Background Research III

III. BACKGROUND RESEARCH

Geographic Setting

The Project Area (PA) is located in the extreme northwest section of Delaware, approximately 1.61 kilometers (1.0 miles) southeast of the Pennsylvania State line and some 12.87 kilometers (8.0 miles) northwest of Wilmington. It is centered along SR 41 (Lancaster Pike) and extends from approximately Ash Tree Lane to Brackenville Road in Hockessin, New Castle County, DE. The Area of Potential Effects (APE) has been defined as properties adjacent to or with direct views to the PA and encompasses the properties fronting SR 41 and 1410 Old Lancaster Pike. The proposed alterations to SR 41 are safety improvements that include widening SR 41 to accommodate left turn lanes.

Delaware is the second smallest state, 96 miles long and from 9 to 35 miles wide with a total area of 1,982 square miles. It borders the Atlantic Ocean, Delaware Bay and New Jersey to the east, Pennsylvania to the north, Maryland to the west, and Virginia to the south. As part of the Atlantic coastal plain, it is almost entirely flat with shallow and slow-moving rivers. The exception is its northwest corner where the coastal plain meets the foothills of the Appalachians, the Piedmont Plateau, creating a fall line. Delaware's highest point on the Piedmont Plateau is near Ebright Road in New Castle County, 447.85 ft. above sea level.[1]

New Castle is Delaware's northernmost and smallest county at 438 square miles. The county symbol is the Ship, a symbol of New Castle's shipbuilding industry and Delaware's extensive coastal commerce centered at New Castle City and Wilmington. Wilmington is the county seat, located on Delaware's northern coast, 40 miles southeast from Philadelphia. Historically, almost 50% of Delaware's population lived in New Castle County, the greatest percentage in Wilmington.

Hockessin, or "place of many foxes", is one of the highest points in Delaware. It was originally part of Letitia Manor, a 15,000-acre estate given by William Penn to his daughter. Just over the border from Chester County, Pennsylvania, Hockessin shares many similarities with southeastern Pennsylvania, such as mushroom cultivation and kaolin mining, significant Hockessin industries since the 1870s. De Beers' atlas shows five houses along this section of Old Lancaster in 1868, including the Hockessin Post Office (Figure 3). The town experienced a significant boom after the Wilmington and Western Railroad reached the town in 1872. More than half of the historic buildings adjoining the Project Area date from circa 1880 (Figure 4a-b).[2]

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[1] Dr. Carol E. Hoeffecker. *Delaware: the First State* (Wilmington, DE: Middle Atlantic Press, 1988), 2-1.
[2] J. Thomas Scharf. *History of Delaware 1690-1888* (Philadelphia: L. J. Richards and Co, 1888), 927.

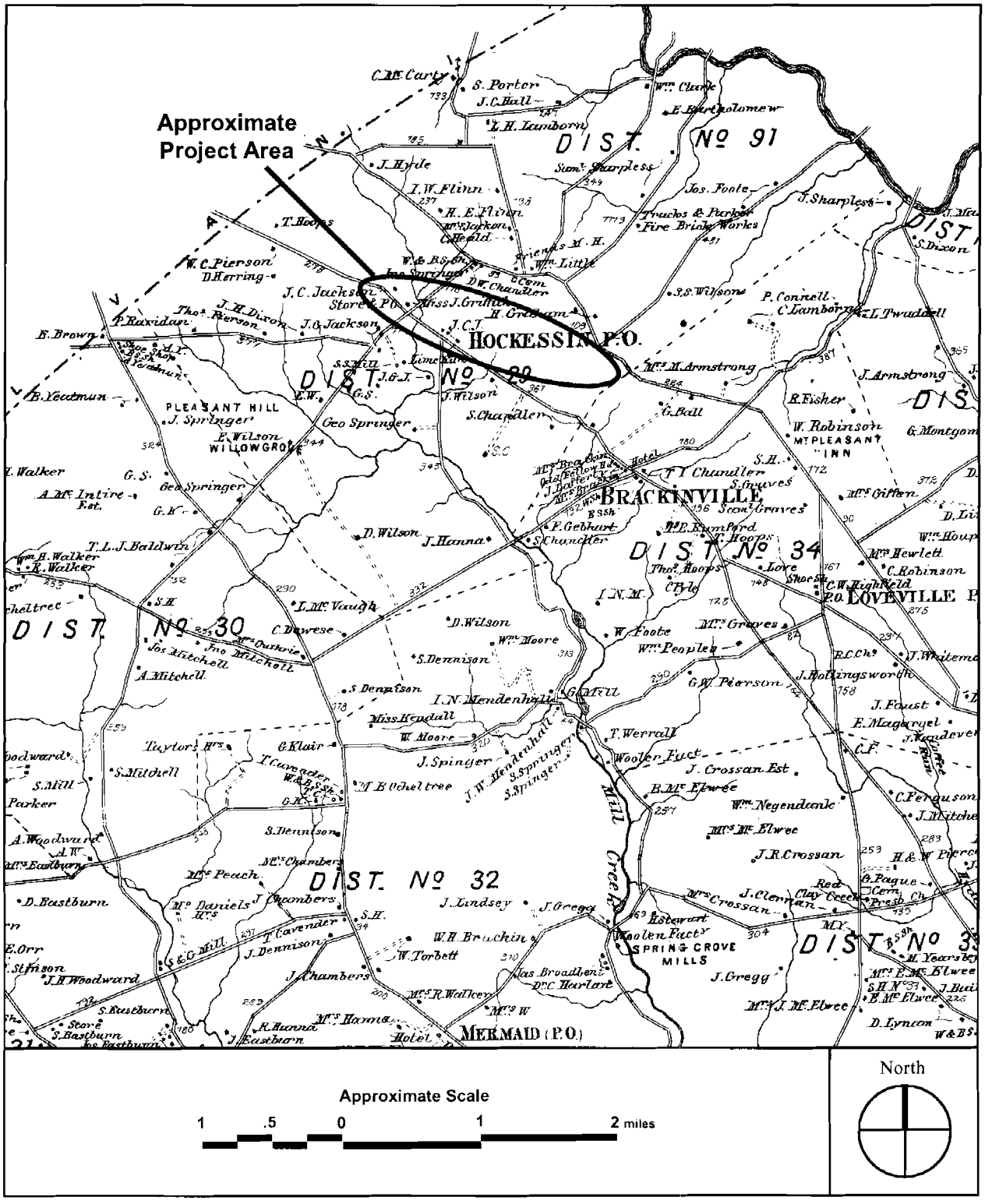

Figure 3. Mill Creek Hundred c. 1868. (Source, D.G. Beers' *Atlas of the State of Delaware*, Pomeroy & Beers, 1868).

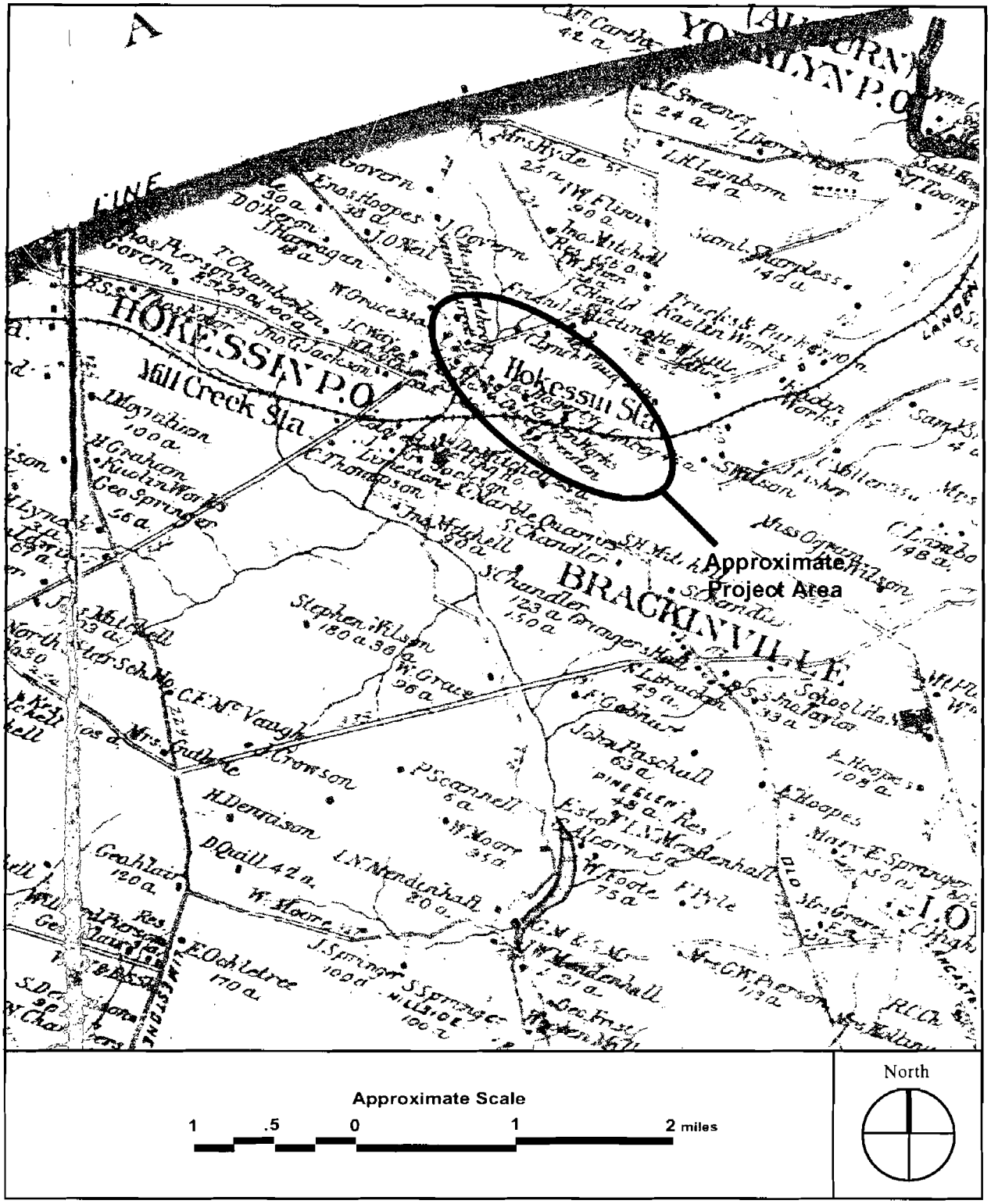

Figure 4a. Mill Creek Hundred c. 1893. (Source, the *Atlas of New Castle County*; Philadelphia: G. W. Baist,1893).

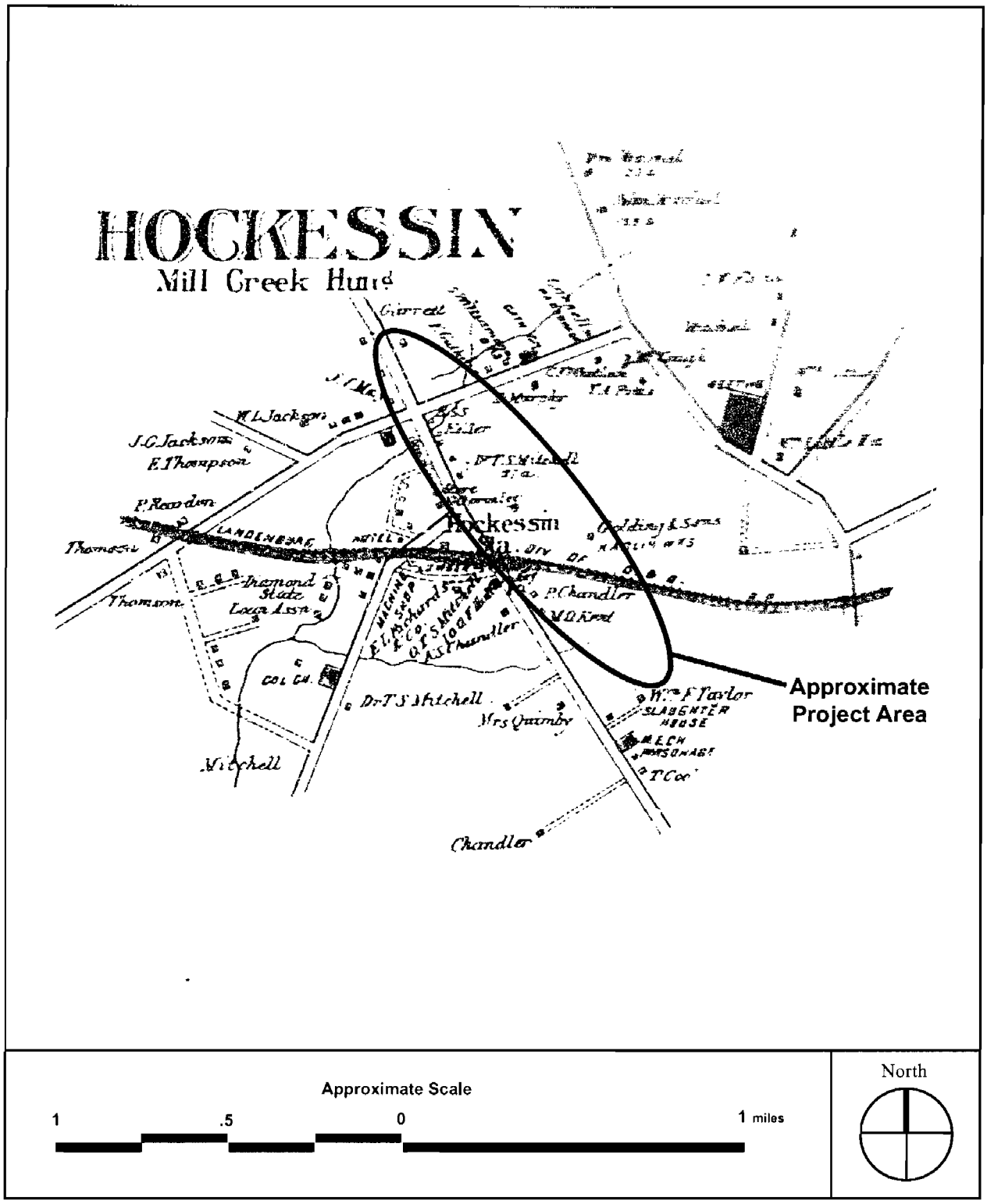

Figure 4b. Detail of the Village of Hockessin c. 1893. (Source, the *Atlas of New Castle County,* Philadelphia: G. W. Baist, 1893).

Environmental Setting

The proposed S.R. 41 Hockessin project area lies within the Piedmont Uplands Physiographic Province. Sections of the Piedmont Uplands in this portion of the State are underlain by bedrock of the Baltimore Gneiss (felspathic biotite gneiss and minor schist) and Dockeysville Marble Formations[3] and are characterized by an overall hilly relief with moderately to steeply sloping upland topography dissected by narrow incising stream valleys).[4] While elevations throughout the Piedmont generally fall within 30 and 120 meters (100 – 400 feet) above mean sea level (asml) ground surfaces in the vicinity of the present project area lie between approximately 76 and 107 meters (ca. 250 – 350 feet) asml. Topographically, the project area perpendicularly cross-cuts, and traverses nearly all sections of the Mill Creek drainage basin prism. To the extreme east and west, respectively, the proposed APE occupies sections of the rather sharply inclined valley side slopes and the pronounced upland landforms associated with them. In contrast, long stretches through the middle of the project area lie within the lower lying and gently sloped stream valley bottom and exhibit a much more uniform overall ground surface relief. The lowest elevated portion of the APE is located to the east of the intersection of S.R. 41 and Old Lancaster Pike, in the immediate vicinity of Mill Creek and its associated wetlands.

Within this region of Delaware major drainages, including the Brandywine, Red Clay, and Mill Creeks, all flow in a general south-southeast trending direction following the strike of the of the Piedmont front before intersecting higher order streams (White Clay Creek/Christina River) along the Fall Line with the Atlantic Coastal Plane Physiographic Province. Mill Creek, the primary drainage in the immediate vicinity of the S.R. 41/Hockessin APE, originates from headwaters located a short distance north of the project area and crosses under the roadway immediately to the east of the intersection with Old Lancaster Pike. From here the creek meanders south and ultimately flows into White Clay Creek to the southwest of the Village of Stanton. While no other natural drainages intersect the Project Area, several additional small tributary streams are present in lands just to the south.

Near surface soils within the project area fall into the Glenelg-Manor-Chester group and are represented by a total of five individual type classifications that, taken together, support a rich and varied assortment of plant and animal resources (Figure 5). Individual soils present include those of the Glenelg, Glenville, and Hatboro series and are listed in Table 1, along with brief descriptions of their basic characteristics and habitat potentials. Of the types represented Glenelg and Manor Loams (GmB2 & GmC2) are deep well drained soils normally found within upland areas of the Piedmont Plateau (3-15% slopes). The Glenville Silt Loam (GnA & GnB2) are moderately to poorly drained soils normally found along the upper courses of drainageways within upland areas (0-8% slopes). The Hatboro Silt Loam (HbA)series soils are characterized as deep poorly drained soils normally found in association with floodplains and upland areas of the Piedmont Plateau (0-3% slopes).

Lithic resources within the vicinity of the S.R. 41/Hockessin APE include both primary outcrop formations and secondary cobble deposits. Primary lithic sources are represented by jasper, chert, and chalcedony materials associated with the Delaware Chalcedony Complex, the nearest outcrops of which are found to the southwest, in the Broad Run Valley of southern Chester County, in Pennsylvania, and in the vicinity of Newark, Delaware. Additional primary lithic sources include natural outcrops of quartz, quartzite, argillite, diabase, and granite found in scattered locations throughout the Piedmont uplands. Secondary lithic resources derive from the course sediments of the Columbia Formation in the Atlantic

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[3] (Delaware Geologic Survey 1976)

[4] E.D. Matthews and A. L. Lavoie. *Soil Survey of New Castle County, Delaware*. Washington, D.C: United States Department of Agriculture, Soil Conservation Service and the Delaware Agricultural Experiment Station, 1970. J.F. Custer. *Prehistoric Cultures of the Delmarva Peninsula: An Archaeological Study*. Cranbury, NJ: Associated University Presses, 1989.

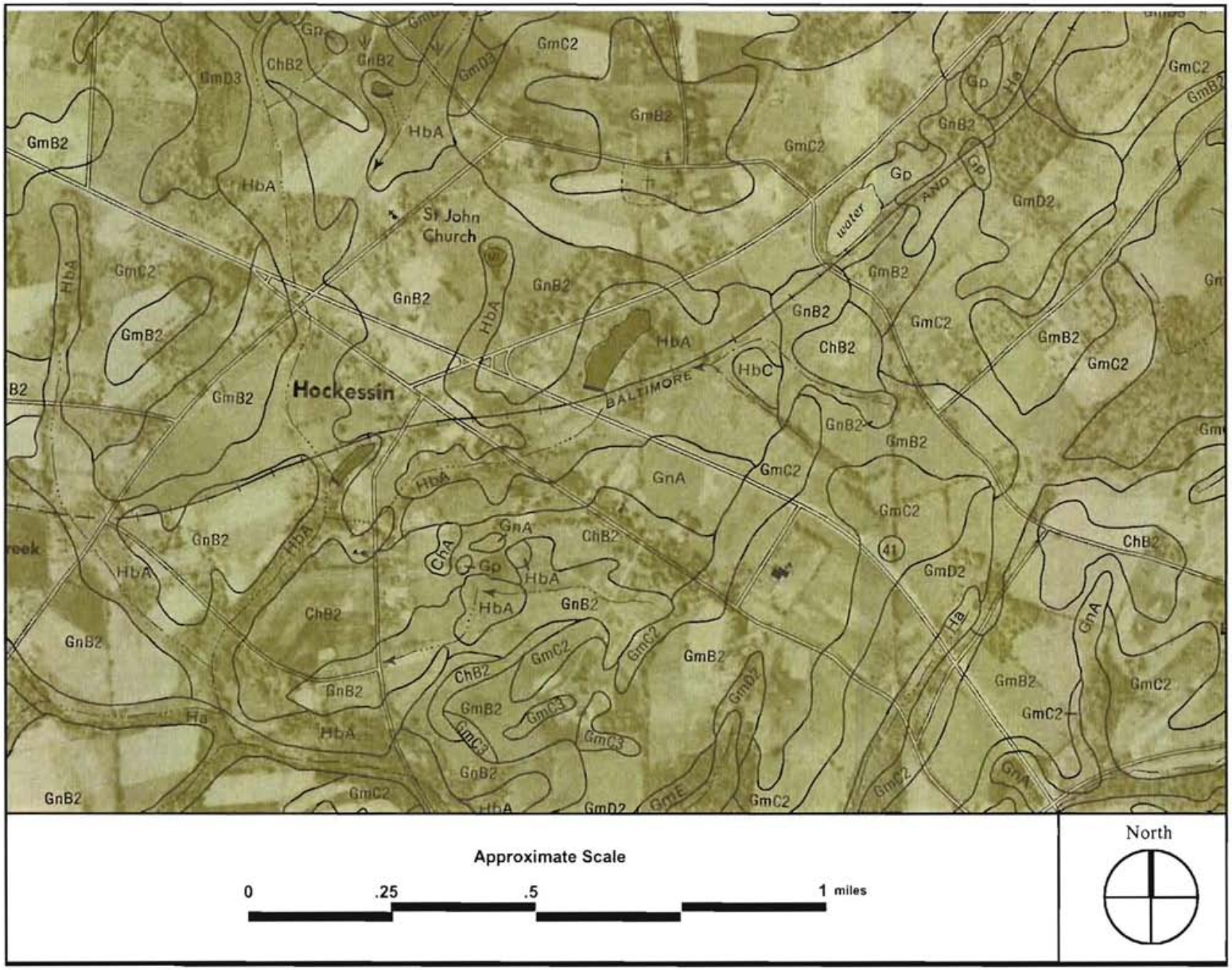

Figure 5. Hockessin Road Soils Distribution. (USDA, *Soil Survey of New Castle County, Delaware*, Soil Conservation Services, 1970).

Table 1. *Soils and Soils Properties*

Symbol	Name	% Slope	Landform	Drainage/Erosional Properties	Habitat Potential
GmB2	Glenelg and Manor Loams	3-8%	Upland areas of the Piedmont Plateau	Deep, well drained soils; subject to moderate erosion	Good for a variety of mixed hardwoods, mainly oak. These soils are good for most agricultural uses with erosion as the only limitations.
GmC2	Glenelg and Manor Loams	8-15%	Upland areas of the Piedmont Plateau	Deep, well drained soils; subject to severe erosion	Good for a variety of mixed hardwoods, mainly oak. These soils are good for most agricultural uses. However, the erosional hazard is severe and if cultivated regularly they require extensive soil erosional control measures.
GnA	Glenville Silt Loam	0-3%	Along the upper courses of drainageways of upland areas.	Moderately to poorly drained soils only slightly susceptible to erosion	Good for a variety of hardwoods, including oak, maple, and tulip-poplar. These soils are limited for agricultural use by seasonal wetness and impeded drainage.
GnB2	Glenville Silt Loam	3-8%	Along the upper courses of drainageways of upland areas.	Moderately to poorly drained soils susceptible to moderate erosion.	Good for a variety of hardwoods, including oak, maple, and tulip-poplar. These soils are limited for agricultural use by seasonal wetness and impeded drainage.
HbA	Hatboro Silt Loam	0-3%	Floodplains and Uplands of the Piedmont Plateau.	Deep, poorly drained soils subject to minimal erosion.	Good for a variety of water tolerant hardwoods including willow, alder, and gum. These soils are limited for ost agricultural uses due to flooding and a seasonally high water table.

Coastal Plain. These materials consist of alluvial cobble deposits of quartz and quartzite, along with lesser amounts of jasper, chert, and chalcedony, that have been eroded out of the Piedmont Uplands, to the west.[5] The nearest deposits of these materials are found within both the White Clay and Christina River valleys, along the shores of Churchman's Marsh to the southeast.[6]

Prehistoric Overview

The prehistoric archaeological record of the Delaware Piedmont Uplands can be divided into four chronological units, defined on the basis of sets of shared cultural characteristics and common adaptations to similar environmental conditions: The Paleo-Indian Period (ca. 12,000 B.C. - 6,500 B.C.), the Archaic Period (6,500 B.C - 3,000 B.C.), the Woodland I Period (3,000 B.C. - A.D. 1,000), and the Woodland II Period (A.D. 1,000 - A.D. 1650). A fifth time segment, the Contact Period may also be considered and lasts from approximately A.D. 1650-1750. While Native American groups may have still existed in this region after the latter date, their culture, by that time, had been irreversibly altered by contact with European peoples. The following paragraphs describe the defining characteristics of each of these Culture Periods.[7]

The **Paleo-Indian Period** (ca. 12,000 - 6,500 B.C.) encompasses the block of time witnessed by the final retreat of the Pleistocene glacial conditions from eastern North America and the onset of more modern Holocene environments. The distinctive feature of this Culture Period is an adaptation to the cold, and alternately wet and dry, conditions characterizing the times and manifested in the form of a lifestyle based primarily on hunting and gathering of foods, with hunted foods possibly comprising a large portion of the diet. Hunted animals may have included now-extinct megafaunal species, including mammoth, mastodon, Eastern Bison, camels, and horses. A mosaic patterning of deciduous, boreal, and grassland environments would have provided a large number of productive habitats for these game animals in Northern Delaware and permanent watering habitats, such as those in the vicinity of Churchman's Marsh, would have been particularly good hunting settings.

Paleo-Indian populations are believed to have exhibited a highly mobile lifestyle incorporating a fairly fluid social organization based on relatively small bands of single and multiple family units. Tool kits of these peoples reflect their reliance on hunted animal resources and is characterized by a preference for high quality lithic materials and the long-term curation and maintenance of finished tools. Throughout the 5500 year time span of this period, the basic adaptation remains relatively constant, though with some modifications appearing as Holocene environmental conditions begin to emerge.

Reflecting their preference for high quality lithics, the most common known Paleo-Indian sites are quarry-related base camps, reduction workshops, and temporary hunting camps situated near surficial raw material outcrops. Within Northern Delaware such outcrops are represented by the so-called Delaware Chalcedony Complex, located in the extreme northwest portion of New Castle County, in the vicinity of modern-day Newark. A secondary location for Paleo-Indian sites is adjacent to poorly drained swamps, springheads, and sinkholes, within environments similar to those surrounding Churchman's Marsh.

The **Archaic Period** (6,500 B.C. - 3,000 B.C.) is characterized by a series of adaptations to the newly emerged full Holocene environments. These environments differed from earlier ones and were dominated by mesic forests of oak and hemlock. A reduction in open grasslands associated with the onset of warm

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[5]Custer 1989, J.F. Custer. *Prehistoric Cultures of Eastern Pennsylvania*. Harrisburg: Pennsylvania Historical and Museum Commission, 1996.
[6] J.F. Custer and C.A. DeSantis. *A Management Plan for Prehistoric Archaeological Resources of Northern Delaware*. Newark, DE: University of Delaware Center for Archaeological Research, 1986.
[7] Custer, 1989. Custer, 1986.

and wet conditions caused the extinction of many of the grazing megafaunal species hunted in earlier times, and saw them replaced by browsing species such as deer. Sea level rise accompanied the melting of glacial ice and resulted in the elevation of the local water table and the creation of a number of large interior swamps, including Churchmans Marsh. Warmer, wetter climatic conditions resulted in the rise of a greater variety of edible plant resources and aquatic environs such as rivers, lakes, and marshes, along with their immediate surroundings, became substantially more productive. In the face of this proliferation of resources Native subsistence strategies changed from the hunting focus of the Paleo-Indian Period to a more generalized foraging pattern in which plants and aquatic foods played a more important role.

Reflecting this more diversified environment Archaic Period tool kits were more generalized than those of the Paleo-Indian Period and witnessed the increased use of, and reliance on, a wider array of pecked/ground plant processing tools such as grinding stones, mortars, and pestles. The presence of other tool forms, such as net sinkers, indicate an increased exploitation of, and reliance on, aquatic resources. Native populations evidently continued to lead a fairly mobile lifestyle with a wide range of resources and settings utilized on a seasonal basis. Social structure continued to be typified by band-level organization, with group membership evidently shifting on a seasonal basis in relation to resource availability. During this time favored site locations became more diversified and included upland settings near both ephemeral and perennial streams and elevated landforms adjacent to swampy floodplains.

The **Woodland I Period** (3,000 B.C. - A.D. 1,000) can be correlated with a dramatic change in local climates and environments that seem to be associated with events occurring throughout the Middle Atlantic region. Following the onset of a pronounced warm and dry period (3,000 B.C. - 1,000 B.C.) oak/hemlock forests were replaced by ones dominated by oak/hickory, extensive grasslands again became common, and some interior streams dried up; the overall effect of which was an alteration of the environment, but not a degradation. Continued sea level rise and a reduction in its rate also made many areas of the Delaware River and Bay shore the sites of large brackish water marshes that were especially productive. These changes in environment and resource distribution resulted in significant, concomitant shifts in subsistence and socio-cultural adaptations for prehistoric populations. Settlement systems were now centered around the rich and varied environments represented by the floodplains of major rivers and the margins of estuarine swamps, which become the sites of large base camps. These sites and ones like them appear to have supported larger aggregate populations than earlier base camp sites and were inhabited for longer periods of time, possibly on a year-round basis. The overall tendency witnessed during this period is toward the development of a more sedentary lifestyle and a general increase in overall Native American population densities.

Woodland I tool kits show some minor variations over Archaic Period ones as well as a few major additions. Plant processing tools become even more common and seem to indicate an intensive harvesting of wild plant foods that, by the end of the period, may have approached the efficiency of agriculture. Chipped stone tools changed little over previous types, although broad-blade, knife-like processing tools became more prevalent. The addition of stone, and later ceramic containers is also seen. These items allowed the more efficient cooking of certain types of food and may also have functioned for storage of certain surplus plant foods. Long-term stockpiling of food surpluses is indicated by the presence of large storage pits of various configurations and evidence for more sedentary habitation sites is supported by the appearance of semi-subterranean house structures.

This general trend toward increased sedentism additionally wrought changes in the socio-political organization of Native populations. Less reliance on high-mobility subsistence strategies resulted in a reduction in effective group territory and, in conjunction with increases in overall population densities, led to the development of highly sophisticated regional trade networks. These factors, in turn, resulted in the creation of the first identifiable cultural groups, delineated on the basis of named site complexes (e.g., Clyde Farm and Delaware Park Complexes. While further to the south, in the middle Delaware peninsula,

the above changes accompanied the appearance of populations exhibiting incipient ranked social structure Native groups in the northern peninsula continued to exhibit an egalitarian social structure.

In many portions of Middle Atlantic Region the **Woodland II Period** (A.D. 1,000 - ca. A.D. 1650) is marked by the appearance of agricultural food production systems. Within northern Delaware, however, the addition of agricultural practices seems not to have appreciably altered earlier lifeways and cultural adaptations. In general, Woodland II populations in the Project Area vicinity exhibited many of the same characteristics as their Woodland I predecessors. Hunted and gathered foods continued to comprise the largest portion of the diet, and tool kits and basic lifestyles remain essentially unchanged, though the extensive trading networks of the previous period did not continue. Settlement patterns during this time also followed closely those of earlier periods, with many of the same sites continuing to be revisited; however, the absence of evidence for dwellings or other signs of settled village life may signify a slight reversal of the cultural evolution trajectory, in favor of a somewhat less sedentary existence. Looking ahead, it can be said that Woodland II peoples in this region exhibited many of the same cultural characteristics and adaptations as the Delaware Indian groups that populated the area during early historical times.

The **Contact Period** (ca. A.D. 1650 - A.D. 1750) represents a poorly understood segment of the archaeological record in northern Delaware, and begins with the arrival of the first substantial numbers of Europeans to the region. In the Mid-Atlantic region, the first settlers were primarily Dutch and Swedish, with large numbers of British peoples arriving after the mid-seventeenth century. Based on ethnographic accounts, three main Native American groups occupied the Middle Atlantic region at time of contact: the Munsee in the Upper Delaware Valley, the North Unami in the Middle Delaware Valley and central New Jersey, and the South Unami or Unalachtigo in the Lower Delaware Valley and southern New Jersey. These indigenous peoples referred to themselves as the Lenape (the People); due to their association with the Delaware River Europeans called them the Delawares.

This period continues to be poorly understood simply because so few sites have been documented in this portion of the State with deposits, well preserved or otherwise, dating to this time. While sites from this time have been identified within New Castle County, deposits associated with these occupations have not been extensively studied. Based on existing historical accounts it appears as though the Native groups in the northern portion of the State did not maintain intensive interactions with their European counterparts, remaining instead under the virtual domination of the Susquehannock Indians of southern Lancaster County, Pennsylvania. It is likely that Woodland II lifestyles continued through the late-seventeenth and early eighteenth centuries in this area, with gradual erosion of Native traditions and finally the complete acculturation of local populations by the middle of the eighteenth century.

Previously Recorded Prehistoric Sites

Data relating to sites previously recorded in the vicinity of the project area can be used to develop more specific expectations regarding the density, types, distribution, stratigraphic disposition, and age-range of prehistoric archaeological deposits that may be located within the proposed S.R. 41/Hockessin archaeological APE. Background research conducted in the Cultural Resource Survey (CRS) files and cultural resources report library maintained at the Delaware State Historic Preservation Office (DESHPO), in Dover, revealed that a total of 13 Native American occupations have been previously recorded within a one-mile radius of the project area, although none were reported within the current APE boundaries. Of this total all prior documented sites were found by avocational archaeologists. More detailed information pertaining to these sites is summarized below and in Appendix D.

Table 2. Previously Recorded Prehistoric Archaeological Sites Located Within One Mile of the Proposed Project Area

Site Number	Site Name	Culture Periods	Dates	Site Type/Function
7NC-A-4	---	Archaic/ Woodland II	6500 BC – BC 3000 1000 AD – AD 1650	Unknown
7NC-A-5	---	Archaic/ Woodland II	6500 BC – BC 3000 1000 AD – AD 1650	Unknown
7NC-A-6	---	Woodland I	3000 BC - AD 1000	Unknown
7NC-A-7	---	Unknown Prehistoric	Unknown	Unknown
7NC-A-8	---	Unknown Prehistoric	Unknown	Unknown
7NC-A-51	Mill Creek #1	Unknown Prehistoric	Unknown	Procurement Site
7NC-A-52	Manley #1	Unknown Prehistoric	Unknown	Procurement Site
7NC-A-66	Manley #2	Unknown Prehistoric	Unknown	Procurement Site
7NC-A-67	Manley #3	Unknown Prehistoric	Unknown	Procurement Site
7NC-A-68	Manley #4	Unknown Prehistoric	Unknown	Procurement Site
7NC-A-69	Manley #5	Unknown Prehistoric	Unknown	Procurement Site
7NC-A-70	Manley #6	Unknown Prehistoric	Unknown	Procurement Site
7C-A-71	Manley #7	Unknown Prehistoric	Unknown	Procurement Site

Of the above thirteen previously recorded prehistoric sites all are located to the south of S.R. 41. Two of these sites contain components that date to the Archaic and Woodland II culture periods, one falls within the Woodland I period, and the remaining ten are of an indeterminate age due to lack of diagnostic artifacts. The Archaic/Woodland II sites (7NC-A-4, 7NC-A-5) are located along Mill Creek to the southeast and are characterized by a variety of stone tools, projectile points (Normanskill-like, contracting stem, and triangle), and Riggins pottery. The Woodland I site (7NC-A-6) is located southwest of the project area along an unnamed tributary of Mill Creek and is associated with a variety of stone tools and projectile points (Fox Creek, Pentagonal, and straight). The remaining ten sites (7NC-A-7, 7NC-A-8, 7NC-A-51, 7NC-A-52, and 7NC-A-66 through 71) are concentrated in areas both southwest and southeast of the present APE and are represented by surface scatters of lithic debitage, primarily quartz (Table 2).

Historic Overview

Early Settlement

Henry Hudson is often credited as discovering the Mid Atlantic region in 1609. Recent scholarship, however, shows that Spanish sailors frequently sailed by Delaware Bay in the 14th century. Called St. Christopher's Bay, it was a landmark for ships traveling back to Europe. It was also noted in the logs of Italian explorer, Giovanni Verrazano. Henry Hudson, however, was the first to claim it for a European nation.[8]

An Englishman, Hudson was hired by the Dutch East India Company to find a Northwest Passage to Asia. He briefly ventured into what he called the *Zuidt* or South River (now the Delaware) before shoals and hostile Indians sent him on to the more promising, *Noord* or North River (now the Hudson).[9] As the result of Hudson's explorations, and in event one of these rivers was indeed the Northwest Passage, the Dutch laid claim to the land from the Delaware to New York and called it New Netherlands.

A few months later, the river was rediscovered again by the English. In the spring of 1610, Captain Samuel Argall was blown off course sailing from Jamestown to Bermuda for supplies. Finally reoriented off Cape Cod, he followed the coast back to Jamestown, exploring, renaming, and claiming the land for England. It was Argall who gave the Delaware River and Bay its English name, after Lord Del la Warr (Thomas West), the proprietor of Jamestown.[10]

The second Dutch explorer to arrive on the Delaware was Henry Hendrickson in 1615. Using a shallower boat than Hudson's 80 ton *De Halve Maen*, he was able to thoroughly explore the river, mapping the coastline and water hazards up to the mouth of the Schuylkill. There he traded with the Minquas tribe and ransomed three white settlers captured from New Amsterdam. He also made detailed descriptions of Mid Atlantic flora and fauna, which became the guidebook for outfitting future trading posts.

Unlike the English, the Dutch rarely colonized the areas they controlled. With a high employment rate and tolerant culture, they did not have the internal pressure necessary to populate colonies. Instead, they use colonization to develop an extensive sea trade, building seasonal trading posts in profitable locations around the globe. Their first settlements in the Mid Atlantic were temporary trading posts established by

[8] Dan Terrell, *Eight Flags over Delaware 1609-1715* (Lewes Beach: Duck Press, 1975), i.
[9] Warren Boeschenstein. *Historic American Towns along the Atlantic Coast* (Baltimore: John Hopkins University Press, 1991),143.
[10] Terrell, ii.

Dutch corporations. Exclusive rights were granted for four successive voyages and jurisdictions were established by filing a claim within two weeks of returning from a scouting mission.[11]

In 1638, Holland allowed Sweden to establish the first permanent farming communities along the Delaware River. On March 29th, the *Kalmar Nyckel* and the *Vogel Grip* landed at present-day Wilmington carrying mostly Finns deported from Sweden. There they built Fort Christina near what is now the foot of Seventh Street. Reinforcements arrived in 1640 and 1643 and New Sweden slowly expanded along the west side of the Delaware River.[12] John Printz became governor of the area in 1643, establishing headquarters on Tincium Island off the coast of Upland (now Chester City) and a garrison at Fort Christiana.[13]

In 1651, the Dutch reasserted their claim to New Netherlands, building Fort Casimir on the site of the present town of New Castle. Printz, aware of the Dutch garrison in New Amsterdam, did not challenge Dutch authority. His successor, however, Johan Rising, seized Casimir upon his arrival in 1654. He could only hold it for a year. In the autumn of 1655, Peter Stuyvesant sent troops down from New Amsterdam, capturing the Swedish forts and extending New Netherlands again to the mouth of the Delaware. Fort Christina was renamed Fort Altena, and Fort Casmir became the principal southern Dutch settlement with John Paul Jacquet its new governor.[14]

Holland now faced a new enemy, England. On March 14, 1664, Charles II granted his brother, the Duke of York, an English patent for New Netherlands. Fighting a losing battle in Europe and weakened by the plague, Holland was unable to withstand an invasion by the Duke's army. New Amsterdam surrendered to the British on September 8 and New Amstel on September 30, extending British dominion over the entire Eastern Seaboard. The Dutch briefly regained portions of New Netherlands in 1673, but were defeated by Lord Baltimore, governor of Maryland, within a year. English sovereignty endured for the next 100 years.

In 1681, Charles II granted the Province of Pennsylvania to William Penn as repayment for a £16,000 loan. Penn's agents arrived on the Delaware River shortly thereafter. Realizing the province did not have a right of way to the Atlantic, and therefore might become landlocked over time, Penn petitioned the Crown to extend his patent to include the west side of the Delaware. The Duke of York, having little long-term interest in the New World, conveyed what is now the State of Delaware to him in March of 1682.[15]

On October 27 of the same year, William Penn landed at New Castle to take possession of the Lower Counties - New Castle, St. Jones and Deale - from the Duke of York's agents. The colonists swore an oath of allegiance to their new proprietor, and the first General Assembly was held in the colony. The following year the Lower Counties were annexed to Pennsylvania as territories with full privileges. St. Jones and Deale were renamed Kent and Sussex Counties, respectively.

Deale County, however, had already been claimed by Lord Baltimore as part of the Province of Maryland. Under Queen Elizabeth, Baltimore was granted land between Virginia and New Amsterdam not cultivated by or sold to Europeans. Either not acknowledging, or not aware of Holland's brief occupation at Zwaanendael, Baltimore had laid claim to most of Sussex county, asserting his claim by

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[11] Pennock Pusey, *History of Lewes, DE* (Wilmington: Historical Society of Delaware, 1903), 5-8.
[12] State of Delaware Homepage.
[13] Charles William Heathcote and Lucille Shenk, associate ed., *A History of Chester County, Pennsylvania*, (Harrisburg: National Historical Association, 1932), 10.
[14] Eckman, 21-23.
[15] Russell F Weigley, ed. *Philadelphia, A 300 Year History* (New York: W.W. Norton & Company, 1982), 3.

defeating the Dutch at Lewes in 1673. A long boundary dispute ensued between Penn and Baltimore that continued between their heirs for over seventy-five years. The border was officially surveyed by Charles Mason and Jeremiah Dixon in 1763-68, and the Mason-Dixon Line between the provinces of Pennsylvania, the Lower Counties, and Maryland established.[16]

The Lower Counties became the State of Delaware on June 15, 1776, using the Declaration of Independence to secede from both England and Pennsylvania. The capital was moved from New Castle the more central Dover.[17] Remaining a strong supporter of the new nation, nearly 4,000 men from Delaware enlisted during the War for Independence, though only one Revolutionary engagement was fought on Delaware soil - the battle of Cooch's Bridge, near Newark, on September 3, 1777. Delaware went on to become the first of state to ratify the U.S. constitution on December 7, 1787, earning it the moniker "The First State".[18]

An important impetus to the state's economy after the war was the invention of a belt system to automate mill machinery. Designed by Oliver Evans in 1785, it transformed milling by decreasing production time and requiring fewer men.[19] Delaware's primary agricultural product into the mid-1800s was wheat.

Nineteenth Century

Delaware's economy was stimulated by the Embargo Acts preceding the War of 1812, which greatly diminished the supply of European manufactured goods to America. By 1810, Delaware had four paper mills, five forges, three cotton and two woolen mills, several iron rolling and slitting mills. A notable innovator, Eleuthère Irénée du Pont, founded a gunpowder mill, and the du Pont dynasty, at Hengley in 1803. The Eleutherian Mills produced greatly superior and more reliable powder than ever before manufactured in America, revolutionizing American warfare.

Du Pont was one of the few manufacturers to survive after 1815, when British goods again flooded the domestic market. Delaware's main industry reverted to wheat production, with most of its other business activities ancillary to farming. Into the 1900s, most of its roads, landings, canneries, rail spurs, warehouses, and mills were constructed to support an economy and culture predicated on agriculture.[20]

Farmland was most valuable in New Castle County. Each acre was valued at approximately seventy dollars, and the percentage of each farm's acreage that was improved was high, approximately eighty-two percent. Kent County farms were significantly lower in value, at twenty-eight dollars per acre. The percentage of improved land on each farm was also significantly lower, thirty-three percent. In Sussex County, almost one-half of the land of each farm was unimproved, and each acre valued at approximately thirteen dollars.

The bulk of Delaware's agricultural laborers were originally slaves. The Dutch West Indies Company, the largest European slave dealer and owner of New Netherlands, introduced the first slaves to Delaware in 1639. By 1664, slaves comprised 20% of the population, continuing to rise as English colonists emigrated from Maryland and brought slaves with them. Not until the 1800s would the percentage of slave to free black population began to shift, a trend attributed to the growth of Methodism. In 1790, 95%

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[16] Pusey, 14-15.
[17] Hoeffecker, 86.
[18] Hoeffecker, 98.
[19] Hoeffecker, 111-13.
[20] John A. Monroe. *History of Delaware* (Newark, DE: The University of Delaware Press, 1993), 103-107.

of the African population in Delaware were enslaved. By 1860 there were 90,000 whites, 20,000 free blacks, and only 1,800 slaves.[21]

Delaware became a border state during the Civil War, with New Castle County pro-Union and Sussex County pro-slavery. Approximately 12,000 men joined the Union Army and only 500 joined the Confederacy. The Union had a field hospital in Wilmington and a POW cap at Fort Delaware on Pea Patch Island. Wilmington was the center of Delaware's war effort, manufacturing steam ships, wagons, shoes, ammunition containers and holsters for the north.[22]

Historically most of Delaware's manufacturers, and farmers, transported their products by water. Many Delaware rivers have access to the Atlantic Ocean, including the Christina, Mispillion, Broadkill, Saint Jones and Murderkill. With such an abundance of navigable rivers, most of Delaware's roads were poor-quality and provided only local access. Overland travel was slightly improved with the invention of turnpikes. Turnpikes were paved toll roads built, usually by non-local investors, for the transportation of goods along overland routes where these routes were competitive in price or travel time with waterborne transportation.

The Newport and Gap, Delaware's first turnpike and first road to be improved with crushed stone, was completed in 1808.[23] Built over an old Indian trail, it connected southern Delaware with Christiana.[24] The Old Lancaster Turnpike was completed shortly thereafter, connecting the farms of Lancaster, Pennsylvania with Wilmington via Hockessin.[25] By the mid-nineteenth-century, many of Delaware's ports had turnpikes radiating out into the farmland of Delaware and Pennsylvania, with the Wilmington - Kennett Turnpike (now Route 52) emerging as the best access to the tidewater.[26] Turnpikes, however, continued to remain ancillary to shipping until the invention of the automobile (Figure 6).

Contemporary with the construction of turnpikes, canals were introduced to augment and improve Delaware's water traffic. Relatively flat topography and abundant water sources made Delaware ideal for canals. The highly successful Chesapeake and Delaware Canal was built in 1824-29. It connected the Delaware River with Back Creek on the Chesapeake Bay. A tidal canal 13.6 miles in length and deepened over time to 27 feet deep, it shortens the route from Baltimore to Philadelphia by 316 miles, New York by 179 miles and Europe by 100 miles.[27] Owned and operated by the federal government, toll-free, since 1919, it is one of the few canals still in active service.[28]

Unlike most states, the introduction of railroads in Delaware in the mid-1800s did not replace canals. Instead, it decreased shipping along Delaware's navigable rivers. Shipbuilding and water transport had peaked during the Civil War and Reconstruction, but by 1887 began to cease altogether.[29] As marine railroads replaced river traffic, trade was withdrawn from the tidewater landings, and new villages created inland, including Harrington, Ellendale, Viola, and Houston.[30]

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[21] Hoeffecker, 135.
[22] Hoeffecker, 140-47.
[23] WPA, 445-6
[24] C.A. Weslager. *Delaware's Buried Past* (New Brunswick, NJ: Rutgers University Press, 1968), 144.
[25] Scharf, 417.
[26] Beers, D. G. *Atlas of the State of Delaware* (Philadelphia: Pomeroy & Beers, 1868).
[27] Hoeffecker, 120.
[28] WPA, 335.
[29] George A. Harter. *Dodge's Geography of Delaware.* (Rand McNally & Co. 1911), 13.
[30] WPA, 77.

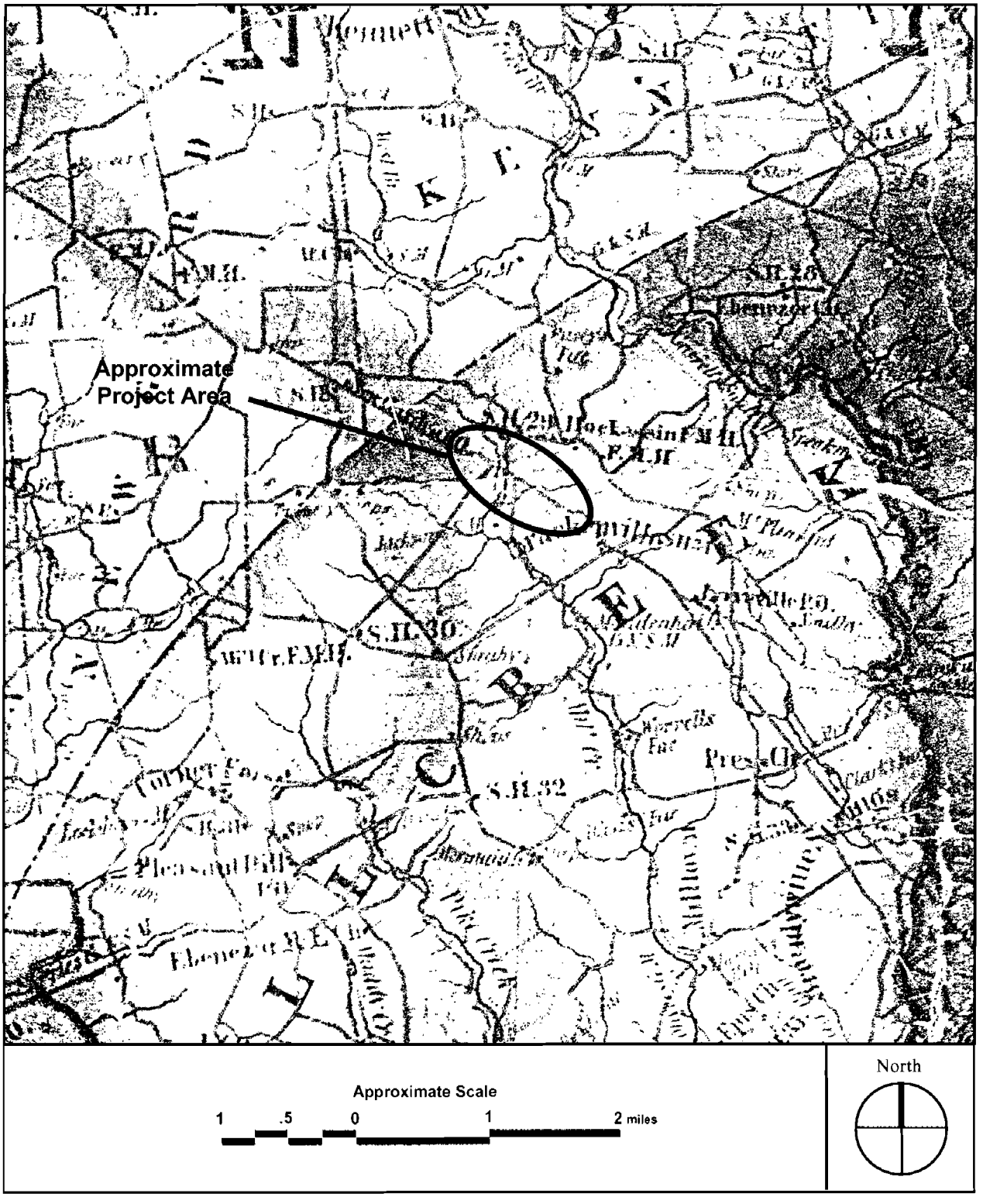

Figure 6. Mill Creek Hundred c. 1850. (Source, Jacob Price and Samuel Rea's *Map of the State of Delaware*, Robert E. Smith, 1850).

Delaware had many railroad lines, both passenger and freight, beginning in 1831 with the New Castle and Frenchtown line, the 16.19 mile rail link in a water-rail-water route from Philadelphia to Baltimore (Figure 7). The Wilmington and Western Railroad through Hockessin opened for freight and passenger service on October 19, 1872. The line originally transported Kaolin Clay, vulcanized fiber materials, snuff, iron, and coal between downtown Wilmington, Delaware and Landenberg, Pennsylvania via the Red Clay Valley. The line foreclosed in 1877, reorganized as the Delaware Western Railroad in the late 1870s, and was purchased by the Baltimore & Philadelphia Railroad, a subsidiary of the Baltimore & Ohio Railroad, in 1885. Renamed the Landenberg Branch, it was the longest branch line on the B&O's Royal Blue Route. Due to the decline of railroad traffic, the line was shortened to Southwood, DE in the early 1940s, and shortened again to Hockessin in the late 1950s. The B&O Railroad sold the line in August of 1982 to Historic Red Clay Valley, Inc., who now operate a tourist railroad along its remaining 10.2 mile track.[31]

Twentieth Century

The development of a paved road network through Delaware faltered from 1903 through 1917.[32] A State Aid Law appropriating funds for road improvement passed in 1903, but was repealed in 1905.[33] In 1909, the legislature nearly passed a bill to pave the road from Wilmington to Georgetown, but did not.[34] Even the efforts of T. Coleman du Pont, who offered to fund construction of this same alignment, were stymied from 1911 to 1915 in court. After reaching the United States Supreme Court to resolve eminent domain powers, construction of this road proceeded, and, in 1917, a twenty-mile section in Sussex County was dedicated.

Coleman du Pont donated $4,000,000 to the Boulevard, one of many state projects the du Pont family would sponsor. In 1930, Henry Francis du Pont established the Winterthur Corporation, a non-profit, educational organization and museum on his estate in Wilmington. Throughout the early twentieth century, Pierre S. du Pont replaced existing one-room schoolhouses statewide with modern buildings equipped with auditoriums, gymnasiums, cafeterias and libraries.[35] The one-room Public School #29 at the intersection of Old Lancaster Pike and Valley Road, now the Lanborn Library, was replaced at this time.

Encouraged by the success of the Coleman du Pont Boulevard, the Delaware State Highway Department was created, and almost immediately assumed responsibility for construction of the remaining length of the road, from Milford north to Wilmington.[36] The du Pont was a sixteen-foot wide concrete road, within a sixty-five foot right-of-way, that overlaid previously existing roads. For the first time, rural Delaware was connected with the major urban markets that had previously been accessible only by rail or water.[37]

The automobile and improved road technology finally eclipsed waterways as an efficient means of transport, revitalized Delaware agriculture, and in time made even railroads obsolete. Historically, transportation innovations did not reach out into rural areas, and farmers had always faced the difficulty of getting their goods to the distribution point. The use of trucks provided the first, direct access from

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[31] Wilmington And Western Railroad Homepage (http://www.wwrr.com).
[32] The bicycling enthusiast's "Good Roads" efforts, often attributed with the initial impetus for road improvement, appears to have made no headway in southern Delaware.H. Clay Reed. *Delaware: A History of the First State* (New York: Lewis Historical Publishing Co., 1947), 537. Seely, 11.
[33] Reed, 538.
[34] WPA, 79.
[35] Hoeffecker, 174.
[36] Reed 545-6.
[37] WPA, 403.

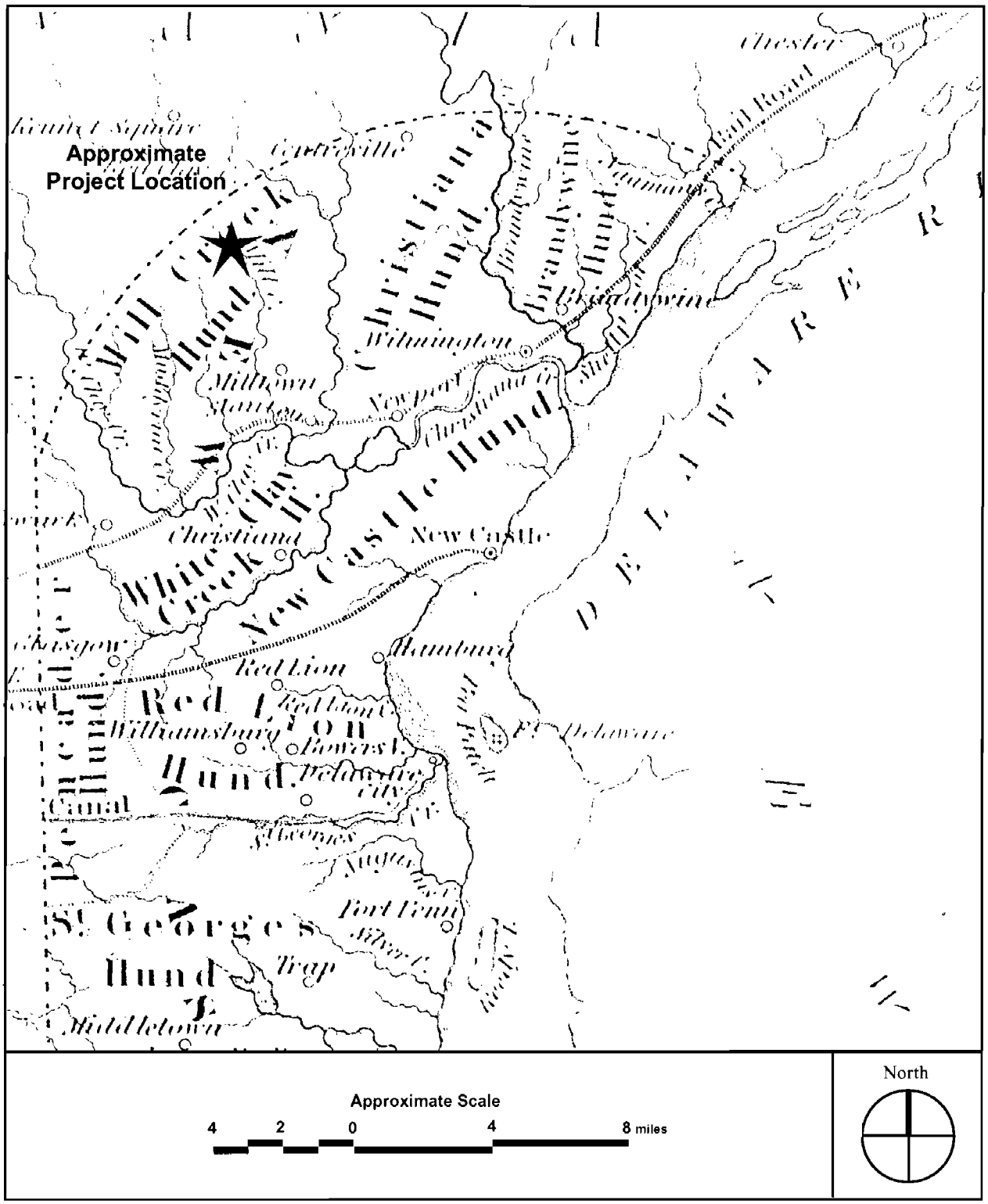

Figure 7. New Castle County c. 1838. (Source, G. W. Boynton's *The First Two Railroads*, Bradford & Goodrich, 1838).

farm to market, and agriculture production rose again.[38] State Highway Department as-builts show Hockessin's primary export was mushrooms, with three mushroom houses located along Old Lancaster Pike between Valley Road and Yorklyn Road c. 1952.

The Delaware Department of Transportation built SR 41 through Hockessin in the 1950s, thus bypassing a portion of Old Lancaster Pike. It leaves the old roadbed just north of Withers Way and rejoins it north of Valley Road A more level and straight road, SR 41 overlaid historic farms, demolishing the old farm buildings and opening the adjoining land to development for the first time (Figure 8).[39] The road is now flanked by light industrial, gas stations and commercial buildings (Figure 9).

[38] Hoeffecker, 158-172.

[39] State of Delaware Department of Transportation, Division of Highways. *Construction Plan for Contract 79-061-01* (April 1980).

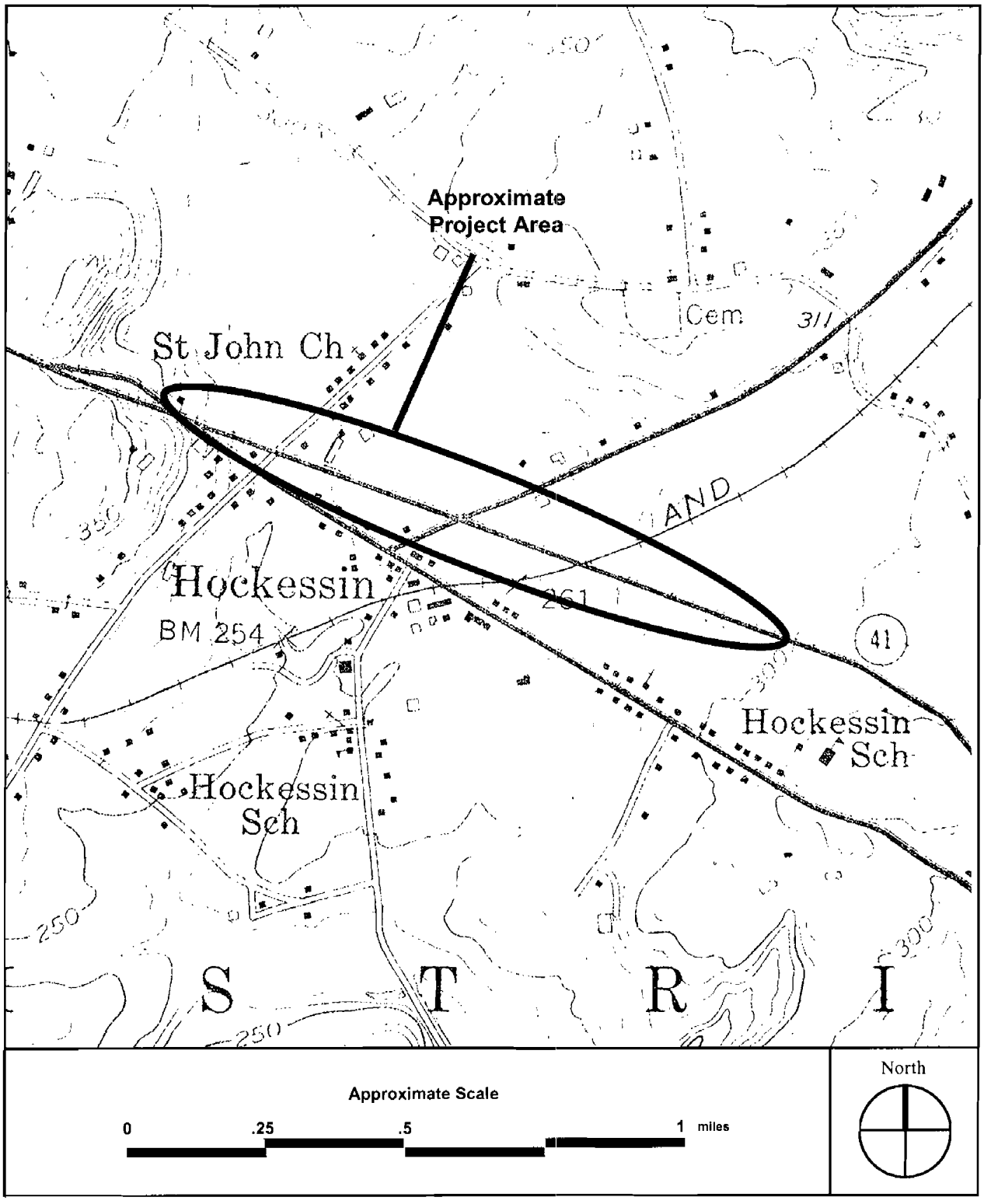

Figure 8. Hockessin c. 1954. (Source, United States Geological Survey's *Kennett Square PA-Del 7.5 Minute Quadrangle*, 1954.)

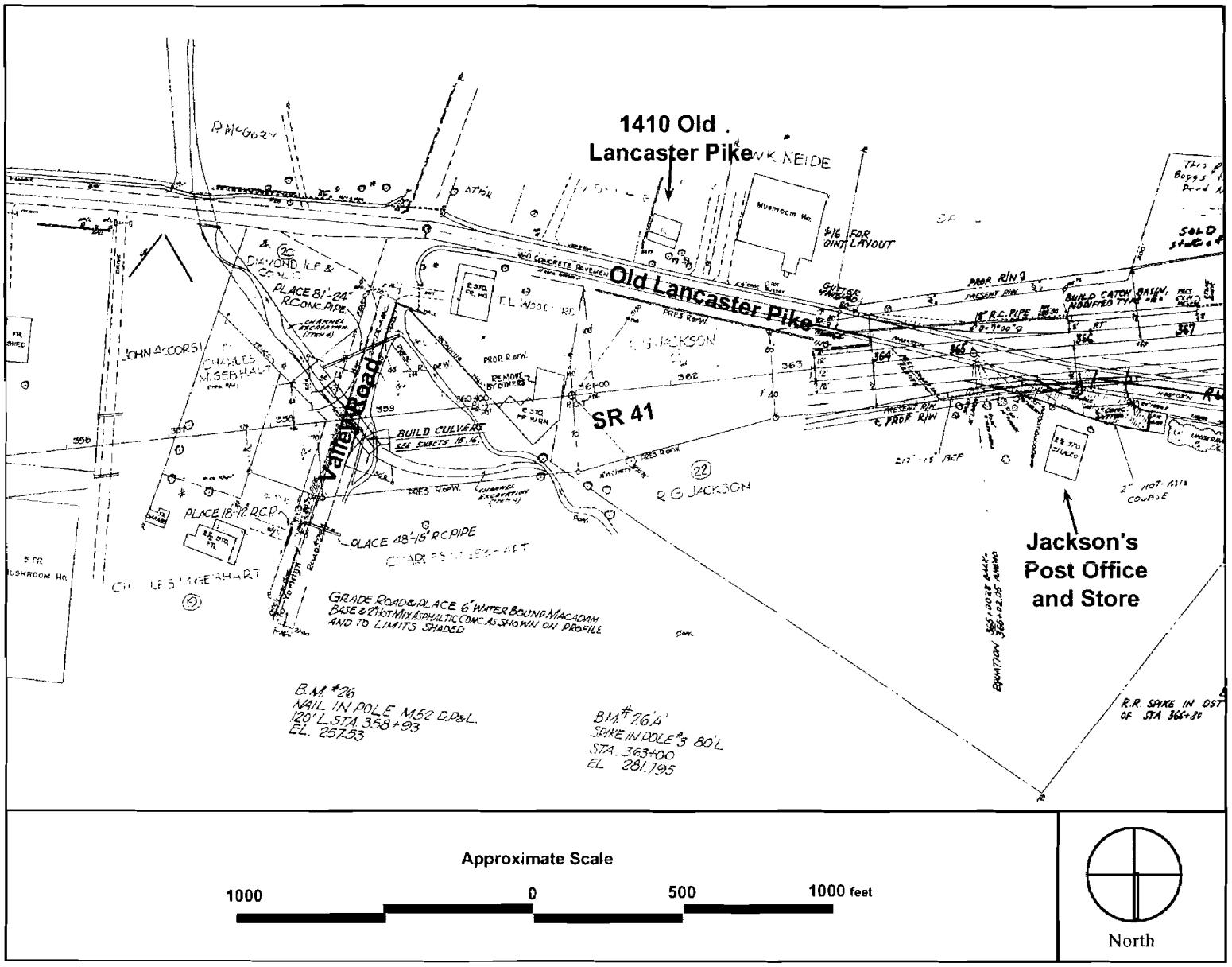

Figure 9. Intersection of Old Lancaster Pike and Valley Road c. 1952 showing future location of SR 41. (Detail, *Construction Plan for Lancaster Pike: Gap Road to PA Line,* State of Delaware Department of Transportation, July 1952).