

SECTION 2.0 ENVIRONMENTAL SETTING

The environmental setting of the APE has been discussed in detail in the 2009 Phase IA archaeological survey report (see Richard Grubb & Associates, Inc. 2009) and is briefly summarized here. Soils data obtained from the U.S. Department of Agriculture WebSoil Survey that were not available during the Phase IA archaeological survey are included (United States Department of Agriculture – Natural Resources Conservation Service [USDA-NRCS] 2010).

The APE is characterized by gently rolling topography ranging in elevation from approximately 50 feet (near streams) to 80 feet (near the intersection of Middle Neck Road and U.S. Route 301) above mean sea level (AMSL), with most of the APE in the 60-70 feet AMSL range (see Figure 1.2). No major landscape features such as basins, bluffs, or eminences are present although slightly elevated knolls exist in portions of agricultural fields, wooded areas, and near streams. The APE traverses uplands and drainage divide areas, as well as low-lying wetland settings in the southern portion near ephemeral, headwater tributaries of the Sassafras River drainage system. The northern portion of the APE lies within the Sandy Branch and Great Bohemia Creek drainage systems, which in turn are tributaries of the Bohemia and Elk Rivers. The Elk and Sassafras Rivers flow into the upper Chesapeake Bay 12 to 15 miles southwest of the APE.

Surficial deposits within the APE are mapped as the Middle Pleistocene Columbia Formation, fine to coarse yellowish- to reddish-brown quartz sands and gravels cross-bedded with clayey silt (Pickett and Spoljaric 1971; Ramsey 2005; A.D. Marble & Company 2006a: 4). A geomorphological investigation was conducted within the U.S. Route 301 Levels Road Mitigation site, situated on an upland peninsula adjacent to and overlapping the western boundary of the northern portion of the APE (see Richard Grubb & Associates, Inc. 2010). Daniel Hayes, who performed the investigation (Hayes 2009), examined maps of the remainder of the APE and considered Section 3 to contain similar deflated upland settings and unlikely to have potential for deeply buried sites. The APE contains eroded upland landforms with incised stream floodplains and swales or small drainage headwaters with silty deposits or Columbia Formation sediments (Daniel Hayes, personal communication, December 12, 2008).

Soils in the New Castle County, Delaware portion of the APE are mapped as the Matapeake-Sassafras Association, nearly level to steep, well-drained soils on uplands in the western part of New Castle County (Matthews and Lavoie 1970). The Cecil County, Maryland portion is mapped as the Matapeake-Butlertown Association, with nearly level to gently sloping, well- to moderately well-drained soils on broad uplands on the coastal plain (Anderson and Matthews 1973). Specific soil

types present within the APE according to published soil surveys (Figure 2.1, Matthews and Lavoie 1970; Anderson and Matthews 1973) and recent WebSoil surveys (Figure 2.2, USDA-NRCS 2010), are summarized in Table 2.1.

Table 2.1: Soil series and types within the APE.

	1970 Soil Survey New Castle County, DE (see Figure 2.1)	2010 WebSoil Survey New Castle County, DE (see Figure 2.2)	1973 Soil Survey Cecil County, MD (see Figure 2.1)	2010 WebSoil Survey Cecil County, MD (see Figure 2.2)
Wetland or poorly drained soils	Mixed Alluvial Land: Mv Fallsington loam: Fs	Crosiadore silt loam: CsA Othello silt loam: OtA Fallsington loam: FgA Longmarsh and Indiantown soils, frequently flooded: LO Zekiah sandy loam, frequently flooded: Za	Othello silt loam: OhA Barclay silt loam: BcB Leonardtown silt loam: LoA Fallsington loam: FmA	Crosiadore silt loam: CsA Othello silt loam: OtA
Upland, well- drained soils	Matapeake silt loam: MeA, MeB2, MeC2, MeC3 Sassafras sandy loam: SaB2, SaC3, SmE Woodstown loam: WsA	Reybold silt loams: ReA, ReB, and ReC Reybold-Queponco complex: RdA Sassafras sandy loam: SaB, SaD, and SaE Collington fine sandy loam: CnD Woodstown loam: WoA	Keyport silt loam: KpB2 Matapeake silt loam: MnB2	Mattapex silt loam: (MtA, MtB) Nassawango silt loam: (NsB)

The 1970s soil surveys indicated that various types of well-drained Matapeake soils dominate the northern portion of the somewhat eroded APE. Other well-drained soil types present mapped as Sassafras sandy loam on eroded features such as gullies, and small areas of Woodstown loam and Keyport silt loam. Poorly-drained Mixed Alluvial Land was the defined soil type on floodplains and along tributaries in the northern and middle portion of the APE. Large areas of poorly drained Fallsington loam and smaller areas of poorly drained Othello silt loam characterized level terrain in the southern portions of the APE. Two other poorly-drained soils in the southern portion of the APE were referred to as Barclay silt loam in upland settings, and Leonardtown silt loam.

The USDA-NRCS Web Soil Survey indicates that much of the northern portion of the APE previously classified as Matapeake is now mapped as Reybold silt loams (ReA, ReB, and ReC) with slopes ranging from 0 to 10 percent and Reybold-Queponco complex, 0 to 2 percent slopes (RdA). Other well-drained upland soils present in the APE are currently mapped as Sassafras sandy loam, 2 to 25 percent slopes (SaB, SaD, and SaE), Collington fine sandy loam, 5 to 15 percent slopes (CnD), Woodstown loam, 0 to 2 percent slopes (WoA), Mattapex silt loam, 0 to 5 percent slopes (MtA, MtB) and Nassawango silt loam, 2 to 5 percent slopes (NsB) in the same or similar settings as those

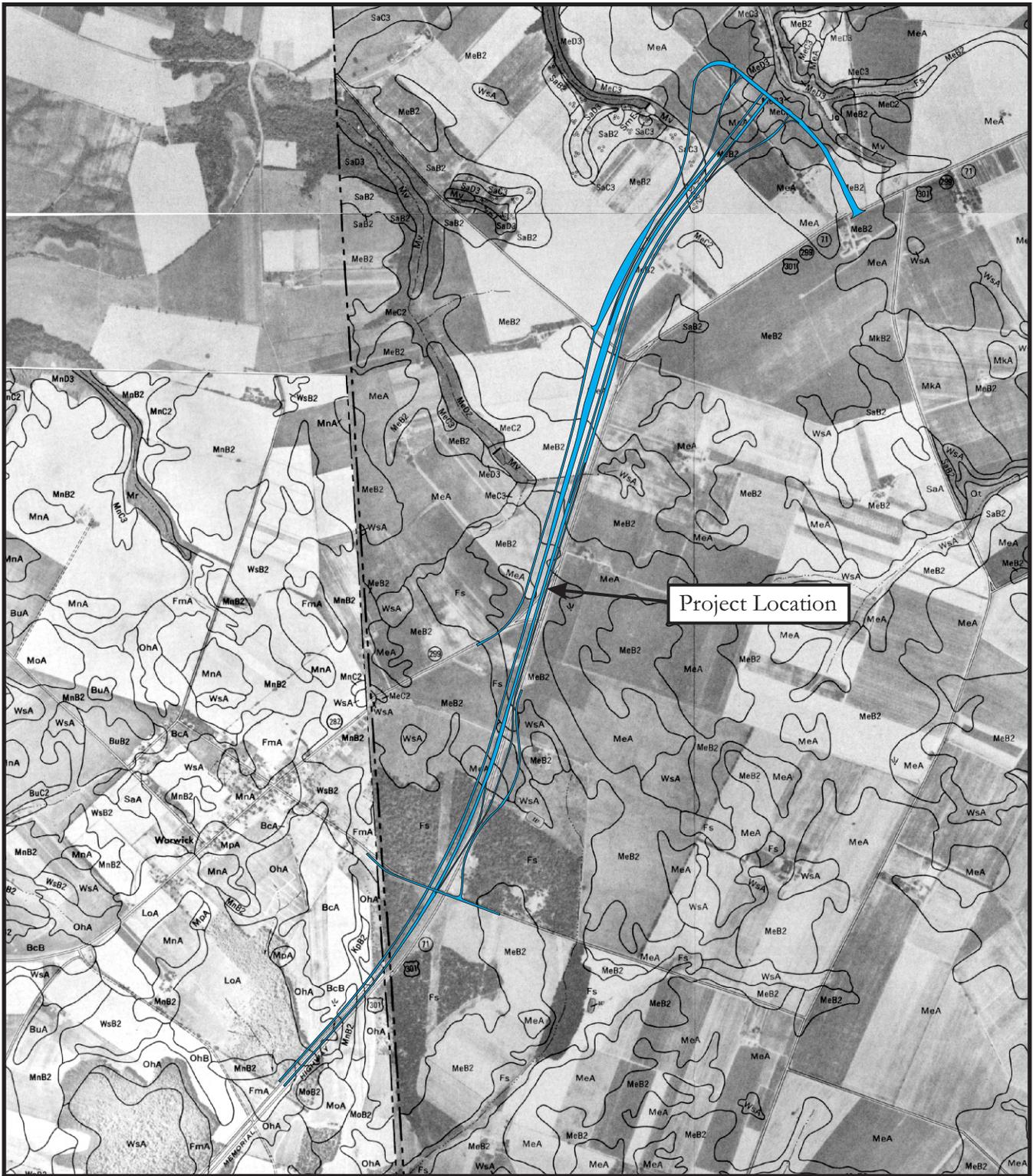


Figure 2.1:

Soils Map

(from 1973 Richard H. Anderson and Earle D. Matthews, *Soil Survey of Cecil County, Maryland*, Sheet Number 44 and 1970 Earle D. Matthews and Oscar L. Lavoie, *Soil Survey of New Castle County, Delaware*, Sheet Numbers 41 and 44).

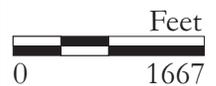




Figure 2.2:

Soils Map (from 2008 Natural Resources Conservation Service, Web Soil Survey, <http://websoilsurvey.nrcs.usda.gov>).



formerly mapped as Matapeake, Sassafras, Woodstown loam, and Keyport silt loam. The soil series called Mixed Alluvial Land is no longer present along streams and locations of poorly drained Fallsington soils are more limited. These areas were reclassified as poorly drained Crosiadore silt loam, 0 to 2 percent slopes (CsA) or Othello silt loam, 0 to 2 percent slopes (OtA) with smaller areas of Fallsington loam, 0 to 2 percent slopes (FgA), Longmarsh and Indiantown soils, frequently flooded (LO) and Zekiah sandy loam, frequently flooded (Za) (USDA-NRCS 2010). Generally both soil surveys indicate that well-drained soils dominate the northern portion of the APE, and wetlands and poorly-drained soils are dominant in the south; however, pockets of well-drained soils such as Reybold (RdA), Woodstown (WoA), Mattapex (MtA, MtB) and Nassawango (NsB) are found in the southern portion of the APE and small areas of poorly-drained Zekiah (Za) and frequently flooded Longmarsh and Indiantown soils (LO) are found along streams in the northern portion of the APE.

The vegetation in the APE consists of fallow and recently harvested agricultural fields, as well as hardwood forested field breaks, patches of hardwood forest along roads and streams, and intermittent areas of wetland vegetation in the southern portion of the APE.

