

1.0 INTRODUCTION

On behalf of the Delaware Department of Transportation (DelDOT), The Louis Berger Group, Inc. (LBG), has completed an Architectural Survey Report in support of the proposed improvements to State Route (SR) 1 in New Castle County, Delaware. The project is in the planning stage, and a number of options or alternatives are being developed and evaluated within the framework of the National Environmental Policy Act (NEPA). The architectural survey will support the ongoing NEPA analysis and Section 106 consultation as well as 4(f) determinations. As consultant to DelDOT, LBG is part of a team that includes DelDOT staff and the General Engineering Consultant, Rummel, Klepper & Kahl (RKK), responsible for development of the design and the NEPA process.

This report summarizes the results of the architectural survey of the area of potential effect (APE). The purpose of the architectural investigation was to identify standing structures built prior to 1965 in the APE and to evaluate the eligibility of extant resources for inclusion in the National Register of Historic Places.

The investigation was conducted in accordance with the guidelines specific to the State of Delaware, including the Delaware Statewide Comprehensive Historic Preservation Plan (Ames et al. 1987) and the *Guidelines for Archaeological and Architectural Surveys in Delaware* (Delaware State Historic Preservation Office 1993). In addition, the cultural resource evaluations were conducted in accordance with Section 106 of the National Historic Preservation Act of 1966, as amended, and the Procedures for the Protection of Historic and Cultural Properties set forth in 36 CFR 800, as amended. This legislation requires that the effect(s) of any federally assisted undertaking on historically significant districts, buildings, structures, objects, or sites be taken into account during the project planning process. Significant resources are those that are listed in, or eligible for listing in, the National Register.

Fieldwork for the architectural investigation was completed by Patti Kuhn, Principal Investigator, and Sarah Groesbeck, Architectural Historian, of LBG in June 2012. Both Ms. Kuhn and Ms. Groesbeck meet the Secretary of the Interior's Professional Qualifications Standards (48 FR 44738-9) for Architectural History.

1.1 ENVIRONMENTAL SETTING

The APE primarily consists of a large-scale suburban landscape, developed after the construction of SR 1 in the last quarter of the twentieth century. Historic towns and agricultural landscapes remain extant, nestled between the more recent suburbs. Major transportation routes, including U.S. Route 40 (U.S. 40) and SR 7, traverse the APE and are spotted with automobile-related businesses and other commercial buildings.

The northernmost part of the APE is in the Fall Zone and the remainder in the Coastal Plain. In the Coastal Plain the land is formed on layers of sand and gravel washed down from the ancient mountains, shaped into gentle hills. The only steep slopes in the APE are the banks of streams,

and there are no high hills or deep valleys. Before the land was cleared for farming, it supported a mixed deciduous forest dominated by oaks and hickories.

The SR 1 Corridor crosses a series of small rivers that drain eastward toward the Delaware Bay and several tributary streams. The largest stream is the Christina River, which is tidal as far inland as Christiana town. South of the Christina are Red Lion Creek and then the Chesapeake and Delaware (C&D) Canal, which occupies the old bed of St Georges Creek.

1.2 SCOPE OF UNDERTAKING

The SR 1 project is a linear corridor that traverses Christiana, White Clay Creek, Red Lion, and St Georges Hundreds in northern New Castle County (Figure 1.1). The project extends for a distance of approximately 10 miles. The northern terminus is located at the Christiana Mall, and the southern terminus is located at Rogers Pit, just south of the Chesapeake and Delaware Canal.

From what LBG has been advised, the proposed undertaking consists of widening SR 1 to three 12-foot travel lanes in each direction between SR 273 and Tybouts Corner. South of Tybouts Corner to the William Roth Bridge, SR 1 will be widened to four 12-foot travel lanes in each direction. The proposed project also includes the alterations, expansion, or reconfiguration of four existing interchanges, listed from north to south: SR 273 at SR 1, U.S. 40 at SR 1, Tybouts Corner and U.S. 13 at SR 1, and SR 72 and SR 1. Bottlenecks along various sections of the corridor caused by volume have spurred the need for greater capacity. Additionally there are five identified Hazard Elimination Program (HEP) sites within the limits of the project that will be addressed.

1.3 AREA OF POTENTIAL EFFECT

For purposes of this study, the APE or study area, defined in DelDOT's Section 106 initiation letter to the State Historic Preservation Office (Fulmer 2012), is limited to 600 feet from the edge of the existing travel lane. Where the 600-foot limit crosses private property, the APE encompasses the entire privately owned parcel. The APE during project development of this undertaking may be refined to include additional properties should greater indirect effects apply. This decision will be made through consultation among the Federal Highway Administration (FHWA), DelDOT, and the Delaware State Historic Preservation Office.

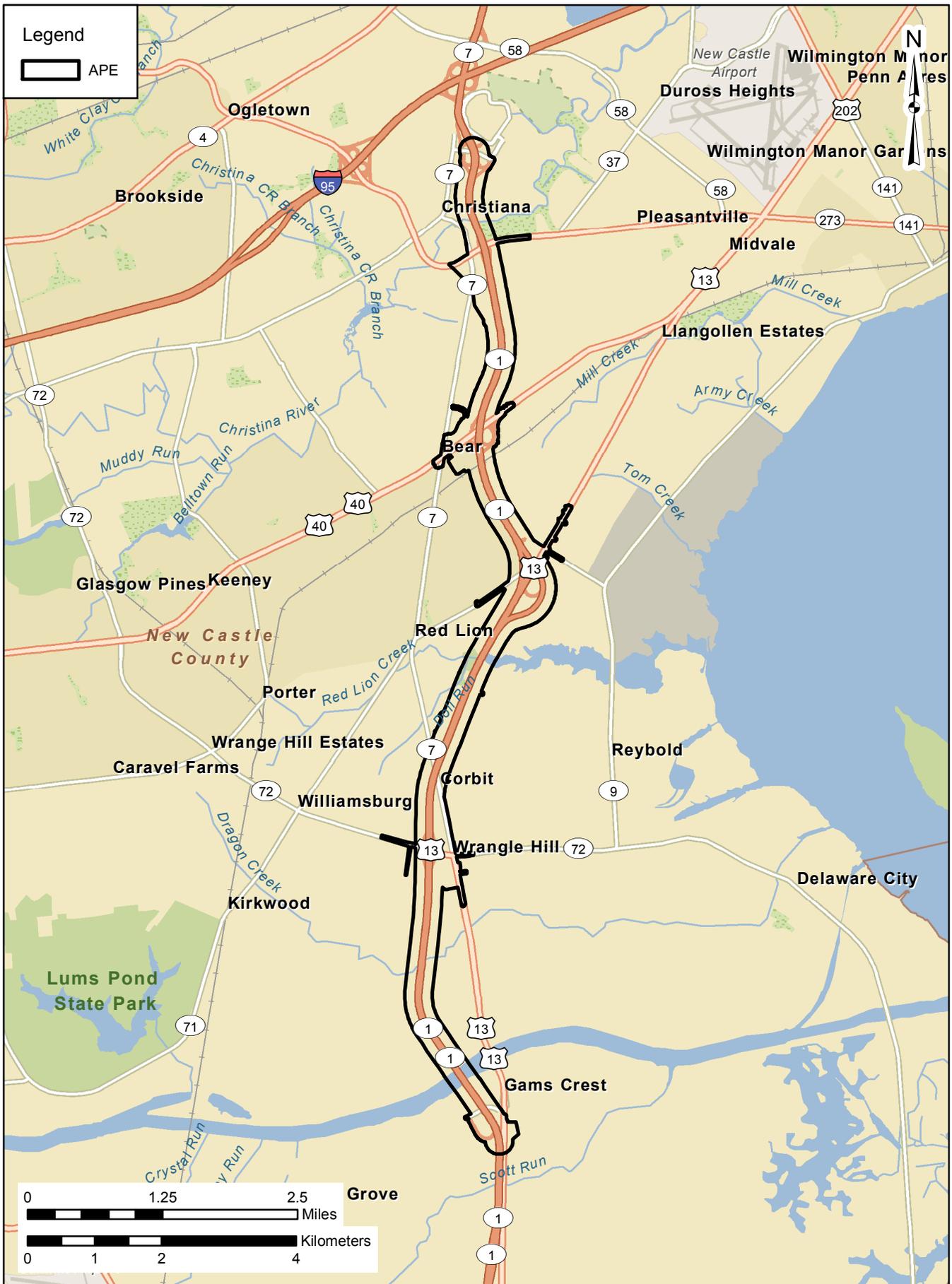


FIGURE 1.1: State Route 1 Road Widening Area of Potential Effect

SOURCE: ESRI 2011

2.0 BACKGROUND RESEARCH

2.1 PREVIOUS INVESTIGATIONS

Numerous cultural resource studies, archaeological and architectural, have been completed in the project vicinity, many of which are associated with the building of SR 1. Table 2.1 lists the previous studies in the vicinity of the APE.

Table 2.1: Previous Studies in Vicinity of APE

TITLE/DESCRIPTION	REFERENCE
<i>Cultural Resources of the Proposed Route 13 Corridor: An Overview Prepared for the Draft Environmental Impact Statement</i>	Custer and Cunningham 1986
Identified 320 standing structures located in the U.S. 13 corridor, 60 of which would be directly impacted by the proposed relief route.	
<i>Architectural Investigation of the U.S. 13 Relief Route, Route 7 to U.S. Route 113, New Castle and Kent Counties, Delaware</i>	Benenson and Bower 1987
Overview of how the study of approximately 140 architectural resources was conducted and a closer look at what were found to be the more historically and architecturally significant resources in the U.S. Route 13 Relief Route corridor.	
<i>Architectural Investigations on State Route 7, U.S. Route 13 to Interstate 95 and at Milltown, New Castle County, Delaware</i>	Bowers 1988
Examination of buildings and structures of potential architectural significance that could potentially be affected by proposed relocation of portions of Route 7. Four properties were included in this investigation.	
<i>A Cultural Resource Survey of the Proposed 301 Corridor, New Castle County, Delaware</i>	Siders et al. 1993
Reconnaissance survey of standing historic structures and a preliminary determination of the potential eligibility of those resources for nomination to the National Register. The study identified 88 historic standing structures.	
<i>New Castle County, Delaware, New Castle Hundred, School Bell Road (SR1 to US40) Improvements, Historic Architecture Survey and Determination of Eligibility</i>	Hyland and Kuncio 2004
Historic resource study to identify and evaluate standing structures in the APE that were 50 years of age or older. One previously surveyed resource and five newly identified resources were evaluated, and none were determined eligible for the National Register.	

Table 2.1 (continued)

TITLE/DESCRIPTION	REFERENCE
<i>I 95/Delaware Turnpike Project, New Castle County, Delaware</i>	Clark et al. 2012
Included a historic architectural investigation associated with proposed Interstate 95 improvements in New Castle County. A total of 27 properties was surveyed, of which 13 had been previously surveyed. Of the surveyed properties, two were recommended as eligible for the National Register.	
<i>New Castle County, Delaware, New Castle and Pencader Hundreds, Route 40 Improvements, SR 896 to SR1, Historic Architecture Survey and Determination of Eligibility</i>	Hyland and Kuncio 2006
Historic resource study to identify and evaluate standing structures in the APE that were 50 years of age or older. The study identified 38 resources, one of which was determined eligible for the National Register.	
<i>U.S. 301 Project Development, Determination of Eligibility Report, St Georges, Pencader, and Appoquinimink Hundreds, New Castle County, Delaware, Volumes 1 and 2</i>	Frederick et al. 2006
Historic resource study to identify and evaluate standing structures in the APE that were 50 years of age or older. A total of 188 resources was identified, 148 of which were not previously surveyed. The study determined that 145 of the resources were not eligible for the National Register.	

Note: studies are listed in chronological order, the oldest first.

2.2 HISTORICAL OVERVIEW

2.2.1 Exploration and Settlement (circa 1630 to 1730)

Colonists from Sweden and the Netherlands rivaled one another for control of land along the Delaware River, with early attempts by the Dutch to establish a settlement in Delaware Bay near present-day Lewes (Sussex County) beginning in 1631. Called Swanendael, the all-male settlement was sponsored by the Dutch West India Company and was centered on the pursuits of whaling and raising grain and tobacco. A 1632 massacre, however, eliminated the colony (Scharf 1888:32-33). The first permanent European settlement in New Castle County and in the State of Delaware was established by the New Sweden Company in 1638 in what is now Wilmington. The Swedish colonists built a fort along the Christina River that they named Fort Christina. The colony itself was called Christinaham and originally consisted of 25 Swedish and Finnish colonists who lived in a small cluster of houses surrounded by cultivated fields (Dixon 1992:11).

The Christinaham colony became the nucleus of a small settlement, one of a string of settlements in Delaware established as New Sweden. During the first decade of establishment, the population of the colony remained low at 183 inhabitants, reaching 368 by 1654. In 1655 the Dutch regained control of the area and built Fort Casimir near present-day New Castle and let Fort Christina fall into ruin. In 1664 the Dutch colonies in Delaware, along with Fort Christina, fell to British control; however, the British encouraged the continued settlement of the area by the Swedish, Finnish, and Dutch colonists (Munroe 1984:24-26). Despite attempts by the Dutch to reclaim its colonies in Delaware in 1673 and 1674, the area remained under the control of the British. In

1682 proprietary rights to Pennsylvania and the land including all of modern Delaware were granted to William Penn, who established the Colony of Delaware. In 1704 Delaware was granted permission from Penn to organize an assembly separate from Pennsylvania (Munroe 1984:43).

In the decades before and after the turn of the eighteenth century, the land in New Castle County outside the small towns was primarily occupied by subsistence farmers who chose where to settle based on the drainage characteristics of soils and the proximity of navigable waters or reasonable passable roads (Bowers 1988:11). By the end of the seventeenth century, New Castle County farmers were shifting from subsistence farming to a more market-oriented farming. Mixed farming was common, in which the cultivation of grains, particularly wheat, was combined with livestock raising. Mills were built along the waterways to assist in the production of grain and became one of the earliest types of manufacturing complexes in the area. The discovery of iron ore in the area attracted a group of Welsh miners and settlers, and in 1684 a grant for the “Welsh Tract” was issued by Penn. Overall, settlement of the region remained sparse and was mostly concentrated along the major waterways.

Delaware was divided into “hundreds” as a form of political division in 1687. New Castle County initially contained five hundreds but was ultimately divided into 11 hundreds. Few roads existed during this period, and those that did were often in poor condition. By 1660 the route known as “Herman’s Cart Road” was in use and connected Appoquinimink (present-day Odessa) with Bohemian Manor in Maryland. Another road ran from New Castle to Appoquinimink and Christiana, and a third connected Ogletown to New Castle (Scharf 1888:413).

The buildings and structures built by the early settlers were typically modest in design. Dwellings on farmsteads were small, wood-frame buildings with earth foundations and often surrounded by an array of outbuildings that made up an agricultural complex, including kitchens, bake houses, meat houses, chicken houses, stables, and grain and tobacco sheds (Herman et al. 1989:63-65). The domestic outbuildings were sited closer to the main dwelling, and the agricultural outbuildings were typically sited closer to the fields. Early commercial buildings, including mills, tanneries, and blacksmith shops, were also typically simple wood-frame structures.

2.2.2 Intensified and Durable Settlement (circa 1730 to 1770)

A second influx of immigration occurred during the Intensified and Durable Settlement period, resulting in an increase in the settlement of inland areas. Between 1725 and 1755, English and Scots-Irish immigrants arrived in New Castle County and worked as indentured servants on local farms. New Castle County, with its fertile soils and access to markets, had evolved into a commercial farming community during this period. In the mid-1770s the average size of a farm in the county was about 200 acres and typically included grain cultivation and livestock raising (Lemon 1972:179).

The increase in population and commercial activities in New Castle County also led to the establishment of towns as well as new modes of transportation and industries. The permanent settlement of Wilmington began in 1731 and had grown to approximately 30 houses by 1736

(Dixon 1992). Initially known as Willingtown, the new settlement was ideally located with a protected harbor in the wide, slow-running Christina River, and a natural energy source from the narrow, swift-running Brandywine River. Willingtown's location was also advantageous for its transportation potential, in particular the navigation of the Christina River to the Delaware River and beyond, as well as already established land routes (DeCunzo 2004:94-95). Wilmington's initial growth was inhibited by its proximity to Philadelphia, which dominated not only the mercantile economy of the Delaware River valley but also the social, religious, and political life of the Pennsylvania colony. However, Wilmington was able to thrive because of its geographic location, which provided a strong economic base for milling and shipping (Dixon 1992:14).

The village of Christiana Bridge, eventually known as Christiana and located immediately west of the northern end of the APE, grew at the foot of a bridge spanning the Christina River and was one of the only hamlets in the Upper Peninsula by 1700. A bridge had been at that location as early as 1686, and the small village evolved on the north bank of the river in White Clay Creek Hundred (Federal Writers' Project 1938:483). The tract of land was originally called Eagle's Point and was surveyed around 1683 for John Ogle, a large landowner of the Hundred. The tract passed to Dr. Rees Jones, Christiana's first known doctor, in 1731. Following his death, the tract passed to his nephew, John Emes, in 1759 before the majority of the tract was sold to nine tenants who were a collection of successful yeomen, merchants, innkeepers, and cordwainers (Dunn 1974). The village's strategic location along the Kings Road (SR 7) from Philadelphia to Baltimore gave rise to its early economic prosperity and lent itself as a resting spot for George Washington as he traveled between the two cities. During this period, in addition to the establishment of Wilmington and Christiana, a number of other towns formed or began to prosper in the Upper Peninsula, including Newport, Cuckoldstoan (Stanton), Newark, and Cantwell's Bridge (Odessa).

Transportation during this period was tied mostly to the waterways, like the Christina River and Red Lion Creek that traverse the APE. However, the inland transport of commercial goods to processing and distribution centers did occur over short distances. Travel between commercial centers and towns was eased by the development of the Philadelphia-Lewes post road, modern day U.S. 13. Many of the early eighteenth-century towns formed along this route, including Red Lion and St Georges, both located near the APE.

The town of St Georges was established sometime before 1730 at a milldam on St Georges Creek. A tavern was at the location as early as 1735 and was still in operation as late as 1762 when the King's Highway was officially surveyed through the area (Federal Writers' Project 1938:335). St Georges was part of a north-south running stage coach route until the arrival of the railroad in the second half of the nineteenth century.

With the intensification of agriculture activities, many farmers turned to slave labor during this period. The slaves came to Delaware through Dutch slave traders and through the emigration of Maryland tobacco planters into the colony during the seventeenth and eighteenth centuries. By 1775 Delaware had 2,000 slaves. Attempts were made to abolish the slave trade in the colony; however, Governor John Penn vetoed the measure put forth by the General Assembly. The state constitution established after the Declaration of Independence prohibited the import and export of slaves (Hyland and Kuncio 2006:9).

Perceived agricultural opportunities, rural population growth, and practices that fostered degradation of once fertile soils led farmers to bring more marginal lands into cultivation as the eighteenth century progressed. During this period large landholdings were increasingly divided into small plots and were either owner-occupied or tenant farms. Agriculture in New Castle County through much of the eighteenth century was based on extensive rather than intensive use of land, in which crop rotation and use of lime or manure for soil restoration was largely unknown. By the 1750s, however, crop rotation became relatively widespread, with corresponding improvements in yields (Catts et al. 1987:25). Many farms produced a surplus of crops, primarily wheat and Indian corn, for market sale in such places as Dover, Wilmington, Philadelphia, and Baltimore (Siders et al. 1993:13).

2.2.3 Transformation from Colony to State (circa 1770 to 1830)

At the start of the Transformation from Colony to State period, the Revolutionary War heavily influenced social, economic, and political developments in New Castle County. Industry developed along the rivers in the commercial centers because of improved milling technology, and Wilmington, in particular, experienced great prosperity after the American Revolution with the dropping of trade barriers and the rise in the price of flour. Merchants began trading flour directly with the West Indies, setting off the town's first major economic and population growth since the early years of its establishment. Along with the expansion of the Brandywine mills, Wilmington also took advantage of an increased demand for shipping, and several new small-scale manufacturing and craft enterprises were established (Goodwin 1986:13). Wilmington's economic growth was also reflected in its population, which rose from 1,200 in 1785 to more than 5,000 inhabitants in 1820 (Dixon 1992).

At the time of the Revolutionary War, Christiana Bridge had become a prominent commercial center with a number of wharves and storehouses built along the river's banks. Nearly 20 shopkeepers and merchants are known to have been conducting business in the village between 1735 and 1800. Its location along a principal road put the village in important location during the Revolutionary War. In 1777 Gen. George Washington ordered battalions to march to Christiana Bridge prior to fighting back the British invasion at Cooch's Bridge (near Newark), the only Revolutionary War battle to occur in Delaware. Additional troops passed through Christiana Bridge, which was chosen by an Act of Assembly as Delaware's supply depository, again in 1781.

Following the war, Christiana emerged as a prominent transshipment point in the Philadelphia-Baltimore trade network, and also functioned as a social and economic center for the surrounding agrarian community. The Christiana Tavern and Shannon Hotel served as points of social interaction for residents and travelers passing through. A post office was opened in Christiana in 1793. The school in the community, which was initially established in 1752, was incorporated into the state education system in 1804 (Dunn 1974). In 1827 the Methodists joined the town's religious community, which already included a Presbyterian congregation established in 1738 (Bowers 1988:6).

During the first decades of the nineteenth century, rural New Castle County experienced widespread depression, with significant out-migration to cities or to new lands in western states.

Those agriculturalists who remained, however, bought up the farms of their less fortunate neighbors, thereby reassembling larger and potentially more productive holdings (Herman et al. 1984:5). The owners of these large farms employed hired laborers and tenants to work their lands. Delaware had a total population, including both slaves and free blacks, of 64,273 inhabitants by 1800, with nearly 40 percent of the total living in New Castle County.

The hard times faced by these farmers came to an end during the second quarter of the nineteenth century with the introduction of new agricultural methods and improved modes of transportation. Thanks to the significant educational and promotional efforts of the New Castle County Agricultural Society, organized in 1818, agricultural practices had significantly improved by the mid-nineteenth century to include fertilization, use of new machinery, and better drainage techniques. Production also expanded to include more dairying in response to demands from the region's expanding urban centers (Catts et al. 1987:28; Herman et al. 1984:5).

At the end of this period, construction began on the Chesapeake and Delaware Canal, which would be an impetus for future industrialization and capitalization in New Castle County that was further propelled by the arrival of the railroads in 1831. Philadelphia merchants revived the construction of a canal that would connect the Delaware River with the Chesapeake Bay, bisecting New Castle County. Wilmington residents initially invested in the Chesapeake and Delaware Canal as they thought it would terminate at the Christina River; however, a southerly route was chosen, cutting the city off from main trade route across the peninsula and ending its monopoly of the portage trade (Goodwin 1986).

2.2.4 Industrialization and Capitalization (circa 1830 to 1880)

Improvements in transportation continued during the Industrial and Capitalization period with the arrival of the railroad in New Castle County. The New Castle and Frenchtown Railroad began the first regular steam railroad passenger service in the county and was the impetus for the establishment of an all rail freight and passenger route to Philadelphia (Jett and Fitting 1979). In 1835 the Philadelphia, Wilmington, and Baltimore Railroad was completed, propelling industrialization and capitalization in New Castle County (Figure 2.1). The line traveled south from Philadelphia through Wilmington to Baltimore, paralleling the Delaware River from Philadelphia until a point north of Wilmington, where it traveled south and west along the Christina River toward Maryland. Other railroads constructed in the state during this period include the downstate Delaware Railroad (1850s) and the Pennsylvania and Delaware Railroad (1870s).

In addition to transportation improvements, the nineteenth century brought an agricultural revival to Delaware, making the state the center for peach production in the eastern United States. Red Lion Hundred, in particular, which began growing peaches in 1831, had the most productive and profitable farms and orchards in the state by 1850. The agricultural productivity can be mostly attributed to the introduction of scientific-farming methods, particularly the use of marl (decayed seashells containing 15 to 18 percent carbonate of lime), which were uncovered during the construction of the Chesapeake and Delaware Canal and applied to the fields of a Red Lion Hundred farmer. The success of that farmer's crops led to the widespread use of marl



FIGURE 2.1: Circa 1850 Map of the Philadelphia, Wilmington, and Baltimore Railroad

SOURCE: Larkin n.d.

until the advent of commercial lime. The peach boom lasted until about 1870, when the orchards were destroyed by a blight called “the yellows” (Jett and Fitting 1979).

The revival of agriculture brought about by improved farm practices in New Castle County, as in other areas of north-central Delaware, was accompanied by a major rebuilding of the agricultural landscape. The rebuilding included the transformation of existing structures as well as erection of completely new structures, both domestic and agricultural. The crib/granary and the bank barn were introduced, and there was increased use of center-passage dwelling plans, complete with fashionable architectural details. Dwellings built during this time also incorporated specific functional areas, such as kitchens, often located in rear ells (Herman et al. 1987:146, 148, 206). These trends extended to houses of tenant farm managers and laborers, as earlier log and frame “tenements” were replaced with new dwellings, which could, particularly for managers, resemble those of a middling farm owner in size and finish (Herman 1987:162).

The town of Christiana did not share in the economic revival enjoyed by the surrounding agricultural community in the mid-nineteenth century. The fact that neither of the major railroads built during this period connected through Christiana and that the Chesapeake and Delaware Canal was constructed south of the town instead of connecting the Elk and Christina rivers as originally planned did not bode well for the town’s growth. Christiana remained a local service center through much of the nineteenth century, but only the churches, hotels, and dwellings of its more prosperous citizens remain extant (Catts et al. 1987:29-34).

Bear, a crossroads community near the APE, became more established during this period. Located at the intersection of the Christiana to Red Lion Road (now SR 7) and the New Castle and Frenchtown Turnpike (now U.S. 40), the hamlet featured a tavern during the early nineteenth century, which was demolished in 1845. Other buildings in the town during the nineteenth century included two general stores, a blacksmith shop, an Odd Fellows hall, and a post office. The hamlet also served as a stop for the New Castle & Frenchtown Railroad and would include a station and water tank by the mid-nineteenth century (Hyland and Kuncio 2006:16).

The impact of the Civil War on Delaware, which had a population of 112,216 before the war, was more socio-cultural than economic. Several military encampments for home guard units were temporarily established throughout the state. Pea Patch Island housed 12,500 Confederate imprisoned soldiers during the war at Fort Delaware (New Castle County City Council 1968). New Castle County, which was home to 49 percent of the state’s population, reportedly had several major links along the Underground Railroad and was sympathetic with the Union. Abolitionists, who were most typically Quakers, had been active in New Castle County for decades prior to the Civil War and often found themselves working against slave catchers who were attempting to collect rewards for the capture of runaway slaves.

A depression, as well as the collapse of the peach industry, followed the war. As there were no longer slaves, laborers began demanding higher wages, while prices of farm products fell. The labor force, particularly former slaves, began migrating to the northern cities. Many tenant farmhouses fell into ruins, and the larger mansions were used to house tenants (Jett and Fitting 1979).

2.2.5 Urbanization and Suburbanization (circa 1880 to 1940)

Figures 2.2 and 2.3 show areas in the project APE in New Castle and Red Lion toward the end of the nineteenth century. During that period competition from agricultural areas of the Midwest and Great Plains hurt the agricultural economy of many areas of the Northeast and Mid-Atlantic regions. North-central Delaware farmers responded with a shift toward diversification, with increasing emphasis on fruits and vegetables. In addition, the introduction of pasteurization and improved methods of refrigeration enabled a significant expansion of the dairy industry throughout northern Delaware (Passmore et al. 1978:41-2). Both dairying and fruit and vegetable farming in New Castle County benefited by proximity of many urban centers, such as Baltimore, Wilmington, and Philadelphia, and the many methods of transportation available for the transport of goods. In the Piedmont uplands the growth of dairy farming was expressed, architecturally, by expansion of existing bank barns with large hay sheds, while it was represented farther south by the use of a “new” material (concrete) and erection of new barns with concrete block ground stories and concrete floors.

During this period farm size and the total acreage of farmland in the state began to decrease owing to farm abandonment and the start of suburbanization. In 1912, 84 percent of the land area in the county remained agricultural. The 1910 census listed over 2,000 farms in the county with over half farmed by their owners (Clark et al. 2012:28). After 1910 farm sizes began to decrease, with farms of 100 acres or less in the majority from a previous average of 130 acres in 1880, and tenant farming became even more prevalent (De Cunzo and Garcia 1992:28).

World War I brought increased industry to many of the county’s urban centers. Wilmington’s shipyards, foundries, tanneries, and munitions plants increased production as part of the war effort. The shipyards produced freighters used for shipping cargo overseas, and the tanneries produced leather used in ships, passenger rail cars, uniforms, and shoes. DuPont had a government contract as the sole manufacturer of military gunpowder and supplied more than 40 percent of the gunpowder used by Allied forces. This economic upturn was short-lived, however, and after the war ended in 1918, Wilmington’s industry entered a decline that continued through the Great Depression until the onset of World War II. Several of the city’s major plants closed in the 1920s and the 1930s, including Bethlehem Steel, Jackson & Sharp, and the Lobedell Car Wheel Company (Dixon 1992:36; Zug-Gilbert and Diamanti 2011).

The use of roads for travel became popular with the growing affordability of automobiles for both commercial and private use. In 1903, following the National Good Roads Convention, the General Assembly of Delaware passed an act that provided matching funds for the construction of permanent roads. When the act was repealed two years later, New Castle County began its own road improvement program. Between 1905 and 1908, the county constructed nearly 73 miles of improved roads, and by 1916 New Castle County had 220 miles of improved roads (Rosin and Bowers 1992:4-5).

Between 1913 and 1917, the number of registered automobiles in Delaware soared from 3,050 to 10,702, a trend also evident on a national level. The increase in car ownership led to a national

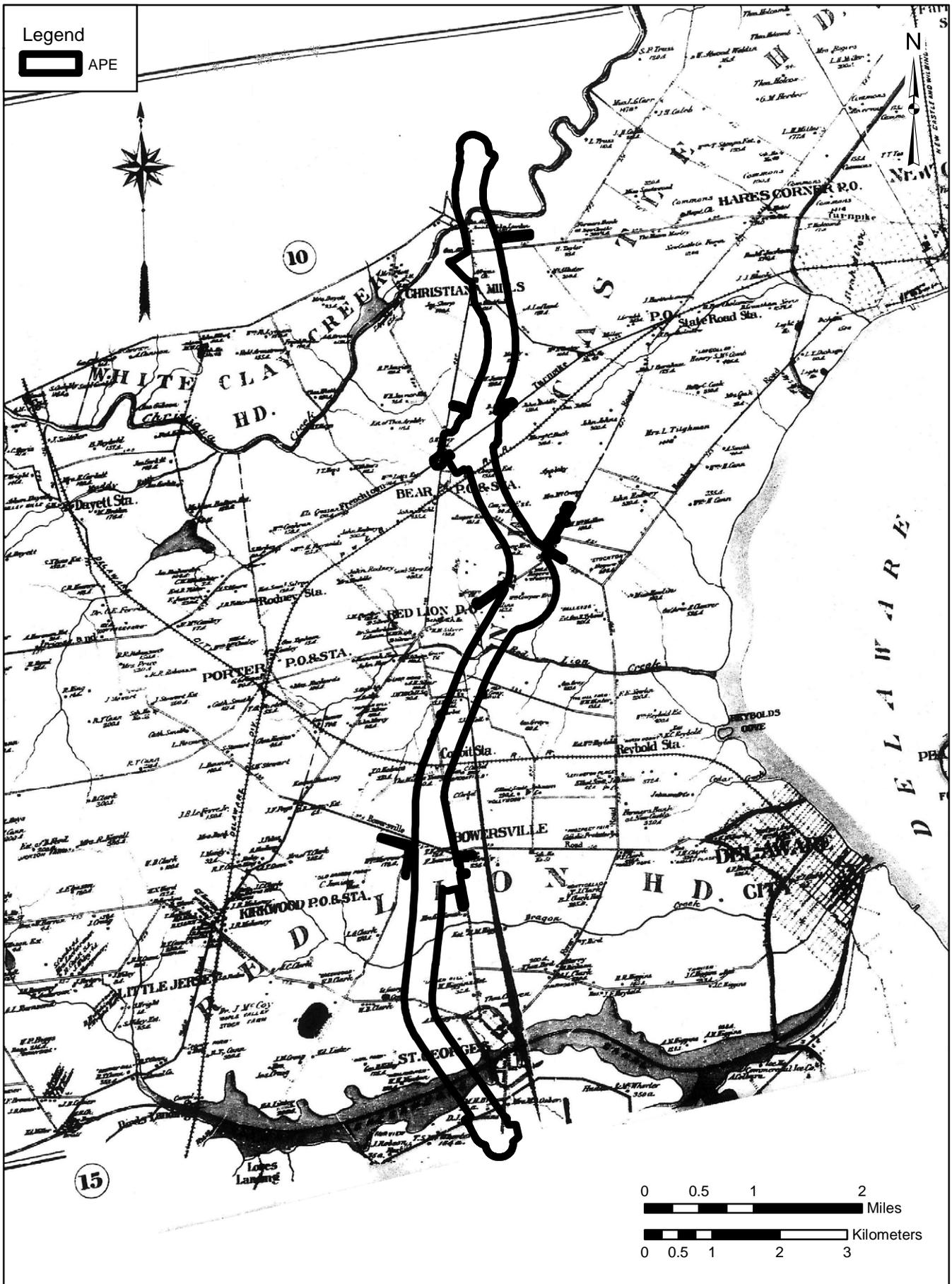


FIGURE 2.3: 1893 Baist Map, Detail of Red Lion and New Castle Hundreds

SOURCE: Baist 1983

interest in road improvement, and in 1916 Congress passed the Federal Aid Highway Act, providing for federal matching funds for road construction but only to states having highway departments staffed with qualified engineers (Rosin and Bowers 1992:6). As a result the Delaware State Highway Department was established in 1917 to construct and improve Delaware's primary road system, and within six years over 89 miles of modern roads had been built in Delaware. The DuPont Highway (present-day U.S. 13) was originally completed in 1924 as a single-lane road and followed the old eighteenth-century King's Highway in several locations. To reduce congestion, the Delaware State Highway Department expanded the highway with dual northbound and southbound lanes beginning in 1927. When the project was completed in 1934, the Dover to Wilmington span became the country's first divided highway and a model for future projects (Francis and Hahn 2009:8). Improvements were also made to U.S. 40, and by 1927 the highway extended through Delaware into New Jersey with the use of a ferry service. Ultimately, the Delaware Memorial Bridge was constructed in 1948-1951 to carry vehicles across the Delaware River at this crossing (Hyland and Kuncio 2006:17).

The new and improved road system brought new forms of growth and development in New Castle County. Commercial enterprises, including those offering services for automobile travel, were built along the new thoroughfares. Commercial services were built in strips, and restaurants and diners, service stations, and campgrounds and tourist cabins (the forerunners of roadside motels) were built to accommodate automobile travelers (Rosin and Bowers 1992:8-9). A change in design aesthetic for commercial architecture resulted from the new forms of commercial development and was based on the need to ease automobile access to the services. Areas for parking and maneuvering cars close to businesses were incorporated into the new designs. Beginning in the mid-1930s, architecture began also to replicate the aerodynamic, streamlined designs of cars, as seen in the Streamline Modern style (Rosin and Bowers 1992:18).

Some residential buildings were also built along the new transportation routes, which provided a means for a quick commute to urban centers. The residences were typically vernacular in style with some architectural details influenced by popular styles of the time, including Colonial Revival, Craftsman, and Cape Cod (Hyland and Kuncio 2006:17). Although land adjacent to the highways became developed, the land beyond mostly retained its agricultural character with farmers taking advantage of the roads for efficient transport of crops to market.

Residential development surrounding Wilmington during this period took on the form of subdivisions. From 1880 to 1950, 182 Wilmington area subdivisions were built in Brandywine, Christiana, Mill Creek, and New Castle hundreds (Chase et al. 1992:25). Twenty-three of these subdivisions were built in New Castle Hundred, north of the APE. The earlier subdivisions were typically laid out in a grid pattern; however, in the 1920s, as parkways grew in popularity, subdivisions were designed with curvilinear roads, which were thought to make a more scenic subdivision and to slow motor traffic. These earlier subdivisions often took several years to build, which would typically result in more variety of architectural styles as the houses reflected the changing trends in residential design (Chase et al. 1992:30).

Figures 2.4, 2.5, and 2.6 show Tybout's Corner and St Georges from 1923 to 1931.



FIGURE 2.4: Tybout's Corner, Looking South, 1923

SOURCE: DeIDOT var.



FIGURE 2.5: Tybout's Corner, Looking South, Undated

SOURCE: DeIDOT var.



FIGURE 2.6: Aerial View from St Georges, Looking North, 1931

SOURCE: DeIDOT var.

2.2.6 Suburbanization and Early Ex-Urbanization (1940 to present)

Land use in New Castle County, particularly the northern section of the county, continued to become more urbanized, a trend that started during the Depression of the 1930s and accelerated during the post-World War II era. Increased automotive transportation as well as improved roads continued to lead to new patterns of settlement. While urban population growth continued, there was also an expansion of a non-agricultural but residential population into rural areas. Both residential and commercial development took place along primary and secondary roadways in the county. After Christiana, New Castle Hundred had the second highest hundred population in northern New Castle County with 8,261 residents in 1930, and by 1960 the hundred had more than tripled with 40,293 residents. White Clay Creek Hundred also experienced a substantial population increase between 1930 and 1960, from 5,476 to 20,040. Similar growth did not occur in Red Lion and St Georges hundreds since they were farther from population centers (Crosswhite and Vaughn 1962:5, 17).

Residential development was typically tract housing in the form of planned subdivisions and strip developments along the edge of agricultural land. Like elsewhere in the United States during this time, the houses were often simple examples of Cape Cod, Minimal Traditional, and Ranch dwellings. While planned subdivisions grew up around Wilmington, Newark, and New Castle, the APE remained predominantly rural. A small number of strip developments and minor subdivisions were established along major thoroughfares as farmers sold off portions of their land (Figure 2.7).

Wilmington retained its status as the industrial center of the state, with its industries shifting to chemicals and automobiles between 1948 and 1960; however, the new facilities were located outside the city limits, continuing the trend of both commercial and residential expansion into the neighboring suburbs. DuPont retained its corporate headquarters in downtown Wilmington but had plants in Newport and Edgemoor, an experimental station along the Brandywine, and a technical facility east of Elsmere, all outside the city limits. General Motors opened its first postwar production plant on Wilmington's outskirts near Elsmere in 1947. Suburban expansion brought new residential communities, improved roads, commercial businesses, and other infrastructure improvements in the vicinity of the new facilities (Zug-Gilbert and Diamanti 2011).

Rapid urbanization took off again during the 1960s with Delaware becoming a valuable throughway for interstate commerce. The continued decentralization of manufacturing and businesses outside city centers during this period was accompanied by the population growth and the growing suburbanization of the county. St. Joe Paper Company owned a 618-acre site in Brandywine Hundred, American Viscose Corporation owned a 218-acre complex south of New Castle, and General Motors operated a plant outside Elsmere (Crosswhite and Vaughn 1962:11). The suburbanization that developed around the large metropolitan areas was mostly large unincorporated housing developments. In northern New Castle County, Brandywine had 6,385 acres of subdivisions, Christiana Hundred had nearly 2,500 acres, and New Castle Hundred had 2,800 acres of subdivisions (Crosswhite and Vaughn 1962:8).

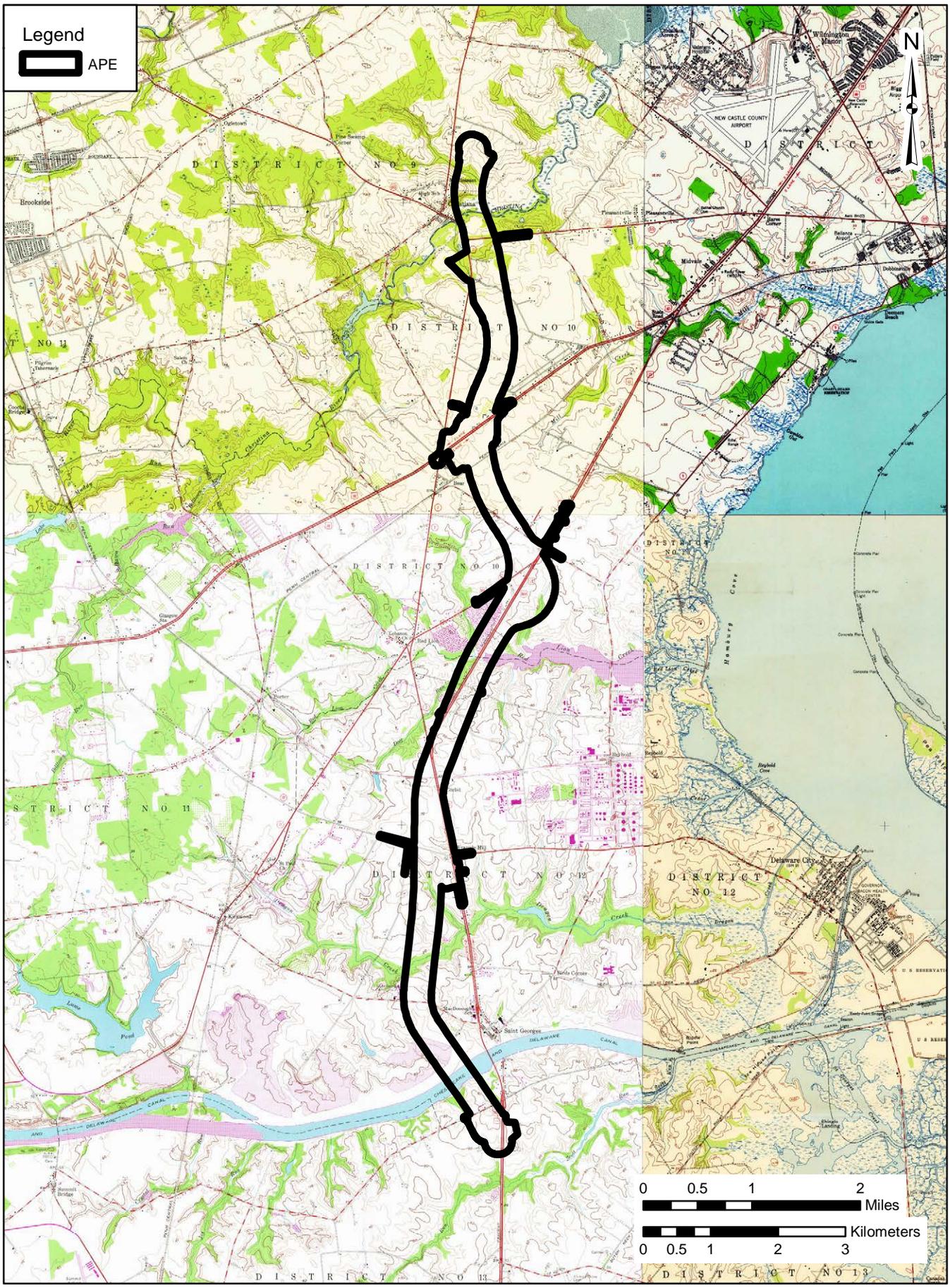


FIGURE 2.7: Map Showing APE circa 1953

SOURCE: USGS 1948, 1951, 1953a, 1953b

The more southern and western hundreds in New Castle County, including Millcreek, Pencader, Red Lion, New Castle, and White Clay Creek, retained their mostly agricultural status during the 1960s, particularly with commercial farms. In 1960 Pencader, followed closely by Millcreek, had the highest acreage of cropland among the hundreds with 10,190 acres. Christiana, New Castle, and Red Lion hundreds all had about 5,000 acres of cropland each (Crosswhite and Vaughn 1962:9). The principal commercial farming activities were centered on dairy, beef, and mushroom production, and most commercial farming was concentrated in Mill Creek, Pencader, Red Lion, and lower New Castle County hundreds. Grassland and livestock raising were more common in the Piedmont regions, and feed grain and cash crop production were more typical in the Coastal Plain. Residential farms were more commonly found in Mill Creek, upper Pencader, White Clay Creek, and Christiana hundreds (Crosswhite and Vaughn 1962:14) (Figure 2.8).

Suburbanization outside the city centers in New Castle County also continued into the late twentieth century. Beginning in 1970, state officials proposed a north-south turnpike connecting Dover to I-95. A number of studies were undertaken to recommend routes, one of which advocated that the new road be built west of U.S. 13 similar to today's SR 1. No action was taken at that time on any of the proposed plans.

Finally, in 1983 DelDOT began new studies on a north-south corridor. Known initially as "U.S. 13 Relief Route," the new 51-mile highway was constructed to bypass the heavily traveled U.S. 13 and to serve as a relief route for north-central Delaware. DelDOT proposed three basic alignments: a westerly corridor that would run west of U.S. 13, a central corridor that would reconstruct U.S. 13 as a freeway with service roads, and an easterly corridor located east of U.S. 13, possibly as far east as SR 9. In 1987 the alignment's location was approved by the Federal Highway Administration (FHWA) and the Environmental Protection Agency. The approved route did not hold to a single alignment but also used existing road alignments. From Christiana south to Tybouts Corner, the road was a reconstruction of the existing four-lane divided SR 7. The 23 miles from Tybouts to Smyrna crossed U.S. 13 several times and, in places, used the existing alignment. The southern 17-mile section from Smyrna to Dover Air Force Base was built on a new alignment east of U.S. 13.

Construction on the sections of SR 1 in the APE took place between 1987 and 1993 (Figure 2.9). Even as early as 1993, the nature of the APE had dramatically shifted from rural to suburban in the vicinity of the new highway. When completed in 2003, the route, now known as the Korean War Veterans Memorial Highway, was the single largest public works project undertaken in Delaware history (Kozel 2010). Today, the areas around SR 1 in the APE consist mostly of large-scale subdivisions and commercial areas.

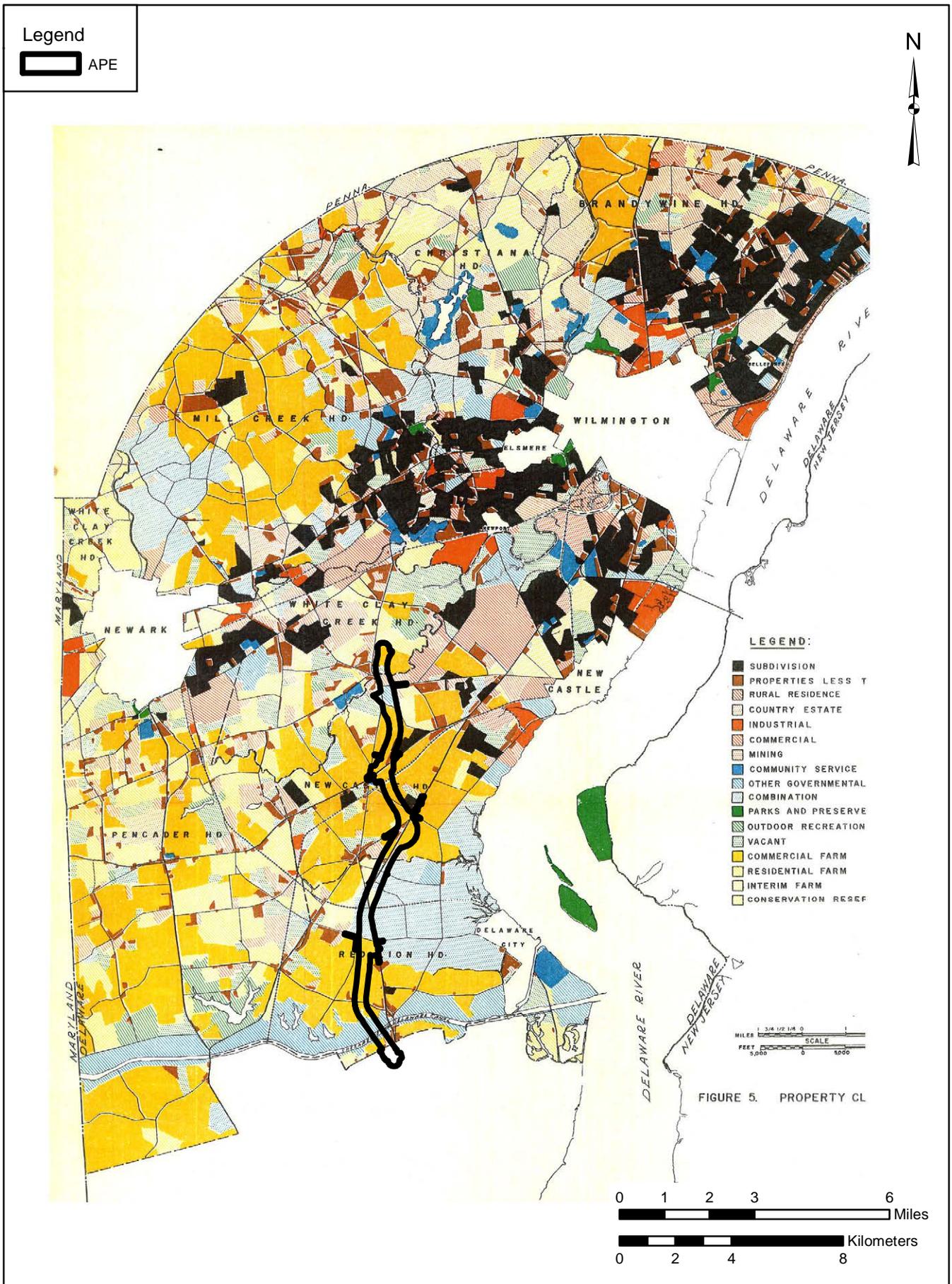


FIGURE 2.8: 1962 Map Showing Land Uses in Northern New Castle County

SOURCE: Crosswhite and Vaughn 1962

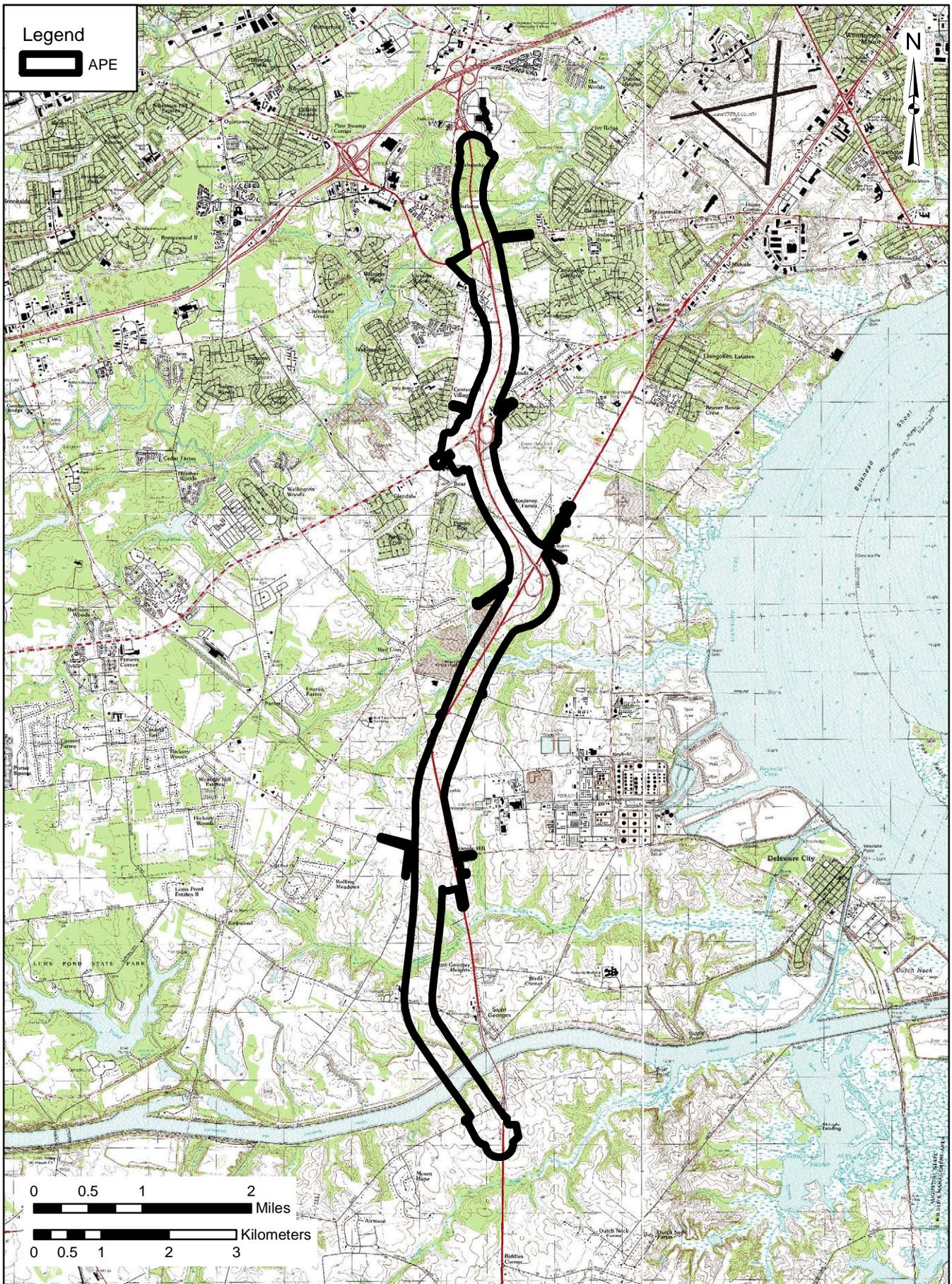


FIGURE 2.9: Map Showing APE in 1993

SOURCE: USGS 1993a, 1993b, 1993c, 1993d