BOWERS HILL INTERCHANGE IMPROVEMENTS STUDY

ARCHAEOLOGICAL ASSESSMENT TECHNICAL REPORT

Prepared in support of the Environmental Assessment for the Bowers Hill Interchange Improvements Study

VDOT Project #: 0664-131-028, P101; UPC #: 111427
Federal Project Number NHPP-664-7(067)
DHR #: 2018-0199

APRIL 2019
# TABLE OF CONTENTS

1 INTRODUCTION .......................................................................................................................... 1
   1.1 Study Area ............................................................................................................................. 2
      1.1.1 Interstate 664 .................................................................................................................. 2
      1.1.2 Interstate 264 .................................................................................................................. 2
      1.1.3 Interstate 64 .................................................................................................................... 2
      1.1.4 U.S. Route 460/58/13 (West Military Highway) ............................................................... 2
      1.1.5 Jolliff Road/Airline Boulevard/West Military Highway/South Military Highway ............. 2
   1.2 Purpose and Need .................................................................................................................... 4
   1.3 Alternatives ........................................................................................................................... 4
      1.3.1 No-Build Alternative ....................................................................................................... 4
      1.3.2 Alternative 1: Eastbound and Westbound U.S. Route 58 Braided Ramps ....................... 4
      1.3.3 Alternative 2: Full Interchange Reconstruction ............................................................... 6
   1.4 Regulatory Context .................................................................................................................. 9
   1.5 General Methodology ........................................................................................................... 9

2 METHODOLOGY ........................................................................................................................ 11
   2.1 Background Research ........................................................................................................... 11
   2.2 Current Conditions Assessment ............................................................................................ 11
   2.3 Assessment of Archaeological Potential ............................................................................... 12
      2.3.1 Predictive Model for Prehistoric Archaeological Potential ........................................... 12
      2.3.2 Predictive Model for Historic Archaeological Potential ................................................ 13

3 ENVIRONMENTAL SETTING .................................................................................................... 14
   3.1 Geology ............................................................................................................................... 14
   3.2 Hydrology ........................................................................................................................... 15
   3.3 Soils ..................................................................................................................................... 15
   3.4 Natural Resources ............................................................................................................... 19

4 REGIONAL CULTURAL CONTEXT ............................................................................................. 21
   4.1 Prehistoric Context .............................................................................................................. 21
      4.1.1 Paleoindian Period ......................................................................................................... 21
      4.1.2 Archaic Period ............................................................................................................... 22
      4.1.3 Woodland Period ......................................................................................................... 23
4.2 Historic Context .............................................................................................................. 26
  4.2.1 Settlement to Society (1607-1750)........................................................................... 26
  4.2.2 Colony to Nation (1750-1789)................................................................................ 31
  4.2.3 Early National Period (1789-1830)....................................................................... 32
  4.2.4 Civil War (1861-1865) ........................................................................................... 36
  4.2.5 Reconstruction and Growth (1865-1917)............................................................... 40
  4.2.6 World War I to World War II (1917-1945).......................................................... 40
  4.2.7 The New Dominion (1945-present) ...................................................................... 41

5 PREVIOUSLY DOCUMENTED CULTURAL RESOURCES .................................................. 42
  5.1 Previous Archaeological Survey within the APE ....................................................... 42
  5.2 Previously Documented Archaeological Resources .................................................. 45
  5.3 Previously Documented Historic Architectural Resources ....................................... 48
  5.4 Battlefield Resources ............................................................................................... 51

6 ASSESSMENT OF ARCHAEOLOGICAL SITE POTENTIAL ............................................. 52
  6.1 Archaeological Site Potential .................................................................................... 52
       6.1.1 Potential for Extraordinarily Complex Sites or Sites with Human Burials ........... 54
       6.1.2 Recommendations for Archaeological Survey ............................................... 54
  6.2 Potential for Archaeological Sites Important Chiefly for Reasons Other than Information Potential .................................................................................................................. 59
       6.2.1 Battlefield Resources ....................................................................................... 60
       6.2.2 Other Archaeological Resources .................................................................... 60

7 SUMMARY AND BUILD ALTERNATIVE ANALYSIS .................................................... 61
  7.1 Alternative 1 ............................................................................................................. 61
  7.2 Alternative 2 ............................................................................................................. 61

8 REFERENCES .................................................................................................................... 65

LIST OF TABLES

Table 3-1: NCPS Soils in APE ........................................................................................... 18
Table 5-1: Previous Archaeological Surveys within the APE ............................................ 43
Table 5-2: Previously Documented Archaeological Resources ......................................... 45
Table 5-3: Previously Documented Historic Architecture Resources ................................ 51
Table 6-1: Areas Recommended for Archaeological Survey ............................................ 54
Table 7-1: Areas Recommended for Archaeological Survey ............................................ 61
Table 7-2: Build Alternatives Acreage Recommended for Archaeological Survey .......... 61
# LIST OF FIGURES

| Figure 1-1: Study Area | .......................................................... | 3 |
| Figure 1-2: Existing Conditions | .......................................................... | 5 |
| Figure 1-3: Alternative 1: Eastbound and Westbound U.S. Route 58 Braided Ramps | ....................................................... | 7 |
| Figure 1-4: Alternative 2: Full Interchange Reconstruction | .......................................................... | 8 |
| Figure 1-5: Archaeological APE | .......................................................... | 10 |
| Figure 3-1: NRCS Soil Series West Section of APE | .......................................................... | 16 |
| Figure 3-2: NRCS Soil Series East Section of APE | .......................................................... | 17 |
| Figure 4-1: Approximate Location of APE on the 1612 *Map of Virginia* | ....................................................... | 28 |
| Figure 4-2: Approximate Location of APE on the 1673 Map of *Virginia and Maryland* | ....................................................... | 29 |
| Figure 4-3: Map of 17th Century Land Patents in the Approximate Location of APE | ....................................................... | 30 |
| Figure 4-4: Approximate Location of APE on a 1755 Map of Virginia and Maryland | ....................................................... | 33 |
| Figure 4-5: Approximate Location of APE on the 1780 *Plan of Princess Ann and Norfolk Counties* | ....................................................... | 34 |
| Figure 4-6: Approximate Location of APE on the 1827 *Map of Virginia* | ....................................................... | 35 |
| Figure 4-7: Approximate Location of APE on 1859 *A map of the state of Virginia* | ....................................................... | 37 |
| Figure 4-8: Approximate Location of APE of the 1863 Map of the *Coast of North Carolina and Virginia* | ....................................................... | 39 |
| Figure 5-1: Previous Archaeological Surveys within the APE | ....................................................... | 44 |
| Figure 5-2: Previously Recorded Archaeological Sites | ....................................................... | 47 |
| Figure 5-3: Previously Documented Architecture Resources | ....................................................... | 50 |
| Figure 6-1: Areas for Archaeological Assessment | ....................................................... | 53 |
| Figure 6-2: Area 1, View East | ....................................................... | 55 |
| Figure 6-3: Area 2, View West (Google Earth, 2018) | ....................................................... | 56 |
| Figure 6-4: Area 3, View West (Google Earth, 2018) | ....................................................... | 57 |
| Figure 6-5: Area 4 View North (Google Earth, 2018) | ....................................................... | 57 |
| Figure 6-6: Area 5, View East toward Private Residences | ....................................................... | 58 |
| Figure 6-7: Area 5, View Northeast (Google Earth, 2018) | ....................................................... | 59 |
| Figure 7-1: Alternative 1 Areas for Assessment | ....................................................... | 63 |
| Figure 7-2: Alternative 2 Areas for Assessment | ....................................................... | 64 |
1 INTRODUCTION

The Virginia Department of Transportation (VDOT), in coordination with the Federal Highway Administration (FHWA) as the lead federal agency, is preparing an Environmental Assessment (EA) under the National Environmental Policy Act of 1969 (NEPA) for the Bowers Hill Interchange Improvements Study. The Bowers Hill Interchange Improvements Study considers operational improvements to the Bowers Hill interchange which includes the junction of Interstate (I-) 664, I-264, I-64, U.S. Route 460, U.S. Route 58, U.S. Route 13, and Virginia Route 191 (Jolliff Road) in the City of Chesapeake, Virginia (Chesapeake). The Study Area under evaluation is shown on Figure 1-1.

The EA is prepared in accordance with FHWA and Council on Environmental Quality (CEQ) regulations implementing NEPA. The content of the EA conforms to CEQ guidelines, which provide direction regarding implementation of the procedural provisions of NEPA, and the FHWA’s Guidance for Preparing and Processing Environmental and Section 4(f) Documents (Technical Advisory T6640.8A, October 1987). As part of the EA, the environmental review process is carried out following the National Environmental Policy Act and Clean Water Act (Section 404) Merged Process for Highway Projects in Virginia (merged process),1 between VDOT, the FHWA, the U.S. Army Corps of Engineers (USACE), the U.S. Environmental Protection Agency (USEPA), and the U.S. Fish and Wildlife Service (USFWS).2

The purpose of this Archaeological Assessment Technical Report is to present a detailed analysis of the potential for archaeological resources on or eligible for listing on the National Register of Historic Places to be impacted by the alternatives being studied for the Bowers Hill Interchange Improvements Study. The following Archaeological Assessment presents historical background and mapping studies associated with each of these alternatives and presents the potential for encountering both prehistoric and historic archaeological resources within each of these alternatives. The assessment report identifies the presence of and the potential for archaeological sites that may be affected by the alternatives being studied and may be listed or eligible for listing on the National Register of Historic Places (NRHP). In addition, the report also seeks to identify the presence of or the potential for the study alternatives to contain archaeological sites that may have compelling associated value other than their potential to yield information important in prehistory and history and have more than minimal value for preservation in place. The methods used for this analysis were defined in the Resource Identification and Impact Analysis Methodologies document for the Bowers Hill Interchange Improvements Study which received agency concurrence in June 2018. This document first provides an overview of the study with a description of the methods used to assess the potential direct effects.

1 The merged process facilitates an environmental review process and development of documentation that comply with the requirements of NEPA and provide sufficient information to support FHWA approval or Federal regulatory decision-making, including future permits issued by other Federal agencies. However, permits would not be obtained as part of this phase of the project. These would be attained prior to construction of the preferred alternative.
2 The U.S. Fish and Wildlife Service declined to participate as a Concurring Agency in the study on October 19, 2018, as the “project has little potential to impact Service trust resources”.

BOWERS HILL INTERCHANGE IMPROVEMENTS STUDY
Archaeological Assessment Technical Report

Page | 1
1.1 **Study Area**

The Bowers Hill interchange is located at the junction of I-664, I-264, I-64, and U.S. Route 460/58/13 in Chesapeake, Virginia (see Figure 1-1). Both I-264 and I-64 terminate within the interchange as they join to form I-664 which proceeds west and north through the interchange to Suffolk and points further north. The roadways which constitute the interchange provide connectivity between the Cities of Hampton and Newport News to the north; the Cities of Portsmouth, Norfolk, and Virginia Beach to the east; and the City of Suffolk to the west. The Study Area is large enough to encompass potential interchange improvement alternatives; this does not imply that impacts would occur to the entirety of the Study Area. Existing conditions on the major roadways within the Study Area are described in the subsequent sections.

1.1.1 **Interstate 664**

I-664 forms the northern leg of the Bowers Hill Interchange and provides a connection to Newport News via the Monitor-Merrimac Memorial Bridge-Tunnel (MMMBT) crossing of the Hampton Roads Harbor (Figure 1-2). Within the Study Area, I-664 provides two lanes of travel in each direction with 10-foot paved outside shoulders, 4-foot paved inside shoulders, and a posted speed of 60 miles per hour (MPH).

1.1.2 **Interstate 264**

I-264 forms the eastern leg of the interchange and it provides a connection to Portsmouth, I-464, and Norfolk via the Downtown Tunnel crossing of the Elizabeth River. Within the Study Area, I-264 provides two lanes of travel in each direction with 10-foot paved outside shoulders, 2-foot paved inside shoulders, and a posted speed of 55 MPH.

1.1.3 **Interstate 64**

I-64 forms the southern leg of the interchange and provides a connection to other roadways in Chesapeake and I-464 via the High Rise Bridge crossing of the Elizabeth River (Southern Branch). Within the Study Area, I-64 provides two lanes of travel in each direction with 10-foot paved outside shoulders, 4-foot paved inside shoulders, and a posted speed of 60 MPH.

1.1.4 **U.S. Route 460/58/13 (West Military Highway)**

U.S. Route 460/58/13 forms the western leg of the interchange and provides a connection to Suffolk and points located further west. It is classified as an Other Freeway or Expressway, although it has a number of at-grade intersections west of the Study Area. Within the Study Area, U.S. Route 460/58/13 provides three lanes of travel in each direction with 10-foot paved outside shoulders, 4-foot paved inside shoulders, and a posted speed of 60 MPH.

1.1.5 **Jolliff Road/Airline Boulevard/West Military Highway/South Military Highway**

An intersection of Jolliff Road (VA Route 191), Airline Boulevard (U.S. Route 58), West Military Highway (U.S. Route 58/13), and South Military Highway (U.S. Route 460/13 Alternate) is east of the U.S. Route 58/13 off-ramps from northbound (NB) I-664. Jolliff Road is classified as a Major Collector, Airline Boulevard a Minor Arterial, West Military Highway an Other Freeway or Expressway, and South Military Highway a Minor Arterial. Jolliff Road, north of the intersection provides one travel lane in each direction with graded shoulders and a posted speed limit of 35 MPH. Airline Boulevard, to the east of the interchange, provides one travel lane in each direction, a center two-way left turn lane, graded shoulders, and a posted speed limit of 35 MPH. It widens to two travel lanes in each direction as it approaches this intersection. South Military Highway is located to the south of the intersection and provides two travel
lanes in each direction from the I-664 overpass to this intersection. Further west of the overpass, the eastbound (EB) direction is limited to one lane. Shoulder width is variable along the roadway within the Study Area and the posted speed limit is 35 MPH.

1.2 PURPOSE AND NEED

The purpose of the Bowers Hill Interchange Improvements Study is to address current operational deficiencies, such as inefficient access configurations, while improving safety within weaving and transition areas at the junction of I-664, I-264, I-64, U.S. Route 460, U.S. Route 58, U.S. Route 13, and VA Route 191 (the Bowers Hill interchange). This study will also address current and future travel demand within the interchange.

The following needs have been identified for the study:

- **Operational Deficiencies** – current access configurations within the interchange create inefficient weave conditions and traffic operations affecting route continuity and transitions between intended routes;
- **Safety** – current conditions contribute to increased side-swipe crashes within the weaving area between the access and departure ramps of U.S. Route 460 and those of I-264, as well as rear-end crashes along the entire Study Area corridor of I-664 and I-64; and
- **Congestion and Capacity** – current and predicted future travel demand exceed interchange capacity which causes congestion and negatively affects travel times.

1.3 ALTERNATIVES

1.3.1 No-Build Alternative

In accordance with the implementing regulations for NEPA (40 Code of Federal Regulations [CFR] § 1502.14(d)), the No-Build Alternative has been retained for detailed study and serves as a benchmark for comparison with the Build Alternatives. The No-Build Alternative would retain the existing configuration of the Bowers Hill Interchange including access roads and ramps. Only planned maintenance improvements and those proposed independently by VDOT would occur within the Study Area.

1.3.2 Alternative 1: Eastbound and Westbound U.S. Route 58 Braided Ramps

Alternative 1 would retain much of the existing infrastructure, all local access connections, and widen existing I-664 in both directions within the Study Area. These improvements would provide additional lanes and barrier separation of movements between U.S. Route 58, I-664, I-264, and I-64 at existing weave/merge conflict points within the main interchange area. In the SB direction of I-664 the continuous auxiliary lane would be included between Dock Landing Road and the WB U.S. Route 58 exit ramp. In the NB direction, the additional (third) lane continuing to NB I-664 would tie into the new auxiliary lane from the WB U.S. Route 58 entrance ramp to Dock Landing Road, which is being constructed under a separate project, creating a lane drop at the Dock Landing Road interchange. Widening of existing roadways would provide room for additional travel lanes and barrier within the main interchange, new ramps, and modifications to existing ramps would further reduce conflict points and improve operations.
Figure 1-2: Existing Conditions
In the NB direction, the existing two-lane ramp from I-64 to I-664 would remain and a new single lane flyover ramp would be constructed to the right of the existing ramp, separated by barrier, providing access to EB U.S. Route 58. A new single lane ramp from WB I-264 to NB I-664 would be constructed parallel to but separate from the ramps from I-64 in the main portion of the interchange. NB and WB traffic would be separated by barrier. The ramp from Airline Boulevard to NB I-664 would remain. Eastbound the existing U.S. Route 58 ramp would become a two-lane barrier separated roadway through the interchange with direct ramp connections to EB I-264 and WB I-64. Traffic from EB U.S. Route 58 would access Airline Boulevard by following U.S. Route 460 to South Military Highway. A new flyover ramp would be constructed from EB U.S. Route 58 to EB I-264. Existing local access from U.S. Route 58 to South Military Highway would be maintained. Alternative 1 is depicted on Figure 1-3.

The existing two-lane section of I-264 would split with one lane (inside) providing a barrier separated direct connection to NB I-664, the other lane (outside) would provide barrier separated access to WB U.S. Route 58 by using the existing ramp at Exit 13A.

1.3.3 Alternative 2: Full Interchange Reconstruction

Alternative 2 includes the development of braided ramps similar to Alternative 1; however, it would provide additional barrier separation of major movements by realigning NB I-664 within the main interchange area. As a result, a significant portion of existing NB I-664 would not be utilized in this design and some local movements would be redirected or eliminated. In the SB direction of I-664 the continuous auxiliary lane would be included. In the NB direction, the additional (third) lane continuing to NB I-664 would tie into the new auxiliary lane from the WB U.S. Route 58 entrance ramp to Dock Landing Road, which is being constructed under a separate project. Functionally, this would create a lane drop at the Dock Landing Road interchange. Additional travel lanes and barrier would be added within the main interchange to separate traffic from SB I-664 and EB U.S. Route 58 to WB I-64 and EB I-264, respectively. The existing ramp from SB I-664 to WB I-64 would be widened to three lanes.

In the NB direction, the existing ramp from I-64 to I-664 would be reconstructed/widened to three lanes and would come in on the right of a new two-lane ramp from WB I-264. A new single lane ramp from WB I-264 to NB I-664 would be constructed parallel but separate from the three-lane ramp from I-64. In the main portion of the interchange, NB and WB traffic would be separated by barrier with slip ramps providing access from I-64 to WB U.S. Route 58 and Airline Boulevard (via NB I-664). The ramp from Airline Boulevard to NB I-664 would be realigned. Eastbound U.S. Route 58 would be realigned as a new two-lane roadway that would be barrier separated through the interchange with a direct connection to EB I-264. Traffic from EB U.S. Route 58 would access Airline Boulevard by following U.S. Route 460 to South Military Highway. The existing two-lane ramp from EB U.S. Route 58 to SB I-664 would provide one lane to WB I-64 and the second lane would be dropped at the realigned exit ramp to South Military Highway. A new flyover ramp would be constructed from EB U.S. Route 58 to I-664 NB. Existing local access from U.S. Route 58 to South Military Highway would be maintained. Alternative 2 is depicted on Figure 1-4.

I-264 WB would be realigned to provide a new two-lane ramp with direct access to WB U.S. Route 58. The existing two-lane section of I-264 would split with one lane on new parallel alignment through the main interchange with a direct connection to NB I-664, the other lane would split off to a new one-lane flyover ramp with direct access to WB I-64.
Figure 1-3: Alternative 1: Eastbound and Westbound U.S. Route 58 Braided Ramps
Figure 1-4: Alternative 2: Full Interchange Reconstruction
1.4 REGULATORY CONTEXT
VDOT, in coordination with the FHWA, has developed an EA to evaluate the anticipated social, economic, and natural environmental effects associated with potential transportation improvements at the Bowers Hill Interchange. The EA has been prepared in accordance with NEPA and in accordance with FHWA regulations.

The following Archaeological Assessment of the potential effects of the project on significant archaeological sites was performed to comply with Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended, and its implementing regulations at 36 CFR Part 800. The key personnel completing the work meet or exceed the Secretary of the Interior’s Professional Qualification Standards (36 CFR Part 61) for archaeology, architectural history, and history.

1.5 GENERAL METHODOLOGY
For the purposes of analyzing the Build Alternatives for the Bowers Hill Interchange Improvements Study, the Study Area Corridor was delineated. The Study Area surrounds the current Bowers Hill interchange and includes legs to the north, northeast, and southeast. From the west the Study Area follows West Military Highway (Route 58) into the Study Area converging at the Bowers Hill interchange then follows I-264, I-664, and I-64 to the east. To the north, the Study Area follows a portion of I-664 (see Figure 1-1). For the purposes of Section 106, the Archaeological Area of Potential Effects (APE) for Direct Effects is defined as the area in which there is potential for direct impacts on historic properties to occur. The APE, shown on Figure 1-5, encompasses the outer-most edge of the area where direct impacts are anticipated to occur for both Build Alternatives and includes some areas within adjacent existing highway right of way which a builder may reasonably desire to traffic across or store equipment or materials in during project construction.
Figure 1-5: Archaeological APE
2 METHODOLOGY

The archaeological assessment was conducted by Rummel, Klepper & Kahl, LLP (RK&K) with the goal of providing an archaeological review for the two Build Alternatives within the defined APE of the Bowers Hill Interchange Improvements Study Area. The archaeological assessment included four tasks:

- Identification of previously recorded archaeological resources and limits of previous archaeological survey within the APE;
- Identification of areas that may require or warrant additional survey during future stages of the project;
- Estimation of the likelihood within the APE for the presence of significant archaeological resources potentially eligible for the National Register of Historic Places (NRHP); and
- Identification of the significant types of archaeological resources that may be extraordinarily complex, contain human burials, or be important chiefly for reasons other than information potential.

2.1 BACKGROUND RESEARCH

The research was largely based on information available through the Virginia Department of Historic Resources’ (VDHR) Virginia Cultural Resource Information System (V-CRIS) GIS-based mapping system. A thorough historic context has already been prepared for the region containing the APE (Brady et al. 2016; Klein et al. 2011; Leithoff et al. 2009). These works represent a variety of cultural resource professional projects and served as a basis for the overview. The background research also focused on providing an overview of previous work within the APE to identify areas not previously surveyed that retain integrity and have the potential to contain significant archaeological resources. This assessment of previous work included the following:

- Review of additional pertinent archaeological studies conducted within the APE;
- Map overlays generated in ArcGIS illustrating previous survey coverage and the APE;
- Review of V-CRIS GIS data including Phase I level survey coverage layer; and
- Review of both architectural and archaeological site information and reports housed at VDHR to identify potential concerns and sites important chiefly for reasons other than information potential.

2.2 CURRENT CONDITIONS ASSESSMENT

RK&K staff prepared a GIS-based current conditions assessment of the APE which included an overview of environmental context and conditions as well as a review of the current built environment within the APE. The conditions assessment was conducted with the goal of identifying areas within the APE that retain the potential for intact archaeological resources. A review of aerial photography coupled with map overlays showing the change in conditions over time was utilized to meet this project goal. Additionally, the conditions assessment was utilized to illustrate the potential of the project to impact resources already determined potentially significant that have yet to be fully evaluated. The current conditions assessment included the following tasks:
GIS-based assessment of current conditions utilizing current aerial photography and map overlays;

- Review and summation of environmental context prepared during previous investigations in the APE; and

- Identification of potential areas that retain integrity and may require additional Phase I level survey coverage.

### 2.3 Assessment of Archaeological Potential

Background research conducted as part of the current project included a thorough review of pertinent cultural resource reports available at VDHR regarding the level of previous survey coverage for the APE. Additionally, the VDHR archives were consulted for information on previously recorded archaeological sites present within the APE. The review of the previously conducted cultural resource survey data, coupled with a review of the previously recorded sites identified within the APE and a review of the history of the region were synthesized to present an assessment of archaeological site potential within the APE. This synthesis of information was generated to identify areas within the APE that may require or warrant additional survey during future stages of the project; and to assess the likelihood for the presence of significant archaeological resources within the APE that may be extraordinarily complex, contain human burials, or would be important chiefly for reasons other than information potential.

Jean M. Cascardi, RK&K Field Manager, conducted the archaeological assessment and completed the technical report with supervision from Karen Hutchins-Keim, RK&K Principal Investigator. Additional background research came from Kelly Flammia and J. Andrew Ross. A windshield assessment of the APE was conducted by Jean Cascardi. GIS project mapping was prepared by Jean Cascardi with additional support from Liz O’Keefe and Ryan Sless. RK&K archaeologist Jason Shellenhamer and RK&K project managers Travis Comer and Maggie Berman provided additional project support.

#### 2.3.1 Predictive Model for Prehistoric Archaeological Potential

RK&K developed a predictive model based on a sensitivity assessment that divided the prehistoric archaeological potential of the study corridor into areas of high, moderate, and low potential. The basic criteria for prehistoric archaeological sensitivity drawn from the predictive model are described as follows:

- Areas in the study corridor were considered to possess a **High Archaeological Potential** if the area is located in an environmental setting highly favorable for prehistoric occupation (determined by proximity to water resources, elevation, and ground slope) on mostly undisturbed and well drained soils and/or in adjacent to or in close proximity to previously documented prehistoric archaeological sites.

- Areas in the study corridor were considered to possess a **Moderate Archaeological Potential** if the area is located in an environmental setting moderately favorable for prehistoric occupation on mostly undisturbed and well drained soils and/or located within 500 to 1000 feet from a previously to documented prehistoric archaeological site.
• Areas in the study corridor were considered to possess **Low Archaeological Potential** if the area is located in an unfavorable environment for prehistoric occupation on disturbed or poorly drained soils and/or located at a distance greater than 1000 feet from previously documented prehistoric archaeological.

### 2.3.2 Predictive Model for Historic Archaeological Potential

The basic criteria for historic archaeological sensitivity drawn from the predictive model are described as follows:

• Areas in the study corridor were considered to possess a **High Archaeological Potential** if the area consists of mostly undisturbed, well drained soils and is located in close proximity (typically within 500 feet or less) to known historic period occupations represented by previously documented archaeological sites or historic structures or buildings.

• Areas in the study corridor were considered to possess a **Moderate Archaeological Potential** if the area consists of mostly undisturbed and well drained soils and is located in moderate proximity (typically between 500 to 1000 feet) to known historic period occupations represented by previously documented archaeological sites or historic structures or buildings.

• Areas in the study corridor were considered to possess **Low Archaeological Potential** if the area consists of disturbed or poorly drained soils and is located at a distance (typically greater than 1000 feet) from documented historic period occupations represented by previously documented archaeological sites or historic structures or buildings.
3 ENVIRONMENTAL SETTING

The APE is located in the Tidewater region of southeastern Virginia, within the City of Chesapeake. This area is situated within the Atlantic Coastal Plain physiographic region which is an area of low elevation and relief that is typically less than 30 feet above mean sea level (AMSL) (Egloff, 1985). It is characterized by narrow well-drained ridges, broad poorly drained flats, and marine coastal areas. Coastal areas consist of marshes, beaches, and dunes. The Atlantic Coastal Plain is made up of unconsolidated sediments – silts, sands, and gravels – that create a wedge that increases from 0.0 feet at the Fall Line to approximately 10,000 feet at the Atlantic shoreline. The APE is located northeast of the Great Dismal Swamp Wildlife Refuge’s northern boundary. The Great Dismal Swamp encompasses approximately 750 square miles in southeastern Virginia and northeastern North Carolina and is comprised of poorly drained, forested peat. It is densely forested and contains scattered natural elevations of 10 to 20 feet AMSL. USGS Topographic mapping indicates portions of the Study Area share environmental characteristics with the federally controlled portion of the Great Dismal Swamp.

3.1 GEOLOGY

The geology of the Virginia Coastal Plain consists of igneous and metamorphic rock of Precambrian and Paleozoic age overlain by a series of sedimentary deposits dating to the Cretaceous Period. Within the APE, the sedimentary deposits are estimated to exceed 400 feet in depth. Beginning as early as the Late Cretaceous Period, a cycle of transgression and regression related to glacial activities and subsequent sea level fluctuation is responsible for the formation of these sedimentary layers in the Atlantic Coastal Plain. These layers are known as the Mattaponi (Upper Cretaceous/Paleocene), Nanjemoy (Eocene), Calvert (Eocene/Miocene), and Yorktown (Miocene) formations (Teifke, 1973). The Cenozoic Period has been characterized by the continued deposition of clays, silts, sands, and gravels. The Late Pleistocene and Holocene geology of the Atlantic Coastal Plain has mostly been characterized by marine transgression onto land. Sedimentary systems effecting the APE include fluvial and marine-estuarine depositions. Fluvial forces include overbank flow and stream meander, resulting in alluvial deposition. Marine-estuarine soil deposition occurs during hurricanes, tidal floods, and longshore currents (Onuschak, 1973).

The APE is in a coastal lowland and is nearly level to gently sloped and low-lying; these lowlands coincide with major rivers typical near the Chesapeake Bay. The APE largely lies within the Lynnhaven Member with a small portion of the western edge lying within the Sedgefield Member. Both the Lynnhaven and Sedgefield Members are part of the Tabb Formation. The Lynnhaven Member is described as pebbly and cobbly, fine to course gray sand grades upward into clayey and silty fine sand and sandy silt (Rada and Evans, 1993). A homogeneous bluish-gray sandy clay up to five feet thick comprises the principal lithology of this member. The Sedgefield Member is described as pebbly to boulder, clayey sand and fine to medium, shelly sand that grades upwards into sandy and clayey silt (Rada and Evans, 1993). The Sedgefield Member primarily lies toward the western perimeter of the Bowers Hill Study Area. It measures from 8 to 11 feet thick near its northern end near the confluence of the James and Nansemond Rivers and decreases in thickness to approximately four feet as it extends south.
3.2 Hydrology
Two tributaries lie within the APE; Goose Creek extends along the northwestern edge of the Study Area and the confluence of the Western Branch of the Elizabeth River. Goose Creek is located on the northern edge of the Study Area, north of Airline Boulevard. The Elizabeth River, the major drainage within the Study Area, is a tributary of the James River that empties into the Chesapeake Bay at Hampton Roads.

The APE is located north and east of the Great Dismal Swamp. During the early twentieth century canals and ditches were cut through the swamp to facilitate drainage and to develop new transportation routes for travel and shipping. Two of these ditches, the North and East ditch, intersect each other near Bowers Hill. The East ditch originates near Lake Drummond and flows north over a course of approximately 12 miles and intersects with a channelized portion of Goose Creek south and west of the APE.

3.3 Soils
Soils within the APE generally belong to the Tomotley-Deloss Complex (Figure 3-1 and Figure 3-2). The complex is common in the Tidewater Region of Virginia. The soils in this complex range from very poorly to poorly drained and have a mostly sandy clay loam subsoil. The soil survey indicates that the dominant soil types within the APE are Tomotley-Deloss (20.6 percent), Udorthents-Urban land complex (13.3 percent), and Munden fine sandy loam (9.5 percent). Additionally, soils found within the APE share similar characteristics with Aquent soil (98 percent).

The Tomotley-Deloss Complex is a very poorly to poorly drained, hydric soil with little to no slope. The complex is typically found on marine terraces on a parent material of loamy marine deposits. Udorthents consists of disturbed soils. Urban land is described as areas that have been covered by infrastructure elements, structures, or supporting features of structures; such as roadways or parking lots (NRCS, 2007). The Udorthents-Urban soil is found along the previously developed roadways of U.S. Route 13, I-64, I-264, and I-664 within the APE. Munden fine sandy loam soils are not considered a hydric soil and are moderately well drained with gentle to no slope. Munden fine sandy loams are located on marine terraces in the Coastal Plain. Aquents soil series soils exhibit no slopes to gentle slopes and are primarily located in the Tidewater Region of Virginia. These soils are found in areas where ground disturbance has occurred and are mainly associated with built environments, including man-made wetlands and leveled areas of poorly drained soils (NRCS Chesapeake, VA 2007). Representative profiles for Aquent and Udorthents-Urban soils are not provided in the soil survey resources as they vary due to past ground disturbing activities. Several other soil series appear within the APE; these soils share landform settings related to marine or stream terraces and parent materials related to marine deposits or alluvial deposits. A complete list of the soil types within the Bowers Hill Interchange Improvements APE is presented in Table 3-1.
Figure 3-1: NRCS Soil Series West Section of APE
Figure 3-2: NRCS Soil Series East Section of APE
<table>
<thead>
<tr>
<th>City/County</th>
<th>Map Symbol</th>
<th>Name</th>
<th>Soil Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chesapeake</td>
<td>5</td>
<td>Aquents 0 to 2 percent slopes</td>
<td>Frequently ponded, poorly drained, nearly level to gentle slope</td>
</tr>
<tr>
<td>Chesapeake</td>
<td>8</td>
<td>Bojac loamy fine sand, 0 to 2 percent slopes</td>
<td>Well-drained soils, nearly level to gently sloping</td>
</tr>
<tr>
<td>Chesapeake</td>
<td>9</td>
<td>Bojac-Urban land complex 0 to 2 percent slopes</td>
<td>Bojac are nearly level to gently sloping, very deep, well drained soils. Urban land consists of areas covered by asphalt roadways or parking lots, concrete structures, buildings and other impervious surfaces.</td>
</tr>
<tr>
<td>Chesapeake</td>
<td>14E</td>
<td>Conetoe-Chesapeake-Tetotum complex, 2 to 40 percent slopes</td>
<td>Gently sloping to moderately sloping, well-drained soils</td>
</tr>
<tr>
<td>Chesapeake</td>
<td>16</td>
<td>Deloss-Tomotley-Nimmo, 0 to 1 percent slope</td>
<td>Nearly level, very poorly drained soil</td>
</tr>
<tr>
<td>Chesapeake</td>
<td>19</td>
<td>Dragston fine sandy loam, 0 to 2 percent slopes</td>
<td>Nearly level, somewhat poorly drained soils</td>
</tr>
<tr>
<td>Chesapeake</td>
<td>21</td>
<td>Dragston-Urban land complex, 0 to 2 percent slopes</td>
<td>Nearly level to gently sloping, somewhat poorly drained soils, urban land consists of areas covered by asphalt roadways or parking lots, concrete structures, buildings and other impervious surfaces.</td>
</tr>
<tr>
<td>Chesapeake</td>
<td>22</td>
<td>Dragston-Urban land-Tomotley complex. 0 to 2 percent slopes</td>
<td>Nearly level to gently sloping, somewhat poorly drained to poorly drained soils, urban land consists of areas covered by asphalt roadways or parking lots, concrete structures, buildings and other impervious surfaces.</td>
</tr>
<tr>
<td>Chesapeake</td>
<td>25</td>
<td>Munden fine sandy loam, 0 to 2 percent slopes</td>
<td>Nearly level to gentle slopes, moderately well-drained soils</td>
</tr>
<tr>
<td>Chesapeake</td>
<td>27</td>
<td>Munden-Urban land complex. 0 to 2 percent slopes</td>
<td>Nearly level to gentle slopes, moderately well-drained soils, urban land consists of areas covered by asphalt roadways or parking lots, concrete structures, buildings and other impervious surfaces.</td>
</tr>
<tr>
<td>Chesapeake</td>
<td>30</td>
<td>Nawney silt loam, 0 to 1 percent slope</td>
<td>Nearly level, very poorly drained soils</td>
</tr>
<tr>
<td>Chesapeake</td>
<td>37</td>
<td>Rappahannock muck, 0 to 1 percent slopes</td>
<td>Nearly level, very frequently flooded, very poorly drained</td>
</tr>
<tr>
<td>Chesapeake</td>
<td>43</td>
<td>Tomotley-Deloss complex, 0 to 1 percent slopes</td>
<td>Nearly level to no slope, poorly to very poorly drained soil</td>
</tr>
<tr>
<td>Chesapeake</td>
<td>44</td>
<td>Tomotley-Deloss-Urban land, 0 to 1 percent slopes</td>
<td>Nearly level to no slope, poorly to very poorly drained, urban land consists of areas covered by asphalt roadways or parking lots, concrete structures, buildings and other impervious surfaces.</td>
</tr>
<tr>
<td>City/County</td>
<td>Map Symbol</td>
<td>Name</td>
<td>Soil Description</td>
</tr>
<tr>
<td>-------------</td>
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</tr>
<tr>
<td>Chesapeake</td>
<td>47</td>
<td>Tomotley-Urban land-Bertie complex, 0 to 2 percent slopes</td>
<td>Nearly level to gently sloping, poorly drained to somewhat poorly drained soils with urban land consisting of areas covered by asphalt roadways or parking lots, concrete structures, buildings and other impervious surfaces.</td>
</tr>
<tr>
<td>Chesapeake</td>
<td>49</td>
<td>Udorthents-Urban land complex, 0 to 45 percent slopes</td>
<td>Udorthents resulted from disturbance of soil by land leveling, excavation or filling and consists of dandy and loamy soil material. Urban land consists of areas covered by asphalt roadways or parking lots, concrete structures, buildings and other impervious surfaces.</td>
</tr>
<tr>
<td>Chesapeake</td>
<td>50</td>
<td>Urban land, 0 to 5 percent slopes</td>
<td>Consists of areas covered by asphalt roadways or parking lots, concrete structures, buildings and other impervious surfaces.</td>
</tr>
<tr>
<td>Chesapeake</td>
<td>51E</td>
<td>Urban land-Conetoe-Chesapeake-Tetotem complex, 2 to 40 percent slopes</td>
<td>Gentle to steep slopes. Urban land consists of areas covered by asphalt roadways or parking lots, concrete structures, buildings and other impervious surfaces. Very deep, well-drained to moderately well-drained soils, alluvium or marine deposits.</td>
</tr>
<tr>
<td>Chesapeake</td>
<td>52</td>
<td>Urban land-Deloss-Tomotley-Nimmo complex, 0 to 1 percent slopes</td>
<td>Urban land consists of areas covered by asphalt roadways or parking lots, concrete structures, buildings and other impervious surfaces. Deloss-Tomotley-Nimmo are nearly level, very deep, poorly drained soil.</td>
</tr>
</tbody>
</table>

Source: United States Department of Agriculture 2018

3.4 **Natural Resources**

The APE lies within the Southeastern Evergreen Forest region. Upland areas are covered by oak-hickory and pine forests and the lower, wet areas are populated by cypress, tupelo, and pine (Braun, 1950). The Great Dismal Swamp ranges from peat beds to forests as well as locations that have been drained for agricultural use. The historically forested areas consisted of loblolly pines, poplar, beech, hickory, red maple, oak, and gum (Henry et al., 1959). White cedar also covered large stretches of the Great Dismal Swamp until about the 1930s when many of the trees were harvested as part of an extensive logging industry in the area (Simpson, 1990). The white cedar trees were replaced by red maple, poplar, oaks, loblolly pine, and gums. Numerous fires have been recorded in the Great Dismal Swamp over the last two hundred years; fires are recorded as destroying thousands of acres of forest within the swamp beginning in 1806 and as recently as 1940-1941. Today dense thickets of myrtle, gallberry, and cane reed grow throughout the swamp as a result of those historic fires (Henry et al. 1959).
The unique freshwater/saltwater environment found in the APE has contributed to great faunal diversity in the region. A wide variety of fish and shellfish species, numerous avian species, mammalian species, and the cultivation of plants such as corn, beans, and squash would have allowed prehistoric inhabitants of the Tidewater area to exploit an abundant food base. Oysters, crabs, fresh and saltwater clams, shrimp, mussels, bass, flounder, shad, herring, snapper, sturgeon, and bluefish are among the important riverine and estuary fauna of the Tidewater area that would have been exploited by inhabitants of the region (James River Institute for Archaeology, 1994; Dent, 1995; Stevens, 1991).
4 REGIONAL CULTURAL CONTEXT

The following section provides a generalized cultural context for identifying and determining the significance of archaeological resources that may be present within the APE. This context is not intended to be a full historic context for the region, but an overview of the background and history of the Bowers Hill Interchange Improvements Study Area. Several sources were consulted to develop this project-specific context and were largely supplemented by *A Cultural Resources Survey of a ±70 acre Parcel for the Southeastern Public Service Authority of Virginia* (James et al., 2007) and *A Phase I Cultural Resources Survey of the Approximately 20 Mile Dominion Power Suffolk to Thrasher 230kV Transmission Line, Cities of Suffolk and Chesapeake, Virginia* prepared for Williamsburg Environmental Group by Cultural Resources, Inc (Leithoff et al., 2009); additional sources are cited within the text.

4.1 PREHISTORIC CONTEXT

Native American settlement and chronology descriptions throughout the Mid-Atlantic are consistently described in a three-period division characterized by major shifts in lifeways. These are Paleoindian, Archaic, and Woodland Periods. The end of the Woodland Period is characterized by the arrival of European colonists and explorers to the “New World” in the seventeenth century, bringing outside cultural and physical influences on Native American populations. The following description of Native American Prehistoric context is the commonly referenced and accepted timeline as it applies to Virginia and more generally the Mid-Atlantic region of the United States.

4.1.1 Paleoindian Period

Native American occupation in Virginia began at least during the Paleoindian Period, which is thought to have begun in North America by approximately 12,000 B.C. (Anderson and Sassaman, 1996). Artifacts most often associated with this period are fluted points (such as the Clovis and Cumberland types) which have rarely been found in stratified archaeological contexts (Justice, 1987). Population densities were low during this period and the archaeological record suggests people lived in small, mobile groups. Paleoindians were primarily hunter-gatherers who collected wild foods and may have hunted large herd animals such as caribou, in addition to deer, elk, moose, and a variety of small game species (Turner, 1989; Boyd, 1989).

Fewer than 75 Paleoindian sites have been identified in Virginia with fewer than 20 documented in the Coastal Plain (Turner, 1989). Stratified sites containing Paleoindian components in Virginia include the Williamson site, the Thunderbird and Fifty Sites of the Flint Run Complex, and the more recently excavated Slade North and Fannin sites (Barber and Barfield, 1989; Gardner, 1974, 1977; Carr, 1975; McAvoy, 1992; McAvoy and McAvoy, 1997). Concentrations of fluted points associated with this period have been associated with local outcrops of chert, jasper, and chalcedony as well as with the regions generally dominated by the oak-hickory forest and the northern hardwood forests. It appears that the Paleoindians in Virginia resided in areas that would have been rich in floral, faunal, and lithic materials (Turner, 1989). The current consensus from researchers in the Eastern United States is that Paleoindian subsistence was characterized by a balanced hunting economy based on the exploitation of migratory game such as caribou, supplemented by foraged plant and animal species (Fitting, 1965; Johnson, 1996; Ritchie and Funk, 1973).
Several projectile point types are characteristic of the Paleoindian Period in Virginia and include Clovis, Mid-Paleo, Dalton, Hardaway, and Hardaway-Dalton (Barber and Barfield, 1989). The Paleoindian tool kit includes scrapers, gravers, wedges, hammerstones, and abraders in addition to the fluted point (Gardner, 1989). These artifacts are frequently made of high-quality lithic materials such as quartz crystal, jasper, chert, chalcedony, and varieties of Carolina Slate.

Small temporary campsites have been identified immediately west of the Dismal Swamp in Suffolk suggesting that Paleoindian populations may have used the Swamp for hunting and foraging (Rappleye and Gardner, 1979). During this period the Dismal Swamp was young and would have consisted of freshwater marshes within stream courses that were separated by well-drained interfluves in boreal pine-spruce forests ideal for gathering resources (Bottoms and Painter, 1979). The environment would likely have been ideal for hunting based on the proximity to water and a high potential for wildlife as may be evidenced by the temporary campsites. Recent archaeological investigations at the Cactus Hill site in Sussex County indicate that Native Americans may have been in Virginia as early as 15,000 -16,000 years ago; however, other such early settlement has not yet been identified elsewhere in Virginia (VDHR, 2017). Despite this, increasing evidence of earlier periods of occupation has been identified elsewhere in the Mid-Atlantic and on the Atlantic Coast.

4.1.2 Archaic Period

The Archaic Period (8,000−1,200 B.C.) follows the Paleoindian Period and coincided approximately with the start of the Holocene, the present geological period that began with the recession of the ice sheets and a shift from moist, cool climates to a warmer, drier climate up to today. The Archaic Period can be characterized by the development of specialized resource procurement technologies and activities. The differences in the material culture are believed to reflect larger, more localized populations and changes in methods of food procurement and processing (Dent, 1995:147, 164-5). In eastern Virginia, a temperate climate was established and the formation of the Chesapeake estuary began during the Holocene (Dent, 1995). Increasing differences in seasonal availability of resources brought on by post-Pleistocene changes are thought to coincide with increasing emphasis on strategies of seasonally geared mobility.

Archaic populations are thought to have been organized in social groups of 20 to 30 individuals (band-level social organization) with settlement patterns characterized by frequent seasonal movements within well-defined territories corresponding to the seasonal availability of resources. Subsistence strategies were developed to exploit the seasonally available flora and fauna that emerged during the early Holocene era (Dent, 1995). Settlement during the Archaic Period likely involved the occupation of relatively large regions by single band-sized groups who settled in base camps during part of the year and dispersed seasonally to create smaller microband camps that may have consisted of no more than a single family (Griffin, 1952; Anderson and Hanson, 1988; Ward and Davis, 1999).

The population continued to increase from the Early to Middle Archaic Periods and continued throughout the Late Archaic. The Late Archaic is one of the most studied areas of Native American history, in part because the environment was optimal for site preservation. The Late Archaic continued as a hunter-gatherer subsistence (egalitarian and highly-mobile bands) economy with an increase in plant processing and the large-scale exploitation of shellfish. Selection of lithic materials during this time shows an increased reliance on locally available tool stone.
Late Archaic groups became more sedentary as their reliance on seasonal flora increased. Evidence for storage of foods such as squash, nuts, and goosefoot appeared in the Late Archaic southeastern North America (Steponaitis, 1986:374). The increased use of floodplain settings documented elsewhere along the Atlantic Coast during the Late Archaic also occurred in Coastal Virginia (Klein and Klatka, 1991; Steponaitis 1986).

Klein and Klatka (1991), using data from three different studies along the Coastal Plain (Potter, 1982; Steponaitis, 1987; Turner, 1976), show a movement toward increased utilization of estuarine resources during the Late Archaic and Early Woodland Periods. This pattern is not confined to the Virginia Coastal Plain. It is seen along the entire Atlantic Coastal region, and it has been suggested (e.g. Braun, 1974; Claassen, 1986; Snow, 1980) that it is indicative of an increase in shellfish exploitation and anadromous fish post-3000 B.C. This was also likely related to the stabilization of sea levels during the Late Archaic, resulting in favorable conditions for the development of estuarine habitats. These increasingly sedentary groups also became more reliant on fishing and other riverine resources as evidenced by the appearance of artifacts and features such as net sinkers, shell middens, and fish weirs at some Late Archaic sites (Dent 1995:184-185).

Archaeological investigations at the Magnolia Site (44SK0155) represent a rare example of a large habitation site in the vicinity of the APE. The site, located approximately 6.5 miles southwest of the APE, is a multi-component prehistoric site with a primary occupation period dating to the Middle Archaic and a secondary occupation period dating to the Late Archaic to Early Woodland (Blanton, 2003). Projectile point types recovered from the site indicate it was also occupied as early as the Early Archaic period. Archaeological evidence supports the assumption that the site was not occupied year-round but would have been returned to seasonally (Blanton, 2003). Site stratification and projectile point type analysis suggests an increase in the number of individuals occupying the site until the Early Woodland period when a sudden decrease in diagnostic projectile points was observed, suggesting abandonment of the site (Blanton, 2003).

4.1.3 Woodland Period
The Archaic Period was followed by the Woodland Period (1,200 B.C.—A.D. 1600), characterized by the adoption of ceramic technology, an intensified reliance upon horticulture and agriculture, and increased sedentism (Klein and Klatka, 1991; Mouer, 1991). Three subperiods (Early, Middle, and Late Woodland) have been designated, based primarily on stylistic and technological changes in ceramic and projectile point types as well as settlement patterns. All researchers do not agree upon the temporal brackets for the Early and Middle Woodland in Virginia. The temporal scheme used in Virginia at present is Early Woodland, ca. 1200 B.C.—ca. 500 B.C.; Middle Woodland, ca. 500 B. C. - ca. A.D. 900; and Late Woodland, A.D. 900-1600.

During the Early Woodland Period, the archaeological record indicates the continued increase in the use of oysters as a food source. In addition, the use of subterranean features such as storage pits, refuse pits, and cooking hearths have been associated with the Early Woodland Period; these types of features appeared first in the Piedmont and then in the Coastal Plain. Mouer (1991) indicates that thick midden deposits with dense occupational debris start to appear on sites along the James River during the Early Woodland Period concurrently with shell midden deposits that were documented by Waselkov (1982) along the Potomac River. These types of features indicate increased sedentism and a shift to more intense
local resource extraction and lengthier occupation periods. At the White Oak Point site, remains of hickory nuts, various species of shellfish and fish, and deer were recovered (Waselkov, 1982). At the Magnolia site, remains of hickory nuts and other seeds and small degraded fragments of faunal remains were recovered (Blanton 2003). Although some early agriculture may have been practiced during this period, the subsistence pattern of Early Woodland inhabitants of Eastern North America was probably similar to that of Late Archaic people. The exploitation of plants, including goosefoot, sumpweed, maygrass, and knotwood, continued, as did a general increase in sedentism first seen during the Late Archaic (Steponaitis, 1986:379).

During the Middle Woodland Period, there is a noted decrease in the archaeological record of the number of sites along smaller streams and an increase in sites along major trunk streams and estuaries. Shellfish, anadromous and resident fishes, deer, waterfowl, and turkey would have been among the more important fauna in the Middle Woodland diet. Analysis of remains gathered from excavations at the Maycock’s Point site has shown the importance of aquatic resources in the James River estuary system during the Middle Woodland Period (Opperman, 1992). Various nuts, amaranth, and chenopod seeds also appear to have been important during this period; these items were probably harvested intensively and often stored for long periods of time.

Settlement models for the Middle Woodland in the outer Coastal Plain have been put forth by Gardner (1982) and when combined with research on the shoreline Potomac area of the Northern Neck region (Potter, 1982; Waselkov, 1982), the models show that shellfish exploitation began during the Late Archaic and became intensive by the Middle Woodland. During the period between A.D. 200 and A.D. 500, small group sites predominate in the archaeological record; these small sites include both low-density shell middens on the coast and non-midden sites in the interior (Potter 1982). After A.D. 500 and until the start of the Late Woodland Period, there is evidence of an increase in the numbers of very large shell middens; these may well represent village sites where multiple bands congregated for part or all of a year (Potter, 1982:346). Around Portsmouth, Gardner (1982:56-57) interprets large sites as sedentary macroband settlements, and smaller sites as outlying ephemeral camps that would have been occupied as needed. Handsman and McNett (1974:26, 31) suggest that the small site/large site dichotomy in the Chesapeake area is a reflection of need due to population pressure and to accommodate nascent horticulture. However, no evidence of such horticulture is seen in the archaeological record before the Late Woodland.

Archaeological evidence from the Magnolia Site suggests the site was abandoned before the Middle Woodland Period which is atypical of the period (Blanton, 2003). Other regional archaeological evidence suggests that at the time the site was abandoned there was increased settlement in the Nansemond and James River estuaries (Blanton, 2003). The change in settlement pattern could be evidence of increased population stress on the resources of the Dismal Swamp or, possibly, evidence of a changing environment within the swamp (Blanton, 2003).

The Late Woodland Period is marked by an intensified use of cultivated plants, particularly maize, although various beans and squashes were also used consistently during the Late Woodland. Socio-economic complexity likely increased concurrently with an increased dependence on agriculture and increased population density. During the Woodland Period, tribal organization developed replacing bands. The reorganization relied on larger kinship groups and, gradually, leader-based ability was replaced with centralized authority based on formal inheritance (VDHR, 2017). These systems would have been in place...
at the time of European contact and had likely been established several centuries before contact. Carbonized remains of maize, squash, gourd, hickory nut, walnut, acorn, grape, huckleberry, persimmon, blueberry, blackgum, and amaranth have been recovered from a Late Woodland context at the Great Neck site (Gardner, 1990). European accounts describe a heavy reliance on slash-and-burn agricultural methods; however, despite this supposed dependence on cultigens, only nine sites report such remains in the region (Turner, 1992:106-107). This may be due to recovery methods; greater numbers of cultigens have been found at coastal plain sites where finer recovery methods such as water screening or flotation were used, as opposed to traditional dry screening. It may also be the result of post-depositional processes in the coastal plain, such as soil acidity and percolation conditions that may obscure the cultigen remains from the archaeological record (Turner, 1992:108). However, if maize and other cultigens were truly not common during the Late Woodland Period, knowing the processes under which the Powhatan chiefdom emerged without maize agriculture would be “theoretically important for studies on the evolution of chiefdoms” (Turner, 1992:108). The role of abundant aquatic resources available in the estuarine environment also cannot be overlooked and may account for the possible decreased dependence on maize. In addition to cultigens and shellfish, Late Woodland peoples throughout the region would have continued to rely on large mammals, small mammals, and birds (Dent, 1995:251) for their subsistence.

Shell was an important material used during the Late Woodland Period in the Chesapeake and tended to be associated with the accumulation of wealth and, possibly, status in those societies. A prominent example of an indicator of wealth and status is Powhatan's Mantle. This deerskin mantle contains thousands of small marginella beads sewn into various patterns. Pendants and gorgets made of shell are also common indicators of wealth during this period. Of note, five engraved shell masks, decorated with a traditional Southeastern “forked/weeping eye” motif were found in a seventeenth-century burial in Stafford County. Three of the five masks show clear similarities with others located in the lower Southeast (Smith and Smith, 1989), and likely indicate long-distance trade. Bone was also used for items including pins and fishhooks.

Trade becomes a significant factor during the Late Woodland; as Turner (1992:105) states, it “presumably was a factor in the evolution of the Powhatan chiefdom as well as the less complex Nottoway and Meherrin societies to the south.” In addition to the shell masks described above, steatite pipes found at the Hand site demonstrate trade with groups in the Virginia Piedmont. Copper has also been found in small amounts across the region, although its originating source is to the west. Of a less exotic nature, some lithic raw materials not generally found along the coast had to be traded into the region from areas to the west. At the Great Neck site, a possible shell bead workshop area was uncovered suggesting that Coastal Plain groups had goods to trade out of the region (Turner, 1992:105).

Settlement during the Late Woodland Period is markedly changed from that of the preceding Middle Woodland. Most prominently, the presence of palisaded villages serves as a distinguishing settlement characteristic and appears to have emerged during the fifteenth and sixteenth centuries. Palisades are generally interpreted as defensive mechanisms and may indicate growing tension and possibly hostilities between neighboring groups (Turner, 1992). In addition to palisaded villages, nucleated and dispersed non-palisaded villages, hamlets, and temporary camps are quite common in the region at this time. Although only nucleated villages are usually identified, more recent work suggests that dispersed villages were present as well (Potter, 1982; Hodges, 1986a, 1986b; Opperman, 1989, and Turner, 1990). Village settlement itself varied, but some sites show evidence of longhouses located adjacent to the palisade.
Other archaeological investigations at sites associated with the Weanoocks of Prince George County have uncovered short, oval structures.

The social organization of groups located along the coast during the Late Woodland has been widely recognized as being hierarchical and is based primarily on historical documentation. The hierarchy was manifested most prominently by the Powhatan Chiefdom of the sixteenth and seventeenth centuries. Its growth is documented through a rise from six to nine districts in the middle to late sixteenth century to 31 districts by 1607 containing 13,000 persons and covering 16,500 square kilometers (Turner, 1992). Archaeological evidence of hierarchal rank in the Mid-Atlantic is not as well defined as it is elsewhere in the western hemisphere; for example, other known rank societies demonstrated hierarchal order through monumental architecture, which is absent in the region. However, there is archaeological evidence and historic documentation that support the expansion of Powhatan by increased territoriality and warfare. The best archaeological indicator of rank in the region may be evidenced in mortuary practices.

There are early historic accounts of different treatment of individuals of different rank; archaeological investigations evidence this as well. Two examples of this are the Great King of Great Neck, a burial with more than 30,000 shell beads (Turner, 1992:117) and a child burial at the Hatch site that contained almost 1,500 shell beads. Ossuary burial is common in the Chesapeake; however, rank is more difficult to assess with this burial type as it is unclear if higher status individuals were placed in separate areas as ossuaries filled up. Generally, ossuaries contained between 10 and 20 individuals and there is an absence of interred artifacts.

Woodland Period sites are more common in the region than Archaic sites. Woodland sites tend to be located along larger streams and estuaries and conditions for preservation tend to be better than earlier period sites. By the onset of the Woodland Period, environmental conditions similar to those of today were well established. Sea level rise and shoreline erosion of sites from the later periods become less of a factor in the preservation of sites.

### 4.2 Historic Context

Based on extensive previous survey and planning work completed in Virginia, the following sequence of time periods has been broadly defined by the VDHR as a basis for understanding historic cultural developments within the Commonwealth. The APE is situated on a major thoroughfare connecting the long-established cities of Suffolk, Portsmouth, and Norfolk. Bowers Hill did not experience similar growth as these cities and retained a rural landscape for some time. Despite the construction of major interstates and roadways, the APE located south of Goose Creek and the confluence of the Western Branch of the Elizabeth River has retained much of its agricultural character; however, suburban development on the outskirts of the APE is encroaching.

#### 4.2.1 Settlement to Society (1607-1750)

In May 1607, a small group of Englishmen under the authority of the Virginia Company of London arrived at Jamestown Island, where they established the first permanent English settlement in the New World. At the time of their arrival, the Tidewater Region was politically dominated by the Powhatan chiefdom. The Powhatan Chiefdom was comprised of numerous Algonquian-speaking tribes occupying southeastern Virginia (Potter, 1993). John Smith’s 1612 Map (Figure 4-6) shows villages along the James and
Nansemond Rivers. Various tribes of the Powhatan Chiefdom and the Nansemond lived on the edge of the Dismal Swamp and would have been utilizing the resources within the swamp.

The Nansemond controlled much of the APE at the time of the English settlement in the Tidewater Region. The largest Nansemond settlement was in the area of Reid’s Ferry on the Western Branch of the Nansemond and their maize was stored on nearby Dumpling Island (McKnight, 1959). In 1608 the English, led by Captain John Smith, were traveling along the Nansemond River and were attacked near Dumpling Island. The English retaliated and the Nansemond called off the attack and made peace (McKnight, 1959). The winter of 1608/1609 was difficult for the English settlers; it was then that Captain John Martin headed an expedition to seize the maize from Dumpling Island and capture the Nansemond chief. The Nansemond responded and attacked Martins party, liberating both their chief and their maize (McKnight, 1959). Over the next ten years, the number of English increased and subsequently grew in strength.

Chesapeake was originally part of the Elizabeth City shire formed in 1634. Historical documents record land grants in the area as early as 1620, but it was not settled until later (Mason, 1941). By 1636, an influx of settlers to the banks of the Elizabeth and Lynnhaven rivers prompted the formation of New Norfolk County, and Chesapeake became a part of this new county. Regional population continued to increase, and New Norfolk County was divided into Upper and Lower Norfolk County. Lower Norfolk County was formed in 1637 and was comprised of the Tidewater area south of the James River. In 1645 Upper Norfolk County became Nansemond County and included parts of both present-day Southampton and Isle of Wight Counties. It was during this period that the English settlers conquered the Nansemond Indians and English settlement grew.

Over time the two tribes became more culturally connected. Some Nansemond married English settlers and present-day Nansemond trace their heritage to the 1638 marriage of John Bass to a Nansemond convert named Elizabeth or to the marriage of John Bass’s two daughters to two of Powhatans' followers (Hobbs and Paquette, 1987). The Bass Family and the Nansemond continued to form alliances through marriage during the seventeenth century. These marriages lead to the division of the Nansemond tribe in the region; a Christian settlement that stayed in the area of present-day Bowers Hill and a second settlement that went north to present-day Surry County (Vest, 2003). Augustine Herrman's 1673 map shows little detail except the rivers in the vicinity of the APE (Figure 4-2).

During the seventeenth century, tobacco was the primary agricultural crop for most of Virginia. The fertile soils and many waterways in the region facilitated the cultivation and export of tobacco. The tobacco industry was the key to the region's economic stability (Hobbs and Paquette, 1987). Early historic maps show limited settlement in what is now known as Bowers Hill. However, the location, south of the confluence of Goose Creek and the Western Branch of the Elizabeth River provided planters with access to the James River and the Chesapeake Bay. A land patent map, created in 1948, depicts early land ownership in the area during the mid through late seventeenth century, including a record of a “Bowers” family owning land in the vicinity of the APE. Robert Bowers held land patents for 300 acres east of the APE and 100 acres north of the APE by 1654; John Bowers held claim to 166 acres just north of the confluence at the Western Branch of the Elizabeth River and Goose Creek (Figure 4-3) (Granbery, 1948).
Figure 4-1: Approximate Location of APE on the 1612 Map of Virginia

Legend

- Approximate Location of APE

Map Not to Scale

Bowers Hill Interchange Improvements Study

Approximate Location of APE (Smith 1612)
Figure 4-2: Approximate Location of APE on the 1673 Map of Virginia and Maryland
Figure 4-3: Map of 17th Century Land Patents in the Approximate Location of APE

Legend

- Approximate Location of APE

Bowers Hill Interchange Improvements Study
Approximate Location of APE
(Granbery 1948)
Some of the Nansemond tribe remained in the vicinity until 1640s. In 1644, the surviving Nansemond fled their home on the Nansemond River and took refuge with the Nottoway tribe to the west (Hobbs and European settlers to the area were aware of the Dismal swamp but little was done in the seventeenth century to utilize the natural resources or inhabit the area (Stewart 1979). In 1665, Governor William Drummond of North Carolina led an expedition deep into the swamp and discovered the lake that is now named for him (Boyd, 1967).

In 1691, Lower Norfolk County was subdivided to create Princess Anne and Norfolk counties. Norfolk County’s territory extended from the North River westward to the Nansemond County line. It was bound by the James River on the north and North Carolina on the south. The seat of Norfolk County’s government was the town of Washington, later called Berkley (Boyd, 1967).

In the 1720’s William Byrd II explored the Great Dismal Swamp while surveying the Virginia-North Carolina border (Boyd, 1967). At that time, he recommended draining portions of the swamp for crops such as tobacco and hemp and utilizing the vast quantities of timber available.

### 4.2.2 Colony to Nation (1750-1789)

Eighteenth-century historic maps do not provide great detail of the Bowers Hill Interchange Improvements Study APE, as illustrated by the 1755 map by Jefferson and Fry (Figure 4-4). A later map, from 1780, of Princess Anne and Norfolk Counties shows more detail of the area including overland roads connecting from the Nansemond River’s east bank through a portion of the APE and to the city of Portsmouth, known as the “Road to Portsmouth” (Figure 4-5) (No Author, 1780). Additionally, the map depicts other development in the area including the Nansemond Church and two mills established off the Western Branch of the Elizabeth River.

The Revolutionary War greatly affected the town of Suffolk and its residents (McKnight, 1959). Nansemond County did not experience much fighting but did serve as a refuge for those fleeing the town of Norfolk and was established as a commercial center (McKnight, 1959). Lord Cornwallis and Benedict Arnold commanded troops in the area that crossed the Nansemond at Sleepy Hole Ferry (McKnight, 1959). In the early days of the Revolutionary War, the town of Norfolk was heavily Loyalist (Forrest, 1853).

During the Revolutionary War the Battle of Great Bridge (1775) was fought in vicinity of today’s Chesapeake City (Brady et al., 2016). Colonel William Woodford, Lieutenant Colonel Scott, and Major Thomas Marshall and their Virginia soldiers marched toward Suffolk from Williamsburg in need of provisions for their troops (Brady et al., 2016). Virginian soldiers built a breastwork across the bridge from British soldiers. The British troops moved on the Virginian soldiers, but safely behind fortifications the American troops easily defeated the British (Brady et al., 2016). After the Battle of Great Bridge, the British under Lord Dunmore retreated to their ships just off the coast of Norfolk. This resulted in an assault of Norfolk and eventually led to the burning of the city (Forrest, 1853).

Prior to the American Revolution the economic potential of the Great Dismal Swamp was recognized. In 1763, the Adventurers for Draining the Dismal Swamp was formed by William and Thomas Nelson, Robert Burwell, George Washington, Fielding Lewis, Robert Tucker, Jr., Thomas Walker, William Waters, John Symes, and Samuel Gist. Gershom Nimmo, a Surveyor of Norfolk County, was employed to determine existing patents and reported that Tucker owned 3,000 of the 5,800 acres. The Dismal Swamp Land Company received its charter in 1764. The Virginia Assembly also passed an act “to drain a large tract of
marshy grounds in the counties of Nansemond and Norfolk and permit them to enter upon and ...make such canal as they saw fit" (Brown, 1967).

George Washington visited the swamp in 1763, 1766, 1767, and 1768. Two canals, the Washington and Jericho, as well as many drainage ditches were dug to facilitate timbering and agricultural enterprises in the swamp (Davis, 1962; McKnight, 1959). The Washington Ditch and the Jericho Ditch extended from Lake Drummond to the western edge of the swamp (Yarborough, 1965).

The company changed names to the Dismal Swamp Company under the management of John Washington, George Washington's brother. In 1776, the company succeeded in sending 55 barrels of rice to Antigua (Simpson, 1990). The Revolutionary War had a severe impact on the enterprise and by 1781 and the original workforce of 60 enslaved laborers to eleven men, six women, and three children (Simpson, 1990).

The order was driven by a need to get timber and other resources from northeastern North Carolina to the ports in Norfolk; the canal was also meant to provide access to the swamp's abundant cypress and juniper, to make barrel staves, shingles, and naval stores for the shipping industry. The Dismal Swamp Canal Company was chartered by the Virginia General Assembly in 1787 (Stewart, 1979).

4.2.3 Early National Period (1789-1830)
The construction of the main Dismal Swamp canal was started in 1793 and African-American enslaved people from the area comprised most of the labor force (Stewart, 1979; Brown, 1970). By the mid-1790s enslaved laborers working for the Dismal Swamp Canal Company had constructed approximately 11 miles of the Dismal Swamp Canal (Parramore et al., 1994). The canal, completed in 1805, eventually covered a distance of 22.15 miles, from Deep Creek in Virginia to Joyce Creek in North Carolina. Herman Boyes’ 1827 map (Figure 4-6) shows the canal and feeder canal constructed by the Dismal Swamp Canal Company. By 1801, the canal was open to boat traffic from its southern terminus north to the Virginia-North Carolina line (Davis, 1962). The Dismal Swamp Company also produced shingles from juniper and cypress that were used in the construction of buildings and led the company to turn a profit by 1810. By 1817, the company employed 100 workers, most of whom were hired enslaved individuals (Simpson, 1990). The construction of the main canal increased the economic potential of the swamp and brought many investors into the area. In 1818, the Virginia General Assembly authorized the Dismal Swamp Canal Company to connect the main canal with the Northwest River. Construction on this canal began in 1828 and was completed in late 1830 (Board of Public Works, 1830). From 1820 to 1835, Suffolk experienced a severe agricultural depression, with tar, turpentine, and slave trading becoming the economic staples. The Dismal Swamp and its juniper forest were the county’s major sources of revenue during this period producing three million shingles (McKnight, 1959).
Figure 4-4: Approximate Location of APE on a 1755 Map of Virginia and Maryland

Legend

Approximate Location of APE

Map Not to Scale

Bowers Hill Interchange Improvements Study

Approximate Location of APE
(Fry and Jefferson 1775)
Figure 4-5: Approximate Location of APE on the 1780 Plan of Princess Ann and Norfolk Counties
Figure 4-6: Approximate Location of APE on the 1827 Map of Virginia

Legend

Approximate Location of APE

Bowes Hill Interchange Improvements Study
Approximate Location of APE
(Boye 1827)
At the same time the canal was constructed a road paralleling the canal was also built. Tolls placed along this road also helped to defray the cost of maintenance and improvements along the main canal (Brown, 1967). A stage coach route was established that assisted in the movement of goods in both directions (Brown 1967). The vicinity of the APE continued to be under-represented in maps from the first half of the nineteenth century. Boye’s 1827 map shows the Road to Portsmouth running through the APE and a smaller road running south from Bowers Hill to the canal and adjacent roadway through the Dismal Swamp. Boye’s map also demarcates a mill and a chapel in the vicinity of the APE. In 1784, Virginia Governor Patrick Henry ordered the construction of a main canal that would run north-south through the entire swamp to connect the Chesapeake Bay to the Albemarle Sound in North Carolina.

Later in the Early National Period, eastern Virginia experienced a decrease in population (Mansfield, 1989; Parramore et al., 1994). The Tidewater region consisted of farmers and the agricultural depression of the 1830s hit hard. The Lower Tidewater farmers could not compete with the cotton of the Deep South and many inhabitants moved out of the region. This period was generally uneventful for the region; however, in 1837 a fire almost destroyed the entire town of Suffolk and the county buildings (McKnight, 1959).

While Tidewater farms were hit hard, the Dismal Swamp Canal continued to enjoy a certain prosperity during the first half of the nineteenth century. Towns and communities grew up along the canal especially at the locks, and the timber industry became quite profitable during the 1820s and 1830s. As time passed, the region’s transportation network became more sophisticated and in 1830 the Virginia General Assembly approved the charter of the Petersburg Railroad Company (Stewart 1973). Following this in 1832, a group of citizens organized the Portsmouth and Roanoke Railroad Company. The Portsmouth and Roanoke Railroad Company line ran its first train to Suffolk in 1834 (Figure 4-7). By 1837, the line was established through the APE from Portsmouth, VA to the Roanoke River in Weldon, NC. Direct competition between the Petersburg Railroad, which ran from Petersburg, VA to Garysburg, NC, and the Portsmouth and Roanoke Railroad to be the leader in the region’s freight and passenger transportation led to price wars in the 1830s and 1840s. These price wars directly resulted in the two companies partnering with other railroads and a reorganization of ownerships (Stewart 1973). In 1846, the Portsmouth and Roanoke Railroad was reorganized, at which time the name was changed to the Seaboard and Roanoke Railroad. The railroad and the Albemarle-Chesapeake Canal, which opened in 1859, diminished the shipping business and prosperity previously seen by the Dismal Swamp Canal (Cross and Cross 1985).

4.2.4 Civil War (1861-1865)

By the 1860s, the issue of slavery had precipitated armed conflict, and Virginia dissolved her ties to the federal government. The Tidewater area saw considerable activity with battles centering on Norfolk, Portsmouth, and the Chesapeake-Albemarle and Dismal Swamp canals. At the start of the war, the timber and shipping industry came to a standstill. No major battles or skirmishes took place in the vicinity of modern day Chesapeake; however, Civil War battles did take place in the larger region (Brady et al., 2016).

In 1862, the Battle of Camden was fought at the southern end of the Dismal Swamp Canal; and in 1863 Union soldiers were sent into the Dismal Swamp to attack Confederate soldiers entrenched in the swamp (Davis, 1962). The area suffered a great deal during the war and the canal was badly damaged in several places. Suffolk and Nansemond County became especially important to the Confederacy after Union troops seized Norfolk, Portsmouth, Hampton, and Newport News. Suffolk and especially the railroads, such as the Norfolk and Petersburg and the Seaboard and Roanoke were crucial links to Richmond to get
Figure 4-7: Approximate Location of APE on 1859 A map of the state of Virginia

Legend

Approximate Location of APE

VDOT

Bowers Hill Interchange Improvements Study
Approximate Location of APE
(Boye, Bucholtz, and Tanner 1859)
supplies to the troops, particularly because Richmond could not be accessed by boat (Hobbs and Paquette, 1987).

Evacuated by the Union in April 1861, the Suffolk area stayed in the Confederacy until May 1862, when McClellan bluff ed Confederate Joseph Johnston into abandoning his massive Yorktown line. Although Johnston gave up the Peninsula, the Ironclad CSS Virginia kept Hampton Roads a Confederate waterway.

In 1863, General Longstreet, commander of the Confederate forces in Petersburg, tried to stop Union forces in Suffolk from reinforcing General Hooker's army in northern Virginia. Longstreet had also crossed the Blackwater to obtain needed supplies from Nansemond and Isle of Wight counties (McKnight, 1959). On April 11, 1863, the Union commander at Suffolk was John Peck, a career officer who graduated from West Point with Ulysses S. Grant and was said to be a close friend of Robert E. Lee. On April 11, the Confederate forces of James Longstreet closed around Suffolk on the west and south. To the east was the Great Dismal Swamp, with the Nansemond River to the north. The river was the primary supply line, and U.S. gunboats moved into it the next day, April 12 (Cormier, 1989; McPherson and McPherson, 1997).

By traditional measure, possession of the ground, Suffolk was a U.S. victory. Historian Steven Cormier makes a convincing argument that Longstreet actually won. His primary mission was to gather food, and the siege bottled up the U.S. Army while the commissary wagons made their rounds. One officer estimated that perhaps as much as three million pounds of bacon was collected. That would have been eighty days of fuel for the army Lee took to Gettysburg, which required about 37,500 pounds of bacon a day. The actual amount was probably much lower, but it is clear that Longstreet collected an enormous amount of food from the area (Cormier, 1989).

Following the siege of Suffolk, the town was left virtually abandoned and Union forces occupied the city for nearly three years. In 1865, at the end of the war, governmental activities resumed, however a fire destroyed the county clerk’s office in 1866, destroying all county records. The county records had now been destroyed for a third time (McKnight, 1959). Maps from this period show the APE in varying detail with the most detailed being that of the U.S. Coast Survey’s Map of the Coast of North Carolina & Virginia (Figure 4-8).

Historical documentary evidence places Camp Foster, a Union Camp, in Bowers Hill during the Civil War. In a column dated Friday, July 17, 1863, the New York Times ran the story, Department of Virginia.; Bower’s Hill Its Strategic Importance The Recent Campaign and its Objects Gen. Keyes’ Farewell Order Col. Buel to be Made a Brigadier-General. Correspondence of the New-York Times. The column, “In the Field, Camp Foster Bowers Hill, Va.,” reported the location of Bowers Hill as being “situated in Virginia, on the Seaboard and Roanoke Railroad, at a point equidistant between Portsmouth, opposite Norfolk, and Suffolk, the scene of recent Union operations under Maj.-Gen. DIX. Gens. R.S. FOSTER, TERRY, GETTY, and CORCORAN.” The author describes that landscape of the area and “the so-called ‘Hill’” as he believes the location will be of importance to future military efforts. The author reported, “The rebels are understood to be in full occupation of Suffolk, and this force at Bowers Hill is intended to dispute their approach upon the ports of Norfolk and Portsmouth from the Blackwater, and from all the section south of the James River, and between that and the Atlantic coast. You will thus see that it is a most important position....” (New York Times Archives, 1863).
Figure 4-8: Approximate Location of APE of the 1863 Map of the Coast of North Carolina and Virginia
To the west of and outside of the APE near the intersection of Goose Creek and Jolliff Road (the Road to Portsmouth) are the remnants of the earthworks associated with the Forrest Entrenchment, a Confederate installation (44CS0007, 131-0045).

4.2.5 Reconstruction and Growth (1865-1917)

Four years of war had a devastating effect on Virginia; and postwar reconstruction was a slow and gradual process in the south. Suffolk and Norfolk Counties were no exception. Suffolk's economy stabilized and the Farmers' Bank of Nansemond was founded in 1869, and the public-school system established in 1871. Suffolk was the terminus for six different rail lines: the Norfolk and Western, the Southern, the Atlantic Coast line, the Seaboard Air Line; the Virginian, and the Suffolk and Carolina railroads; these lines offered the city a major source of stability and growth (Hobbs and Paquette, 1987). However, in 1888 fire again threatened Suffolk, burning almost the entire business district (McKnight, 1959).

The Dismal Swamp Canal suffered a great deal from neglect during the war, including a lack of maintenance and upkeep necessary for its full operation. After the war commercial traffic resumed but was drastically decreased and use of the Northwest Canal almost completely ceased (Board of Public Works, 1866). The Dismal Swamp Transportation Company was established in 1867, the Company repaired locks and cleared the canal so that service could be reestablished between Deep Creek and South Mills (Davis, 1962). In 1892 the Dismal Swamp Canal Company sold the canal to the Lake Drummond Canal and Water Company (Brown, 1970). Between 1896 and 1899 the canal was completely rebuilt and dredged 10 feet; all the locks besides Deep Creek and South Mills were eliminated from the canal (Davis, 1962). During the early years of the twentieth century the canal experienced a second period of prosperity. In 1912 the Albemarle-Chesapeake Canal was purchased by the U.S. Army Corps of Engineers and the toll was removed depleting all the commercial shipping business from the Dismal Swam Canal (Yarborough, 1967). By the 1920s the Albemarle and Chesapeake Canal had outgrown the use of the Deep Creek to South Mills canal. It was during this period that Portsmouth grew in size and importance and Deep Creek declined. Lumbering continued in the Dismal Swamp but the golden age of the canal was over (Davis, 1962).

By the turn of the century, Suffolk was again prospering. The city and county were becoming more modernized, and factories and the peanut market were growing. The first peanut processing plant, the Suffolk Peanut Company, was founded in 1898 (McKnight, 1959). During this period the peanut economy became an important part of the region’s prosperity.

The Nansemond continued to live in the Bowers Hill region in the nineteenth and early twentieth centuries. To the south of, and outside of the APE, at the intersection of Indiana Avenue and South Military Highway, is located the Indiana United Methodist Church (131-0386) and the site of the Nansemond Indian School (131-0387, 44CS0361). The church served as a mission church for members of the Nansemond tribe. The school was constructed on the church’s property around 1890 as a school for Nansemond children who lived in the Bowers Hill area and were excluded from schools for white children. The school burned down in 1928 (The Washington Times 2003).

4.2.6 World War I to World War II (1917-1945)

World War I and World War II affected the cities of Suffolk and Norfolk as residents prepared for war by strengthening the local military, which was ordered to recruit up to war strength (McKnight, 1959).
Nansemond draft board registered over 2,000 men in 1917, and it was reported that 1,119 were sent to war. As a result of the onset of WWI, the U.S. Navy in 1917 established the U.S. Naval Operating Base and Training Station in Norfolk, later known as Naval Station Norfolk (Brady et al., 2016). During World War I the region experienced economic growth directly related to the war effort. After the end of the war Norfolk and the surrounding area experienced a slight decline in growth (Brady et al., 2016). With the onset of World War II, the area experienced an influx of people along with an increase in economic growth and jobs spurred by war (Brady et al., 2016).

During the 1920s the Commonwealth upgraded the canal bank highway that ran alongside the main canal as U.S. Route 17. The U.S. Government bought the Dismal Swamp Canal in 1929, made repairs, and named it part of the Inland Waterway (Davis, 1962). New locks were constructed at Deep Creek and South Mills in 1943 and the canal was of strategic importance during World War II, when submarine warfare threatened the Atlantic coast (Davis, 1962; Simpson, 1990).

4.2.7 The New Dominion (1945-present)
In the post-war decades, the region continued to grow and became prosperous. After the war the peanut industry continued to grow making Suffolk and Nansemond County the largest peanut producing area in the world (McKnight, 1959).

Other companies continued to establish themselves in Suffolk, as it remained the terminus for five railroad lines and gained a new municipal airport once used by the Navy. In 1951, Suffolk opened the Louise Obici Memorial Hospital, adding to the infrastructure of the city (Hobbs and Paquette, 1987). Suffolk was no longer just a shipping center for the area’s agricultural products.

In 1972 Nansemond County became the City of Nansemond and in 1974 was merged with the City of Suffolk, making the City of Suffolk Virginia's largest city in area (Hobbs and Paquette, 1987).

The Dismal Swamp Canal has been utilized for recreational purposes during the second half of the twentieth century. During the 1940s and 1950s, Norfolk County grew and was subsumed by the City of Chesapeake in 1963. In 1973, the Union Camp Company donated its land to the Department of the Interior for wildlife preservation, making it the largest land donation for wildlife preservation. This land along with additional parcels became the Great Dismal Swamp National Wildlife Refuge and covers approximately 106,000 acres (Simpson, 1990).

Throughout the early twentieth century, the Chesapeake area experienced residential and commercial growth. By the mid-twentieth century, parts of South Norfolk and Norfolk County, of which the City of Chesapeake was still a part, were annexed to form neighboring cities. Between 1950 and 1960, Norfolk County lost nearly 30 square miles of land and over 50,000 residents via annexation. In 1962, the citizens of Norfolk County and South Norfolk voted in a special election to approve a merger of the two localities which had been agreed upon by the governments of each the previous year. In June of 1963 the name “Chesapeake” was chosen for the city newly formed from Norfolk County and South Norfolk (www.cityofchesapeake.net 1996-2018). Today the City of Chesapeake is a mix of rural, suburban, and urban landscapes that continues to experience population growth. In 1963 the population was approximately 78,000 growing to 226,138 by 2012 (Brady et al., 2016).
5 PREVIOUSLY DOCUMENTED CULTURAL RESOURCES

A number of archaeological surveys have been conducted within or near the APE. A review of these studies provides a framework for determining the potential archaeological site types that may be located within the APE and for evaluating the level of integrity of such resources. This review also documents the level of previous survey coverage in the current APE to develop recommendations for additional work during future stages of the project. In addition to the review of the previous archaeological survey reports, research also included a review of previously identified archaeological sites within the APE as well as identifying any historic properties recorded within or adjacent to the APE.

5.1 PREVIOUS ARCHAEOLOGICAL SURVEY WITHIN THE APE

Documentary research conducted at VDHR and utilizing the V-CRIS GIS-based mapping system identified eight previous archaeological studies that have been conducted within portions of the APE since 1987 (Table 5-1; Figure 5-1). The surveys included archaeological investigations for VDOT Route 664 improvements (1987), I-64 widening projects (1996, 1998), Hampton Roads Crossing Study for Build Alternatives (1999), proposed locations for water transmission lines (2003), and the I-64 High Rise Bridge corridor (2014). The total combined acreage of these surveys is approximately 196.45 acres. Additionally, an archaeological assessment was prepared in support of the Hampton Roads Crossing Study Supplemental Environmental Impact Statement (SEIS) in 2016.

James Madison University Archeological Research Center (JMUARC) conducted a Phase I cultural resource survey in 1987 for VDOT to investigate two alternatives of three alignments for the Route 664 Bowers Hill/Belleville Connector (Sherwood and McCartney 1987). The survey consisted of pedestrian survey to assess probability of site location based on environmental and cultural conditions and subsurface shovel testing where warranted. The survey resulted in the identification of 25 archaeological sites. The Line A Section I, as designated by JMUARC, archaeological testing completed in 1987 coincides with portions of the Bowers Hill APE. Six previously identified sites within the 1987 APE were identified and the survey also identified and delineated two new archaeological sites: a prehistoric site of unknown age and cultural affiliation with further work recommended; and a historic site comprised of a recent structure removal and related debris, no additional work recommended. The JMUARC survey covered approximately 65.82 acres of the Bowers Hill APE.

Michael Baker Jr., Inc conducted preliminary cultural resources investigations for the widening I-64 from I-464 to I-264 in July 1996 (Hinks and Harris, 1996). The result of the investigation was a management survey identifying two areas for archaeological investigations. In 1998, Michael Baker Jr., Inc. completed the Archaeological Survey for Interstate I-64 Widening from I-464 to I-264, City of Chesapeake, Virginia (Hinks et al., 1998). The 1998 Phase I archaeological survey covered approximately 3.08 acres of the Bowers Hill Interchange APE. The survey did not identify any archaeological resources within the APE.
Table 5-1: Previous Archaeological Surveys within the APE

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<td>CS-010</td>
<td>1987</td>
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<td>James Madison University Archeological Research Center</td>
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<td>CS-055</td>
<td>1999</td>
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<td>1996</td>
<td>Management Summary: Preliminary Cultural Resources Investigations, I-64 Widening from I-464 to I-264, City of Chesapeake, Virginia</td>
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<td>1992-0816</td>
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<td>2013-0971</td>
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<td>CS-113</td>
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<td>Supplemental Archaeological Survey for the Interstate 64/High Rise Bridge Corridor Study, City of Chesapeake, Virginia</td>
<td>Cultural Resource Analysts, Inc</td>
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Louis Berger, on behalf of Michael Baker Jr., Inc. completed a Phase I archaeological survey in 1999 for a series of VDOT Build Alternatives proposed to improve traffic in the region. The Bowers Hill APE coincides with the location of Candidate Build Alternative 9, where I-664 intersects with I-264 east of Route 460 (Sara et al., 1999). Archaeological testing associated with the project included review of previous survey data, historical documents, comprehensive pedestrian survey covering the entirety of the APE, and where ground surface visibility was found to be limited a systematic subsurface survey was undertaken. The project was completed in support of the 1999 environmental impact statement. The Berger survey covered approximately 91.76 acres of the Bowers Hill APE.

Coastal Carolina Research, Inc. conducted a Phase I archaeological survey in 2003 for proposed locations of water transmission lines in the City of Chesapeake (Moore et al., 2003). The project coincided with the APE east of Hampton Roads Airport and Route 460 toward Bowers Hill and north towards Jolliff Road. The survey included background research coordinated with VDHR supplemented by systematic subsurface archaeological testing in areas with poor ground surface visibility and considered to possess the potential for the identification of archaeological sites. The survey resulted in the identification of one additional site within the APE, Site 44CS0269, a Middle Woodland Period procurement camp. The site was recommended not eligible in part because of prior impact associated to road construction. The Coastal Carolina Research survey covered approximately 5.57 acres of the Bowers Hill APE.
Figure 5-1: Previous Archaeological Surveys within the APE
Cultural Resource Analysts, Inc. conducted two Phase I archaeological investigations for the I-64/High Rise Bridge Corridor in 2014 (Baicy, 2014b and 2014c). Archaeological site 44CS0233, was reidentified and evaluated; no other archaeological resources were identified. Approximately 107.02 acres of the Bowers Hill Interchanges APE were previously surveyed during those Phase I efforts. The Archaeological Survey for Interstate 64/High Rise Bridge Corridor Study, City of Chesapeake, Virginia, covered approximately 93.85 acres; the Supplemental Archaeological Survey for the Interstate 64/High Rise Bridge Corridor Study, City of Chesapeake, Virginia included approximately 13.17 acres of the Bowers Hill Interchanges APE.

In 2016, Stantec Consulting Services conducted an archaeological assessment in support of the Hampton Roads Crossing Study SEIS (Brady et al., 2016). The results of the assessment recommended archaeological testing in one area within the Bowers Hill Interchange Improvement APE. The area recommended by Stantec was approximately 8.76 acres of land immediately adjacent to and north of the I-664 roadway.

5.2 PREVIOUSLY DOCUMENTED ARCHAEOLOGICAL RESOURCES

Seven previously identified archaeological sites are located within the APE (Table 5-2; Figure 5-2). None of the sites have been recommended as potentially eligible for the NRHP. Sites 44CS0079, 44CS0233, and 44CS0269 have been determined not eligible by the VDHR, and sites 44CS0040, 44CS0041, and 44CS0080 have not been formally evaluated.

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<td>Middle Woodland</td>
<td>Bott 1979b</td>
<td>Not Evaluated; Destroyed (1980)</td>
</tr>
<tr>
<td>44CS0041</td>
<td>Indeterminate</td>
<td>Paleo-Indian to Late Woodland</td>
<td>Bott 1979c</td>
<td>Not Evaluated; Destroyed (1980)</td>
</tr>
<tr>
<td>44CS0044</td>
<td>Indeterminate</td>
<td>Paleo-Indian to Late Woodland</td>
<td>Bott, Wittkofski, et al.</td>
<td>Not Evaluated; Destroyed (1980)</td>
</tr>
<tr>
<td>44CS0079</td>
<td>Camp</td>
<td>Middle Woodland</td>
<td>Sherwood and McCartney 1987; Moore et al. 2003a</td>
<td>Not Eligible (2003)</td>
</tr>
<tr>
<td>44CS0080</td>
<td>Dwellings</td>
<td>Reconstruction and Growth to New Dominion</td>
<td>JMU ARC 1987; Sherwood et al. 1987a</td>
<td>Not Evaluated (1987)</td>
</tr>
<tr>
<td>44CS0233</td>
<td>Indeterminate</td>
<td>Early Archaic to Late Woodland</td>
<td>MacCord 1963; WMCAR 1997; Baicy 2014a</td>
<td>Not Eligible; Destroyed (2014)</td>
</tr>
<tr>
<td>44CS0269</td>
<td>Procurement Camp</td>
<td>Middle Woodland</td>
<td>Moore et al. 2003b</td>
<td>Not Eligible (2003)</td>
</tr>
</tbody>
</table>

Site 44CS0040, a Middle Woodland Period site, was first identified in 1979. The site form noted that artifacts were observed and not collected at this time including an Archaic Period projectile point. The site was tested by WMCAR in 1997. Prehistoric pottery, fire cracked rock (FCR), and debitage were recovered; along with a “Kaolin” pipe bowl fragment. The site was not evaluated for the NRHP. Information on the V-CRIS form is seemingly contradictory in regard to the integrity of the site. The site’s condition is described as “Site Totally Destroyed,” yet WMCAR noted the area warranted further investigation as the
subsoil did not appear to have been heavily impacted by road construction. A portion of the site has likely been partially destroyed outside of the APE.

Site 44CS0041, dating from the prehistoric period, was first identified in 1979 by Keith Bott and revisited by WMCAR in 1997. The archaeological site form recorded the presence of FCR and debitage. No temporal period was identified as a result of either investigations. The site was not evaluated for the NRHP and it is likely a portion of the site outside of the APE has been destroyed by road construction.

Site 44CS0044, dating from the prehistoric period was identified during the construction of the Bower’s Hill Bypass by contractors who reported collecting projectile points after the top of the slight rise was cleared to place the construction trailers. The site was recorded in 1980 as completely destroyed after a site visit by Bott and Wittofski, no additional cultural materials were recorded.

Site 44CS0079, identified as a Middle Woodland Period campsite, was recorded by JMU ARC in 1987. Coastal Carolina Research, Inc. returned to subsurface test the site in 2003. Artifact recovery was limited to four artifacts identified as a hammerstone, FCR, shatter, and a Popes Creek pottery fragment. The site was determined not eligible for the NRHP by VDHR. The site has since been partially destroyed by road construction.

Site 44CS0080, identified in 1987 by JMU ARC, has been recorded as a series of relocated or demolished dwellings with a surface scatter of concrete, mortar, brick, sheet metal, and modern debris dating from the twentieth century (Reconstruction and Growth Period through the New Dominion). Subsurface testing identified natural soil stratification and no features were identified on the site form. JMU ARC recommended no further work at the site, but no formal NRHP evaluation is recorded in V-CRIS. The site has since been largely destroyed by road construction.

V-CRIS depicts Site 44CS0233 as two polygons separated by approximately 400 feet. In 1963, Howard A. MacCord originally recorded the site and it was again recorded in 1997 and 2014 as an Early Archaic through Late Woodland Period site. The archaeological site was determined not eligible for the NRHP by the VDHR and largely destroyed by road construction.

Site 44CS0269 was identified as a Middle Woodland Period Native American procurement camp. The site was investigated in 2003 by Coastal Carolina Research, Inc. when four artifacts were collected. Investigators noted that it was likely that the archaeological site extended beyond the project corridor. The site was determined not eligible for the NRHP by the VDHR and occurs mostly outside of the APE.
Figure 5-2: Previously Recorded Archaeological Sites
5.3 **Previously Documented Historic Architectural Resources**

VDHR archival research revealed 16 previously documented historic architectural resources within the APE (Table 5-3; Figure 5-3). Six of the resources have been determined not eligible for the NRHP by VDHR and the other ten have been recommended not eligible. Generally, the resources reflect the mid-twentieth-century development of the Bowers Hill region. Four exceptions are the section of the Norfolk & Western Railroad (VDHR Inventory No. 131-5613, 131-5325-0169) and three early twentieth-century houses (131-5801, 131-5804, and 131-5805). Additionally, a portion of the Norfolk & Western Railroad west of the Sunray Agricultural Historic District was recently recommended individually eligible.

Resource 131-5080, 721 Raeside Avenue, was surveyed in April 2014 and is not eligible for the NRHP. The site is a single-family dwelling constructed in 1956; the property consists of two secondary resources, a well-house and garage. VDHR concurred with the surveyor’s findings and the property has been found not eligible.

Resource 131-5460 was constructed in 1969 at 4001 Spring Meadow Crescent; no secondary resources are located on the property. The resource has retained moderate integrity; however, it does not meet NRHP criteria and was recommended not eligible. VDHR concurred with the surveyor’s findings and the property is noted as not eligible.

Resource 131-5466 is located at 4048 Spring Meadow Crescent. The single-family dwelling was constructed in 1970 and one secondary resource identified on the property is a shed. In 1994, survey identified the resource had retained moderate integrity, but does not meet the standards for NRHP eligibility. VDHR concurred the resource is not eligible.

Resource 131-5470 located at 4008 Spring Meadow Crescent is a single-family dwelling constructed in 1968. No secondary resources were recorded at the time of survey on the property. The site form indicates VDHR agreed the property is not eligible.

Resource 131-5477 is located at 4321 South Military Highway. The resource is a commercial enterprise and serves as a shooting range. The primary resource is a clubhouse that was constructed in 1948. The site has five associated outbuildings that were constructed in 1970, of which are all shed-type structures. The resource was found not eligible by VDHR as it does not meet any of the NRHP criteria.

Resource 131-5613, a portion of which has been identified as 131-5325-0169 within and to the west of the Sunray Agricultural Historic District, is the Norfolk & Western Railroad near the intersection of Rotunda Avenue and I-64. Historically the resource was known as the Virginian Railway and served to connect coal extraction locations with larger markets. Approximately 700 feet of the rail corridor was evaluated as not eligible for listing on the NRHP, due mainly to the poor integrity of the segment within the APE at the time of evaluation in 2013. A portion of the Virginian Railway west of the Sunray Agricultural Historic District, 131-5325-0169, was recently identified as individually eligible for the NRHP under Criterion A for trends in history and the portion of the Railway within the Sunray Agricultural Historic District is the only portion of the resource identified as a contributing resource to the District.
Resource 131-5778 was constructed in 1950 and is located at 1100 Jolliff Road. The primary structure on the property is a single-family dwelling, while the secondary resource is a shed. The property was recommended not eligible, but the site form indicates its status as unevaluated.

Resource 131-5779 is a single-family dwelling located at 1114 Jolliff Road that has been recommended not eligible for NRHP. The dwelling was constructed in 1970 and has two supporting structures identified as a garage and a playhouse. The property has not been evaluated.

Resource 131-5780 is a single-family dwelling constructed in 1970 at 116 Jolliff Road. Previous survey indicates that there is a garage on the property. The property has been recommended not eligible for NRHP and the property has not been evaluated.

Resource 131-5781 is a single-family dwelling located at 1120 Jolliff Road. The dwelling, constructed in 1970, and associated garage have been recommended not eligible for NRHP. The property has not been evaluated.

Resource 131-5783 is a single-family dwelling located at 1204 Jolliff Road, the dwelling was constructed in 1952, and the property includes three secondary resources identified as sheds. Previous survey has recommended the property not eligible, the property has not been evaluated.

Resource 131-5790 is a single-family dwelling located at 1304 Goodman; a secondary resource is located on the property listed as a shed. The main structure was erected in 1962, with the shed added to the property in 1990. Previous survey has recommended the property not eligible for NRHP listing, the property has not been evaluated.

Resource 131-5801 is located at 4629 Airline Boulevard; the primary resource is a single-family dwelling built in 1902. Previous survey identified eight secondary resources on the property that make-up an agricultural landscape. The secondary resources consist of a barn constructed in 1930, two sheds constructed in 1970 and 1980, two animal shelters constructed in 1980, and two animal pens built in 1970. The property has been recommended not eligible, as the survey found the property did not meet any of the criterion for the NRHP. The recommendation has not been evaluated by VDHR.

Resource 131-5804 is a single-family dwelling with no associated secondary resources located at 4520 Ridgeway Avenue. The dwelling was constructed circa 1915 and was recommended not eligible for the NRHP; the property has not been evaluated.

Resource 131-5805, located at 807 Ridgeway Avenue, is a single-family dwelling constructed in 1925. Previous survey identified secondary resources consisting of three sheds, two animal shelters, and a workshop on the property constructed from 1930 through 1980. The property was recommended not eligible for NRHP, but the site form indicates its status as unevaluated.

Resource 131-5828 is a single-family dwelling located at 4712 Summerest Lane constructed in 1960. Several secondary resources are listed on the property; these are a fallout shelter constructed in 1990, a shed built in 1980, a shed from 1960, a gazebo built in 2000, a modern carport from 2000, a garage constructed in 1990, a shed built in 2000, and an animal shelter dated to 1980. Previous survey has recommended the property not eligible for the NRHP and the site form indicates it remains unevaluated.
Figure 5-3: Previously Documented Architecture Resources
### 5.4 Battlefield Resources

A review of VDHR and V-CRIS records revealed no battlefield resources or American Battlefield Protection Program (ABPP) areas occurring in the APE. The ABPP identifies areas as Potential NR (potentially eligible for the NRHP), Study Areas, and Core Areas, none of which are present within the APE; therefore, the potential for identifying battlefield resources within the APE is low.
6 ASSESSMENT OF ARCHAEOLOGICAL SITE POTENTIAL

On behalf of VDOT, and in coordination with the FHWA, an archaeological assessment was completed as part of a larger Environmental Assessment to evaluate the potential for effects of proposed transportation improvements in the Bowers Hill Interchange Improvements Study APE. The APE follows the outer-most edge of the limit of disturbance (LOD) for the two Build Alternatives and includes some areas within adjacent existing highway right of way which a builder may reasonably desire to traffic across or store equipment or materials in during project construction.

The archaeological assessment identified seven previous archaeological surveys, one archaeological assessment, and seven previously recorded archaeological sites within the APE. Of the 306.15-acre APE, 196.45 acres have been previously surveyed. RK&K assessed the portions of the APE that had not been the subject of previous archaeological surveys for their archaeological site potential and recommends five areas with high and moderate probability for further archaeological survey (Figure 6-1; Table 6-1).

6.1 ARCHAEOLOGICAL SITE POTENTIAL

RK&K employed a predictive model of prehistoric and historic archaeological sensitivity that considered various environmental and cultural factors including level of disturbance, ground slope, soil drainage, and proximity to water resources, previously identified archaeological sites, and historic buildings and structures to determine the level of archaeological sensitivity in areas not previously surveyed in the APE. Areas within the APE were classified as possessing high, moderate, and low archaeological potential based on a variety of environmental factors discussed in Chapter 2 and proximity to archaeological and historical resources.

The APE is located immediately east of the Great Dismal Swamp. Typically, the poorly drained environment of the Dismal Swamp and its environs would be viewed as having either low or no potential for archaeological sites. Regional studies and research, however, indicate that both prehistoric and historic sites have been identified on the mesic islands within the interior of the poorly drained Dismal Swamp. Prehistoric activity dating to the Paleoindian Period has been documented along the western shore of the swamp (Rappleye and Gardner, 1979). More recent studies and investigations documented evidence of Archaic and Woodland activity, Contact Period Native American settlements, Maroon communities, and labor camps on mesic islands within the interior of the Swamp (Sayers, Burke, and Henry, 2007).

Previous archaeological surveys identified seven sites within the APE. These sites were identified in areas with soils that are documented as very poorly drained to well-drained. Given the proximity of the Great Dismal Swamp to the APE and the frequency of small prehistoric sites identified during previous investigations, archaeological sites located in otherwise low-lying or poorly drained soils may be expected.
Figure 6-1: Areas for Archaeological Assessment
6.1.1 Potential for Extraordinarily Complex Sites or Sites with Human Burials

The APE was also assessed for its likelihood to contain extraordinarily complex sites or sites with human burials. A review of available GIS data from the City of Chesapeake and archaeological site data from V-CRIS identified no cemeteries within the APE. Given the heavy roadway development of most of the APE and that most of the undisturbed or partially undisturbed ground within the APE is located within highway cloverleafs or other interchanges, the potential for encountering sites with human burials is low.

The potential to identify extraordinarily complex sites is also considered low. This determination is based on several factors: previous Phase I archaeological surveys in the APE and its vicinity failed to identify complex sites, prior development in the area has disturbed much of the soil located within the APE, and poorly drained soils are predominant throughout the APE.

6.1.2 Recommendations for Archaeological Survey

Archaeological survey is recommended for areas considered to have high or moderate potential for archaeological resources. Pedestrian survey is suggested to assess the recommended areas for subsurface testing, as some of the targeted areas may be subject to frequent or year-round flooding. Areas determined to have a low archaeological potential contain previously disturbed or urban soils, as evidenced by a review of historic twentieth-century maps and soil survey data or the appearance of the area (e.g., visibly disturbed or developed) as observed during the windshield survey. Additional archaeological survey is not recommended for these areas.

Five areas, consisting of approximately 52.94 acres, of high and moderate archaeological potential within the APE are recommended for further archaeological testing (see Figure 6-1; Table 6-1). The recommendations are based upon the previously mentioned criteria and the results of a field reconnaissance. They have not yet been subjected to pedestrian or subsurface archaeological survey.

| Table 6-1: Areas Recommended for Archaeological Survey |
|-----------------|-------|-----|
| Area #  | Acreage | Potential |
| Area 1  | 18.87  | High   |
| Area 2  | 3.75   | Moderate |
| Area 3  | 13.63  | Moderate |
| Area 4  | 6.8    | Moderate |
| Area 5  | 9.89   | High   |

Area 1 measures approximately 18.87 acres and possesses high prehistoric archaeological potential. Soils vary within the area from poorly drained to moderately well-drained and include undisturbed soils as well as Udorthents and Urban Land. The windshield survey from South Military Highway demonstrated that Area 1 is wooded and contains level, elevated landforms containing sandy soil that may be favorable environmental settings for prehistoric habitation (Figure 6-2). Two prehistoric sites (44CS0040 and 44CS0041) have been identified within the western portion of Area 1 and additional prehistoric sites have been identified outside the immediate vicinity of the APE. Neither site 44CS0040 nor 44CS0041 was recommended eligible for the NRHP and both have been partially disturbed by the construction of the highway ramp that runs through Area 1. Despite the partial destruction of Site 44CS0040, archaeologists observed that the subsoil in the general vicinity remained mostly intact and recommended further testing.
in the area (WMCAR 1997). Additionally, the windshield survey observed a ditch parallel to South Military Highway outside of the APE suggesting historic development in the area adding to the archaeological potential of the area. Archaeological deposits associated with the prehistoric occupation and possibly historic development of the region may be present. A Phase I archaeological survey of Area 1 is recommended.

Figure 6-2: Area 1, View East

Area 2 measures approximately 3.75 acres and possesses moderate historic archaeological potential. Area 2 is located north of the interchange of I-664 and U.S. Route 460/58/13. Soils within Area 2 are classified as Udorthents-Urban land with 0 to 45 percent slopes containing Aquents hydric soils. A windshield survey was not conducted because of its location near the highway interchange. A review of Google imagery, however, demonstrates that the area appears to be mostly previously disturbed with wooded areas to the east and west of the roadway (Figure 6-3). Site 44CS0080 is located within Area 2 and an evaluation of the site and determination of its significance has not been made. A Phase I archaeological survey of Area 2 is recommended to identify and evaluate the site, if necessary.

Area 3 measures approximately 13.63 acres and possesses moderate prehistoric archaeological potential. Area 2 is located in a cloverleaf at the interchange of I-664 and U.S. Route 460/58/13. Soils within Area 2 are very poorly drained to poorly drained soil complexes that include Urban Land. A windshield survey was not conducted because of its location in the highway interchange. A review of Google imagery, however, demonstrates that the area is wooded and that the natural topography appears to be intact.
below the elevated highway embankment (Figure 6-4). A review of available historical aerial photography indicates that significant portions of the cloverleaf appear largely undisturbed by the road construction. A prehistoric site (44CS0044) was identified inside of the APE, Area 4, within the cloverleaf less than 500 feet to the east in a similar environmental setting. Archaeological deposits associated with the prehistoric occupation of the region may be present. A Phase I archaeological survey of Area 3 is recommended.

Area 4 measures approximately 6.8 acres and possesses a moderate potential for prehistoric archaeological deposits. Area 4 is situated within a cloverleaf interchange north of I-664 and south of Route 460. Soils within the area are Munden-Urban complex and are moderately well-drained. Previously identified prehistoric archaeological site 44CS0044 is located within the area and has not been evaluated. The site was identified circa 1980 during construction of the Bowers Hill Bypass by contractors who reported collecting projectile points after a slight rise was cleared to stage construction trailers. A site visit was conducted by Keith Bott and the site was recorded as destroyed. Historic aerial imagery shows the site location area cleared in 1990 during construction, the remainder of the area does not appear disturbed. A windshield survey of the area was not conducted because of its location within the highway interchange. A review of Google imagery demonstrates the area is wooded and is situated below the roadway, similar to Area 3 (Figure 6-5). Area 4 is being recommended for Phase I archaeological survey for its proximity to site 44CS0044 and the potential to identify additional archaeological deposits associated with the prehistoric occupation of the region.
Figure 6-4: Area 3, View West (Google Earth, 2018)

Figure 6-5: Area 4 View North (Google Earth, 2018)
Area 5 measures approximately 9.89 acres and possesses a high potential for archaeological deposits. The area contains mostly well-drained soils; however, a portion along an unnamed wetland waterway contains Rappahannock Muck indicating standing water may be present. Area 3 is a mix of agricultural and wooded land north and south of Ridgeway Road. South of Ridgeway Road the ground slopes up toward the I-664 corridor. North of Ridgeway Road is a relatively level landform situated on a slight rise above the road (Figure 6-6 and Figure 6-7). V-CRIS indicates two prehistoric archaeological site polygons, both numbered 44CS0233, are present partially within and adjacent to the Area 3 boundary. In addition, the 1902 USGS Norfolk topographic map depicts a structure once stood within the immediate vicinity. Archaeological deposits associated with the prehistoric and historic occupation of the region may be present. A Phase I archaeological survey is recommended.

All other previously unsurveyed areas within the APE are considered low potential based on previous development or previous archaeological surveys and are excluded from additional testing recommendations. While disturbed and developed soils may hold some potential for the identification of artifacts, the integrity of the cultural resource would be compromised. Previous archaeological surveys were completed to the current standards outlined in VDHRs guiding documents and as such these areas have been excluded from the recommendation for further testing. The Phase I archaeological survey recommended for Areas 1 – 5 should consist of complete pedestrian survey and systematic or judgmental subsurface testing, as required, if elevated landforms are observed.

**Figure 6-6: Area 5, View East toward Private Residences**
6.2 **Potential for Archaeological Sites Important Chiefly for Reasons Other than Information Potential**

The APE was assessed for its likelihood to contain archaeological sites eligible for the National Register that are important chiefly for reasons other than their potential to yield important information through data recovery. The name Bowers Hill likely originated from an early (1654) landowning family in the area (see Figure 4-3). The place name Bowers Hill first appears on historical maps in 1887. Bowers Hill is situated between the City of Suffolk and the Cities of Norfolk and Portsmouth on the northern edge of the Great Dismal Swamp. These cities were important ports and sites that played a major historic role from the Settlement Period through today. Despite the activity of building canals in the Great Dismal Swamp and the railroad passing south of Bowers Hill, the area experienced small growth, retaining much of its rural character.

Despite limited early historical documentary evidence for the Bowers Hill region, family records and local history suggest that the Bass Family, an English family, and the Nansemond formed alliances through marriages during the seventeenth century. These marriages led to the division of the Nansemond tribe in the region. One of these divisions was religious and a Christian settlement was founded in the area of present-day Bowers Hill (Vest 2003). A second settlement that retained much of the Nansemond culture settled north of the APE near Surry County (Vest 2003).

The results of the background research and an assessment of current conditions with the APE suggest that there is a low potential for the identification of new archaeological sites that would be considered important chiefly for reasons other than information potential.
6.2.1 Battlefield Resources
The potential for identifying battlefield sites within the APE is low. As stated previously a review of the documentation on file with VDHR and V-CRIS did not reveal any American Battlefield Protection Program battlefield Study Areas, Core Areas, or areas potentially eligible for the NRHP within the APE boundaries.

6.2.2 Other Archaeological Resources
The potential for identifying other types of archaeological sites important chiefly for reasons other than informational potential is low. Background research revealed the previously recorded archaeological sites located within the APE are of types which appear to be important chiefly for their information potential, and any sites eventually discovered in previously unsurveyed areas of the APE are expected to be of similar types.
SUMMARY AND BUILD ALTERNATIVE ANALYSIS

The archaeological assessment identified seven previous archaeological surveys, one archaeological assessment, and seven archaeological sites within the APE. The APE encompasses a total of 308.23 acres, of which approximately 196.45 acres have been previously surveyed. RK&K identified five areas consisting of approximately 52.94 acres within the APE as retaining a high or moderate archaeological potential. These areas are recommended for Phase I archaeological survey, to include pedestrian survey and systematic or judgmental subsurface testing where appropriate (Table 7-1). All archaeological testing should meet VDHR archaeological standards (VDHR 2017).

Table 7-1: Areas Recommended for Archaeological Survey

<table>
<thead>
<tr>
<th>Area #</th>
<th>Acreage</th>
<th>Potential</th>
<th>Testing Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area 1</td>
<td>18.87</td>
<td>High</td>
<td>Phase I Archaeology Survey, to include pedestrian survey</td>
</tr>
<tr>
<td>Area 2</td>
<td>3.75</td>
<td>Moderate</td>
<td>Phase I Archaeology Survey, to include pedestrian survey</td>
</tr>
<tr>
<td>Area 3</td>
<td>13.63</td>
<td>Moderate</td>
<td>Phase I Archaeology Survey, to include pedestrian survey</td>
</tr>
<tr>
<td>Area 4</td>
<td>6.8</td>
<td>Moderate</td>
<td>Phase I Archaeology Survey, to include pedestrian survey</td>
</tr>
<tr>
<td>Area 5</td>
<td>9.89</td>
<td>High</td>
<td>Phase I Archaeology Survey, to include pedestrian survey</td>
</tr>
</tbody>
</table>

As part of the archaeological assessment, the potential for archaeological remains within the LOD of two Build Alternatives was evaluated. Table 7-2 presents the acreage recommended for archaeological survey per Build Alternative compared to the total number of acres within the LODs. No-build Alternative was not included in this analysis as this represents the baseline, existing conditions.

Table 7-2: Build Alternatives Acreage Recommended for Archaeological Survey

<table>
<thead>
<tr>
<th>Build Alternative</th>
<th>Total Acreage in Planning-Level LOD</th>
<th>Acreage Recommended for Survey</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Moderate Potential</td>
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<tr>
<td>1</td>
<td>111.37</td>
<td>2.92</td>
</tr>
<tr>
<td>2</td>
<td>210.57</td>
<td>18.6</td>
</tr>
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</table>

7.1 ALTERNATIVE 1

Alternative 1 total acreage within the planning-level LOD is 111.37; of this, 9.42 acres are recommended for archaeological survey (Table 7-2; Figure 7-1). Alternative 1 would eliminate Area 1 and a portion of Area 5 (both areas identified as possessing high potential for archaeological resources) from archaeological survey. Alternative 1 would eliminate Area 2 and 3 and 4 (areas identified as possessing moderate potential for archaeological resources) from archaeological survey. Alternative 1 would require archaeological survey of 2.92 acres possessing moderate archaeological potential and 6.5 acres possessing high archaeological potential. In comparison, the archaeological APE study evaluated 24.18 acres possessing moderate potential and 28.76 acres possessing high archaeological potential.

7.2 ALTERNATIVE 2

Alternative 2 total acreage within the planning-level LOD is 210.57; of this, 34.59 acres are recommended for archaeological survey (Table 7-2; Figure 7-2). Alternative 2 includes the largest acreage recommended
for archaeological survey and includes a portion of Area 1 and Area 5, both high potential areas identified. Alternative 2 would reduce the acreage of Areas 2 and 4 and include the entirety of Area 3. Areas 2, 3, and 4 are areas identified as possessing moderate archaeological potential. Alternative 2 would require archaeological survey of 19.33 acres possessing moderate archaeological potential and 15.54 acres possessing high archaeological potential. In comparison, the archaeological APE study evaluated 24.18 acres possessing moderate potential and 28.76 acres possessing high archaeological potential.
Figure 7-1: Alternative 1 Areas for Assessment
Figure 7-2: Alternative 2 Areas for Assessment
REFERENCES

Anderson, D.G. and G.T. Hanson

Anderson, D.G. and K.E. Sassaman

Barber, M., and E. B. Barfield

Baicy, Daniel
2014a Site form for 44CS0244. Original Site Form on file Virginia Department of Historic Resources, Richmond, Virginia.


Board of Public Works

Bott, Keith
1979a Site form for 44CS0039. Original Site Form on file Virginia Department of Historic Resources, Richmond, Virginia.

1979b Site form for 44CS0040. Original Site Form on file Virginia Department of Historic Resources, Richmond, Virginia.

1979c Site form for 44CS0041. Original Site Form on file Virginia Department of Historic Resources, Richmond, Virginia.

1980a Site form for 44CS0042. Original Site Form on file Virginia Department of Historic Resources, Richmond, Virginia.
1980b Site form for 44CS0043. Original Site Form on file Virginia Department of Historic Resources, Richmond, Virginia.

1980C Site form for 44CS0044. Original Site Form on file Virginia Department of Historic Resources, Richmond, Virginia.

Bottoms, Edward and Floyd Painter

Boyd, C.C., Jr.

Boyd, William K.

Boye, Herman

Boye, Herman, Lewis von Bulcholtz, and Benjamin Tanner
1859 A map of the state of Virginia: reduced from the nine-sheet map of the state in conformity to law from the late surveys authorized by the legislature and other original and authentic documents. Map. Retrieved from the Library of Congress, https://lccn.loc.gov/99439988.

Brady, Ellen and Brynn Stewart
2016 An Archaeological Survey of Eight Proposed Storm Water Management Basins Associated with the Interstate 64 Southside Widening and High Ride Bridge, Phase I Project in the City of Chesapeake, Virginia. Prepared for the Virginia Department of Transportation Environmental Division, Hampton Roads District. Richmond, Virginia.

Brady, Ellen and Brynn Stewart, Aimee J. Leithoff, R. Taft Kiser, and Donald Sadler
BOWERS HILL INTERCHANGE IMPROVEMENTS STUDY

Archaeological Assessment Technical Report

Braun, David P.

Braun, E. Lucy

Brown, Alexander Crosby

Brown, Alexander Crosby
1970  The Dismal Swamp Canal, Chesapeake, Virginia. The Norfolk County Historical Society, Chesapeake, Virginia.

Callaghan, Errett H.

Carr, K. C.

Claassen, Cheryl

Cormier, Steven A.

Cross, Charles B. and Eleanor P. Cross
1985  Chesapeake A Pictorial History. Donning Company, Norfolk, Virginia Beach

Davis, H. J.

Dent, Richard J., Jr.

Egloff, Keith T.
Egloff, Keith T. and E. Randolph Turner III

Fitting, James

Forrest, William S.
1853  Historical and Descriptive Sketches of Norfolk and Vicinity, Including Portsmouth and the Adjacent Counties During a Period of Two Hundred Years. Also, Sketches of Williamsburg, Hampton, Suffolk, Smithfield, and Other Places, with Descriptions of Some of the Principal Objects of Interest in Eastern Virginia. Lindsay and Blakiston, Philadelphia, Pennsylvania.

Freitus, Joseph P.

Fry, Joshua and Peter Jefferson

Gardner, Paul

Gardner, William M.


Granbery, John, Jr.

Griffin, James B.

Handsman, Russell and Charles W. McNett

Henry, Elvin F., James Chudoba, and H.C. Porter

Herrman, Augustine

Higgins, Thomas F. and Kenneth E. Struck
1998 A Supplemental Archaeological Study for the proposed Route 17 Project, City of Chesapeake, Virginia: An addendum to A Phase I Cultural Resource Survey of the Proposed Alternatives to the Route 17 Widening Project City of Chesapeake, Virginia. For Virginia Department of Transportation by the William and Mary Center for Archaeological Research, Williamsburg, Virginia.

Hinks, Stephen and Katry Harris
1996 Management Summary: Preliminary Cultural Resources Investigations, I-64 Widening from I-464 to I-264, City of Chesapeake, Virginia. Prepared for the Virginia Department of Transportation by the Cultural Resources Section of Michael Baker Jr., Inc., Coraopolis, Pennsylvania.
Hinks, Stephen, Martin T. Fuess, Denise L. Grantz, KellyLynn L. Rudolph, and Regina J. Hart
1998  Archaeological Survey, I-64 Widening from I-464 to I-264, City of Chesapeake, Virginia. Prepared for the Virginia Department of transportation by the Cultural Resources Section of Michael Baker Jr., Inc., Coraopolis, Pennsylvania.

Hobbs, K., and W. A. Paquette

Hodges, Mary Ellen Norrisey


Hoffman, Michael Allen

James River Institute for Archaeology, Inc. (JRIA; no author)
1994  Phase I Archaeological Survey of the Corporate Woods Property, City of Virginia Beach, Virginia. Submitted to Devon, USA. Copies available at the Virginia Department of Historic Resources, Richmond.

James, Tiffany A., Bill Hall, and Loretta Lautzenheiser

Johnson, Michael F.

Justice, Noel D.

Kimble, David A.
Kirby, Jack Temple

Klein, M.J. and T. Klatka

Klein, Michael, Marco Gonzales, and Michael Carmody

Leithoff, Aimee J., Mike Klein, Sandra DeChard, and Ellen M. Brady

Lindenkohl, A.

MacCord, Howard A.
1981  An Archeological Reconnaissance Survey of the 500 KV, Septa to Yadkin Line in the County of Isle of Wight and the Cities of Suffolk and Chesapeake. Prepared for Virginia Electric and Power Company by the Archeological Society of Virginia, Richmond, Virginia.

McAvoy, Joseph M.

McAvoy, J.M and L.D. McAvoy

McKnight, F.
McPherson, James M. and Patricia R. McPherson

Moore, Will, Dane Magoon, and Loretta Lautzenheiser

2003a Site form for 44CS0079. Original Site Form on file Virginia Department of Historic Resources, Richmond, Virginia.
2003b Site form for 44CS0246. Original Site Form on file Virginia Department of Historic Resources, Richmond, Virginia.

Mouer, L. Daniel

The New York Times

No Author

Onuschak, Emil, Jr.

Opperman, Antony
1992 Middle Woodland Subsistence at Maycock’s Point (44PG40) Prince George County, Virginia. Unpublished Master’s Thesis, Department of Anthropology, University of Tennessee, Knoxville.

Opperman, Antony and E. Randolph Turner

1990 Archaeology at Shelly, Gloucester County. Notes on Virginia 34:24-27.
Parrarmore, T.C., P.C. Stewart and T.L. Bogger  

Potter, Stephen  


Peixotto, Rebecca Anne  

Quarstein, John V.  

Rader, E.K. and N.H. Evans  

Rappleye, Lauralee, and William M. Gardner  

Ritchie, William A. and Robert E. Funk  

Sara, Timothy R., Stuart R. Dixon, Eric F. Griffitts, Phillip E. Pendelton, with J. Lee Cox  

Sherwood, Sarah C. and Martha W. McCartney

1987a Site form for 44CS0080. Original Site Form on file Virginia Department of Historic Resources, Richmond, Virginia.

Simpson, B.

Smith, John

Smith, Marvin T. and Julie Barnes Smith

Snow, Dean

Steponaitis, L.

Steponaitis, Vincas

Stevens, J. Sanderson

Stewart, Peter C.
Teifke, Robert H.

Turner, E. Randolph, III


United States Department of Agriculture [USDA]

Vest, Jay Hansford C.

Virginia Department of Historic Resources (VDHR)


Waselkov, Gregory A.
The Washington Times

www.cityofchesapeake.net
2018

Yarborough, Betty Hathaway
1965 The Great Dismal Swamp. Norfolk County Historical Society of Chesapeake Virginia, Chesapeake Virginia.