SHANNON FARM
MASTER PLAN

JANUARY 2023

PREPARED FOR:

St. Mary's County Department of Recreation and Parks
23150 Leonard Hall Drive
Leonardtown, MD 20650
http://www.co.saint-marys.md.us/recreate/

Commissioners for St. Mary's County Approval & Adoption January 31, 2023
St. Mary's County Recreation and Parks Advisory Board Concurrence October 6, 2022

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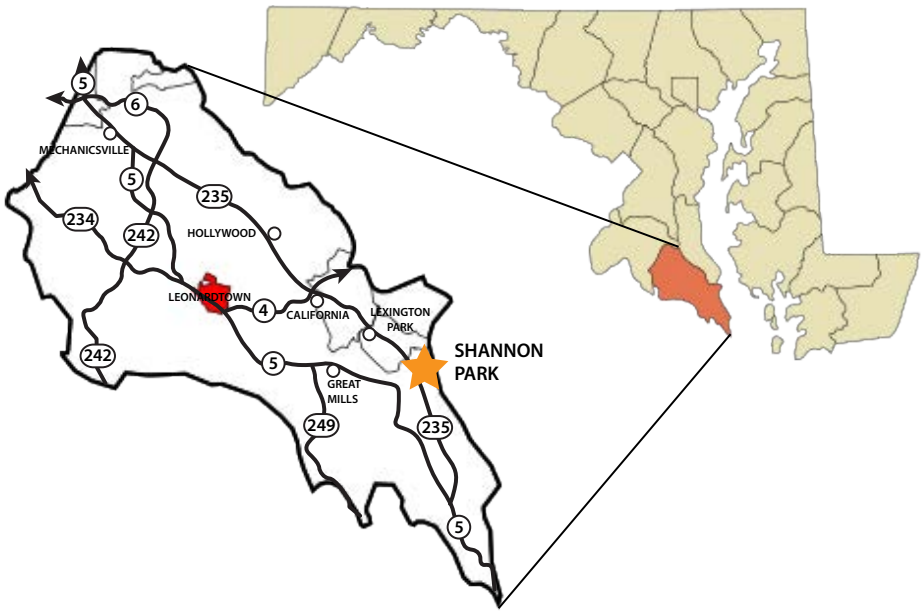
MASTER PLAN FOR SHANNON FARM

ST. MARY'S COUNTY, MARYLAND

EXECUTIVE SUMMARY

St. Mary's County Department of Recreation and Parks (DRP) hired AMT Engineering to develop a master plan and construction drawings for the 212-acre parcel located at 48055 Long Lane, Lexington Park, Maryland. This heavily wooded site is currently undeveloped. The Department of Recreation and Parks would like to provide the citizens of St. Mary's County with an additional community park as well as access to the beach and water.



This parcel is located near the intersection of Three Notch Road and Forest Park Road, south and east of the Naval Air Station at Patuxent River. It is directly south of the River Bay Townhomes, Swash Bay, and Cedar Cove. It can also be accessed from the Home Grown Farm Market located on Three Notch Road.

An initial public access study was conducted and identified an entrance road, parking and basic amenities on undeveloped property that can be implemented first, followed by a Park Master Plan document, and design and engineering plans for construction of park amenities for the new community park. This will include, but may not be limited to, a gravel entrance road and parking; signage; portable restrooms; picnic tables; a nature trail to waterfront area and informal beach use and kayak launching.

In November 2014, Shannon Farm was acquired by the Commissioners of St. Mary's County through a partnership with the Maryland Department of Natural Resources and the United States Navy. St. Mary's County acquired the land with the intention of building a new community park. Attached to the 385 acres of land was a Deed of Conservation Easement on this property that outlined the easement purpose and allowable activities that may occur on the property.

The parcel was designated as a conservation easement in the interest of preserving habitat, maintaining rural character of land, and limiting development in the area. Under this agreement, Agricultural Uses and Activities and Recreational Uses, specifically "low-impact" outdoor activities, are permitted. Commercial Uses and Activities are limited to rental of kayaks and canoes for recreational purposes, small fishing piers, and snacks and beverages from temporary carts or vehicles.

Nearly half of the site is located within the Critical Area. Wetlands were noted in the conservation easement and a plan of Wetlands (Appendix B) was included. There are approximately 66 acres of wetlands on the property. Filling in wetlands is prohibited, including for recreational purposes.

AMT Engineering worked with St. Mary's Department of Recreation and Parks to develop a master plan for the site that would allow beach access but also preserve the forest and wetlands of the site. Additionally, community members and stakeholders were included in the design process to ensure that the park would be what the community wanted.

Two concepts with cost estimates were developed. They were discussed and a preferred option was selected. This option was refined, cost estimate updated, and presented as the final concept. Community response was negative to having an entrance off of Long Lane and the concept was redeveloped to have the initial site access come in from Three Notch Road and the Home Grown Market. The initial access plan will include a parking lot and 1.4 miles of gravel trail and boardwalk that will take visitors to the beach.

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EXISTING CONDITIONS

The County acquired the 385-acre parcel in 2014 through a partnership with the Navy and Maryland DNR. The Shannon Farm parcel is currently an undeveloped lot of land. At present there are no official uses, however, people use it illegally to drive ATVs and hunt. There is a Deed of Conservation Easement on this property that outlines the easement purpose and allowable activities that may occur on the property and the intention of which is to keep the parcel as natural and undeveloped as possible while still allowing public access and recreational uses.

DATA COLLECTION & METHODOLOGY

AMT compiled available records of "mappable" features from sources to include St. Mary's County GIS (http://www.stmarysmd.com/gis/), Maryland DNR Geo-spatial Data (http://dnrweb.dnr.state.md.us/gis/data/data.asp), USDA Web Soil Survey (http://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm) and Maryland's Environmental Resource and Land Information Network (MERLIN). This information was used to create maps of the various elements on site (see the appendices). Among other data, the maps include:

Critical area: land within 1000 feet of the tidal influence of the Chesapeake Bay was determined to be crucial because development in this "critical area" has direct and immediate effects on the health of the Bay. Development in this area is highly regulated.

Forest: areas of land covered by trees, understory plants, and groundcovers; the majority of the site is forested.

Wetlands & water: Wetlands are areas where water covers the soil, or is present either at or near the surface of the soil all year or for varying periods of time during the year. Shannon Farm has both tidal and non-tidal wetlands and corresponding buffers; as located by AMT and MDE.

ATV Tracks through Wetlands

Beach on Chesapeake Bay

Floodplain: areas of low-lying ground adjacent to water that are likely to flood.

Steep slopes & soils: areas that could be highly erodible or less likely to drain after the soil is saturated, hydric soils limit construction suitability

Habitats: Areas of land where Rare, Threatened, and Endangered Species (RTE) and Forest Interior Dwelling Species (FIDS) live or are critical to their migration patterns.

The information gathered was collected into a composite map showing the entire project area with all of the aforementioned areas to show the most suitable places for construction.

AMT ground-truthed the mappable features via on-site investigations to verify the accuracy of the remotely gathered information. They walked the site with St. Mary's County personnel to gain their perspective. They made additional site visits with Maryland Department of the Environment's Wetlands and Waterways in order to document the boundaries of the wetlands that Phase 1 would impact. Survey crews located trees with a DBH of 12" and larger in a swath of land where the Phase 1 access trail will go.

CRITICAL AREA

Of the 385-acre site, approximately 222 acres are located within the Critical Area. This will mean that additional precautions toward environmental resources will need to be enacted.

Of the three land classifications within the critical area, the only applicable classification for Shannon Farm is the Resource Conservation Areas (RCA). RCAs are the largest land classification in the critical area (approximately 80%) and therefore provide the greatest opportunity for meeting the goals of the Critical Area Program. In order to do so, the land use regulations are the most restrictive and performance standards that address lot coverage, forest and developed woodland retention/ replacement, construction on steep slopes, stormwater management, and habitat protection have been created for development.

The Critical Area Buffer is the area of at least one hundred feet located directly adjacent to the State's tidal waters, tidal wetlands, and tributary streams. Impacts to the buffer should also be minimized. The buffer area may be expanded to include erodible soils and steep slopes.

Forested areas are extremely important to the health of the Chesapeake Bay. It is important when developing an area within the RCA to maintain and increase forest cover to increase various species habitats, stormwater infiltration, shoreline stabilization, nutrient absorption, and water temperature mediation. As such, the development of Shannon Farm will try to impact the forest as minimally as possible.

Early Successional Sweetgum Forest

FOREST

Much of the proposed trail alignment is forested and forested wetland.

West of the Metcom sewer line is an upland mixed oak/hickory/pine forest, while a mixed oak/pine wetland forest sits to the east, with patches of upland oak/pine forest in non-wetland areas.

At the far eastern end of the trail alignment sits an early successional stage forest, mainly consisting of sweet gum.

The forested areas are in good condition and are relatively undisturbed, except for the sewer line right of way, and ATV trails that wind through the property.

WETLANDS

The wetlands that exist along the trail alignment begin just east of the MetCom sewer line and extend across much of the alignment to the east, ending near the area of early successional sweetgum forest.

These wetlands are non-tidal, forested wetlands, more specifically PF01A (Cowardin Classification), paulstrine, forested, broad-leaved deciduous, temporarily flooded.

The Chesapeake Bay sits at the far east end of the trail alignment and can be considered two additional wetland classifications, depending on the exact location along the shoreline. The classifications are: E2US2P (Estuarine, intertidal, unconsolidated shore, sand, irregularly flooded), and E1UBL (Estuarine, subtidal, unconsolidated bottom, subtidal).

The wetlands along the trail alignment appear to be in good condition and are relatively undisturbed. The lack of development on site has allowed the wetlands to remain and natural plant and animal communities to flourish.

Development and impact should be kept to a minimum to keep these valuable environmental features and habitats intact. Additionally, informational signage should be placed near different wetlands for educational purposes in a later phase.

FLOODPLAINS

There are FEMA Flood Insurance Map designated floodplains located at the north and south boundaries of the site. However, Phase 1 development does not appear to impact them.

STEEP SLOPES & SOILS

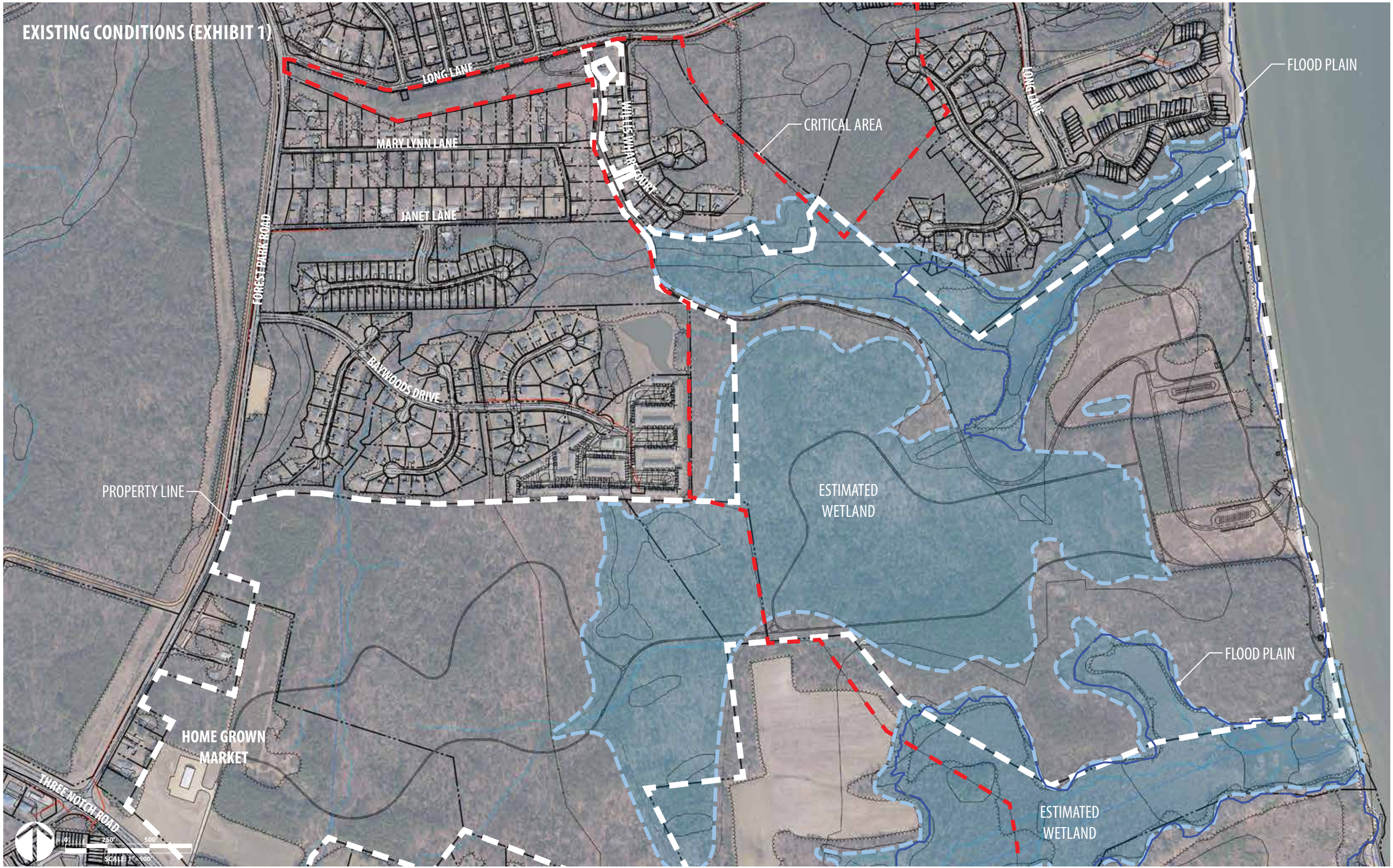
Steep slopes and erodible soils can lead to runoff that will eventually pollute the Chesapeake Bay. Within the critical area, development on slopes of 15% and greater is prohibited. The critical area buffer is extended to encompass ecologically sensitive areas such as steep slopes and soils with development constraints. However, the only steep slopes are located at the western side of the property, well outside of the critical area.

HABITAT

This large of a tract of undisturbed forest and wetlands has several environmental features that make it unique and a lot that should be preserved. Ecosystems in need of protection include: riparian forests, relatively undisturbed and large tracts of forest which support breeding populations of forest interior-dwelling birds (vireos, warblers, flycatchers, woodpeckers, etc.), certain plant and animal communities that are the best example of their kind in Maryland, and other areas determined to be of local significance.

The size and location of forest qualifies as habitat for forest interior dwelling species (FIDS). They require large forests (50+ acres of forest with at least 10 acres of habitat or riparian forests that are at least 300 total feet with 50+ acres of total forested area) to have a habitat that is optimal for reproduction and survival. There are approximately 25 species of FIDS birds that potentially breed in the critical area and about half of them are highly area sensitive. This means they are most vulnerable to forest loss, fragmentation, and habitat degradation.

EXISTING CONDITIONS (EXHIBIT 1)



PARK VISION

The vision for the park is primarily to provide beach and water access to the Chesapeake Bay for County residents that is ecologically integrated, aesthetically pleasing, and inclusive for visitors or all ages and abilities. Additional recreational opportunities for picnicking and trail walking support the primary purpose. Playgrounds and built structures will reflect the natural environment and waterfront location.

The following are goals and guidelines for the master plan of the park:

- Provide environmentally sensitive solutions to mitigate developmental impacts in the Critical Area.
- Provide a multi-generational passive recreational opportunity to the beach and water.
- Provide gathering spaces for individuals and families.
- Provide ADA accessible paths and site facilities for visitors of all physical abilities.
- Provide a playground area for children and their caregivers.
- Provide access to the Chesapeake Bay.
- Create a park entry sequence by locating parking near the Home Grown Market, gatehouse, and trail system to beach access.
- Preserve the existing Forested Wetlands.
- Preserve the Tree Cover and forested land.

The vision for Shannon Park is to provide beach and water access to the residents of St. Mary's County while also preserving the unique environmental features of the site.

DESIGN DEVELOPMENT

After meeting with the Department of Recreation and Parks, AMT developed two concepts based upon that discussion and the park vision. Two potential entry points were considered, one from the water tower along the existing roadway, and the second extending Long Lane to a bridge over the wetlands (Appendix B). The second concept was ruled out due to cost.

The first concept was explored and developed. And a final concept was presented to the County and stakeholders. However, residents of local communities were concerned about the additional traffic that would be brought in along Long Lane and about having a roadway behind their homes. After much discussion, a new access road coming in from Three Notch Road (MD 235) was agreed upon. Parking will be located near the Home Grown Market so that a hub is created and park visitors will have access to the market's restrooms and facilities.

Upon agreement of this concept, AMT and St. Mary's County representatives walked and staked the proposed centerline alignment. It was walked a second time with AMT and representatives of the Maryland Department of the Environment (MDE) Wetlands and Waterways to upon the limits of the wetlands. Survey was then conducted along the centerline and extending out 50' in either direction for a 100' swath.

Construction documents were developed for the 10' wide asphalt trail, boardwalks, and parking lot. This Phase 1 development was designed to get visitors to the beach as quickly as possible. In later phases, informational and educational signage will be added. The trail passes through several unique ecosystems and signage will inform the public about them.

PHASING

This Master Plan can be broken down into as many phases and constructed over time as St. Mary's County has funding and community needs. The First Phase, based on County priorities, should be the parking and trail to the beach. Restrooms, playground, and other amenities can be added later as the County has funding.

ENVIRONMENTAL DESIGN CONSIDERATIONS

In order to impact the environment and critical area as minimally as possible, AMT made the following several design choices:

Boardwalks: to reduce the impact to wetlands, AMT is proposing that boardwalks be used to cross them. The piers that the boardwalk will be built upon require a much smaller amount of land disturbance than an asphalt trail. Additionally, it does not add impervious surface.

Steeper Slopes: St. Mary's County is committed to making this trail accessible to all users. However, the western side of the site was challenging to keep trails to under 5% slope as there were slopes over 15%. AMT consulted the USDA *Forest Service Trail Accessibility Guidelines* and made several sections of the trail up to 8% with landings. The County determined this was too steep and the final design includes a boardwalk that spans a valley and thus avoids one of the larger grade changes. The remainder of the steep section was able to be graded at 5% or less. Additionally, this change minimized impact and saved trees.

Meadow Planting: In the disturbed areas off of the trail, AMT proposed native meadow seeding. These native meadows will provide excellent habitat for native species.

Stormwater Management: The project stormwater management is defined by the Limit of Disturbance (LOD) of 6.17 acres. The site consists of mostly forested area in the pre-developed condition with 0.04 acres of impervious area (0.01%) and in the post-developed condition 2.47 acres of impervious area (40.0%). To meet the stormwater quality requirements, the plan proposes 2 micro-bio facilities, 3 grass swale facilities, 2 bio-swale facilities, 4 areas of sheet flow to a conservation area, 2 areas of non-rooftop disconnection, and 1 wet swale facility within the site LOD. The site requires an ESD volume of 15,774 cf, a recharge (percent volume) of 962 cf, and recharge (percent area) of 11,260 sf.

ADDITIONAL ENVIRONMENTAL CONCERNS

Since the park is located on the Chesapeake Bay, there are two major concerns related to water that need to be considered when designing the park: Shore Erosion and Sea Level Rise.

SHORE EROSION

The two primary reasons for shoreline erosion are wave action and sea level rise. Wave action affects the shore by eroding and transporting sediment from one place to another. As weather affects the waves, weather affects erosion; major changes in shoreline can be noticed after severe storms. Sea level rise is a global issue and its speed has been increasing over the last century. Generally, the oceans are rising at an average rate of six inches every 100 years. However, it is possible that by the end of the 21st Century, the Chesapeake Bay will have risen 2-feet. Refer to the later section for site specific information.

Existing Erosion at Park Shoreline. Photo by Mary Terry

The shoreline of Shannon Farm is like many shorelines along the Chesapeake Bay, it includes marsh and forested upland banks with fronting sand beaches. If uplands are exposed to direct wave action, they erode much more quickly because of their soil composition. Wave action is directly eroding the upland banks along much of the shoreline of Shannon Farm. Marshes can be particularly important to shoreline stabilization because they buffer the upland areas by holding on to the peaty earth beneath them. There is marshland on the northern and southern edges of the property's shoreline.

Wide marshes, beaches and dunes reduce the effects of wave action during storms whereas narrow shore zone features allow waves to more frequently impact upland banks, causing undercutting, instability, and erosion.

It would be beneficial to conduct a reach assessment; a "reach" is defined as a segment of shoreline where the erosion processes and responses mutually interact. Determining the length of eroding shoreline, processes at work, rates and patterns of erosion, and wave action, amongst other factors will be necessary to determine how to complete address erosion. For the purposes of the master plan, several strategies will be discussed below, however, a more in depth study should be conducted.

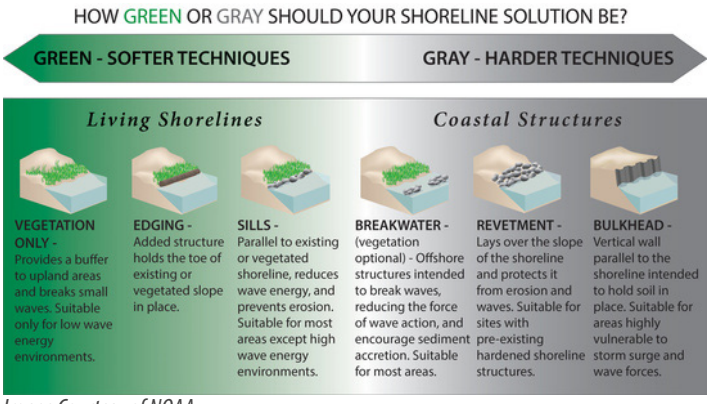


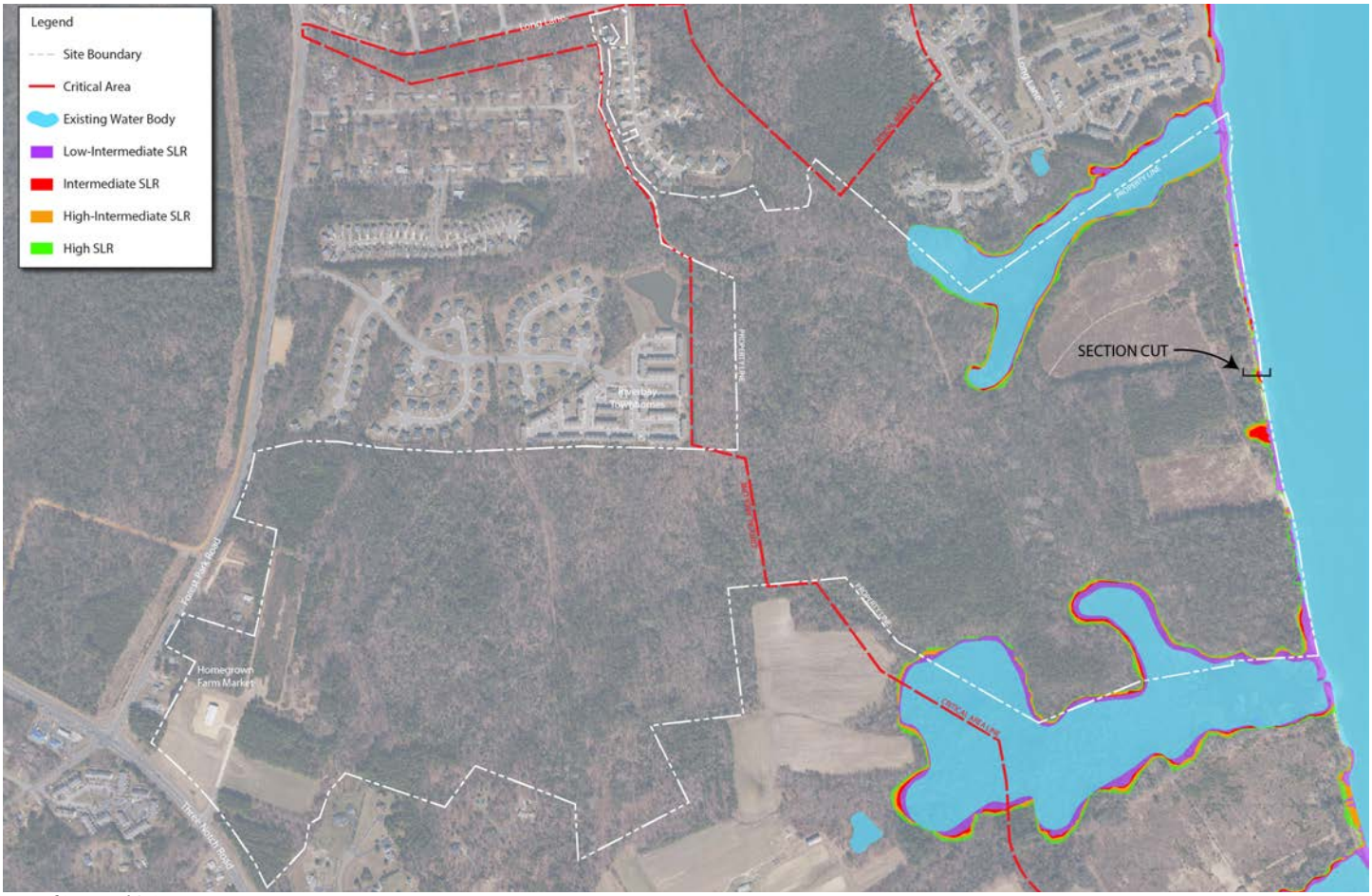
Image Courtesy of NOAA

Bulkheads, seawalls, revetments, and groins are strategies that should be evaluated but that would greatly change the character of the beach. This report will focus on breakwaters and living shorelines.

A breakwater is an offshore share-parallel structure that "breaks" waves and dissipates their energy before it reaches the shore. They are considered an offensive structure because they address the wave before it reaches the shore. By breaking up the waves' energy, breakwaters reduce their ability to erode the beach and upland banks. Breakwater systems generally include multiple structures and work with beach nourishment or living shorelines to create a stable shoreline.

A living shoreline is a protected, stabilized coastal edge made of natural materials such as plants, sand, or rock. In addition to stabilizing the beach, living shorelines create habitats for wildlife, improve water quality, and store carbon.

Breakwaters at Elms Beach. Photo Courtesy of C. S. Hardaway, Jr. and R. J. Byrne



Map of Projected SLR

SEA LEVEL RISE

With sea-level rise (SLR) becoming an increasing threat to coastal Maryland, a study was done in May 2022 through July 2022 to explore the vulnerability of the Shannon Farm. This study was accomplished through a literature review of SLR projections by state and federal sources and then information was shared through the creation of graphics by AMT.

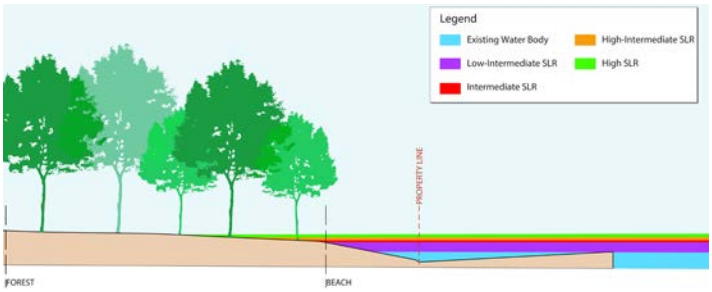
The National Oceanic and Atmospheric Administration (NOAA) has been dedicated to researching and predicting changes in climate, weather, oceans, and coasts. NOAA sensors have been placed at nearby Solomons Island, MD, allowing for SLR and tidal information to gathered. Mean water levels for the area were taken from GIS information. Using data from the sensors at Solomons Island, NOAA has been able to predict 4* different scenarios for SLR by the year 2070 (See Map of Projected SLR and Section View of Projected SLR).

These 4* scenarios are the following,

- Intermediate-Low: 1.87 feet increase in SLR
- Intermediate: 2.23 feet increase in SLR
- Intermediate-High: 2.82 feet increase in SLR
- High: 3.41 feet increase in SLR

*Please note that NOAA no longer shows the "Low" scenario as global trends since the 1990s make this scenario highly unlikely to occur by 2100.

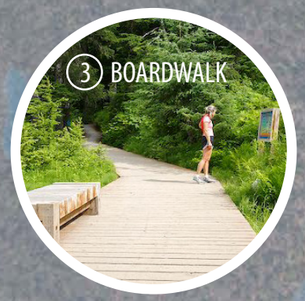
A 2018 study on SLR conducted for the state of Maryland found that the Likely Range (a 66% probability) will be around 0.8-1.6 feet, with a 5% chance of SLR exceeding 2 feet, and a 1% chance of SLR exceeding 2.3 feet (Boesch, et Al., 2018). These numbers will depend heavily on greenhouse emissions in the following years which if not addressed could cause the Likely Range to increase substantially. Should the High scenario occur, Shannon Farm stands to lose approximately 9.16 acres of wetland and forested areas.



Section View of Projected Sea Level

1 GATEHOUSE

2 ASPHALT TRAIL



3 BOARDWALK

4 PLAYGROUND

5 ADA BEACH ACCESS

6 NON-ADA BEACH ACCESS

7 PICNIC SHELTER

8 LIVING SHORELINE & BREAKWATERS

9 UNPAVED NATURE TRAIL

LONG LANE

MARY LYNN LANE

JANET LANE

WILLIS WHARF COURT

FOREST PARK ROAD

BAYWOODS DRIVE

LONG LANE

RESTROOM

PARKING LOT & TRAILHEAD

1 GATEHOUSE

HOME GROWN MARKET

250' 0' 250' 500'

SCALE: 1"=250'

MASTER PLAN

Based on the environmental characteristics, site limitations, and community input, AMT developed a Master Plan for Shannon Farm. The primary feature of the park is the coastline. Additionally, the site has many unique natural features, specifically the forested wetlands, which will be preserved by keeping disturbance to a minimum. The majority of the site will remain undeveloped with the access route and beach front being the primary developments.

1 GATEHOUSE

Similar to other park facilities, St. Mary's County Recreation and Parks wants to be able to control access to the beach from the Home Grown Market. There will be a manned gatehouse with arm at the entrance to the parking lot. They will most likely collect fees on the weekend and for out of county visitors. The Department will determine the fee schedule.

2 ASPHALT TRAIL

The main access route will be a 10' wide asphalt trail. The trail is designed to be ADA accessible and is under 5% slope for the entirety of its length. There are 2' wide shoulders along the length of the trail.

3 BOARDWALK

14-foot wide boardwalk is used along this access route. Most of the boardwalk segments are over areas of forested wetlands. The boardwalk with use helical piers to minimize disturbance. As most of these boardwalks are not over 30" from the ground, the boardwalk will have toe-kicks, a low wheel-stop, not railings.

4 PLAYGROUND

The playground will be a natural playground with a nautical theme. A natural playground is a play environment that consists of elements and textures from the earth such as tree logs, tree stumps, boulders, plants, drainage paths, among others instead of a traditional steel playground structures. Natural playgrounds can include slides and climbers. They are inclusive and feature accessible design. They encourage children to play creatively, promote active play, foster a social environment, and allow children to learn more about nature. This playground will include elements for preschoolers to school-aged children.

5 ADA BEACH ACCESS

The trail was designed to be fully accessible. As such, beach access must also be accessible. Ramps, mobi-mats, and other ADA technology will be evaluated to bring all users to the beach.

6 NON-ADA BEACH ACCESS

Due to the steep nature of the drop off between the forested edge and the beach, stairs will need to be used to prevent erosion issues. Stairs will be placed often along the edge in order to prevent people walking or climbing down to the beach and destabilizing the landscape.

7 PICNIC SHELTER

Picnic shelters on concrete pads will be located along the gravel trail at the shore. These can be rented in advance or available as first-come, first-serve.

8 LIVING SHORELINE & BREAKWATERS

Two design features that will immprove shoreline erosion are Living Shorelines and Breakwaters. These are a green approach to dealing with erosion. A living shoreline is a protected, stabilized coastal edge made of natural materials such as plants, sand, or rock. In addition to stabilizing the beach, living shorelines create habitats for wildlife, improve water quality, and store carbon.

A breakwater is an offshore share-parallel structure that "breaks" waves and dissipates their energy before it reaches the shore. By breaking up the waves' energy, breakwaters reduce their ability to erode the beach and upland banks. Breakwater systems generally include multiple structures and work with living shorelines to create a stable shoreline.

These and other shoreline infrastructure should be explored and considered in order to stabilize the shoreline at Shannon Farm.

9 UNPAVED NATURE TRAIL

Additional walking trails will be added throughout the site. These trails will be unpaved, natural surface trails that will be built by Recreation and Parks as needed. The trails will take visitors throughout the park to experience a variety of different ecosystems. Benches will be placed along the trails.

Green Flush Restroom Vail with Covered Porch

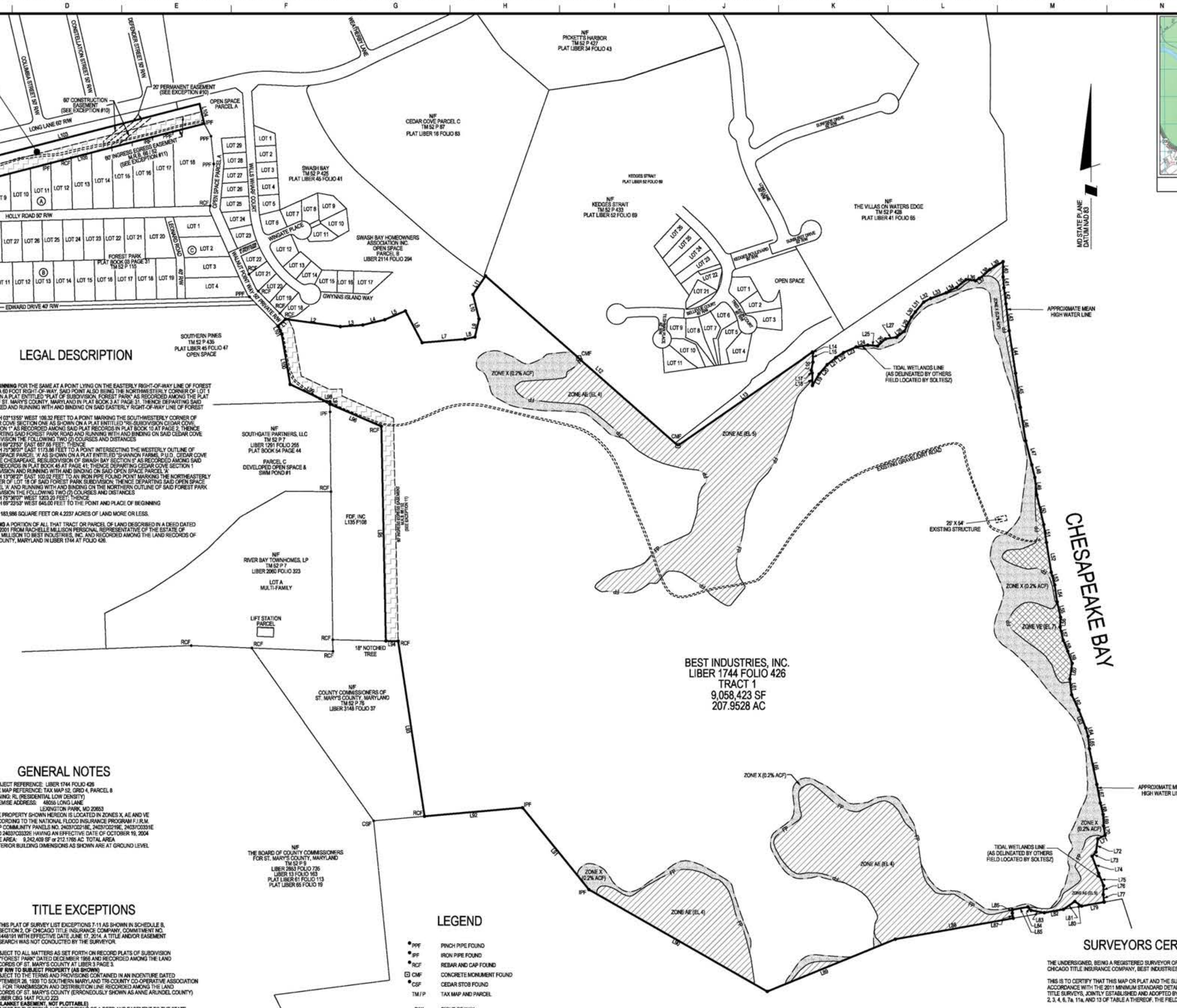
RESTROOM

There are currently no utilities such as water, sewer, or electricity on the Shannon Farm site. Most likely these facilities will be either pump out or vault toilet restrooms. Access will be a key consideration when selecting the type.

EMERGENCY ACCESS ROUTE

The trail and boardwalks have been designed to accomodate small emergency vehicles, such as an ambulance. The route will have controlled access and not be open to the public.

APPENDIX A
ALTA LAND TITLE SURVEY & WETLAND LOCATION EXHIBIT



LEGAL DESCRIPTION

TRACT 1:

BEGINNING FOR THE SAME AT A POINT LYING ON THE SOUTHWESTERLY CORNER OF WALNUT POINT WAY A FIFTY FOOT PRIVATE RIGHT-OF-WAY AS SHOWN ON A PLAT ENTITLED "SHANNON FARMS, CEDAR COVE ON THE CHESAPEAKE, RESUBDIVISION OF SWASH BAY, SECTION 5" AS RECORDED AMONG THE PLAT RECORDS OF ST. MARY'S COUNTY, MARYLAND IN PLAT BOOK 45 AT PAGE 41, SAID POINT ALSO MARKING THE BEGINNING OF THE SOUTH 23°55'00" EAST 42.00 FOOT LINE AS SHOWN ON A PLAT ENTITLED "LOTS 1 THROUGH 49, SOUTHERN PINES" AS RECORDED AMONG SAID PLAT RECORDS IN PLAT BOOK 45 PAGE 47, SAID POINT FURTHER DESCRIBED AS BEING THE NORTHWESTERLY CORNER OF THE HEREIN DESCRIBED PARCEL; THENCE DEPARTING SAID POINT OF BEGINNING SO FIXED AND RUNNING WITH AND BINDING ON SAID SWASH BAY SUBDIVISION THE FOLLOWING ELEVEN (11) COURSES AND DISTANCES

1) NORTH 48°05'10" EAST 50.04 FEET TO A REBAR AND CAP FOUND; THENCE
2) SOUTH 82°17'32" EAST 270.46 FEET; THENCE
3) NORTH 85°56'47" EAST 109.82 FEET; THENCE
4) NORTH 76°28'26" EAST 109.82 FEET; THENCE
5) NORTH 67°00'05" EAST 109.82 FEET; THENCE
6) SOUTH 27°44'05" EAST 175.00 FEET; THENCE
7) NORTH 85°15'55" EAST 210.00 FEET; THENCE
8) NORTH 77°45'55" EAST 50.00 FEET; THENCE
9) NORTH 12°45'55" EAST 90.00 FEET; THENCE
10) NORTH 13°57'57" WEST 123.23 FEET; THENCE
11) NORTH 34°10'55" EAST 109.38 FEET TO A POINT INTERSECTING THE WESTERLY OUTLINE OF A PLAT ENTITLED "CEDAR COVE P.U.D., KEDGES STRAIT" AS RECORDED AMONG SAID PLAT RECORDS IN PLAT BOOK 52 AT PAGE 59; THENCE DEPARTING SAID SWASH BAY SUBDIVISION

97) NORTH 00°41'42" WEST 12.18 FEET; THENCE
98) SOUTH 88°30'32" WEST 15.10 FEET TO A POINT MARKING THE SOUTHEASTERLY CORNER OF SAID SOUTHERN PINES SUBDIVISION; THENCE DEPARTING SAID SOUTHWOODS SUBDIVISION AND RUNNING WITH AND BINDING ON SAID SOUTHERN PINES SUBDIVISION THE FOLLOWING THREE (3) COURSES AND DISTANCES
99) NORTH 64°38'54" WEST 197.80 FEET; THENCE
100) NORTH 09°38'54" WEST 249.50 FEET; THENCE
101) NORTH 25°23'54" WEST 42.00 FEET TO THE POINT AND PLACE OF BEGINNING

CONTAINING 9,058,423 SQUARE FEET OR 207.9528 ACRES OF LAND MORE OR LESS.

BEING A PORTION OF ALL THAT TRACT OR PARCEL OF LAND DESCRIBED IN A DEED DATED OCTOBER 5, 2001 FROM RACHELLE MILLISON PERSONAL REPRESENTATIVE OF THE ESTATE OF J. LAURENCE MILLISON TO BEST INDUSTRIES, INC. AND RECORDED AMONG THE LAND RECORDS OF ST MARY'S COUNTY, MARYLAND IN LIBER 1744 AT FOLIO 426.

LEGAL DESCRIPTION

TRACT 2:

BEGINNING FOR THE SAME AT A POINT LYING ON THE EASTERLY RIGHT-OF-WAY LINE OF FOREST PARK ROAD A 60 FOOT RIGHT-OF-WAY, SAID POINT ALSO BEING THE NORTHWESTERLY CORNER OF LOT 1 AS SHOWN ON A PLAT ENTITLED "PLAT OF SUBDIVISION, FOREST PARK" AS RECORDED AMONG THE PLAT RECORDS OF ST. MARY'S COUNTY, MARYLAND IN PLAT BOOK 3 AT PAGE 31. THENCE DEPARTING SAID POINT SO FIXED AND RUNNING WITH AND BINDING ON SAID EASTERLY RIGHT-OF-WAY LINE OF FOREST PARK ROAD

1) NORTH 03°13'55" WEST 106.32 FEET TO A POINT MARKING THE SOUTHWESTERLY CORNER OF CEDAR COVE SECTION ONE AS SHOWN ON A PLAT ENTITLED "RE-SUBDIVISION CEDAR COVE, SECTION 1" AS RECORDED AMONG SAID PLAT RECORDS IN PLAT BOOK 10 AT PAGE 2, THENCE DEPARTING SAID FOREST PARK ROAD AND RUNNING WITH AND BINDING ON SAID CEDAR COVE SUBDIVISION THE FOLLOWING TWO (2) COURSES AND DISTANCES
2) SOUTH 69°23'53" EAST 657.65 FEET; THENCE
3) NORTH 75°36'07" EAST 1173.86 FEET TO A POINT INTERSECTING THE WESTERLY OUTLINE OF OPEN SPACE PARCEL 'A' AS SHOWN ON A PLAT ENTITLED "SHANNON FARMS, P.U.D., CEDAR COVE ON THE CHESAPEAKE, RESUBDIVISION OF SWASH BAY SECTION 5" AS RECORDED AMONG SAID PLAT RECORDS IN PLAT BOOK 45 AT PAGE 41; THENCE DEPARTING CEDAR COVE SECTION 1 SUBDIVISION AND RUNNING WITH AND BINDING ON SAID OPEN SPACE PARCEL 'A'
4) SOUTH 13°08'27" EAST 100.02 FEET TO AN IRON PIPE FOUND POINT MARKING THE NORTHEASTERLY CORNER OF LOT 18 OF SAID FOREST PARK SUBDIVISION; THENCE DEPARTING SAID OPEN SPACE PARCEL 'A' AND RUNNING WITH AND BINDING ON THE NORTHERN OUTLINE OF SAID FOREST PARK SUBDIVISION THE FOLLOWING TWO (2) COURSES AND DISTANCES
5) SOUTH 75°36'07" WEST 1203.20 FEET; THENCE
6) NORTH 69°23'53" WEST 645.00 FEET TO THE POINT AND PLACE OF BEGINNING

CONTAINING 183,986 SQUARE FEET OR 4.2237 ACRES OF LAND MORE OR LESS.

BEING A PORTION OF ALL THAT TRACT OR PARCEL OF LAND DESCRIBED IN A DEED DATED OCTOBER 5, 2001 FROM RACHELLE MILLISON PERSONAL REPRESENTATIVE OF THE ESTATE OF J. LAURENCE MILLISON TO BEST INDUSTRIES, INC. AND RECORDED AMONG THE LAND RECORDS OF ST MARY'S COUNTY, MARYLAND IN LIBER 1744 AT FOLIO 426.

GENERAL NOTES

1. SUBJECT REFERENCE: LIBER 1744 FOLIO 426
2. TAX MAP REFERENCE: TAX MAP 52, GRID 4, PARCEL 8
3. ZONING: RL (RESIDENTIAL LOW DENSITY)
4. PREMISE ADDRESS: 48056 LONG LANE
   LEXINGTON PARK, MD 20653
5. THE PROPERTY SHOWN HEREON IS LOCATED IN ZONES X, AE AND VE ACCORDING TO THE NATIONAL FLOOD INSURANCE PROGRAM F.I.R.M. MAP COMMUNITY PANELS NO. 24037C0218E, 24037C0219E, 24037C0331E AND 24037C0332E HAVING AN EFFECTIVE DATE OF OCTOBER 19, 2004
6. SITE AREA: 9,242,409 SF or 212.1765 AC TOTAL AREA
7. EXTERIOR BUILDING DIMENSIONS AS SHOWN ARE AT GROUND LEVEL

TITLE EXCEPTIONS

THIS PLAT OF SURVEY LIST EXCEPTIONS 7-11 AS SHOWN IN SCHEDULE B, SECTION 2, OF CHICAGO TITLE INSURANCE COMPANY, COMMITMENT NO. 1448191 WITH EFFECTIVE DATE JUNE 17, 2014. A TITLE AND/OR EASEMENT SEARCH WAS NOT CONDUCTED BY THE SURVEYOR.

7. SUBJECT TO ALL MATTERS AS SET FORTH ON RECORD PLATS OF SUBDIVISION OF "FOREST PARK" DATED DECEMBER 1956 AND RECORDED AMONG THE LAND RECORDS OF ST. MARY'S COUNTY AT LIBER 3 PAGE 3.
   100' R/W TO SUBJECT PROPERTY (AS SHOWN)
8. SUBJECT TO THE TERMS AND PROVISIONS CONTAINED IN AN INDENTURE DATED SEPTEMBER 26, 1939 TO SOUTHERN MARYLAND TRI-COUNTY CO-OPERATIVE ASSOCIATION INC. FOR TRANSMISSION AND DISTRIBUTION LINE RECORDED AMONG THE LAND RECORDS OF ST. MARY'S COUNTY (ERRONEOUSLY SHOWN AS ANNE ARUNDEL COUNTY) IN LIBER CBG 14AT FOLIO 223
   (BLANKET EASEMENT, NOT PLOTTABLE)
9. SUBJECT TO THE TERMS AND CONDITIONS OF A DEED AND EASEMENT TO THE STATE ROADS COMMISSION DATED JUNE 28, 1946 AND RECORDED AMONG THE LAND RECORDS OF ST. MARY'S COUNTY IN LIBER 15 AT FOLIO 152
   60 ' R/W (AS SHOWN ON SURVEY)
10. SUBJECT TO THE TERMS AND CONDITIONS OF A DEED OF EASEMENT TO ST. MARY'S METROPOLITAN COMMISSION FOR UTILITY RIGHT OF WAY DATED MAY 28, 1971 AND RECORDED AMONG THE LAND RECORDS OF ST. MARY'S COUNTY IN LIBER DBK 170 AT FOLIO 334
    (AS SHOWN ON SURVEY)
11. SUBJECT TO A RIGHT OF WAY DESCRIBED IN A DEED TO LILLIAN S. PALM DATED NOVEMBER 27, 1979 AND RECORDED AMONG THE LAND RECORDS OF ST. MARY'S COUNTY IN LIBER MRB 66 AT FOLIO 52
    (AS SHOWN ON SURVEY)

LEGEND

- PPF — PINCH PIPE FOUND
- IPF — IRON PIPE FOUND
- RCF — REBAR AND CAP FOUND
- CMF — CONCRETE MONUMENT FOUND
- CSF — CEDAR STOB FOUND
- TM / P — TAX MAP AND PARCEL
- R/W — RIGHT OF WAY
- INGRESS/EGRESS EASEMENT
- ZONE "X" - (AREA OUTSIDE THE 0.2% ANNUAL CHANCE FLOODING)
- ZONE "X" - (AREA OF 0.2% ANNUAL CHANCE FLOOD)
- ZONE "AE" - (BASE FLOOD ELEVATION DETERMINED)
- ZONE "VE" - (COASTAL FLOOD ZONE WITH VELOCITY HAZARD (WAVE ACTION); BASE FLOOD ELEVATIONS DETERMINED)

LINE TABLE

L1	N 48°05'10" E	50.04
L2	S 82°17'32" E	270.46
L3	N 85°56'47" E	109.82
L4	N 76°28'26" E	109.82
L5	N 67°00'05" E	109.82
L6	S 27°44'05" E	175.00
L7	N 85°15'55" E	210.00
L8	N 77°45'55" E	50.00
L9	N 12°45'55" E	90.00
L10	N 13°57'57" W	123.23
L11	N 34°10'56" E	109.38
L12	S 48°37'35" E	1252.16
L13	N 55°13'24" E	799.47
L14	S 26°56'20" E	4.59
L15	S 00°22'25" E	44.00
L16	S 10°56'12" W	40.79
L17	S 18°36'15" E	13.91
L18	S 00°48'57" E	60.98
L19	N 30°21'26" E	65.32
L20	N 40°55'36" E	60.03
L21	N 51°34'48" E	53.90
L22	N 57°01'06" E	45.05
L23	N 65°59'26" E	67.41
L24	N 80°51'48" E	57.35
L25	S 84°23'36" E	48.06
L26	N 47°56'57" E	52.44
L27	N 81°10'36" E	54.65
L28	N 52°53'56" E	46.89
L29	N 27°06'01" E	77.90
L30	N 35°59'13" E	32.42
L31	N 40°24'32" E	62.92
L32	N 62°06'03" E	37.96
L33	N 70°12'56" E	80.25
L34	N 63°09'24" E	57.11
L35	N 50°20'23" E	60.10
L36	S 83°43'40" E	46.62
L37	N 57°08'22" E	42.26
L38	N 47°44'50" E	46.91
L39	N 59°01'07" E	74.95
L40	S 00°06'22" E	73.66
L41	S 04°32'58" E	53.62
L42	S 07°08'56" E	79.54
L43	S 06°45'57" E	132.72
L44	S 08°33'13" E	208.13
L45	S 08°02'30" E	168.39
L46	S 08°59'54" E	165.57
L47	S 14°23'48" E	121.43
L48	S 13°34'32" E	63.03
L49	S 06°21'26" E	86.19
L50	S 13°05'29" E	149.06
L51	S 08°43'58" E	88.26
L52	S 09°12'22" E	147.05
L53	S 14°49'33" E	64.67
L54	S 08°21'58" E	83.56
L55	S 12°31'33" E	76.95
L56	S 03°00'50" W	46.58
L57	S 13°29'34" E	65.99
L58	S 22°26'18" E	57.21
L59	S 19°59'58" E	63.42
L60	S 08°19'27" W	76.52
L61	S 06°29'55" E	78.61
L62	S 26°04'00" E	81.86
L63	S 21°27'56" E	93.37
L64	S 15°28'41" E	41.57
L65	S 05°45'00" E	61.06
L66	S 11°52'26" E	178.20
L67	S 10°43'35" E	92.34
L68	S 13°35'18" E	58.36
L69	S 02°16'31" E	54.43
L70	S 08°09'58" E	47.38
L71	S 62°51'33" W	39.04
L72	S 08°14'52" W	64.61
L73	S 41°16'19" W	27.85
L74	S 20°33'07" E	88.88
L75	S 22°26'57" E	65.40
L76	S 02°58'44" W	43.10
L77	S 07°03'18" E	37.19
L79	S 79°55'09" W	111.95
L80	N 55°30'22" W	40.13
L81	S 55°18'38" W	67.63
L82	S 79°55'09" W	95.17
L83	N 79°38'20" W	55.80
L84	N 42°50'41" W	22.39
L85	S 80°02'42" W	76.48
L86	S 02°54'27" W	17.17
L87	S 10°00'13" E	25.25
L88	S 79°55'09" W	584.78
L89	S 67°45'56" W	675.46
L90	N 60°13'47" W	1003.35
L91	N 39°00'13" W	514.76
L92	S 84°59'47" W	480.71
L93	N 08°34'44" W	863.53
L94	N 88°42'16" W	60.06
L95	N 01°12'16" W	1046.62
L96	N 66°34'54" W	273.82
L97	N 00°41'42" W	12.18
L98	S 88°30'32" W	15.10
L99	N 64°38'54" W	197.80
L100	N 09°38'54" W	249.50
L101	N 25°23'54" W	42.00
L102	S 69°23'53" E	657.65
L103	N 75°36'07" E	1173.86
L104	S 13°08'27" E	100.02
L105	S 75°36'07" W	1203.20
L106	N 69°23'53" W	645.00
L107	N 03°13'55" W	106.32

SURVEYORS CERTIFICATE

THE UNDERSIGNED, BEING A REGISTERED SURVEYOR OF THE STATE OF MARYLAND CERTIFIES TO CHICAGO TITLE INSURANCE COMPANY, BEST INDUSTRIES AND THE CONSERVATION FUND AS FOLLOWS:

THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE 2011 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/ACSM LAND TITLE SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS, AND INCLUDES ITEMS 2, 3, 4, 6, 7a, 11a, AND 13 OF TABLE A THEREOF. THE FIELD WORK WAS COMPLETED ON JULY 24, 2014

LARRY L. MANN — DATE
PROPERTY LINE SURVEYOR
MD. REG. NO. 469
LICENSE EXPIRES:01/02/2015

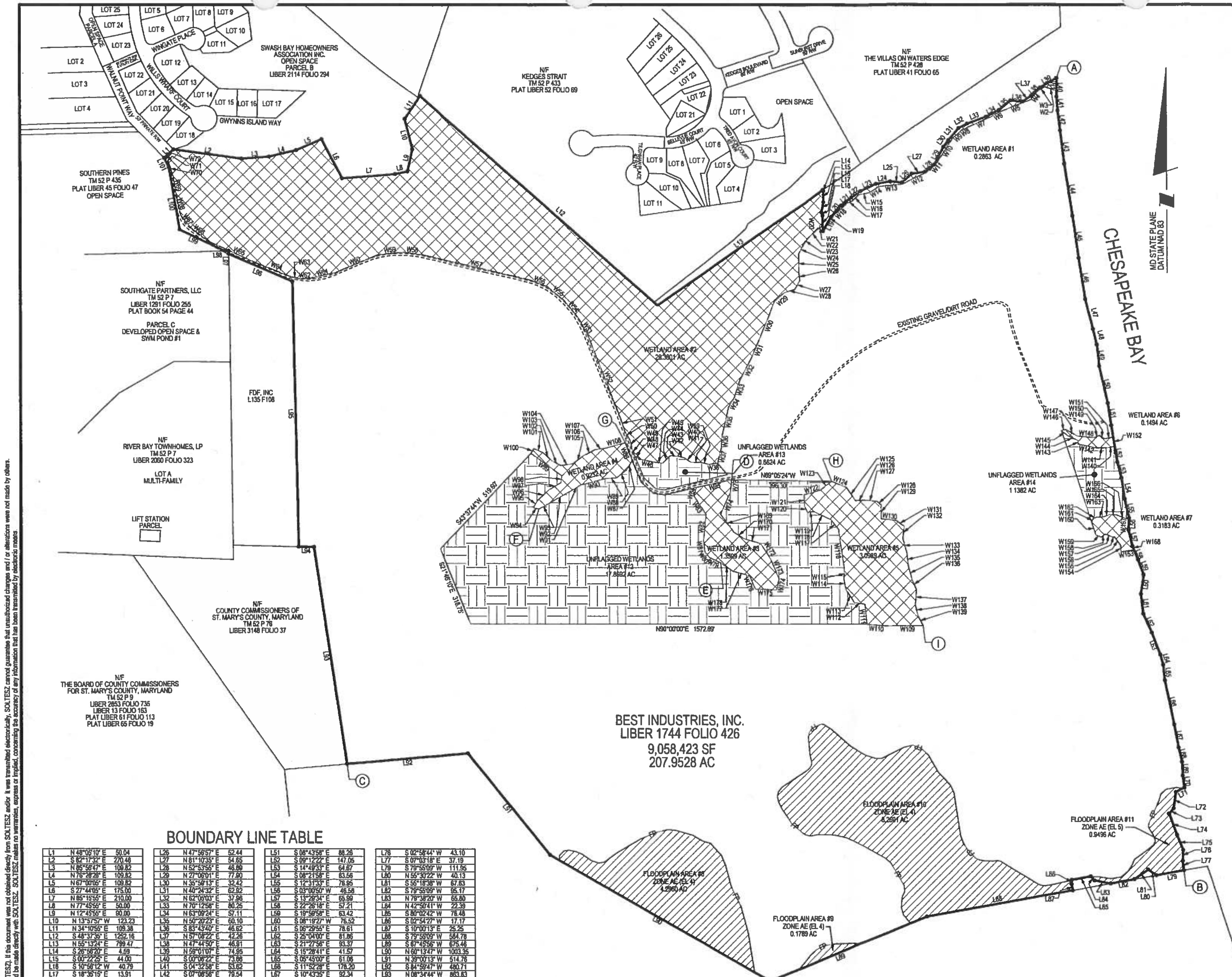
SHANNON FARMS AT CEDAR COVE

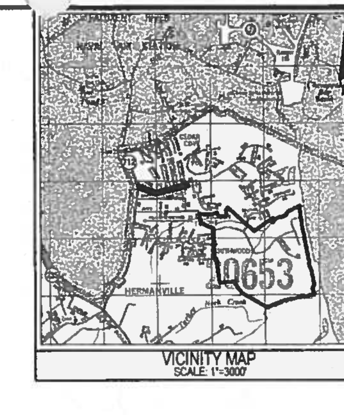
PROPERTY OF
BEST INDUSTRIES, INC.
P.O. BOX 315
SPRINGFIELD, VA 22150
EIGHTH (8th) ELECTION DISTRICT, ST MARY'S COUNTY, MARYLAND

ALTA/ACSM LAND TITLE SURVEY

SOLTESZ
Rockville, Lanham, Waldorf, Leonardtown, Frederick
Engineering, Planning, Environmental Sciences
WALDORF OFFICE
401 Post Office Road, Suite 103
Waldorf, MD 20602
P. 301.870.2166 F. 301.870.2884
www.solteszco.com

ZONING CATEGORY: RL
TAX MAP / PARCEL: 52 / 8
LIBER / FOLIO: 1744 / 426
DATE: JULY 2014
DESIGNED: JMD
TECHNICIAN: JMD
CHECKED: LLM
1" = 200'
SHEET 1 OF 1
PROJECT NO. 1114-02-01





GENERAL NOTES

1. TAX MAP REFERENCE: TAX MAP 52, GRID 4, PARCEL 8
2. ZONING: RL (RESIDENTIAL LOW DENSITY)
3. PREMISE ADDRESS: 48055 LONG LANE
   LEXINGTON PARK, MD 20653
4. THE PROPERTY SHOWN HEREON IS LOCATED IN ZONES X, AE AND VE ACCORDING TO THE NATIONAL FLOOD INSURANCE PROGRAM F.I.R.M. MAP COMMUNITY PANELS NO. 24037C0218E, 24037C0219E, 24037C0331E AND 24037C0332E HAVING AN EFFECTIVE DATE OF OCTOBER 19, 2004
5. SITE AREA: 9,242,409 SF or 212.1765 AC TOTAL AREA
6. THE WETLAND AREAS WERE FIELD LOCATED BY SOLTESZ ON NOVEMBER 11 - 18, 2014

COORDINATE TABLE

POINT	NORTH	EAST
A	215712.656	1484864.318
B	212588.049	1485358.196
C	213007.385	1482039.054
D	214127.609	1483567.656
E	213800.529	1483523.382
F	214012.087	1482801.359
G	214273.318	1483146.699
H	214121.316	1483963.907
I	213553.999	1484327.596

AREA TABULATION

WETLAND AREA # 1 =	0.2863 ACRES
WETLAND AREA # 2 =	26.3801 ACRES
WETLAND AREA # 3 =	1.3599 ACRES
WETLAND AREA # 4 =	0.9232 ACRES
WETLAND AREA # 5 =	3.0989 ACRES
WETLAND AREA # 6 =	0.1494 ACRES
WETLAND AREA # 7 =	0.3183 ACRES
FLOOD PLAIN AREA #8 =	4.2960 ACRES
FLOOD PLAIN AREA #9 =	0.1789 ACRES
FLOOD PLAIN AREA #10 =	8.2691 ACRES
FLOOD PLAIN AREA #11 =	0.9496 ACRES
UNFLAGGED WETLAND AREA #12 =	17.8892 ACRES
UNFLAGGED WETLAND AREA #13 =	0.6624 ACRES
UNFLAGGED WETLAND AREA #14 =	1.1382 ACRES

TOTAL AREA = 65.88 ACRES

LEGEND

TM / P	TAX MAP AND PARCEL
W# (W1)	WETLANDS AREA LINES
L# (L1)	BOUNDARY LINES
R/W	RIGHT OF WAY
(crosshatch)	FIELD LOCATED WETLAND AREAS
(hatch)	FLOOD PLAIN AREA

WETLAND AREAS LINE TABLE

W1	S 00°06'22" E	50.98
W2	N 69°55'59" W	47.77
W3	S 58°24'00" W	32.25
W4	S 41°18'38" W	44.91
W5	S 68°35'22" W	127.17
W6	S 61°56'16" W	35.58
W7	S 65°42'28" W	107.92
W8	S 59°08'32" W	38.15
W9	S 49°48'25" W	38.92
W10	S 31°58'21" W	104.50
W11	S 40°48'18" W	50.95
W12	S 63°52'26" W	124.06
W13	S 84°11'38" W	93.12
W14	S 59°56'21" W	46.97
W15	S 81°11'38" W	42.03
W16	S 47°48'43" W	37.73
W17	S 65°51'58" W	22.56
W18	S 46°42'26" W	95.81
W19	N 30°21'25" E	11.77
W20	S 00°48'57" E	37.63
W21	S 53°21'15" W	28.99
W22	S 49°00'12" W	48.48
W23	S 36°01'45" W	33.60
W24	S 26°12'15" W	42.48
W25	S 00°20'49" E	73.08
W26	S 06°52'43" E	31.29
W27	S 28°37'26" W	39.18
W28	S 71°45'11" W	44.21
W29	S 49°04'33" W	48.81
W30	S 21°51'48" W	174.08
W31	S 23°09'04" W	66.49
W32	S 27°48'37" W	103.71
W33	S 18°02'33" W	71.11
W34	S 31°16'59" W	45.61
W35	S 12°51'17" W	115.32
W36	S 04°15'07" W	49.43
W37	S 13°31'41" W	60.14
W38	S 85°34'21" W	39.12
W39	N 76°50'09" W	30.17
W40	N 88°47'08" W	38.20
W41	N 55°17'51" W	31.12
W42	N 74°25'54" W	22.44
W43	N 67°53'26" W	34.73
W44	S 46°03'16" W	40.95
W45	N 84°23'27" W	27.70
W46	N 78°34'25" W	65.13
W47	N 52°46'27" W	25.94
W48	N 18°02'23" W	29.27
W49	N 15°12'01" W	34.22
W50	N 28°56'57" W	42.04
W51	N 18°12'00" W	60.31
W52	N 21°33'15" W	329.82
W53	N 27°32'53" W	83.48
W54	N 38°40'15" W	92.91
W55	N 50°57'42" W	88.00
W56	N 68°22'10" W	72.21
W57	N 76°43'58" W	439.44
W58	N 83°13'14" W	80.64
W59	S 84°20'39" W	98.35
W60	S 67°08'28" W	182.07
W61	S 77°04'19" W	103.69
W62	S 89°11'13" W	42.94
W63	N 78°25'12" W	36.72
W64	N 68°18'29" W	145.89
W65	N 65°35'24" W	204.69
W66	N 52°37'58" W	88.81
W67	N 39°38'31" W	63.78
W68	N 12°59'58" W	74.93
W69	N 09°30'22" W	85.18
W70	N 18°01'22" W	60.40
W71	S 70°20'31" W	8.58
W72	N 25°23'54" W	17.48
W73	S 06°13'51" W	47.25
W74	S 23°34'04" W	97.28
W79	N 65°16'17" W	49.80
W80	N 38°42'21" W	30.88
W81	N 05°58'29" W	43.98
W82	N 05°39'17" E	102.13
W83	N 32°29'28" W	89.39
W84	N 19°04'27" E	33.88
W85	N 78°10'48" E	143.30
W86	S 21°09'00" E	75.95
W87	S 32°21'14" W	43.94
W88	S 52°02'49" W	48.82
W89	S 86°17'12" W	41.12
W90	S 76°08'13" W	107.01
W91	S 58°35'21" W	38.21
W92	S 60°12'24" W	109.77
W93	S 61°42'06" W	43.10
W94	N 73°18'45" W	22.05
W95	N 30°47'29" E	32.38
W96	N 47°05'23" E	60.85
W97	N 59°29'19" E	56.35
W98	N 08°54'53" E	28.88
W99	N 54°10'54" W	151.57
W100	N 28°57'02" E	21.65
W101	S 67°01'02" E	41.04
W102	S 47°24'23" E	47.99
W103	S 62°07'14" E	39.00
W104	N 81°57'59" E	48.20
W105	N 53°12'46" E	50.44
W106	N 62°29'06" E	56.55
W107	N 62°19'34" E	40.02
W108	N 75°04'13" E	82.31
W109	S 89°34'49" W	149.52
W110	N 85°01'55" W	74.80
W111	N 05°18'42" W	78.54
W112	N 80°53'21" W	43.58
W113	N 33°43'46" W	63.20
W114	N 09°50'25" W	42.56
W115	N 03°53'35" E	35.62
W116	N 08°10'50" W	159.29
W117	N 38°07'42" W	49.19
W118	N 65°13'41" W	78.02
W119	S 80°20'41" W	23.41
W120	N 28°21'05" W	27.34
W121	N 01°44'47" W	45.44
W122	N 75°05'14" E	68.76
W123	N 52°48'43" E	57.07
W124	S 67°42'34" E	63.10
W125	S 35°38'45" E	63.63
W126	N 85°18'44" E	32.05
W127	S 84°41'50" E	53.57
W128	S 48°47'47" E	23.93
W129	S 00°56'39" W	53.08
W130	S 83°29'25" E	60.04
W131	S 54°30'37" E	39.48
W132	S 06°38'40" W	49.28
W133	S 16°08'37" E	58.78
W134	S 07°11'41" E	55.23
W135	S 15°23'13" E	54.23
W136	S 24°23'46" E	41.84
W137	S 04°16'50" W	60.55
W138	S 13°27'54" E	43.59
W139	S 26°35'52" E	44.04
W140	S 78°32'05" W	32.32
W141	N 89°57'38" W	40.98
W142	N 78°33'18" W	75.82
W143	N 01°57'03" W	13.56
W144	N 63°15'56" W	46.80
W145	N 48°11'19" W	29.30
W146	N 77°12'40" E	16.46
W147	S 60°10'24" E	52.99
W148	S 84°45'59" E	65.91
W149	N 67°50'33" E	24.70
W150	S 53°52'43" E	24.49
W151	N 78°32'05" E	35.63
W152	S 09°12'22" E	36.50
W153	S 81°09'35" W	52.38
W154	N 01°36'59" W	25.96
W155	N 36°32'06" W	40.30
W156	N 89°19'59" W	6.90
W157	N 68°39'04" W	33.28
W158	S 51°42'50" W	20.45
W159	N 65°07'47" W	24.07
W160	N 18°21'28" W	51.82
W161	N 19°03'49" E	13.86
W162	N 65°54'44" E	16.34
W163	N 87°19'03" E	28.02
W164	N 70°13'16" E	27.84
W165	S 65°48'29" E	28.60
W166	S 68°59'44" E	52.82
W167	S 03°00'50" W	39.98
W168	S 22°28'18" E	15.55
W169	S 36°41'43" E	87.17
W170	S 57°34'42" E	47.45
W171	S 73°18'11" E	68.29
W172	S 33°01'30" E	73.34
W173	S 23°13'52" E	84.23
W174	S 13°51'57" W	44.08
W175	N 88°38'59" W	81.86
W176	N 24°12'24" W	58.56
W177	N 75°31'43" W	68.18
W178	N 55°31'24" W	58.82

BOUNDARY LINE TABLE

L1	N 48°05'10" E	50.04
L2	S 82°17'32" E	270.46
L3	N 85°56'47" E	109.82
L4	N 76°28'28" E	109.82
L5	N 67°00'05" E	109.82
L6	S 27°44'05" E	175.00
L7	N 85°15'55" E	210.00
L8	N 77°45'55" E	50.00
L9	N 12°45'55" E	90.00
L10	N 13°57'57" W	123.23
L11	N 34°10'56" E	109.38
L12	S 48°37'35" E	1252.16
L13	N 55°13'24" E	799.47
L14	S 26°56'20" E	4.59
L15	S 00°22'25" E	44.00
L16	S 10°56'12" W	40.79
L17	S 18°35'15" E	13.91
L18	S 00°48'57" E	60.98
L19	N 30°21'25" E	65.32
L20	N 40°55'05" E	60.03
L21	N 51°34'48" E	53.90
L22	N 57°01'06" E	45.05
L23	N 65°59'26" E	67.41
L24	N 80°51'48" E	57.35
L25	S 84°23'36" E	48.06
L26	N 47°56'57" E	52.44
L27	N 81°10'35" E	54.65
L28	N 52°53'55" E	46.89
L29	N 27°06'01" E	77.90
L30	N 35°58'13" E	32.42
L31	N 40°24'32" E	62.82
L32	N 62°09'03" E	37.98
L33	N 70°12'58" E	80.25
L34	N 63°09'24" E	57.11
L35	N 50°20'23" E	60.10
L36	S 83°43'40" E	46.62
L37	N 57°08'22" E	42.26
L38	N 47°44'50" E	46.91
L39	N 59°01'07" E	74.95
L40	S 00°06'22" E	73.66
L41	S 04°32'58" E	53.62
L42	S 07°08'56" E	79.54
L43	S 06°45'57" E	132.72
L44	S 06°33'13" E	208.13
L45	S 08°02'30" E	168.39
L46	S 08°59'54" E	165.57
L47	S 14°23'48" E	121.43
L48	S 13°34'32" E	63.03
L49	S 06°21'28" E	86.19
L50	S 13°05'29" E	149.06
L51	S 08°43'58" E	88.26
L52	S 09°12'22" E	147.05
L53	S 14°49'33" E	64.67
L54	S 08°21'58" E	83.56
L55	S 12°31'33" E	78.95
L56	S 03°00'50" W	46.58
L57	S 13°28'34" E	65.89
L58	S 22°26'18" E	57.21
L59	S 19°58'58" E	63.42
L60	S 08°19'27" W	76.52
L61	S 06°29'55" E	78.61
L62	S 25°04'00" E	81.86
L63	S 21°27'56" E	93.37
L64	S 15°28'41" E	41.57
L65	S 05°45'00" E	61.06
L66	S 11°52'28" E	178.20
L67	S 10°43'35" E	92.34
L68	S 13°35'18" E	58.36
L69	S 02°16'31" E	54.43
L70	S 08°09'58" E	47.38
L71	S 62°51'33" W	39.04
L72	S 08°14'52" W	64.61
L73	S 41°16'19" W	27.85
L74	S 20°33'07" E	88.88
L75	S 22°28'57" E	65.40
L76	S 02°58'44" W	43.10
L77	S 07°03'18" E	37.19
L79	S 79°55'09" W	111.95
L80	N 55°30'22" W	40.13
L81	S 55°18'38" W	67.63
L82	S 79°55'09" W	95.17
L83	N 79°38'20" W	65.80
L84	N 42°50'41" W	22.39
L85	S 80°02'42" W	76.48
L86	S 02°54'27" W	17.17
L87	S 10°00'13" E	25.25
L88	S 79°55'09" W	584.78
L89	S 67°45'56" W	675.46
L90	N 60°13'47" W	1003.35
L91	N 39°00'13" W	514.76
L92	S 84°59'47" W	480.71
L93	N 08°34'44" W	863.63
L94	N 88°42'16" W	60.06
L95	N 01°12'16" W	1048.62
L96	N 66°34'54" W	273.82
L97	N 00°41'42" W	12.18
L98	S 88°30'32" W	15.10
L99	N 64°38'54" W	197.80
L100	N 09°38'54" W	249.50
L101	N 25°23'54" W	42.00

SURVEYORS CERTIFICATE

I HEREBY CERTIFY TO THE BEST OF MY KNOWLEDGE, INFORMATION AND BELIEF THAT THE PLAN SHOWN HEREON IS CORRECT; THAT THIS IS A WETLANDS LOCATION EXHIBIT OF FIELD LOCATED WETLANDS LOCATED ON PART OF THE PROPERTY CONVEYED UNTO BEST INDUSTRIES, INC. BY DEED DATED OCTOBER 5, 2001 FROM THE ESTATE OF J. LAURENCE MILLISON, BY RACHELLE MILLISON PERSONAL REPRESENTATIVE OF THE ESTATE AS RECORDED AMONG THE LAND RECORDS OF ST. MARY'S COUNTY, MARYLAND IN LIBER 1744 AT FOLIO 426.

Larry L. Mann   1-27-15

LARRY L. MANN   DATE
PROPERTY LINE SURVEYOR
MD REG. NO. 469
EXPIRATION DATE: 01/02/2017

SOLTESZ
Engineering
Surveying
Planning
Environmental Sciences
WALDORF OFFICE
401 Post Office Road, Suite 103
Waldorf, MD 20602
P. 301.870.2166 F. 301.870.2884
Rockville
Lanham
Waldorf
Leonardtown
Frederick
Soltesz DC, LLC
www.solteszco.com

NO.	REVISIONS	BY	DATE
2	ADDED UNFLAGGED WETLAND AREAS AND REVISED AREA TABLE	JMD	12/10/2014
1	ADDED ADDITIONAL WETLAND AREA AND REVISED AREA TABLE	JMD	12/5/2014

DATE: NOVEMBER 2014 CAD STANDARDS VERSION: V8i
DESIGNED: JMD TECHNICIAN: JMD CHECKED: LLM

LARRY L. MANN
EXPIRATION DATE: 01/02/2017

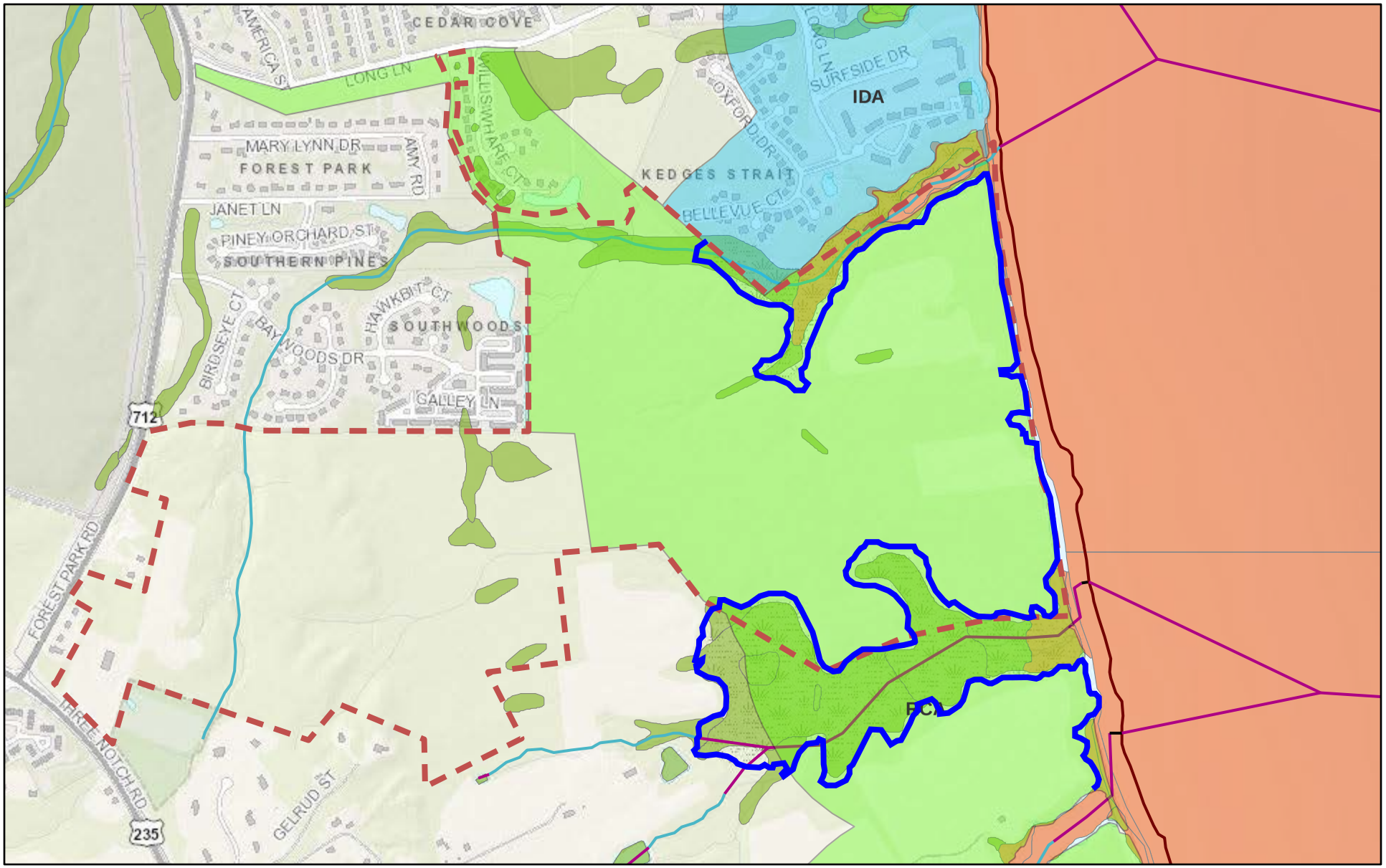
WETLAND LOCATION EXHIBIT
SHANNON FARMS AT CEDAR COVE

EIGHTH (8th) ELECTION DISTRICT, ST MARY'S COUNTY, MARYLAND

1" = 200'
SHEET 1 OF 1
PROJECT NO. 3516-00-00

APPENDIX B
ST. MARY'S COUNTY GIS DATA MAPS

ArcGIS Web Map



8/16/2021, 3:06:00 PM

1:15,000

0 500 1,000 2,000 ft

0 165 330 660 m

Critical Area (Adopted May 2021)

- IDA
- RCA

USGS Streams

- Perennial
- Intermittent

Artificial Path

- Coastline
- Connector

MD DNR Wetlands

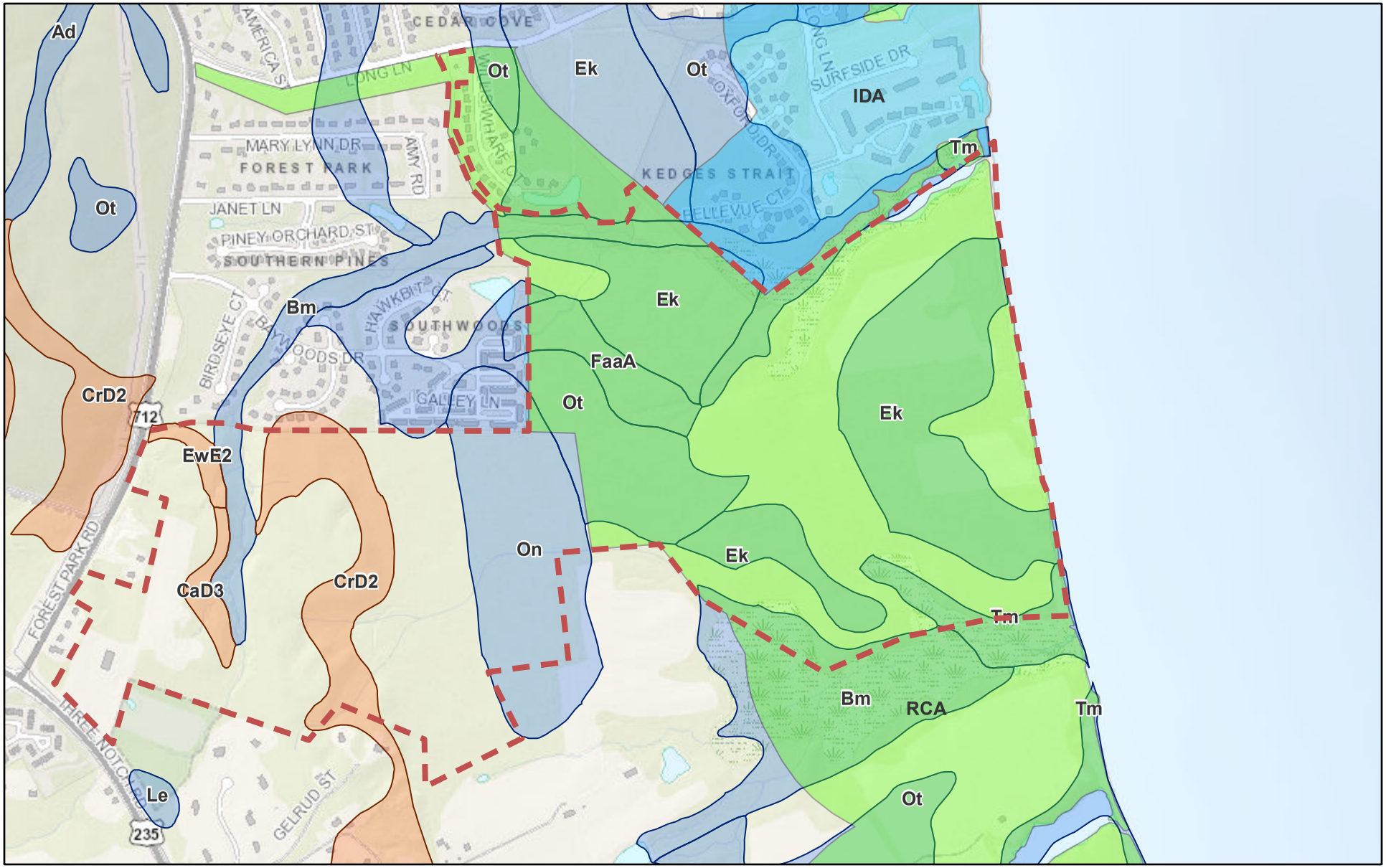
- Estuarine
- Palustrine

FEMA Floodplain

- Floodplain

Printed from the Public GIS Map
Provided by the St Marys County Government

ArcGIS Web Map



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Critical Area (Adopted May 2021)

- IDA
- RCA

- NRCS Soils (SSURGO) - Highly Erodible Soils
- NRCS Soils (SSURGO) - Hydric Soils

1:15,000

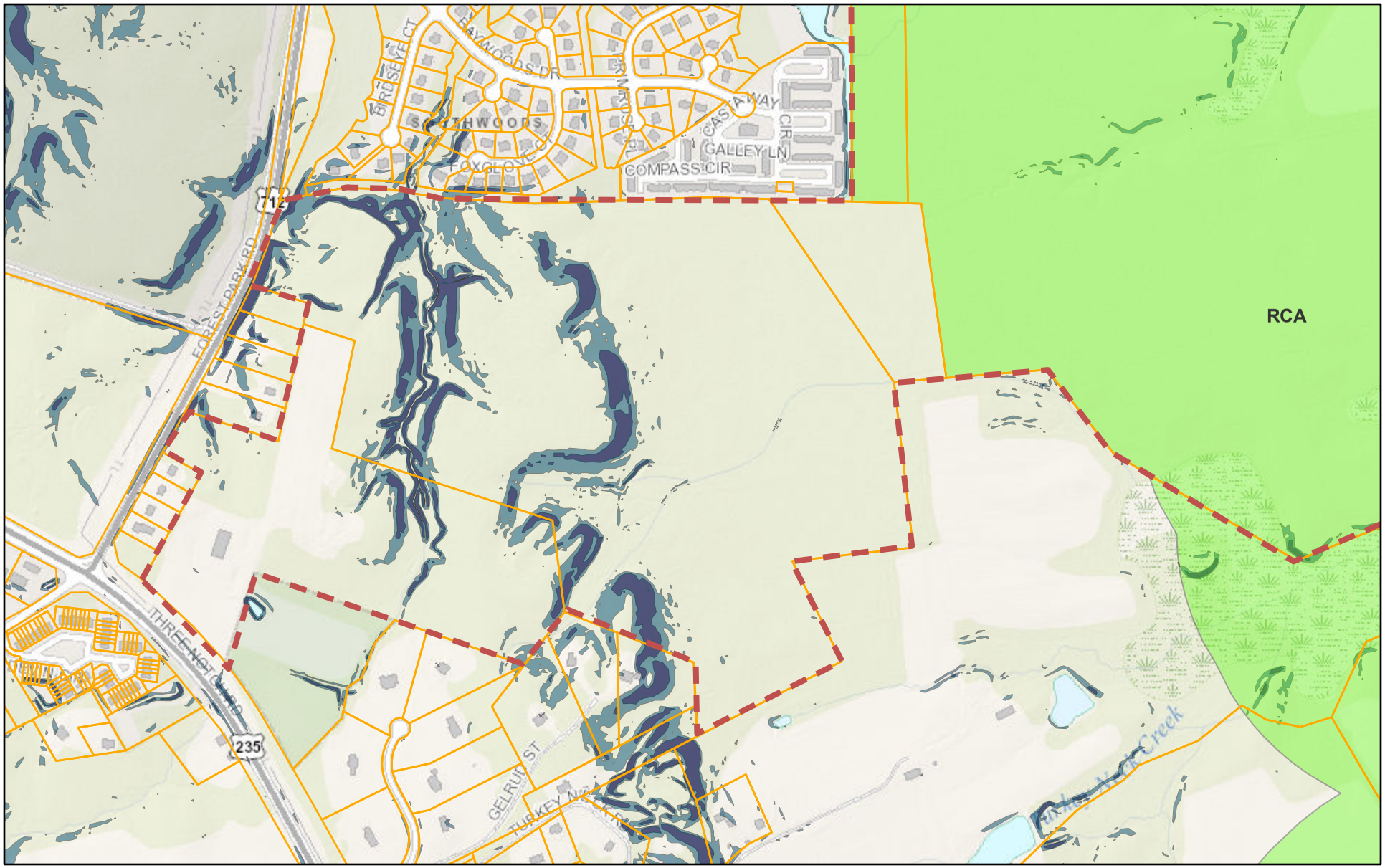
0 500 1,000 2,000 ft

0 165 330 660 m

Printed from the Public GIS Map

Provided by the St Marys County Government

ArcGIS Web Map



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Property Boundaries

Critical Area (Adopted May 2021)

RCA

Slopes Greater than 15%

Slopes Greater than 25%

1:10,000

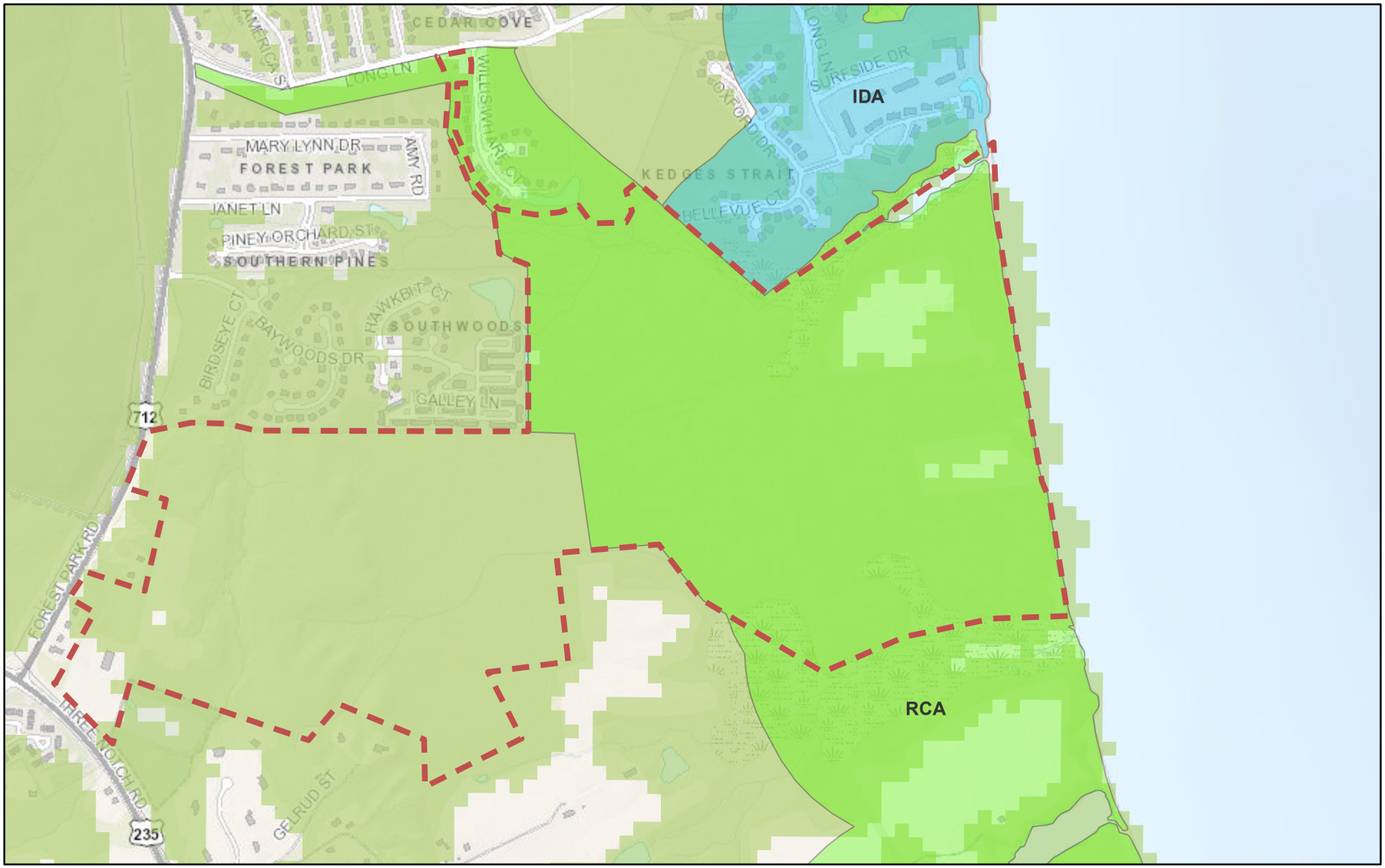
0 360 720 1,440 ft

0 110 220 440 m

Printed from the Public GIS Map

Provided by the St Marys County Government

ArcGIS Web Map



8/16/2021, 3:07:07 PM

Critical Area (Adopted May 2021)

IDA

RCA

Potential Forest Interior Dwelling Species (FIDS) Habitat

1:15,000

0 500 1,000 2,000 ft

0 165 330 660 m

Printed from the Public GIS Map

Provided by the St Marys County Government

APPENDIX C
INITIAL CONCEPTS

Shannon Farm Concept 1 Forest Drive

St. Mary's County
Recreation and Parks
Patuxent Building P.O. Box 653
23150 Leonard Hall Drive
Leonardtown, MD 20650

A. Morton Thomas & Associates, Inc.
800 King Farm Boulevard, 4th Floor
Rockville, MD 20850
301.881.2545

Legend

- Site Boundary
- Critical Area
- Flood Plain
- Wetlands
- Gravel Access Road (Phase 1)
- Gravel Access Road (Phase 2)
- Gravel Parking Area
- Gatehouse & Turnaround
- Bridge
- Culvert
- Fencing
- Gravel Trail (Phase 1)
- Gravel Trail (Phase 2)
- Boardwalk
- Restroom & Shower House
- Playground
- Picnic Table
- Picnic Shelter
- Kayak Launch Parking
- Kayak Launch
- Non-ADA Beach Access

200' 0 200' 400'
SCALE: 1"=200'

Shannon Farm Concept 2 Wetland Overpass

St. Mary's County
Recreation and Parks
Patuxent Building P.O. Box 653
23150 Leonard Hall Drive
Leonardtown, MD 20650

A. Morton Thomas & Associates, Inc.
800 King Farm Boulevard, 4th Floor
Rockville, MD 20850
301.881.2545

Legend

- Site Boundary
- Critical Area
- Flood Plain
- Wetlands
- Gravel Access Road (Phase 1)
- Gravel Access Road (Phase 2)
- Gravel Parking Area
- Gatehouse & Turnaround
- Bridge
- Culvert
- Fencing
- Gravel Trail (Phase 1)
- Gravel Trail (Phase 2)
- Boardwalk
- Restroom & Shower House
- Playground
- Picnic Table
- Picnic Shelter
- Kayak Launch Parking
- Kayak Launch
- Non-ADA Beach Access

200' 0 200' 400'
SCALE: 1"=200'

APPENDIX D
FINAL CONCEPT

Shannon Farm

Master Plan

St. Mary's County
Recreation and Parks
Patuxent Building P.O. Box 653
23150 Leonard Hall Drive
Leonardtown, MD 20650

A. Morton Thomas & Associates, Inc.
800 King Farm Boulevard, 4th Floor
Rockville, MD 20850
301.881.2545

GATEHOUSE ENLARGEMENT

ROAD DIET
TRAFFIC CALMING

LONG LANE

GATEHOUSE

MARY LYNN LANE

WELLS WHARF COURT

JANET LANE

FOREST PARK ROAD

BAYWOODS DRIVE

MAIN ACCESS ROAD

BEACHFRONT ENLARGEMENT

POSSIBLE NEIGHBORHOOD PEDESTRIAN CONNECTION

ADA BEACH ACCESS

PLAYGROUND ENTRY PARKING LOT

ADA BEACH ACCESS

RESTROOM

BOAT ACCESS PARKING LOT

ADA BEACH ACCESS

HOME GROWN MARKET

250' 0' 250' 500'
SCALE: 1"=250'

APPENDIX E
UPDATED FINAL CONCEPT & COST ESTIMATE

Shannon Farm

St. Mary's County
Recreation and Parks
Patuxent Building P.O. Box 653
23150 Leonard Hall Drive
Leonardtown, MD 20650

A. Morton Thomas & Associates, Inc.
800 King Farm Boulevard, 4th Floor
Rockville, MD 20850
301.881.2545

Legend

- Site Boundary
- Critical Area
- Flood Plain
- Wetlands
- Gravel Access Road
- Gravel Parking Area (Option 1 - Preferred)
- Gravel Access Road (Option 2)
- Culvert
- Gravel Trail
- Asphalt Trail & Maintenance Access
- Boardwalk
- Playground
- ADA Beach Access
- Non-ADA Beach Access
- Restroom

200' 0 200' 400'
SCALE: 1"=200'

UPDATED FINAL CONCEPT COST ESTIMATE

Following input from the community, the Master Plan was redesigned to originate from Three Notch Road and Home Grown Market and stay far from residential developments in January 2021. This cost estimate (above) was developed based on that design.

The estimate was updated again in March 2021 after a field walk where the wetlands were delineated. This estimate (on the following page) more correctly reflects the amount of boardwalk needed to cross the wetlands as they were understood at the time.

However, after discussions about grade with an eye to accessibility, St. Mary's County decided to review the concept again. The first quarter mile of trail was designed to be 5-8% slope for stretches of 200 feet with landings separating them.

St. Mary's County representatives met with consultants at a steep (5-8%) portion of the Washington, Baltimore & Annapolis Trail near Odenton, MD in August 2021 to try out the trail. After this trail visit, it was determined that a slope over 5% was too steep and the 5% slopes should be kept to a minimum. In order to accommodate that, another run of boardwalk was added to connect two high points. In addition to improving accessibility, this design change also reduced earthwork and tree removal. Refer to pages 26 and 27 for the updated master plan and cost estimate.

Shannon Farm

Master Plan

St. Mary's County Recreation and Parks
Patuxent Building P.O. Box 653
23150 Leonard Hall Drive
Leonardtown, MD 20650

A. Morton Thomas & Associates, Inc.
700 King Farm Blvd, Suite 300
Rockville, MD 20850
301.881.2545


1 GATEHOUSE


2 ASPHALT TRAIL


3 BOARDWALK


4 PLAYGROUND


5 ADA BEACH ACCESS


6 NON-ADA BEACH ACCESS


7 PICNIC SHELTER


8 LIVING SHORELINE & BREAKWATERS


9 UNPAVED NATURE TRAIL

LONG LANE
MARY LYNN LANE
JANET LANE
WILLIS WHARF COURT
FOREST PARK ROAD
BAYWOODS DRIVE
LONG LANE
RESTROOM
PARKING LOT & TRAILHEAD
1 GATEHOUSE
HOME GROWN MARKET

250' 0' 250' 500'
SCALE: 1"=250'

Shannon Farms Concept

Order of Magnitude Construction Estimate & Program

ITEM DESCRIPTION	UNIT	EST. QTY.	UNIT PRICE	TOTAL PRICE	COMMENT
Mobilization	LS	1	$ 400,000.00	$ 400,000	Required permits, fees, sediment and erosion control measures
Demolition & Clearing	AL	1	$ 200,000.00	$ 200,000	Remove existing structions and vegetation that will be in the area of disturbance, including large trees.
Erosion & Sediment Control	AL	1	$ 200,000.00	$ 200,000	Measures to prevent erosion and protect existing environmental features.
Earthwork	AL	1	$ 350,000.00	$ 350,000	Adjusting the existing grade to meet proposed through cut and fill.
Asphalt Road (20' wide) with Swales Asphalt Parking Lot	SF	25,000	$ 10.00	$ 250,000	The access road will follow the existing roadway.
Asphalt Trail (10' Wide)	SF	55,000	$ 10.00	$ 550,000	This trail will connect the parking lot to the beach and playground.
Gravel Trail (8' Wide)	SF	25,448	$ 5.00	$ 127,240	This trail and connectors will take visitors to different parts of the beach.
Pedestrian Culvert	EA	2	$ 5,000.00	$ 10,000	Culverts will be used where the trail crosses a stream.
Boardwalk (14' Wide)	SF	27,000	$ 85.00	$ 2,295,000	Boardwalks will be used where the trail crosses over wetlands to minimize the impact.
Boardwalk Railings	LF	1,000	$ 65.00	$ 65,000	Standard railings will be used.
Boardwalk Kickplate	LF	3,000	$ 25.00	$ 75,000	Standard kickplate will be used at boardwalks less than 30" from ground.
Boardwalk Abutment	AL	1	$ 15,000.00	$ 15,000	Standard railings will be used at boardwalks more than 30" from ground.
Vehicular Gate	EA	1	$ 4,000.00	$ 4,000	Gate for traffic control on site will be installed at the entrance.
Park Entry Sign	AL	1	$ 3,000.00	$ 3,000	Entry sign will be located along Long Lane.
Park Use Signage	AL	3	$ 1,000.00	$ 3,000	Wayfinding, rules, and entrance information.
Wayfinding & Interpretive Signage	AL	1	$ 10,000.00	$ 10,000	Signage to inform visitors throughout the site about how to get around and about the history and environment of the area. Locations based on teaching in the landscape – graphic-rich.
Playground	AL	1	$ 200,000.00	$ 200,000	Playground to include 2-5, and 5-12 play zones.
Green Flush Restroom	EA	1	$ 200,000.00	$ 200,000	Pre-fabricated Septic vault toilet. Minimal environmental impact.
Restroom (Alternative)	EA	1	$ 200,000.00		Pre-fabricated Septic restrooms will require pumping and truck access.
Picnic Pavilion	EA	5	$ 40,000.00	$ 200,000	Picnic Shelter on concrete pad.
Picnic Tables	EA	20	$ 1,500.00	$ 30,000	Standard and ADA Picnic Tables.
Non-ADA Beach Access (Stairs)	EA	9	$ 5,000.00	$ 45,000	In order to prevent damage to the eroding shoreline embankment, wooden stairs will be placed at regular intervals.
Bioretention Installation (Level 2)	EA	5	$ 60,000.00	$ 300,000	Stormwater management for roadway and parking area and additional development.
Planting Allowance	AL	1	$ 50,000.00	$ 50,000	Planting for Privacy Screen to buffer existing residences from roadway.
Living Shoreline	AL	1	$ 500,000.00	$ 500,000	Constructed barriers to encourage healthy shoreline. Includes sand, armor stone, chinking stone, filter cloth, native plant plugs, and construction.
Breakwaters	AL	1	$ 900,000.00	$ 900,000	2,000 feet of breakwaters, Armor Stone and Filter Fabric and construction.
Emergency Access Easement	AL	1	$ 9,900.00	$ 9,900	Cost of aquiring the land to develop the emergency access road.
Emergency Access Road	AL	1	$ 750,000.00	$ 750,000	20' wide, gravel access road with required stormwater facilities.
Remove E&S Controls and Clean Up	AL	1	$ 5,000.00	$ 5,000	Construction clean-up.
			ESTIMATED COST	$ 7,747,140	

APPENDIX F
SOURCES & BIBLIOGRAPHY

SOURCES & BIBLIOGRAPHY

Hardaway, Jr., C.S. and R.J. Byrne. Shoreline Management in Chesapeake Bay. Special Report in Applied Marine Science and Ocean Engineering Number 356. Virginia Sea Grant Publication VSG-99-11. Virginia Institute of Marine Science, College of William and Mary, 1999.

U.S. Geological Survey. The Chesapeake Bay: Geologic Product of Rising Sea Level. USGS Fact Sheet 102-98. U.S. Department of the Interior, October 1998.

Sea Rise And Storms On The Chesapeake Bay. National Geographic, 2022. https://education.nationalgeographic.org/resource/sea-rise-and-storms-chesapeake-bay. Accessed: June 17, 2022.

NOAA Fisheries. https://www.fisheries.noaa.gov/insight/understanding-living-shorelines. Accessed: July 14, 2022.