ENVIRONMENTAL SETTING

The Burnham House site is located in south-central New Castle County, Delaware. This part of New Castle County has historically been rural with large tracts of farmland and continues to be rural to an extent. The improvements to US Route 13 include adding two new north-bound lanes to create a divided four lane highway. In addition, the recent completion of State Route (SR) 1 (Korean War Veterans Memorial Highway), a four- to six-lane highway built to interstate standards directly west of US Route 13, has made access from south-central New Castle County to the urban areas of northern Delaware and southeastern Pennsylvania much easier. As a result, large housing subdivisions have begun to spring up on farmland around historic rural communities such as St. Georges and Port Penn. The current project area has not been impacted by this recent suburban development and only to a limited extent by construction.

Geology

The site is in the Upper Coastal Plain physiographic zone in the Mid-Drainage management zone subdivision. The Upper Coastal Plain physiographic zone covers the area between the Smyrna River to the south and the Piedmont Fall Line to the north (Custer 1984; Custer and Bachman 1986; Hodny et al. 1989). The Potomac and Columbia formations characterize the sediments of the northern Delaware Coastal Plain. Potomac formation sediments are fluvial silts and clays deposited during the Early Cretaceous Period. They are overlain by the sediments of the Columbia formation, deposited by watercourses from the north during the Quaternary Period.

Sands, made up mostly of quartz, feldspar, and coarse gravels of sandstone, quartz, and chert, characterize the Columbia formation (Custer 1984; Jordan 1964). The gravels resisted erosion which created a gently rolling topography with up to 50-foot (15.2 m) differences in elevation between floodplain marshes and headlands, thereby creating differences in plant communities. These topographic conditions combined with the presence of tidally influenced brackish watercourses and freshwater further inland allow for a wide range of available natural resources.

Hydrology

Spring Mill Branch is the main watercourse draining the Burnham House site. Spring Mill Branch, located 0.46 miles (0.74 km) east of the site, joins with Drawyer Creek at Shallcross Lake and then flows into the Delaware River. The Delaware River then empties into the Delaware Bay, which joins the Atlantic Ocean between Cape Henlopen and Cape May.

Soils

Fertile, well-drained soils attracted both humans and game over millennia. Moreover, the wild grasses, fruits, and seeds consumed by people both before and after the adoption of agriculture flourished in such settings. As a consequence, numerous archaeologists have cited the correlation between the distribution of level to gently sloping, well-drained, fertile soils and archaeological sites (e.g., Lukezic 1990; Potter 1993; Turner 1976; Ward 1965). Soil scientists classify soils according to natural and artificial fertility and the threat posed by erosion and flooding, among other attributes. Soil Classes 1 and 2 represent the most fertile soils, those best suited for not only agriculture but for a wide range of uses. Of course, soil fertility must be considered in relation to the productivity of the surrounding soils as well.

Within the project area, the Class 1 Reybold-Queponco complex represents the majority of soil types, encompassing the area in which the Burnham House and other associated structures are located. The Class 2 Reybold silt loam is located immediately north of the site core and may represent a suitable setting for archaeological resources due to its fertility. The Class 2 Woodstown loam represents a very small portion of the project area to the west of the site core, but is also a fertile soil like the other two. The fact that the Reybold-Queponco complex, the Reybold silt loam, and the Woodstown loam have a tendency to erode could impact intactness of sediment. However, their fertility and moderate to excellent drainage make them ideal soils for historic period occupations and the agricultural activities associated with them (Table 1, p. 10) (Soil Survey Staff 2012).

Table 1: Soils in the Project Area (Soil Survey Staff 2012).

Soil Name	Class	Slope	Percentage of Project Area	Characteristics
Reybold-Queponco complex	1	0-2%	63.7%	Well drained, tendency to erode
Reybold silt loam	2	2-5%	34.2%	Well drained, tendency to erode
Woodstown loam	2	0-2%	2.2%	Moderately well drained, tendency to erode