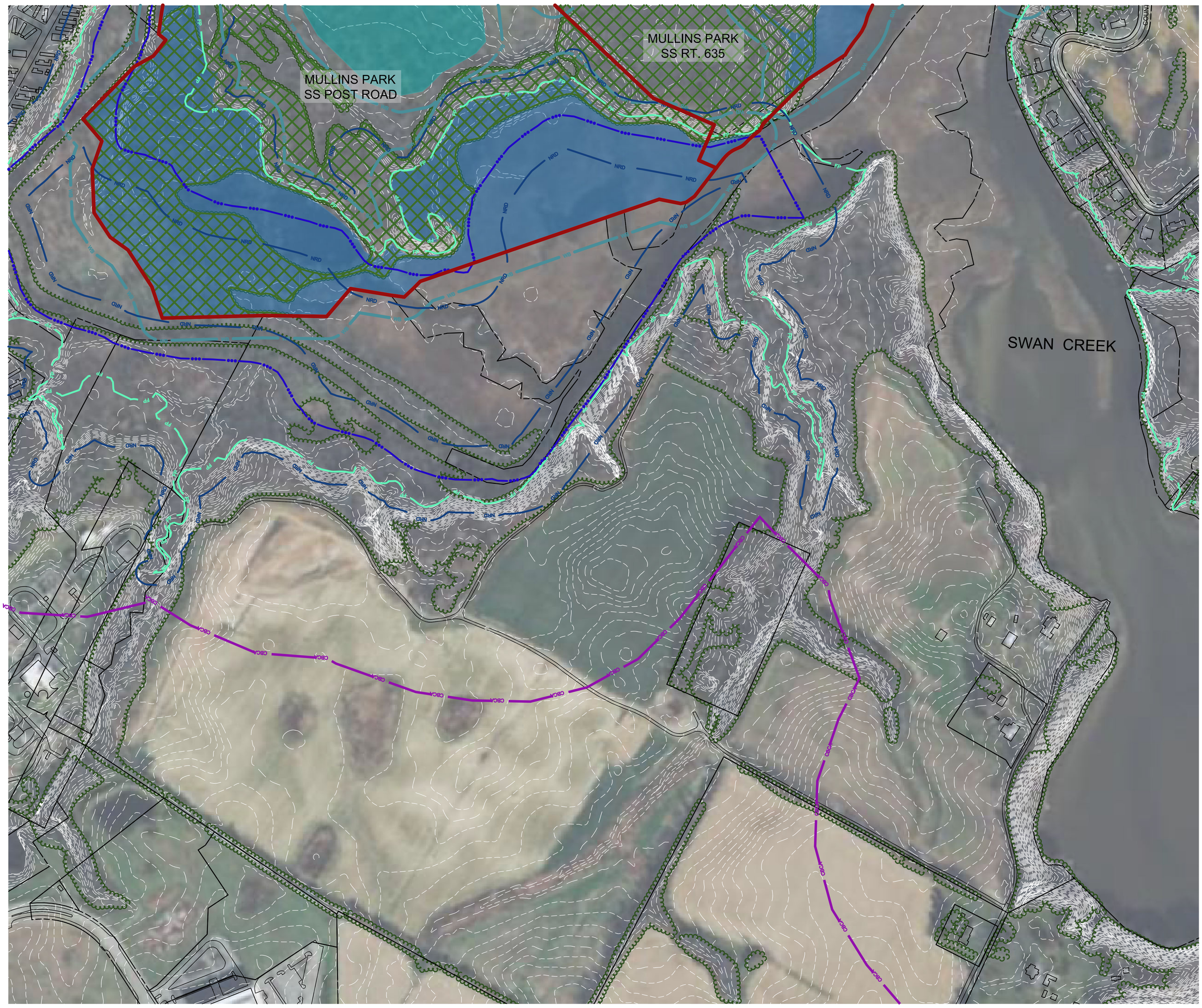
WOSSC BUFFER

WETLAND OF SPECIAL STATE CONCERN (WOSSC)

NORTH

0 40 100 200 400 600

SCALE: 1" = 200'



PARCEL BOUNDARY

NON-TIDAL WETLAND

STREAM

FLOOD PLAIN

FOREST AREA - WITHIN CBCA BOUNDARY

TIDAL WETLAND

NATURAL RESOURCE DISTRICT

FOREST LINE

WETLAND BUFFER

CHESAPEAKE BAY CRITICAL AREA BUFFER

SITE STUDY AREA 3

NORTH

0 40 100 200 400 600

SCALE: 1" = 200'

PARCEL BOUNDARY

NON-TIDAL WETLAND

STREAM

FOREST LINE

FOREST AREA - OUTSIDE CBCA BOUNDARY

TIDAL WETLAND

NATURAL RESOURCE DISTRICT

FLOOD PLAIN

FOREST AREA - WITHIN CBCA BOUNDARY

WETLAND BUFFER

CHESAPEAKE BAY CRITICAL AREA BUFFER

INVASIVE FLORA

SITE STUDY AREA 4

NORTH

0 40 100 200 400 600

SCALE: 1" = 200'