# APPENDIX A: WEB SOIL SURVEY REPORT

United States Department of Agriculture

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

# Custom Soil Resource Report for Anne Arundel County, Maryland, and Queen Anne's County, Maryland

## BCS 1,000 ft Corridor




July 2, 2024

# Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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# How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

# Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

# Custom Soil Resource Report
## Soil Map (BCS 1000-ft Corridor_2024-07-02)



## 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: Anne Arundel County, Maryland
Survey Area Data: Version 22, Sep 12, 2023

Soil Survey Area: Queen Anne's County, Maryland
Survey Area Data: Version 20, Sep 12, 2023

Your area of interest (AOI) includes more than one soil survey area. These survey areas may have been mapped at different scales, with a different land use in mind, at different times, or at different levels of detail. This may result in map unit symbols, soil properties, and interpretations that do not completely agree across soil survey area boundaries.

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

Date(s) aerial images were photographed: Jan 1, 1999—Dec 31, 2003

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background

## MAP LEGEND

## MAP INFORMATION

imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

# Map Unit Legend (BCS 1000-ft Corridor_2024-07-02)

| Map Unit Symbol | Map Unit Name | Acres in AOI | Percent of AOI |
|---|---|---|---|
| AsC | Annapolis fine sandy loam, 5 to 10 percent slopes | 8.0 | 0.3% |
| AsE | Annapolis fine sandy loam, 15 to 25 percent slopes | 25.7 | 1.1% |
| AuD | Annapolis-Urban land complex, 5 to 15 percent slopes | 4.0 | 0.2% |
| CoB | Collington-Wist complex, 2 to 5 percent slopes | 5.3 | 0.2% |
| CoC | Collington-Wist complex, 5 to 10 percent slopes | 24.0 | 1.0% |
| CpB | Collington-Wist-Urban land complex, 0 to 5 percent slopes | 0.9 | 0.0% |
| CpD | Collington-Wist-Urban land complex, 5 to 15 percent slopes | 0.0 | 0.0% |
| CRD | Collington and Annapolis soils, 10 to 15 percent slopes | 8.2 | 0.3% |
| CSE | Collington, Wist, and Westphalia soils, 15 to 25 percent slopes | 8.6 | 0.4% |
| CSF | Collington, Wist, and Westphalia soils, 25 to 40 percent slopes | 15.1 | 0.6% |
| CxA | Cumberstone-Mattapex complex, 0 to 2 percent slopes | 61.3 | 2.5% |
| CxB | Cumberstone-Mattapex complex, 2 to 5 percent slopes | 46.6 | 1.9% |
| CxC | Cumberstone-Mattapex complex, 5 to 10 percent slopes | 6.5 | 0.3% |
| DcA | Deale-Shadyoak complex, 0 to 2 percent slopes | 6.4 | 0.3% |
| DxC | Downer-Phalanx complex, 5 to 10 percent slopes | 4.0 | 0.2% |
| DxD | Downer-Phalanx complex, 10 to 15 percent slopes | 0.6 | 0.0% |
| MtaB | Mattapex silt loam, 2 to 5 percent slopes, northern coastal plain | 10.4 | 0.4% |
| MtC | Mattapex silt loam, 5 to 10 percent slopes | 4.1 | 0.2% |

| Map Unit Symbol | Map Unit Name | Acres in AOI | Percent of AOI |
|---|---|---|---|
| MxB | Mattapex-Butlertown complex, 2 to 5 percent slopes | 14.4 | 0.6% |
| MyB | Mattapex-Butlertown-Urban land complex, 0 to 5 percent slopes | 17.4 | 0.7% |
| MZA | Mispillion and Transquaking soils, 0 to 1 percent slopes, tidally flooded | 17.7 | 0.7% |
| SaB | Sassafras fine sandy loam, 2 to 5 percent slopes | 5.9 | 0.2% |
| SME | Sassafras and Croom soils, 15 to 25 percent slopes | 19.3 | 0.8% |
| SMF | Sassafras and Croom soils, 25 to 40 percent slopes | 1.3 | 0.1% |
| SnB | Sassafras-Urban land complex, 0 to 5 percent slopes | 1.9 | 0.1% |
| SoA | Shadyoak-Elkton complex, 0 to 2 percent slopes | 16.4 | 0.7% |
| UxB | Udorthents, loamy, sulfidic substratum, 0 to 5 percent slopes | 213.1 | 8.7% |
| UxD | Udorthents, loamy, sulfidic substratum, 5 to 15 percent slopes | 136.6 | 5.6% |
| Uz | Urban land | 7.7 | 0.3% |
| W | Water | 258.7 | 10.6% |
| WBA | Widewater and Issue soils, 0 to 2 percent slopes, frequently flooded | 31.3 | 1.3% |
| WdaB | Woodstown sandy loam, 2 to 5 percent slopes, Northern Coastal Plain | 8.0 | 0.3% |
| **Subtotals for Soil Survey Area** | | **989.0** | **40.5%** |
| **Totals for Area of Interest** | | **2,443.4** | **100.0%** |

| Map Unit Symbol | Map Unit Name | Acres in AOI | Percent of AOI |
|---|---|---|---|
| Bp | Bestpitch peat, very frequently flooded, tidal | 31.4 | 1.3% |
| CaA | Carmichael loam, 0 to 2 percent slopes | 30.6 | 1.3% |
| CoA | Corsica mucky loam, 0 to 2 percent slopes | 14.7 | 0.6% |
| HnA | Hammonton sandy loam, 0 to 2 percent slopes | 69.1 | 2.8% |
| HnB | Hammonton sandy loam, 2 to 5 percent slopes | 8.8 | 0.4% |
| Ho | Honga peat, very frequently flooded, tidal | 103.7 | 4.2% |

| Map Unit Symbol | Map Unit Name | Acres in AOI | Percent of AOI |
|---|---|---|---|
| HvA | Hurlock sandy loam, 0 to 2 percent slopes | 153.8 | 6.3% |
| IgB | Ingleside sandy loam, 2 to 5 percent slopes | 37.7 | 1.5% |
| LO | Longmarsh and Indiantown soils, frequently flooded | 13.6 | 0.6% |
| MqA | Mattapex-Butlertown silt loams, 0 to 2 percent slopes | 89.8 | 3.7% |
| MqB | Mattapex-Butlertown silt loams, 2 to 5 percent slopes | 34.2 | 1.4% |
| NsB | Nassawango silt loam, 2 to 5 percent slopes | 16.4 | 0.7% |
| OtA | Othello silt loams, 0 to 2 percent slopes, Mid-Atlantic Coastal Plain | 171.9 | 7.0% |
| PiA | Pineyneck silt loam, 0 to 2 percent slopes | 20.7 | 0.8% |
| PiB | Pineyneck silt loam, 2 to 5 percent slopes | 96.2 | 3.9% |
| UbB | Udorthents, borrow area, 0 to 5 percent slopes | 1.6 | 0.1% |
| UoB | Unicorn silt loam, 2 to 5 percent slopes | 12.3 | 0.5% |
| UpB | Urban land | 138.6 | 5.7% |
| UsB | Unicorn-Sassafras loams, 2 to 5 percent slopes | 9.3 | 0.4% |
| UsC | Unicorn-Sassafras loams, 5 to 10 percent slopes | 5.3 | 0.2% |
| W | Water | 327.1 | 13.4% |
| WhA | Whitemarsh silt loam, 0 to 2 percent slopes | 67.5 | 2.8% |
| **Subtotals for Soil Survey Area** | | **1,454.3** | **59.5%** |
| **Totals for Area of Interest** | | **2,443.4** | **100.0%** |

# Map Unit Descriptions (BCS 1000-ft Corridor_2024-07-02)

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some

observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The

pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

# Anne Arundel County, Maryland

## AsC—Annapolis fine sandy loam, 5 to 10 percent slopes

### Map Unit Setting

*National map unit symbol:* 4m9t
*Elevation:* 10 to 160 feet
*Mean annual precipitation:* 40 to 50 inches
*Mean annual air temperature:* 52 to 57 degrees F
*Frost-free period:* 180 to 210 days
*Farmland classification:* Farmland of statewide importance

### Map Unit Composition

*Annapolis and similar soils:* 80 percent
*Minor components:* 20 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Annapolis

#### Setting

*Landform:* Broad interstream divides
*Landform position (two-dimensional):* Shoulder
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Parent material:* Glauconitic loamy fluviomarine deposits

#### Typical profile

*Ap - 0 to 8 inches:* fine sandy loam
*Bt - 8 to 27 inches:* channery sandy clay loam
*E and Bt - 27 to 61 inches:* loamy sand
*CB - 61 to 81 inches:* loamy sand

#### Properties and qualities

*Slope:* 5 to 10 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Well drained
*Runoff class:* Medium
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to high (0.14 to 1.98 in/hr)
*Depth to water table:* More than 80 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Available water supply, 0 to 60 inches:* Moderate (about 7.0 inches)

#### Interpretive groups

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 3e
*Hydrologic Soil Group:* C
*Ecological site:* F149AY150MD - Well Drained Glauconitic Fine-Loamy Upland
*Hydric soil rating:* No

### Minor Components

#### Donlonton

*Percent of map unit:* 10 percent
*Landform:* Depressions, swales

*Down-slope shape:* Concave
*Across-slope shape:* Concave, linear
*Ecological site:* F149AY110NJ - Moist Glauconitic Fine-loamy Upland
*Hydric soil rating:* No

**Collington**

*Percent of map unit:* 10 percent
*Landform:* Broad interstream divides
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Ecological site:* F149AY170MD - Well Drained Fine-Loamy Upland
*Hydric soil rating:* No

## AsE—Annapolis fine sandy loam, 15 to 25 percent slopes

**Map Unit Setting**

*National map unit symbol:* 4m9v
*Elevation:* 10 to 230 feet
*Mean annual precipitation:* 40 to 50 inches
*Mean annual air temperature:* 52 to 57 degrees F
*Frost-free period:* 180 to 210 days
*Farmland classification:* Not prime farmland

**Map Unit Composition**

*Annapolis and similar soils:* 80 percent
*Minor components:* 20 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Annapolis**

**Setting**

*Landform:* Knolls, interfluves, ravines
*Landform position (two-dimensional):* Backslope
*Down-slope shape:* Linear
*Across-slope shape:* Convex, linear
*Parent material:* Glauconitic loamy fluviomarine deposits

**Typical profile**

*Ap - 0 to 8 inches:* fine sandy loam
*Bt - 8 to 27 inches:* channery sandy clay loam
*E and Bt - 27 to 61 inches:* loamy sand
*CB - 61 to 81 inches:* loamy sand

**Properties and qualities**

*Slope:* 15 to 25 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Well drained
*Runoff class:* High
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to high (0.14 to 1.98 in/hr)
*Depth to water table:* More than 80 inches

*Frequency of flooding:* None
*Frequency of ponding:* None
*Available water supply, 0 to 60 inches:* Moderate (about 7.0 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 6e
*Hydrologic Soil Group:* C
*Ecological site:* F149AY150MD - Well Drained Glauconitic Fine-Loamy Upland
*Hydric soil rating:* No

## Minor Components

### Collington

*Percent of map unit:* 5 percent
*Landform:* Ravines, knolls, interfluves
*Landform position (two-dimensional):* Backslope
*Down-slope shape:* Linear
*Across-slope shape:* Linear, convex
*Ecological site:* F149AY170MD - Well Drained Fine-Loamy Upland
*Hydric soil rating:* No

### Adelphia

*Percent of map unit:* 5 percent
*Landform:* Hillslopes, drainhead complexes
*Landform position (two-dimensional):* Footslope, toeslope
*Landform position (three-dimensional):* Side slope
*Down-slope shape:* Linear
*Across-slope shape:* Convex
*Ecological site:* F149AY130NJ - Moist Loamy Upland
*Hydric soil rating:* No

### Widewater

*Percent of map unit:* 5 percent
*Landform:* Drainageways, flood plains
*Down-slope shape:* Linear
*Across-slope shape:* Concave, linear
*Ecological site:* R149AY060DE - Wet Alluvial Floodplain
*Hydric soil rating:* Yes

### Howell

*Percent of map unit:* 5 percent
*Landform:* Hillslopes, knolls
*Landform position (two-dimensional):* Backslope
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Ecological site:* F149AY160MD - Well Drained Clayey Upland
*Hydric soil rating:* No

## AuD—Annapolis-Urban land complex, 5 to 15 percent slopes

### Map Unit Setting

*National map unit symbol:* 4m93
*Elevation:* 10 to 160 feet
*Mean annual precipitation:* 40 to 50 inches
*Mean annual air temperature:* 52 to 57 degrees F
*Frost-free period:* 180 to 210 days
*Farmland classification:* Not prime farmland

### Map Unit Composition

*Annapolis and similar soils:* 50 percent
*Urban land:* 35 percent
*Minor components:* 15 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Annapolis

#### Setting

*Landform:* Broad interstream divides
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Parent material:* Glauconitic loamy fluviomarine deposits

#### Typical profile

*Ap - 0 to 8 inches:* fine sandy loam
*Bt - 8 to 27 inches:* channery sandy clay loam
*E and Bt - 27 to 61 inches:* loamy sand
*CB - 61 to 81 inches:* loamy sand

#### Properties and qualities

*Slope:* 5 to 15 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Well drained
*Runoff class:* Medium
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to high (0.14 to 1.98 in/hr)
*Depth to water table:* More than 80 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Available water supply, 0 to 60 inches:* Moderate (about 7.0 inches)

#### Interpretive groups

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 4e
*Hydrologic Soil Group:* C
*Ecological site:* F149AY150MD - Well Drained Glauconitic Fine-Loamy Upland
*Hydric soil rating:* No

### Description of Urban Land

#### Properties and qualities

*Slope:* 5 to 15 percent
*Depth to restrictive feature:* 10 inches to
*Runoff class:* Very high

#### Interpretive groups

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 8
*Hydrologic Soil Group:* D
*Hydric soil rating:* No

### Minor Components

#### Donlonton

*Percent of map unit:* 15 percent
*Landform:* Depressions, swales
*Down-slope shape:* Concave
*Across-slope shape:* Concave, linear
*Ecological site:* F149AY110NJ - Moist Glauconitic Fine-loamy Upland
*Hydric soil rating:* No

## CoB—Collington-Wist complex, 2 to 5 percent slopes

### Map Unit Setting

*National map unit symbol:* 4mb4
*Elevation:* 10 to 230 feet
*Mean annual precipitation:* 40 to 50 inches
*Mean annual air temperature:* 52 to 57 degrees F
*Frost-free period:* 180 to 210 days
*Farmland classification:* All areas are prime farmland

### Map Unit Composition

*Collington and similar soils:* 50 percent
*Wist and similar soils:* 35 percent
*Minor components:* 15 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Collington

#### Setting

*Landform:* Broad interstream divides, interfluves
*Landform position (two-dimensional):* Summit
*Landform position (three-dimensional):* Interfluve
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Parent material:* Glauconite bearing loamy fluviomarine deposits

**Typical profile**

*Ap - 0 to 10 inches:* fine sandy loam
*Bt - 10 to 34 inches:* sandy clay loam
*BC - 34 to 72 inches:* fine sandy loam

**Properties and qualities**

*Slope:* 2 to 5 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Well drained
*Runoff class:* Low
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (0.20 to 1.98 in/hr)
*Depth to water table:* More than 80 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Available water supply, 0 to 60 inches:* High (about 10.5 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 2e
*Hydrologic Soil Group:* B
*Ecological site:* F149AY170MD - Well Drained Fine-Loamy Upland
*Hydric soil rating:* No

## Description of Wist

**Setting**

*Landform:* Broad interstream divides, interfluves
*Landform position (two-dimensional):* Summit, shoulder, backslope
*Landform position (three-dimensional):* Interfluve
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Parent material:* Glauconite bearing loamy fluviomarine deposits

**Typical profile**

*Ap - 0 to 13 inches:* fine sandy loam
*BE - 13 to 17 inches:* fine sandy loam
*Bt - 17 to 41 inches:* sandy clay loam
*BC - 41 to 82 inches:* fine sandy loam

**Properties and qualities**

*Slope:* 2 to 5 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Well drained
*Runoff class:* Very low
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (0.20 to 5.95 in/hr)
*Depth to water table:* About 40 to 72 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Available water supply, 0 to 60 inches:* Moderate (about 9.0 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 2e
*Hydrologic Soil Group:* A
*Ecological site:* F149AY170MD - Well Drained Fine-Loamy Upland

*Hydric soil rating:* No

**Minor Components**

**Adelphia**

*Percent of map unit:* 15 percent
*Landform:* Drainhead complexes, depressions, swales
*Down-slope shape:* Concave, linear
*Across-slope shape:* Concave
*Ecological site:* F149AY130NJ - Moist Loamy Upland
*Hydric soil rating:* No

## CoC—Collington-Wist complex, 5 to 10 percent slopes

**Map Unit Setting**

*National map unit symbol:* 4mb5
*Elevation:* 10 to 230 feet
*Mean annual precipitation:* 40 to 50 inches
*Mean annual air temperature:* 52 to 57 degrees F
*Frost-free period:* 180 to 210 days
*Farmland classification:* Farmland of statewide importance

**Map Unit Composition**

*Collington and similar soils:* 45 percent
*Wist and similar soils:* 35 percent
*Minor components:* 20 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Collington**

**Setting**

*Landform:* Interfluves, broad interstream divides
*Landform position (two-dimensional):* Summit
*Landform position (three-dimensional):* Interfluve
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Parent material:* Glauconite bearing loamy fluviomarine deposits

**Typical profile**

*Ap - 0 to 10 inches:* fine sandy loam
*Bt - 10 to 34 inches:* sandy clay loam
*BC - 34 to 72 inches:* fine sandy loam

**Properties and qualities**

*Slope:* 5 to 10 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Well drained
*Runoff class:* Medium
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (0.20 to 1.98 in/hr)

*Depth to water table:* More than 80 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Available water supply, 0 to 60 inches:* High (about 10.5 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 3e
*Hydrologic Soil Group:* B
*Ecological site:* F149AY170MD - Well Drained Fine-Loamy Upland
*Hydric soil rating:* No

## Description of Wist

**Setting**

*Landform:* Interfluves, broad interstream divides
*Landform position (two-dimensional):* Summit, shoulder, backslope
*Landform position (three-dimensional):* Interfluve
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Parent material:* Glauconite bearing loamy fluviomarine deposits

**Typical profile**

*Ap - 0 to 13 inches:* fine sandy loam
*BE - 13 to 17 inches:* fine sandy loam
*Bt - 17 to 41 inches:* sandy clay loam
*BC - 41 to 82 inches:* fine sandy loam

**Properties and qualities**

*Slope:* 5 to 10 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Well drained
*Runoff class:* Low
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (0.20 to 5.95 in/hr)
*Depth to water table:* About 40 to 72 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Available water supply, 0 to 60 inches:* Moderate (about 9.0 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 3e
*Hydrologic Soil Group:* A
*Ecological site:* F149AY170MD - Well Drained Fine-Loamy Upland
*Hydric soil rating:* No

## Minor Components

**Adelphia**

*Percent of map unit:* 15 percent
*Landform:* Swales, drainhead complexes, depressions
*Down-slope shape:* Concave
*Across-slope shape:* Linear, concave
*Ecological site:* F149AY130NJ - Moist Loamy Upland
*Hydric soil rating:* No

**Tinton**

*Percent of map unit:* 5 percent
*Landform:* Interfluves
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Ecological site:* F153DY160NJ - Well Drained Coarse-Loamy Upland
*Hydric soil rating:* No

## CpB—Collington-Wist-Urban land complex, 0 to 5 percent slopes

**Map Unit Setting**

*National map unit symbol:* ng9j
*Elevation:* 10 to 230 feet
*Mean annual precipitation:* 40 to 50 inches
*Mean annual air temperature:* 52 to 57 degrees F
*Frost-free period:* 180 to 210 days
*Farmland classification:* Not prime farmland

**Map Unit Composition**

*Collington and similar soils:* 31 percent
*Wist and similar soils:* 29 percent
*Urban land:* 25 percent
*Minor components:* 15 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Collington**

**Setting**

*Landform:* Interfluves, broad interstream divides
*Landform position (two-dimensional):* Summit
*Landform position (three-dimensional):* Interfluve
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Parent material:* Glauconite bearing loamy fluviomarine deposits

**Typical profile**

*Ap - 0 to 10 inches:* fine sandy loam
*Bt - 10 to 34 inches:* sandy clay loam
*BC - 34 to 72 inches:* fine sandy loam

**Properties and qualities**

*Slope:* 0 to 5 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Well drained
*Runoff class:* Low
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (0.20 to 1.98 in/hr)
*Depth to water table:* More than 80 inches
*Frequency of flooding:* None

*Frequency of ponding:* None
*Available water supply, 0 to 60 inches:* High (about 10.5 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 2e
*Hydrologic Soil Group:* B
*Ecological site:* F149AY170MD - Well Drained Fine-Loamy Upland
*Hydric soil rating:* No

## Description of Wist

**Setting**

*Landform:* Interfluves, broad interstream divides
*Landform position (two-dimensional):* Summit, shoulder, backslope
*Landform position (three-dimensional):* Interfluve
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Parent material:* Glauconite bearing loamy fluviomarine deposits

**Typical profile**

*Ap - 0 to 13 inches:* fine sandy loam
*BE - 13 to 17 inches:* fine sandy loam
*Bt - 17 to 41 inches:* sandy clay loam
*BC - 41 to 82 inches:* fine sandy loam

**Properties and qualities**

*Slope:* 0 to 5 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Well drained
*Runoff class:* Very low
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (0.20 to 5.95 in/hr)
*Depth to water table:* About 40 to 72 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Available water supply, 0 to 60 inches:* Moderate (about 9.0 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 2e
*Hydrologic Soil Group:* A
*Ecological site:* F149AY170MD - Well Drained Fine-Loamy Upland
*Hydric soil rating:* No

## Description of Urban Land

**Setting**

*Parent material:* Human transported material

**Properties and qualities**

*Slope:* 0 to 5 percent
*Depth to restrictive feature:* 10 inches to
*Runoff class:* Very high

**Interpretive groups**

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 8

*Hydrologic Soil Group:* D
*Hydric soil rating:* No

**Minor Components**

**Adelphia**
*Percent of map unit:* 10 percent
*Landform:* Swales, drainhead complexes, depressions
*Down-slope shape:* Concave
*Across-slope shape:* Linear, concave
*Ecological site:* F149AY130NJ - Moist Loamy Upland
*Hydric soil rating:* No

**Tinton**
*Percent of map unit:* 5 percent
*Landform:* Interfluves
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Ecological site:* F153DY160NJ - Well Drained Coarse-Loamy Upland
*Hydric soil rating:* No

## CpD—Collington-Wist-Urban land complex, 5 to 15 percent slopes

**Map Unit Setting**
*National map unit symbol:* ng9k
*Elevation:* 10 to 230 feet
*Mean annual precipitation:* 40 to 50 inches
*Mean annual air temperature:* 52 to 57 degrees F
*Frost-free period:* 180 to 210 days
*Farmland classification:* Not prime farmland

**Map Unit Composition**
*Collington and similar soils:* 31 percent
*Wist and similar soils:* 29 percent
*Urban land:* 25 percent
*Minor components:* 15 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Collington**

**Setting**
*Landform:* Interfluves, broad interstream divides
*Landform position (two-dimensional):* Summit
*Landform position (three-dimensional):* Interfluve
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Parent material:* Glauconite bearing loamy fluviomarine deposits

**Typical profile**

*Ap - 0 to 10 inches:* fine sandy loam
*Bt - 10 to 34 inches:* sandy clay loam
*BC - 34 to 72 inches:* fine sandy loam

**Properties and qualities**

*Slope:* 5 to 15 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Well drained
*Runoff class:* Medium
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (0.20 to 1.98 in/hr)
*Depth to water table:* More than 80 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Available water supply, 0 to 60 inches:* High (about 10.5 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 4e
*Hydrologic Soil Group:* B
*Ecological site:* F149AY170MD - Well Drained Fine-Loamy Upland
*Hydric soil rating:* No

## Description of Wist

**Setting**

*Landform:* Interfluves, broad interstream divides
*Landform position (two-dimensional):* Summit, shoulder, backslope
*Landform position (three-dimensional):* Interfluve
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Parent material:* Glauconite bearing loamy fluviomarine deposits

**Typical profile**

*Ap - 0 to 13 inches:* fine sandy loam
*BE - 13 to 17 inches:* fine sandy loam
*Bt - 17 to 41 inches:* sandy clay loam
*BC - 41 to 82 inches:* fine sandy loam

**Properties and qualities**

*Slope:* 5 to 15 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Well drained
*Runoff class:* Low
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (0.20 to 5.95 in/hr)
*Depth to water table:* About 40 to 72 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Available water supply, 0 to 60 inches:* Moderate (about 9.0 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 4e
*Hydrologic Soil Group:* A
*Ecological site:* F149AY170MD - Well Drained Fine-Loamy Upland

*Hydric soil rating:* No

**Description of Urban Land**

**Properties and qualities**

*Slope:* 5 to 15 percent
*Depth to restrictive feature:* 10 inches to
*Runoff class:* Very high

**Interpretive groups**

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 8
*Hydrologic Soil Group:* D
*Hydric soil rating:* No

**Minor Components**

**Adelphia**

*Percent of map unit:* 10 percent
*Landform:* Depressions, drainhead complexes, swales, interfluves
*Landform position (two-dimensional):* Footslope
*Down-slope shape:* Concave
*Across-slope shape:* Linear
*Ecological site:* F149AY130NJ - Moist Loamy Upland
*Hydric soil rating:* No

**Tinton**

*Percent of map unit:* 5 percent
*Landform:* Interfluves
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Ecological site:* F153DY160NJ - Well Drained Coarse-Loamy Upland
*Hydric soil rating:* No

## CRD—Collington and Annapolis soils, 10 to 15 percent slopes

**Map Unit Setting**

*National map unit symbol:* ng9d
*Elevation:* 10 to 230 feet
*Mean annual precipitation:* 40 to 50 inches
*Mean annual air temperature:* 52 to 57 degrees F
*Frost-free period:* 180 to 210 days
*Farmland classification:* Not prime farmland

**Map Unit Composition**

*Collington and similar soils:* 45 percent
*Annapolis and similar soils:* 30 percent
*Minor components:* 25 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Collington**

**Setting**

*Landform:* Interfluves, hillslopes, knolls
*Landform position (two-dimensional):* Backslope
*Down-slope shape:* Linear
*Across-slope shape:* Convex
*Parent material:* Glauconite bearing loamy fluviomarine deposits

**Typical profile**

*Ap - 0 to 10 inches:* fine sandy loam
*Bt - 10 to 34 inches:* sandy clay loam
*BC - 34 to 72 inches:* fine sandy loam

**Properties and qualities**

*Slope:* 10 to 15 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Well drained
*Runoff class:* Medium
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (0.20 to 1.98 in/hr)
*Depth to water table:* More than 80 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Available water supply, 0 to 60 inches:* High (about 10.5 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 4e
*Hydrologic Soil Group:* B
*Ecological site:* F149AY170MD - Well Drained Fine-Loamy Upland
*Hydric soil rating:* No

**Description of Annapolis**

**Setting**

*Landform:* Hillslopes, interfluves, knolls
*Landform position (two-dimensional):* Backslope
*Down-slope shape:* Linear
*Across-slope shape:* Convex
*Parent material:* Glauconitic loamy fluviomarine deposits

**Typical profile**

*Ap - 0 to 8 inches:* fine sandy loam
*Bt - 8 to 27 inches:* channery sandy clay loam
*E and Bt - 27 to 61 inches:* loamy sand
*CB - 61 to 81 inches:* loamy sand

**Properties and qualities**

*Slope:* 10 to 15 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Well drained
*Runoff class:* Medium
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to high (0.14 to 1.98 in/hr)
*Depth to water table:* More than 80 inches

*Frequency of flooding:* None
*Frequency of ponding:* None
*Available water supply, 0 to 60 inches:* Moderate (about 7.0 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 4e
*Hydrologic Soil Group:* C
*Ecological site:* F149AY150MD - Well Drained Glauconitic Fine-Loamy Upland
*Hydric soil rating:* No

**Minor Components**

**Westphalia**

*Percent of map unit:* 10 percent
*Landform:* Hillslopes, knolls
*Ecological site:* F153DY160NJ - Well Drained Coarse-Loamy Upland
*Hydric soil rating:* No

**Wist**

*Percent of map unit:* 10 percent
*Landform:* Hillslopes, knolls
*Ecological site:* F149AY170MD - Well Drained Fine-Loamy Upland
*Hydric soil rating:* No

**Holmdel**

*Percent of map unit:* 5 percent
*Landform:* Interfluves, depressions, swales, drainhead complexes
*Landform position (two-dimensional):* Toeslope
*Ecological site:* F149AY130NJ - Moist Loamy Upland
*Hydric soil rating:* No

## CSE—Collington, Wist, and Westphalia soils, 15 to 25 percent slopes

**Map Unit Setting**

*National map unit symbol:* ng9f
*Elevation:* 0 to 230 feet
*Mean annual precipitation:* 40 to 50 inches
*Mean annual air temperature:* 52 to 57 degrees F
*Frost-free period:* 180 to 210 days
*Farmland classification:* Not prime farmland

**Map Unit Composition**

*Collington and similar soils:* 35 percent
*Wist and similar soils:* 30 percent
*Westphalia and similar soils:* 20 percent
*Minor components:* 15 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Collington

#### Setting

*Landform:* Knolls, hillslopes, interfluves
*Landform position (two-dimensional):* Backslope
*Landform position (three-dimensional):* Side slope, head slope, nose slope
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Parent material:* Glauconite bearing loamy fluviomarine deposits

#### Typical profile

*Ap - 0 to 4 inches:* fine sandy loam
*Bt - 4 to 34 inches:* sandy clay loam
*BC - 34 to 72 inches:* fine sandy loam

#### Properties and qualities

*Slope:* 15 to 25 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Well drained
*Runoff class:* High
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (0.20 to 1.98 in/hr)
*Depth to water table:* More than 80 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Available water supply, 0 to 60 inches:* High (about 10.6 inches)

#### Interpretive groups

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 6e
*Hydrologic Soil Group:* B
*Ecological site:* F149AY170MD - Well Drained Fine-Loamy Upland
*Hydric soil rating:* No

### Description of Wist

#### Setting

*Landform:* Hillslopes, knolls, interfluves
*Landform position (two-dimensional):* Backslope
*Landform position (three-dimensional):* Side slope
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Parent material:* Glauconite bearing loamy fluviomarine deposits

#### Typical profile

*A - 0 to 3 inches:* fine sandy loam
*BE - 3 to 13 inches:* fine sandy loam
*Bt - 13 to 41 inches:* sandy clay loam
*BC - 41 to 82 inches:* fine sandy loam

#### Properties and qualities

*Slope:* 15 to 25 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Well drained
*Runoff class:* Medium
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (0.20 to 5.95 in/hr)

*Depth to water table:* About 40 to 72 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Available water supply, 0 to 60 inches:* Moderate (about 8.7 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 6e
*Hydrologic Soil Group:* A
*Ecological site:* F149AY170MD - Well Drained Fine-Loamy Upland
*Hydric soil rating:* No

## Description of Westphalia

**Setting**

*Landform:* Hillslopes, knolls, interfluves
*Landform position (two-dimensional):* Backslope
*Landform position (three-dimensional):* Side slope
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Parent material:* Loamy fluviomarine deposits

**Typical profile**

*A - 0 to 6 inches:* fine sandy loam
*Bt - 6 to 12 inches:* fine sandy loam
*BC - 12 to 42 inches:* loamy fine sand
*C - 42 to 72 inches:* loamy fine sand

**Properties and qualities**

*Slope:* 15 to 25 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Well drained
*Runoff class:* Medium
*Capacity of the most limiting layer to transmit water (Ksat):* High (1.98 to 5.95 in/hr)
*Depth to water table:* More than 80 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Available water supply, 0 to 60 inches:* Moderate (about 6.3 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 7e
*Hydrologic Soil Group:* A
*Ecological site:* F153DY160NJ - Well Drained Coarse-Loamy Upland
*Hydric soil rating:* No

## Minor Components

**Adelphia**

*Percent of map unit:* 10 percent
*Landform:* Interfluves, drainhead complexes, hillslopes, depressions
*Landform position (two-dimensional):* Footslope, toeslope
*Ecological site:* F149AY130NJ - Moist Loamy Upland
*Hydric soil rating:* No

**Widewater**

*Percent of map unit:* 5 percent

*Landform:* Drainageways, flood plains, drainhead complexes
*Ecological site:* R149AY060DE - Wet Alluvial Floodplain
*Hydric soil rating:* Yes

## CSF—Collington, Wist, and Westphalia soils, 25 to 40 percent slopes

### Map Unit Setting

*National map unit symbol:* ng9g
*Elevation:* 0 to 230 feet
*Mean annual precipitation:* 40 to 50 inches
*Mean annual air temperature:* 52 to 57 degrees F
*Frost-free period:* 180 to 210 days
*Farmland classification:* Not prime farmland

### Map Unit Composition

*Collington and similar soils:* 35 percent
*Wist and similar soils:* 30 percent
*Westphalia and similar soils:* 20 percent
*Minor components:* 15 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Collington

#### Setting

*Landform:* Hillslopes, ravines
*Landform position (three-dimensional):* Side slope
*Down-slope shape:* Linear
*Across-slope shape:* Convex, linear
*Parent material:* Glauconite bearing loamy fluviomarine deposits

#### Typical profile

*A - 0 to 2 inches:* fine sandy loam
*Bt - 2 to 34 inches:* sandy clay loam
*BC - 34 to 72 inches:* fine sandy loam

#### Properties and qualities

*Slope:* 25 to 40 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Well drained
*Runoff class:* High
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (0.20 to 1.98 in/hr)
*Depth to water table:* More than 80 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Available water supply, 0 to 60 inches:* High (about 10.6 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 7e
*Hydrologic Soil Group:* B
*Ecological site:* F149AY170MD - Well Drained Fine-Loamy Upland
*Hydric soil rating:* No

**Description of Wist**

**Setting**

*Landform:* Ravines, hillslopes
*Landform position (two-dimensional):* Summit, shoulder, backslope
*Landform position (three-dimensional):* Side slope
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Parent material:* Glauconite bearing loamy fluviomarine deposits

**Typical profile**

*A - 0 to 3 inches:* fine sandy loam
*BE - 3 to 13 inches:* fine sandy loam
*Bt - 13 to 41 inches:* sandy clay loam
*BC - 41 to 82 inches:* fine sandy loam

**Properties and qualities**

*Slope:* 25 to 40 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Well drained
*Runoff class:* Medium
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (0.20 to 5.95 in/hr)
*Depth to water table:* About 40 to 72 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Available water supply, 0 to 60 inches:* Moderate (about 8.7 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 7e
*Hydrologic Soil Group:* A
*Ecological site:* F149AY170MD - Well Drained Fine-Loamy Upland
*Hydric soil rating:* No

**Description of Westphalia**

**Setting**

*Landform:* Hillslopes, ravines
*Landform position (three-dimensional):* Side slope
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Parent material:* Loamy fluviomarine deposits

**Typical profile**

*A - 0 to 6 inches:* fine sandy loam
*Bt - 6 to 12 inches:* fine sandy loam
*BC - 12 to 42 inches:* loamy fine sand
*C - 42 to 72 inches:* loamy fine sand

**Properties and qualities**

*Slope:* 25 to 40 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Well drained
*Runoff class:* Medium
*Capacity of the most limiting layer to transmit water (Ksat):* High (1.98 to 5.95 in/hr)
*Depth to water table:* More than 80 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Available water supply, 0 to 60 inches:* Moderate (about 6.3 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 7e
*Hydrologic Soil Group:* A
*Ecological site:* F153DY160NJ - Well Drained Coarse-Loamy Upland
*Hydric soil rating:* No

**Minor Components**

**Widewater**

*Percent of map unit:* 10 percent
*Landform:* Drainageways, flood plains
*Ecological site:* R149AY060DE - Wet Alluvial Floodplain
*Hydric soil rating:* Yes

**Adelphia**

*Percent of map unit:* 5 percent
*Landform:* Hillslopes, swales, drainhead complexes
*Landform position (two-dimensional):* Footslope, toeslope
*Ecological site:* F149AY130NJ - Moist Loamy Upland
*Hydric soil rating:* No

## CxA—Cumberstone-Mattapex complex, 0 to 2 percent slopes

**Map Unit Setting**

*National map unit symbol:* 4mbd
*Elevation:* 0 to 120 feet
*Mean annual precipitation:* 40 to 50 inches
*Mean annual air temperature:* 52 to 57 degrees F
*Frost-free period:* 180 to 210 days
*Farmland classification:* Farmland of statewide importance

**Map Unit Composition**

*Cumberstone and similar soils:* 50 percent
*Mattapex and similar soils:* 40 percent

*Minor components:* 10 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Cumberstone

#### Setting

*Landform:* Fluviomarine terraces
*Landform position (three-dimensional):* Tread
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Parent material:* Silty eolian deposits over loamy and clayey fluviomarine deposits

#### Typical profile

*Ap - 0 to 9 inches:* silt loam
*Bt - 9 to 23 inches:* silty clay loam
*BCg - 23 to 33 inches:* silt loam
*2Agb - 33 to 54 inches:* clay loam
*2Btgb - 54 to 62 inches:* clay
*2BCgb - 62 to 72 inches:* sandy clay

#### Properties and qualities

*Slope:* 0 to 2 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Somewhat poorly drained
*Runoff class:* Very high
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.06 to 0.60 in/hr)
*Depth to water table:* About 15 to 20 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Available water supply, 0 to 60 inches:* High (about 10.3 inches)

#### Interpretive groups

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 3w
*Hydrologic Soil Group:* C/D
*Ecological site:* F153CY020MD - Moist Loess Upland
*Hydric soil rating:* No

### Description of Mattapex

#### Setting

*Landform:* Fluviomarine terraces
*Landform position (three-dimensional):* Tread
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Parent material:* Silty eolian deposits over fluviomarine deposits

#### Typical profile

*A - 0 to 2 inches:* silt loam
*E - 2 to 7 inches:* silt loam
*BE - 7 to 13 inches:* silt loam
*Bt - 13 to 32 inches:* silt loam
*BC - 32 to 42 inches:* silt loam
*2C - 42 to 80 inches:* fine sandy loam

#### Properties and qualities

*Slope:* 0 to 2 percent

*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Moderately well drained
*Runoff class:* Medium
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.06 to 0.57 in/hr)
*Depth to water table:* About 20 to 40 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Available water supply, 0 to 60 inches:* Moderate (about 8.3 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 2w
*Hydrologic Soil Group:* D
*Ecological site:* F153CY020MD - Moist Loess Upland
*Hydric soil rating:* No

**Minor Components**

**Shadyoak**

*Percent of map unit:* 5 percent
*Landform:* Depressions on fluviomarine terraces, swales
*Landform position (three-dimensional):* Tread
*Ecological site:* F149AY090NJ - Coastal Plain Hardwood Swamp
*Hydric soil rating:* Yes

**Woodstown**

*Percent of map unit:* 5 percent
*Landform:* Fluviomarine terraces, interfluves
*Landform position (three-dimensional):* Tread
*Ecological site:* F149AY130NJ - Moist Loamy Upland
*Hydric soil rating:* No

## CxB—Cumberstone-Mattapex complex, 2 to 5 percent slopes

**Map Unit Setting**

*National map unit symbol:* 4mbf
*Elevation:* 10 to 120 feet
*Mean annual precipitation:* 40 to 50 inches
*Mean annual air temperature:* 52 to 57 degrees F
*Frost-free period:* 180 to 210 days
*Farmland classification:* Farmland of statewide importance

**Map Unit Composition**

*Cumberstone and similar soils:* 50 percent
*Mattapex and similar soils:* 40 percent
*Minor components:* 10 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

## Description of Cumberstone

### Setting

*Landform:* Fluviomarine terraces
*Landform position (three-dimensional):* Tread
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Parent material:* Silty eolian deposits over loamy and clayey fluviomarine deposits

### Typical profile

*Ap - 0 to 9 inches:* silt loam
*Bt - 9 to 23 inches:* silty clay loam
*BCg - 23 to 33 inches:* silt loam
*2Agb - 33 to 54 inches:* clay loam
*2Btgb - 54 to 62 inches:* clay
*2BCgb - 62 to 72 inches:* sandy clay

### Properties and qualities

*Slope:* 2 to 5 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Somewhat poorly drained
*Runoff class:* Very high
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.06 to 0.60 in/hr)
*Depth to water table:* About 15 to 20 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Available water supply, 0 to 60 inches:* High (about 10.3 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 3w
*Hydrologic Soil Group:* C/D
*Ecological site:* F153CY020MD - Moist Loess Upland
*Hydric soil rating:* No

## Description of Mattapex

### Setting

*Landform:* Fluviomarine terraces
*Landform position (three-dimensional):* Tread
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Parent material:* Silty eolian deposits over fluviomarine deposits

### Typical profile

*A - 0 to 2 inches:* silt loam
*E - 2 to 7 inches:* silt loam
*BE - 7 to 13 inches:* silt loam
*Bt - 13 to 32 inches:* silt loam
*BC - 32 to 42 inches:* silt loam
*2C - 42 to 80 inches:* fine sandy loam

### Properties and qualities

*Slope:* 2 to 5 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Moderately well drained

*Runoff class:* Medium
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.06 to 0.57 in/hr)
*Depth to water table:* About 20 to 40 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Available water supply, 0 to 60 inches:* Moderate (about 8.3 inches)

**Interpretive groups**
*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 2e
*Hydrologic Soil Group:* D
*Ecological site:* F153CY020MD - Moist Loess Upland
*Hydric soil rating:* No

**Minor Components**

**Shadyoak**
*Percent of map unit:* 5 percent
*Landform:* Fluviomarine terraces
*Landform position (three-dimensional):* Tread
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Ecological site:* F149AY090NJ - Coastal Plain Hardwood Swamp
*Hydric soil rating:* Yes

**Woodstown**
*Percent of map unit:* 5 percent
*Landform:* Drainhead complexes, interfluves, depressions, fluviomarine terraces, swales, broad interstream divides
*Landform position (two-dimensional):* Footslope
*Landform position (three-dimensional):* Tread
*Down-slope shape:* Concave, linear
*Across-slope shape:* Concave, linear
*Ecological site:* F149AY130NJ - Moist Loamy Upland
*Hydric soil rating:* No

## CxC—Cumberstone-Mattapex complex, 5 to 10 percent slopes

**Map Unit Setting**
*National map unit symbol:* 4mbg
*Elevation:* 0 to 120 feet
*Mean annual precipitation:* 40 to 50 inches
*Mean annual air temperature:* 52 to 57 degrees F
*Frost-free period:* 180 to 210 days
*Farmland classification:* Farmland of statewide importance

**Map Unit Composition**
*Cumberstone and similar soils:* 46 percent

*Mattapex and similar soils:* 44 percent
*Minor components:* 10 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Cumberstone

#### Setting

*Landform:* Fluviomarine terraces
*Landform position (three-dimensional):* Riser
*Down-slope shape:* Convex
*Across-slope shape:* Linear
*Parent material:* Silty eolian deposits over loamy and clayey fluviomarine deposits

#### Typical profile

*Ap - 0 to 9 inches:* silt loam
*Bt - 9 to 23 inches:* silty clay loam
*BCg - 23 to 33 inches:* silt loam
*2Agb - 33 to 54 inches:* clay loam
*2Btgb - 54 to 62 inches:* clay
*2BCgb - 62 to 72 inches:* sandy clay

#### Properties and qualities

*Slope:* 5 to 10 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Somewhat poorly drained
*Runoff class:* Very high
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.06 to 0.60 in/hr)
*Depth to water table:* About 15 to 20 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Available water supply, 0 to 60 inches:* High (about 10.3 inches)

#### Interpretive groups

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 3e
*Hydrologic Soil Group:* C/D
*Ecological site:* F153CY020MD - Moist Loess Upland
*Hydric soil rating:* No

### Description of Mattapex

#### Setting

*Landform:* Fluviomarine terraces
*Landform position (three-dimensional):* Riser
*Down-slope shape:* Convex
*Across-slope shape:* Linear
*Parent material:* Silty eolian deposits over fluviomarine deposits

#### Typical profile

*A - 0 to 2 inches:* silt loam
*E - 2 to 7 inches:* silt loam
*BE - 7 to 13 inches:* silt loam
*Bt - 13 to 32 inches:* silt loam
*BC - 32 to 42 inches:* silt loam
*2C - 42 to 80 inches:* fine sandy loam

**Properties and qualities**

*Slope:* 5 to 10 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Moderately well drained
*Runoff class:* High
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.06 to 0.57 in/hr)
*Depth to water table:* About 20 to 40 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Available water supply, 0 to 60 inches:* Moderate (about 8.3 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 3e
*Hydrologic Soil Group:* D
*Ecological site:* F153CY020MD - Moist Loess Upland
*Hydric soil rating:* No

**Minor Components**

**Woodstown**

*Percent of map unit:* 5 percent
*Landform:* Fluviomarine terraces
*Landform position (three-dimensional):* Riser
*Ecological site:* F149AY130NJ - Moist Loamy Upland
*Hydric soil rating:* No

**Shadyoak**

*Percent of map unit:* 5 percent
*Landform:* Depressions, swales on fluviomarine terraces
*Landform position (three-dimensional):* Tread
*Ecological site:* F149AY090NJ - Coastal Plain Hardwood Swamp
*Hydric soil rating:* Yes

## DcA—Deale-Shadyoak complex, 0 to 2 percent slopes

**Map Unit Setting**

*National map unit symbol:* 4mbk
*Elevation:* 0 to 120 feet
*Mean annual precipitation:* 40 to 50 inches
*Mean annual air temperature:* 52 to 57 degrees F
*Frost-free period:* 180 to 210 days
*Farmland classification:* Farmland of statewide importance

**Map Unit Composition**

*Deale and similar soils:* 45 percent
*Shadyoak and similar soils:* 35 percent
*Minor components:* 20 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Deale**

**Setting**

*Landform:* Fluviomarine terraces
*Landform position (three-dimensional):* Tread
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Parent material:* Silty eolian deposits over loamy and clayey fluviomarine deposits

**Typical profile**

*Ap - 0 to 8 inches:* silt loam
*Btg - 8 to 32 inches:* clay loam
*2BC - 32 to 36 inches:* very fine sandy loam
*3BCg - 36 to 46 inches:* silt loam
*4BC' - 46 to 50 inches:* fine sandy loam
*5Agb - 50 to 61 inches:* silty clay
*5Btgb - 61 to 72 inches:* clay

**Properties and qualities**

*Slope:* 0 to 2 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Somewhat poorly drained
*Runoff class:* Very high
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.06 to 0.60 in/hr)
*Depth to water table:* About 10 to 15 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Available water supply, 0 to 60 inches:* High (about 9.2 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 3w
*Hydrologic Soil Group:* C/D
*Ecological site:* F153CY020MD - Moist Loess Upland
*Hydric soil rating:* No

**Description of Shadyoak**

**Setting**

*Landform:* Depressions on fluviomarine terraces
*Landform position (three-dimensional):* Tread
*Down-slope shape:* Concave
*Across-slope shape:* Concave
*Parent material:* Silty eolian deposits over loamy and clayey fluviomarine deposits

**Typical profile**

*Ap - 0 to 9 inches:* silt loam
*Btg - 9 to 29 inches:* silt loam
*2Agb - 29 to 35 inches:* loam
*2Btgb - 35 to 52 inches:* loam
*2BCg - 52 to 58 inches:* loam
*2CBg - 58 to 71 inches:* fine sandy loam
*2CBjg - 71 to 75 inches:* sandy loam

**Properties and qualities**

*Slope:* 0 to 2 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Poorly drained
*Runoff class:* Negligible
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (0.20 to 2.00 in/hr)
*Depth to water table:* About 0 to 10 inches
*Frequency of flooding:* None
*Frequency of ponding:* Occasional
*Available water supply, 0 to 60 inches:* High (about 11.8 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 4w
*Hydrologic Soil Group:* B/D
*Ecological site:* F149AY090NJ - Coastal Plain Hardwood Swamp
*Hydric soil rating:* Yes

**Minor Components**

**Cumberstone**

*Percent of map unit:* 10 percent
*Landform:* Fluviomarine terraces
*Landform position (three-dimensional):* Tread
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Ecological site:* F153CY020MD - Moist Loess Upland
*Hydric soil rating:* No

**Mattapex**

*Percent of map unit:* 10 percent
*Landform:* Fluviomarine terraces
*Landform position (three-dimensional):* Tread
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Ecological site:* F153CY020MD - Moist Loess Upland
*Hydric soil rating:* No

## DxC—Downer-Phalanx complex, 5 to 10 percent slopes

**Map Unit Setting**

*National map unit symbol:* 4mby
*Elevation:* 0 to 280 feet
*Mean annual precipitation:* 40 to 50 inches
*Mean annual air temperature:* 52 to 57 degrees F
*Frost-free period:* 180 to 210 days
*Farmland classification:* Farmland of statewide importance

**Map Unit Composition**

*Downer and similar soils:* 45 percent
*Phalanx and similar soils:* 40 percent
*Minor components:* 15 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Downer**

**Setting**

*Landform:* Knolls, interfluves
*Landform position (two-dimensional):* Shoulder
*Down-slope shape:* Convex, linear
*Across-slope shape:* Convex, linear
*Parent material:* Loamy fluviomarine deposits

**Typical profile**

*Ap - 0 to 12 inches:* loamy sand
*Bt - 12 to 31 inches:* sandy loam
*BC - 31 to 38 inches:* loamy sand
*C - 38 to 72 inches:* sand

**Properties and qualities**

*Slope:* 5 to 10 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Well drained
*Runoff class:* Low
*Capacity of the most limiting layer to transmit water (Ksat):* High (1.98 to 5.95 in/hr)
*Depth to water table:* More than 80 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Available water supply, 0 to 60 inches:* Low (about 5.8 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 3e
*Hydrologic Soil Group:* A
*Ecological site:* F153DY160NJ - Well Drained Coarse-Loamy Upland
*Hydric soil rating:* No

**Description of Phalanx**

**Setting**

*Landform:* Knolls, interfluves
*Landform position (two-dimensional):* Shoulder
*Down-slope shape:* Convex
*Across-slope shape:* Convex
*Parent material:* Loamy fluviomarine deposits

**Typical profile**

*Ap - 0 to 11 inches:* sandy loam
*BE - 11 to 15 inches:* sandy loam
*Bt1 - 15 to 22 inches:* channery sandy loam
*Bt2 - 22 to 28 inches:* sandy loam
*Bt3 - 28 to 33 inches:* fine sandy loam
*Bm - 33 to 38 inches:* cemented material

**Properties and qualities**

*Slope:* 5 to 10 percent
*Depth to restrictive feature:* 12 to 30 inches to petroferric
*Drainage class:* Well drained
*Runoff class:* High
*Capacity of the most limiting layer to transmit water (Ksat):* Very low to moderately low (0.00 to 0.06 in/hr)
*Depth to water table:* More than 80 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Available water supply, 0 to 60 inches:* Very low (about 2.5 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 3e
*Hydrologic Soil Group:* D
*Ecological site:* F149AY140NJ - Well Drained Petroferric Upland
*Hydric soil rating:* No

**Minor Components**

**Russett**

*Percent of map unit:* 5 percent
*Landform:* Drainhead complexes, swales, depressions, interfluves
*Landform position (two-dimensional):* Footslope
*Ecological site:* F149AY130NJ - Moist Loamy Upland
*Hydric soil rating:* No

**Hammonton**

*Percent of map unit:* 5 percent
*Landform:* Interfluves, drainhead complexes, swales, depressions
*Landform position (two-dimensional):* Footslope
*Ecological site:* F149AY130NJ - Moist Loamy Upland
*Hydric soil rating:* No

**Evesboro**

*Percent of map unit:* 5 percent
*Landform:* Interfluves, knolls
*Landform position (two-dimensional):* Backslope
*Ecological site:* F153DY170NJ - Sandy, Excessively Drained Upland
*Hydric soil rating:* No

## DxD—Downer-Phalanx complex, 10 to 15 percent slopes

**Map Unit Setting**

*National map unit symbol:* 4mbz
*Elevation:* 0 to 300 feet
*Mean annual precipitation:* 40 to 50 inches
*Mean annual air temperature:* 52 to 57 degrees F

*Frost-free period:* 180 to 210 days
*Farmland classification:* Not prime farmland

**Map Unit Composition**

*Downer and similar soils:* 45 percent
*Phalanx and similar soils:* 40 percent
*Minor components:* 15 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Downer**

**Setting**

*Landform:* Knolls, interfluves
*Landform position (two-dimensional):* Backslope
*Down-slope shape:* Convex, linear
*Across-slope shape:* Convex, linear
*Parent material:* Loamy fluviomarine deposits

**Typical profile**

*Ap - 0 to 12 inches:* loamy sand
*Bt - 12 to 31 inches:* sandy loam
*BC - 31 to 38 inches:* loamy sand
*C - 38 to 72 inches:* sand

**Properties and qualities**

*Slope:* 10 to 15 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Well drained
*Runoff class:* Low
*Capacity of the most limiting layer to transmit water (Ksat):* High (1.98 to 5.95 in/hr)
*Depth to water table:* More than 80 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Available water supply, 0 to 60 inches:* Low (about 5.8 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 4e
*Hydrologic Soil Group:* A
*Ecological site:* F153DY160NJ - Well Drained Coarse-Loamy Upland
*Hydric soil rating:* No

**Description of Phalanx**

**Setting**

*Landform:* Knolls, interfluves
*Landform position (two-dimensional):* Backslope
*Down-slope shape:* Linear
*Across-slope shape:* Convex
*Parent material:* Loamy fluviomarine deposits

**Typical profile**

*Ap - 0 to 11 inches:* sandy loam
*BE - 11 to 15 inches:* sandy loam
*Bt1 - 15 to 22 inches:* channery sandy loam
*Bt2 - 22 to 28 inches:* sandy loam

*Bt3 - 28 to 33 inches:* fine sandy loam
*Bm - 33 to 38 inches:* cemented material

**Properties and qualities**

*Slope:* 10 to 15 percent
*Depth to restrictive feature:* 12 to 30 inches to petroferric
*Drainage class:* Well drained
*Runoff class:* High
*Capacity of the most limiting layer to transmit water (Ksat):* Very low to moderately low (0.00 to 0.06 in/hr)
*Depth to water table:* More than 80 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Available water supply, 0 to 60 inches:* Very low (about 2.5 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 6e
*Hydrologic Soil Group:* D
*Ecological site:* F149AY140NJ - Well Drained Petroferric Upland
*Hydric soil rating:* No

**Minor Components**

**Hammonton**

*Percent of map unit:* 5 percent
*Landform:* Drainhead complexes, swales, depressions, interfluves
*Landform position (two-dimensional):* Footslope
*Ecological site:* F149AY130NJ - Moist Loamy Upland
*Hydric soil rating:* No

**Russett**

*Percent of map unit:* 5 percent
*Landform:* Drainhead complexes, swales, depressions, interfluves
*Landform position (two-dimensional):* Footslope
*Ecological site:* F149AY130NJ - Moist Loamy Upland
*Hydric soil rating:* No

**Evesboro**

*Percent of map unit:* 5 percent
*Landform:* Interfluves
*Landform position (two-dimensional):* Backslope
*Ecological site:* F153DY170NJ - Sandy, Excessively Drained Upland
*Hydric soil rating:* No

## MtaB—Mattapex silt loam, 2 to 5 percent slopes, northern coastal plain

**Map Unit Setting**

*National map unit symbol:* 2thww
*Elevation:* 0 to 440 feet

*Mean annual precipitation:* 42 to 49 inches
*Mean annual air temperature:* 52 to 59 degrees F
*Frost-free period:* 190 to 260 days
*Farmland classification:* All areas are prime farmland

**Map Unit Composition**

*Mattapex and similar soils:* 80 percent
*Minor components:* 20 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Mattapex**

**Setting**

*Landform:* Depressions, flats, swales
*Landform position (three-dimensional):* Dip, talf
*Down-slope shape:* Concave, linear
*Across-slope shape:* Concave, linear
*Parent material:* Silty eolian deposits over fluviomarine sediments

**Typical profile**

*Ap - 0 to 11 inches:* silt loam
*BE - 11 to 15 inches:* silt loam
*Bt - 15 to 36 inches:* silt loam
*2C1 - 36 to 60 inches:* fine sandy loam
*2C2 - 60 to 80 inches:* loamy sand

**Properties and qualities**

*Slope:* 2 to 5 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Moderately well drained
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.06 to 0.57 in/hr)
*Depth to water table:* About 20 to 40 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Maximum salinity:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
*Available water supply, 0 to 60 inches:* High (about 9.6 inches)

**Interpretive groups**

*Land capability classification (irrigated):* 2e
*Land capability classification (nonirrigated):* 2e
*Hydrologic Soil Group:* C
*Ecological site:* F153CY020MD - Moist Loess Upland
*Hydric soil rating:* No

**Minor Components**

**Woodstown**

*Percent of map unit:* 10 percent
*Landform:* Depressions, broad interstream divides, fluviomarine terraces, flats
*Landform position (two-dimensional):* Footslope, summit
*Landform position (three-dimensional):* Tread, dip, talf
*Down-slope shape:* Concave, linear
*Across-slope shape:* Concave, linear
*Ecological site:* F149AY130NJ - Moist Loamy Upland
*Hydric soil rating:* No

**Dodon**

*Percent of map unit:* 5 percent
*Landform:* Stream terraces, fluviomarine terraces
*Landform position (two-dimensional):* Summit
*Landform position (three-dimensional):* Tread
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Ecological site:* F149AY130NJ - Moist Loamy Upland
*Hydric soil rating:* No

**Othello, drained**

*Percent of map unit:* 5 percent
*Landform:* Flats, depressions, swales
*Landform position (two-dimensional):* Footslope
*Landform position (three-dimensional):* Dip
*Down-slope shape:* Linear, concave
*Across-slope shape:* Linear, concave
*Ecological site:* F149AY090NJ - Coastal Plain Hardwood Swamp
*Hydric soil rating:* Yes

## MtC—Mattapex silt loam, 5 to 10 percent slopes

**Map Unit Setting**

*National map unit symbol:* ngbf
*Elevation:* 10 to 120 feet
*Mean annual precipitation:* 40 to 50 inches
*Mean annual air temperature:* 52 to 57 degrees F
*Frost-free period:* 180 to 210 days
*Farmland classification:* Farmland of statewide importance

**Map Unit Composition**

*Mattapex and similar soils:* 75 percent
*Minor components:* 25 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Mattapex**

**Setting**

*Landform:* Interfluves, fluviomarine terraces, drainhead complexes
*Landform position (two-dimensional):* Footslope
*Landform position (three-dimensional):* Riser, tread
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Parent material:* Silty eolian deposits over fluviomarine deposits

**Typical profile**

*A - 0 to 2 inches:* silt loam
*E - 2 to 7 inches:* silt loam
*BE - 7 to 13 inches:* silt loam
*Bt - 13 to 32 inches:* silt loam

*BC - 32 to 42 inches:* silt loam
*2C - 42 to 80 inches:* fine sandy loam

**Properties and qualities**

*Slope:* 5 to 10 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Moderately well drained
*Runoff class:* High
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.06 to 0.57 in/hr)
*Depth to water table:* About 20 to 40 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Available water supply, 0 to 60 inches:* Moderate (about 8.3 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 3e
*Hydrologic Soil Group:* D
*Ecological site:* F153CY020MD - Moist Loess Upland
*Hydric soil rating:* No

**Minor Components**

**Dodon**

*Percent of map unit:* 10 percent
*Landform:* Interfluves, fluviomarine terraces, drainhead complexes
*Landform position (two-dimensional):* Footslope
*Landform position (three-dimensional):* Riser, tread
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Ecological site:* F149AY130NJ - Moist Loamy Upland
*Hydric soil rating:* No

**Woodstown**

*Percent of map unit:* 10 percent
*Landform:* Interfluves, fluviomarine terraces, drainhead complexes
*Landform position (two-dimensional):* Footslope
*Landform position (three-dimensional):* Riser, tread
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Ecological site:* F149AY130NJ - Moist Loamy Upland
*Hydric soil rating:* No

**Elkton**

*Percent of map unit:* 5 percent
*Landform:* Drainhead complexes, swales, depressions
*Ecological site:* F149AY090NJ - Coastal Plain Hardwood Swamp
*Hydric soil rating:* Yes

## MxB—Mattapex-Butlertown complex, 2 to 5 percent slopes

### Map Unit Setting

*National map unit symbol:* 4md5
*Elevation:* 10 to 250 feet
*Mean annual precipitation:* 40 to 50 inches
*Mean annual air temperature:* 52 to 57 degrees F
*Frost-free period:* 180 to 210 days
*Farmland classification:* All areas are prime farmland

### Map Unit Composition

*Mattapex and similar soils:* 40 percent
*Butlertown and similar soils:* 35 percent
*Minor components:* 25 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Mattapex

#### Setting

*Landform:* Broad interstream divides, interfluves, fluviomarine terraces
*Landform position (two-dimensional):* Summit
*Landform position (three-dimensional):* Tread
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Parent material:* Silty eolian deposits over fluviomarine deposits

#### Typical profile

*A - 0 to 2 inches:* silt loam
*E - 2 to 7 inches:* silt loam
*BE - 7 to 13 inches:* silt loam
*Bt - 13 to 32 inches:* silt loam
*BC - 32 to 42 inches:* silt loam
*2C - 42 to 80 inches:* fine sandy loam

#### Properties and qualities

*Slope:* 2 to 5 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Moderately well drained
*Runoff class:* Medium
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.06 to 0.57 in/hr)
*Depth to water table:* About 20 to 40 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Available water supply, 0 to 60 inches:* Moderate (about 8.3 inches)

#### Interpretive groups

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 2e
*Hydrologic Soil Group:* D

*Ecological site:* F153CY020MD - Moist Loess Upland
*Hydric soil rating:* No

### Description of Butlertown

#### Setting

*Landform:* Fluviomarine terraces, interfluves, broad interstream divides
*Landform position (two-dimensional):* Summit
*Landform position (three-dimensional):* Tread
*Down-slope shape:* Linear
*Across-slope shape:* Linear

#### Typical profile

*A - 0 to 1 inches:* silt loam
*E - 1 to 12 inches:* silt loam
*Bt - 12 to 35 inches:* silt loam
*Btx - 35 to 44 inches:* silt loam
*2BC - 44 to 50 inches:* loamy sand
*2C - 50 to 80 inches:* sandy loam

#### Properties and qualities

*Slope:* 2 to 5 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Moderately well drained
*Runoff class:* Low
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.01 to 0.20 in/hr)
*Depth to water table:* About 20 to 40 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Available water supply, 0 to 60 inches:* Moderate (about 8.6 inches)

#### Interpretive groups

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 2e
*Hydrologic Soil Group:* D
*Ecological site:* F153CY020MD - Moist Loess Upland
*Hydric soil rating:* No

### Minor Components

#### Fine-silty aquic paleudults

*Percent of map unit:* 15 percent
*Landform:* Fluviomarine terraces, interfluves
*Landform position (two-dimensional):* Summit
*Landform position (three-dimensional):* Tread
*Hydric soil rating:* No

#### Sassafras

*Percent of map unit:* 5 percent
*Landform:* Knolls, interfluves
*Landform position (two-dimensional):* Summit
*Ecological site:* F149AY170MD - Well Drained Fine-Loamy Upland
*Hydric soil rating:* No

#### Woodstown

*Percent of map unit:* 5 percent
*Landform:* Fluviomarine terraces, interfluves, drainhead complexes

*Landform position (two-dimensional):* Summit
*Landform position (three-dimensional):* Tread
*Ecological site:* F149AY130NJ - Moist Loamy Upland
*Hydric soil rating:* No

## MyB—Mattapex-Butlertown-Urban land complex, 0 to 5 percent slopes

### Map Unit Setting

*National map unit symbol:* 4md7
*Elevation:* 0 to 250 feet
*Mean annual precipitation:* 40 to 50 inches
*Mean annual air temperature:* 52 to 57 degrees F
*Frost-free period:* 180 to 210 days
*Farmland classification:* Not prime farmland

### Map Unit Composition

*Mattapex and similar soils:* 35 percent
*Butlertown and similar soils:* 25 percent
*Urban land:* 20 percent
*Minor components:* 20 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Mattapex

#### Setting

*Landform:* Interfluves, fluviomarine terraces, broad interstream divides, drainhead complexes
*Landform position (two-dimensional):* Footslope
*Landform position (three-dimensional):* Tread
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Parent material:* Silty eolian deposits over fluviomarine deposits

#### Typical profile

*A - 0 to 2 inches:* silt loam
*E - 2 to 7 inches:* silt loam
*BE - 7 to 13 inches:* silt loam
*Bt - 13 to 32 inches:* silt loam
*BC - 32 to 42 inches:* silt loam
*2C - 42 to 80 inches:* fine sandy loam

#### Properties and qualities

*Slope:* 0 to 5 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Moderately well drained
*Runoff class:* Medium
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.06 to 0.57 in/hr)
*Depth to water table:* About 20 to 40 inches

*Frequency of flooding:* None
*Frequency of ponding:* None
*Available water supply, 0 to 60 inches:* Moderate (about 8.3 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 2e
*Hydrologic Soil Group:* D
*Ecological site:* F153CY020MD - Moist Loess Upland
*Hydric soil rating:* No

## Description of Butlertown

**Setting**

*Landform:* Interfluves, fluviomarine terraces, broad interstream divides, drainhead complexes
*Landform position (two-dimensional):* Footslope
*Landform position (three-dimensional):* Tread
*Down-slope shape:* Linear
*Across-slope shape:* Linear

**Typical profile**

*A - 0 to 1 inches:* silt loam
*E - 1 to 12 inches:* silt loam
*Bt - 12 to 35 inches:* silt loam
*Btx - 35 to 44 inches:* silt loam
*2BC - 44 to 50 inches:* loamy sand
*2C - 50 to 80 inches:* sandy loam

**Properties and qualities**

*Slope:* 0 to 5 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Moderately well drained
*Runoff class:* Low
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.01 to 0.20 in/hr)
*Depth to water table:* About 20 to 40 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Available water supply, 0 to 60 inches:* Moderate (about 8.6 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 2e
*Hydrologic Soil Group:* D
*Ecological site:* F153CY020MD - Moist Loess Upland
*Hydric soil rating:* No

## Description of Urban Land

**Properties and qualities**

*Slope:* 0 to 5 percent
*Depth to restrictive feature:* 10 inches to
*Runoff class:* Very high

**Interpretive groups**

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 8

*Hydrologic Soil Group:* D
*Hydric soil rating:* No

**Minor Components**

**Fine-silty aquic paleudults**
*Percent of map unit:* 10 percent
*Landform:* Interfluves, fluviomarine terraces
*Landform position (two-dimensional):* Summit
*Landform position (three-dimensional):* Tread
*Hydric soil rating:* No

**Woodstown**
*Percent of map unit:* 5 percent
*Landform:* Interfluves, fluviomarine terraces, drainhead complexes
*Landform position (two-dimensional):* Summit
*Landform position (three-dimensional):* Tread
*Ecological site:* F149AY130NJ - Moist Loamy Upland
*Hydric soil rating:* No

**Hambrook**
*Percent of map unit:* 5 percent
*Landform:* Interfluves, fluviomarine terraces, drainhead complexes
*Landform position (two-dimensional):* Summit
*Landform position (three-dimensional):* Tread
*Ecological site:* F149AY170MD - Well Drained Fine-Loamy Upland
*Hydric soil rating:* No

## MZA—Mispillion and Transquaking soils, 0 to 1 percent slopes, tidally flooded

**Map Unit Setting**
*National map unit symbol:* 4mdb
*Elevation:* 0 feet
*Mean annual precipitation:* 40 to 50 inches
*Mean annual air temperature:* 52 to 58 degrees F
*Frost-free period:* 180 to 220 days
*Farmland classification:* Not prime farmland

**Map Unit Composition**
*Mispillion and similar soils:* 45 percent
*Transquaking and similar soils:* 40 percent
*Minor components:* 15 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Mispillion

#### Setting

*Landform:* Tidal marshes
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Parent material:* Herbaceous organic material over silty estuarine sediments

#### Typical profile

*Oe - 0 to 24 inches:* mucky peat
*Oa - 24 to 40 inches:* muck
*Cg1 - 40 to 54 inches:* mucky silt loam
*Cg2 - 54 to 80 inches:* silt loam

#### Properties and qualities

*Slope:* 0 to 1 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Very poorly drained
*Runoff class:* Negligible
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to high (0.06 to 1.98 in/hr)
*Depth to water table:* About 0 to 5 inches
*Frequency of flooding:* Very frequent
*Frequency of ponding:* None
*Maximum salinity:* Moderately saline to strongly saline (15.0 to 50.0 mmhos/cm)
*Sodium adsorption ratio, maximum:* 35.0
*Available water supply, 0 to 60 inches:* Very high (about 21.6 inches)

#### Interpretive groups

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 8
*Hydrologic Soil Group:* A/D
*Ecological site:* R153DY060MD - Tidal Salt Marsh
*Hydric soil rating:* Yes

### Description of Transquaking

#### Setting

*Landform:* Tidal marshes
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Parent material:* Herbaceous organic material over estuarine deposits

#### Typical profile

*Oe - 0 to 46 inches:* mucky peat
*Oa - 46 to 65 inches:* muck
*Cg - 65 to 80 inches:* silty clay loam

#### Properties and qualities

*Slope:* 0 to 1 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Very poorly drained
*Runoff class:* Very high
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to high (0.06 to 5.95 in/hr)
*Depth to water table:* About 0 to 10 inches
*Frequency of flooding:* Very frequent

*Frequency of ponding:* None
*Maximum salinity:* Strongly saline (25.0 to 40.0 mmhos/cm)
*Sodium adsorption ratio, maximum:* 32.0
*Available water supply, 0 to 60 inches:* Very high (about 26.2 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 8
*Hydrologic Soil Group:* A/D
*Ecological site:* R153DY060MD - Tidal Salt Marsh
*Hydric soil rating:* Yes

**Minor Components**

**Hydraquents**

*Percent of map unit:* 15 percent
*Landform:* Flood plains, mud flats, tidal flats
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Hydric soil rating:* Yes

## SaB—Sassafras fine sandy loam, 2 to 5 percent slopes

**Map Unit Setting**

*National map unit symbol:* 4mdv
*Elevation:* 0 to 210 feet
*Mean annual precipitation:* 40 to 50 inches
*Mean annual air temperature:* 52 to 57 degrees F
*Frost-free period:* 180 to 210 days
*Farmland classification:* All areas are prime farmland

**Map Unit Composition**

*Sassafras and similar soils:* 75 percent
*Minor components:* 25 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Sassafras**

**Setting**

*Landform:* Interfluves, fluviomarine terraces, broad interstream divides
*Landform position (two-dimensional):* Summit
*Landform position (three-dimensional):* Tread
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Parent material:* Loamy fluviomarine deposits

**Typical profile**

*A - 0 to 3 inches:* fine sandy loam
*BE - 3 to 18 inches:* fine sandy loam
*Bt - 18 to 50 inches:* sandy clay loam

*CB - 50 to 72 inches:* stratified fine sandy loam to loam to silt loam to sandy clay loam

**Properties and qualities**

*Slope:* 2 to 5 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Well drained
*Runoff class:* Very low
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (0.20 to 2.00 in/hr)
*Depth to water table:* More than 80 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Available water supply, 0 to 60 inches:* High (about 9.8 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 2e
*Hydrologic Soil Group:* B
*Ecological site:* F149AY170MD - Well Drained Fine-Loamy Upland
*Hydric soil rating:* No

**Minor Components**

**Downer**

*Percent of map unit:* 5 percent
*Landform:* Broad interstream divides, interfluves, knolls
*Landform position (two-dimensional):* Summit
*Down-slope shape:* Linear, convex
*Across-slope shape:* Linear, convex
*Ecological site:* F153DY160NJ - Well Drained Coarse-Loamy Upland
*Hydric soil rating:* No

**Woodstown**

*Percent of map unit:* 5 percent
*Landform:* Interfluves, drainhead complexes, swales, fluviomarine terraces, depressions, broad interstream divides
*Landform position (two-dimensional):* Summit
*Landform position (three-dimensional):* Tread
*Down-slope shape:* Linear, concave
*Across-slope shape:* Concave, linear
*Ecological site:* F149AY130NJ - Moist Loamy Upland
*Hydric soil rating:* No

**Phalanx**

*Percent of map unit:* 5 percent
*Landform:* Knolls, broad interstream divides, interfluves
*Landform position (two-dimensional):* Summit
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Ecological site:* F149AY140NJ - Well Drained Petroferric Upland
*Hydric soil rating:* No

**Matapeake**

*Percent of map unit:* 5 percent
*Landform:* Broad interstream divides, fluviomarine terraces, interfluves
*Landform position (two-dimensional):* Summit

*Landform position (three-dimensional):* Tread
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Ecological site:* F153CY030MD - Well Drained Loess Upland
*Hydric soil rating:* No

**Hambrook**

*Percent of map unit:* 5 percent
*Landform:* Interfluves, fluviomarine terraces, broad interstream divides
*Landform position (three-dimensional):* Tread
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Ecological site:* F149AY170MD - Well Drained Fine-Loamy Upland
*Hydric soil rating:* No

## SME—Sassafras and Croom soils, 15 to 25 percent slopes

**Map Unit Setting**

*National map unit symbol:* 4m48
*Elevation:* 10 to 370 feet
*Mean annual precipitation:* 40 to 50 inches
*Mean annual air temperature:* 52 to 57 degrees F
*Frost-free period:* 180 to 210 days
*Farmland classification:* Not prime farmland

**Map Unit Composition**

*Sassafras and similar soils:* 40 percent
*Croom and similar soils:* 35 percent
*Minor components:* 25 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Sassafras**

**Setting**

*Landform:* Ravines, fluviomarine terraces, knolls, interfluves
*Landform position (three-dimensional):* Riser
*Down-slope shape:* Linear, convex
*Across-slope shape:* Linear, convex
*Parent material:* Loamy fluviomarine deposits

**Typical profile**

*A - 0 to 3 inches:* fine sandy loam
*BE - 3 to 18 inches:* fine sandy loam
*Bt - 18 to 50 inches:* sandy clay loam
*CB - 50 to 72 inches:* stratified fine sandy loam to loam to silt loam to sandy clay loam

**Properties and qualities**

*Slope:* 15 to 25 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Well drained

*Runoff class:* High
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (0.20 to 2.00 in/hr)
*Depth to water table:* More than 80 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Available water supply, 0 to 60 inches:* High (about 9.8 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 6e
*Hydrologic Soil Group:* B
*Ecological site:* F149AY170MD - Well Drained Fine-Loamy Upland
*Hydric soil rating:* No

## Description of Croom

**Setting**

*Landform:* Interfluves, ravines, knolls, fluviomarine terraces
*Landform position (three-dimensional):* Riser
*Down-slope shape:* Convex, linear
*Across-slope shape:* Convex, linear
*Parent material:* Gravelly fluviomarine deposits

**Typical profile**

*A - 0 to 3 inches:* loam
*Bt1 - 3 to 15 inches:* very gravelly clay loam
*Bt2 - 15 to 30 inches:* extremely gravelly sandy clay loam
*Bt3 - 30 to 39 inches:* extremely gravelly sandy clay loam
*BC - 39 to 80 inches:* extremely gravelly coarse sandy loam

**Properties and qualities**

*Slope:* 15 to 25 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Well drained
*Runoff class:* High
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high (0.20 to 0.57 in/hr)
*Depth to water table:* More than 80 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Available water supply, 0 to 60 inches:* Very low (about 2.9 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 6e
*Hydrologic Soil Group:* C
*Ecological site:* F153DY160NJ - Well Drained Coarse-Loamy Upland
*Hydric soil rating:* No

## Minor Components

**Russett**

*Percent of map unit:* 10 percent
*Landform:* Swales, drainhead complexes, interfluves, broad interstream divides
*Landform position (two-dimensional):* Summit, footslope
*Down-slope shape:* Linear

*Across-slope shape:* Linear
*Ecological site:* F149AY130NJ - Moist Loamy Upland
*Hydric soil rating:* No

**Hammonton**

*Percent of map unit:* 5 percent
*Landform:* Swales, interfluves, depressions
*Landform position (two-dimensional):* Summit
*Down-slope shape:* Linear, concave
*Across-slope shape:* Concave, linear
*Ecological site:* F149AY130NJ - Moist Loamy Upland
*Hydric soil rating:* No

**Christiana**

*Percent of map unit:* 5 percent
*Landform:* Drainhead complexes, swales, interfluves
*Landform position (two-dimensional):* Footslope
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Ecological site:* F149AY120MD - Moist Clayey Upland
*Hydric soil rating:* No

**Zekiah**

*Percent of map unit:* 5 percent
*Landform:* Drainhead complexes, flood plains, drainageways
*Ecological site:* R149AY060DE - Wet Alluvial Floodplain
*Hydric soil rating:* Yes

## SMF—Sassafras and Croom soils, 25 to 40 percent slopes

### Map Unit Setting

*National map unit symbol:* 4mdy
*Elevation:* 10 to 370 feet
*Mean annual precipitation:* 40 to 50 inches
*Mean annual air temperature:* 52 to 57 degrees F
*Frost-free period:* 180 to 210 days
*Farmland classification:* Not prime farmland

### Map Unit Composition

*Sassafras and similar soils:* 40 percent
*Croom and similar soils:* 35 percent
*Minor components:* 25 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Sassafras

#### Setting

*Landform:* Ravines, fluviomarine terraces, interfluves, knolls
*Landform position (three-dimensional):* Riser
*Down-slope shape:* Linear, convex

*Across-slope shape:* Linear, convex
*Parent material:* Loamy fluviomarine deposits

**Typical profile**

*A - 0 to 3 inches:* fine sandy loam
*BE - 3 to 18 inches:* fine sandy loam
*Bt - 18 to 50 inches:* sandy clay loam
*CB - 50 to 72 inches:* stratified fine sandy loam to loam to silt loam to sandy clay loam

**Properties and qualities**

*Slope:* 25 to 40 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Well drained
*Runoff class:* High
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (0.20 to 2.00 in/hr)
*Depth to water table:* More than 80 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Available water supply, 0 to 60 inches:* High (about 9.8 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 7e
*Hydrologic Soil Group:* B
*Ecological site:* F149AY170MD - Well Drained Fine-Loamy Upland
*Hydric soil rating:* No

**Description of Croom**

**Setting**

*Landform:* Interfluves, ravines, knolls, fluviomarine terraces
*Landform position (three-dimensional):* Riser
*Down-slope shape:* Convex, linear
*Across-slope shape:* Convex
*Parent material:* Gravelly fluviomarine deposits

**Typical profile**

*A - 0 to 3 inches:* loam
*Bt1 - 3 to 15 inches:* very gravelly clay loam
*Bt2 - 15 to 30 inches:* extremely gravelly sandy clay loam
*Bt3 - 30 to 39 inches:* extremely gravelly sandy clay loam
*BC - 39 to 80 inches:* extremely gravelly coarse sandy loam

**Properties and qualities**

*Slope:* 25 to 40 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Well drained
*Runoff class:* High
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high (0.20 to 0.57 in/hr)
*Depth to water table:* More than 80 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Available water supply, 0 to 60 inches:* Very low (about 2.9 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 7e
*Hydrologic Soil Group:* C
*Ecological site:* F153DY160NJ - Well Drained Coarse-Loamy Upland
*Hydric soil rating:* No

**Minor Components**

**Russett**

*Percent of map unit:* 10 percent
*Landform:* Swales, drainhead complexes, interfluves, broad interstream divides
*Landform position (two-dimensional):* Summit, footslope
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Ecological site:* F149AY130NJ - Moist Loamy Upland
*Hydric soil rating:* No

**Hammonton**

*Percent of map unit:* 5 percent
*Landform:* Swales, interfluves, depressions
*Landform position (two-dimensional):* Summit
*Down-slope shape:* Linear, concave
*Across-slope shape:* Concave, linear
*Ecological site:* F149AY130NJ - Moist Loamy Upland
*Hydric soil rating:* No

**Christiana**

*Percent of map unit:* 5 percent
*Landform:* Swales, interfluves, drainhead complexes
*Landform position (two-dimensional):* Footslope
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Ecological site:* F149AY120MD - Moist Clayey Upland
*Hydric soil rating:* No

**Zekiah**

*Percent of map unit:* 5 percent
*Landform:* Flood plains, drainhead complexes, drainageways
*Ecological site:* R149AY060DE - Wet Alluvial Floodplain
*Hydric soil rating:* Yes

## SnB—Sassafras-Urban land complex, 0 to 5 percent slopes

**Map Unit Setting**

*National map unit symbol:* 4m8b
*Elevation:* 10 to 330 feet
*Mean annual precipitation:* 40 to 50 inches
*Mean annual air temperature:* 52 to 57 degrees F

*Frost-free period:* 175 to 220 days
*Farmland classification:* Not prime farmland

**Map Unit Composition**

*Sassafras and similar soils:* 45 percent
*Urban land:* 35 percent
*Minor components:* 20 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Sassafras**

**Setting**

*Landform:* Broad interstream divides, fluviomarine terraces, knolls
*Landform position (three-dimensional):* Tread
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Parent material:* Loamy fluviomarine deposits

**Typical profile**

*Ap - 0 to 9 inches:* sandy loam
*E - 9 to 15 inches:* sandy loam
*Bt - 15 to 30 inches:* loam
*BC - 30 to 37 inches:* sandy loam
*C - 37 to 80 inches:* loamy sand

**Properties and qualities**

*Slope:* 0 to 5 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Well drained
*Runoff class:* Low
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (0.57 to 1.98 in/hr)
*Depth to water table:* More than 80 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Available water supply, 0 to 60 inches:* Moderate (about 7.8 inches)

**Interpretive groups**

*Land capability classification (irrigated):* 1
*Land capability classification (nonirrigated):* 2e
*Hydrologic Soil Group:* B
*Ecological site:* F149AY170MD - Well Drained Fine-Loamy Upland
*Hydric soil rating:* No

**Description of Urban Land**

**Interpretive groups**

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 8
*Hydrologic Soil Group:* D
*Hydric soil rating:* No

**Minor Components**

**Phalanx**

*Percent of map unit:* 5 percent
*Landform:* Divides

*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Ecological site:* F149AY140NJ - Well Drained Petroferric Upland
*Hydric soil rating:* No

**Woodstown**

*Percent of map unit:* 5 percent
*Landform:* Drainhead complexes, interfluves, depressions, fluviomarine terraces, swales, broad interstream divides
*Landform position (two-dimensional):* Footslope
*Landform position (three-dimensional):* Tread
*Down-slope shape:* Concave, linear
*Across-slope shape:* Concave, linear
*Ecological site:* F149AY130NJ - Moist Loamy Upland
*Hydric soil rating:* No

**Matapeake**

*Percent of map unit:* 5 percent
*Landform:* Interfluves, fluviomarine terraces, broad interstream divides
*Landform position (two-dimensional):* Summit
*Landform position (three-dimensional):* Tread
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Ecological site:* F153CY030MD - Well Drained Loess Upland
*Hydric soil rating:* No

**Hambrook**

*Percent of map unit:* 5 percent
*Landform:* Broad interstream divides, swales, drainhead complexes, interfluves, fluviomarine terraces
*Landform position (two-dimensional):* Summit
*Landform position (three-dimensional):* Tread
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Ecological site:* F149AY170MD - Well Drained Fine-Loamy Upland
*Hydric soil rating:* No

## SoA—Shadyoak-Elkton complex, 0 to 2 percent slopes

**Map Unit Setting**

*National map unit symbol:* 4mf0
*Elevation:* 0 to 210 feet
*Mean annual precipitation:* 40 to 50 inches
*Mean annual air temperature:* 52 to 58 degrees F
*Frost-free period:* 180 to 220 days
*Farmland classification:* Not prime farmland

**Map Unit Composition**

*Shadyoak and similar soils:* 45 percent

*Elkton and similar soils:* 40 percent
*Minor components:* 15 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Shadyoak

#### Setting

*Landform:* Fluviomarine terraces
*Landform position (three-dimensional):* Tread
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Parent material:* Silty eolian deposits over loamy or clayey fluviomarine deposits

#### Typical profile

*Ap - 0 to 9 inches:* silt loam
*Btg - 9 to 29 inches:* silt loam
*2Agb - 29 to 35 inches:* loam
*2Btgb - 35 to 52 inches:* loam
*2BCg - 52 to 58 inches:* loam
*2CBg - 58 to 71 inches:* fine sandy loam
*2CBjg - 71 to 75 inches:* sandy loam

#### Properties and qualities

*Slope:* 0 to 2 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Poorly drained
*Runoff class:* Negligible
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (0.20 to 2.00 in/hr)
*Depth to water table:* About 0 to 10 inches
*Frequency of flooding:* None
*Frequency of ponding:* Occasional
*Available water supply, 0 to 60 inches:* High (about 11.8 inches)

#### Interpretive groups

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 4w
*Hydrologic Soil Group:* B/D
*Ecological site:* F149AY090NJ - Coastal Plain Hardwood Swamp
*Hydric soil rating:* Yes

### Description of Elkton

#### Setting

*Landform:* Fluviomarine terraces
*Landform position (three-dimensional):* Tread
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Parent material:* Silty eolian deposits over loamy fluviomarine deposits

#### Typical profile

*A - 0 to 2 inches:* silt loam
*Eg - 2 to 7 inches:* silt loam
*Btg1 - 7 to 38 inches:* silty clay loam
*Btg2 - 38 to 54 inches:* clay loam
*2CBg - 54 to 72 inches:* sandy clay loam

**Properties and qualities**

*Slope:* 0 to 2 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Poorly drained
*Runoff class:* Negligible
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.06 to 0.20 in/hr)
*Depth to water table:* About 0 to 10 inches
*Frequency of flooding:* None
*Frequency of ponding:* Occasional
*Available water supply, 0 to 60 inches:* High (about 9.4 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 4w
*Hydrologic Soil Group:* C/D
*Ecological site:* F149AY090NJ - Coastal Plain Hardwood Swamp
*Hydric soil rating:* Yes

**Minor Components**

**Deale**

*Percent of map unit:* 10 percent
*Landform:* Fluviomarine terraces
*Landform position (three-dimensional):* Tread
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Ecological site:* F153CY020MD - Moist Loess Upland
*Hydric soil rating:* No

**Kentuck, undrained**

*Percent of map unit:* 5 percent
*Landform:* Swales, depressions
*Down-slope shape:* Concave
*Across-slope shape:* Linear, concave
*Ecological site:* F149AY090NJ - Coastal Plain Hardwood Swamp
*Hydric soil rating:* Yes

## UxB—Udorthents, loamy, sulfidic substratum, 0 to 5 percent slopes

**Map Unit Setting**

*National map unit symbol:* 4m4j
*Elevation:* 30 to 660 feet
*Mean annual precipitation:* 40 to 50 inches
*Mean annual air temperature:* 52 to 57 degrees F
*Frost-free period:* 180 to 210 days
*Farmland classification:* Not prime farmland

**Map Unit Composition**

*Udorthents and similar soils:* 75 percent
*Minor components:* 25 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Udorthents**

**Setting**

*Landform:* Interfluves
*Landform position (two-dimensional):* Toeslope
*Down-slope shape:* Linear
*Across-slope shape:* Linear

**Typical profile**

*AC - 0 to 2 inches:* sandy loam
*C - 2 to 72 inches:* loam

**Properties and qualities**

*Slope:* 0 to 5 percent
*Depth to restrictive feature:* 18 to 80 inches to sulfuric
*Drainage class:* Well drained
*Runoff class:* Low
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.06 to 0.57 in/hr)
*Depth to water table:* About 40 to 72 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Available water supply, 0 to 60 inches:* Moderate (about 8.2 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 4s
*Hydrologic Soil Group:* C
*Hydric soil rating:* No

**Minor Components**

**Collington**

*Percent of map unit:* 10 percent
*Landform:* Interfluves, broad interstream divides
*Landform position (two-dimensional):* Summit
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Hydric soil rating:* No

**Wist**

*Percent of map unit:* 5 percent
*Landform:* Interfluves, broad interstream divides
*Landform position (two-dimensional):* Summit
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Hydric soil rating:* No

**Annapolis**

*Percent of map unit:* 5 percent
*Landform:* Interfluves, broad interstream divides
*Landform position (two-dimensional):* Summit

*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Hydric soil rating:* No

**Adelphia**

*Percent of map unit:* 5 percent
*Landform:* Swales, interfluves, drainhead complexes, drainageways, depressions
*Landform position (two-dimensional):* Footslope
*Down-slope shape:* Linear, concave
*Across-slope shape:* Concave
*Hydric soil rating:* No

## UxD—Udorthents, loamy, sulfidic substratum, 5 to 15 percent slopes

**Map Unit Setting**

*National map unit symbol:* 4m58
*Elevation:* 10 to 660 feet
*Mean annual precipitation:* 40 to 50 inches
*Mean annual air temperature:* 52 to 57 degrees F
*Frost-free period:* 180 to 210 days
*Farmland classification:* Not prime farmland

**Map Unit Composition**

*Udorthents and similar soils:* 75 percent
*Minor components:* 25 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Udorthents**

**Setting**

*Landform:* Interfluves
*Landform position (two-dimensional):* Toeslope
*Down-slope shape:* Linear
*Across-slope shape:* Linear

**Typical profile**

*AC - 0 to 2 inches:* sandy loam
*C - 2 to 72 inches:* loam

**Properties and qualities**

*Slope:* 5 to 15 percent
*Depth to restrictive feature:* 18 to 80 inches to sulfuric
*Drainage class:* Well drained
*Runoff class:* Medium
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.06 to 0.57 in/hr)
*Depth to water table:* About 40 to 72 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Available water supply, 0 to 60 inches:* Moderate (about 8.2 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 7s
*Hydrologic Soil Group:* C
*Hydric soil rating:* No

**Minor Components**

**Collington**

*Percent of map unit:* 15 percent
*Landform:* Interfluves
*Landform position (two-dimensional):* Shoulder, backslope
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Hydric soil rating:* No

**Shrewsbury**

*Percent of map unit:* 5 percent
*Landform:* Swales, drainageways, depressions
*Hydric soil rating:* Yes

**Adelphia**

*Percent of map unit:* 5 percent
*Landform:* Swales, interfluves, drainhead complexes, drainageways, depressions
*Landform position (two-dimensional):* Footslope
*Down-slope shape:* Linear, concave
*Across-slope shape:* Concave
*Hydric soil rating:* No

## Uz—Urban land

**Map Unit Setting**

*National map unit symbol:* ngbx
*Mean annual precipitation:* 40 to 50 inches
*Mean annual air temperature:* 52 to 57 degrees F
*Frost-free period:* 180 to 210 days
*Farmland classification:* Not prime farmland

**Map Unit Composition**

*Urban land:* 100 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Urban Land**

**Interpretive groups**

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 8
*Hydrologic Soil Group:* D
*Hydric soil rating:* No

## W—Water

**Map Unit Setting**

*National map unit symbol:* 4m91
*Mean annual precipitation:* 40 to 50 inches
*Mean annual air temperature:* 52 to 57 degrees F
*Frost-free period:* 180 to 210 days
*Farmland classification:* Not prime farmland

**Map Unit Composition**

*Water:* 100 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

## WBA—Widewater and Issue soils, 0 to 2 percent slopes, frequently flooded

**Map Unit Setting**

*National map unit symbol:* 4m9c
*Elevation:* 0 to 600 feet
*Mean annual precipitation:* 40 to 50 inches
*Mean annual air temperature:* 52 to 57 degrees F
*Frost-free period:* 180 to 210 days
*Farmland classification:* Not prime farmland

**Map Unit Composition**

*Widewater and similar soils:* 41 percent
*Issue and similar soils:* 39 percent
*Minor components:* 20 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Widewater**

**Setting**

*Landform:* Drainageways, flood plains
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Parent material:* Loamy alluvium

**Typical profile**

*Ag - 0 to 4 inches:* loam
*Bg - 4 to 8 inches:* fine sandy loam
*BCg - 8 to 44 inches:* loam
*Agb - 44 to 67 inches:* loam
*Cg - 67 to 70 inches:* clay

**Properties and qualities**

*Slope:* 0 to 2 percent
*Depth to restrictive feature:* More than 80 inches

*Drainage class:* Poorly drained
*Runoff class:* Very high
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.06 to 0.20 in/hr)
*Depth to water table:* About 0 to 10 inches
*Frequency of flooding:* Frequent
*Frequency of ponding:* Frequent
*Available water supply, 0 to 60 inches:* High (about 10.9 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 5w
*Hydrologic Soil Group:* C/D
*Ecological site:* R149AY060DE - Wet Alluvial Floodplain
*Hydric soil rating:* Yes

## Description of Issue

### Setting

*Landform:* Drainageways, drainhead complexes, flood plains
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Parent material:* Loamy alluvium

### Typical profile

*Ap - 0 to 4 inches:* silt loam
*Bw - 4 to 19 inches:* loam
*Bg1 - 19 to 30 inches:* fine sandy loam
*Bg2 - 30 to 58 inches:* fine sandy loam
*Ab - 58 to 70 inches:* silt loam

### Properties and qualities

*Slope:* 0 to 2 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Somewhat poorly drained
*Runoff class:* Very high
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (0.60 to 2.00 in/hr)
*Depth to water table:* About 10 to 20 inches
*Frequency of flooding:* Occasional
*Frequency of ponding:* None
*Available water supply, 0 to 60 inches:* High (about 9.9 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 4w
*Hydrologic Soil Group:* B/D
*Ecological site:* R149AY070MD - Moist Alluvial Floodplain
*Hydric soil rating:* No

## Minor Components

### Zekiah

*Percent of map unit:* 10 percent
*Landform:* Drainageways, flood plains
*Down-slope shape:* Linear
*Across-slope shape:* Concave, linear

*Ecological site:* R149AY060DE - Wet Alluvial Floodplain
*Hydric soil rating:* Yes

**Longmarsh**

*Percent of map unit:* 5 percent
*Landform:* Backswamps on flood plains, channels on flood plains
*Down-slope shape:* Linear
*Across-slope shape:* Linear, concave
*Ecological site:* R149AY060DE - Wet Alluvial Floodplain
*Hydric soil rating:* Yes

**Shrewsbury**

*Percent of map unit:* 5 percent
*Landform:* Swales, drainhead complexes, drainageways
*Landform position (three-dimensional):* Tread
*Down-slope shape:* Linear
*Across-slope shape:* Linear, concave
*Ecological site:* F149AY090NJ - Coastal Plain Hardwood Swamp
*Hydric soil rating:* Yes

## WdaB—Woodstown sandy loam, 2 to 5 percent slopes, Northern Coastal Plain

### Map Unit Setting

*National map unit symbol:* 2thvx
*Elevation:* 0 to 490 feet
*Mean annual precipitation:* 42 to 48 inches
*Mean annual air temperature:* 52 to 58 degrees F
*Frost-free period:* 180 to 220 days
*Farmland classification:* All areas are prime farmland

### Map Unit Composition

*Woodstown and similar soils:* 81 percent
*Minor components:* 19 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Woodstown

#### Setting

*Landform:* Broad interstream divides, depressions, fluviomarine terraces, flats
*Landform position (two-dimensional):* Shoulder, footslope
*Landform position (three-dimensional):* Riser, dip
*Down-slope shape:* Convex, concave
*Across-slope shape:* Linear, concave
*Parent material:* Loamy fluviomarine deposits

#### Typical profile

*Ap - 0 to 7 inches:* sandy loam
*E - 7 to 11 inches:* sandy loam

*Bt - 11 to 29 inches:* sandy loam
*BCg - 29 to 45 inches:* fine sandy loam
*Cg - 45 to 80 inches:* loamy sand

**Properties and qualities**

*Slope:* 2 to 5 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Moderately well drained
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (0.57 to 1.98 in/hr)
*Depth to water table:* About 20 to 40 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Maximum salinity:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
*Available water supply, 0 to 60 inches:* Moderate (about 8.3 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 2e
*Hydrologic Soil Group:* C
*Ecological site:* F149AY130NJ - Moist Loamy Upland
*Hydric soil rating:* No

**Minor Components**

**Hammonton**

*Percent of map unit:* 7 percent
*Landform:* Broad interstream divides, flats
*Landform position (two-dimensional):* Shoulder
*Landform position (three-dimensional):* Dip
*Down-slope shape:* Convex
*Across-slope shape:* Linear
*Ecological site:* F149AY130NJ - Moist Loamy Upland
*Hydric soil rating:* No

**Fallsington, occasionally ponded**

*Percent of map unit:* 7 percent
*Landform:* Flats, swales, depressions, drainageways
*Landform position (two-dimensional):* Footslope
*Landform position (three-dimensional):* Talf, dip
*Down-slope shape:* Linear, concave
*Across-slope shape:* Linear, concave
*Ecological site:* F149AY090NJ - Coastal Plain Hardwood Swamp
*Hydric soil rating:* Yes

**Hambrook**

*Percent of map unit:* 5 percent
*Landform:* Flats, fluviomarine terraces
*Landform position (two-dimensional):* Shoulder
*Landform position (three-dimensional):* Riser, dip
*Down-slope shape:* Convex
*Across-slope shape:* Linear
*Ecological site:* F149AY170MD - Well Drained Fine-Loamy Upland
*Hydric soil rating:* No

# Queen Anne's County, Maryland

## Bp—Bestpitch peat, very frequently flooded, tidal

### Map Unit Setting

*National map unit symbol:* 4pb9
*Elevation:* 0 feet
*Mean annual precipitation:* 42 to 48 inches
*Mean annual air temperature:* 52 to 58 degrees F
*Frost-free period:* 180 to 220 days
*Farmland classification:* Not prime farmland

### Map Unit Composition

*Bestpitch and similar soils:* 85 percent
*Minor components:* 15 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Bestpitch

#### Setting

*Landform:* Tidal marshes
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Parent material:* Herbaceous organic material over silty estuarine sediments estuarine deposits

#### Typical profile

*Oi - 0 to 24 inches:* peat
*Oe - 24 to 40 inches:* muck
*Cg1 - 40 to 80 inches:* silty clay

#### Properties and qualities

*Slope:* 0 to 1 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Very poorly drained
*Runoff class:* Negligible
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.06 to 0.20 in/hr)
*Depth to water table:* About 0 to 5 inches
*Frequency of flooding:* Very frequent
*Frequency of ponding:* None
*Maximum salinity:* Moderately saline to strongly saline (15.0 to 50.0 mmhos/cm)
*Sodium adsorption ratio, maximum:* 35.0
*Available water supply, 0 to 60 inches:* Very high (about 20.2 inches)

#### Interpretive groups

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 8
*Hydrologic Soil Group:* A/D
*Ecological site:* R153DY060MD - Tidal Salt Marsh
*Hydric soil rating:* Yes

### Minor Components

#### Transquaking

*Percent of map unit:* 5 percent

*Landform:* Tidal marshes
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Ecological site:* R153DY060MD - Tidal Salt Marsh
*Hydric soil rating:* Yes

**Water**

*Percent of map unit:* 5 percent
*Landform:* Salt ponds
*Hydric soil rating:* Unranked

**Honga**

*Percent of map unit:* 5 percent
*Landform:* Submerged upland tidal marshes
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Ecological site:* R153DY070MD - Submerged Upland Tidal Salt Marsh
*Hydric soil rating:* Yes

## CaA—Carmichael loam, 0 to 2 percent slopes

**Map Unit Setting**

*National map unit symbol:* 4pbh
*Elevation:* 0 to 130 feet
*Mean annual precipitation:* 42 to 48 inches
*Mean annual air temperature:* 52 to 58 degrees F
*Frost-free period:* 180 to 220 days
*Farmland classification:* Farmland of statewide importance

**Map Unit Composition**

*Carmichael, drained, and similar soils:* 45 percent
*Carmichael, undrained, and similar soils:* 35 percent
*Minor components:* 20 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Carmichael, Drained**

**Setting**

*Landform:* Swales, depressions, flats
*Landform position (three-dimensional):* Talf
*Down-slope shape:* Concave, linear
*Across-slope shape:* Linear, concave
*Parent material:* Loamy eolian deposits over fluviomarine sediments

**Typical profile**

*Ap - 0 to 9 inches:* loam
*BEg - 9 to 15 inches:* loam
*Btg1 - 15 to 19 inches:* loam
*Btg2 - 19 to 33 inches:* silt loam
*Cg - 33 to 80 inches:* sandy loam

**Properties and qualities**

*Slope:* 0 to 2 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Poorly drained
*Runoff class:* Negligible
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (0.20 to 1.98 in/hr)
*Depth to water table:* About 10 to 20 inches
*Frequency of flooding:* None
*Frequency of ponding:* Rare
*Available water supply, 0 to 60 inches:* High (about 11.1 inches)

**Interpretive groups**

*Land capability classification (irrigated):* 3w
*Land capability classification (nonirrigated):* 3w
*Hydrologic Soil Group:* C/D
*Ecological site:* F149AY090NJ - Coastal Plain Hardwood Swamp
*Hydric soil rating:* Yes

**Description of Carmichael, Undrained**

**Setting**

*Landform:* Swales, depressions, flats
*Landform position (three-dimensional):* Talf
*Down-slope shape:* Concave, linear
*Across-slope shape:* Linear, concave
*Parent material:* Loamy eolian deposits over fluviomarine sediments

**Typical profile**

*Oi - 0 to 1 inches:* moderately decomposed plant material
*A - 1 to 3 inches:* loam
*Eg,BEg - 3 to 15 inches:* loam
*Btg1 - 15 to 19 inches:* loam
*Btg2 - 19 to 33 inches:* silt loam
*Cg - 33 to 80 inches:* sandy loam

**Properties and qualities**

*Slope:* 0 to 2 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Poorly drained
*Runoff class:* Negligible
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (0.20 to 1.98 in/hr)
*Depth to water table:* About 0 to 10 inches
*Frequency of flooding:* None
*Frequency of ponding:* Occasional
*Available water supply, 0 to 60 inches:* High (about 11.3 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 5w
*Hydrologic Soil Group:* C/D
*Ecological site:* F149AY090NJ - Coastal Plain Hardwood Swamp
*Hydric soil rating:* Yes

**Minor Components**

**Pineyneck**

*Percent of map unit:* 10 percent
*Landform:* Swales, terraces, flats
*Landform position (three-dimensional):* Rise
*Down-slope shape:* Concave, linear
*Across-slope shape:* Linear
*Ecological site:* F149AY130NJ - Moist Loamy Upland
*Hydric soil rating:* No

**Corsica, undrained**

*Percent of map unit:* 5 percent
*Landform:* Drainageways, swales, flats, depressions
*Landform position (three-dimensional):* Dip
*Down-slope shape:* Concave, linear
*Across-slope shape:* Linear, concave
*Ecological site:* F149AY090NJ - Coastal Plain Hardwood Swamp
*Hydric soil rating:* Yes

**Fallsington, drained**

*Percent of map unit:* 5 percent
*Landform:* Swales, depressions, flats
*Landform position (three-dimensional):* Talf
*Down-slope shape:* Concave, linear
*Across-slope shape:* Linear, concave
*Ecological site:* F149AY090NJ - Coastal Plain Hardwood Swamp
*Hydric soil rating:* Yes

## CoA—Corsica mucky loam, 0 to 2 percent slopes

**Map Unit Setting**

*National map unit symbol:* 4pbj
*Elevation:* 0 to 200 feet
*Mean annual precipitation:* 42 to 48 inches
*Mean annual air temperature:* 52 to 58 degrees F
*Frost-free period:* 180 to 220 days
*Farmland classification:* Farmland of statewide importance

**Map Unit Composition**

*Corsica, undrained, and similar soils:* 55 percent
*Corsica, drained, and similar soils:* 25 percent
*Minor components:* 20 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Corsica, Undrained**

**Setting**

*Landform:* Swales, flats, depressions, drainageways

*Landform position (three-dimensional):* Talf
*Down-slope shape:* Concave, linear
*Across-slope shape:* Linear, concave

**Typical profile**

*Oi - 0 to 2 inches:* slightly decomposed plant material
*A - 2 to 12 inches:* mucky loam
*BEg - 12 to 18 inches:* sandy loam
*Btg - 18 to 40 inches:* sandy clay loam
*BCg - 40 to 48 inches:* sandy loam
*2Cg - 48 to 80 inches:* clay loam

**Properties and qualities**

*Slope:* 0 to 2 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Very poorly drained
*Runoff class:* Negligible
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.06 to 0.57 in/hr)
*Depth to water table:* About 0 to 10 inches
*Frequency of flooding:* None
*Frequency of ponding:* Frequent
*Available water supply, 0 to 60 inches:* High (about 11.3 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 5w
*Hydrologic Soil Group:* B/D
*Ecological site:* F149AY090NJ - Coastal Plain Hardwood Swamp
*Hydric soil rating:* Yes

## Description of Corsica, Drained

**Setting**

*Landform:* Swales, flats, depressions
*Landform position (three-dimensional):* Talf
*Down-slope shape:* Concave, linear
*Across-slope shape:* Linear, concave

**Typical profile**

*Ap - 0 to 12 inches:* mucky loam
*BEg - 12 to 18 inches:* sandy loam
*Btg - 18 to 40 inches:* sandy clay loam
*BCg - 40 to 48 inches:* sandy loam
*2Cg - 48 to 80 inches:* clay loam

**Properties and qualities**

*Slope:* 0 to 2 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Very poorly drained
*Runoff class:* Negligible
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.06 to 0.57 in/hr)
*Depth to water table:* About 0 to 10 inches
*Frequency of flooding:* None
*Frequency of ponding:* Rare
*Available water supply, 0 to 60 inches:* High (about 10.9 inches)

**Interpretive groups**

*Land capability classification (irrigated):* 3w
*Land capability classification (nonirrigated):* 3w
*Hydrologic Soil Group:* B/D
*Ecological site:* F149AY090NJ - Coastal Plain Hardwood Swamp
*Hydric soil rating:* Yes

**Minor Components**

**Kentuck, undrained**

*Percent of map unit:* 5 percent
*Landform:* Swales, depressions
*Down-slope shape:* Concave
*Across-slope shape:* Linear, concave
*Ecological site:* F149AY090NJ - Coastal Plain Hardwood Swamp
*Hydric soil rating:* Yes

**Woodstown**

*Percent of map unit:* 5 percent
*Landform:* Flats
*Landform position (three-dimensional):* Rise
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Ecological site:* F149AY130NJ - Moist Loamy Upland
*Hydric soil rating:* No

**Fallsington, drained**

*Percent of map unit:* 5 percent
*Landform:* Flats
*Landform position (three-dimensional):* Rise
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Ecological site:* F149AY090NJ - Coastal Plain Hardwood Swamp
*Hydric soil rating:* Yes

**Hurlock, drained**

*Percent of map unit:* 5 percent
*Landform:* Flats
*Landform position (three-dimensional):* Rise
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Ecological site:* F149AY090NJ - Coastal Plain Hardwood Swamp
*Hydric soil rating:* Yes

## HnA—Hammonton sandy loam, 0 to 2 percent slopes

**Map Unit Setting**

*National map unit symbol:* 4pcn
*Elevation:* 0 to 120 feet

*Mean annual precipitation:* 42 to 48 inches
*Mean annual air temperature:* 52 to 58 degrees F
*Frost-free period:* 180 to 220 days
*Farmland classification:* All areas are prime farmland

**Map Unit Composition**

*Hammonton and similar soils:* 80 percent
*Minor components:* 20 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Hammonton**

**Setting**

*Landform:* Depressions, drainageways, flats
*Landform position (three-dimensional):* Talf
*Down-slope shape:* Concave, linear
*Across-slope shape:* Concave, linear
*Parent material:* Loamy fluviomarine sediments

**Typical profile**

*Ap - 0 to 11 inches:* sandy loam
*Bt - 11 to 30 inches:* sandy loam
*Cg - 30 to 80 inches:* sand

**Properties and qualities**

*Slope:* 0 to 2 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Moderately well drained
*Runoff class:* Very low
*Capacity of the most limiting layer to transmit water (Ksat):* High (1.98 to 5.95 in/hr)
*Depth to water table:* About 20 to 40 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Available water supply, 0 to 60 inches:* Low (about 5.4 inches)

**Interpretive groups**

*Land capability classification (irrigated):* 2w
*Land capability classification (nonirrigated):* 2w
*Hydrologic Soil Group:* B
*Ecological site:* F149AY130NJ - Moist Loamy Upland
*Hydric soil rating:* No

**Minor Components**

**Hurlock, drained**

*Percent of map unit:* 5 percent
*Landform:* Flats, swales, depressions
*Down-slope shape:* Linear, concave
*Across-slope shape:* Linear, concave
*Ecological site:* F149AY090NJ - Coastal Plain Hardwood Swamp
*Hydric soil rating:* Yes

**Ingleside**

*Percent of map unit:* 5 percent
*Landform:* Fluviomarine terraces, flats
*Landform position (three-dimensional):* Rise

*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Ecological site:* F153DY160NJ - Well Drained Coarse-Loamy Upland
*Hydric soil rating:* No

**Klej**

*Percent of map unit:* 5 percent
*Landform:* Depressions, flats
*Landform position (three-dimensional):* Dip
*Down-slope shape:* Concave, linear
*Across-slope shape:* Concave, linear
*Ecological site:* F153DY150NJ - Moist Sandy Upland
*Hydric soil rating:* No

**Rosedale**

*Percent of map unit:* 5 percent
*Landform:* Flats
*Landform position (three-dimensional):* Rise
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Ecological site:* F153DY160NJ - Well Drained Coarse-Loamy Upland
*Hydric soil rating:* No

## HnB—Hammonton sandy loam, 2 to 5 percent slopes

**Map Unit Setting**

*National map unit symbol:* 4pcp
*Elevation:* 0 to 140 feet
*Mean annual precipitation:* 42 to 48 inches
*Mean annual air temperature:* 52 to 58 degrees F
*Frost-free period:* 180 to 220 days
*Farmland classification:* All areas are prime farmland

**Map Unit Composition**

*Hammonton and similar soils:* 80 percent
*Minor components:* 20 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Hammonton**

**Setting**

*Landform:* Depressions, drainageways, flats
*Landform position (three-dimensional):* Talf
*Down-slope shape:* Concave, linear
*Across-slope shape:* Concave, linear
*Parent material:* Loamy fluviomarine sediments

**Typical profile**

*Ap - 0 to 11 inches:* sandy loam
*Bt - 11 to 30 inches:* sandy loam
*Cg - 30 to 80 inches:* sand

**Properties and qualities**

*Slope:* 2 to 5 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Moderately well drained
*Runoff class:* Low
*Capacity of the most limiting layer to transmit water (Ksat):* High (1.98 to 5.95 in/hr)
*Depth to water table:* About 20 to 40 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Available water supply, 0 to 60 inches:* Low (about 5.4 inches)

**Interpretive groups**

*Land capability classification (irrigated):* 2e
*Land capability classification (nonirrigated):* 2e
*Hydrologic Soil Group:* B
*Ecological site:* F149AY130NJ - Moist Loamy Upland
*Hydric soil rating:* No

**Minor Components**

**Hurlock, drained**

*Percent of map unit:* 5 percent
*Landform:* Flats, swales, depressions
*Landform position (three-dimensional):* Dip
*Down-slope shape:* Linear, concave
*Across-slope shape:* Linear, concave
*Ecological site:* F149AY090NJ - Coastal Plain Hardwood Swamp
*Hydric soil rating:* Yes

**Klej**

*Percent of map unit:* 5 percent
*Landform:* Depressions, flats
*Landform position (three-dimensional):* Dip
*Down-slope shape:* Concave, linear
*Across-slope shape:* Concave, linear
*Ecological site:* F153DY150NJ - Moist Sandy Upland
*Hydric soil rating:* No

**Rosedale**

*Percent of map unit:* 5 percent
*Landform:* Flats
*Landform position (three-dimensional):* Rise
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Ecological site:* F153DY160NJ - Well Drained Coarse-Loamy Upland
*Hydric soil rating:* No

**Ingleside**

*Percent of map unit:* 5 percent
*Landform:* Fluviomarine terraces, depressions, flats
*Landform position (three-dimensional):* Rise
*Down-slope shape:* Linear, concave
*Across-slope shape:* Linear, concave
*Ecological site:* F153DY160NJ - Well Drained Coarse-Loamy Upland
*Hydric soil rating:* No

## Ho—Honga peat, very frequently flooded, tidal

### Map Unit Setting

*National map unit symbol:* 4pcq
*Elevation:* 0 feet
*Mean annual precipitation:* 42 to 48 inches
*Mean annual air temperature:* 52 to 58 degrees F
*Frost-free period:* 180 to 220 days
*Farmland classification:* Not prime farmland

### Map Unit Composition

*Honga and similar soils:* 80 percent
*Minor components:* 20 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Honga

#### Setting

*Landform:* Submerged upland tidal marshes
*Down-slope shape:* Linear
*Across-slope shape:* Linear

#### Typical profile

*Oi - 0 to 7 inches:* peat
*Oe - 7 to 22 inches:* mucky peat
*Ag - 22 to 24 inches:* silt loam
*Eg - 24 to 36 inches:* silt loam
*Btg - 36 to 65 inches:* silty clay loam

#### Properties and qualities

*Slope:* 0 to 1 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Very poorly drained
*Runoff class:* Negligible
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.06 to 0.60 in/hr)
*Depth to water table:* About 0 to 10 inches
*Frequency of flooding:* Very frequent
*Frequency of ponding:* None
*Maximum salinity:* Moderately saline to strongly saline (15.0 to 60.0 mmhos/cm)
*Sodium adsorption ratio, maximum:* 40.0
*Available water supply, 0 to 60 inches:* Very high (about 19.3 inches)

#### Interpretive groups

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 8
*Hydrologic Soil Group:* C/D
*Ecological site:* R153DY070MD - Submerged Upland Tidal Salt Marsh
*Hydric soil rating:* Yes

**Minor Components**

**Sunken**

*Percent of map unit:* 10 percent
*Landform:* Submerged upland tidal marshes, flats
*Landform position (three-dimensional):* Rise
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Ecological site:* R153DY070MD - Submerged Upland Tidal Salt Marsh
*Hydric soil rating:* Yes

**Transquaking**

*Percent of map unit:* 5 percent
*Landform:* Tidal marshes
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Ecological site:* R153DY060MD - Tidal Salt Marsh
*Hydric soil rating:* Yes

**Mispillion**

*Percent of map unit:* 5 percent
*Landform:* Tidal marshes
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Ecological site:* R153DY060MD - Tidal Salt Marsh
*Hydric soil rating:* Yes

## HvA—Hurlock sandy loam, 0 to 2 percent slopes

**Map Unit Setting**

*National map unit symbol:* 4pcr
*Elevation:* 0 to 120 feet
*Mean annual precipitation:* 42 to 48 inches
*Mean annual air temperature:* 52 to 58 degrees F
*Frost-free period:* 180 to 220 days
*Farmland classification:* Farmland of statewide importance

**Map Unit Composition**

*Hurlock, drained, and similar soils:* 42 percent
*Hurlock, undrained, and similar soils:* 38 percent
*Minor components:* 20 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Hurlock, Drained**

**Setting**

*Landform:* Swales, depressions, flats
*Down-slope shape:* Concave, linear
*Across-slope shape:* Linear, concave
*Parent material:* Loamy fluviomarine sediments fluviomarine deposits

**Typical profile**

*Ap - 0 to 10 inches:* sandy loam
*Eg - 10 to 13 inches:* sandy loam
*Btg - 13 to 25 inches:* sandy loam
*Cg - 25 to 63 inches:* loamy sand
*2Cg - 63 to 80 inches:* silt loam

**Properties and qualities**

*Slope:* 0 to 2 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Poorly drained
*Runoff class:* Negligible
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to high (0.06 to 5.95 in/hr)
*Depth to water table:* About 10 to 20 inches
*Frequency of flooding:* None
*Frequency of ponding:* Rare
*Available water supply, 0 to 60 inches:* Moderate (about 6.7 inches)

**Interpretive groups**

*Land capability classification (irrigated):* 3w
*Land capability classification (nonirrigated):* 3w
*Hydrologic Soil Group:* A/D
*Ecological site:* F149AY090NJ - Coastal Plain Hardwood Swamp
*Hydric soil rating:* Yes

## Description of Hurlock, Undrained

**Setting**

*Landform:* Drainageways, depressions, swales, flats
*Down-slope shape:* Concave, linear
*Across-slope shape:* Concave, linear
*Parent material:* Loamy fluviomarine sediments fluviomarine deposits

**Typical profile**

*Oe - 0 to 2 inches:* moderately decomposed plant material
*A - 2 to 4 inches:* sandy loam
*Eg - 4 to 13 inches:* sandy loam
*Btg - 13 to 25 inches:* sandy loam
*Cg - 25 to 63 inches:* loamy sand
*2Cg - 63 to 80 inches:* silt loam

**Properties and qualities**

*Slope:* 0 to 2 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Poorly drained
*Runoff class:* Negligible
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to high (0.06 to 5.95 in/hr)
*Depth to water table:* About 0 to 10 inches
*Frequency of flooding:* None
*Frequency of ponding:* Occasional
*Available water supply, 0 to 60 inches:* Moderate (about 7.4 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 5w

*Hydrologic Soil Group:* A/D
*Ecological site:* F149AY090NJ - Coastal Plain Hardwood Swamp
*Hydric soil rating:* Yes

**Minor Components**

**Mullica, drained**
*Percent of map unit:* 5 percent
*Landform:* Drainageways, depressions, swales, flats
*Landform position (three-dimensional):* Dip
*Down-slope shape:* Concave, linear
*Across-slope shape:* Concave, linear
*Ecological site:* F149AY090NJ - Coastal Plain Hardwood Swamp
*Hydric soil rating:* Yes

**Hammonton**
*Percent of map unit:* 5 percent
*Landform:* Flats, drainageways
*Landform position (three-dimensional):* Rise
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Ecological site:* F149AY130NJ - Moist Loamy Upland
*Hydric soil rating:* No

**Woodstown**
*Percent of map unit:* 5 percent
*Landform:* Flats, fluviomarine terraces, broad interstream divides
*Landform position (three-dimensional):* Tread, rise
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Ecological site:* F149AY130NJ - Moist Loamy Upland
*Hydric soil rating:* No

**Klej**
*Percent of map unit:* 5 percent
*Landform:* Flats
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Ecological site:* F153DY150NJ - Moist Sandy Upland
*Hydric soil rating:* No

## IgB—Ingleside sandy loam, 2 to 5 percent slopes

**Map Unit Setting**
*National map unit symbol:* 4pct
*Elevation:* 10 to 140 feet
*Mean annual precipitation:* 42 to 48 inches
*Mean annual air temperature:* 52 to 58 degrees F
*Frost-free period:* 180 to 220 days
*Farmland classification:* All areas are prime farmland

**Map Unit Composition**

*Ingleside and similar soils:* 75 percent
*Minor components:* 25 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Ingleside**

**Setting**

*Landform:* Fluviomarine terraces, depressions, flats
*Landform position (three-dimensional):* Rise
*Down-slope shape:* Linear, concave
*Across-slope shape:* Linear, concave

**Typical profile**

*Ap - 0 to 10 inches:* sandy loam
*E - 10 to 15 inches:* sandy loam
*Bt - 15 to 33 inches:* sandy loam
*BC - 33 to 43 inches:* sandy loam
*C1 - 43 to 56 inches:* loamy sand
*C2 - 56 to 80 inches:* silt loam

**Properties and qualities**

*Slope:* 2 to 5 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Well drained
*Runoff class:* Very low
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to high (0.06 to 5.95 in/hr)
*Depth to water table:* About 40 to 72 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Available water supply, 0 to 60 inches:* Moderate (about 6.9 inches)

**Interpretive groups**

*Land capability classification (irrigated):* 2e
*Land capability classification (nonirrigated):* 2e
*Hydrologic Soil Group:* A
*Ecological site:* F153DY160NJ - Well Drained Coarse-Loamy Upland
*Hydric soil rating:* No

**Minor Components**

**Woodstown**

*Percent of map unit:* 5 percent
*Landform:* Depressions, flats, drainageways
*Landform position (three-dimensional):* Dip
*Down-slope shape:* Concave, linear
*Across-slope shape:* Concave, linear
*Ecological site:* F149AY130NJ - Moist Loamy Upland
*Hydric soil rating:* No

**Downer**

*Percent of map unit:* 5 percent
*Landform:* Fluviomarine terraces, knolls, flats
*Landform position (three-dimensional):* Rise
*Down-slope shape:* Linear, convex

*Across-slope shape:* Linear, convex
*Ecological site:* F153DY160NJ - Well Drained Coarse-Loamy Upland
*Hydric soil rating:* No

**Rosedale**

*Percent of map unit:* 5 percent
*Landform:* Flats
*Landform position (three-dimensional):* Talf
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Ecological site:* F153DY160NJ - Well Drained Coarse-Loamy Upland
*Hydric soil rating:* No

**Hammonton**

*Percent of map unit:* 5 percent
*Landform:* Depressions, drainageways, flats
*Landform position (three-dimensional):* Talf
*Down-slope shape:* Concave, linear
*Across-slope shape:* Concave, linear
*Ecological site:* F149AY130NJ - Moist Loamy Upland
*Hydric soil rating:* No

**Cedartown**

*Percent of map unit:* 5 percent
*Landform:* Flats, knolls, dunes
*Landform position (three-dimensional):* Talf
*Down-slope shape:* Linear, convex
*Across-slope shape:* Linear, convex
*Ecological site:* F153DY170NJ - Sandy, Excessively Drained Upland
*Hydric soil rating:* No

## LO—Longmarsh and Indiantown soils, frequently flooded

**Map Unit Setting**

*National map unit symbol:* 2r113
*Elevation:* 0 to 120 feet
*Mean annual precipitation:* 42 to 48 inches
*Mean annual air temperature:* 52 to 58 degrees F
*Frost-free period:* 180 to 220 days
*Farmland classification:* Not prime farmland

**Map Unit Composition**

*Longmarsh and similar soils:* 43 percent
*Indiantown and similar soils:* 37 percent
*Minor components:* 20 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Longmarsh**

**Setting**

*Landform:* Flood plains

*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Parent material:* Loamy alluvium

**Typical profile**

*Oe - 0 to 2 inches:* moderately decomposed plant material
*A - 2 to 19 inches:* mucky loam
*Cg1 - 19 to 34 inches:* sandy loam
*Cg2 - 34 to 80 inches:* loamy sand

**Properties and qualities**

*Slope:* 0 to 1 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Very poorly drained
*Runoff class:* Negligible
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (0.57 to 5.95 in/hr)
*Depth to water table:* About 0 to 10 inches
*Frequency of flooding:* Frequent
*Frequency of ponding:* Frequent
*Maximum salinity:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
*Available water supply, 0 to 60 inches:* Moderate (about 8.6 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 5w
*Hydrologic Soil Group:* B/D
*Ecological site:* R149AY060DE - Wet Alluvial Floodplain
*Hydric soil rating:* Yes

## Description of Indiantown

**Setting**

*Landform:* Flood plains
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Parent material:* Loamy alluvium

**Typical profile**

*Oe - 0 to 2 inches:* moderately decomposed plant material
*A - 2 to 25 inches:* mucky silt loam
*Cg - 25 to 80 inches:* loamy sand

**Properties and qualities**

*Slope:* 0 to 1 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Very poorly drained
*Runoff class:* Negligible
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (0.57 to 1.98 in/hr)
*Depth to water table:* About 0 to 10 inches
*Frequency of flooding:* Frequent
*Frequency of ponding:* Frequent
*Maximum salinity:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
*Available water supply, 0 to 60 inches:* High (about 11.0 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 5w
*Hydrologic Soil Group:* B/D
*Ecological site:* R149AY060DE - Wet Alluvial Floodplain
*Hydric soil rating:* Yes

**Minor Components**

**Zekiah**
*Percent of map unit:* 10 percent
*Landform:* Flood plains
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Ecological site:* R149AY060DE - Wet Alluvial Floodplain
*Hydric soil rating:* Yes

**Klej**
*Percent of map unit:* 5 percent
*Landform:* Flats
*Landform position (three-dimensional):* Rise
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Ecological site:* F153DY150NJ - Moist Sandy Upland
*Hydric soil rating:* No

**Manahawkin**
*Percent of map unit:* 5 percent
*Landform:* Flood plains, swamps
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Ecological site:* F153DY110NJ - Mucky Swamp
*Hydric soil rating:* Yes

## MqA—Mattapex-Butlertown silt loams, 0 to 2 percent slopes

**Map Unit Setting**
*National map unit symbol:* 4pf8
*Elevation:* 0 to 130 feet
*Mean annual precipitation:* 42 to 48 inches
*Mean annual air temperature:* 52 to 58 degrees F
*Frost-free period:* 180 to 220 days
*Farmland classification:* All areas are prime farmland

**Map Unit Composition**
*Mattapex and similar soils:* 40 percent
*Butlertown and similar soils:* 35 percent
*Minor components:* 25 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Mattapex

#### Setting

*Landform:* Swales, depressions, flats
*Landform position (three-dimensional):* Talf
*Down-slope shape:* Concave, linear
*Across-slope shape:* Linear, concave
*Parent material:* Silty eolian deposits over fluviomarine sediments fluviomarine deposits

#### Typical profile

*Ap - 0 to 11 inches:* silt loam
*BE - 11 to 15 inches:* silt loam
*Bt - 15 to 36 inches:* silt loam
*2C1 - 36 to 60 inches:* fine sandy loam
*2C2 - 60 to 80 inches:* loamy sand

#### Properties and qualities

*Slope:* 0 to 2 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Moderately well drained
*Runoff class:* Low
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.06 to 0.57 in/hr)
*Depth to water table:* About 20 to 40 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Available water supply, 0 to 60 inches:* Moderate (about 8.3 inches)

#### Interpretive groups

*Land capability classification (irrigated):* 2w
*Land capability classification (nonirrigated):* 2w
*Hydrologic Soil Group:* C
*Ecological site:* F153CY020MD - Moist Loess Upland
*Hydric soil rating:* No

### Description of Butlertown

#### Setting

*Landform:* Flats, broad interstream divides, interfluves
*Landform position (three-dimensional):* Talf
*Down-slope shape:* Linear
*Across-slope shape:* Linear

#### Typical profile

*Ap - 0 to 4 inches:* silt loam
*E - 4 to 10 inches:* silt loam
*BE - 10 to 16 inches:* silt loam
*Bt - 16 to 29 inches:* silt loam
*Bx - 29 to 33 inches:* silt loam
*BCx - 33 to 48 inches:* loam
*2C - 48 to 80 inches:* loamy fine sand

#### Properties and qualities

*Slope:* 0 to 2 percent
*Depth to restrictive feature:* 24 to 39 inches to fragipan
*Drainage class:* Moderately well drained

*Runoff class:* High
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.01 to 0.20 in/hr)
*Depth to water table:* About 20 to 40 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Available water supply, 0 to 60 inches:* Low (about 5.3 inches)

**Interpretive groups**

*Land capability classification (irrigated):* 2w
*Land capability classification (nonirrigated):* 2w
*Hydrologic Soil Group:* D
*Ecological site:* F153CY020MD - Moist Loess Upland
*Hydric soil rating:* No

**Minor Components**

**Crosiadore**

*Percent of map unit:* 10 percent
*Landform:* Depressions, flats
*Landform position (three-dimensional):* Dip
*Down-slope shape:* Concave, linear
*Across-slope shape:* Concave, linear
*Ecological site:* F153CY020MD - Moist Loess Upland
*Hydric soil rating:* No

**Pineyneck**

*Percent of map unit:* 5 percent
*Landform:* Swales, terraces, flats
*Landform position (three-dimensional):* Talf
*Down-slope shape:* Concave, linear
*Across-slope shape:* Linear
*Ecological site:* F149AY130NJ - Moist Loamy Upland
*Hydric soil rating:* No

**Nassawango**

*Percent of map unit:* 5 percent
*Landform:* Terraces, flats
*Landform position (three-dimensional):* Rise
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Ecological site:* F153CY030MD - Well Drained Loess Upland
*Hydric soil rating:* No

**Carmichael, drained**

*Percent of map unit:* 3 percent
*Landform:* Flats, swales, depressions
*Landform position (three-dimensional):* Dip
*Down-slope shape:* Linear, concave
*Across-slope shape:* Linear, concave
*Ecological site:* F149AY090NJ - Coastal Plain Hardwood Swamp
*Hydric soil rating:* Yes

**Othello, drained**

*Percent of map unit:* 2 percent
*Landform:* Swales, depressions, flats
*Landform position (three-dimensional):* Dip

*Down-slope shape:* Concave, linear
*Across-slope shape:* Linear, concave
*Ecological site:* F149AY090NJ - Coastal Plain Hardwood Swamp
*Hydric soil rating:* Yes

## MqB—Mattapex-Butlertown silt loams, 2 to 5 percent slopes

### Map Unit Setting

*National map unit symbol:* 4pf9
*Elevation:* 0 to 130 feet
*Mean annual precipitation:* 42 to 48 inches
*Mean annual air temperature:* 52 to 58 degrees F
*Frost-free period:* 180 to 220 days
*Farmland classification:* All areas are prime farmland

### Map Unit Composition

*Mattapex and similar soils:* 40 percent
*Butlertown and similar soils:* 35 percent
*Minor components:* 25 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Mattapex

#### Setting

*Landform:* Flats, swales, depressions
*Landform position (three-dimensional):* Talf
*Down-slope shape:* Linear, concave
*Across-slope shape:* Linear, concave
*Parent material:* Silty eolian deposits over fluviomarine sediments fluviomarine deposits

#### Typical profile

*Ap - 0 to 11 inches:* silt loam
*BE - 11 to 15 inches:* silt loam
*Bt - 15 to 36 inches:* silt loam
*2C1 - 36 to 60 inches:* fine sandy loam
*2C2 - 60 to 80 inches:* loamy sand

#### Properties and qualities

*Slope:* 2 to 5 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Moderately well drained
*Runoff class:* Medium
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.06 to 0.57 in/hr)
*Depth to water table:* About 20 to 40 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Available water supply, 0 to 60 inches:* Moderate (about 8.3 inches)

**Interpretive groups**

*Land capability classification (irrigated):* 2e
*Land capability classification (nonirrigated):* 2e
*Hydrologic Soil Group:* C
*Ecological site:* F153CY020MD - Moist Loess Upland
*Hydric soil rating:* No

## Description of Butlertown

**Setting**

*Landform:* Flats, broad interstream divides, interfluves
*Landform position (three-dimensional):* Talf
*Down-slope shape:* Linear
*Across-slope shape:* Linear

**Typical profile**

*Ap - 0 to 4 inches:* silt loam
*E - 4 to 10 inches:* silt loam
*BE - 10 to 16 inches:* silt loam
*Bt - 16 to 29 inches:* silt loam
*Bx - 29 to 33 inches:* silt loam
*BCx - 33 to 48 inches:* loam
*2C - 48 to 80 inches:* loamy fine sand

**Properties and qualities**

*Slope:* 2 to 5 percent
*Depth to restrictive feature:* 24 to 39 inches to fragipan
*Drainage class:* Moderately well drained
*Runoff class:* High
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.01 to 0.20 in/hr)
*Depth to water table:* About 20 to 40 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Available water supply, 0 to 60 inches:* Low (about 5.3 inches)

**Interpretive groups**

*Land capability classification (irrigated):* 2e
*Land capability classification (nonirrigated):* 2e
*Hydrologic Soil Group:* D
*Ecological site:* F153CY020MD - Moist Loess Upland
*Hydric soil rating:* No

## Minor Components

**Pineyneck**

*Percent of map unit:* 10 percent
*Landform:* Swales, terraces, flats
*Landform position (three-dimensional):* Rise, talf
*Down-slope shape:* Concave, linear
*Across-slope shape:* Linear
*Ecological site:* F149AY130NJ - Moist Loamy Upland
*Hydric soil rating:* No

**Nassawango**

*Percent of map unit:* 5 percent
*Landform:* Terraces, flats

*Landform position (three-dimensional):* Rise
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Ecological site:* F153CY030MD - Well Drained Loess Upland
*Hydric soil rating:* No

**Crosiadore**

*Percent of map unit:* 5 percent
*Landform:* Depressions, flats
*Landform position (three-dimensional):* Dip
*Down-slope shape:* Concave, linear
*Across-slope shape:* Concave, linear
*Ecological site:* F153CY020MD - Moist Loess Upland
*Hydric soil rating:* No

**Hammonton**

*Percent of map unit:* 5 percent
*Landform:* Drainageways, depressions, flats
*Landform position (three-dimensional):* Talf
*Down-slope shape:* Concave, linear
*Across-slope shape:* Concave, linear
*Ecological site:* F149AY130NJ - Moist Loamy Upland
*Hydric soil rating:* No

## NsB—Nassawango silt loam, 2 to 5 percent slopes

**Map Unit Setting**

*National map unit symbol:* 4pfq
*Elevation:* 10 to 120 feet
*Mean annual precipitation:* 42 to 48 inches
*Mean annual air temperature:* 52 to 58 degrees F
*Frost-free period:* 180 to 220 days
*Farmland classification:* All areas are prime farmland

**Map Unit Composition**

*Nassawango and similar soils:* 80 percent
*Minor components:* 20 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Nassawango**

**Setting**

*Landform:* Terraces, flats
*Landform position (three-dimensional):* Rise
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Parent material:* Silty eolian deposits over fluviomarine sediments

**Typical profile**

*Ap - 0 to 10 inches:* silt loam

*E - 10 to 16 inches:* silt loam
*Bt - 16 to 44 inches:* silt loam
*2C - 44 to 60 inches:* loamy sand
*2Cg - 60 to 80 inches:* fine sandy loam

**Properties and qualities**

*Slope:* 2 to 5 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Well drained
*Runoff class:* Low
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.06 to 0.57 in/hr)
*Depth to water table:* About 40 to 72 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Available water supply, 0 to 60 inches:* High (about 9.3 inches)

**Interpretive groups**

*Land capability classification (irrigated):* 2e
*Land capability classification (nonirrigated):* 2e
*Hydrologic Soil Group:* C
*Ecological site:* F153CY030MD - Well Drained Loess Upland
*Hydric soil rating:* No

## Minor Components

**Crosiadore**

*Percent of map unit:* 5 percent
*Landform:* Swales, depressions, flats
*Landform position (three-dimensional):* Dip
*Down-slope shape:* Concave, linear
*Across-slope shape:* Concave, linear
*Ecological site:* F153CY020MD - Moist Loess Upland
*Hydric soil rating:* No

**Othello, drained**

*Percent of map unit:* 5 percent
*Landform:* Depressions, swales
*Down-slope shape:* Concave
*Across-slope shape:* Concave, linear
*Ecological site:* F149AY090NJ - Coastal Plain Hardwood Swamp
*Hydric soil rating:* Yes

**Matapeake**

*Percent of map unit:* 5 percent
*Landform:* Knolls, flats
*Landform position (three-dimensional):* Rise
*Down-slope shape:* Convex, linear
*Across-slope shape:* Convex, linear
*Ecological site:* F153CY030MD - Well Drained Loess Upland
*Hydric soil rating:* No

**Mattapex**

*Percent of map unit:* 5 percent
*Landform:* Flats, swales, depressions
*Landform position (three-dimensional):* Dip
*Down-slope shape:* Linear, concave

*Across-slope shape:* Linear, concave
*Ecological site:* F153CY020MD - Moist Loess Upland
*Hydric soil rating:* No

## OtA—Othello silt loams, 0 to 2 percent slopes, Mid-Atlantic Coastal Plain

### Map Unit Setting

*National map unit symbol:* 2thwn
*Elevation:* 0 to 100 feet
*Mean annual precipitation:* 40 to 50 inches
*Mean annual air temperature:* 46 to 68 degrees F
*Frost-free period:* 210 to 240 days
*Farmland classification:* Farmland of statewide importance

### Map Unit Composition

*Othello, drained, and similar soils:* 48 percent
*Othello, undrained, and similar soils:* 28 percent
*Minor components:* 24 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Othello, Drained

#### Setting

*Landform:* Swales, depressions, flats
*Landform position (two-dimensional):* Footslope
*Landform position (three-dimensional):* Dip, talf
*Down-slope shape:* Concave, linear
*Across-slope shape:* Linear, concave
*Parent material:* Silty eolian deposits over fluviomarine deposits

#### Typical profile

*Ap - 0 to 9 inches:* silt loam
*Btg - 9 to 29 inches:* silt loam
*2BCg - 29 to 34 inches:* sandy loam
*2Cg - 34 to 80 inches:* loamy sand

#### Properties and qualities

*Slope:* 0 to 2 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Poorly drained
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.06 to 0.57 in/hr)
*Depth to water table:* About 10 to 20 inches
*Frequency of flooding:* None
*Frequency of ponding:* Rare
*Maximum salinity:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
*Available water supply, 0 to 60 inches:* Moderate (about 8.8 inches)

#### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 3w
*Hydrologic Soil Group:* C/D
*Ecological site:* F149AY090NJ - Coastal Plain Hardwood Swamp
*Hydric soil rating:* Yes

### Description of Othello, Undrained

#### Setting

*Landform:* Drainageways, swales, depressions, flats
*Landform position (two-dimensional):* Footslope
*Landform position (three-dimensional):* Dip, talf
*Down-slope shape:* Concave, linear
*Across-slope shape:* Linear, concave
*Parent material:* Silty eolian deposits over fluviomarine deposits

#### Typical profile

*Oe - 0 to 2 inches:* peat
*A - 2 to 4 inches:* silt loam
*Eg - 4 to 10 inches:* silt loam
*Btg - 10 to 29 inches:* silt loam
*2BCg - 29 to 35 inches:* sandy loam
*2Cg - 35 to 80 inches:* loamy sand

#### Properties and qualities

*Slope:* 0 to 2 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Poorly drained
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.06 to 0.57 in/hr)
*Depth to water table:* About 0 to 10 inches
*Frequency of flooding:* None
*Frequency of ponding:* Occasional
*Maximum salinity:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
*Available water supply, 0 to 60 inches:* High (about 9.6 inches)

#### Interpretive groups

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 5w
*Hydrologic Soil Group:* C/D
*Ecological site:* F149AY090NJ - Coastal Plain Hardwood Swamp
*Hydric soil rating:* Yes

### Minor Components

#### Mattapex

*Percent of map unit:* 7 percent
*Landform:* Broad interstream divides, swales, depressions, flats
*Landform position (two-dimensional):* Summit, footslope
*Landform position (three-dimensional):* Talf, dip
*Down-slope shape:* Linear, concave
*Across-slope shape:* Linear, concave
*Ecological site:* F153CY020MD - Moist Loess Upland
*Hydric soil rating:* No

#### Crosiadore

*Percent of map unit:* 7 percent
*Landform:* Depressions, fluviomarine terraces, flats

*Landform position (two-dimensional):* Footslope, summit
*Landform position (three-dimensional):* Tread, dip, talf
*Down-slope shape:* Concave, linear
*Across-slope shape:* Concave, linear
*Ecological site:* F153CY020MD - Moist Loess Upland
*Hydric soil rating:* No

**Kentuck, undrained**

*Percent of map unit:* 5 percent
*Landform:* Swales, depressions, flats
*Landform position (two-dimensional):* Toeslope
*Landform position (three-dimensional):* Dip, talf
*Down-slope shape:* Concave, linear
*Across-slope shape:* Concave, linear
*Ecological site:* F149AY090NJ - Coastal Plain Hardwood Swamp
*Hydric soil rating:* Yes

**Fallsington, undrained**

*Percent of map unit:* 5 percent
*Landform:* Drainageways, swales, depressions, flats
*Landform position (two-dimensional):* Footslope
*Landform position (three-dimensional):* Dip, talf
*Down-slope shape:* Concave, linear
*Across-slope shape:* Concave, linear
*Ecological site:* F149AY090NJ - Coastal Plain Hardwood Swamp
*Hydric soil rating:* Yes

## PiA—Pineyneck silt loam, 0 to 2 percent slopes

**Map Unit Setting**

*National map unit symbol:* 4pfx
*Elevation:* 10 to 130 feet
*Mean annual precipitation:* 42 to 48 inches
*Mean annual air temperature:* 52 to 58 degrees F
*Frost-free period:* 180 to 220 days
*Farmland classification:* All areas are prime farmland

**Map Unit Composition**

*Pineyneck and similar soils:* 80 percent
*Minor components:* 20 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Pineyneck**

**Setting**

*Landform:* Swales, terraces, flats
*Landform position (three-dimensional):* Talf
*Down-slope shape:* Concave, linear
*Across-slope shape:* Linear

*Parent material:* Loamy eolian deposits over fluviomarine sediments

**Typical profile**

*Ap - 0 to 9 inches:* silt loam
*E - 9 to 14 inches:* silt loam
*Bt1 - 14 to 20 inches:* silt loam
*Bt2 - 20 to 27 inches:* loam
*2BC - 27 to 32 inches:* fine sandy loam
*2C - 32 to 47 inches:* loamy fine sand
*3Cg,4Ab,4C'g - 47 to 80 inches:* loam

**Properties and qualities**

*Slope:* 0 to 2 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Moderately well drained
*Runoff class:* Low
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (0.20 to 1.98 in/hr)
*Depth to water table:* About 20 to 40 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Available water supply, 0 to 60 inches:* High (about 9.5 inches)

**Interpretive groups**

*Land capability classification (irrigated):* 2w
*Land capability classification (nonirrigated):* 2w
*Hydrologic Soil Group:* C
*Ecological site:* F149AY130NJ - Moist Loamy Upland
*Hydric soil rating:* No

**Minor Components**

**Unicorn**

*Percent of map unit:* 10 percent
*Landform:* Knolls, terraces, flats
*Landform position (three-dimensional):* Rise
*Down-slope shape:* Convex, linear
*Across-slope shape:* Convex, linear
*Ecological site:* F153DY160NJ - Well Drained Coarse-Loamy Upland
*Hydric soil rating:* No

**Carmichael, drained**

*Percent of map unit:* 5 percent
*Landform:* Depressions, swales, flats
*Landform position (three-dimensional):* Dip
*Down-slope shape:* Concave, linear
*Across-slope shape:* Concave, linear
*Ecological site:* F149AY090NJ - Coastal Plain Hardwood Swamp
*Hydric soil rating:* Yes

**Greenwich**

*Percent of map unit:* 5 percent
*Landform:* Knolls, terraces, flats
*Landform position (three-dimensional):* Rise
*Down-slope shape:* Convex, linear
*Across-slope shape:* Convex, linear
*Ecological site:* F153DY160NJ - Well Drained Coarse-Loamy Upland

*Hydric soil rating:* No

## PiB—Pineyneck silt loam, 2 to 5 percent slopes

### Map Unit Setting

*National map unit symbol:* 4pfy
*Elevation:* 0 to 130 feet
*Mean annual precipitation:* 42 to 48 inches
*Mean annual air temperature:* 52 to 58 degrees F
*Frost-free period:* 180 to 220 days
*Farmland classification:* All areas are prime farmland

### Map Unit Composition

*Pineyneck and similar soils:* 75 percent
*Minor components:* 25 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Pineyneck

#### Setting

*Landform:* Swales, terraces, flats
*Landform position (three-dimensional):* Talf
*Down-slope shape:* Concave, linear
*Across-slope shape:* Linear
*Parent material:* Loamy eolian deposits over fluviomarine sediments

#### Typical profile

*Ap - 0 to 9 inches:* silt loam
*E - 9 to 14 inches:* silt loam
*Bt1 - 14 to 20 inches:* silt loam
*Bt2 - 20 to 27 inches:* loam
*2BC - 27 to 32 inches:* fine sandy loam
*2C - 32 to 47 inches:* loamy fine sand
*3Cg,4Ab,4C'g - 47 to 80 inches:* loam

#### Properties and qualities

*Slope:* 2 to 5 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Moderately well drained
*Runoff class:* Low
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (0.20 to 1.98 in/hr)
*Depth to water table:* About 20 to 40 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Available water supply, 0 to 60 inches:* High (about 9.5 inches)

#### Interpretive groups

*Land capability classification (irrigated):* 2e
*Land capability classification (nonirrigated):* 2e
*Hydrologic Soil Group:* C

*Ecological site:* F149AY130NJ - Moist Loamy Upland
*Hydric soil rating:* No

**Minor Components**

**Unicorn**
*Percent of map unit:* 10 percent
*Landform:* Knolls, terraces, flats
*Landform position (three-dimensional):* Rise
*Down-slope shape:* Convex, linear
*Across-slope shape:* Convex, linear
*Ecological site:* F153DY160NJ - Well Drained Coarse-Loamy Upland
*Hydric soil rating:* No

**Mattapex**
*Percent of map unit:* 5 percent
*Landform:* Flats, swales, depressions
*Landform position (three-dimensional):* Talf
*Down-slope shape:* Linear, concave
*Across-slope shape:* Linear, concave
*Ecological site:* F153CY020MD - Moist Loess Upland
*Hydric soil rating:* No

**Crosiadore**
*Percent of map unit:* 5 percent
*Landform:* Depressions, flats
*Landform position (three-dimensional):* Dip
*Down-slope shape:* Concave, linear
*Across-slope shape:* Concave, linear
*Ecological site:* F153CY020MD - Moist Loess Upland
*Hydric soil rating:* No

**Ingleside**
*Percent of map unit:* 5 percent
*Landform:* Fluviomarine terraces, flats
*Landform position (three-dimensional):* Rise
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Ecological site:* F153DY160NJ - Well Drained Coarse-Loamy Upland
*Hydric soil rating:* No

## UbB—Udorthents, borrow area, 0 to 5 percent slopes

**Map Unit Setting**
*National map unit symbol:* 4pgv
*Elevation:* 0 to 150 feet
*Mean annual precipitation:* 42 to 48 inches
*Mean annual air temperature:* 52 to 58 degrees F
*Frost-free period:* 180 to 220 days
*Farmland classification:* Not prime farmland

**Map Unit Composition**

*Udorthents, borrow area, and similar soils:* 75 percent
*Minor components:* 25 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Udorthents, Borrow Area**

**Setting**

*Landform:* Knolls, flats
*Down-slope shape:* Convex, linear
*Across-slope shape:* Convex, linear
*Parent material:* Fluviomarine sediments fluviomarine deposits

**Typical profile**

*AC - 0 to 2 inches:* loam
*C - 2 to 80 inches:* sandy loam

**Properties and qualities**

*Slope:* 0 to 5 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Moderately well drained
*Runoff class:* Very low
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to very high (0.06 to 19.98 in/hr)
*Depth to water table:* About 20 to 40 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Available water supply, 0 to 60 inches:* Moderate (about 7.8 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 2e
*Hydrologic Soil Group:* C
*Hydric soil rating:* No

**Minor Components**

**Udorthents, loamy**

*Percent of map unit:* 10 percent
*Landform:* Broad interstream divides
*Landform position (two-dimensional):* Shoulder
*Landform position (three-dimensional):* Talf
*Down-slope shape:* Linear, convex
*Across-slope shape:* Linear
*Hydric soil rating:* No

**Askecksy, drained**

*Percent of map unit:* 5 percent
*Landform:* Swales, depressions, flats
*Landform position (three-dimensional):* Talf
*Down-slope shape:* Concave, linear
*Across-slope shape:* Linear, concave
*Ecological site:* F153DY130MD - Sandy Coastal Plain Swamp
*Hydric soil rating:* Yes

**Klej**

*Percent of map unit:* 5 percent

*Landform:* Depressions, flats
*Down-slope shape:* Concave, linear
*Across-slope shape:* Concave, linear
*Ecological site:* F153DY150NJ - Moist Sandy Upland
*Hydric soil rating:* No

**Water**

*Percent of map unit:* 5 percent
*Hydric soil rating:* No

## UoB—Unicorn silt loam, 2 to 5 percent slopes

**Map Unit Setting**

*National map unit symbol:* 4ph2
*Elevation:* 10 to 130 feet
*Mean annual precipitation:* 42 to 48 inches
*Mean annual air temperature:* 52 to 58 degrees F
*Frost-free period:* 180 to 220 days
*Farmland classification:* All areas are prime farmland

**Map Unit Composition**

*Unicorn and similar soils:* 70 percent
*Minor components:* 30 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Unicorn**

**Setting**

*Landform:* Knolls, terraces, flats
*Landform position (three-dimensional):* Dip, rise, talf
*Down-slope shape:* Convex, linear
*Across-slope shape:* Convex, linear
*Parent material:* Loamy eolian deposits over fluviomarine sediments

**Typical profile**

*Ap - 0 to 11 inches:* silt loam
*Bt - 11 to 24 inches:* loam
*2Bt - 24 to 35 inches:* sandy loam
*2C - 35 to 51 inches:* loamy sand
*3C,4C - 51 to 80 inches:* stratified loamy sand to silt loam

**Properties and qualities**

*Slope:* 2 to 5 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Well drained
*Runoff class:* Low
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to high (0.06 to 1.98 in/hr)
*Depth to water table:* About 40 to 72 inches
*Frequency of flooding:* None
*Frequency of ponding:* None

*Available water supply, 0 to 60 inches:* Moderate (about 8.9 inches)

**Interpretive groups**

*Land capability classification (irrigated):* 2e
*Land capability classification (nonirrigated):* 2e
*Hydrologic Soil Group:* C
*Ecological site:* F153DY160NJ - Well Drained Coarse-Loamy Upland
*Hydric soil rating:* No

**Minor Components**

**Pineyneck**

*Percent of map unit:* 10 percent
*Landform:* Terraces, swales, flats
*Landform position (three-dimensional):* Dip, rise, talf
*Down-slope shape:* Linear, concave
*Across-slope shape:* Linear
*Ecological site:* F149AY130NJ - Moist Loamy Upland
*Hydric soil rating:* No

**Nassawango**

*Percent of map unit:* 5 percent
*Landform:* Terraces, flats
*Landform position (three-dimensional):* Rise
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Ecological site:* F153CY030MD - Well Drained Loess Upland
*Hydric soil rating:* No

**Mattapex**

*Percent of map unit:* 5 percent
*Landform:* Flats, swales, depressions
*Landform position (three-dimensional):* Rise
*Down-slope shape:* Linear, concave
*Across-slope shape:* Linear, concave
*Ecological site:* F153CY020MD - Moist Loess Upland
*Hydric soil rating:* No

**Hammonton**

*Percent of map unit:* 5 percent
*Landform:* Drainageways, depressions, flats
*Down-slope shape:* Concave, linear
*Across-slope shape:* Concave, linear
*Ecological site:* F149AY130NJ - Moist Loamy Upland
*Hydric soil rating:* No

**Greenwich**

*Percent of map unit:* 5 percent
*Landform:* Knolls, terraces, flats
*Landform position (three-dimensional):* Dip, rise, talf
*Down-slope shape:* Convex, linear
*Across-slope shape:* Convex, linear
*Ecological site:* F153DY160NJ - Well Drained Coarse-Loamy Upland
*Hydric soil rating:* No

## UpB—Urban land

**Map Unit Setting**

*National map unit symbol:* 4ph3
*Elevation:* 0 to 300 feet
*Mean annual precipitation:* 42 to 48 inches
*Mean annual air temperature:* 52 to 58 degrees F
*Frost-free period:* 180 to 220 days
*Farmland classification:* Not prime farmland

**Map Unit Composition**

*Urban land:* 90 percent
*Minor components:* 10 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Urban Land**

**Setting**

*Landform:* Flats
*Down-slope shape:* Linear
*Across-slope shape:* Linear

**Minor Components**

**Udorthents, loamy**

*Percent of map unit:* 10 percent
*Landform:* Broad interstream divides
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Hydric soil rating:* No

## UsB—Unicorn-Sassafras loams, 2 to 5 percent slopes

**Map Unit Setting**

*National map unit symbol:* 4ph5
*Elevation:* 10 to 130 feet
*Mean annual precipitation:* 42 to 48 inches
*Mean annual air temperature:* 52 to 58 degrees F
*Frost-free period:* 180 to 220 days
*Farmland classification:* All areas are prime farmland

**Map Unit Composition**

*Unicorn and similar soils:* 40 percent
*Sassafras and similar soils:* 35 percent

*Minor components:* 25 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Unicorn

#### Setting

*Landform:* Terraces, flats, knolls
*Landform position (three-dimensional):* Dip, rise, talf
*Down-slope shape:* Linear, convex
*Across-slope shape:* Linear, convex
*Parent material:* Loamy eolian deposits over fluviomarine sediments

#### Typical profile

*Ap - 0 to 11 inches:* loam
*Bt - 11 to 24 inches:* loam
*2Bt - 24 to 35 inches:* sandy loam
*2C - 35 to 51 inches:* loamy sand
*3C,4C - 51 to 80 inches:* stratified loamy sand to silt loam

#### Properties and qualities

*Slope:* 2 to 5 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Well drained
*Runoff class:* Low
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to high (0.06 to 1.98 in/hr)
*Depth to water table:* About 40 to 72 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Available water supply, 0 to 60 inches:* High (about 9.2 inches)

#### Interpretive groups

*Land capability classification (irrigated):* 2e
*Land capability classification (nonirrigated):* 2e
*Hydrologic Soil Group:* C
*Ecological site:* F153DY160NJ - Well Drained Coarse-Loamy Upland
*Hydric soil rating:* No

### Description of Sassafras

#### Setting

*Landform:* Flats, fluviomarine terraces, knolls
*Landform position (three-dimensional):* Riser
*Down-slope shape:* Linear, convex
*Across-slope shape:* Linear, convex

#### Typical profile

*Ap - 0 to 9 inches:* loam
*E - 9 to 15 inches:* loam
*Bt - 15 to 30 inches:* loam
*BC - 30 to 37 inches:* sandy loam
*C - 37 to 80 inches:* loamy sand

#### Properties and qualities

*Slope:* 2 to 5 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Well drained
*Runoff class:* Low

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (0.57 to 1.98 in/hr)
*Depth to water table:* More than 80 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Available water supply, 0 to 60 inches:* Moderate (about 8.3 inches)

**Interpretive groups**

*Land capability classification (irrigated):* 2e
*Land capability classification (nonirrigated):* 2e
*Hydrologic Soil Group:* B
*Ecological site:* F149AY170MD - Well Drained Fine-Loamy Upland
*Hydric soil rating:* No

## Minor Components

### Pineyneck

*Percent of map unit:* 5 percent
*Landform:* Swales, terraces, flats
*Landform position (three-dimensional):* Dip, rise, talf
*Down-slope shape:* Concave, linear
*Across-slope shape:* Linear
*Ecological site:* F149AY130NJ - Moist Loamy Upland
*Hydric soil rating:* No

### Mattapex

*Percent of map unit:* 5 percent
*Landform:* Flats, swales, depressions
*Landform position (three-dimensional):* Rise
*Down-slope shape:* Linear, concave
*Across-slope shape:* Linear, concave
*Ecological site:* F153CY020MD - Moist Loess Upland
*Hydric soil rating:* No

### Ingleside

*Percent of map unit:* 5 percent
*Landform:* Fluviomarine terraces, depressions, flats
*Down-slope shape:* Linear, concave
*Across-slope shape:* Linear, concave
*Ecological site:* F153DY160NJ - Well Drained Coarse-Loamy Upland
*Hydric soil rating:* No

### Downer

*Percent of map unit:* 5 percent
*Landform:* Fluviomarine terraces, knolls, flats
*Down-slope shape:* Linear, convex
*Across-slope shape:* Linear, convex
*Ecological site:* F153DY160NJ - Well Drained Coarse-Loamy Upland
*Hydric soil rating:* No

### Nassawango

*Percent of map unit:* 5 percent
*Landform:* Terraces, flats
*Landform position (three-dimensional):* Rise
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Ecological site:* F153CY030MD - Well Drained Loess Upland

*Hydric soil rating:* No

## UsC—Unicorn-Sassafras loams, 5 to 10 percent slopes

### Map Unit Setting

*National map unit symbol:* 4ph6
*Elevation:* 10 to 130 feet
*Mean annual precipitation:* 42 to 48 inches
*Mean annual air temperature:* 52 to 58 degrees F
*Frost-free period:* 180 to 220 days
*Farmland classification:* Farmland of statewide importance

### Map Unit Composition

*Unicorn and similar soils:* 40 percent
*Sassafras and similar soils:* 35 percent
*Minor components:* 25 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Unicorn

#### Setting

*Landform:* Knolls, terraces, low hills
*Landform position (three-dimensional):* Side slope
*Down-slope shape:* Convex, linear
*Across-slope shape:* Convex, linear
*Parent material:* Loamy eolian deposits over fluviomarine sediments

#### Typical profile

*Ap - 0 to 11 inches:* loam
*Bt - 11 to 24 inches:* loam
*2Bt - 24 to 35 inches:* sandy loam
*2C - 35 to 51 inches:* loamy sand
*3C,4C - 51 to 80 inches:* stratified loamy sand to silt loam

#### Properties and qualities

*Slope:* 5 to 10 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Well drained
*Runoff class:* Low
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to high (0.06 to 1.98 in/hr)
*Depth to water table:* About 40 to 72 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Available water supply, 0 to 60 inches:* High (about 9.2 inches)

#### Interpretive groups

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 3e
*Hydrologic Soil Group:* C

*Ecological site:* F153DY160NJ - Well Drained Coarse-Loamy Upland
*Hydric soil rating:* No

### Description of Sassafras

#### Setting

*Landform:* Low hills, fluviomarine terraces, knolls
*Landform position (three-dimensional):* Side slope, riser
*Down-slope shape:* Convex, linear
*Across-slope shape:* Convex, linear

#### Typical profile

*Ap - 0 to 9 inches:* loam
*E - 9 to 15 inches:* loam
*Bt - 15 to 30 inches:* loam
*BC - 30 to 37 inches:* sandy loam
*C - 37 to 80 inches:* loamy sand

#### Properties and qualities

*Slope:* 5 to 10 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Well drained
*Runoff class:* Low
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (0.57 to 1.98 in/hr)
*Depth to water table:* More than 80 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Available water supply, 0 to 60 inches:* Moderate (about 8.3 inches)

#### Interpretive groups

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 3e
*Hydrologic Soil Group:* B
*Ecological site:* F149AY170MD - Well Drained Fine-Loamy Upland
*Hydric soil rating:* No

### Minor Components

#### Pineyneck

*Percent of map unit:* 5 percent
*Landform:* Flats, swales, terraces
*Landform position (three-dimensional):* Dip, rise, talf
*Down-slope shape:* Linear, concave
*Across-slope shape:* Linear
*Ecological site:* F149AY130NJ - Moist Loamy Upland
*Hydric soil rating:* No

#### Ingleside

*Percent of map unit:* 5 percent
*Landform:* Fluviomarine terraces, knolls
*Landform position (two-dimensional):* Backslope, footslope
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Ecological site:* F153DY160NJ - Well Drained Coarse-Loamy Upland
*Hydric soil rating:* No

**Downer**

*Percent of map unit:* 5 percent
*Landform:* Knolls, flats, fluviomarine terraces
*Down-slope shape:* Convex, linear
*Across-slope shape:* Convex, linear
*Ecological site:* F153DY160NJ - Well Drained Coarse-Loamy Upland
*Hydric soil rating:* No

**Mattapex**

*Percent of map unit:* 5 percent
*Landform:* Swales, depressions
*Down-slope shape:* Concave
*Across-slope shape:* Linear, concave
*Ecological site:* F153CY020MD - Moist Loess Upland
*Hydric soil rating:* No

**Nassawango**

*Percent of map unit:* 5 percent
*Landform:* Terraces, flats
*Landform position (three-dimensional):* Rise
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Ecological site:* F153CY030MD - Well Drained Loess Upland
*Hydric soil rating:* No

## W—Water

**Map Unit Setting**

*National map unit symbol:* 4ph7
*Mean annual precipitation:* 42 to 48 inches
*Mean annual air temperature:* 52 to 58 degrees F
*Frost-free period:* 180 to 220 days
*Farmland classification:* Not prime farmland

**Map Unit Composition**

*Water:* 100 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

## WhA—Whitemarsh silt loam, 0 to 2 percent slopes

**Map Unit Setting**

*National map unit symbol:* 4phd
*Elevation:* 0 to 120 feet
*Mean annual precipitation:* 42 to 48 inches
*Mean annual air temperature:* 52 to 58 degrees F

*Frost-free period:* 180 to 220 days
*Farmland classification:* Not prime farmland

**Map Unit Composition**

*Whitemarsh, drained, and similar soils:* 45 percent
*Whitemarsh, undrained, and similar soils:* 30 percent
*Minor components:* 25 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Whitemarsh, Drained**

**Setting**

*Landform:* Swales, flats, drainageways, depressions
*Landform position (three-dimensional):* Dip, talf
*Down-slope shape:* Concave, linear
*Across-slope shape:* Linear, concave
*Parent material:* Silty eolian deposits over fluviomarine sediments

**Typical profile**

*Ap - 0 to 8 inches:* silt loam
*Eg1,Eg2 - 8 to 12 inches:* silt loam
*Btg1 - 12 to 24 inches:* silty clay loam
*Btg2,Btg3 - 24 to 55 inches:* silt loam
*BCg - 55 to 62 inches:* silt loam
*2Cg - 62 to 80 inches:* silt loam

**Properties and qualities**

*Slope:* 0 to 2 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Poorly drained
*Runoff class:* Negligible
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.06 to 0.20 in/hr)
*Depth to water table:* About 10 to 20 inches
*Frequency of flooding:* None
*Frequency of ponding:* Rare
*Available water supply, 0 to 60 inches:* High (about 9.7 inches)

**Interpretive groups**

*Land capability classification (irrigated):* 3w
*Land capability classification (nonirrigated):* 3w
*Hydrologic Soil Group:* C/D
*Ecological site:* F149AY090NJ - Coastal Plain Hardwood Swamp
*Hydric soil rating:* Yes

**Description of Whitemarsh, Undrained**

**Setting**

*Landform:* Swales, flats, drainageways, depressions
*Landform position (three-dimensional):* Dip, talf
*Down-slope shape:* Concave, linear
*Across-slope shape:* Linear, concave
*Parent material:* Silty eolian deposits over fluviomarine sediments

**Typical profile**

*Oi,Oe - 0 to 2 inches:* moderately decomposed plant material
*A - 2 to 4 inches:* silt loam

*Eg1,Eg2 - 4 to 12 inches:* silt loam
*Btg1 - 12 to 24 inches:* silty clay loam
*Btg2,Btg3 - 24 to 55 inches:* silt loam
*BCg - 55 to 62 inches:* silt loam
*2Cg - 62 to 80 inches:* silt loam

**Properties and qualities**

*Slope:* 0 to 2 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Poorly drained
*Runoff class:* Negligible
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.06 to 0.20 in/hr)
*Depth to water table:* About 0 to 10 inches
*Frequency of flooding:* None
*Frequency of ponding:* Occasional
*Available water supply, 0 to 60 inches:* High (about 10.2 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 5w
*Hydrologic Soil Group:* C/D
*Ecological site:* F149AY090NJ - Coastal Plain Hardwood Swamp
*Hydric soil rating:* Yes

**Minor Components**

**Crosiadore**

*Percent of map unit:* 10 percent
*Landform:* Depressions, flats
*Landform position (three-dimensional):* Rise
*Down-slope shape:* Concave, linear
*Across-slope shape:* Concave, linear
*Ecological site:* F153CY020MD - Moist Loess Upland
*Hydric soil rating:* No

**Kentuck, undrained**

*Percent of map unit:* 5 percent
*Landform:* Swales, depressions
*Down-slope shape:* Concave
*Across-slope shape:* Linear, concave
*Ecological site:* F149AY090NJ - Coastal Plain Hardwood Swamp
*Hydric soil rating:* Yes

**Mattapex**

*Percent of map unit:* 5 percent
*Landform:* Swales, flats
*Landform position (three-dimensional):* Rise
*Down-slope shape:* Concave, linear
*Across-slope shape:* Linear
*Ecological site:* F153CY020MD - Moist Loess Upland
*Hydric soil rating:* No

**Othello, drained**

*Percent of map unit:* 5 percent
*Landform:* Swales, depressions, flats
*Landform position (three-dimensional):* Dip, talf

*Down-slope shape:* Concave, linear
*Across-slope shape:* Linear, concave
*Ecological site:* F149AY090NJ - Coastal Plain Hardwood Swamp
*Hydric soil rating:* Yes

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# APPENDIX B: NATURAL RESOURCE MAP SET (NORTHERN ALIGNMENTS)

RITCHIE HWY

BALTIMORE ANNAPOLIS BLVD

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BALTIMORE ANNAPOLIS BLVD

Note: The lines for build alternatives limits of disturbance are illustrated as overlapping in many locations

- Sensitive Species Project Review Area (SSPRA)
- Forest Interior Dwelling Species (FIDS) Habitat
- Submerged Aquatic Vegetation (SAV)
- Natural Oyster Bars
- 100-Year Floodplain
- Waterfowl Concentration and Staging Areas

Farmland Soils (Outside of Census-Designated Urban Areas)

- Prime Farmland Soil
- Farmland Soils of Statewide Importance

Critical Areas

- Intensely Developed Area (IDA)
- Limited Developed Area (LDA)
- Resource Conservation Area (RCA)
- 100' Critical Area Buffer

Wetlands

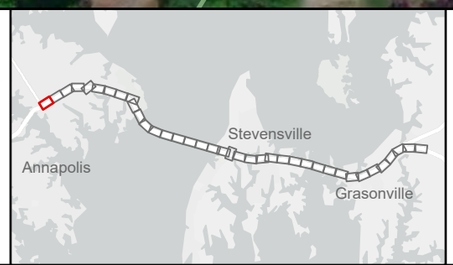
- NWI-Mapped Wetlands
- Field-Delineated Wetlands
- Field-Delineated Waterways

Limit of Disturbance

- Alternative B
- Alternative D
- Alternative F

Shared Use Path

- Alternative B&D
- Alternative F




1" = 200 Feet

0 50 100 200 300 400 Feet

Maryland Transportation Authority

Chesapeake BAY CROSSING STUDY TIER 2 NEPA

# Natural Resource Map
# Northern Alignments
# Build Alternatives B,D and F




Sensitive Species Project Review Area (SSPRA)
Forest Interior Dwelling Species (FIDS) Habitat
Submerged Aquatic Vegetation (SAV)
Natural Oyster Bars
100-Year Floodplain
Waterfowl Concentration and Staging Areas

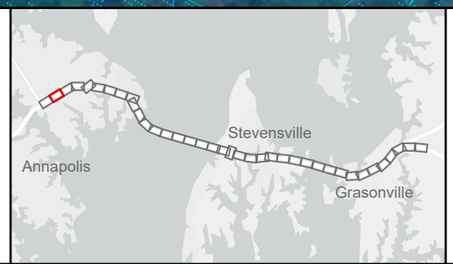
Farmland Soils (Outside of Census-Designated Urban Areas)
Prime Farmland Soil
Farmland Soils of Statewide Importance

Critical Areas
Intensely Developed Area (IDA)
Limited Developed Area (LDA)
Resource Conservation Area (RCA)
100' Critical Area Buffer

Wetlands
NWI-Mapped Wetlands
Field-Delineated Wetlands
Field-Delineated Waterways

Limit of Disturbance
Alternative B
Alternative D
Alternative F

Shared Use Path
Alternative B&D
Alternative F




1" = 200 Feet

0 50 100 200 300 400 Feet

MDTA
Maryland Transportation Authority

Chesapeake BAY CROSSING STUDY TIER 2 NEPA

# Natural Resource Map
# Northern Alignments
# Build Alternatives B,D and F

OLD MILL BOTTOM RD

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FERGUSON RD

OLD MILL BOTTOM RD S

Whitehall Creek

- Sensitive Species Project Review Area (SSPRA)
- Forest Interior Dwelling Species (FIDS) Habitat
- Submerged Aquatic Vegetation (SAV)
- Natural Oyster Bars
- 100-Year Floodplain
- Waterfowl Concentration and Staging Areas

Farmland Soils (Outside of Census-Designated Urban Areas)

- Prime Farmland Soil
- Farmland Soils of Statewide Importance

Critical Areas

- Intensely Developed Area (IDA)
- Limited Developed Area (LDA)
- Resource Conservation Area (RCA)
- 100' Critical Area Buffer

Wetlands

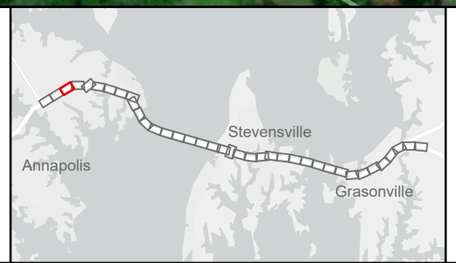
- NWI-Mapped Wetlands
- Field-Delineated Wetlands
- Field-Delineated Waterways

Limit of Disturbance

- Alternative B
- Alternative D
- Alternative F

Shared Use Path

- Alternative B&D
- Alternative F




1" = 200 Feet

0 50 100 200 300 400 Feet

MDTA Maryland Transportation Authority

Chesapeake BAY CROSSING STUDY TIER 2 NEPA

# Natural Resource Map
# Northern Alignments
# Build Alternatives B,D and F

MIDDLETOWN RD

Whitehall Creek

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BUSCHS FRONTAGE RD

Whitehall Creek

ll Creek

Sensitive Species Project Review Area (SSPRA)
Forest Interior Dwelling Species (FIDS) Habitat
Submerged Aquatic Vegetation (SAV)
Natural Oyster Bars
100-Year Floodplain
Waterfowl Concentration and Staging Areas

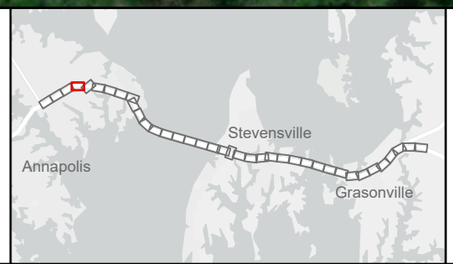
Farmland Soils (Outside of Census-Designated Urban Areas)
Prime Farmland Soil
Farmland Soils of Statewide Importance

Critical Areas
Intensely Developed Area (IDA)
Limited Developed Area (LDA)
Resource Conservation Area (RCA)
100' Critical Area Buffer

Wetlands
NWI-Mapped Wetlands
Field-Delineated Wetlands
Field-Delineated Waterways

Limit of Disturbance
Alternative B
Alternative D
Alternative F

Shared Use Path
Alternative B&D
Alternative F




N

1" = 200 Feet

0 50 100 200 300 400 Feet

MDTA Maryland Transportation Authority

Chesapeake BAY CROSSING STUDY TIER 2 NEPA

# Natural Resource Map
# Northern Alignments
# Build Alternatives B,D and F

BROADNECK RD

CAPE SAINT CLAIRE RD

COLLEGE PKWY

BUSCHS FRONTAGE RD

Whitehall Creek

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301

SAINT MARGARETS RD

HOLLY DR N

LDA

RCA

WHITEHALL RD

IDA

E COLLEGE PKWY

Sensitive Species Project Review Area (SSPRA)
Forest Interior Dwelling Species (FIDS) Habitat
Submerged Aquatic Vegetation (SAV)
Natural Oyster Bars
100-Year Floodplain
Waterfowl Concentration and Staging Areas

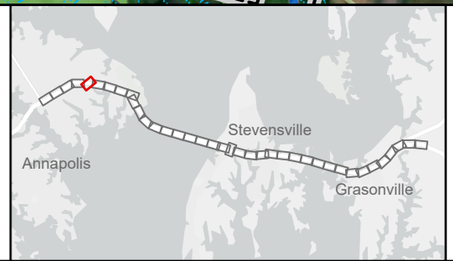
Farmland Soils (Outside of Census-Designated Urban Areas)
Prime Farmland Soil
Farmland Soils of Statewide Importance

Critical Areas
Intensely Developed Area (IDA)
Limited Developed Area (LDA)
Resource Conservation Area (RCA)
100' Critical Area Buffer

Wetlands
NWI-Mapped Wetlands
Field-Delineated Wetlands
Field-Delineated Waterways

Limit of Disturbance
Alternative B
Alternative D
Alternative F

Shared Use Path
Alternative B&D
Alternative F




1" = 200 Feet

0 50 100 200 300 400 Feet

MDTA Maryland Transportation Authority

Chesapeake BAY CROSSING STUDY TIER 2 NEPA

# Natural Resource Map
# Northern Alignments
# Build Alternatives B,D and F

E COLLEGE PKWY

STACEY LN

REVELL DOWNS DR

LDA

E COLLEGE PKWY

50 301

WHITEHALL RD

WHITEHALL RD

RCA

Sensitive Species Project Review Area (SSPRA)
Forest Interior Dwelling Species (FIDS) Habitat
Submerged Aquatic Vegetation (SAV)
Natural Oyster Bars
100-Year Floodplain
Waterfowl Concentration and Staging Areas

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MDTA Maryland Transportation Authority

Chesapeake BAY CROSSING STUDY TIER 2 NEPA

# Natural Resource Map
# Northern Alignments
# Build Alternatives B,D and F

Bay Head Park

BAY HEAD RD

YORKTOWN RD

E COLLEGE PKWY

50 301

Western Limit of Alternative B

RIDOUT LN

RCA

Sensitive Species Project Review Area (SSPRA)
Forest Interior Dwelling Species (FIDS) Habitat
Submerged Aquatic Vegetation (SAV)
Natural Oyster Bars
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MDTA Maryland Transportation Authority

Chesapeake BAY CROSSING STUDY TIER 2 NEPA

# Natural Resource Map
## Northern Alignments
## Build Alternatives B,D and F




Sensitive Species Project Review Area (SSPRA)
Forest Interior Dwelling Species (FIDS) Habitat
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Natural Oyster Bars
100-Year Floodplain
Waterfowl Concentration and Staging Areas

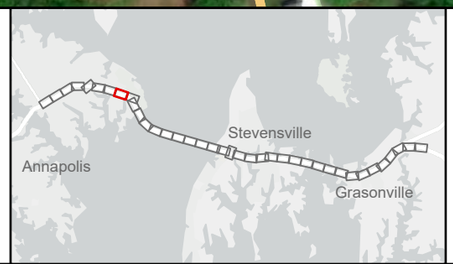
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MDTA Maryland Transportation Authority

Chesapeake BAY CROSSING STUDY TIER 2 NEPA

# Natural Resource Map
# Northern Alignments
# Build Alternatives B,D and F

Limit of Disturbance extends beyond map limits - no resources are located in this area

RCA

MDNR Office and Police Station

RCA

E COLLEGE PKWY

Sandy Point State Park

50

301

OCEANIC DR

SKIDMORE RD

LDA

CARRS RD

LDA

Sensitive Species Project Review Area (SSPRA)
Forest Interior Dwelling Species (FIDS) Habitat
Submerged Aquatic Vegetation (SAV)
Natural Oyster Bars
100-Year Floodplain
Waterfowl Concentration and Staging Areas

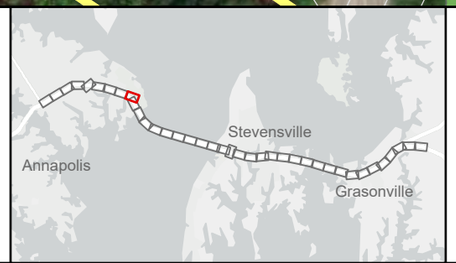
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MDTA
Maryland Transportation Authority

Chesapeake BAY CROSSING STUDY TIER 2 NEPA

# Natural Resource Map
# Northern Alignments
# Build Alternatives B,D and F

RCA

Mezick Pond

E-ZPass Stop-In Center

OCEANIC DR

50 301

OLD FERRY SHIP RD

IDA

LDA

MDTA Police Station

OCEANIC DR

Westinghouse Bay

SKIDMORE RD

RCA

RCA

RCA

Sensitive Species Project Review Area (SSPRA)
Forest Interior Dwelling Species (FIDS) Habitat
Submerged Aquatic Vegetation (SAV)
Natural Oyster Bars
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Waterfowl Concentration and Staging Areas

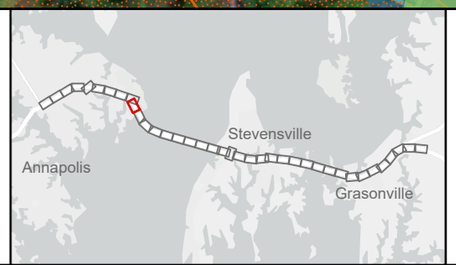
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MDTA Maryland Transportation Authority

Chesapeake BAY CROSSING STUDY TIER 2 NEPA

# Natural Resource Map
# Northern Alignments
# Build Alternatives B,D and F

Chesapeake Bay

Mezick Pond

Sandy Point State Park

RCA

WESTBOUND

50 301

WILLIAM PRESTON LANE JR. MEMORIAL (BAY) BRIDGE

50 301

EASTBOUND

50 301

OLD FERRY SHIP RD

MDTA Maintenance Facility

IDA

Westinghouse Bay

Sensitive Species Project Review Area (SSPRA)
Forest Interior Dwelling Species (FIDS) Habitat
Submerged Aquatic Vegetation (SAV)
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100-Year Floodplain
Waterfowl Concentration and Staging Areas

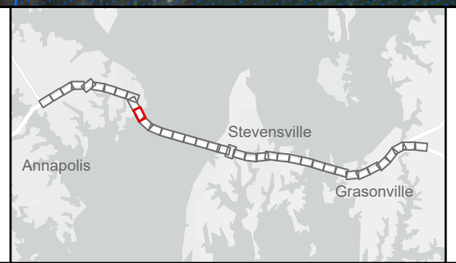
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MDTA Maryland Transportation Authority

Chesapeake BAY CROSSING STUDY TIER 2 NEPA

# Natural Resource Map
# Northern Alignments
# Build Alternatives B,D and F




- Sensitive Species Project Review Area (SSPRA)
- Forest Interior Dwelling Species (FIDS) Habitat
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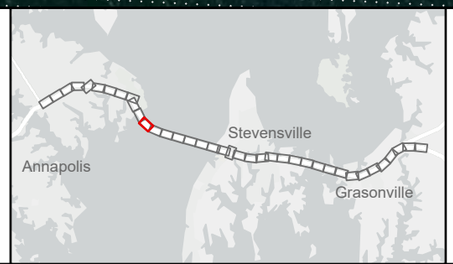
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Limit of Disturbance

- Alternative B
- Alternative D
- Alternative F

Shared Use Path

- Alternative B&D
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MDTA Maryland Transportation Authority

Chesapeake BAY CROSSING STUDY TIER 2 NEPA

# Natural Resource Map
# Northern Alignments
# Build Alternatives B,D and F




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MDTA Maryland Transportation Authority

Chesapeake BAY CROSSING STUDY TIER 2 NEPA

# Natural Resource Map
# Northern Alignments
# Build Alternatives B,D and F

WESTBOUND

50 301

WILLIAM PRESTON LANE JR. MEMORIAL (BAY) BRIDGE

EASTBOUND

50 301

Chesapeake Bay

Sensitive Species Project Review Area (SSPRA)
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N

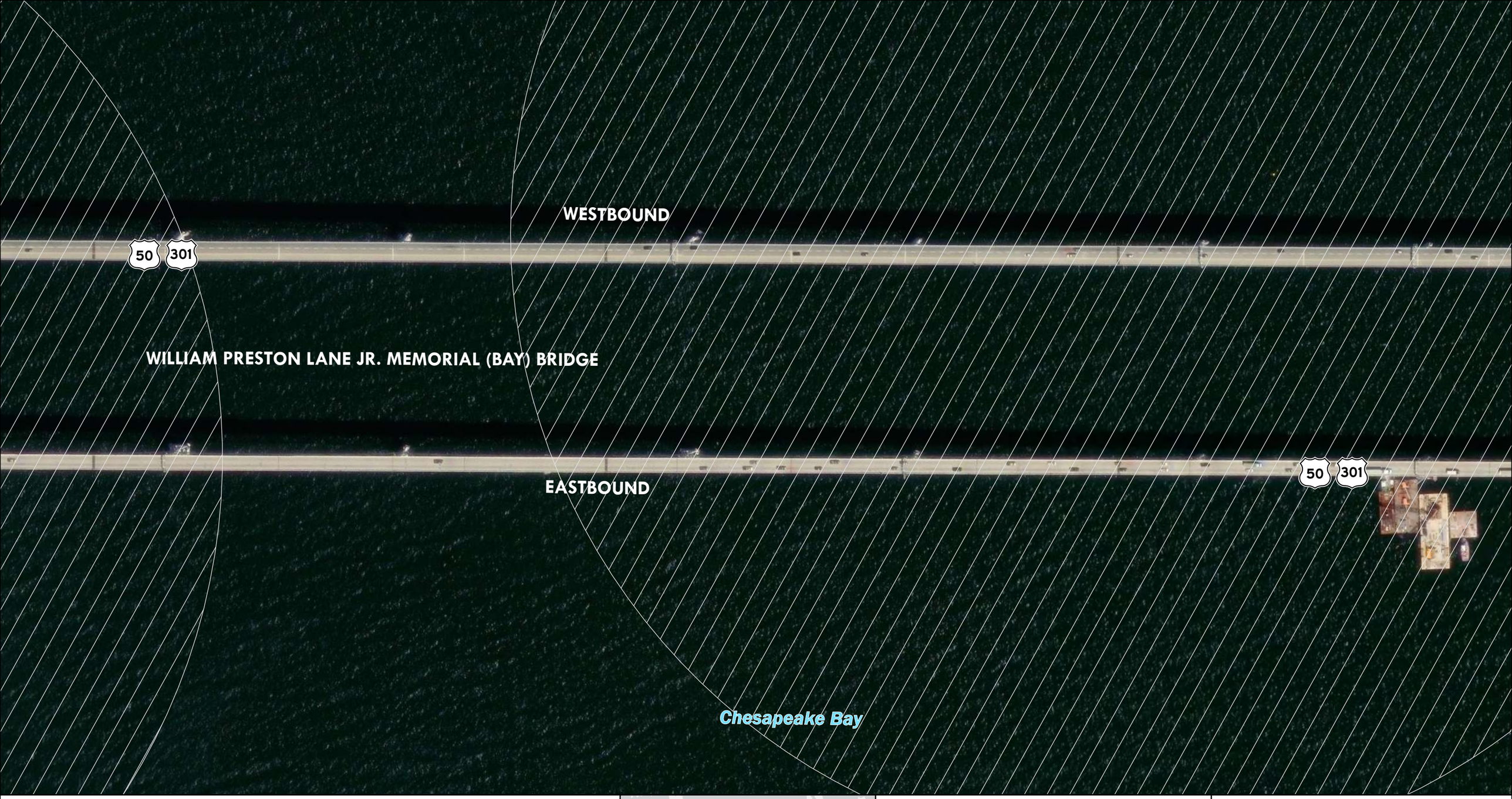
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MDTA
Maryland Transportation Authority

Chesapeake BAY CROSSING STUDY TIER 2 NEPA

# Natural Resource Map
# Northern Alignments
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MDTA
Maryland Transportation Authority

Chesapeake BAY CROSSING STUDY
TIER 2 NEPA

# Natural Resource Map
# Northern Alignments
# Build Alternatives B,D and F

WESTBOUND

50 301

WILLIAM PRESTON LANE JR. MEMORIAL (BAY) BRIDGE

EASTBOUND

50 301

Chesapeake Bay

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MDTA
Maryland Transportation Authority

Chesapeake BAY CROSSING STUDY TIER 2 NEPA

# Natural Resource Map
# Northern Alignments
# Build Alternatives B,D and F

WESTBOUND

50 301

WILLIAM PRESTON LANE JR. MEMORIAL (BAY) BRIDGE

EASTBOUND

50 301

Chesapeake Bay

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MDTA
Maryland Transportation Authority

Chesapeake BAY CROSSING STUDY TIER 2 NEPA

# Natural Resource Map
# Northern Alignments
# Build Alternatives B,D and F

RCA

Terrapin Nature Park

50 301

IDA

50 301

50 301

PIER ONE RD

Chesapeake Bay

Bay Bridge Marina

Sensitive Species Project Review Area (SSPRA)
Forest Interior Dwelling Species (FIDS) Habitat
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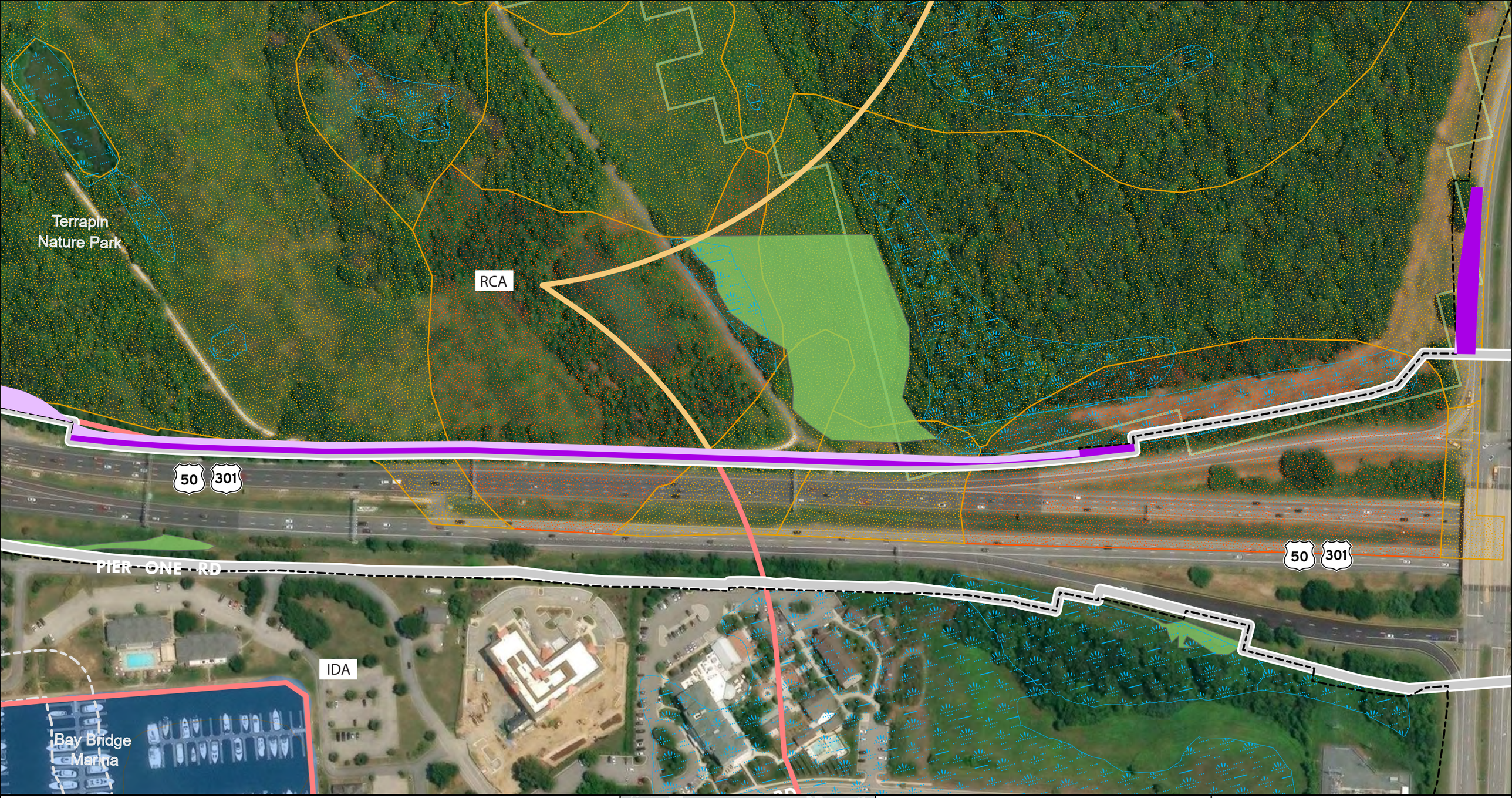
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MDTA Maryland Transportation Authority

Chesapeake BAY CROSSING STUDY TIER 2 NEPA

# Natural Resource Map
# Northern Alignments
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Sensitive Species Project Review Area (SSPRA)
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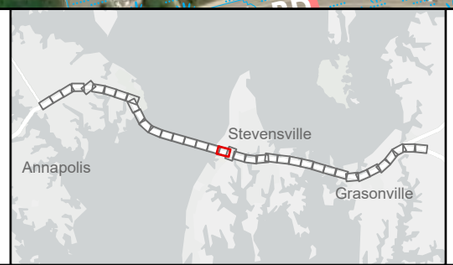
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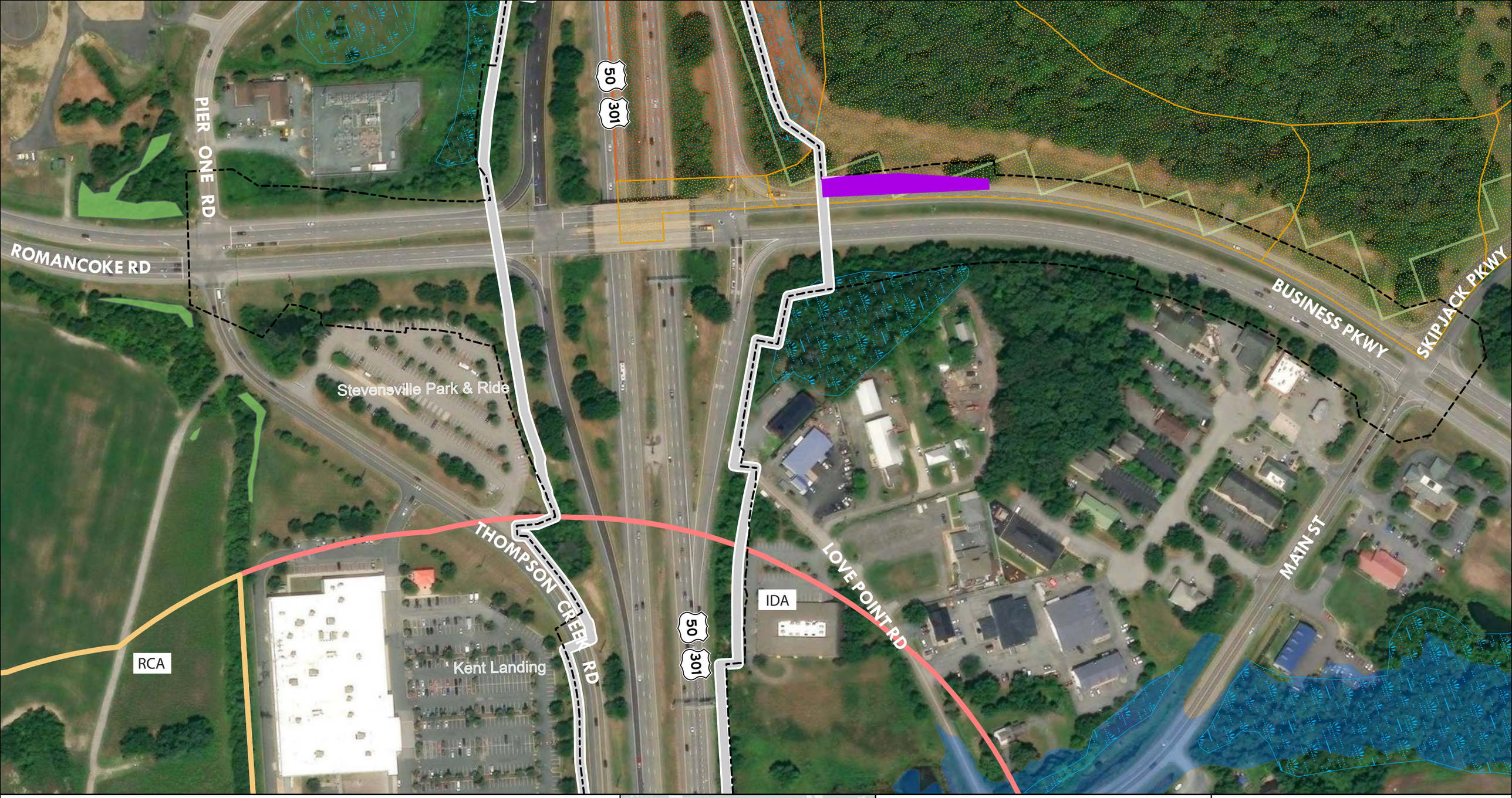

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MDTA
Maryland Transportation Authority

Chesapeake BAY CROSSING STUDY
TIER 2 NEPA

# Natural Resource Map
# Northern Alignments
# Build Alternatives B,D and F




Sensitive Species Project Review Area (SSPRA)
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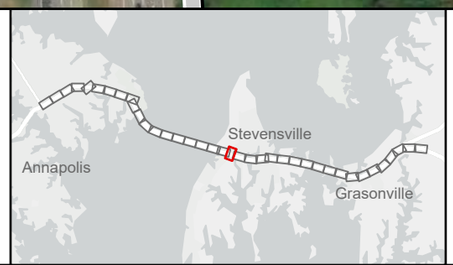
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MDTA
Maryland Transportation Authority

Chesapeake BAY CROSSING STUDY
TIER 2 NEPA

# Natural Resource Map
# Northern Alignments
# Build Alternatives B,D and F

MAIN ST

LDA

DUKE ST

ISLAND DR

MAIN ST

IDA

Stevensville
Middle School

50 301

THOMPSON CREEK RD

IDA

Thompson Creek
Shopping Center

Thompson Creek

THOMPSON CREEK RD

THOMPSON CREEK MALL

Sensitive Species Project Review Area (SSPRA)
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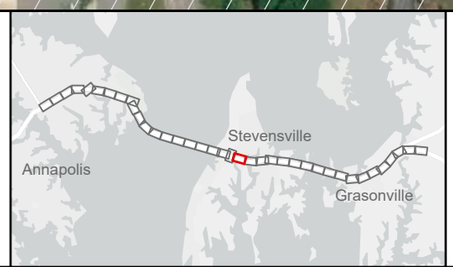
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MDTA
Maryland Transportation Authority

Chesapeake BAY CROSSING STUDY
TIER 2 NEPA

# Natural Resource Map
# Northern Alignments
# Build Alternatives B,D and F

MAIN ST

RCA

LDA

IDA

Stevensville Cemetery

RCA

IDA

50

301

SHERMAN DR

Cox Creek

LDA

Sensitive Species Project Review Area (SSPRA)
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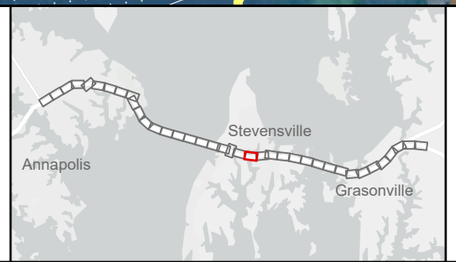
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MDTA
Maryland Transportation Authority

Chesapeake BAY CROSSING STUDY
TIER 2 NEPA

# Natural Resource Map
# Northern Alignments
# Build Alternatives B,D and F




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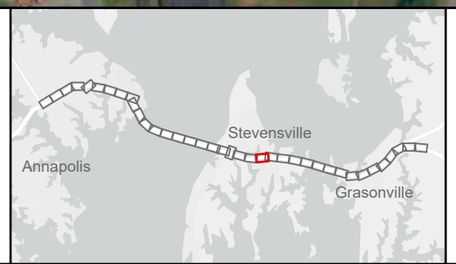
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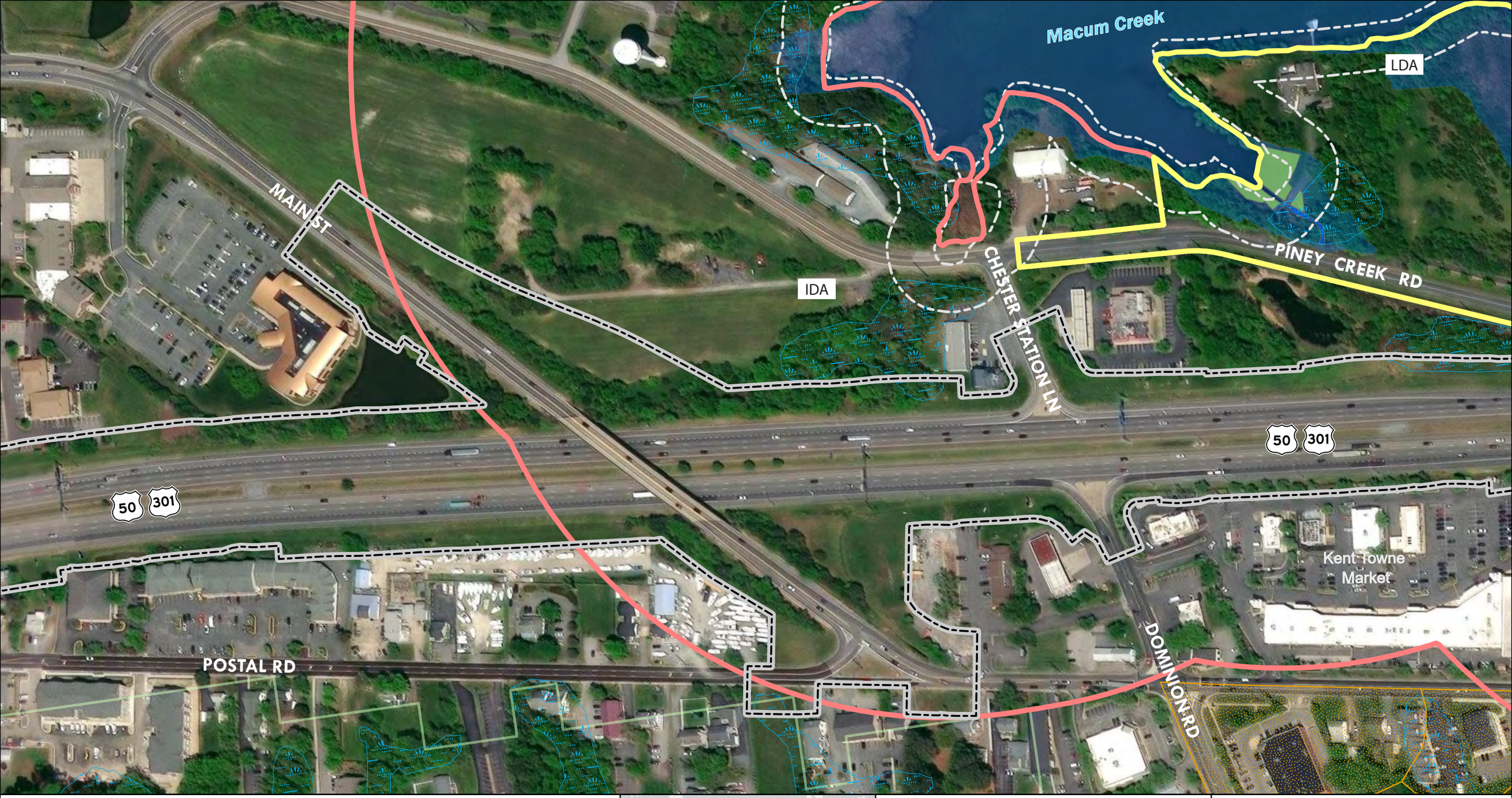

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MDTA
Maryland
Transportation
Authority

Chesapeake BAY CROSSING STUDY TIER 2 NEPA

# Natural Resource Map
# Northern Alignments
# Build Alternatives B,D and F




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Waterfowl Concentration and Staging Areas

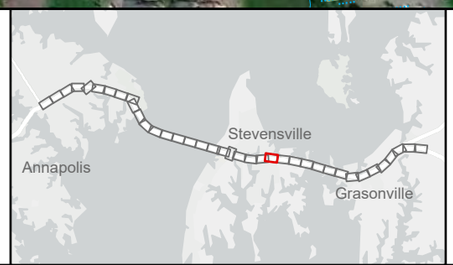
Farmland Soils (Outside of Census-Designated Urban Areas)
Prime Farmland Soil
Farmland Soils of Statewide Importance

Critical Areas
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Limited Developed Area (LDA)
Resource Conservation Area (RCA)
100' Critical Area Buffer

Wetlands
NWI-Mapped Wetlands
Field-Delineated Wetlands
Field-Delineated Waterways

Limit of Disturbance
Alternative B
Alternative D
Alternative F

Shared Use Path
Alternative B&D
Alternative F




1" = 200 Feet

0 50 100 200 300 400 Feet

MDTA Maryland Transportation Authority

Chesapeake BAY CROSSING STUDY TIER 2 NEPA

# Natural Resource Map
# Northern Alignments
# Build Alternatives B,D and F

Macum Creek

LDA

IDA

JOHN GIBSON DR

RCA

LDA

PINEY CREEK RD

50 301

50 301

Kent Towne Market

IDA

MAIN ST

S PINEY RD

Sensitive Species Project Review Area (SSPRA)
Forest Interior Dwelling Species (FIDS) Habitat
Submerged Aquatic Vegetation (SAV)
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MDTA Maryland Transportation Authority

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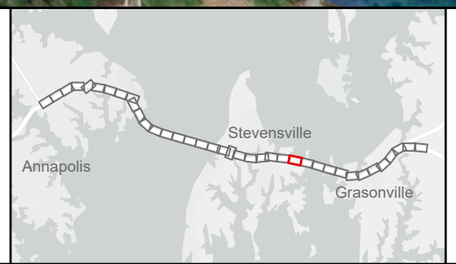
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MDTA Maryland Transportation Authority

Chesapeake BAY CROSSING STUDY TIER 2 NEPA

# Natural Resource Map
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PINEY NARROWS RD

PINEY NARROWS RD

IDA

Kent Narrows

50 301

MAIN ST

WHARF DR

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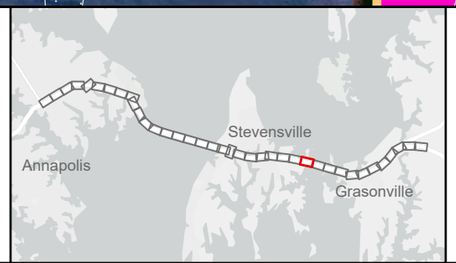
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MDTA Maryland Transportation Authority

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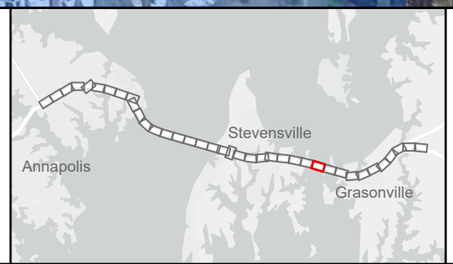
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Chesapeake BAY CROSSING STUDY TIER 2 NEPA

# Natural Resource Map
## Northern Alignments
## Build Alternatives B,D and F

Muddy Creek

RCA

LONG POINT RD

JACKSON CREEK LN

50 301

LDA

MAIN ST

RCA

IDA

RCA

Marshy Creek

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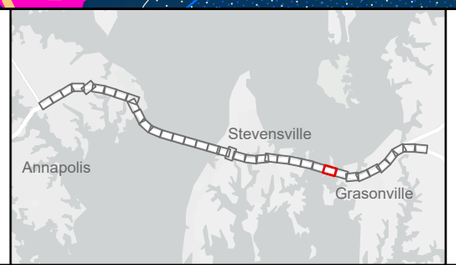
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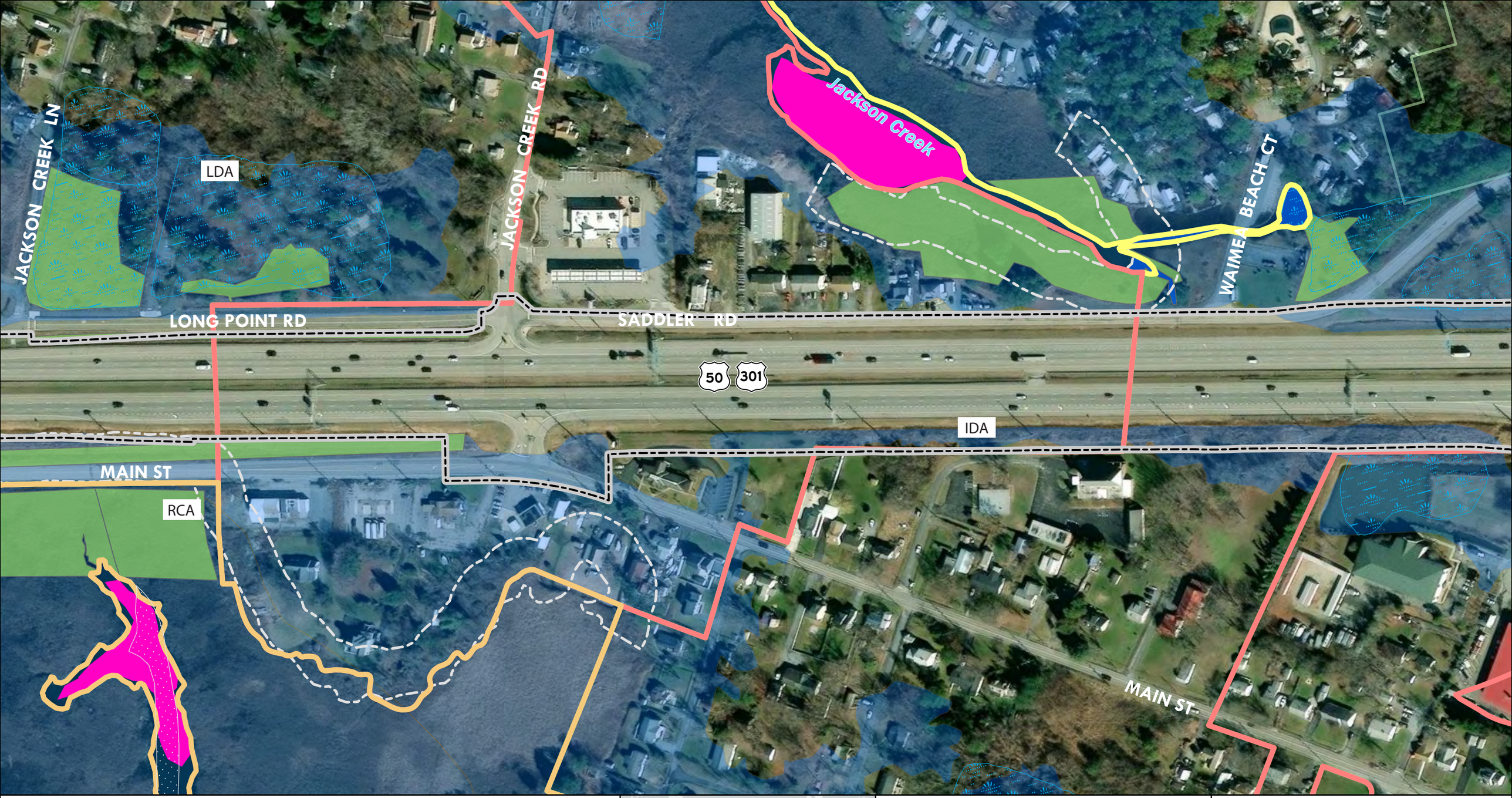

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Chesapeake BAY CROSSING STUDY TIER 2 NEPA

# Natural Resource Map
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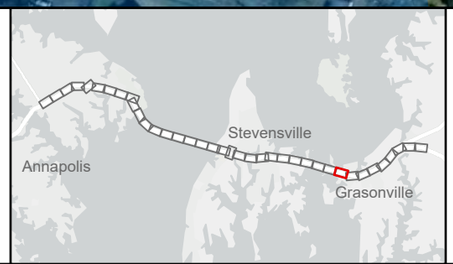
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Chesapeake BAY CROSSING STUDY TIER 2 NEPA

# Natural Resource Map
# Northern Alignments
# Build Alternatives B,D and F

Limit of Disturbance extends beyond map limits - this area includes FIDS and Critical Areas

CHESTER RIVER BEACH RD

LDA

LDA

IDA

IDA

VFW AVE

50 301

PULLMAN CROSSING RD

MAIN ST

Sensitive Species Project Review Area (SSPRA)
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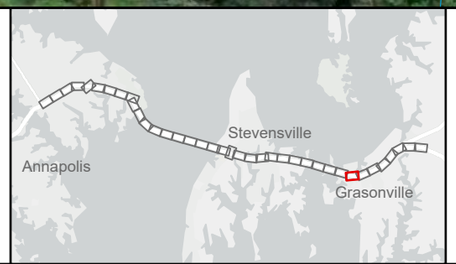
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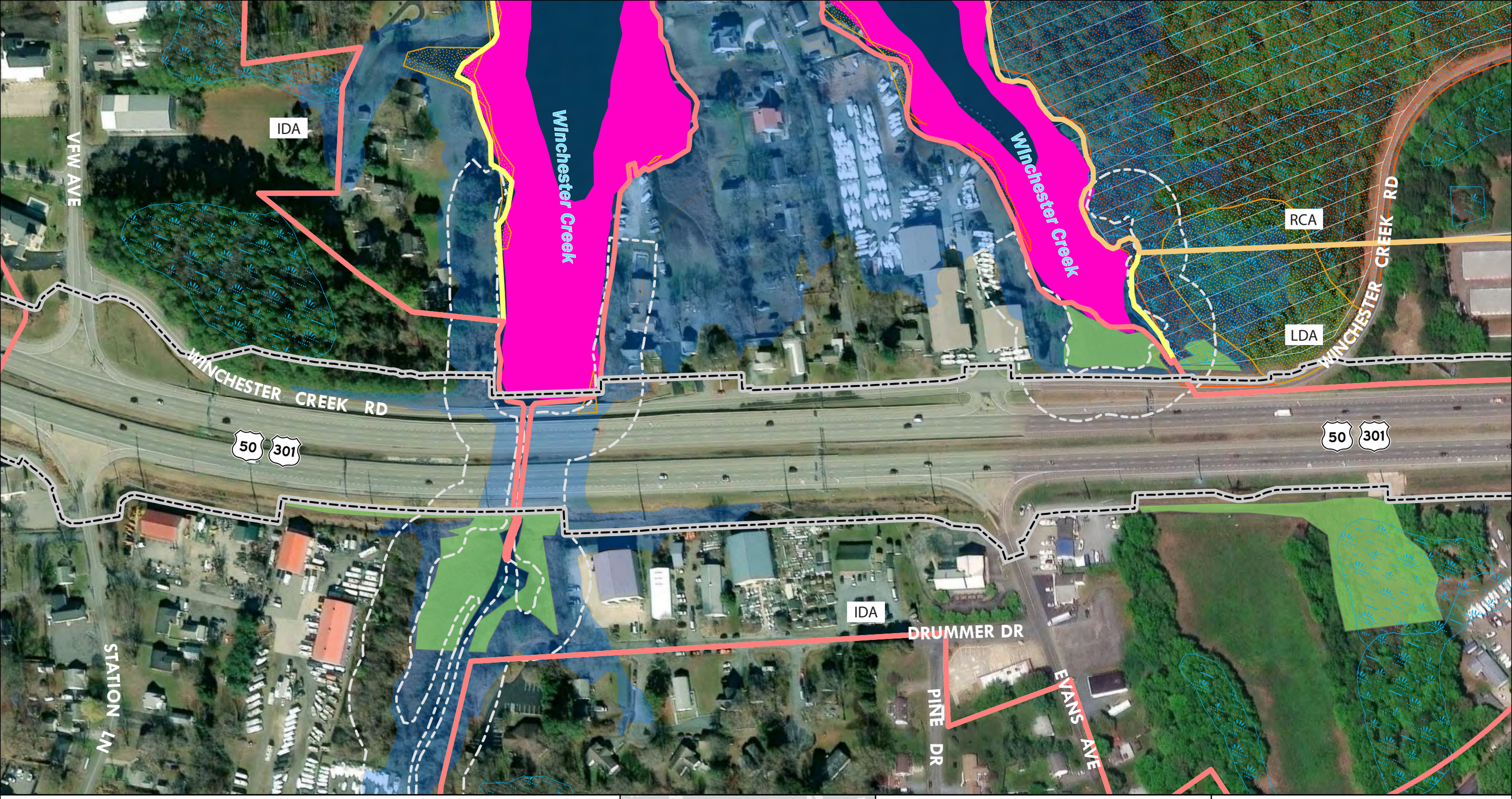

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Maryland Transportation Authority

Chesapeake BAY CROSSING STUDY TIER 2 NEPA

# Natural Resource Map
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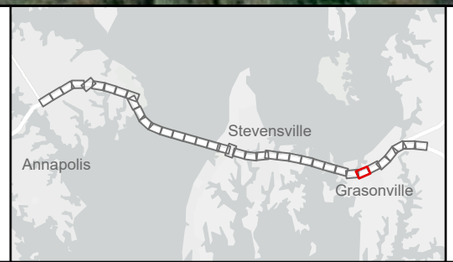
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Chesapeake BAY CROSSING STUDY
TIER 2 NEPA

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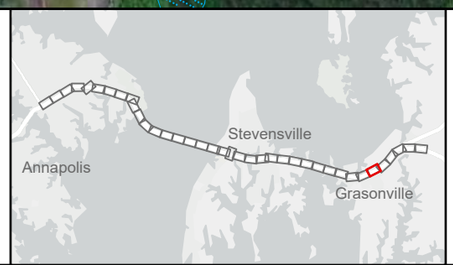
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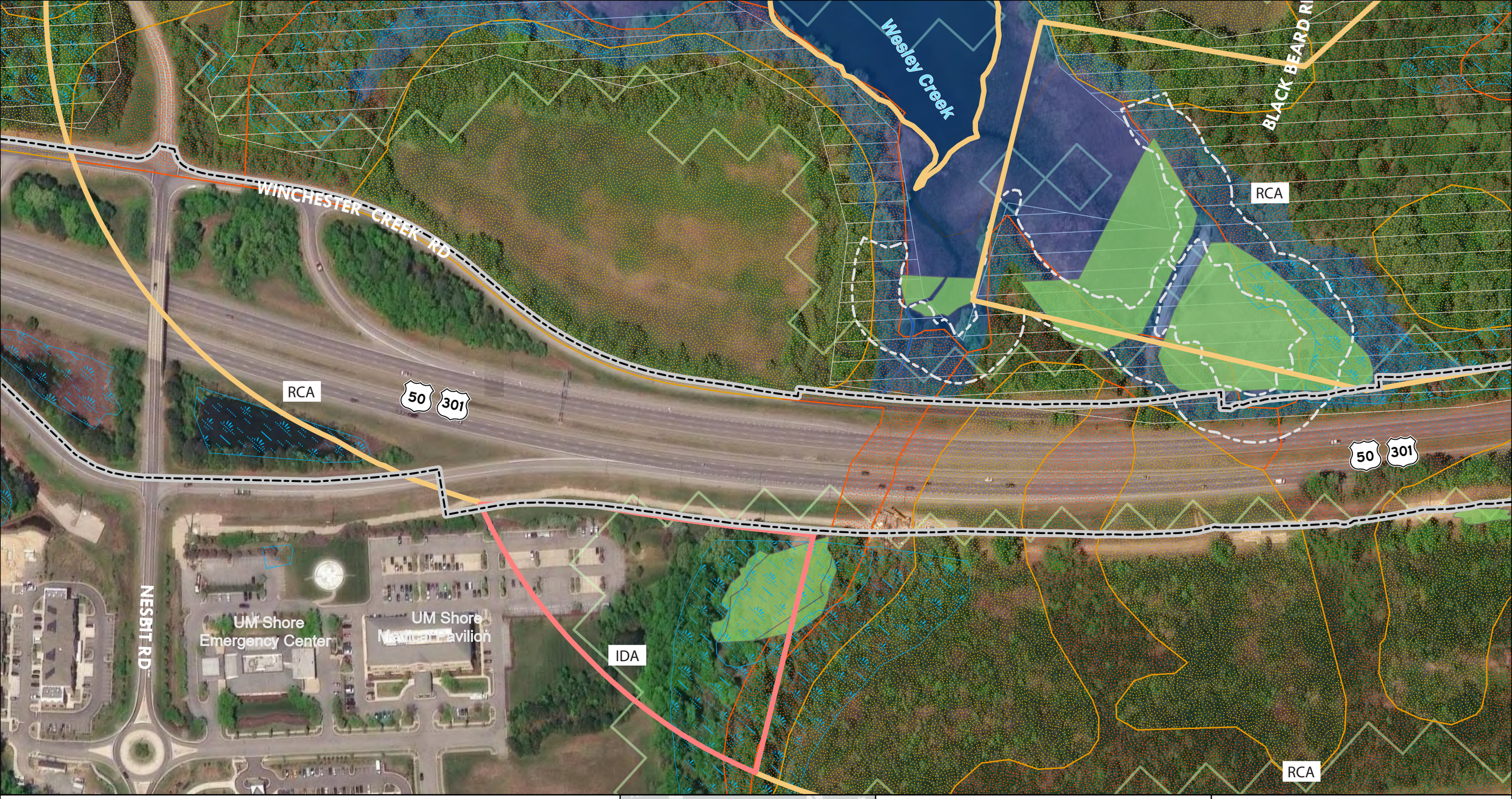

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Chesapeake BAY CROSSING STUDY
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# Natural Resource Map
# Northern Alignments
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50 301

50 301

RCA

LDA

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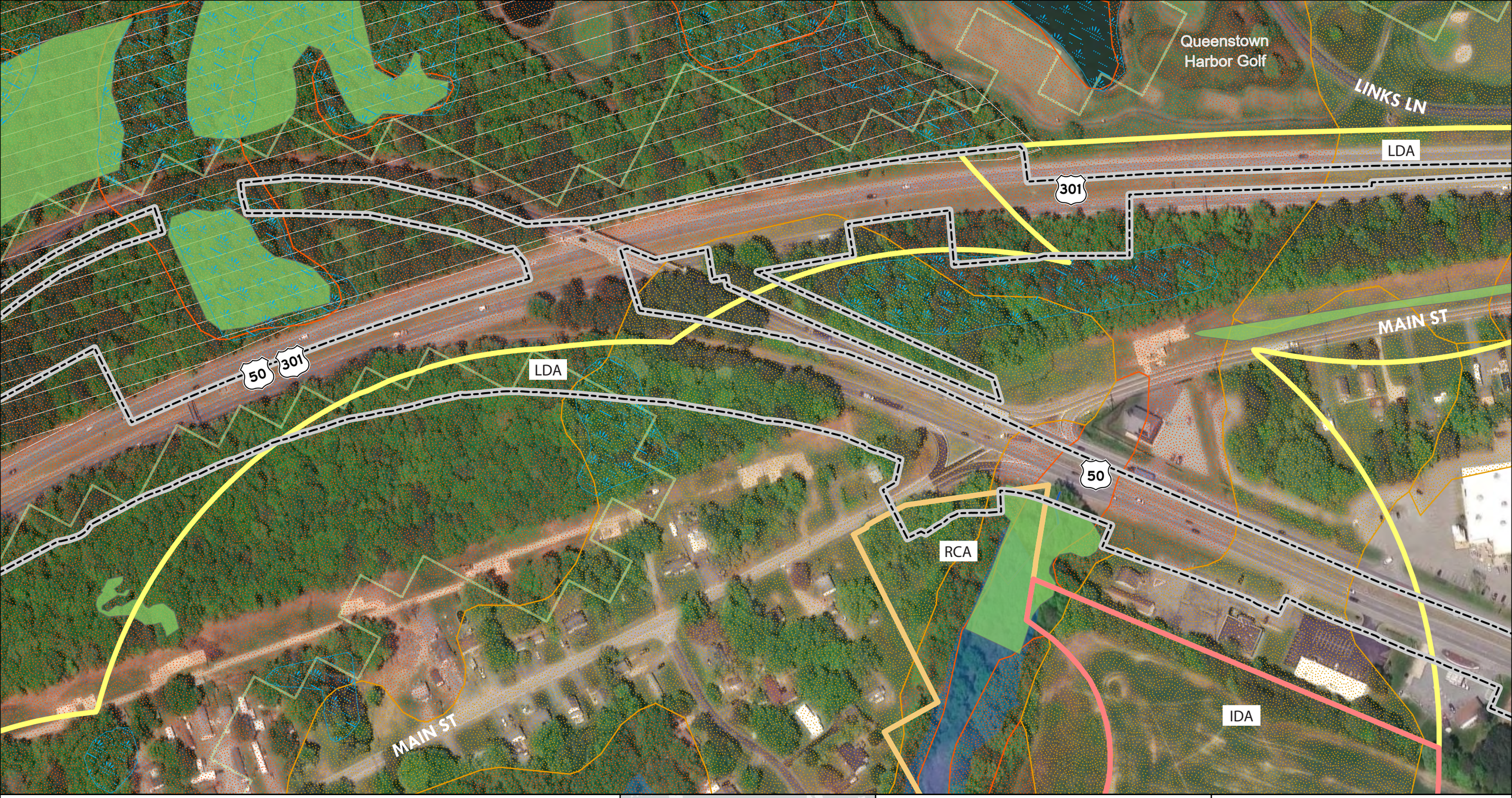

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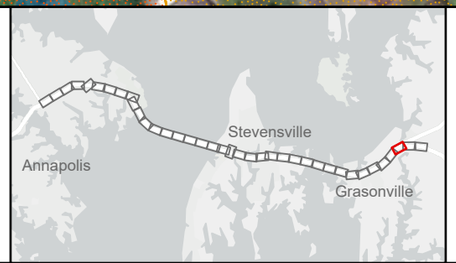
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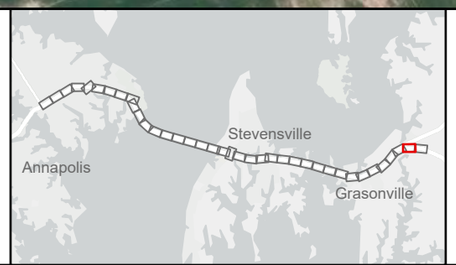
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MDTA
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Transportation
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Chesapeake BAY CROSSING STUDY TIER 2 NEPA

# Natural Resource Map
# Northern Alignments
# Build Alternatives B,D and F

DEL RHODES AVE

LDA

RCA

RCA

50

IDA

Wye River

50

OCEAN GTWY

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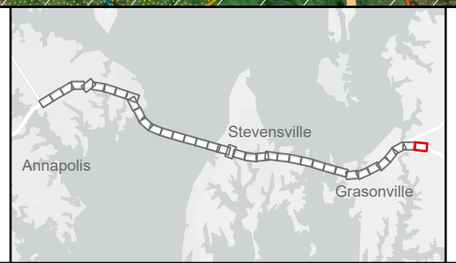
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