

Appendix F – Cultural Resources Information



COMMONWEALTH of VIRGINIA

Department of Historic Resources

2801 Kensington Avenue, Richmond, Virginia 23221

Travis A. Voyles
Secretary of Natural and
Historic Resources

Julie V. Langan
Director

Tel: (804) 367-2323
Fax: (804) 367-2391
www.dhr.virginia.gov

October 13, 2023

Ms. Lauren Gryctko
Johnson, Mirmiran, & Thompson
9201 Arboretum Parkway, Suite 310
Richmond, Virginia 23236

Re: Marina Way Extension
Prince William County, Virginia
DHR File No. 2023-4415

Dear Ms. Gryctko

The Department of Historic Resources (DHR) has received for our review and comment above referenced project and the report entitled *Phase IB Archaeological Survey Marina Way Extension Project, Prince William County, Virginia*, prepared by Johnson, Mirmiran, & Thompson (Inc). Our comments are provided to Prince William County and their consultants as assistance in meeting its responsibilities under Section 106 of the National Historic Preservation Act as part of a Locally Administered project funded through the Virginia Department of Transportation (VDOT).

The investigations and report meet applicable standards and guidelines and DHR accepts the report as a reasonable and good faith effort to identify historic properties. The archaeological investigations did not identify any archaeological sites within the Area of Potential Effects (APE) and no above ground historic properties were identified. DHR concurs with the consultant's recommendation that no further work is necessary to identify historic properties for this undertaking.

Based upon the documentation provided, it is DHR's opinion that no historic properties will be affected by the proposed undertaking. Implementation of the undertaking in accordance with the finding of *No Historic Properties Affected* as documented fulfills the Federal agency's responsibilities under Section 106 of the National Historic Preservation Act. If for any reason the undertaking is not or cannot be conducted as proposed in the finding, consultation under Section 106 must be reopened.

Thank you for your consideration of historic resources. Please contact me at samantha.henderson@dhr.virginia.gov or (804) 482-6088 if you have any questions or if we may provide any further assistance.

Sincerely,

A handwritten signature in blue ink, appearing to read "Sam Henderson".

Samantha Henderson, Archaeologist
Review and Compliance Division

Eastern Region Office
2801 Kensington Avenue
Richmond, VA 23221
Tel: (804) 367-2323
Fax: (804) 367-2391

Western Region Office
962 Kime Lane
Salem, VA 24153
Tel: (540) 387-5443
Fax: (540) 387-5446

Northern Region Office
5357 Main Street
PO Box 519
Stephens City, VA 22655
Tel: (540) 868-7029
Fax: (540) 868-7033



COMMONWEALTH of VIRGINIA

Department of Historic Resources

2801 Kensington Avenue, Richmond, Virginia 23221

Travis A. Voyles
Secretary of Natural and
Historic Resources

Julie V. Langan
Director

Tel: (804) 367-2323
Fax: (804) 367-2391
www.dhr.virginia.gov

August 1, 2023

Ms. Lauren Gryctko
Johnson, Mirmiran, & Thompson
9201 Arboretum Parkway, Suite 310
Richmond, Virginia 23236

Re: Marina Way Extension
Prince William County, Virginia
DHR File No. 2023-4415

Dear Ms. Gryctko:

The Department of Historic Resources (DHR) has received for our review and comment the report entitled, Phase IA Archaeological Reconnaissance Survey and Historic Architecture Assessment Marina Way Extension Project, Prince William County, Virginia, dated June 16, 202. Our comments are provided to Prince William County and their consultants as assistance in meeting its responsibilities under Section 106 of the National Historic Preservation Act as part of a Locally Administered project funded through the Virginia Department of Transportation (VDOT) Smart Scale program.

The project is described as construction of a four-lane divided roadway and pedestrian facilities connecting Marina Way to Horner Road in the Woodbridge area of Prince William County. The roadway is intended as a main street for North Woodbridge Town Center currently under development. The proposed project Area of Potential Effects (APE) encompasses 18.7 acres. Approximately 15.25 acres of APE was hardscape, and the remaining 3.45 acres in woods at the time of survey.

It is our opinion that the archaeological assessment results presented in the above report sufficiently support the consultant's recommendations that the 3.45-acre area encompassing the woods has moderate potential for archaeological resources. We agree that this is also the only portion of the APE suitable for a phase I archaeological survey meeting current *Guidelines for Conducting Historic Resources Survey in Virginia* (2017). The phase I archaeological testing strategy and methods recommended by the consultant (Page 46) meet current Guidelines. The archaeologist in the field may assess whether subsurface testing is feasible and appropriate while visually inspecting areas exhibiting excessive disturbance, slopes greater than 20 percent, standing water, or otherwise unlikely to have preserved archaeological deposits. Current guidance would consider historic properties those dating to 1973 and earlier (at least 50 years); later properties of exceptional significance may also be considered.

Please ensure that a comb bound hard copy and digital copy of the Phase IB report and hard copy inventory forms, as specified in DHR's Guidelines, are submitted for our review. Thank you for your

Eastern Region Office
2801 Kensington Avenue
Richmond, VA 23221
Tel: (804) 367-2323
Fax: (804) 367-2391

Western Region Office
962 Kime Lane
Salem, VA 24153
Tel: (540) 387-5443
Fax: (540) 387-5446

Northern Region Office
5357 Main Street
PO Box 519
Stephens City, VA 22655
Tel: (540) 868-7029
Fax: (540) 868-7033

consideration of historic resources. Please contact me at samantha.henderson@dhr.virginia.gov or (804) 482-6088 if you have any questions or if we may provide any further assistance.

Sincerely,



Samantha Henderson, Archaeologist
Review and Compliance Division

Eastern Region Office
2801 Kensington Avenue
Richmond, VA 23221
Tel: (804) 367-2323
Fax: (804) 367-2391

Western Region Office
962 Kime Lane
Salem, VA 24153
Tel: (540) 387-5443
Fax: (540) 387-5446

Northern Region Office
5357 Main Street
PO Box 519
Stephens City, VA 22655
Tel: (540) 868-7029
Fax: (540) 868-7033



September 12, 2023

UPDATED: February 16, 2024

Phase IB Archaeological Survey

Marina Way Extension Project, Prince William County, Virginia

Project # 0639-076-348

UPC 120778

Submitted to: Prince William County Department of Transportation





By Kaitlin LaGrasta, RPA, Archaeologist, and Dan King, RPA, Archaeologist
and Lauren Gryctko, RPA, Senior Archaeologist and Principal Investigator

Signature of Principal Investigator



Abstract

This report documents the results of the Phase IB archaeological survey for the proposed Marina Way Extension Project (the project) in Prince William County, Virginia. The purpose of the project is to lessen the burden on key surrounding facilities such as Route 1 and Route 123 by connecting Marina Way to Horner Road with a four-lane divided roadway complete with pedestrian facilities. Marina Way, a two-lane undivided roadway, serves as the only access point to Occoquan Harbor. The road extension will function as a main street for the proposed North Woodbridge Town Center currently under development, which will better distribute traffic demand to multiple intersections. The proposed improvements will promote safety, improve land use development accesses, and enhance the visual aesthetics throughout the corridor. This federal-funded (SmartScale) Locally Administrated Project (LAP) is in the north Woodbridge area between I-95 and Route 1, just south of the Occoquan River. This original report was submitted to DHR in September 2023, however, since submittal, the project area has slightly changed to include an additional portion of Annapolis Way. The report has been updated throughout to reflect the appropriate acreage and project area boundaries. Because the project update only includes Annapolis Way, which is an existing road, no additional fieldwork was conducted.

The proposed project study area measures 20.9 acres and is located between Route 123 on the west, and Route 1 on the East; the 20.9 acres are considered the Area of Potential Effects (APE). This survey was conducted for Prince William County to identify the potential for significant archaeological resources within the proposed APE. All work was conducted in consultation with the Virginia Department of Historic Resources (DHR) and in accordance with DHR's (2017) Guidelines for Conducting Historic Resources Survey in Virginia. The project complies with requirements of Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended, and its corresponding implementing regulations in 36 CFR 800. The purpose of the survey and assessment was to identify and evaluate archaeological sites for the National Register of Historic Places (NRHP). The criteria established for significance or potential significance is established in 36 CFR 60.4. JMT conducted the field survey and submits this report to DHR for concurrence on behalf of Prince William County.

JMT conducted a Phase IA reconnaissance survey in June 2023, which determined that the majority of the APE consists of paved roads, paved parking lots, grassy medians with buried and aboveground utilities, and part of the extant Gordon Plaza shopping center building (King et al. 2023). JMT determined that the wooded area located in the central portion of the APE has moderate potential for archaeological resources and recommended systematic survey per DHR Guidelines (2017), with shovel test pits (STPs) excavated at intervals of 50ft (15m). The testable area totals approximately 3.45 acres. Additionally, the historic and cultural background research as well as the potential for above ground resources impacted within the viewshed of the indirect effects APE were completed during the Phase IA survey. JMT did not recommend any additional work for historic architecture resources. No additional historic above ground resources were identified during the Phase I survey of the property and as such, JMT recommends no further work for the above ground resources.

This report provides the results of the archaeological survey within the APE. Fieldwork was conducted from August 14 – 18, 2023. Archaeological testing methods within the APE included visual inspection, pedestrian survey, and the systematic use of shovel test pits (STPs) placed at intervals of approximately 15 meters (50 feet) within the



recommended 3.45-acre testable area. Overall, the soils encountered varied in level of disturbance. No archaeological sites were identified and no further testing is recommended.



Table of Contents

Phase IB Archaeological Survey	i
Marina Way Extension Project, Prince William County, Virginia	i
Abstract.....	iii
1.0 Introduction	7
2.0 Environmental Setting.....	11
2.1 Physical Setting	11
2.2 Physiography and Geology.....	11
2.3 Hydrology.....	11
2.4 Flora and Fauna	11
2.5 Soils	12
2.6 Climate.....	12
3.0 Cultural Context	14
3.1 Precontact Context	14
Pre-Clovis (Unknown – 13,000 B.P.)	14
Paleoindian Period (13,000 – 10,000 B.P.)	14
Archaic Period (10,000 – 3200 B.P.)	15
Woodland Period (3200 – 350 B.P.).....	16
Late Woodland (1100 – 350 B.P.).....	17
3.2 Historic Context.....	17
History of Northern Virginia and Prince William County (AD 1600 – Present).....	17
History of the Project Area	19
4.0 Methods	27
4.1 Archaeology Background Research.....	27
4.2 Archaeology Field Methods	27
Survey Goals	27
Pedestrian Survey	27
Systematic Shovel Testing.....	27
4.3 Lab Methods	28
4.4 Curation	28
4.5 Evaluation Criteria	28
4.6 Expected Results.....	28
5.0 Results.....	29
5.1 Archaeological Background Research and Reconnaissance Survey Results	29
Background Research Results.....	29



Phase IA Reconnaissance Survey Results	31
5.2 Archaeology Survey Results.....	33
6.0 Summary and Recommendations	44
References.....	45
Appendix A. Resume of Principal Investigator	55
Appendix B. Table of STP Profiles	58

Figures

Figure 1. APE on 7.5-minute USGS topographic map of Occoquan, Virginia (1966) and Fort Belvoir, VA (1965).	8
Figure 2. APE on ESRI Aerial Imagery (2023).	9
Figure 3. APE on ESRI Aerial Imagery (2023) showing the Phase IB STP testable area.	10
Figure 4. Soils within the APE.	13
Figure 5. 1890 USGS Topographic map of the APE (USGS 1890).	20
Figure 6. 1944 USGS Topographic map of the APE (USGS 1944).	21
Figure 7. 1951 USGS Topographic map of the APE (USGS 1951).	22
Figure 8. 1962 Historic aerial map of the APE (NETR Online 2023).	23
Figure 9. 1966 USGS topographic map of the APE (USGS 1965, 1966).	24
Figure 10. 1979 historic aerial map of the APE (NETR Online 2023).	25
Figure 11. 1994 Historic aerial map of the APE (NETR Online 2023).	26
Figure 12. Cultural resources within the APE.....	31
Figure 13. APE with locations of soil tests and visible disturbances.....	33
Figure 14. Map of all STP locations.....	35

Photographs

Photograph 1. Standing water along line "G" in the western corner of the APE.	36
Photograph 2. Standing water along the "G" line in the western corner of the APE.	36
Photograph 3. Standing water along the "G" line in the western corner of the APE.	37
Photograph 4. Standing water along the "G" line in the western corner of the APE.	37
Photograph 5. View of paved lot and push piles along the southwestern border of the APE,	38
Photograph 6. View of push piles along the southwestern border of the APE, facing east.	38
Photograph 7. Example of modern dump site along line "G."	39
Photograph 8. Example of dumping and standing water along line "G."	39
Photograph 9. View of the slope along the northeastern edge of the APE.	40
Photograph 10. Example of the wetland identified in the southern portion of the APE.	40
Photograph 12. STP E2.....	42
Photograph 13. Example of a typical STP profile in an undisturbed section of the APE.	43

Tables

Table 1. Soil types within APE.....	12
Table 2. Archaeological sites within 0.5-mile of the project area.	29
Table 3. Prior Phase I archaeological surveys within 0.5-mile of the APE.....	30



1.0 Introduction

The Marina Way Road Extension Project (the project) in Prince William County, Virginia involves connecting Marina Way to Horner Road with a four-lane divided roadway complete with pedestrian facilities. The purpose is to lessen the burden on key surrounding facilities such as Route 1 and Route 123. This extension will function as a main street for the proposed North Woodbridge Town Center currently under development.

This report documents the results of the archaeological survey for the proposed project. This survey and assessment were conducted for Prince William County to identify the potential for significant cultural resources, archaeological sites, and standing structures in the proposed area of potential effects (APE). The project study area measures 20.9 acres and is located between Route 123 on the west, and Route 1 on the East (Figure 1 and Figure 2). The 20.9-acre project area is considered the APE.

JMT conducted a Phase IA reconnaissance survey in June 2023, which determined that the majority of the 20.9-acre APE consists of paved roads, paved parking lots, grassy medians with buried and aboveground utilities, and part of the extant Gordon Plaza shopping center building (King et al. 2023). JMT determined that the wooded area located in the central portion of the APE has moderate potential for archaeological resources and recommended systematic survey. The testable portion within the wooded area totals approximately 3.45 acres (Figure 3). Additionally, the historic and cultural background research as well as the potential for above ground resources impacted within the viewshed of the indirect effects APE were completed during the Phase IA survey. No additional aboveground resources were identified during the Phase I and therefore, JMT does not recommend any additional work for historic architecture resources.

Phase IB archaeological survey fieldwork was conducted from August 14 – 18, 2023. Fieldwork was completed by Daniel King, Registered Professional Archaeologist (RPA) and Archaeologist of JMT and Madison Ramsey, Field Technician of JMT. Lauren Gryctko, RPA and Senior Archaeologist of JMT with 13 years of experience, serves as Principal Investigator. Archaeological testing methods within the APE included visual inspection, pedestrian survey, and the systematic use of shovel test pits (STPs) placed at intervals of approximately 15 meters (50 feet) within the recommended 3.45-acre testable area, per Virginia Department of Historic Resources (DHR) guidelines (2017).

This original report was submitted to DHR in September 2023, however, since submittal, the project area has slightly changed to include an additional portion of Annapolis Way. The report has been updated throughout to reflect the appropriate acreage and project area boundaries. Because the project update only includes Annapolis Way, which is an existing road, no additional fieldwork was conducted.

This report is divided into six chapters: Chapter One: Introduction; Chapter Two: Environmental Setting; Chapter Three: Cultural Context; Chapter Four: Methods; Chapter Five: Results; and Chapter Six: Summary and Recommendations.

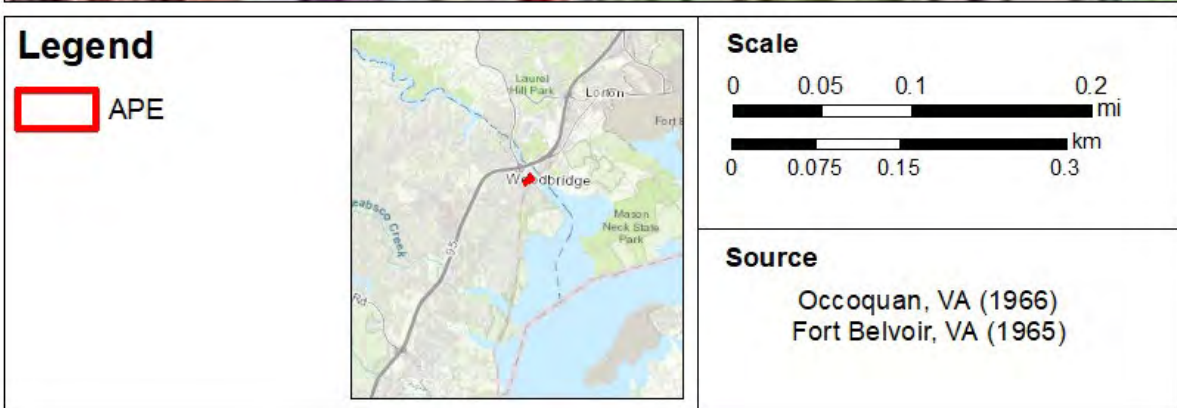


Figure 1. APE on 7.5-minute USGS topographic map of Occoquan, Virginia (1966) and Fort Belvoir, VA (1965).

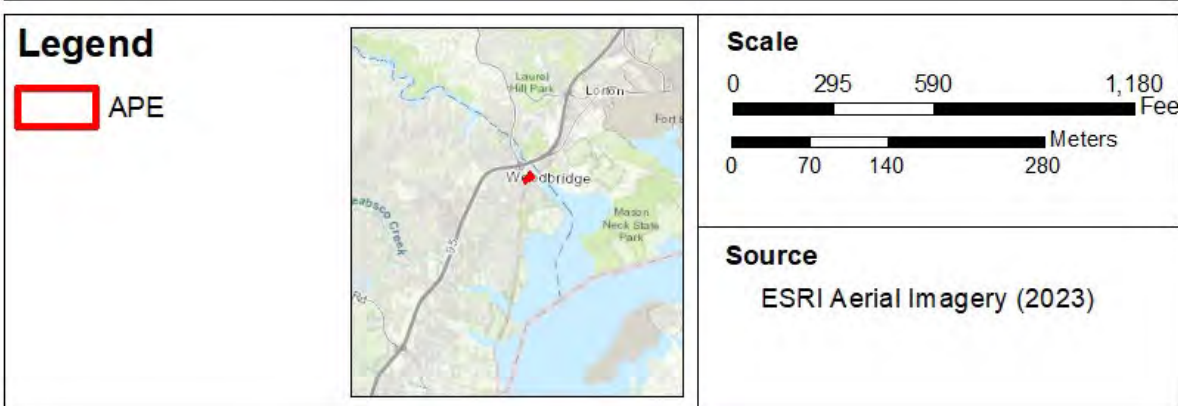




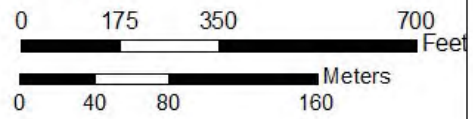
Figure 2. APE on ESRI Aerial Imagery (2023).



Legend

-  Phase IB STP Test Area
-  APE

Scale



Source

ESRI Aerial Imagery (2023)

Figure 3. APE on ESRI Aerial Imagery (2023) showing the Phase IB STP testable area.



2.0 Environmental Setting

The APE lies on the eastern most edge of Prince William County, Virginia, approximately a quarter of a mile west of the Occoquan River. Prince William County was historically rural but has experienced growth and urban development due to its proximity to Washington D.C.

2.1 Physical Setting

The proposed project study area measures 20.9 acres and is located between Route 123 on the west, and Route 1 on the east. The APE associated with this undertaking includes two large strip malls and their associated drainage basin and woodlands, as well as entrances, roadways, and parking currently used to access both malls.

2.2 Physiography and Geology

Prince William County exhibits diverse physiography and geology. The county lies within the Piedmont physiographic province, characterized by rolling hills and occasional valleys (Roberts and Bailey 2000). It is underlain by complex geology, primarily consisting of metamorphic rocks such as gneiss, schist, and quartzite. These rocks formed during the Precambrian and experienced subsequent tectonic activity, including folding and faulting (Dietrich 2014). The presence of the Bull Run and Occoquan faults indicates the region's history of seismic activity. Additionally, the county features significant deposits of gravel, sand, and clay, which have been extensively quarried for construction materials (Binning 2021). The geologic diversity and historical geological processes contribute to the unique landscape and resources of the county.

Elevations in the county range from near sea level along the Occoquan River to 1230 ft (375 m) above mean sea level (amsl) at Chestnut Peak. Prince William County is bounded on the north by Fairfax and Loudoun Counties; on the east by the Occoquan River; on the south by Stafford County; and on the west by Fauquier County.

2.3 Hydrology

No streams cross the project APE, however several small drainages within the APE drain into Occoquan River, which is approximately 1,195 ft (365 m) east of the APE. The Occoquan River drains south into Belmont Bay before draining into the Potomac River at Woodbridge, Virginia. The Potomac River empties into Chesapeake Bay which empties into the Atlantic Ocean.

2.4 Flora and Fauna

Virginia is native to 12 varieties of oak (*Quercus var.*), five species of pine (*Pinus var.*), two of walnut (*Juglans var.*), locust (*Robinia var.*), gum (*Liquidambar var.*), and poplar (*Liriodendron var.*). Pines predominate the Coastal Plain physiographic region, with numerous hardwoods on slopes and ridges further inland. (Advameg, Inc. 2023).

Indigenous mammalian species include the white-tailed deer (*Odocoileus virginianus*), black bear (*Ursa niger*), bobcat (*Lynx rufus*), groundhog (*Marmota monax*), raccoon (*Procyon lotor*), opossum (*Didelphis marsupialis*), red and gray foxes (*Urocyon var.*), and spotted and striped skunks (*Mephitis var.*).

Additionally, there are several species of moles (*Talpa var.*), shrews (*Sorex var.*), bats (*Pteropus var.*), squirrels (*Sciurus var.*), deer mice (*Peromyscus var.*), rats (*Rattus var.*), and rabbits (*Sylvilagus var.*). Dominant game birds



include the ruffed grouse (*Bonasa umbellus*), wild turkey (*Meleagris gallopavo*), bobwhite quail (*Colinus virginianus*), mourning dove (*Zenaidura macroura*), woodcock (*Scolopax minor*), and Wilson’s snipe (*Gallinago delicata*). Freshwater fish include bass (*Micropterus salmoides*), bream (*Abramis brama*), bluegill (*Lepomis macrochirus*), sunfish (*Lepomis var.*), perch (*Perca var.*), carp (*Cyprinus var.*), catfish (*Ictalurus var.*), and crappie (*Pomoxis var.*). Native reptiles consist of the northern copperhead (*Agkistrodon contortrix*), timber rattlesnake (*Crotalus horridus*), and black snake (*Elaphe var*) (Advameg, Inc. 2023).

2.5 Soils

There are three soil types present in the APE (Table 1; Figure 4). The most prevalent type is Urban land-Udorthents complex, 0 to 7 percent slopes (54B). Urban land-Udorthents complex is made up of leveled soils that have been cut away or graded and infilled. It has a typical profile of A - 0 to 5 inches: dark grayish brown (10YR 4/2) loam over E - 5 to 10 inches: dark grayish brown (10YR 4/2) loam over Bt1 - 10 to 24 inches: yellowish brown (10YR 5/6) clay over C - 24 to 42 inches: olive (5Y 5/4) sandy clay loam (Soil Survey Staff 2023). The second most prevalent soil type is Neabsco-Quantico complex, 2 to 7 percent slopes (42B). Neabsco-Quantico complex is a moderately well drained to well-drained soil occurring on hillslopes. Its parent material is marine deposits and it has a typical profile of H1 - 0 to 8 inches: loam over H2 - 8 to 17 inches: clay loam over H3 - 17 to 36 inches: loam over H4 - 36 to 52 inches: clay loam over H5 - 52 to 72 inches: very gravelly sandy loam (Soil Survey Staff 2023). The third soil type is Dumfries sandy loam, 15 to 25 percent slopes (18D). Dumfries sandy loam soils are well-drained occurring on hillslopes. Its parent material is marine deposits and it has a typical profile of H1 - 0 to 10 inches: sandy loam over H2 - 10 to 29 inches: sandy clay loam over H3 - 29 to 35 inches: sandy loam over H4 - 35 to 72 inches: sandy loam (Soil Survey Staff 2023).

Table 1. Soil types within APE.

Map Unit	Map Unit Name	Area (Acres)	Percent of APE
54B	Urban land-Udorthents complex, 0 to 7 percent slopes	13.3	63.8 %
42B	Neabsco-Quantico complex, 2 to 7 percent slopes	6.5	31.2 %
18D	Dumfries sandy loam, 15 to 25 percent slopes	1.1	4.9 %
Total		20.9	100.0 %

2.6 Climate

Prince William County experiences a humid subtropical climate, characterized by four distinct seasons. Summers in Prince William County are generally hot and humid, with average temperatures ranging from the mid-70s to the mid-90s Fahrenheit (mid-20s to mid-30s Celsius). The region receives a moderate amount of rainfall during this season. Autumn brings milder temperatures, with temperatures ranging from the 50s to the 70s Fahrenheit (10s to 20s Celsius). Winters in Prince William County are cool, with average temperatures ranging from the 30s to the 50s Fahrenheit (0 to 10 degrees Celsius), and occasional snowfall. Spring brings mild temperatures in the 50s to 70s Fahrenheit (10s to 20s Celsius) and blooming flora. It is important to note that weather patterns can vary from year to year, but overall, Prince William County experiences the range of all four seasons (Sperling’s 2021).

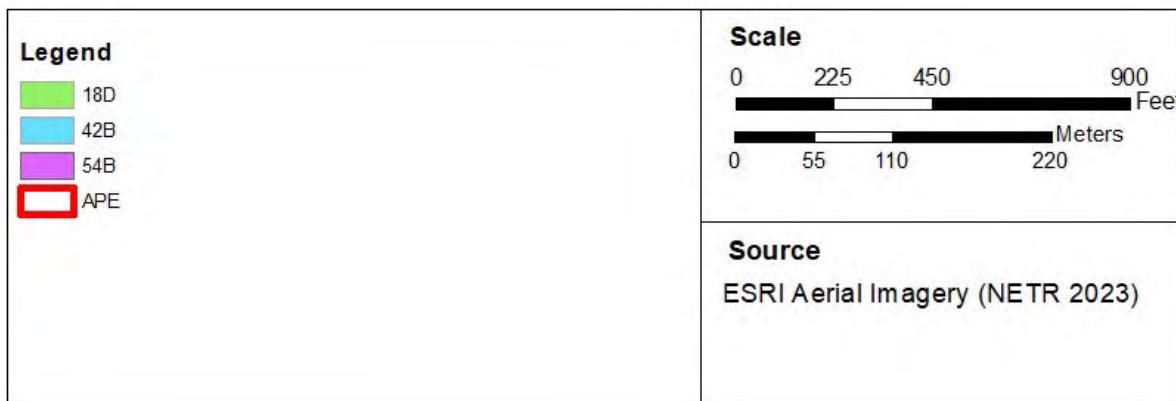


Figure 4. Soils within the APE.



3.0 Cultural Context

This section summarizes the precontact and historic cultural development of the Prince William County region of Virginia. This background is intended to serve as a context for assessing the significance of archaeological resources encountered in the project area.

3.1 Precontact Context

Precontact context in Virginia is typically divided into three main periods: Paleoindian (13,000 – 10,000 B.P.), Archaic (10,000 – 3200 B.P.), and Woodland (3200 – 350 B.P.). However, in recent years, there is evidence that a human presence was in the region pre-dating the Paleoindian.

PRE-CLOVIS (UNKNOWN – 13,000 B.P.)

Traditional hypotheses regarding human entrance into the New World have centered on Bering Land Bridge access and the corresponding ice-free corridor (Anderson et al. 1990:3). Though, in recent years, there has been widespread agreement in the professional community that early models of “Clovis first” are in need of revision due to growing evidence for earlier occupations (Cactus Hill in Virginia and Topper in South Carolina; McAvoy and McAvoy 1997).

Buried strata at the Cactus Hill Site in Sussex County, Virginia have returned radiocarbon dates of 15,000 years ago from strata situated below levels containing fluted points (McAvoy and McAvoy 1997). Prismatic blade-like flakes of quartzite chipped from specially prepared cobbles and lightly worked along one side to produce a sharp edge, make up the majority of stone cutting and scraping tools (Klein 2016; McAvoy and McAvoy 1997).

Sandstone grinding and abrading tools, also found in a significant quantity in the deepest artifact bearing strata, could indicate the production of wood and bone tools or ornaments. Because these tools do not possess unique characteristics that immediately identify them as dating to the Paleoindian period, archaeologists must consider the possibility of Pre-Clovis sites. At present, only a handful of potential such sites have been identified in North America (Klein 2016).

PALEOINDIAN PERIOD (13,000 – 10,000 B.P.)

The widely accepted Native American occupation of the eastern portion of North America begins approximately 13,000 B.P. The Paleoindian settlement-subsistence pattern revolved around hunting and gathering in small nomadic bands. These bands focused on hunting caribou, elk, deer, and possibly mega-fauna (Goodyear 1979; Meltzer 1988; Smith 1986a). Evidence for this period consists primarily of fluted projectile points. These points are rare and are often identified as isolated occurrences. While the discoveries are rare, the eastern half of the United States has some of the highest concentrations of Paleoindian points (Klein 2016). Only 271 sites with Paleoindian components have been identified in Virginia so far, according to VCRIS (DHR 2023a). While the fluted Clovis and Folsom points are the best known of the point types, others include the Hardaway-Dalton and Hardaway Side-Notched (Barber and Barfield 1989). Stone tools of this period are primarily made from high quality cryptocrystalline lithic material, and base camps have been identified near the source quarries for these materials (Moore et al. 2003:11). The Paleo toolkit included scrapers, graters, unifacial tools, wedges, hammerstones, abraders, and other tools used for chopping and smashing (Gardner 1989; Klein 2016).



ARCHAIC PERIOD (10,000 – 3200 B.P.)

The Archaic period is dated from circa 10,000 – 3200 B.P. and is commonly divided into Early (10,000 – 8800 B.P.), Middle (8800 – 5500 B.P.), and Late (5500 – 3200 B.P.) subperiods based on specific projectile point types. The Archaic was a significant period of climate change with the onset of Holocene climatic conditions, a period that was warmer and wetter than the late Pleistocene. Environments shifted from boreal forests to northern hardwoods (Moore et al. 2003:12). Additionally, there was a significant rise in sea levels as continental glaciers began to melt. Precontact populations' response to these changes included increased population, expansion into new environmental zones, and regional variations in point styles.

EARLY ARCHAIC (10,000 – 8800 B.P.)

There does not appear to be a dramatic change in the toolkits of the Early Archaic from the Paleoindian predecessors. Their settlement and subsistence patterns appear to be very similar (Anderson et al. 1996; Cable 1996). The transition into the Archaic is marked by an increase in site size, artifact quantity, and the increase in the number of sites (Egloff and McAvoy 1990). Diagnostic artifacts of the Early Archaic include Kirk Corner-Notched and Palmer Corner-Notched points (Coe 1964; Egloff and McAvoy 1990). Additionally, some bifurcated stem points, St. Albans and LeCroy, appear to be associated with the increased use of hafted endscrapers (Coe 1964). The Early Archaic also marks the first appearance of groundstone tools such as axes, celts, adzes, and grinding stones. At the close of the Early Archaic, there was an increased reliance on a wider range of lithic resources.

MIDDLE ARCHAIC (8800 – 5500 B.P.)

There is a high degree of cultural continuity between the Early and Middle Archaic periods, but sites dating to the Middle Archaic are more numerous, pointing to a likely population increase; sites also appear to be occupied for longer periods of time (Klein 2016). This period is accompanied by a relatively warm and dry period that may have resulted in population movements (Delcourt and Delcourt 1987; Stoltman and Baerreis 1983). The primary cultural attributes of the Middle Archaic are “small-group band organization, impermanent settlement systems, infrequent aggregation phases, and low levels of regional or areal integration and interaction” (Mouer 1991:10). During the Middle Archaic, though base camps continued to be located along the floodplains of large drainages, smaller sites begin to appear in locations such as upland swamps and interior ridgetops (Gardner 1987). New tool types emerged for wood-working, seed-grinding, and nutcracking, such as axes and adzes, mauls, grinding slabs, and nutting stones (Katz 2011:16). Diagnostic artifacts of this period include Stanley Stemmed, Morrow Mountain Stemmed, Guilford Lanceolate, and Halifax Side-Notched projectile points.

LATE ARCHAIC (5500 – 3200 B.P.)

The Late Archaic is widely seen as the culmination of trends that began in the preceding periods of the Archaic (Dent 1995a). Dent (1995:178) suggests that the Late Archaic is “a time that contains both the ends of one way of life and the beginnings of a significant redirection”. The artifact assemblage of this period is dominated by bifacial tools; though expedient flake scrapers, drills, perforators, and utilized flakes are also characteristic of the period. Groundstone tools, including adzes, celts, gorges, and axes are seen during this period, with the grooved axe making its first appearance (Dent 1995). Diagnostic artifacts of the early Late Archaic include the Bare Island/Lackawaxen, Lamoka, and Holmes projectile points, all of which are of the narrow blade tradition (Dent 1995; Mouer 1991).



The period of time from approximately 4500 to 3200 B.P. is considered the Transitional Period by some (Mouer 1991), but others argue that due to the lack of pottery, it is more accurately classified as an extension of the Late Archaic (Dent 1995). Associated with the appearance of these point types was a major change in settlement pattern, with sites focusing on the floodplains of higher-order streams (Mouer 1991b). Transitional Period sites tend to be larger than those of the Archaic periods, likely associated with an increase in population; however, there is still no evidence for year-round occupation. Dent (1995) argues that the larger sites may be misinterpreted as reflecting longer-term occupation and may simply point to the sites being revisited for short periods on multiple occasions. Material culture associated with the Transitional includes steatite vessels, as well as the groundstone tools from earlier in the Late Archaic. Broad-blade points associated with the terminal Late Archaic or Transitional Period include Savannah River, Susquehanna, and Perkiomen, and Dry Brook, and Orient Fishtail points (Dent 1995; Mouer 1991).

WOODLAND PERIOD (3200 – 350 B.P.)

The Woodland Period is also divided into three subperiods, Early (3200 – 2300 B.P.), Middle (2300 – 1100 B.P.), and Late (1100 – 350 B.P.). Highlights of this period are generally considered to be the appearance of pottery production on a large scale, increased semi-sedentary settlements, and horticulture (Ward and Davis 1999:76). Although subsistence strategies were a continuation of the earlier hunter-gatherer systems, they were augmented with increased reliance on the cultivation of native and domesticated plants (Smith 1986b). Overall, the Woodland is a period of increased sedentism with adaptive strategies concentrated on limited agriculture, mixed hunting, and intensive collecting. As agriculture grew in importance, so too did village life and social complexity; however, hunting and gathering continued to be a supplemental dietary strategy.

EARLY WOODLAND (3200 – 2300 B.P.)

The trend of population growth continues into the Early Woodland as settlements were established in estuarine contexts (Moore et al. 2003:14). The Early Woodland steatite-tempered Marcey Creek pottery is seen as the earliest ceramic ware produced in Virginia, most commonly found on sites located north of the James River (Egloff and Potter 1982:95–97). Marcey Creek ceramics are characterized by shallow, slab-built forms (Dent 1995b; McLearen 1991). Clay-tempered Croaker Landing ware, dating to 3150 – 2750 BP, was first identified in York County along the York River (Egloff and Potter 1982:97). Other contemporaneous wares include Selden Island and Bushnell Wares. Selden Island, another steatite-tempered, and other temper types appear during the Early Woodland (McLearen 1991). Around 1100 B.P. a shift from slab to coil construction and conoidal vessels occurs. This technology shift is accompanied by the introduction of surface treatments such as cord marking and net impression (Dent 1995; McLearen 1991). Projectile points of the Early Woodland include the Rossville Stemmed and possibly Piscataway Stemmed (Dent 1995).

MIDDLE WOODLAND (2300 – 1100 B.P.)

The Middle Woodland is characterized by the rise of interactions, marking the spread of religious and ritual behaviors, which appear in local traditions; while localized stylistic developments that appear independently alongside interregional styles, increased sedentism and evidence of ranked societies or incipient societies appear (McLearen 1992). Coastal populations intensified fishing and shellfish gathering, with larger, longer-term settlements occurring along freshwater-saltwater transition zones (Moore et al. 2003:14). Smaller, seasonal resource procurement sites were commonly settled along tributary waterways in the interior (Moore et al. 2003:14). Though there is a degree of commonality among Middle Woodland populations, one of the striking characteristics of the period is the rise of regional trends, specifically in pottery.



The use of shell-tempering in the Coastal Plain differs from the predominance of quartz-tempering in the Piedmont, and north-south differences corresponding to river drainages that drain into the Chesapeake Bay or Albemarle Sound appear. The regional diversity of surface treatments increases after 1500 B.P. and analysis of the regional pottery indicates that the Potomac, the Rappahannock, and Upper Dan were slightly different cultural subareas (Hantman and Klein 1992; Klein 2016).

There are two phases of the Middle Woodland based on ceramic chronology. The earlier is characterized by Popes Creek (north of the James River), Stoney Creek (south of the James River), and related ceramics (2600 – 1700 BP) and the later Mockley ceramic (1700 – 1000 BP) (Egloff and Potter 1982:99; Stewart 1992). Stoney Creek is a thick-walled, medium sand-tempered, and fabric, cord, or knotted net-impressed ware (Egloff and Potter 1982:99). Mockley is a shell-tempered, cord, net impressed, or smoothed ware, sometimes incised or punctate decorations on the exterior and interiors of rims (Custer 1989; Dent 1995c; Egloff and Potter 1982; Steponaitis 1980; Wright 1973) Projectile points of include the Fox Creek-Selby Bay points, often associated with Mockley pottery. Other points of the period include Jack's Reef corner-notched, Rossville, and Calvert points. The latter appear during the Early Woodland but may have carried over to the Middle Woodland based on their association with sites containing Popes Creek pottery.

LATE WOODLAND (1100 – 350 B.P.)

An increased intensification of agriculture, associated population growth, larger sedentary villages situated along floodplains, and increased sociocultural complexity characterize the Late Woodland (Gallivan 2003). In the early portion of the Late Woodland, settlements are comprised of small clusters of houses, though by 600 BP, larger villages are evident (Klein 2016). The presence of fortified, nucleated settlements, such as those at Piscataway Creek in the Lower Potomac region and Patawomeke in Stafford County, suggest an increase in interregional and intra-group hostilities during this time (Katz 2011:19). Other socio-political characteristics of this time include unequal access to resource surpluses and non-local goods, differences in burial practices based on rank, and hierarchical settlement patterns (Banguilan et al. 2010:18).

Ceramic types of the period include the shell-tempered Townsend ware (1000 BP – 1590 CE) and the quartz-tempered Potomac Creek ware (650 BP – 1600s CE) (Egloff and Potter 1982). There are five subtypes of Townsend ware as currently identified, including Rappahannock Fabric Impressed, Rappahannock Incised, Townsend Incised, Townsend Corded Horizontal, and Townsend Herringbone (DHR 2023b; Egloff and Potter 1982:107–109). Two sub-types of Potomac Creek wares are recognized, including Potomac Creek Cord-Impressed and Potomac Creek Plain (Egloff and Potter 1982:112). The smaller Madison, Levanna/Yadkin, Caraway, and Potomac triangular points are associated with the terminal Woodland period. The predominance of these small projectile points in Late Woodland contexts suggest reliance on bows and arrows for hunting (Banguilan et al. 2010:18).

3.2 Historic Context

HISTORY OF NORTHERN VIRGINIA AND PRINCE WILLIAM COUNTY (AD 1600 – PRESENT)

The Historic Context for the area is largely adapted from Crowl (2005) and other sources and summarizes the development of the region from the Contact through the present. At the Contact period the Siouan-speaking Manahoac Indians inhabited much of northern Virginia from the Potomac to the North Anna River. They were mentioned in accounts by early traders, travelers, and specifically by John Smith, who met a Manahoac group in 1608 (Egloff and Woodward 2006). The subsistence and settlement patterns of this period were largely continued from the Late Woodland period.



The Manahoac were driven from the area by 1667, as raiding Iroquois, disease, and colonial expansion pushed the group south to join the Monacans (Egloff and Woodward 2006). An additional group in the area was the Algonquian-speaking Potowomekes, part of the Powhatan chiefdom, which lived along the Potomac River. During the seventeenth century, the lives of Native Americans and European Colonizers became increasingly co-mingled, sometimes peacefully, but often hostile. By 1650, disease and warfare had largely forced the remaining native population to move or lose their culture (Crowl 2005).

English colonizer Captain John Smith explored the region in 1608, but it was not until 1731 that the county was officially established and named after Prince William Augustus, the son of King George II. During the colonial era, Prince William County was predominantly rural and agricultural, with tobacco being the primary crop. It was an important center for trade and transportation, situated along the Potomac River and major roads connecting Virginia to the north.

As tensions rose between the American colonies and Great Britain, Prince William County played a role in the American Revolutionary War, as its strategic location near transportation routes made it a site of various skirmishes and battles. Notably, the Battle of Bull Run (First Manassas) took place in Prince William County in 1861, marking one of the early major engagements of the Civil War.

The Civil War had a profound impact on Prince William County. As part of Virginia, the county joined the Confederacy, and the region saw military activity and troop movements. The Battle of Bull Run, fought near Manassas in the county, resulted in a Confederate victory and was a significant turning point in the early stages of the war.

The clashes had a profound impact on the region, as it was located strategically between Washington, D.C., and Richmond, the capital of the Confederacy. The war brought destruction and hardship to the county and left the county in economic peril.

In the post-war years, Prince William County transitioned from an agricultural economy to a more diversified one. The county saw the growth of industries such as mining, manufacturing, and tourism. The construction of railroads and the development of transportation infrastructure further stimulated economic growth and brought prosperity to the region. The town of Manassas became important as a railroad terminal because it was a shipping hub for the Shenandoah Valley in the west and to the urban cores of Alexandria, Virginia and Washington, D.C. in the east (Klein and Davis III 2011).

As the United States grew closer to participation in World War I, the Marine Corps took on a greater role within the armed forces. In 1917, Marine officers leased a plot of 5,300 acres at Quantico (Klein and Davis III 2011). Later that year, the leasing company sold the property to the United States government due to financial hardship (Evans 1989). The Marine Corps Reservation at Quantico continued to grow throughout World War II, prompting economic and residential growth in Prince William County.

During the economic depression of the 1930s, land depleted by tobacco farming in the eighteenth and nineteenth centuries was bought for redevelopment through federal programs (Evans 1989). The Civilian Conservation Corps (CCC) built five cabin camps and several small lakes in Prince William County, including the Chopawamsic Recreation Demonstration Area (NPS 2005). During World War II these cabin camps were used to house and train allied spies for the Office of Strategic Services, which later became the CIA (Evans 1989). The park was returned to the National Park Service after WWII and became Prince William Forest Park (Evans 1989; NPS 2005).



The years after World War II saw the expansion of the federal government, including lobbying groups and research and development enterprises connecting Northern Virginia economically and physically to Washington, D.C. (Evans 1989). The 1956 Highway Act led to the construction of Interstate 95, which allowed urban and suburban development to prosper in Prince William County in the 1950s and beyond (Evans 1989).

Prince William County remains a dynamic and diverse community today. It has an economy which is driven by sectors such as technology, healthcare, and government contracting. The county is also known for its educational institutions, including Northern Virginia Community College and George Mason University's Science and Technology Campus. It also offers numerous recreational opportunities, with parks, trails, and cultural attractions meant to showcase the area's natural beauty and history.

HISTORY OF THE PROJECT AREA

According to a historic map review, the APE has been affected by development since at least the 1890s, at which time a topographic map shows two structures partially within the APE and a third structure just southwest of the APE (Figure 5). At this time, Route 1 and Route 123 were already in existence. Similarly, a railroad is shown running southwest-northeast along the southeastern edge of the projected location of the APE. By 1944, the area started to grow with a structure within the APE, several driveways running through the project area, and heavy development to the southeast of the project area (Figure 6). A 1951 topographic map shows additional development within the APE, both in the northeast and the southwest (Figure 7). At a greater distance, additional structures and roads are shown in the 1951 map within the vicinity of the project area. A 1962 aerial image shows recent demolition in the northeastern portion of the APE, and scattered development within and to the southeast of the project area (Figure 8). Northwest of the project area appears to have remained rural, wooded and agricultural land, however, by 1966, development appears to have expended to the northwest, with a large structure appearing within the APE on the 1966 topographic map (Figure 9). This is echoed in 1979 historic aerial imagery, which also shows clearing northwest of the project area, and suggests that construction and growth was within the vicinity of the project area during the 1970s (Figure 10). The project location and its vicinity experienced further development through the 1990s (Figure 11).

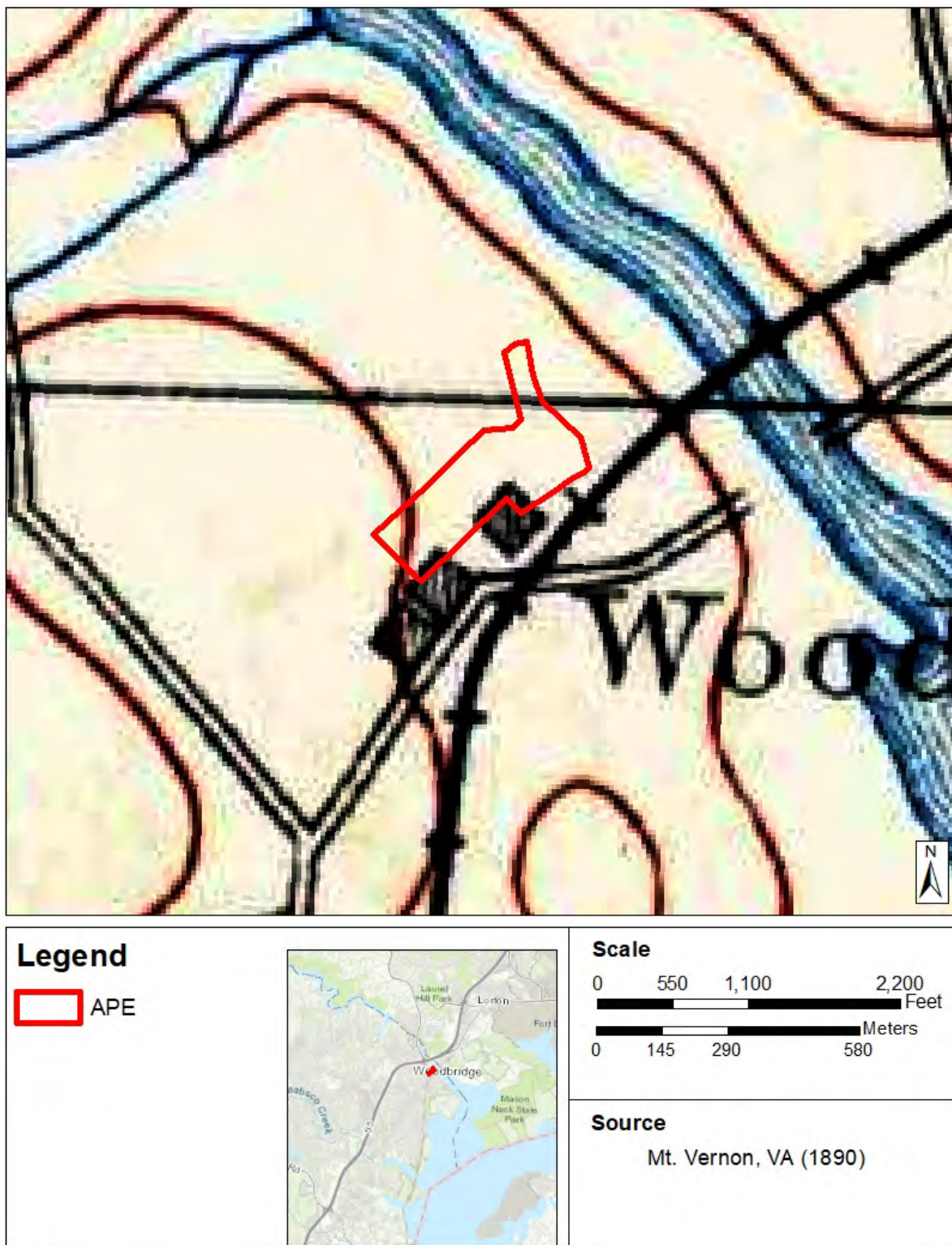


Figure 5. 1890 USGS Topographic map of the APE (USGS 1890).

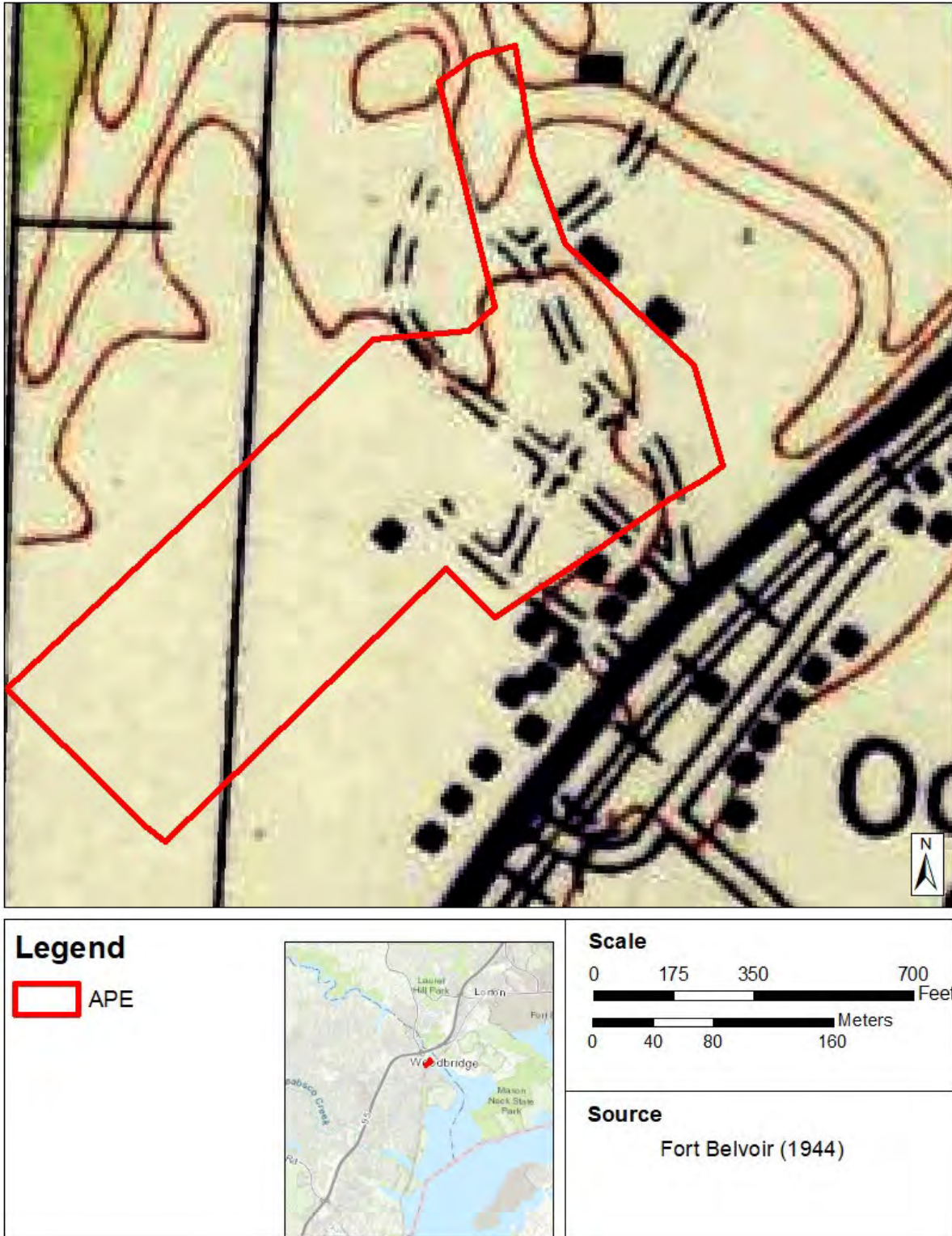


Figure 6. 1944 USGS Topographic map of the APE (USGS 1944).

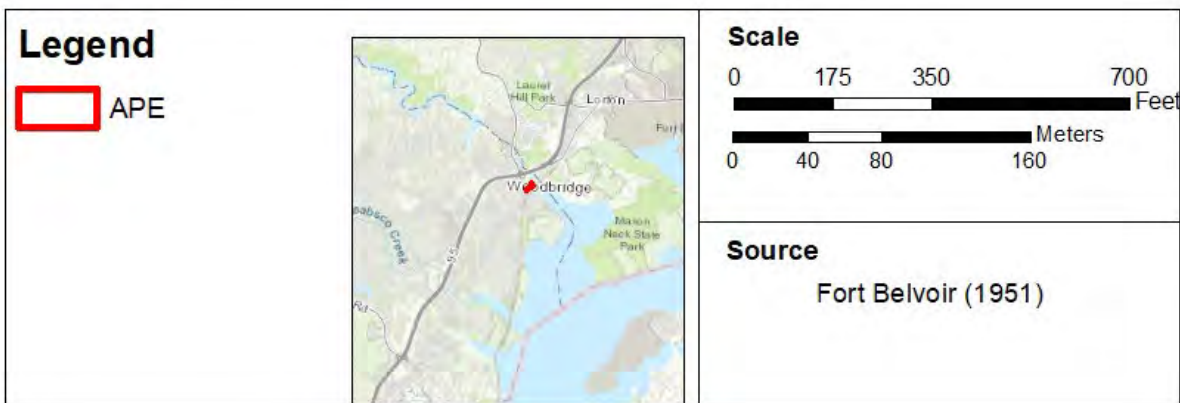
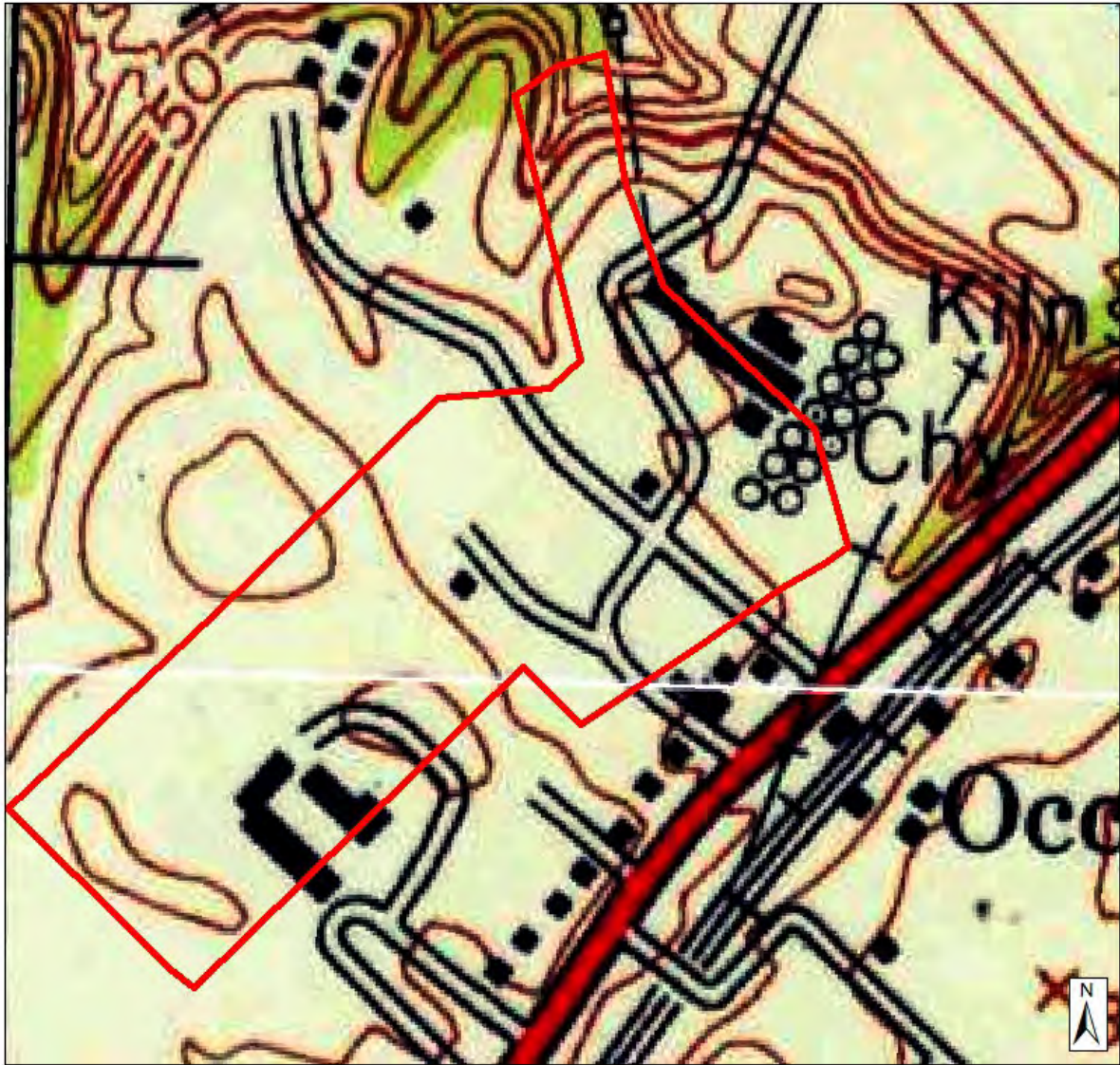


Figure 7. 1951 USGS Topographic map of the APE (USGS 1951).

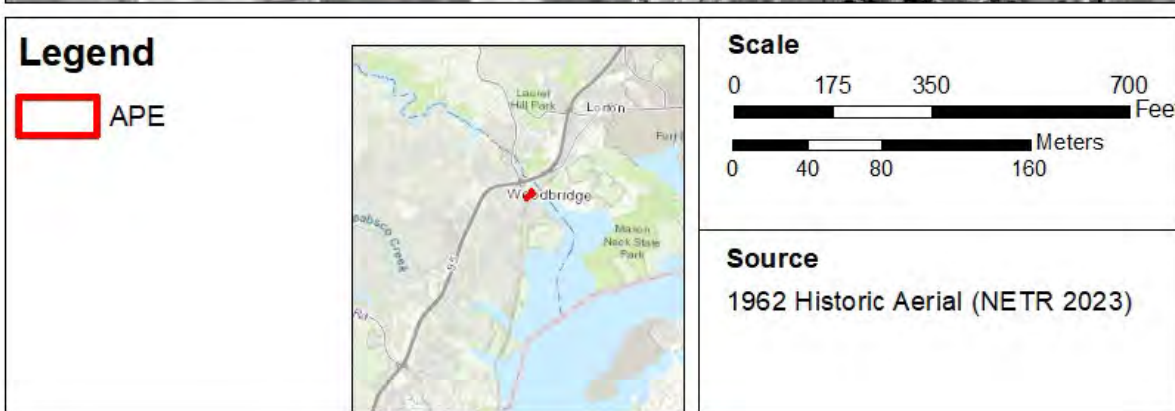


Figure 8. 1962 Historic aerial map of the APE (NETR Online 2023).

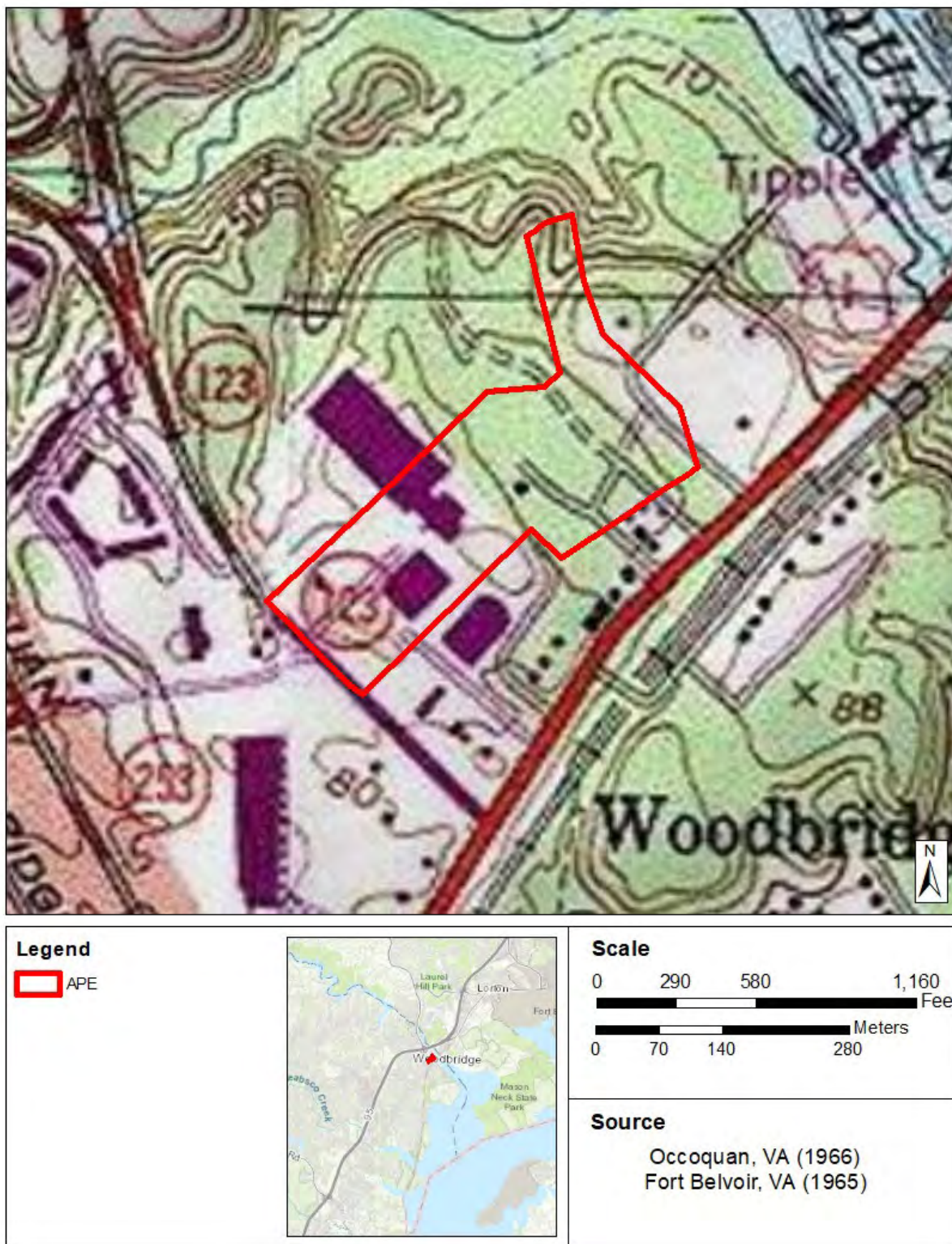


Figure 9. 1966 USGS topographic map of the APE (USGS 1965, 1966).

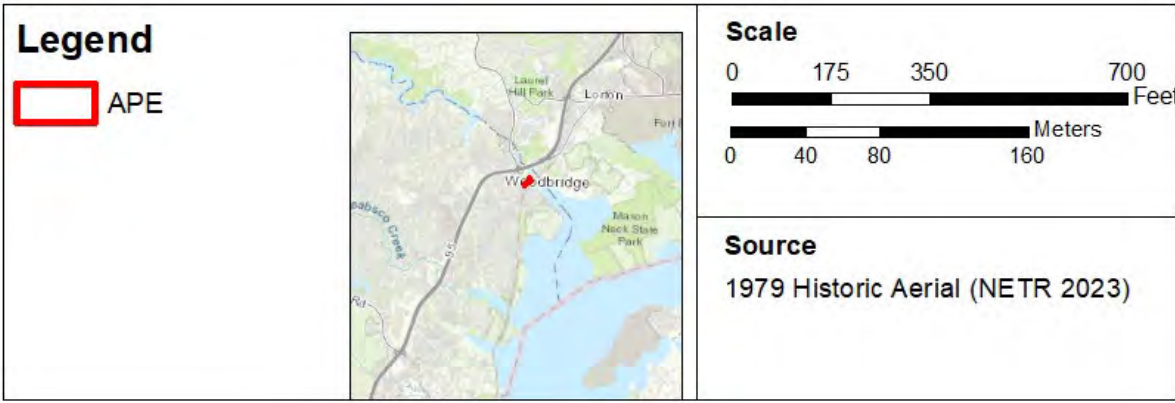
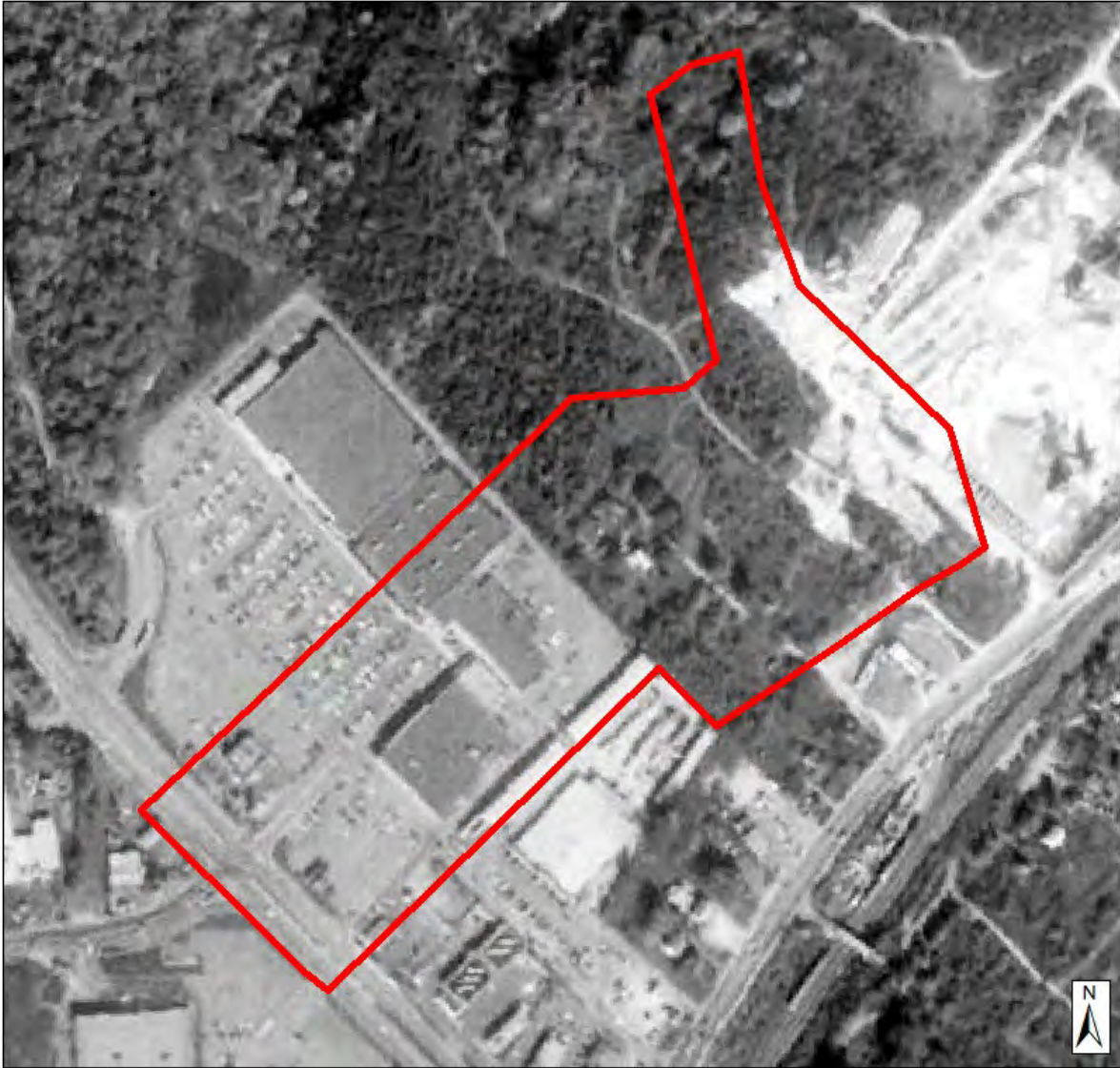


Figure 10. 1979 historic aerial map of the APE (NETR Online 2023).

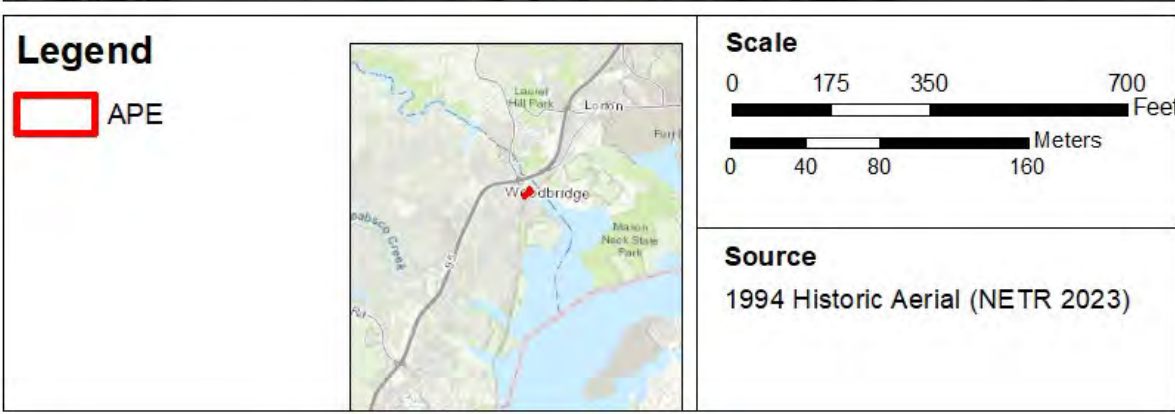


Figure 11. 1994 Historic aerial map of the APE (NETR Online 2023).



4.0 Methods

4.1 Archaeology Background Research

Background research was performed to identify previously recorded resources in the defined APE and to assess the archaeological potential of the project location. Background research was conducted in accordance with DHR Guidelines (2017). A records search was conducted via the Virginia Cultural Resource Information System (VCRIS), a cultural resource records database managed by DHR. Site files were reviewed along with GIS data, historic maps and atlases, soil surveys, aerial photography to identify any previously recorded archaeological sites within the project area or within 0.5-mile of the APE.

4.2 Archaeology Field Methods

SURVEY GOALS

The goal of the proposed survey was to identify archaeological sites in the APE. All forms of archaeological survey rely on sampling; it is time and cost-prohibitive to conduct an archaeological survey by excavating all possible site bearing soils within a project area. The standard for Section 106 compliance is that a reasonable and good faith effort be made to identify historic properties, including archaeological sites. A recommendation of potential eligibility for listing on the NRHP, as well as a determination of effects on these sites are also a goal of the initial archaeological survey.

PEDESTRIAN SURVEY

A pedestrian survey was conducted to determine the current conditions of the APE, including disturbed portions of the project area and any cultural features with surface visibility. Photographic documentation of the APE and surrounding area was also conducted.

SYSTEMATIC SHOVEL TESTING

STPs were excavated at systematic intervals throughout all three segments of the APE. Per DHR Guidelines (2017), STPs were excavated at intervals of 15 m (50 ft). Areas that exhibited excessive prior disturbance, slope greater than 20 percent, or standing water were visually inspected, but not shovel tested. All shovel tests had an approximately 0.4-m (01.31-ft) diameter and were excavated 10 centimeters (cm) (4 inches [in]) into subsoil unless noted otherwise. All excavated soils were screened through 0.64-cm (1/4-inch) mesh. Had radial STPs been needed they would have been excavated at intervals of 7.5 m (25 ft) around regular interval positive STPs in a cruciform pattern and placed adjacent to negative STPs and the edge of the project's APE. No radial shovel tests were needed, due to the lack of artifacts. Each natural stratum was given a stratum designation (e.g., Stratum I) to delineate stratigraphic relationships. Representative STPs were photographed, and profile drawings were made of stratigraphy. Had artifacts been identified they would have been recovered and bagged by stratum when possible, however, no artifacts were recovered. Soil conditions and notations on disturbances were recorded within field notes. Following the recording of stratigraphic data, soil was backfilled, and the ground surface was returned, as closely as possible, to its original condition.



4.3 Lab Methods

Had artifacts been found, they would have been processed, catalogued, and prepared for curation in JMT's laboratory in Fort Washington, Pennsylvania in accordance with standard procedures outlined in DHR's (2011) State Collections Management Standards.

4.4 Curation

The project records are temporarily being curated by JMT.

4.5 Evaluation Criteria

The NRHP significance criteria in 36 CFR 60.4 defines eligible cultural resources as buildings, structures, objects, sites, and districts that have integrity of location, design, setting, materials, workmanship, feeling, and association and that meet one or more of the following criteria. Criterion D is most often, but not exclusively, used with archaeological resources.

- Criterion A: Association with events that have significantly contributed to the broad patterns of history;
- Criterion B: Association with persons significant in the past;
- Criterion C: Possession of the distinctive characteristics of a type, period, or method of construction; exemplification of the work of a master architect, engineer, or artist; embodiment of high artistic values; or evidence of a significant and discernible entity whose components may lack distinction on their own; and
- Criterion D: Ability to yield information significant to prehistory or history.

4.6 Expected Results

According to a historic map review, a twentieth century structure was identified in the 3.45-acre testable area of the APE. This area appears to have had some disturbance in the past from logging and development, though the Phase IA reconnaissance survey identified some intact soils. As such, there is a high potential that JMT will identify historic period archaeological resources within the APE. Additionally, given the project location near the Occoquan River, there is a moderate potential for identification of precontact archaeological resources in the APE.



5.0 Results

The following section provides the results of the archaeology background research and the archaeological survey of the APE. Overall, the majority of the 20.9-acre APE consists of paved roads, paved parking lots, grassy medians with buried and aboveground utilities, and part of the extant Gordon Plaza shopping center building. However, the wooded area located in the central portion of the APE has moderate potential for archaeological resources and recommended systematic survey. The testable portion within the wooded area totals approximately 3.45 acres. This original report was submitted to DHR in September 2023, however, since submittal, the project area has slightly changed to include an additional portion of Annapolis Way. The report has been updated throughout to reflect the appropriate acreage and project area boundaries. Because the project update only includes Annapolis Way, which is an existing road, no additional fieldwork was conducted.

5.1 Archaeological Background Research and Reconnaissance Survey Results

BACKGROUND RESEARCH RESULTS

The background research revealed that there are 13 previously recorded archaeological resources located within 0.5-mile of the APE (Table 2, Figure 12). None of the sites overlap the APE. Site 44FX2542 is the only site within the 0.5-mile search radius considered eligible or potentially eligible for listing in the NRHP. One of the sites was determined not eligible for listing in the NRHP by DHR Staff and the remaining 11 were not evaluated. The project area is not adjacent to any Civil War study or core areas. Background research also showed 10 prior Phase I surveys located within 0.5-mile of the APE (Table 3 see Figure 12). One of these surveys (FX-133) partially overlaps with the northeastern portion of the project APE.

Table 2. Archaeological sites within 0.5-mile of the project area.

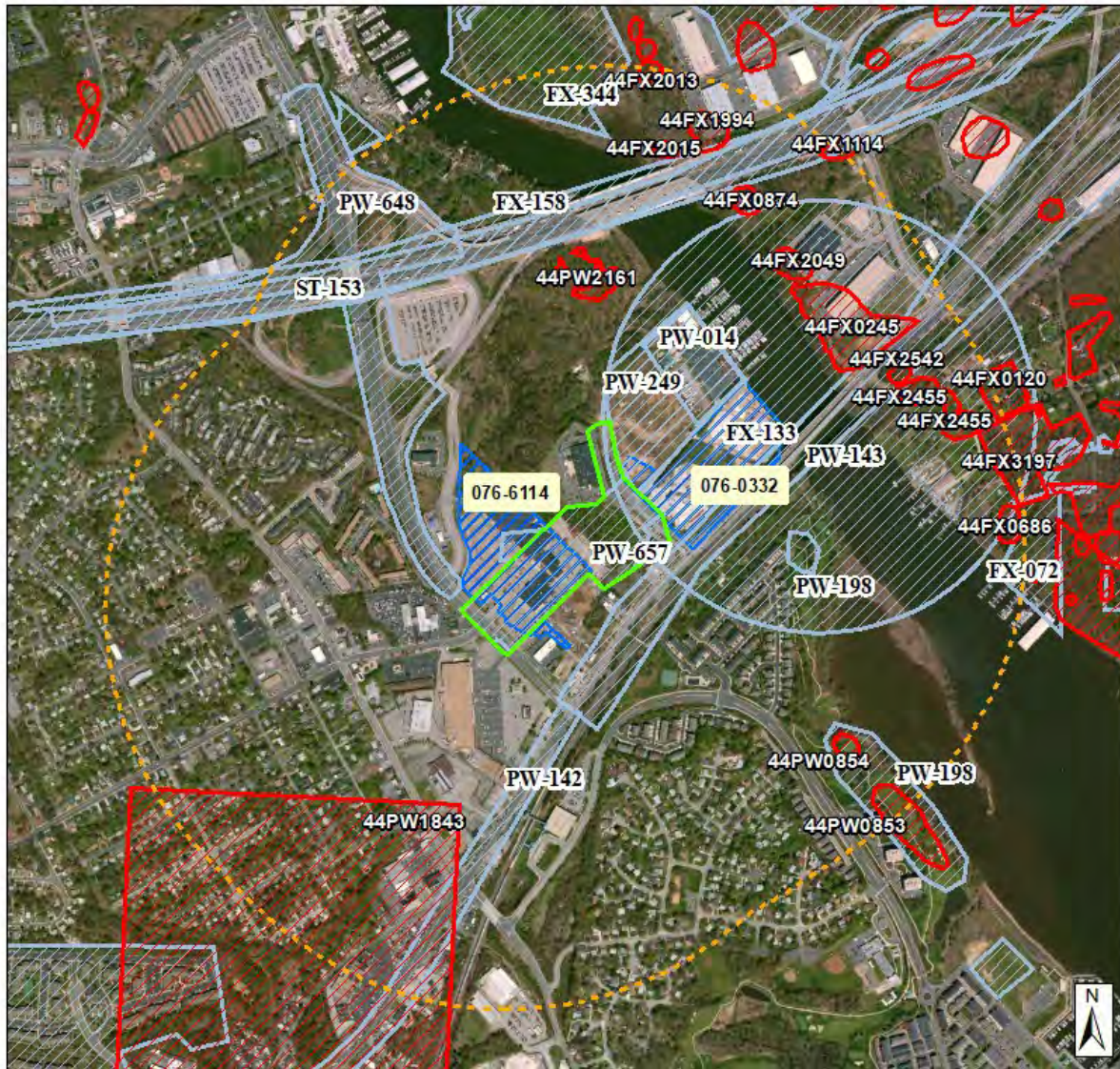
DHR ID	Site Types	Time Periods	Evaluation
44FX0120	Store	18th Century: 2nd half (1750 - 1799), 20th Century: 1st half (1900 - 1949)	--
44FX0245	Cemetery	Prehistoric/Unknown (15000 B.C. - 1606 A.D.), 19th Century: 2nd/3rd quarter (1825 - 1874)	DHR Staff: Not Eligible
44FX0686	--	Historic/Unknown	--
44FX0874	--	--	--
44FX1994	Camp, base	Early Archaic (8500 - 6501 B.C.), Middle Archaic (6500 - 3001 B.C.), Late Archaic (3000 - 1201 B.C.), Early Woodland (1200 B.C. - 299 A.D.), Late Woodland (1000 - 1606)	--
44FX2015	--	Prehistoric/Unknown (15000 B.C. - 1606 A.D.)	--
44FX2049	Camp	null	--
44FX2455	Camp, Dwelling, single	Pre-Contact, Reconstruction and Growth (1866 - 1916), World War I to World War II (1917 - 1945), The New Dominion (1946 - 1991)	--
44FX2542	Village/Town	Paleo-Indian (15000 - 8501 B.C.E), Early Archaic Period (8500 - 6501 B.C.E), Middle Archaic Period (6500 - 3001 B.C.E), Late Archaic Period (3000 - 1201 B.C.E), Early Woodland (1200 B.C.E - 299 C.E), Middle Woodland (300 - 999 C.E), Late Woodland (1000 - 1606), Contact Period (1607 - 1750), Colony to Nation (1751 - 1789), Early National Period (1790 - 1829)	DHR Staff: Potentially Eligible
44FX3197	Lithic scatter, Other, Village/Town, Vineyard	Pre-Contact, Contact Period (1607 - 1750), Colony to Nation (1751 - 1789), Early National Period (1790 - 1829), Antebellum Period (1830 - 1860), Civil War (1861 - 1865)	--



DHR ID	Site Types	Time Periods	Evaluation
44PW0853	Camp, temporary, Lithic workshop	Late Woodland (1000 - 1606)	--
44PW0854	Camp, temporary, Lithic workshop	Early Woodland (1200 B.C. - 299 A.D.)	--
44PW1843	Camp	Colony to Nation (1751 - 1789), Early National Period (1790 - 1829)	--

Table 3. Prior Phase I archaeological surveys within 0.5-mile of the APE.

Report Number	Title	Author	Year
FX-072	Phase I Archaeological Investigation of the Fairfax Yacht Club Occoquan Marina, Fairfax County, Virginia	Charles H. LeeDecker, Amy Friedlander, Teresa E. Ossion	1983
FX-133	Preliminary Cultural Resource Reconnaissance Report, Route 1-Occoquan River Bridge, Fairfax County, Virginia	Michael F. Johnson	1980
FX-158	Phase I Cultural Resource Reconnaissance Survey for the Interstate-95 HOV Lane Project, Fairfax and Prince William Counties, Virginia	Daniel Koski-Karell	1987
FX-344	Cultural Resource Evaluation on the Grounds of the Former Medium Security Facility, District of Columbia Detention Center, Lorton, Virginia	John T. Eddins, Eric F. Griffiths	1998
PW-014	An Archaeological Investigation of the Richard L. Krauss Riverfront Property for Determination of a Permit Action at the mouth of Occoquan River, Prince William County, Virginia	Stephen S. Israel	1981
PW-142	Cultural Resources Identification Survey (Phase I) Improvements to US 1 from Stafford County Line to Route 123, Prince William County, Virginia, Project A	Bill Hall, Loretta Lautzenheiser, John P. Cooke, Mary Ann Holm, N. Carolyn McCollum	2001
PW-143	Cultural Resources Identification Survey (Phase I) Improvements to U.S. Route 1 from Route 123 to Route 611 (Telegraph Road) Prince William and Fairfax Counties, Virginia, Project B	Loretta Lautzenheiser, John P. Cooke, Mary Ann Holm, Bill Hall, et al	2001
PW-198	Phase I Archaeological Investigations at Belmont Center, Woodbridge, Prince William County, Virginia	Cynthia Pfanstiehl, Tery D. Harris, Edward Otter	1994
PW-249	Phase I Cultural Resources Survey of Approximately 13 Acres at the Proposed Rivergate Development, Prince William County, Virginia	Matthew Laird	2005
ST-153	Phase I Archeological Investigations of the I-95/395 HOV/Bus/HOT Lanes Project, Arlington, Fairfax, Prince William and Stafford Counties and the City of Alexandria, Virginia	Brian Buchanan, Christopher Shephard, David Carroll, Curt Breckenridge, Johnna Flahive, Christine Jirikowic, Tammy Bryant, William Barse	2007



<p>Legend</p>	<p>Scale</p>
<ul style="list-style-type: none"> New Study Area (2024) Archaeology Search Area (0.5-mile) Archaeological Resources Archaeology Phase 1 Survey Architectural Resources 	<p>0 0.125 0.25 0.5 mi</p> <p>0 0.175 0.35 0.7 km</p>
	<p>Source ESRI Aerial Imagery (2023)</p>

Figure 12. Cultural resources within the APE.

PHASE IA RECONNAISSANCE SURVEY RESULTS



A reconnaissance level survey was conducted to determine the current conditions of the APE and to assess the archaeology potential using pedestrian survey and limited soil testing to evaluate the soils within the project area (Figure 13). The reconnaissance survey determined that the majority of the 20.9-acre APE consists of paved roads, paved parking lots, grassy medians with buried and aboveground utilities, and part of the extant Gordon Plaza shopping center building (King et al. 2023). JMT determined that the wooded area located in the central portion of the APE has moderate potential for archaeological resources and recommended systematic survey. The testable portion within the wooded area totals approximately 3.45 acres.

The one architectural resource located within the APE, Gordon Plaza (076-6114), has been recommended not eligible for listing in the National Register of Historic Places. During the Phase IA architectural assessment, JMT determined the building was constructed ca. 1973 and has no discernable style and was modified with a new façade in the 1990s (King et al. 2023:27).

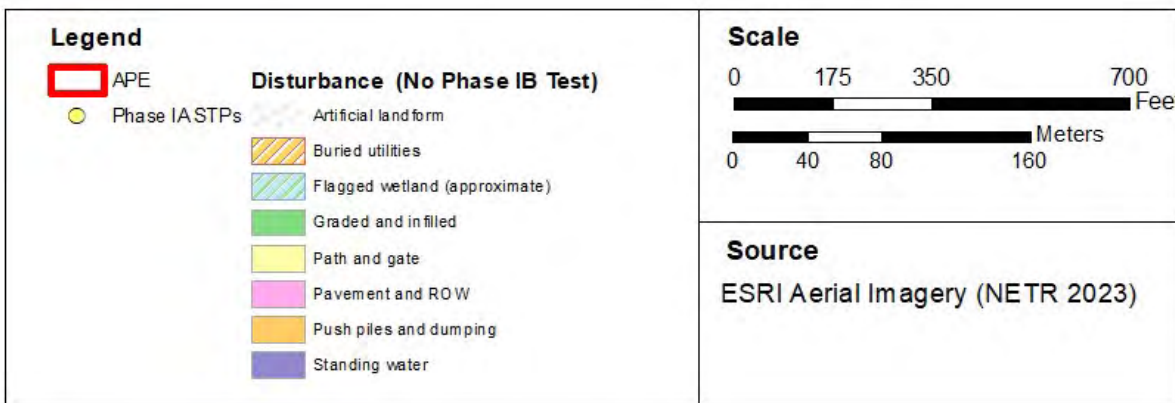


Figure 13. APE with locations of soil tests and visible disturbances.

5.2 Archaeology Survey Results



JMT archaeologists and archaeological field technicians conducted the Phase I survey fieldwork of the Marina Way APE between August 14-18, 2023. The wooded area located in the central portion of the APE was accessible from the northeast from parking lots west of the intersection of Annapolis Road and Marina Way. The vegetation in the northern half of the wooded area consisted of dense Bradford pear trees and young mixed hardwood seedlings with a moderately dense underbrush of poison ivy and bramble vines. The vegetation in the southern half of the wooded area consisted of open mixed hardwood forest with some saplings with an underbrush of poison ivy and bramble vines. A logging road remnant is also present within the wooded area.

Shovel tests were excavated at systematic intervals, and pedestrian survey was conducted throughout the entire APE as specified in Phase IA work plan. Per DHR Guidelines (2017) shovel tests were excavated at intervals of 50ft (15m) where feasible. Areas that exhibited excessive prior disturbance, slope greater than 20 percent, designated wetland, existing yards, obvious disturbance, or standing water were visually inspected, but not shovel tested. An ephemeral wetland was identified in the southeast corner of the wooded area. Other disturbances from wetlands, push piles, trash dumping, buried utilities, logging roads, and pavement were identified along the edges of the wooded area during the Phase IA survey and confirmed during the Phase IB survey. These areas were not shovel tested.

A total of 66 possible shovel test locations were investigated within the APE (Figure 14). Of the 66 potential STPs, 49 were excavated and all of those were found to be negative for historic or prehistoric artifacts. A total of 17 STPs were excluded and not excavated. The entirety of Line G, a total of 11 potential STPs, was not excavated due to standing water, modern push piles, and modern dump sites (Photographs 1-8). An additional four STPs (see Figure 14 – STPs C9, D9, E10, F11) were excluded due to the slope of the landscape (Photograph 9); a final two STPs (see Figure 14 – STPs E2 and E3) were not excavated due to the presence of standing water (Photographs 10 and 11). Four excavated shovel tests (STPs A1, B1, A8, E1) contained modern colorless and brown bottle glass which were determined to be less than 50 years of age and were not collected. These four STPs were located between disturbed and non-disturbed transition areas (Photograph 11) and contained modern refuse associated with the disturbances.

Soil profiles in this area varied depending on the level of disturbance and proximity to frequently inundated areas. A typical soil profile in an undisturbed area consists of three strata (Photograph 13): Stratum I, a 10YR 5/3 brown loam from 0-12 centimeters below ground surface (cmbgs); Stratum II, a 10YR 7/8 yellow sandy clay from 12-24 cmbgs; Stratum III, a 10YR 8/2 very pale brown sandy clay from 24-35 cmbgs (see Appendix B for a table containing all STP information).



Figure 14. Map of all STP locations.



Photograph 1. Standing water along line "G" in the western corner of the APE.



Photograph 2. Standing water along the "G" line in the western corner of the APE.



Photograph 3. Standing water along the "G" line in the western corner of the APE.



Photograph 4. Standing water along the "G" line in the western corner of the APE.



Photograph 5. View of paved lot and push piles along the southwestern border of the APE, facing north.



Photograph 6. View of push piles along the southwestern border of the APE, facing east.



Photograph 7. Example of modern dump site along line "G."



Photograph 8. Example of dumping and standing water along line "G."



Photograph 9. View of the slope along the northeastern edge of the APE.



Photograph 10. Example of the wetland identified in the southern portion of the APE.



Photograph 11. View of the graded area comprising the southeastern edge of the APE.



Photograph 11. STP E2



Photograph 12. Example of a typical STP profile in an undisturbed section of the APE.



6.0 Summary and Recommendations

The Marina Way Road Extension Project (the project) in Prince William County, Virginia involves connecting Marina Way to Horner Road with a four-lane divided roadway complete with pedestrian facilities. The purpose is to lessen the burden on key surrounding facilities such as Route 1 and Route 123. This extension will function as a main street for the proposed North Woodbridge Town Center currently under development.

This report documented the results of the archaeological survey for the proposed project. The survey and assessment were conducted for Prince William County to identify the potential for significant cultural resources, archaeological sites, and standing structures in the proposed area of potential effects. The project study area measures 20.9 acres and is located between Route 123 on the west, and Route 1 on the East. The 20.9-acre project area is considered the APE.

JMT conducted a Phase IA reconnaissance survey in June 2023, which determined that the majority of the 120.9-acre APE consists of paved roads, paved parking lots, grassy medians with buried and aboveground utilities, and part of the extant Gordon Plaza shopping center building (King et al. 2023). JMT determined that the wooded area located in the central portion of the APE has moderate potential for archaeological resources and recommended systematic survey. The testable portion within the wooded area totals approximately 3.45 acres. Additionally, the historic and cultural background research as well as the potential for above ground resources impacted within the viewshed of the indirect effects APE were completed during the Phase IA survey. JMT does not recommend any additional work for historic architecture resources.

Phase IB archaeological survey fieldwork was conducted from August 14 – 18, 2023. Fieldwork was completed by Daniel King, RPA and Archaeologist of JMT and Madison Ramsey, Field Technician of JMT. Lauren Gryctko, RPA and Senior Archaeologist of JMT with 13 years of experience, served as Principal Investigator. Archaeological testing methods within the APE included visual inspection, pedestrian survey, and the systematic use of shovel test pits (STPs) placed at intervals of approximately 15 meters (50 feet) within the recommended 3.45-acre testable area, per Virginia Department of Historic Resources (DHR) guidelines (2017). This original report was submitted to DHR in September 2023, however, since submittal, the project area has slightly changed to include an additional portion of Annapolis Way. The report has been updated throughout to reflect the appropriate acreage and project area boundaries. Because the project update only includes Annapolis Way, which is an existing road, no additional fieldwork was conducted.

A total of 66 possible shovel test locations were investigated and 49 were excavated. Of those, all were found to be negative. A total of 17 STPs were excluded due to standing water, modern push piles, modern dump sites, the slope of the landscape. No artifacts were identified during archaeological testing for the project. No archaeological sites were identified, and no additional archaeological testing is recommended. It is our opinion that no additional archaeological investigation is warranted and that the project can proceed as currently designed.



References

Advameg, Inc.

2023 Flora and Fauna - Virginia. <http://www.city-data.com/states/Virginia-Flora-and-fauna.html>, accessed June 19, 2023.

Anderson, Dave G., L.D. O'Steen, and Ken E. Sassaman

1996 Environmental and Chronological Considerations. In *The Paleoindian and Early Archaic Southeast*, edited by David G. Anderson and Ken E. Sassaman, pp. 3–15. University of Alabama Press, Tuscaloosa, Alabama.

Anderson, David G., Jerald Ledbetter, and L.D. O'Steen

1990 *Paleoindian Period Archaeology of Georgia*. Georgia Archaeological Research Design Paper 6. University of Georgia, Athens, Georgia.

Banguilan, Alvin, Amanda Murphy, and Ben Fischer

2010 *Phase II Archaeological Evaluation of Site 44CF568, Defense Supply Center Richmond, Chesterfield County, Virginia*. Management, Inc., Chesterfield County, Virginia.

Barber, Michael B., and Eugene B. Barfield

1989 Paleoindian Chronology for Virginia. In *Paleoindian Research in Virginia: A Synthesis*, edited by J.M. Wittkofski and T.R. Reinhart, pp. 53–70. Special Publication of the Archaeological Society of Virginia 19. The Dietz Press, Richmond, Virginia.

Binning, Margaret

2021 *Prince William County Historic Sites, an Index*. Ruth E. Lloyd Information Center (RELIC), Bull Run Regional Library, Manassas, VA.

Cable, John S.



1996 Haw River Revisited: Implications for Modeling Terminal Late Glacial and Early Holocene Hunter-Gatherer Settlement Systems in the Southeast. In *Paleoindian and Early Archaic Southeast*, edited by David G. Anderson and Ken E. Sassaman, pp. 107–148. University of Alabama Press, Tuscaloosa, Alabama.

Coe, Joffre L.

1964 *Formative Cultures of the Carolina Piedmont*. Vol. 54, Part 5. Transactions of the American Philosophical Society New Series. American Philosophical Society, Philadelphia.

Crowl, Heather

2005 *Phase I Archaeological Survey of Patriot Park, Fairfax County, Virginia*. URS Corporation, Herndon, VA.

Custer, Jay F.

1989 *Prehistoric Cultures of the Middle Atlantic Region*. University of Delaware Press, Newark, New Jersey.

Delcourt, Paul A., and Hazel R. Delcourt

1987 *Long Term Forest Dynamics of Temperate Zone: A Case Study of Late-Quaternary Forests in Eastern North America*. Springer-Verlag, New York, New York.

Dent, Richard J.

1995a *Chesapeake Prehistory: Old Traditions, New Directions*. Plenum Press, New York, New York.

1995b *Chesapeake Prehistory: Old Traditions, New Directions*. Plenum Press, New York, New York.

1995c *Chesapeake Prehistory: Old Traditions, New Directions*. Plenum Press, New York, New York.

DHR

2023a VCRIS. <https://vcris.dhr.virginia.gov/VCRIS/Mapviewer/>, accessed July 19, 2023.

2023b Ceramics - Townsend Ware. *DHR- Virginia Department of Historic Resources*.

<https://www.dhr.virginia.gov/ceramics-item/townsend-ware/>, accessed July 20, 2023.



Dietrich, Richard V.

2014 Piedmont Physiography. *Geology of Virginia*. <https://www.radford.edu/jtso/GeologyofVirginia/Piedmont/PPhysio-2.html>, accessed June 19, 2023.

Edwards, J.D., and T. Wells

1993 *Historic Louisiana Nails: Aids to the Dating of Old Buildings*. The Fred B. Kniffen Cultural Resources Laboratory Monograph Series 2. Geoscience Publications Department of Geography and Anthropology, Louisiana State University, Baton Rouge, Louisiana.

Egloff, Keith T., and J.M. McAvoy

1990 Chronology of Virginia's Early and Middle Archaic Periods. In *Early and Middle Archaic Research in Virginia: A Synthesis*, edited by T.R. Reinhart and M.E.N. Hodges, pp. 61–80. Special Publication of the Archaeological Society of Virginia 22. The Dietz Press, Richmond, Virginia.

Egloff, Keith T., and Stephen R. Potter

1982 Indian Ceramics from Coastal Plain Virginia. *Archaeology of Eastern North America* 10:95–117.

Egloff, Keith, and Deborah Woodward

2006 *The Early Indians of Virginia*. The University of Virginia Press, Charlottesville, VA.

ESRI

2023 World Imagery [basemap]. World Imagery Map.

Evans, D'Anne

1989 *Prince William County: A Pictorial History*. Donning Co., Virginia Beach, Virginia.



Gallivan, Martin D.

2003 *James River Chiefdoms: The Rise of Social Inequality in the Chesapeake*. University of Nebraska Press, Lincoln, Nebraska.

Gardner, William M.

1989 An Examination of Cultural Change in the Late Pleistocene and Early Holocene. In *Paleoindian Research in Virginia*, edited by J.M. Wittkofski and T.R. Reinhart. Special Publication of the Archaeological Society of Virginia 19. The Dietz Press, Richmond, Virginia.

Goodyear, Albert C.

1979 *A Hypothesis for the Use of Cryptocrystalline Raw Materials among Paleoindian Groups of North America*. Research Manuscript Series 156. South Carolina Institute of Archaeology and Anthropology, University of South Carolina, Columbia, South Carolina.

Greer, Georgeanna H.

1981 *American Stonewares; The Art & Craft of Utilitarian Potters*. Schiffer Publishing, Atglen, PA.

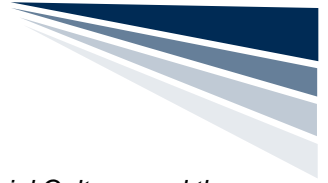
Hantman, Jeffrey L., and Michael Klein

1992 Middle and Late Woodland Archaeology in Piedmont Virginia. In *Middle and Late Woodland Research in Virginia: A Synthesis*, edited by T.R. Reinhart and M.E.N. Hodges, pp. 137–164. Special Publication of the Archaeological Society of Virginia 29. The Dietz Press, Richmond, Virginia.

Hume, Noel

1970 *A Guide to Artifacts of Colonial America*. Vintage Books, New York, New York.

Journey, David



1987 Cut and Wire Nails: Functional and Temporal Interpretations. In *Historic Buildings, Material Culture, and the People of the Prairie Margin*, edited by David Journey and Randall Moir, pp. 83–96. Richland Creek Technical Series 5. Archaeology Research Program, Southern Methodist University, Dallas, Texas.

Katz, Gregory

2011 *Archaeological Survey of Shoreline Stabilization Area on Pumpkin Neck Naval Support Facility, Dahlgren, King George County, Virginia*. The Louis Berger Group, Inc., Washington, D.C.

King, Daniel, Kaitlin LaGrasta, and Lauren Gryctko

2023 *Phase IA Archaeological Reconnaissance Survey and Historic Architecture Assessment, Marina Way Extension Project, Prince William County, Virginia*. JMT, Richmond, Virginia.

Klein, Mike

2016 *Phase IA Reconnaissance Survey of the Virginia Railway Express Maintenance Expansion Area, Spotsylvania County, Virginia*. Dovetail Cultural Resource Group, Fredericksburg, Virginia.

Klein, Mike, and Carthon Davis III

2011 *Phase I Cultural Resource Survey for the Telegraph Road Park and Ride Facility and Road Expansion Prince William County, Virginia*. Dovetail Cultural Resource Group, Fredericksburg, Virginia.

Lindsey, Bill

2020 Historic Glass Bottle Identification & Information Website. *Society for Historical Archaeology and Bureau of Land Management*. <http://www.sha.org/bottle/dating.htm>, accessed January 6, 2021.

Lockhart, Bill

2006 The Color Purple: Dating Solarized Amethyst Container Glass. *Historical Archaeology* 40(2):45–56.



Majewski, Teresita, and Michael J. O'Brien

1987 The Use and Misuse of Nineteenth-Century English and American Ceramics in Archaeological Analysis. In *Advances in Archaeological Method and Theory*, edited by Michael Schiffer, 11:pp. 98–209. Academic Press, New York, New York.

McAvoy, J.M., and Lynn D. McAvoy

1997 *Archaeological Investigations of Site 44SX202, Cactus Hill, Sussex County, Virginia*. Research Report No. 8. Virginia Department of Historic Resources, Richmond, Virginia.

McKee, W. Reid, and M.E. Mason

1980 *Civil War Projectiles II: Small Arms & Field Artillery with Supplement*. Rapidan Press, Mechanicsville, Virginia.

McLearen, Douglas C.

1991 Late Archaic and Early Woodland Material Culture in Virginia. In *Late Archaic and Early Woodland Research in Virginia: A Synthesis*, edited by T.R. Reinhart and M.E.N. Hodges, pp. 89–138. Special Publication of the Archaeological Society of Virginia 23. The Dietz Press, Richmond, Virginia.

1992 Virginia's Middle Woodland Period: A Regional Perspective. In *Middle and Late Woodland Research in Virginia: A Synthesis*, edited by T.R. Reinhart and M.E.N. Hodges, pp. 39–64. Special Publication of the Archaeological Society of Virginia 29. The Dietz Press, Richmond, Virginia.

Meltzer, David J.

1988 Late Pleistocene Human Adaptations in Eastern North America. *Journal of World Prehistory* 2:1–52.

Miller, George

1991 A Revised Set of CC Index Values for Classification and Economic Scaling of English Ceramics from 1787 to 1880. *Historical Archaeology* 25:1–23.



Miller, George, Patricia Samford, Ellen Shlasko, and Andrew Madsen

2000 Telling Time for Archaeologists. *Northeast Historical Archaeology* 29:1–22. DOI:10.22191/nehavol29/iss1/2.

Miller, George, and Catherine Sullivan

1984 Machine-Made Glass Containers and the End of Production for Mouth-blown Bottles. *Historical Archaeology* 18(2):83–96.

Miller, Henry

1986 Transforming a “Splendid and Delightful Land”: Colonists and Ecological Change in the Chesapeake, 1607-1820. *Journal of the Washington Academy of Sciences* 76:173–187.

Moore, Will, Dane Magoon, and Loretta Lautzenheiser

2003 *Archaeological Survey of Proposed Water Transmission Lines, City of Chesapeake, Virginia*. HDR Engineering, Richmond, Virginia.

Mouer, L. Daniel

1991a The Formative Transition in Virginia. In *Late Archaic and Early Woodland Research in Virginia: A Synthesis*, edited by T.R. Reinhart and M.E.N. Hodges, pp. 1–88. Special Publication of the Archaeological Society of Virginia 23. The Dietz Press, Richmond, Virginia.

1991b The Formative Transition in Virginia. In *Late Archaic and Early Woodland Research in Virginia: A Synthesis*, edited by T.R. Reinhart and M.E.N. Hodges, pp. 1–88. Special Publication of the Archaeological Society of Virginia 23. The Dietz Press, Richmond, Virginia.

Nelson, Lee H.

1968 *Nail Chronology as an Aid to Dating Old Buildings*. Technical Leaflet 48. American Association for State and Local History, Nashville, Tennessee.



NETR Online

2023 Historic Aerials - Historic USGS and Historic Aerial Photographs. *Historic Aerials by NETR Online*.
<https://www.historicaerials.com/viewer>.

NPS

2005 Partnering and Managing for Excellence: Prince William Forest Park. *Prince William Forest Park*.
<http://www.nps.gov/parkoftheweek/prwi.htm>, accessed June 8, 2023.

Orser, Charles E. Jr., A.M. Nekola, and J.L. Roark

1987 *Exploring the Rustic Life: Multidisciplinary Research at Millwood Plantation, a Large Piedmont Plantation in Abbeville County, South Carolina, and Elbert County, Georgia*. National Park Service, Atlanta, Georgia.

Ripley, Warren

1970 *Artillery and Ammunition of the Civil War*. Van Nostrand Reinhold Company, New York.

Roberts, C., and C.M. Bailey

2000 Physiographic Map of Virginia Counties. College of William & Mary, Williamsburg, VA.

Samford, Patricia

2002 Institutional Wares (Hotel China). *Diagnostic Artifacts in Maryland, Maryland Archaeological Conservation Lab*.
<https://apps.jefpat.maryland.gov/diagnostic/Post-Colonial%20Ceramics/Less%20Commonly%20Found/IndustrialWare-HotelChina/index-industrialware-HotelChina.html>, accessed April 6, 2023.

Smith, Bruce D.

1986a The Archaeology of Southeastern United States: From Dalton to de Soto, 10,500-500 B.P. In *Advances in World Archaeology*, edited by F. Wendorf and A. Close, pp. 1–91. Academic Press, New York, New York.



1986b The Archaeology of Southeastern United States: From Dalton to de Soto, 10,500-500 B.P. In *Advances in World Archaeology*, edited by F. Wendorf and A. Close, pp. 1–91. Academic Press, New York, New York.

Soil Survey Staff

2023 Web Soil Survey. *U.S. Department of Agriculture, Natural Resources Conservation Service: Soils*.
<http://websoilsurvey.sc.egov.usda.gov/>.

South, Stanley

1977 *Method and Theory in Historical Archaeology*. Academic Press, New York, New York.

Steponaitis, Laurie C.

1980 *A Survey of Artifact Collections from the Patuxent River Drainage, Maryland*. Maryland Historical Trust Monograph Series 1. Maryland Historical Trust, Crownsville, Maryland.

Stewart, R. Michael

1992 Observations on the Middle Woodland Period of Virginia: A Middle Atlantic Region Perspective. In *Middle and Late Woodland Research in Virginia: A Synthesis*, edited by T.R. Reinhart and M.E.N. Hodges, pp. 1–38. Special Publication of the Archaeological Society of Virginia 29. Archaeological Society of Virginia, Richmond, Virginia.

Stoltman, James B., and David A. Baerreis

1983 The Evolution of Human Ecosystems in the Eastern United States. In *Late Quaternary Environments of the United States; Volume 2, The Holocene*, edited by H.E. Jr. Wright. University of Minnesota Press, Minneapolis, Minnesota.

Toulouse, Julian Harrison

1971 *Bottle Makers and Their Marks*. Thomas Nelson, New York, New York.



USGS

- 1890 Mt. Vernon. USGS, Washington, D.C.
- 1944 Belvoir Quadrangle. 7.5 Minute Series. USGS, Washington, D.C.
- 1951 Belvoir Quadrangle, Virginia-Maryland. 7.5 Minute Series (Topographic). USGS, Washington, D.C.
- 1965 Belvoir Quadrangle, Virginia-Maryland. 7.5 Minute Series (Topographic). USGS, Washington, D.C.
- 1966 Occoquan Quadrangle, Virginia. 7.5 Minute Series (Topographic). USGS, Washington, D.C.

Virginia Department of Historic Resources

- 2011 *Virginia Department of Historic Resources State Collections Management Standards*. Virginia Department of Historic Resources, Richmond, Virginia.
- 2017 *Guidelines for Conducting Cultural Resource Survey in Virginia*. Virginia Department of Historic Resources, Richmond, Virginia.

Ward, H. Trawick, and R. P. Stephen Davis Jr.

- 1999 *Time Before History: The Archaeology of North Carolina*. University of North Carolina Press, Chapel Hill.

Wells, Tom

- 1998 Nail Chronology: The Use of Technologically Derived Features. *Historical Archaeology* 32(2):78–99.

Wright, Henry T.

- 1973 *An Archaeological Sequence in the Middle Chesapeake Region, Maryland*. Archaeological Studies 1. Department of Natural Resources, Maryland Geological Survey, Baltimore, Maryland.



Appendix A. Resume of Principal Investigator

LAUREN GRYCTKO
SENIOR ARCHAEOLOGIST/PRINCIPAL INVESTIGATOR

EDUCATION

MA / Anthropology / The College of William & Mary,
Williamsburg, VA (2015)
BS / Anthropology / James Madison University (2011)

YEARS OF EXPERIENCE

12

REGISTRATIONS/CERTIFICATIONS

RPA (5216) OSHA 30



Ms. Gryctko exceeds the qualifications for Archaeologist under the standards set forth by the Secretary of Interior. She has 12 years of professional archaeological experience, with a focus on eighteenth and nineteenth century domestic sites within the Mid-Atlantic. Ms. Gryctko is skilled in archaeological field and lab methods and has over 5 years of cultural resource management experience. She has extensive experience in managing and conducting archaeological projects within the Mid-Atlantic and Southeastern United States, ranging from Phase IAs to Phase IIIs and consisting of solar projects, large scale residential development, road maintenance, and transmission line rebuild projects. She is familiar with the Antiquities Act, the Archaeological Resources Protection Act (ARPA), the National Environmental Protection Act (NEPA), the National Historic Preservation Act (NHPA), Curation of Federally Owned and Administered Archaeological Collections (36 CFR 79), and Native American Graves Protection and Repatriation Act (NAGPRA), and eligibility criteria for the National Register of Historic Places (NRHP). She currently works as a senior archaeologist and principal investigator based in Richmond, Virginia.

PROJECT EXPERIENCE

Chesterfield County, Powhite Parkway Extension – Phase 1 Design.

Senior Archaeologist. Reviewed archaeological finds, finalized eligibility recommendations for archaeological sites, and coordinated with VDHR. This project involves extending Powhite Parkway to Woolridge Road as a four-lane open median divided expressway. Submitted 2022.

The Phase II evaluation of Site 44LD1501, Loudoun County, VA. Project Manager/Principal Investigator. Responsible for implementing a Phase II archaeological strategy for and managing the Phase II archaeological survey of Site 44LD1501 in Loudoun County. The site consisted of an early to mid-nineteenth century site which consisted of intact portions of a stone foundation as well as a filled-in cellar. The project involved the establishment of a grid at a 3-meter (10-foot) interval across the site along with the excavation of 11 one-meter by one-meter units. The site was recommended to be eligible for inclusion in the NRHP. Coordinated archaeological excavations, conducted scheduling, and authored the Phase II report. This archaeological survey was done in preparation for the construction of residential buildings within the project area. Submitted 2021.

Phase I Cultural Resources Survey of the ±21.4 Hectare (±53 Acre) Crosstrail C Boulevard Project Area, Loudoun County, VA. Project Manager.

Responsible for managing the Phase I archaeological survey of the

proposed extension of Crosstrail Boulevard in Loudoun County. The Crosstrail Boulevard (Segment C) from Sycolin Road to the Dulles Greenway project provides for the design and construction of a four-lane, median-divided road between Sycolin Road and the Dulles Greenway interchange. The length of this project is approximately 2,700 linear feet and includes a bridge over the south tributary to Sycolin Creek. This new segment of Crosstrail Boulevard will replace Shreve Mill Road as the means to get from the Dulles Greenway to Sycolin Road. One site was identified – 44LD1964. This site had an occupation range that ranged from 1830 to 1945. Due to the wide occupation range, and the small assemblage, this site was recommended as not eligible for inclusion in the NRHP. Submitted 2021.

Phase I Cultural Resource Survey of the ± 25.5 Hectare (±63.1 Acre) Jones Point Park Project Area, City of Alexandria, VA. Project Manager.

Responsible for managing the Phase I survey within Jones Point Park, which focused on geotechnical boring locations in preparation for sewerage construction. Conducted a Phase I Cultural Resources Survey within Jones Point Park in areas of proposed geotechnical investigations. Completed archaeological testing of 11 proposed geotechnical boring sites located within Jones Point Park in Alexandria, Virginia. Geotechnical boring was implemented by Daniel R. Hayes, of Hayes & Monaghan Geoarchaeologists LLC. The boring locations fell within one existing site – 44AX0078 – which is a scatter of artifacts associated with the demolition of the World War I Shipyard. These artifacts were out of context and mixed with modern debris, and as such the site was considered to not be eligible for inclusion in the NRHP. Coordinated archaeological excavations, conducted scheduling, and authored the Phase I report. Worked closely with geo-archaeologist to discern the presence or absence of buried intact soils. Submitted 2020.

Phase I Cultural Resource Survey of the ±37.5 Hectare (±92.6 Acre) Sandy River Water Intake Project Area, Prince Edward County, VA. Project Manager/Principal Investigator.

Responsible for implementing a Phase I strategy and for managing the Phase I survey of the entirety of the project area in preparation for the installation of a water intake structure. Three sites were identified – Sites 44PE0115, 44PE0116, and 44PE0117. Sites 44PE0155 and 44PE0117 are historic artifact scatters and Site 44PE0114 is a pre-contact lithic scatter. Due to the small number of artifacts in each site, they were all determined to not be eligible for inclusion in the NRHP. Coordinated archaeological excavations, conducted scheduling, and authored the Phase I report. The project involves the construction of a water intake structure and associated infrastructure to withdraw water from the County-owned Sandy River Reservoir at a point near Reservoir Road. Submitted 2021.





Phase I Cultural Resources Survey of the Mount Storm-Valley and Forest Line 550 500 kV Transmission Line Rebuild, Dominion Energy, Rockingham County, VA. Project Manager/Principal Investigator. Responsible for implementing a Phase I strategy and for managing the Phase I survey of the entirety of the Area of Potential Effect in preparation for the replacement of powerline structures and the installation of new access roads. No sites were identified. Coordinated archaeological excavations, conducted scheduling, and authored the Phase I report. The project involves the replacement of towers within an existing ROW which runs through the George Washington and Jefferson National Forests, the installation of new access roads, helicopter landing pads, puller pad locations, and other various improvements involved with maintaining the ROW and installing new towers. Project required coordination with Virginia SHPO, West Virginia SHPO, and the Forest Service. Submitted 2020.

Phase I Cultural Resource Survey of the ±660.12-Hectare (1,631.2-Acre) Moody Creek Solar Project Area, Apex Energy, Charlotte County, VA. Project Manager/Principal Investigator. Responsible for implementing a Phase I strategy and for managing the Phase I survey of the entirety of the project area in preparation for the installation of a solar farm. A total of 10 sites were identified. All sites were determined to not be eligible for inclusion in the NRHP due to heavy logging disturbance. Three cemeteries were identified and were recommended to be avoided with a 100-ft buffer. Coordinated archaeological excavations, conducted scheduling, and authored the Phase I report. Made recommendations for the National Register of Historic Places eligibility status of identified sites. Submitted 2020

Phase IA and Phase I Cultural Resource Survey of the ±890-Hectare (±1,998-Acre) Riverstone Solar Project Area Buckingham County, VA. Project Manager/Principal Investigator. Responsible for conducting a Phase IA survey of the project area and for managing the Phase I survey of the entirety of the project area in preparation for the installation of a solar farm. A total of six sites were identified and were determined to not be eligible for inclusion in the NRHP due to heavy disturbance. Three cemeteries were identified and recommended to be avoided with a 100-foot buffer or to be further delineated. Coordinated archaeological excavations, conducted scheduling, and authored the Phase I report. Made recommendations for the National Register of Historic Places eligibility status of identified sites. Submitted 2022.

Phase I Cultural Resources Survey of the ±683-Hectare (±1,687-Acre) CC Solar Project Area, Caroline County, VA. Project Manager/Principal Investigator. Responsible for managing the Phase I survey of the entirety of the project area in preparation for the installation of a solar farm. A total of 13 sites were identified. Eleven sites were recommended to not be eligible for inclusion in the NRHP due to disturbance. Three sites – 44CE1004, 44CE1005, and 44CE1014 were determined to be potentially eligible for inclusion in the NRHP. These sites included the remains of the Antebellum boy's school Concord Academy, an Early National to Antebellum period artifact scatter, and a Reconstruction and Growth period house site. A total of six cemeteries were identified and recommended to be avoided with a 100-foot buffer or to be further delineated. Coordinated archaeological excavations, conducted scheduling, and authored the Phase I report. Made recommendations for the National Register of Historic Places eligibility status of identified sites. Submitted 2022.

Phase IA and Phase I Cultural Resource Survey of the ± 272 Hectare (±672 Acre) Birchwood Solar Project Area, King George County, VA. Project Manager/Principal Investigator. Responsible for conducting a Phase IA survey of the project area and for managing the Phase I survey of the entirety of the project area in preparation for the installation of a solar farm. Five sites were identified – 44KG0249 through 44KG0253. 44KG0253 and 44KG0251 were determined to not be not eligible for inclusion in the NRHP due to disturbance. Sites 44KG0249 was recommended for further survey and Sites 44KG0250 and 44KG0252 were recommended to be potentially eligible for inclusion in the NRHP. Coordinated archaeological excavations, conducted scheduling, and authored the Phase I report. Made recommendations for the National Register of Historic Places eligibility status of identified sites. Submitted 2022.

Phase IA and Phase I Cultural Resource Survey of the ±553.36 Hectare (±1,367.4 Acre) Michaux Creek Solar Project Area, Orsted, Pittsylvania County, VA. Project Manager/Principal Investigator. Responsible for conducting a Phase IA survey of the project area and for managing the Phase I survey of the entirety of the project area in preparation for the installation of a solar farm. Three sites – 44PY0555 through 44PY0557 were identified. Site 44PY0555 was a circa 1770s to the middle of the 1800s domestic site and was determined to be potentially eligible for inclusion in the NRHP due the presence of surface features, and the relatively undisturbed soil profiles within the site. Coordinated archaeological excavations, conducted scheduling, and authored the Phase I report. Made recommendations for the National Register of Historic Places eligibility status of identified sites. Submitted 2021.

Phase I Cultural Resource Survey of the Line 53 and 72 500kV Transmission Line Rebuild, Dominion Energy, Chesterfield County, VA. Project Manager/Principal Investigator. Responsible for implementing a Phase I strategy and for managing the Phase I survey of the entirety of the Area of Potential Effect in preparation for the replacement of powerline structures and the installation of new access roads. Two sites were identified: Sites 44CG0681 and 44CF0692. Site 44CF0692 is a lithic scatter consisting of 100 prehistoric artifacts. Site 44CF0681 is the Battery Brooke earthwork. It was determined that Site 44CF0692 was potentially eligible for inclusion in the NRHP and that Battery Brooke was eligible for inclusion in the NRHP. Coordinated archaeological excavations, conducted scheduling, and authored the Phase I report. Submitted 2021.

Phase I Cultural Resource Survey of the ±39.2-Hectare (±97-Acre) Appomattox EDA Park Project Area, Appomattox County, VA. Project Manager/Principal Investigator. Responsible for managing the Phase I survey of the entirety of the project. No sites were identified during this survey. Coordinated archaeological excavations, conducted scheduling, and authored the Phase I report. Made recommendations for the National Register of Historic Places eligibility status of identified sites. Submitted 2021.

Phase I Cultural Resource Survey of the ±49.8-Hectare (±123-Acre) Greymont Project Area, Hanover County, VA. Project Manager/Principal Investigator. Responsible for managing the Phase I survey of the entirety of the project. Three sites – 44HN0454 through 44HN0456 – were identified. All three sites date from the Reconstruction and Growth period to the World War II period. Due to lack of diagnostic artifacts, these sites were determined to not be eligible for





inclusion in the NRHP. Coordinated archaeological excavations, conducted scheduling, and authored the Phase I report. Made recommendations for the National Register of Historic Places eligibility status of identified sites. Submitted 2021.

Piney Creek Cemetery Delineation, Halifax County, VA. *Project Manager/Principal Investigator.* Responsible for implementing a delineation strategy two cemeteries and one potential cemetery within the Piney Creek Solar project area. Authored report. Submitted 2021.

Boundary Delineation Survey of a Cemetery in Bolen Park: PCEM-1111-0080, Loudoun County, VA. *Project Manager/Principal Investigator.* Responsible for implementing a delineation strategy of a cemetery within Bolen Park and authoring report. Submitted 2021.

Phase IA and Phase I Cultural Resource Survey of the Midway Solar Project Area, Sun Tribe Solar, Albemarle County, VA. *Project Manager/Principal Investigator.* Responsible for conducting a Phase IA survey of the project area and for managing the Phase I survey of the entirety of the project area in preparation for the installation of a small-scale solar farm. Coordinated archaeological excavations, conducted scheduling, and authored the Phase I report. Submitted 2021.

Phase I Cultural Resource Survey of the ±4.15-Hectare (±10.2-Acre) New Road Power Supply Project Area, Loudoun County, VA *Project Manager/Principal Investigator.* Responsible for managing the Phase I survey of the entirety of the project. Coordinated archaeological excavations, conducted scheduling, and authored the Phase I report. Made recommendations for the National Register of Historic Places eligibility status of identified sites. Submitted 2020.

Phase I Cultural Resource Survey of the ±639.2-Hectare (±1,579.5-Acre) Bookers Mill Solar Project Area, Richmond County, VA *Project Manager/Principal Investigator.* Responsible for managing the Phase I survey of the entirety of the project area in preparation for the installation of solar farm. Coordinated archaeological excavations, conducted scheduling, and authored the Phase I report. Made recommendations for the National Register of Historic Places eligibility status of identified sites. Submitted 2020.

Phase I Cultural Resource Survey of the ±309-Hectare (±764-Acre) Bartonville Solar Project Area, Frederick County, VA *Project Manager/Principal Investigator.* Responsible for managing the Phase I survey of the entirety of the project area in preparation for the installation of solar farm. Coordinated archaeological excavations, conducted scheduling, and authored the Phase I report. Made recommendations for the National Register of Historic Places eligibility status of identified sites. Submitted 2020.

Phase I Cultural Resource Survey of the Millboro Springs Solar Project Area, Bath County, VA *Project Manager/Principal Investigator.* Responsible for managing the Phase I survey of the entirety of the project area in preparation for the installation of solar farm. Coordinated archaeological excavations, conducted scheduling, and authored the Phase I report. Made recommendations for the National Register of Historic Places eligibility status of identified sites. Submitted 2020.

Phase I Cultural Resource Survey of the Moran Solar Project Area, Prince Edward County, VA *Project Manager/Principal Investigator.* Responsible for managing the Phase I survey of the entirety of the project area in preparation for the installation of solar farm. Coordinated archaeological excavations, conducted scheduling, and authored the Phase I report. Made recommendations for the National Register of Historic Places eligibility status of identified sites. Submitted 2020.

Phase IA and Phase I Cultural Resources Survey of the ±99.47-Hectare (±245.8-Acre) Watlington Solar Project Area, Halifax County, VA. *Project Manager.* Responsible for conducting a Phase IA survey of the project area and for managing the Phase I survey of the entirety of the project area in preparation for the installation of solar farm. Coordinated archaeological excavations, conducted scheduling, and authored the Phase I report. Made recommendations for the National Register of Historic Places eligibility status of identified sites. Submitted 2020.

Phase I Cultural Resource Survey of the ±90.0 Hectares (±222.6 Acres) Apple Grove Project Area, Louisa County, VA. *Project Manager/Principal Investigator.* Responsible for managing the Phase I survey of the entirety of the project. Coordinated archaeological excavations, conducted scheduling, and authored the Phase I report. Made recommendations for the National Register of Historic Places eligibility status of identified sites. Submitted 2020.

Phase I Cultural Resource Survey of the ±2.02-Hectare (±5-Acre) 6403 Hillview Avenue Project Area, Fairfax, VA. *Project Manager/Principal Investigator.* Responsible for managing the Phase I survey of the entirety of the project. Coordinated archaeological excavations, conducted scheduling, and authored the Phase I report. Made recommendations for the National Register of Historic Places eligibility status of identified sites. Submitted 2020.

Crosby Cemetery Delineation, Chesterfield County, VA. *Project Manager/Principal Investigator.* Responsible for implementing a delineation strategy an approximately 0.15-acre cemetery consisting of nine visible, for monitoring the delineation, and authoring the report. Submitted 2020.

Rochambeau Cemetery Delineation, James City County, VA. *Project Manager.* Responsible for implementing a delineation strategy for a cemetery consisting of five visible markers and 21 burial shafts identified subsurface; monitored the delineation and authored the report. Submitted 2019.

Phase II Archaeological Evaluation of Sites 44GV0373, 44GV0386, 44GV0408, 44GV0409, 44GV0410, 44GV0407, and 44GV0415. Greenville County, VA. *Field Director.* Responsible for leading a team of up to five people during the Phase II excavation of a total of 7 sites within the ±1,643-acre Sadler Solar project area. These sites included Early to Late Archaic, Early to Late Woodland, and Colony to Nation through World War II sites. Coordinated excavations and contributed towards the recommendations for the National Register of Historic Places eligibility status of the sites. Submitted 2018.





Appendix B. Table of STP Profiles

STP	Strata	Depths (cm)	Soil Color	Soil Type	Cultural Resources
A1	I	0 – 16	10YR 4/2 with 2.5YR 5/8	Clay loam	Modern glass discarded
	II	16 – 26	5YR 5/8	Sandy clay loam	Negative
A2	I	0 – 8	10YR 4/2	Clay loam	Negative
	II	8 – 20	5YR 5/8	Sandy loam	Negative
A3	I	0 – 16	5YR 5/8	Sandy loam	Negative
A4	I	0 – 10	10YR 4/2	Clay loam	Negative
	II	10 – 20	5YR 5/8	Sandy loam	Negative
A5	I	0 – 10	10YR 4/2	Clay loam	Negative
	II	10 – 23	5YR 5/8	Sandy loam	Negative
A6	I	0 – 9	10YR 4/2	Clay loam	Negative
	II	9 – 19	5YR 5/8	Sandy loam	Negative
	III	19 – 30	10YR 8/2	Sandy clay	Negative
A7	I	0 – 5	10YR 4/2	Clay loam	Negative
	II	5 – 18	5YR 5/8	Sandy loam	Negative
	III	18 – 28	10YR 8/2	Sandy clay	Negative
A8	I	0 – 15	10YR 4/2	Clay loam	Modern glass discarded
	II	15 – 25	10YR 8/2	Sandy clay	Negative
B1	I	0 – 15	10YR 5/3	Loam	Modern glass discarded
	II	15 – 25	10YR 8/2	Clay	Negative
B2	I	0 – 7	10YR 5/3	Loam	Negative
	II	7 – 18	10YR 7/8	Sandy clay	Negative
	III	18 – 28	10YR 8/2	Sandy Clay	Negative
B3	I	0 – 10	10YR 5/3	Loam	Negative
	II	10 – 22	10YR 7/8	Sandy clay	Negative
	III	22 – 32	10YR 8/2	Sandy Clay	Negative
B4	I	0 – 14	10YR 5/3	Loam	Negative



STP	Strata	Depths (cm)	Soil Color	Soil Type	Cultural Resources
	II	14 – 24	10YR 7/8	Sandy clay	Negative
	III	24 – 34	10YR 8/2	Sandy Clay	Negative
B5	I	0 – 9	10YR 5/3	Loam	Negative
	II	9 – 19	10YR 7/8	Sandy clay	Negative
	III	19 – 29	10YR 8/2	Sandy Clay	Negative
B6	I	0 – 12	10YR 5/3	Loam	Negative
	II	12 – 24	10YR 7/8	Sandy clay	Negative
	III	24 – 34	10YR 8/2	Sandy Clay	Negative
B7	I	0 – 11	10YR 5/3	Loam	Negative
	II	11 – 26	10YR 7/8	Sandy clay	Negative
	III	26 – 36	10YR 8/2	Sandy Clay	Negative
B8	I	0 – 11	10YR 5/3	Loam	Negative
	II	11 – 15	10YR 7/8	Sandy clay	Negative
	III	15 – 25	10YR 8/2	Sandy Clay	Negative
B9	I	0 – 9	10YR 5/3	Loam	Negative
	II	9 – 21	10YR 7/8	Sandy clay	Negative
	III	21 – 31	10YR 8/2	Sandy Clay	Negative
C1	I	0 – 7	10YR 4/2	Loam	Negative
	II	7 – 20	10YR 5/8	Sandy clay	Negative
	III	20 – 30	10YR 8/2	Sandy Clay	Negative
C2	I	0 – 10	10YR 4/2	Loam	Negative
	II	10 – 20	10YR 5/8	Sandy clay	Negative
C3	I	0 – 12	10YR 4/2	Loam	Negative
	II	12 – 23	10YR 5/8	Sandy clay	Negative
	III	23 – 34	2.5Y 5/4	Clay loam	Negative
C4	I	0 – 16	10YR 4/2	Loam	Negative
	II	16 – 30	Waterlogged	Clay loam	Negative
C5	I	0 – 5	10YR 4/2	Loam	Negative



STP	Strata	Depths (cm)	Soil Color	Soil Type	Cultural Resources
C6	II	5 – 15	10YR 5/8	Sandy clay	Negative
	I	0 – 15	10YR 4/2	Loam	Negative
	II	15 – 28	10YR 5/8	Sandy clay	Negative
C7	I	0 – 20	10YR 4/2	Loam	Negative
	II	20 – 30	10YR 5/8	Sandy clay	Negative
D1	I	0 – 8	10YR 5/3	Loam	Negative
	II	8 – 22	10YR 7/8	Sandy clay	Negative
	III	22 – 32	10YR 8/2	Sandy clay	Negative
D2	I	0 – 5	10YR 5/3	Loam	Negative
	II	5 – 15	10YR 7/8	Sandy clay	Negative
	III	15 – 21	5Y 6/4	Sand	Negative
	IV	21 – 31	10YR 8/2	Sandy clay	Negative
D3	I	0 – 11	10YR 5/3	Loam	Negative
	II	11 – 40	10YR 7/8	Sandy clay	Negative
	III	40 – 50	10YR 8/2	Sandy Clay	Negative
D4	I	0 – 9	10YR 5/3	Loam	Negative
	II	9 – 20	10YR 7/8	Sandy clay	Negative
	III	20 – 30	10YR 8/2	Sandy Clay	Negative
D5	I	0 – 12	10YR 5/3	Loam	Negative
	II	12 – 25	10YR 7/8	Sandy clay	Negative
	III	25 – 35	10YR 8/2	Sandy Clay	Negative
D6	I	0 – 12	10YR 5/3	Loam	Negative
	II	12 – 29	10YR 7/8	Sandy clay	Negative
	III	29 – 40	10YR 8/2	Sandy Clay	Negative
D7	I	0 – 7	10YR 5/3	Loam	Negative
	II	7 – 27	10YR 7/8	Sandy clay	Negative
	III	27 – 39	10YR 8/2	Sandy Clay	Negative
D8	I	0 – 11	10YR 5/3	Loam	Negative



STP	Strata	Depths (cm)	Soil Color	Soil Type	Cultural Resources
	II	11 – 19	10YR 7/8	Sandy clay	Negative
	III	19 – 30	10YR 8/2	Sandy Clay	Negative
E1	I	0 – 8	10YR 4/2	Silty loam	Modern glass discarded
	II	8 – 15	5YR 5/8	Silty clay loam	Negative
E2	I	0 – 10	10YR 4/2	Silty loam	Negative
	II	10 – 15	5YR 5/8	Silty clay loam	Negative
E3	I	0 – 23	Waterlogged	Clay loam	Negative
E4	I	0 – 10	10YR 4/2	Silty loam	Negative
	II	10 – 20	5YR 5/8	Silty clay loam	Negative
E5	I	0 – 17	10YR 4/2	Silty loam	Negative
	II	17 – 29	5YR 5/8	Silty clay loam	Negative
E6	I	0 – 8	10YR 4/2	Silty loam	Negative
	II	8 – 22	10YR 5/3	Silty clay loam	Negative
	III	22 – 32	10YR 8/2	Clay loam	Negative
E7	I	0 – 15	10YR 5/3	Silty clay loam	Negative
	II	15 – 25	10YR 8/2	Clay loam	Negative
E8	I	0 – 23	10YR 5/3	Silty clay loam	Negative
	II	23 – 34	10YR 8/2	Clay loam	Negative
E9	I	0 – 5	10YR 5/3	Silty clay loam	Negative
	II	5 – 20	10YR 8/2	Clay loam	Negative
F1	I	0 – 9	10YR 5/3	Loam	Negative
	II	8 – 28	10YR 7/8	Loamy clay	Negative
	III	28 +	Water table	--	--
F2	I	0 – 8	10YR 5/3	Loam	Negative
	II	8 – 23	10YR 7/8	Loamy clay	Negative
	III	23 +	Water table	--	--
F3	I	0 – 18	10YR 5/3	Loam	Negative
	II	18 – 41	10YR 5/6	Loam clay	Negative



STP	Strata	Depths (cm)	Soil Color	Soil Type	Cultural Resources
	III	41 – 51	10YR 7/4	Sandy clay	Negative
	I	0 – 9	10YR 5/3	Loam	Negative
F4	II	9 – 35	10YR 7/3	Sandy clay loam	Negative
	III	35 – 45	10YR 8/2	Clay	Negative
F5	I	0 – 14	10YR 5/3	Loam	Negative
	II	14 – 29	10YR 8/2	Clay	Negative
F6	I	0 – 9	10YR 5/3	Loamy clay	Negative
	II	9 – 25	10 YR 8/2	Clay	Negative
F7	I	0 – 10	10YR 5/3	Loamy clay	Negative
	II	10 – 25	10 YR 8/2	Clay	Negative
F8	I	0 – 18	10YR 5/3	Loamy clay	Negative
	II	18 – 28	10 YR 8/2	Clay	Negative
F9	I	0 – 13	10YR 5/3	Loamy clay	Negative
	II	13 – 25	10 YR 8/2	Clay	Negative
F10	I	0 – 15	10YR 5/3	Loamy clay	Negative
	II	15 – 26	10 YR 8/2	Clay	Negative