2.0 Project Setting

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2.1 Area of Potential Effects

The current archaeological APE boundary is based on the proposed limits of construction for the Preferred Alternative C (Appendix C: Figure 1-2). The former 2003 APE was based on the six construction Alternatives A through F. Both APEs were developed in consultation with DelDOT and the DESHPO on behalf of the FHWA. The APE currently consists of 26 parcels characterized by low, moderate, and high potential for precontact and/or historic archaeological resources. Archaeological potential of each parcel is described in Section 3.0. Detailed descriptions of each parcel constituting the APE are provided in Section 4.0.

2.2 Environment

The study area is located within the Mid-Peninsular Drainage Divide of the Lower Coastal Plain Physiographic Province. The Mid-Peninsular Drainage Divide exhibits slight elevation differences and contains low-order headwaters. Additional water sources include large fresh-water swamps that are surrounded by sand ridges and bay/basin features (Custer 1989:29). Agricultural fields generally buffer the community of Little Heaven, but areas adjacent to SR 1 generally consist of commercial and residential properties. Trunk Ditch, a tributary of the St. Jones River, extends into the northern end of the project area, approximately 30 to 45 m north of the intersection of Mulberrie Road and U.S. 113/SR 1; an unnamed minor tributary extends under U.S. 113/SR 1 just south of the mobile home community of High Point Park.

Soils in the study area are characterized by the Sasafrass-Fallsington association and are described as level to gently sloping and as well-drained and poorly drained soils of moderate permeability on uplands (Matthews and Ireland 1971). The APE is composed primarily of five soil types: Sassafras sandy loam, (SaA) 0 to 2 percent slope, (SaB) 2 to 5 percent slope, and (SaC3) located on areas of 5 to 10 percent slope; Rumford loamy sand (RuB), 2 to 5 percent slope; and Mixed alluvial land (Mv) (Matthews and Ireland 1971).

Vegetation patterns shifted from a mosaic pattern to a zoned pattern in the early Holocene (post-8,000 B.C.). Pine was dominant, with lesser amounts of hemlock, birch, and oak. After 6,000

B.C., an oak-hickory climax was present, and it was followed by a pine–oak dominated forest after 3,000 B.C. Historic-period vegetation has been described as oak-hickory and marsh climax vegetation (Cunningham et al. 1980:6).

2.3 Culture History: Precontact Era

This section reviews the relevant precontact context for the project area. For detailed overviews of precontact occupations of the Delmarva Peninsula and the broader geographic area, the reader is encouraged to consult the following sources: Custer 1984, 1989, 1994, 1996a, 1996b; Custer et al. 1983; Custer and Stewart 1990; Gardner 1982; Petraglia et al. 2002; Stewart 1989, 1992; Stewart et al. 1986; and Weslager 1972.

There are five general periods of Native American occupations on the Delmarva Peninsula: Paleo-Indian (13,000 to 6,500 B.C.), Archaic (6,500 to 3,000 B.C.), Woodland I (3,000 B.C. to A.D. 1,000), Woodland I (A.D. 1,000 to 1650), and the Contact Period (A.D. 1650 to 1750). Many scholars disagree with the established culture historical sequence (Kevin Cunningham, DelDOT archaeologist, personal communication, 2009). Nonetheless, most would probably agree that regional archaeological evidence attests to a longue durée of societal intensification that included the advent and evolution of many technological (e.g., pottery) and social organizational (e.g., prestige-based network exchange) elements of the native Delmarvan world.

2.3.1 Paleo-Indian Period (13,000 to 6,500 B.C.)

The Paleo-Indian period environment is characterized as a mosaic of deciduous, boreal, and grassland biomes with a uniformly cold and alternately wet and dry climate. Human adaptation to these changing environmental conditions resulted in small, mobile bands of hunter-gatherers with movements related to the exploitation of different localized environments and resources. Site patterning seems to indicate a preference for riverine environments with sites located on high terraces or knolls overlooking rivers or streams (Custer 1989). The earliest diagnostic tool forms include fluted points (i.e., Clovis, Mid-Paleo, and Dalton), while later forms include notched (and often serrated) points (i.e., Palmer, Amos, and Kirk). A series of three Paleo-Indian sites have been identified in central Kent County, Delaware. Known collectively as the Hughes

Early Man Complex, these sites yielded a Clovis point, Kirk and Palmer notched points, and numerous bifacial and flake tools (Custer 1984:58; see also Weslager 1972).

2.3.2 Archaic Period (6,500 to 3,000 B.C.)

The Archaic period is marked by warmer, moister climatic conditions with the disappearance of grasslands and the expansion of mesic forests of oak and hemlock. Mast foods were provided by the mesic forest, which also attracted small game animals, especially deer and turkey. A marked rise in sea level caused lowland flooding and the inundation of river systems, which sped the development of complex estuary systems and prompted the appearance of interior swamps. These changes caused a net increase in floral and faunal resources associated with new wetland areas. Archaic period groups utilized a wide variety of plant and animal resources, resulting in a wide range of subsistence activities and associated tool kits (Custer 1989:128). Archaic projectile points include bifurcated-base and a wide variety of stemmed and notched forms. In response to the broadening of exploited food resources, Archaic groups produced diverse tool kits containing an array of ground stone tools, including grinding stones, netsinkers, and axes.

An increase in sedentism is also inferred by the settlement pattern, with base camps located on terraces of major drainage systems, supported by smaller microband camps and procurement camps found along smaller streams and interior swamps (Custer 1989:129-130). Archaic period sites within the Mid-Drainage Zone are limited. One Archaic floodplain site, 7K-C-9, was documented in the St. Jones drainage. Two other Archaic sites, 7K-C-7 and 7K-F-17, represent Archaic sites associated with bay/basin features in the Murderkill drainage. These bay/basin sites represent short-lived hunting and processing occupations (Custer 1989:135).

2.3.3 Woodland I Period (3,000 B.C. to A.D. 1,000)

The transition to the Woodland I period is marked by the subsistence intensification that included a greater use of aquatic resources. During this period, sea level rise slowed, which allowed the stabilization of riverine and estuarine areas. This in turn fostered the development of shellfish and anadromous fish populations. These new resources were heavily exploited during the Woodland I period (*contra* Schindler 2008). The appearance of storage pits and evidence of

house structures support the interpretation that large, macroband base camp sites emerge at this time and appear to have been occupied on a year-round basis (Custer 1989).

Changes in lithic acquisition and use also take place at this time. Groups inhabiting the Mid-Atlantic region during the Woodland I period greatly expanded their use of lithic raw materials to include quartz, quartzite, argillite, and rhyolite (Stewart 1984). The Barker's Landing Site (7K-D-13), located approximately 3.2 km east of the project area, produced 1,047 argillite artifacts, including debitage and unfinished and finished tools, out of a total of 1,212 artifacts (Custer n.d:4). Ceramic forms include Marcy Creek, Dames Quarter, and Ware Plain, while projectile points are represented by stemmed and broadspear forms. Microband base camp sites are the predominant site type identified along river floodplains and estuarine marshes. Seven microband base camps with Barker's Landing Complex components (7K-F-12, -45, -46, -49, -52, -53, and -55) and one Barker's Landing Complex macroband site (the Coverdale Site [7K-F-38]) were identified along the Murderkill River east of Frederica.

Increased social complexity is evident during the Woodland I period. Evidence comes in the form of exotic grave goods indicating complex mortuary ceremonies, which were being practiced in central Delaware beginning around 500 B.C. and ending around 0 B.C. Known as the Delmarva Adena, this culture group possessed exotic materials and ceremonial goods similar to those of the Ohio Valley Adena cultures. Several important Delmarva Adena sites excavated in Kent County, Delaware, have produced status-related goods such as Flint Ridge chalcedony cache blades, copper beads, and tubular pipes, suggesting some degree of social stratification. Delmarva Adena Complex sites include microband base camps, major and minor mortuary-exchange sites, cache sites, and isolated finds. Ceramic wares associated with this complex include Wilgus, Coulbourn, and Nassawango.

The Delmarva Adena Complex was replaced by the Webb Complex (Late Woodland I). The settlement and subsistence patterns of the Webb Complex generally followed those of the previous Woodland I complexes. In general, Webb Complex sites are characterized by the presence of Jack's Reef projectile points and Hell Island ceramics in the artifact assemblage. The distribution of Webb Complex sites generally is found from the Chesapeake and Delaware Canal

south to the Mispillion and Choptank drainages (Custer 1989:291). Microband base camp sites are the predominant site type identified along river floodplains and estuarine marshes. Locus A and Locus G of the Soulie Gray Farm Site (7K-F-169A and G) and 7K-F-11 are located southeast and south, respectively, of the project area and contain Woodland I components.

Seven microband base camps with Webb Complex components (7K-F-45, -46, -47, -53, -54, -55, and -56) and one Webb Complex procurement site (7K-F-48) were identified along the Murderkill River in proximity to Frederica. Significant components of this period were also excavated at the nearby St. Jones Neck and Lums Pond Site (7NC-F-18) (Custer and Hsiao-Silber 1995; Petraglia et al. 1998).

2.3.4 Woodland II Period (A.D. 1,000 to 1650)

The Woodland II period (A.D. 1,000 to 1650) is generally marked by the introduction of cultigens; associated changes in artifact types and settlement patterns are also noted. Woodland II settlement patterns generally follow the Woodland I model: macroband base camps supported by microband camps and procurement sites. Two cultural complexes are identified in the Woodland II period: the Minguannan Complex and the Slaughter Creek Complex. The Minguannan Complex is found in the northern portion of Delaware, northeastern Maryland, and portions of Chester County, Pennsylvania, while the Slaughter Creek Complex is found from the central peninsula south to Cape Charles, Virginia (Custer 1989:314-316). Artifacts from this group include thin-walled Minguannan ceramics and triangular projectile points. No evidence of village sites or agriculture has been found in association with this complex. The Slaughter Creek Complex is defined by the presence of Townsend ceramics and triangular projectile points. Settlement patterns consist of large macroband base camps and possible sedentary villages with high densities for storage features, as well as small microband base camps. Some of the largest sites (macroband base camps) of the Slaughter Creek complex (i.e., Indian Field, Indian Landing) produced extensive evidence of wild plant gathering rather than domesticates (Custer 1984:163-166).

Custer (1984:169-170) believed that food production most likely occurred along tributary rivers to the Delaware Bay south of the Mispillion River. He hypothesized that food production began

here because of environmental constraints on maintaining a hunter/gatherer economy in the face of a rising population. The Hughes-Willis Site (7K-D-21), located in central Kent County, Delaware, represents the northernmost macroband base camp site of the Slaughter Creek Complex. A variety of tools were recovered from the excavations, and the floral and faunal remains from the site suggest a fall through mid-winter occupation (Thomas et al. 1975). Microband base camps are found more frequently, with site locations corresponding to Woodland I period microband base camp sites. Sites 7K-D-45 and 7K-D-48, identified on St. Jones Neck in Kent County, and the Island Field Site (7K-F-17) contained archaeological deposits associated with temporary hunting sites (Custer 1989:323). Procurement sites are poorly understood, but are found, in general, on small ridges adjacent to poorly drained woodland and adjacent to floodplain areas along major drainages.

2.3.5 Indigenous-North American and European Contact Period (A.D. 1650 to 1750)

The Contact Period (A.D. 1650 to 1750) in Delaware began with the settlement of Europeans in the New World. This was quickly followed by a major disruption of the indigenous socioeconomy as European goods and practices were adopted. The introduction of European diseases into settlements and internecine conflict over the fur trade caused a dramatic loss of life among native groups. The Susquehannock Indians were the dominant force from 1550 through the mid-1600s in the Susquehanna River Valley and the central Mid-Atlantic region in general. The Susquehannocks gained control of the European fur trade and prevented indigenous groups in southeastern Pennsylvania (e.g., Lenni Lenape) and the Delmarva Peninsula (e.g., Nanticoke) from participating in this trade during the mid-seventeenth century. After 1675, the Susquehannocks lost control of the region; they were extirpated from the region by 1763 (Custer 1996a:315; Kent 1989). By the mid-1700s, most native settlements of the Delmarva Peninsula had disappeared. Nonetheless, small indigenous communities continue to thrive today on the Delmarva Peninsula.

2.4 Culture History: Historic Era

This section reviews the relevant historical context for the APE. For detailed overviews of the historical development of Delmarva Peninsula and broader geographic area, the reader is directed to relevant historic contextual studies including Bedell (2002) De Cunzo and Catts

(1990), Hoffecker (1988), Kellogg (1993), LeeDecker (1992), Lemon (1972), Munroe (1984), Scharf (1888), and Weslager (1961). In lieu of a lengthy historical context, the reader is encouraged to refer to the Architectural Survey and Evaluation Report (A.D. Marble & Company 2005a:12-44) on file at the DESHPO and online at DelDOT in "Section 4.0 Historic Overview" (http://www.deldot.gov/archaeology/little_heaven/architectural/index.shtml, accessed 5-10-09).

2.4.1 Euro-Delawarean Agriculture in Little Heaven

Little Heaven served as a nineteenth-century crossroads community located between Milford and Magnolia. Farming was the primary occupation for most residents in the community in the eighteenth and nineteenth centuries. Farmsteads were generally large and consisted of a centrally located farmhouse and a cluster of outbuildings.

From the 1830s to the 1870s, peach production represented a significant percentage of the agricultural economy in Delaware. The industry had its start in the north in 1832 when Isaac Reeves planted one of the first orchards in the vicinity of Delaware City (De Cunzo and Garcia 1992:45). A combination of rich soil tempered with favorable rainfall and climate provided optimum growing conditions for peach orchards. The lucrative industry helped not only peach growers but also support industries such as basket factories, canneries, and peach tree nurseries. Railroad and steamship companies essential to fruit shipment depended on the revenue generated from the annual peach harvests (http://www.agriculturalmuseum.org/produce.htm, accessed 11-10-03). The Delaware Railroad helped the peach industry prosper.

Jehu Reed established a peach orchard in 1827; his success led to an expansion of his orchards that later included plum, apple, and quince trees as well as grapes. His enterprise also included the intensive production of potatoes and corn (Reynolds 1982:377-8). Between 1840 and 1890, huge orchards, ranging from a few hundred to 40,000 trees, spread from Delaware City to Kent County. Frederica, located south of the project area, was an important canning center for the surrounding area, in addition to being a convenient waterway distribution center for the canned goods as well as for rye, oats, corn, bark, and wood. In 1875, the peak peach-production year, almost six million baskets of peaches were shipped to markets. The task of picking the fruit required large groups of workers, who became known as "peach plucks"

(http://www.agriculturalmuseum.org/produce.htm, accessed 11-10-03). A virus known as the peach "yellows" finally led to the collapse of the peach industry in Delaware in the 1870s. Reed raised mulberry trees in areas where the soil nutrients had been stripped by over-harvesting. The savvy Reed employed the mulberry leaves for silkworms and harvested the silk (Scharf 1888:1169). By the early 1900s, many farmers faced bankruptcy. Some peach growers burned their orchards and turned them back into pastures and wheat fields. Other started to cultivate fruits such as apples, grapes, melons, and strawberries. Kent County became a leading producer of apples, while strawberries developed into a lucrative ("million-dollar") crop for farmers.

2.4.2 What's in a Name? Little Heaven: A Place Name and Cradle of American Methodism

The early Little Heaven community was primarily composed of Protestants. One of the notable historic landmarks near the project area is Barratt's Chapel (CRS No. K-108). Barratt's Chapel was built in 1780 on land donated by Philip Barratt, a prominent political figure in Kent County, Delaware. Barratt, who had recently become a Methodist, wanted to build a center for the growing Methodist movement in Delaware. Barratt's Chapel is the oldest surviving church building in the United States built by and for Methodists and is known as the "Cradle of Methodism." Community members that moved into the area in the early twentieth century were largely Irish Catholics (Reynolds 1982:365). Reynolds states that Catholicism never flourished in the area and that the dominant Protestant establishment would unsympathetically refer to the settlement as "Little Heaven."

In the early twentieth century, many of the first commercial businesses that were established on the margin of the highway (currently SR 1) catered to travelers. These included restaurants, service stations, and motor lodges. One of the first roadside businesses purportedly belonged to Cleaver Moore, who established a small roadside market. His son opened a gas station on the same site in the early 1930s; it serviced trucks transporting poultry and produce to northern markets (Reynolds 1982:365). Roadside markets flourished, and one of the first of many gas stations in the community was built opposite the Jehu Reed residence in the 1920s (Reynolds 1982:366). Today, the SR 1 corridor through Little Heaven continues to serve as an ideal waypoint for the truck operators that are heading up and down the peninsula to commercial

markets and for the automobile vacationing masses heading to and from shore points to refuel their gas tanks.

High Point, a mobile home park established around 1958, is located on the west side of U.S. 113A and opposite the Olive School. James Conley sold trailers in the area situated between the two highways (the area referred to herein as Parcel 20). Today, the trailer park constitutes one of the largest residential concentrations in Little Heaven. Little Heaven also contains a small number of residences located on secondary roads surrounding U.S. 113/SR 1. The widening of U.S. 113 in the second half of the twentieth century required some of the commercial and residential structures to be shifted away (east) of the highway. Mechanical grading related to the highway realignment and relocation of some structures has precipitated extensive ground disturbances in the highway margin. Recent residential development has led to the construction of homes and small neighborhoods south of Mulberrie Point Road in the northeastern portion of the project area.

Additional historic contextual information is introduced Section 4.0 in the discussions of the individual study parcels, when warranted. These discussions include details about historic properties relevant to the findings in the areas surveyed during this investigation.

2.5 Local Precontact and Historic Archaeological Site Context

Preliminary background research on the history and prehistory of the project area was conducted in November 2003. Background research was conducted at the DESHPO, the Delaware State Archives, the Delaware Geological Survey, the Historical Society of Delaware, and various historical and educational institutions in search of relevant survey reports and studies. At the DESHPO, pertinent site inventories and archaeological reports were reviewed. Map resources were also consulted at the DESHPO and the Delaware State Archives. Various in-house materials and documents available via the Internet were also consulted.

Few cultural resources studies have been conducted near the Little Heaven study area. A preliminary cultural reconnaissance survey was conducted adjacent to the current project area by DelDOT and totaled 7.86 km (4.89 mi) along the proposed dualization of U.S. 113 from Little

Heaven to Dover Air Force base (Cunningham et al. 1980). The survey consisted of a pedestrian review and limited test unit excavations along U.S. 113/SR 1. The southern limit of the reconnaissance survey extends only to within roughly 304.8 m of the Little Heaven APE. Two previously identified archaeological site locations (7K-F-88 and 7K-F-35) were verified during the study; neither is in the vicinity of the Little Heaven project area. An investigation associated with the Barratt's Chapel Road Improvements Project is currently underway (Skelly and Loy, Inc. 2008).

The nearest known precontact site is 7K-F-92. The site was located by members of the Kent County Archaeological Society in 1979 through a field surface walkover (Cultural Resource Survey [CRS] Form 1979). The site is located between a drainage to Trunk Ditch and Mulberrie Point Road and approximately 304.8 m northeast of the project area. No artifact data accompanied the survey form. The artifact collection is listed as stored at Island Field Site repository in Bowers Beach, Delaware.

The Soulie Gray Site (7K-F-163) is located near the southern terminus of the Little Heaven APE; it represents the most comprehensive archaeological study in the project vicinity. Hunter Research, Inc. conducted a Phase I Archaeological Survey of Locus A (7K-F-163A) and Locus G (7K-F-163G) at the Soulie Gray Farm in April and May 1996. Cultural resources identified during the study included Locus A, the plowed remains of a house, midden, outbuilding, and river landing dating to ca. 1700 to 1750; and Locus G, a precontact Woodland I Webb Complex site situated on the edge of a bluff that overlooks the Murderkill River (Liebeknecht et al. 1996). Locus G contained possible pit features dating from A.D. 600 to 1,000 and surrounds Locus A. The Gray Farm Site (7K-F-11) is located adjacent to the Soulie Gray Farm Site; it is partially contemporaneous to the Soulie Gray Farm Site. Investigations of the site are ongoing (as of May 2009). Precontact artifacts recovered around Locus G of the Soulie Gray Farm Site included fire-cracked rock (FCR), lithic debitage, and a grooved axe. Two ceramic sherds were characterized as a Hell Island type that dates to the Webb Complex (Custer 1989:176). The site also contained a Clyde Farm II activity area component that dates to ca. 4000 to 3200 B.P.

The Robbins Farm #1 to #3 sites (7K-F-49, -44, and -12, respectively) and the Sipple Farm #1 and #2 sites (7K-F-54 and -55) are located to the southwest of the southern end of the APE. These sites contain evidence for precontact-era occupations, but only the site forms for the Robbins Farm sites note that the sites are at least Woodland in age. A historic site, the nineteenth-century James R. Lofland House Site (7K-F-163D), is also located east of the southern portion of the APE. Based on this background information, it was anticipated that the APE may contain evidence of the past 4,000 years of human occupation in central Delaware.