

2.0 ENVIRONMENTAL SETTING

The environmental setting of the US 301 corridor has been described in several previous documents (A.D. Marble & Company 2005; Burrow *et al* 2009; FHWA and DeIDOT 2007:III-114 through III-129; Hayes 2009). This section summarizes these data with specific reference to the Contract 2C Armstrong Corner Interchange project archaeological APE.

2.1 Location and Nature of Archaeological APE

The archaeological APE lies in the Inland Plain of the Coastal Plain physiographic province, at elevations between 18.3 to 21.3 m (60.0 to 70.0 ft) above mean sea level, on the Delmarva Peninsula, and in the drainage divide between the Chesapeake and Delaware bays. The archaeological APE is within the Appoquinimink River watershed of the Delaware Bay drainage and is approximately 2.9 km (1.8 mi) west of Shallcross Lake. The surface formations of the Inland Plain resemble a fluvial terrace with broad, flat areas that resemble old terrace or upland landforms and narrow, deep valleys formed by drainages (Rima *et al* 1964). Surrounded primarily by farmland, the archaeological APE is in a location which is rapidly suburbanizing. Common land uses of the test areas include residential, agricultural, and commercial. Common disturbances within the archaeological APE include road construction and maintenance associated with existing US 301, emplacement and maintenance of buried utilities (e.g., septic, water, gas); grading and filling activities; construction of houses and other buildings; landscaping; and paving for parking lots and driveways (Photographs 1-8).

2.2 Geology, Lithic Resources, and Soils

The geology of the Inland Plain is comprised primarily of the early- to mid-Pleistocene Columbia formation. In the vicinity of the archaeological APE, the Columbia formation is a gently undulating plateau averaging between 18.3 to 21.3 m (60.0 to 70.0 ft) above mean sea level. The archaeological APE is located approximately 16.1 km (10.0 mi) south of Iron Hill, a location which was used throughout the pre-contact period as a source for Iron Hill jasper. This distinctive material varies in color from yellow to dark brown and ranges in quality from excellent to poor. When good to excellent quality jasper is found, a wide variety of lithic tool forms are easily made (Petraglia and Knepper 1996). In addition to being found in primary outcrops, jasper cobbles can be found as secondary sources in certain streams on the Delmarva Peninsula. The other possible lithic



Photograph 1. View near the Price 2 Test Area showing a buried gas line, facing north.



Photograph 2. View near the Price 2 Test Area, showing disturbance, facing south.



Photograph 3. View of the archaeological APE, showing buried sewer line, facing north.



Photograph 4. View of disturbance at the intersection of Armstrong Corner Road and existing US 301, facing northwest.



Photograph 5. View of the archaeological APE, showing residence, facing south.



Photograph 6. View of the archaeological APE, showing driveway, facing north.



Photograph 7. View of the archaeological APE, showing tree landscaping, facing north.



Photograph 8. View of the archaeological APE showing road disturbance, driveway, and parking lot, facing south.

raw material source near the archaeological APE would be cobble packages of quartz, quartzite, and chert found in major streams.

Soils in the vicinity of the archaeological APE include Reybold-Queponco complex, 0 to 2 percent slopes and Reybold silt loam, 2 to 5 percent slopes. The Reybold-Queponco complex, 0 to 2 percent slopes are well drained soils commonly found on flats and swales and created from high silt loamy eolian deposits over fluviomarine deposits. The Reybold silt loam, 2 to 5 percent slopes (ReB) is also a well drained soil commonly found on flats and interfluvies. It is also created from high silt loamy eolian deposits over fluviomarine deposits (United States Department of Agriculture, Natural Resources Conservation Service [USDA, NRCS] 2005). Plateau soils in the vicinity of the archaeological APE have been subjected to repeated plowing (Hayes 2009).

2.3 Climate

New Castle County has a humid, continental climate that is modified due to the proximity of the Atlantic Ocean (Matthews and Lavoie 1970:93). The nearby Atlantic Ocean modifies masses of air that pass over it before reaching the county. Winters bring westerly or northwesterly winds, cooler temperatures, and clearing skies. Summers bring southerly winds with warm moist air. The average annual temperature for the county is 12.2° C (54.0° F), while the average annual precipitation is 121.9 cm (48.0 in). It is fairly evenly distributed over the year. The frost-free growing season lasts approximately 175 to 185 days in the project area.

2.4 Flora and Fauna

The floral and faunal distributions across the Delmarva Peninsula can be described as a mosaic with a high variety of species present in a small area (Custer 1986:46-47). The greatest variety of animals would have been found in the grass/woodlands settings and in perennial and seasonal water sources. Principal mammal species which served as potential resources for the aboriginal inhabitants of the area were mastodon, mammoth, musk ox, vole, lemming, mouse, white-tailed deer, caribou, elk, giant beaver, river otter, porcupine, cottontail rabbit, gray squirrel, and opossum. Important fur-bearing mammals included beaver, muskrat, raccoon, and red and gray foxes. Avian fauna of aboriginal importance would have included wild turkey and ruffed grouse, as well as various species of waterfowl. Numerous species of fish and shellfish were available in freshwater streams, the brackish waters of the Chesapeake Bay, and the salt waters of the Atlantic Ocean. Much of the natural vegetation of the archaeological APE has been significantly

altered by historic and modern clearing and agriculture. At the time of the survey, the vegetation covering the majority of the archaeological APE was maintained lawn and soybean fields.