BAY ENVIRONMENTAL, INC.
Environmental Consulting Services

June 28, 2019

Bill Yannetti
Mitsubishi Chemical Composites America, Inc.
401 Volvo Parkway
Chesapeake, Virginia 23320

Re: Wetland Assessment
401 Volvo Parkway, Chesapeake, Virginia
City of Chesapeake Tax Parcel #0280-000-000790 & 0373-010-000390

Dear Mr. Yannetti,

Upon your request, Bay Environmental conducted a wetland assessment on the property located at 401 Volvo Parkway in Chesapeake, Virginia (City of Chesapeake Tax Parcel Numbers: 0280-000-000790 & 0373-010-000390). The study area is approximately 143.10 acres and consists mostly of forested land, grassy areas, and the Mitubishi Chemical buildings. Representatives of Bay Environmental, Inc. conducted the site visits on June 17 and June 24, 2019. Prior to our site visit we reviewed resource mapping. The details of those maps are discussed below.

The *ESRI online USA, USGS Kempsville, VA Topographic Quadrangle* map (Figure 1) shows the study area at an elevation of approximately 20 feet above sea level. The study area is depicted as a cleared area with a ditch system throughout the property and a pond along the eastern boundary. Thrasher Road is depicted in the northern portion of the property and the Norfolk Southern Railroad is depicted along the western boundary. The surface and groundwater most likely flow in a southern direction towards the Southern Branch of the Elizabeth River.

The National Wetlands Inventory Map, prepared by the U.S. Fish and Wildlife Service (USFWS), identifies four wetland types on site. PUBHx is a palustrine wetland system with an unconsolidated bottom. This wetland system has been excavated and is permanently flooded. PUSAx is a palustrine wetland system with an unconsolidated shore. This wetland system has been excavated and is temporarily flooded, which means that surface water is present for brief periods of the growing season but the water table is typically well below the surface for the remainder of the season. R4SBCx is an intermittent riverine wetland system with a streambed. This wetland system has been excavated and is seasonally flooded, which means that surface water is present early in the growing season but is typically absent by the end of the season. When surface water is absent, the water table is highly variable. R5UBH is a riverine wetland system with an unconsolidated bottom and unknown perenniality. This wetland system is permanently flooded. It is important to note that the USFWS issues a disclaimer with this data recognizing that these maps are prepared from the analysis of high altitude aerial photography and, consequently, "a margin of error is inherent in the use of the imagery".

The soil survey for Chesapeake, VA, prepared by the National Resource Conservation Service (NRCS), has listed eight soil series within the study area (Figure 4). Deloss-Tomotley-Nimmo complex (16) is a 0 to 1 percent sloped, very deep, very poorly drained soil. Dragston-Tomotley complex (20) is a 0 to 2 percent sloped, very deep, somewhat poorly drained soil. Tomotley-Deloss complex (43) is a 0 to 1 percent sloped, very deep, poorly drained soil. Tomotley-Deloss-Urban land complex (44) is a 0 to 1 percent sloped, very deep, poorly drained soil. Tomotley-Nimmo complex (45) is a 0 to 1 percent sloped,

very deep, poorly drained soil. Tomotley-Urban land-Nimmo comlex (48) is a 0 to 1 percent sloped, very deep, poorly drained soil. Urban land (50) is generally developed and 0 to 5 percent sloped. Urban land-Deloss-Tomotley-Nimmo complex is a 0 to 1 percent sloped, very deep, very poorly drained soil. All soil series are listed on NRCS' National List of Hydric soils.

The USGS LiDAR (Light Detection and Ranging) map depicts the changes in elevation on the site. LiDAR is a remote sensing method that uses light in the form of a pulsed laser to measure distances to the Earth. The light pulses along with other data recorded by the airborne system generate precise, three dimensional information about the shape of the Earth and its surface characteristics. This information has been manipulated to show small changes in elevation. The lowest areas are in blue. Green has a mid-range elevation. The highest areas are yellow and then red. The mapping for this site general shows uplands in yellow or orange. The ditches and ponds are shown in blue.

The site investigation included examining the site for areas possessing all three parameters required for an area to be considered a wetland, which include the presence of wetland hydrology, hydric soils, and hydrophytic vegetation. We identified 0.22 acre of the property as potential wetlands. This area contained a remnant ditch that did not appear to be maintained. Some of the vegetation observed in this area included switch cane (*Arundinaria tecta*), loblolly pine (*Pinus taeda*), sweet gum (*Liquidambar styraciflua*), red maple (*Acer rubrum*), and greenbrier (*Smilax rotundifolia*). The soil met the depleted matrix hydric soil indicator. Wetland hydrology indicators observed included geomorphic position and FAC-neutral test.

Three ponds were observed during the site investigation. The northernmost and easternmost ponds appear to be stormwater management features and would most likely be considered non-jurisdictional by the U.S. Army Corps of Engineers. These two ponds are approximately 7.47 acres. The pond near the center of the study area (0.97 acre) does not appear to be maintained and would most likely be considered a jurisdictional feature by the Army Corps.

Photograph 1: Representative view of the potentially jurisdictional pond

A grid-like system of ditches was observed throughout the study area. Based on the new Waters Rule, the majority of the ditches should be considered non-jurisdictional because they do not appear to be relocated tributaries and do not appear to have perennial flow. Approximately 3,006.65 linear feet of the ditches observed on site will most likely be considered to be jurisdictional features because they appear to have perennial flow.

Photograph 2: Representative view of a potentially jurisdictional ditch

The remainder of the study area, approximately 134.44 acres, consisted of potential uplands. Overall, the site is well drained due to the ditch system. The forested areas contained a variety of ornamental plant species in addition to more native species. Some of the upland plant species observed included crab apple (*Malus coronaria*), Chinese wisteria (*Wisteria sinensis*), ebony spleenwort (*Asplenium platyneuron*), bracken fern (*Pteridium aquilinum*), witch hazel (*Hamamelis virginiana*), southern red oak (*Quercus falcata*), black cherry (*Prunus serotina*), and Virginia creeper (*Parthenocissus quinquefolia*). The soil was generally grey with mottles and met the depleted matrix hydric soil indicator throughout the majority of the uplands. No hydrology indicators were observed throughout the uplands.

Photograph 3: Representative view of a forested upland area

Photograph 4: Additional view of a forested upland area

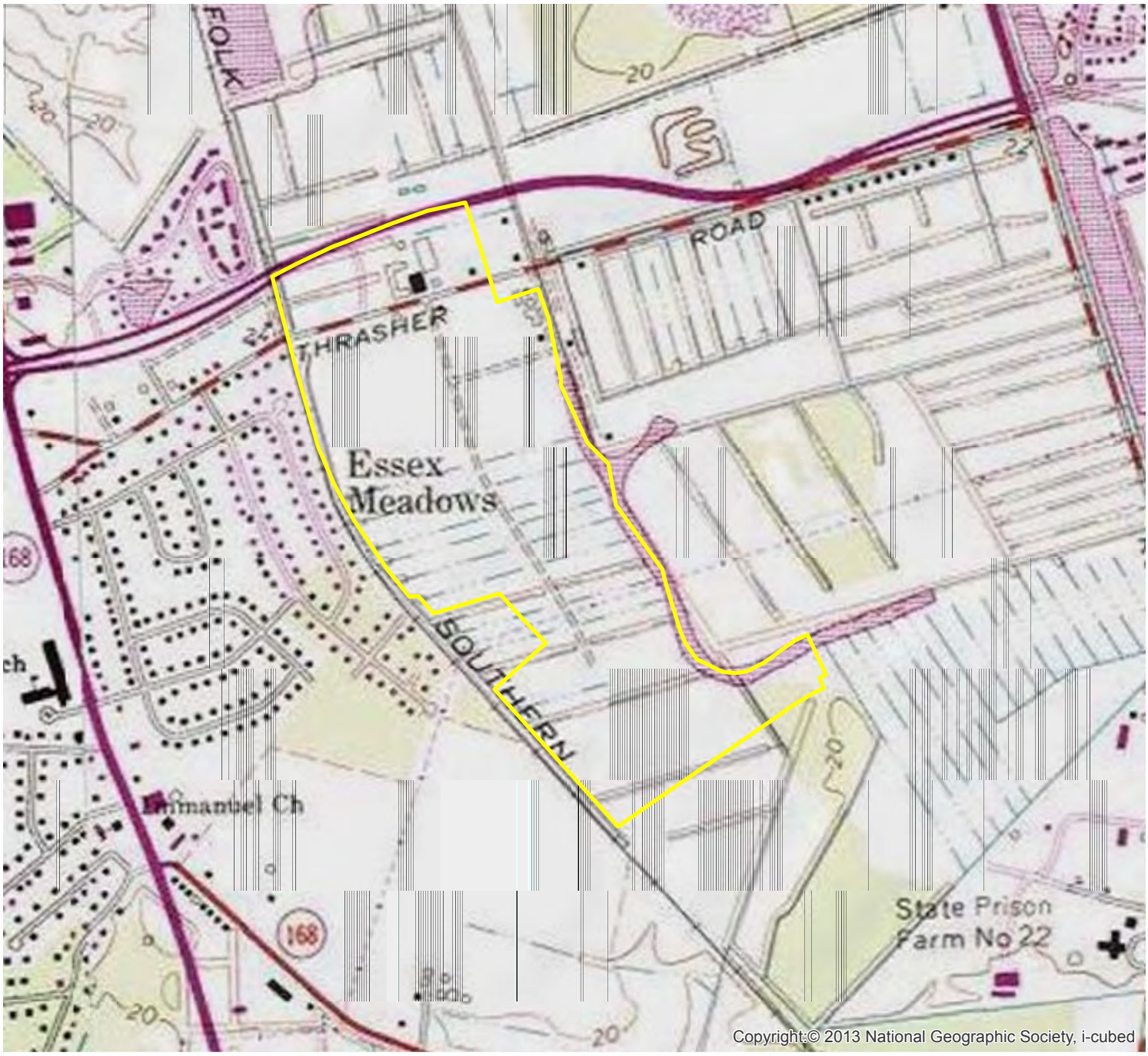
We recommend having a wetland delineation completed on the site and the U.S. Army Corps of Engineers confirming that delineation. If you have any questions, or desire any additional information, please do not hesitate to call me at 757-436-5900.

Sincerely,

Bay Environmental, Inc.

Grace Flick
Environmental Scientist

Reviewed by:
Amy Conley, VA P.W.D. #3402000113
Natural Resources Manager



Legend

Study Area ~ 143.10 acres

N
W E
S

0 250 500 1,000 1,500 2,000
Feet

Source: ESRI online USA topo maps, USGS Kempsville, VA Topographic Quadrangle; City of Chesapeake Parcel Data

Scale: 1 in = 1,000 ft
Bay #:19-262-01
Date: 6/7/19
Prepared by: GCF

Figure 1: Topographical Vicinity Map
401 Volvo Parkway
Wetland Assessment
Chesapeake, VA

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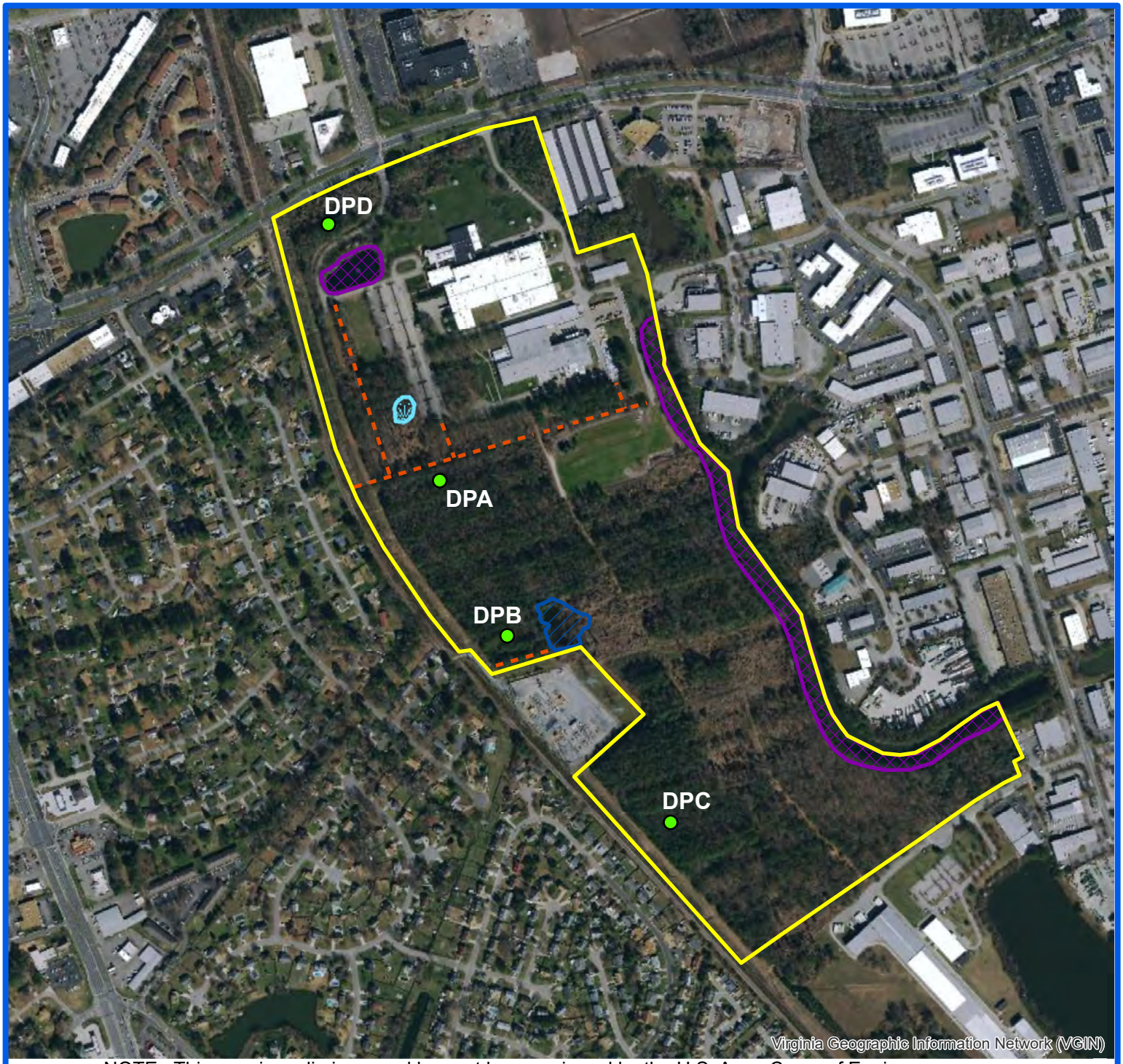

NOTE: This map is preliminary and has not been reviewed by the U.S. Army Corps of Engineers.

Legend

- Study Area ~ 143.10 acres
- Potential Wetlands ~ 0.22 acre
- Potentially Jurisdictional Ditch ~ 3,006.65 linear feet
- Potentially Jurisdictional Pond ~ 0.97 acre
- Potentially Non-Jurisdictional Stormwater Pond ~ 7.47 acres
- Data Points

N W E S

0 175 350 700 1,050 1,400 Feet

Source: State of Virginia 2017 Orthophotographs; City of Chesapeake Parcel Data; Features estimated with Trimble GeoXT and LiDAR data

Scale: 1 in = 700 ft
Bay #:19-262-01
Date: 6/27/19
Prepared by: GCF
Reviewed by: AJLC
VA PWD# 3402000113

Figure 2: Site Conditions
401 Volvo Parkway
Wetland Delineation
Chesapeake, VA

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Legend

Study Area ~ 143.10 acres

NWI Wetlands

N
W E
S

0 175 350 700 1,050 1,400

Feet

Source: State of Virginia 2017 Orthophotograph; City of Chesapeake Parcel Data; USFWS National Wetlands Inventory

Scale: 1 in = 700 ft
Bay #:19-262-01
Date: 6/7/19
Prepared by: GCF

Figure 3: National Wetlands Inventory
401 Volvo Parkway
Wetland Assessment
Chesapeake, VA

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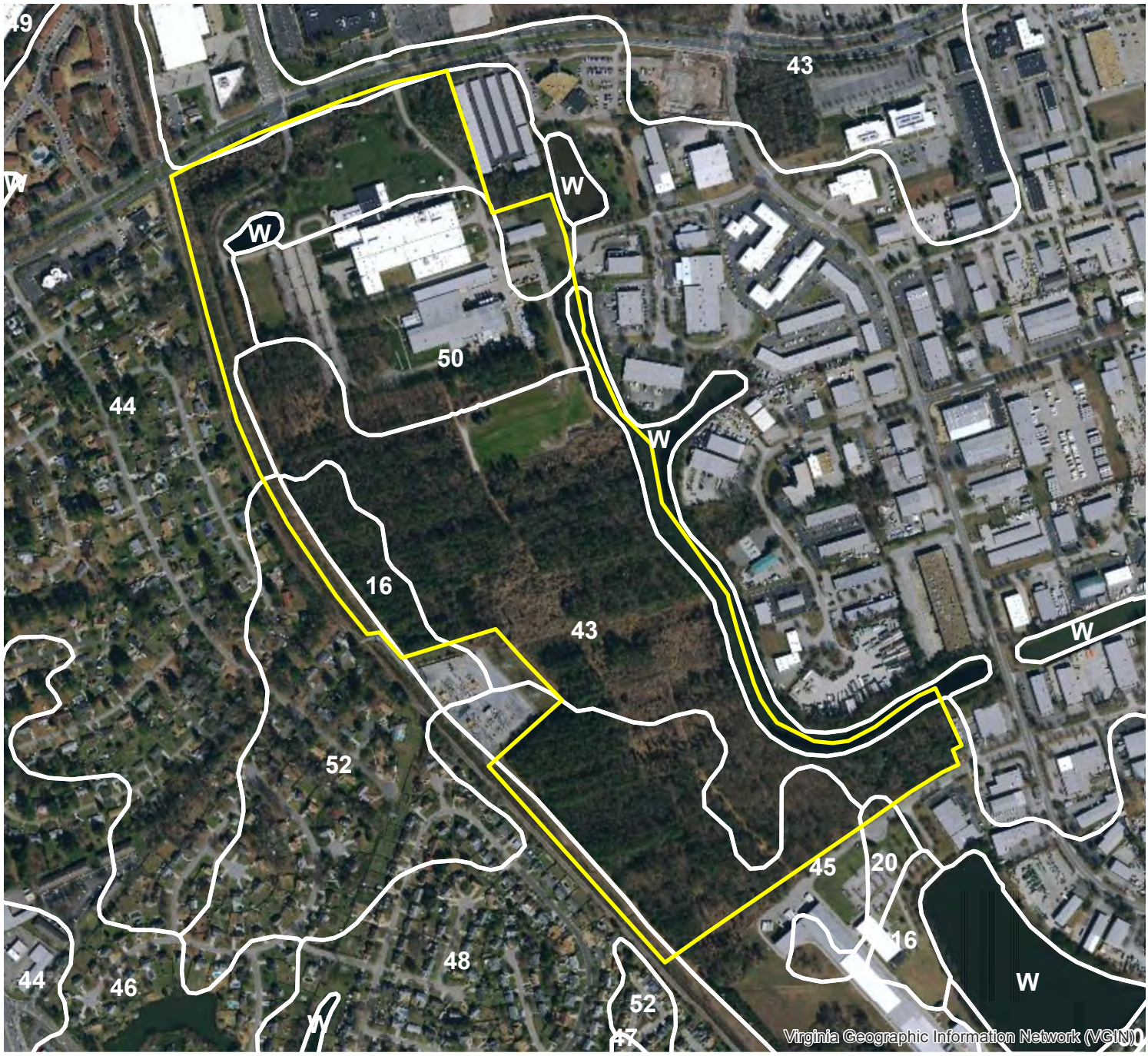

Legend

Study Area ~ 143.10 acres

16 - Deloss-Tomotley-Nimmo complex
20 - Dragston-Tomotley complex
43 - Tomotley-Deloss complex
44 - Tomotley-Deloss-Urban land complex
45 - Tomotley-Nimmo complex
48 - Tomotley-Urban land-Nimmo complex
50 - Urban land
52 - Urban land-Deloss-Tomotley-Nimmo complex
W - Water

N
W E
S

0 175 350 700 1,050 1,400
Feet

Source: State of Virginia 2017 Orthophotograph; City of Chesapeake Parcel Data; NRCS Soil Survey

Scale: 1 in = 700 ft
Bay #:19-262-01
Date: 6/7/19
Prepared by: GCF

Figure 4: NRCS Soils Map
401 Volvo Parkway
Wetland Assessment
Chesapeake, VA

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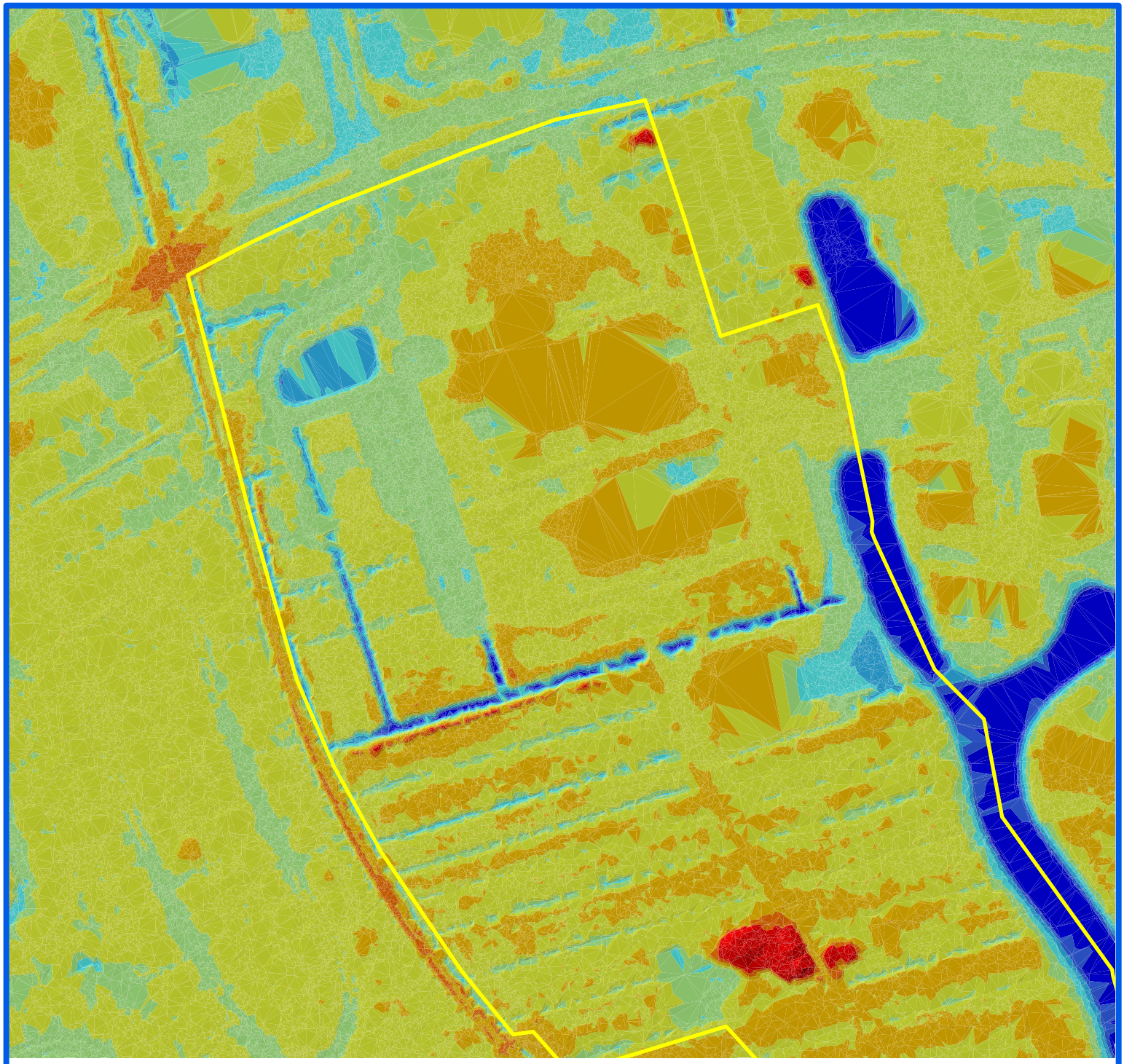

Legend

Study Area ~ 143.10 acres

Elevation

Lower — Higher

N

W E

S

0 100 200 400 600 800

Feet

Source: USGS LPC VA Norfolk 2013 LAS Data; City of Chesapeake Parcel Data

Scale:1 in = 400 ft
Bay #:19-262-01
Date: 6/27/19
Prepared by: GCF

Figure 5a: LiDAR Map (north)
401 Volvo Parkway
Wetland Delineation
Chesapeake, VA

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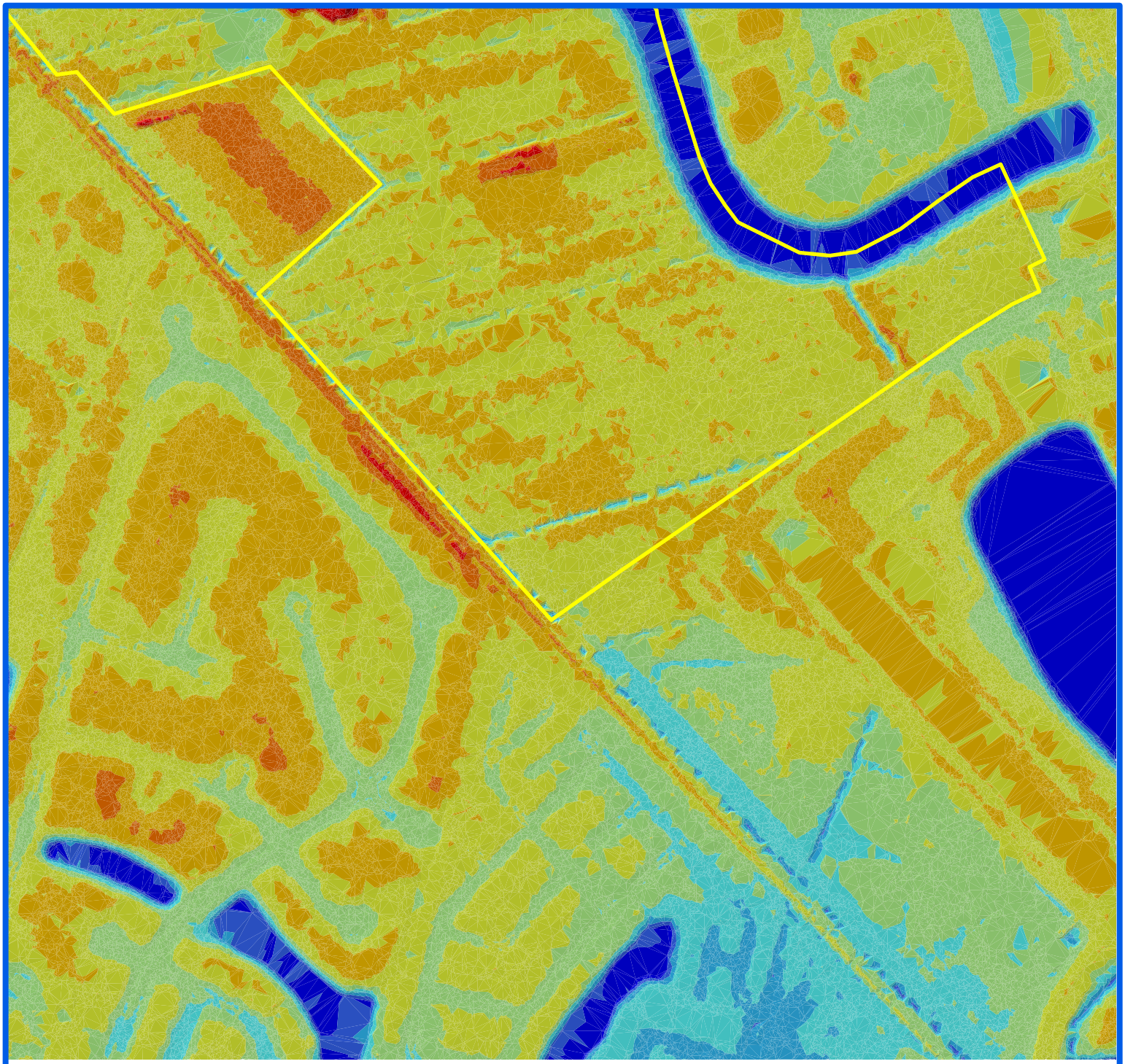

Legend

Study Area ~ 143.10 acres

Elevation

Lower — Higher

N

W E

S

0 100 200 400 600 800

Feet

Source: USGS LPC VA Norfolk 2013 LAS Data; City of Chesapeake Parcel Data

Scale:1 in = 400 ft
Bay #:19-262-01
Date: 6/27/19
Prepared by: GCF

Figure 5b: LiDAR Map (south)
401 Volvo Parkway
Wetland Delineation
Chesapeake, VA

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