

VII. MANAGEMENT RECOMMENDATIONS

A. NATIONAL REGISTER ELIGIBILITY

Seventeen archaeological sites have been evaluated at the Phase II level in the SR 1 corridor and associated wetland replacement areas. Of these, five are considered eligible for listing in the NRHP: the Drawyer Creek South Site (7NC-G-143), the Locust Grove Site (7NC-F-73), the historic component of the Appoquinimink North Site (7NC-F-13), the Whitby Branch Site (7NC-G-151), and the Osborne Wetland No. 3 Site (7NC-J-212). Three sites, the Augustine Creek North Site (7NC-G-144), the Augustine Creek South Site (7NC-G-145), and the Eisenbrey Wetland Site (7NC-G-150), have an indeterminate National Register status, since the Phase II investigations were inconclusive. The 17 sites and the recommendations are listed in Table 34.

TABLE 34 NATIONAL REGISTER ELIGIBILITY RECOMMENDATIONS

SITE NUMBER	SITE NAME	TYPE	NATIONAL REGISTER ELIGIBILITY
7NC-G-144	Augustine Creek North	18th-c. farm; prehistoric procurement	Indet.
7NC-G-145	Augustine Creek South	18th-c. farm; prehistoric procurement	Indet.
7NC-G-149	Drawyer Creek North	Prehistoric procurement	No
7NC-G-150	Eisenbrey Wetland	Woodland I procurement or microband base camp	Indet.
7NC-G-143	Drawyer Creek South	Woodland II procurement	Yes
7NC-F-73	Locust Grove	19th- and 20th-c. farm	Yes
7NC-F-72	Middletown Road	19th-c. tenant dwelling	No
7NC-F-13	Appoquinimink North	1780-1820 farm; prehistoric procurement	Yes
7NC-G-141	Appoquinimink South	Woodland II microband base camp	No
7NC-G-151	Whitby Branch	Woodland I microband base camp or procurement site	Yes
7NC-G-139	Pine Circle	Prehistoric short-term procurement	No
7NC-J-209	Lore Farm	19th- and 20th-c. farm	No
7NC-G-137	Hutchinson/Weldin Store	19th-c. store, village dwelling, and farm	No
7NC-J-210	Osborne Wetland No. 1	Prehistoric procurement	No
7NC-J-212	Osborne Wetland No. 3	Archaic microband base camp	Yes
7NC-J-214	Osborne Wetland No. 5	Prehistoric procurement	No
7NC-J-216	Osborne Wetland No. 7	Prehistoric procurement or microband base camp	No

1. Ineligible Sites

Historic Sites

Of the historic sites evaluated, the Augustine Creek South Site (7NC-G-144), the Middletown Road Site (7NC-F-72), the Hutchinson/Weldin Store Site (7NC-G-137), and the Lore Farm Site

(7NC-J-209) were found to lack integrity, and are therefore considered ineligible for the NRHP. Detailed criteria for the integrity and significance of nineteenth-century agricultural complexes are laid out in *Historic Context: The Archaeology of Agriculture and Rural Life, New Castle and Kent Counties, Delaware, 1830-1940* (De Cunzo and Garcia 1992:312-315). The Augustine Creek South Site dates to a slightly earlier period, and the Hutchinson/Weldin Store Site is a town dwelling, but the criteria developed by De Cunzo and Garcia are still a useful guide.

The Middletown Road Site (7NC-F-72) appeared to be the location of a tenant house occupied for a brief time in the mid- to late nineteenth century. Extensive backhoe stripping failed to locate any subplowzone features, and artifact density was low. The site has no demonstrable integrity and little information potential. Sites of this time period are relatively common; therefore the integrity requirements for this property type are relatively high. As a result, the site is not considered eligible for the NRHP.

The Hutchinson/Weldin Store Site (7NC-G-137) represents two separate nineteenth-century dwellings in the crossroads town of Fieldsboro. The southern portion of the site is associated with a farm that was present by 1824, converted to a store by 1868, and destroyed by 1906. The northern part, on the corner of U.S. Route 13 and Noxontown Road, was separated from the southern part in 1850, and occupied as a dwelling until sometime between 1893 and 1906. The site therefore represents at least three distinct property types: farm, village dwelling, and store. Both parts of the site have been plowed. No intact strata or subplowzone features were discovered in the southern portion of the site. In the northern portion, backhoe trenching did locate a group of postholes and a large pit of unknown function. The most likely interpretation of the archaeological and deed evidence is that the structures that once stood at the intersection have been destroyed by the widening of U.S. Route 13, the excavation of the gas line and other utilities, plowing, and the construction of the antiques store in the 1940s. Because of a demonstrated lack of integrity, the site has little potential to provide information regarding nineteenth-century rural lifeways. It is therefore considered ineligible for listing in the NRHP.

Phase II testing of the Lore Farm Site (7NC-J-209) showed that the earliest component of the site was the known occupation, an owner-occupied farm dating to the 1870s, and most of the material recovered dated to the very late nineteenth century and the twentieth century. The site has been severely disturbed, first by demolition with heavy machinery and then by plowing. Intact cultural strata were discovered only in a small area around a tree, and no other intact areas are likely. Most of the artifacts deposits cannot be assigned to either spatial or temporal contexts. A very high degree of integrity would be required for a property type which is so common and so recent in date. Because of its recent date and disturbed nature, the site is not considered eligible for listing in the NRHP.

Prehistoric Sites

The Appoquinimink South (7NC-G-141), Pine Circle (7NC-G-139), and Osborne Wetland Nos. 1, 5, and 7 sites (7NC-J-212, 7NC-J-214, and 7NC-J-216), as well as the prehistoric components of the Augustine Creek South (7NC-G-145) and Appoquinimink North (7NC-F-13) sites, also

lack integrity. All of these sites have been disturbed by plowing, logging, house construction, or other modern activities, and no intact deposits or features dating to prehistoric times were found in any of them.

The prehistoric component of Site 7NC-G-145 (the Augustine Creek South Site) is a thin artifact scatter dated by small ceramic sherds to the Woodland period, and almost all of the artifacts were recovered from the plowzone. The site appears to represent what Custer (1994) refers to as a procurement site, a place used occasionally by prehistoric peoples during hunting or foraging expeditions. No intact deposits were discovered, and because the site is in an upland area with moderate slopes, where erosion has probably been substantial, none are expected. Only 105 artifacts were recovered, no more than 22 in any test unit. Because of the small number of artifacts and their disturbed (plowzone) context, the site has very little information potential. The prehistoric component lacks integrity and is not considered eligible for listing in the NRHP.

The Drawyer Creek North Site (7NC-G-149) appears to have been used solely or primarily during the Woodland period, probably as a procurement station by people foraging in the wetlands along Drawyer Creek. The Phase II testing has demonstrated that the site, although it appeared initially to be intact, has, in fact, been substantially disturbed. Most of the site has been plowed, and the uneven ground surface indicates other, more recent, disturbances. One small area of intact prehistoric ground surface does appear to be preserved along the northern margin of the site. This area, which was located under deep slopewash deposits in Test Units 1 and 8, appears to measure approximately 5x10 meters. The artifacts recovered from this intact soil consist of a single small triangular projectile point and lithic debitage. These artifacts have already been sampled, and in all likelihood little more would be learned from further testing of this small area. The site therefore has low integrity and little information potential, and is not eligible for listing in the NRHP.

The prehistoric component of the Appoquinimink North Site (7NC-F-13) consists of a scatter of lithic debitage, with a few stone tools, over the entire area of the site. This scatter is confined to the plowzone, and includes artifacts from a long time span, at least the Woodland I and Woodland II periods. Conversations with a local amateur indicated that the site has been heavily collected, and the remaining artifacts are therefore probably not representative of what was originally present. This broad scatter lacks integrity and can provide little information about the past. In one part of the site, a low rise near the river designated the South Locus, a denser scatter of debitage was found that included one projectile point dating to the Late Archaic (Woodland I) period. All of the artifacts were recovered from the plowzone, and no features or intact strata were discovered. This material appears to be related, and the scatter may represent a short series of occupations or even a single use of the site. The South Locus therefore retains some integrity, even though it has been repeatedly plowed. However, the site has already been sampled through the excavation of 13 test units, resulting in the recovery of more than 250 artifacts. As for the broad scatter, repeated surface collections by amateurs make it likely that some types of artifacts, particularly larger tools, are no longer well represented. Sufficient material has been recovered to date the main occupation of the site to the end of the Late Archaic period (early Woodland I) and identify it as a procurement station that was probably occupied for brief periods.

Additional work would be unlikely to contribute further to the knowledge of prehistory. The site therefore does not appear to be eligible for listing in the NRHP.

The Appoquinimink South Site (7NC-G-141) is a microband base camp occupied during several prehistoric periods, most prominently the Woodland II period. The site is large, measuring 50 by 200 meters, and yielded substantial numbers of artifacts, as many as 200 flakes and 13 ceramic sherds from a single test unit. However, it also lacks integrity. Approximately half of the site has been completely destroyed by the construction of houses, driveways, and utilities, and almost all of the remainder has been plowed. The highest artifact densities were encountered in the North Locus, where quantities of lithic debitage and Late Woodland ceramics were found in the upper reaches of a ravine leading down to the river. However, the artifacts in the North Locus were all recovered from plowed soils, much of which may have washed down into the former ravine from higher ground, and they lack clear spatial context. Also, since side-notched projectile points probably dating to the early Woodland I period were found nearby, the nondiagnostic artifacts from the North Locus cannot be assigned to any particular time period. In the absence of clear contexts for the recovered artifacts, the site cannot contribute important information about regional prehistory and is considered ineligible for listing in the NRHP.

Because so little material was recovered from the Pine Circle Site (7NC-G-139)—only 20 artifacts, all of them from disturbed contexts—it has limited potential to yield any additional information about the region's prehistoric inhabitants. The site, representing only transient use of this location by prehistoric people, is not considered eligible for listing in the NRHP.

Three of the four sites investigated in the Osborne Wetland Replacement Area (Sites 7NC-J-210, 7NC-J-214, and 7NC-J-216) lacked sufficient integrity and information potential to qualify for listing in the NRHP. The Phase I and II investigations of the Osborne Wetland Replacement Area did show that the sandy ridges around the marshy stream had been occupied by prehistoric peoples, probably as procurement stations used while foraging in the nearby wetlands. Diagnostic artifacts indicated that these sites were used during the Archaic, Woodland I, and Woodland II periods. Very few ceramics were recovered during the testing, which suggests that although Woodland populations used these sites, they were engaged in different activities than those carried out at sites on tidal creeks, such as Sites 7NC-G-141 and 7NC-G-143.

Sites 7NC-J-210 and 7NC-J-214 were both small, and yielded few artifacts. Deposits at both sites were also confined primarily to the plowzone. Lacking intact strata or features or any artifact-rich areas, these sites can provide little information beyond what has been gained during the Phase I and II investigations. Site 7NC-J-216, a larger site, had yielded a substantial artifact assemblage during the Phase I surface collection, so the low artifact recovery from the Phase II testing was surprising. The diagnostic artifacts recovered span most of Delaware prehistory, from the Archaic to the Woodland II periods. A single subplowzone feature of unknown date and function, which may be a cultural pit of the kind discovered in quantities at other Delaware sites or may be natural, was discovered. The excavated portion of this pit yielded very few artifacts. In fact, almost all the artifacts from the site were recovered from plowzone contexts. Given the

low artifact recovery from subsurface contexts and the fact that most of the cultural deposits are confined to plowzone contexts, it is concluded that Site 7NC-J-216 is ineligible for listing in the NRHP.

2. *Eligible Sites*

Site 7NC-G-143, the Drawyer Creek South Site

The Drawyer Creek South Site is considered eligible for listing in the NRHP under Criterion D, because it has demonstrated the ability to yield information important to prehistory. The site has a very high degree of integrity. It has never been plowed, and trees growing on the site appear to be at least 100 years old, indicating that it has never been logged with heavy machinery. Separate activity areas are preserved in place. Unplowed prehistoric sites are rare in Delaware, demonstrating that the site has a high degree of integrity.

The Drawyer Creek South Site appears to be what Custer (1986, 1989, 1994) calls a procurement site, a place where prehistoric peoples camped briefly while exploiting locally available resources. The ceramics recovered from the site probably date it to the Woodland II (Late Woodland) period, circa AD 1000 to 1650, although the ceramic chronology of this period is by no means fully understood.

The late prehistoric inhabitants of northern Delaware do not appear to have ever practiced agriculture in a major way, if at all—no village sites are known from this area—and they remained essentially hunter-gatherers at the time of European contact (Custer 1989:311-315). In the Appoquinimink River drainage, the larger sites, such as Hell Island (7NC-F-7), appear to have been situated for exploitation of wild resources in the wetlands rather than for access to agricultural land. The immediate surroundings of the Drawyer Creek South Site, the peninsula between Drawyer Creek and the Appoquinimink River, have been extensively surveyed (Bedell 1995a; Custer and Bachman 1986a; De Cunzo 1993), and a distinctive site distribution pattern has been identified. The peninsula consists of a broad upland, separated from narrow terraces along the tidal marshes by steep 20- to 40-foot slopes. Several large, thin lithic scatters are located on the uplands, occupying perhaps a majority of the upland area. Only one ceramic sherd has been recovered from these upland sites. The Drawyer Creek South Site is one of a series of sites located on the narrow terrace along Drawyer Creek. These sites, especially 7NC-G-62, 7NC-G-63 (Custer and Bachman 1986a:45), and 7NC-G-143, have yielded substantial quantities of Late Woodland ceramics, all from contexts within 50 meters of the current shoreline. Ceramic use in this area seems to have been associated with procurement activities in the wetlands.

The management plan developed by Custer for Woodland I sites (Custer 1994) defined research fields which are useful for evaluating the information potential of the Drawyer Creek South Site. Although these criteria were developed for Woodland I (Late Archaic, Early Woodland, and Middle Woodland) sites, they apply well to the Woodland II (Late Woodland) of northern Delaware, since in this area the Woodland I/II transition did not represent a fundamental cultural change. Excavation of the Drawyer Creek South Site could provide important data in four of the

research domains defined by Custer: subsistence patterns, settlement patterns, ceramic technology and chronology, and lithic technology. The site is located in what the state management plan for prehistoric resources (Custer 1986:159) designates as the Interior Study Unit, which is in northern Delaware between the Lower Coastal Plain zone to the east and the Mid-Drainage zone to the southwest.

The site's possible importance in answering questions about settlement/subsistence patterns derives from its high degree of integrity. The intact activity areas preserved on the site could provide information on internal structure, length of use, size of the visiting groups, and other important factors about Woodland procurement sites. If information on the seasonality or length of occupation of the site is obtained, for example from carbonized seeds or faunal remains, the site could help in understanding subsistence practices and the functions of such sites in the overall yearly cycle of the inhabitants.

Because intact stone-working and ceramic-use areas are preserved, the site has the potential to provide important information on ceramic and lithic technology. If the ceramics from the site can be dated, which may be possible using AMS techniques on carbon scraped from the sherds themselves, they could help establish an accurate chronology for ceramics in the region. The ceramics could also be analyzed for surface treatment, manufacturing technique, form, and possibly function, supplying much important information on the ceramics of northern Delaware. Lithic industries such as the one identified at the Drawyer Creek South Site, based on the processing of locally available cobbles into rough tools, were very important in stone-poor Delaware (Riley et al. 1994), and analysis of this site could provide important data on the kinds of tools made, their function, and the manufacturing process.

Site 7NC-F-73, the Locust Grove Site

The Locust Grove Site consists of archaeological deposits associated with Locust Grove, a standing nineteenth-century farmhouse. Detailed criteria for the integrity and significance of nineteenth-century agricultural complexes are laid out in *Historic Context: The Archaeology of Agriculture and Rural Life, New Castle and Kent Counties, Delaware, 1830-1940* (De Cunzo and Garcia 1992:312-315). The Locust Grove Site meets sufficient of these criteria to be eligible for listing in the NRHP.

Several aspects of the Locust Grove Site preserve integrity from the Industrialization and Early Urbanization Period (1830 to 1880). The house itself has sufficient integrity and historical association to have already been determined eligible for the NRHP, and the nineteenth-century smokehouse is a contributing structure. Certain features of the landscaping plan are also preserved, most clearly from the period after the construction of the circa 1870 addition. The driveway appears to be in its original position, and a brick walkway connecting the 1870 front door to the driveway is preserved. The barns and farmyard appear to have been behind the house, in the approximate location of the work area maintained by the last private owners. Several trees on the property are at least 100 years old. The most significant archaeological features on the site are trash pits and midden deposits identified in what are now the front and

side yards of the house. The midden area in the side yard southwest of the house contains domestic refuse deposits, including intact bones and large ceramic vessel sherds that appear to date to the last quarter of the nineteenth century. Testing immediately in front of the house located a small trash pit and a surrounding refuse midden that were sealed by a layer of rubble and redeposited subsoil. This layer quite likely dates to the construction of the circa 1870 addition, and the refuse deposits beneath it therefore probably date to the 1830 to 1870 period. These two well-preserved household refuse deposits, both containing faunal material and mendable ceramic vessels, give the site a very demonstrable degree of archaeological integrity.

The relevant historic context (De Cunzo and Garcia 1992) stipulates that National Register-eligible agricultural complexes must possess, besides integrity, extensive historical documentation, representativeness, and the ability to answer at least one of four defined research questions. Locust Grove, which belonged to the locally well-known Penington family, is documented by a wide variety of written records that can be used to supplement the study of the site's physical remains. These records include deeds, wills, tax records, census records, orphans' court records, and military records. The standing house has already been judged sufficiently representative of the farms of the regional elite to be eligible for the NRHP, and the archaeological site is equally representative. The tightly-dated, artifact-rich deposits make the site ideal for research on one of the four research questions laid out by De Cunzo and Garcia (1992:315): domestic economy, especially the areas of research usually subsumed under consumer behavior. The information from these deposits can also supply meaningful data on at least one other research question: social group identity, behavior, and interaction. The site therefore meets NRHP eligibility criteria, based on planning contexts established by the State of Delaware.

Site 7NC-F-13, the Appoquinimink North Site

The historic component of the Appoquinimink North Site consists of the remains of a farm dating to the 1780 to 1820 period. The historic component satisfies the criteria of eligibility for inclusion in the NRHP under Criterion D, although the site's prehistoric component does not. Detailed criteria for the integrity and significance of nineteenth-century agricultural complexes are laid out in *Historic Context: The Archaeology of Agriculture and Rural Life, New Castle and Kent Counties, Delaware, 1830-1940* (De Cunzo and Garcia 1992:312-315). Although the Appoquinimink North Site's historic component dates to an earlier period, these criteria are still relevant.

The site dates to Delaware's Early Industrialization period (1770 to 1830), and retains integrity in two important respects. Because the site was occupied for a relatively short period of time (probably less than 50 years), it is possible to date the artifact assemblage quite narrowly. The Phase I and Phase II testing identified intact subplowzone features, which lend the site a demonstrable degree of archaeological integrity and promise to provide information on the architecture and layout of the farm.

Historic Context: The Archaeology of Agriculture and Rural Life, New Castle and Kent Counties, Delaware, 1830-1940 (De Cunzo and Garcia 1992) requires that to be eligible for listing in the

NRHP, an agricultural complex site must possess, besides integrity, extensive historical documentation, representativeness, and the ability to contribute information pertinent to at least one of four defined research themes. During the final stage of its occupation, the property belonged to the locally well-known Cochran family. The site is documented by a wide variety of written records that can be used to supplement the study of the site's physical remains. These records include deeds, wills, tax records, census records, and military records. The site can provide material for research on two of the four research questions laid out by De Cunzo and Garcia: landscape, and domestic economy (De Cunzo and Garcia 1992:315).

Landscape studies, which are becoming increasingly important in historical archaeology, examine issues related to the cultural modification of the environment. Since foundations and other structural features provide a physical record of the basic layout of the farm, the numerous artifacts present in the plowzone will probably provide data on the function of the various yards and subsidiary structures, which in turn can be used in attempts to reconstruct the notions of space with which the inhabitants ordered their world.

The domestic economy theme includes both production and consumption on the farm. While the plowzone artifacts from the site can be used for only the most basic studies of consumption, the site also includes intact features, including a possible well, which may yield better-preserved assemblages of tightly-dated artifacts. Such deposits could be used to answer many questions about the material life, economic activity, and cultural aspirations of the residents.

The Appoquinimink North Site can also provide important data on an area of study not identified by De Cunzo and Garcia (1992)—rural vernacular architecture. Housing was, and is, one of the most important components of human material culture, and knowledge of the houses in which people lived is essential to understanding their lives. The study of rural housing is dominated by standing buildings, but there are reasons for believing that standing houses are not a representative sample of the housing stock of the eighteenth and early nineteenth centuries (Carson et al. 1981). In order to obtain a balanced picture of past housing, it is necessary to study buildings that have been destroyed as well as those that survive. Foundations known to be present on the Appoquinimink North Site, supplemented by sketchy descriptions in the records, will enable a reconstruction of the built environment of the farm.

The ability of the Appoquinimink North Site (7NC-F-13) to yield information on the lives of its inhabitants and on the lives of other rural people in late eighteenth- and early nineteenth-century Delaware makes it eligible for listing in the NRHP.

Site 7NC-G-151, the Whitby Branch Site

The Whitby Branch Site is considered eligible for listing in the NRHP under Criterion D, based on its potential to yield information important to prehistory. This site has an unusual degree of integrity. The deposits within its eastern portion are contained in soil that has been plowed only a few times, at most. Artifact deposits at the western end of the site are contained within soil that has never been plowed. Also, well-preserved archaeological features were discovered in the

eastern portion of the site. The surface of this site in general has remained intact since late Pleistocene times. Given the nature of the artifact assemblage recovered at the Whitby Branch Site, its stratigraphic integrity, and nearby related natural features, a strong argument can be made for the unique and significant status of this site.

The Whitby Branch Site is assignable to the Woodland I Study Unit as defined by Custer (1986), comprising what are known elsewhere as the Late Archaic, Early Woodland, and Middle Woodland periods. This study unit includes the most numerous group of sites in Delaware. At the same time it represents a very important era in prehistory. Woodland I sites reflect the transition from an earlier, more mobile lifeway to the beginnings of a sedentary lifeway. According to Custer (1986:86), these important changes are most likely the result of a dramatic shift in the prevailing social environment. The management plan developed by Custer (1994) defines research domains within which the information potential of sites should be evaluated. Excavation of the Whitby Branch Site could provide important data on six research domains: paleoenvironmental studies, chronology, community settlement patterns, ceramic technology, lithic technology, and subsistence systems.

Custer (1994:171) states, "Although great progress has been made in understanding the environmental setting of the Woodland I period, there is still much to learn about local environmental settings," and he adds that palynological studies and research into hydraulic environments are especially useful in this regard. The Whitby Branch Site is surrounded on two sides by wetland deposits that appear to be good candidates for palynological analysis. At least one meter of organic material has collected in the wetland along the western margin of the site. A pollen core with corresponding radiometric assay of key sections would greatly increase knowledge of the local environmental context of this area. It would be difficult to find a more favorable location for such testing.

Since intact clusters of FCR have already been found in the unplowed portion of the site, the potential is good for the discovery of charcoal-bearing features. Since such features would be within intact strata that contain substantial numbers of artifacts, they would allow prehistorians to link certain tool forms and ceramic styles with absolute dates, providing badly needed clarity in the chronology of the Woodland I period (Custer 1994:172).

The Whitby Branch Site's high degree of integrity also makes it a good candidate for the study of settlement patterns and subsistence systems. The site is what Custer (1986:105) calls either a procurement site or a microband base camp. While a number of such sites have been excavated, the relatively undisturbed context of this site is arguably unique, and may provide the type of information necessary for a better understanding of the internal structure of either settlement type. By employing flotation recovery techniques on soil from the intact features, information may be recovered that will be useful in understanding Woodland I subsistence practices. At the Whitby Branch Site, two intact features in unplowed areas were discovered during the Phase II investigations. Additional excavations would probably reveal other features, and it is reasonable to anticipate that preserved flora and faunal remains could be recovered. Better site environments for such recovery are seldom encountered.

The substantial number of artifacts recovered from the site, many of them from intact contexts, could be used to obtain important information about lithic and ceramic technologies. A number of different tool types manufactured from a variety of different raw materials have been recovered at the Whitby Branch Site. There is evidence of a local lithic source, in the form of beach deposits, very near the site. Comparisons of the types of locally available lithic materials with other materials in the total assemblage may offer information on mobility and lithic procurement patterns. A detailed technological analysis of a larger assemblage from the site should offer insights into manufacturing processes in this area of Delaware. Wolfe Neck ceramics, probably dating to circa 700 to 400 BC in this area of Delaware, have been recovered on the site. Further excavation may recover additional specimens of this type. Given other potentially earlier artifacts recovered during excavations at the site, further investigation might also reveal the presence of earlier Woodland I ceramic types on the site, such as Dames Quarter and Marcey Creek wares.

Site 7NC-J-212, the Osborne Wetland No. 3 Site

The Osborne Wetland No. 3 Site (7NC-J-212) is considered eligible for listing in the NRHP under Criterion D, based on its potential to yield information important to prehistory. The site has yielded substantial quantities of prehistoric artifacts, including temporally diagnostic tools, and contains what are probably intact cultural deposits below the plowzone. These intact deposits are located on a low terrace and were buried by aeolian action in the sandy soils of the site. If these deposits do, in fact, date to the Early Archaic period, they could provide important data on a period from which very few intact sites survive in Delaware. Although most of the remainder of the site has been plowed, it still retains some horizontal integrity. Phase II excavations showed that artifact deposits are concentrated on the southeastern edge of each of the three terraces that make up the site, suggesting that the site retains physical evidence of the intrasite distribution of different occupations and activity areas.

The research questions listed by Custer (1994:171-173), while intended specifically for sites in the Woodland I (Late Archaic, Early Woodland, and Middle Woodland) period, provide some guidance for assessing the significance of Site 7NC-J-212. The site has the potential to contribute to answering four of Custer's 12 questions: chronology, community settlement patterns, regional settlement patterns, and lithic technology.

The site's buried deposits, tentatively dated to the Early Archaic period (ca. 7000 BC), provide an opportunity to study an artifact assemblage from a period of Delaware prehistory known almost entirely from plowed sites. Finds of Early Archaic projectile points on plowed sites have established that the region was inhabited in that period, but an association of tools and debitage from a site is much more informative. The site's artifact assemblage could demonstrate the association of a range of tool types with datable projectile points, which would be valuable in establishing the chronology of the period and could ultimately provide information about the technology on which this culture depended.

The environmental setting of Site 7NC-J-212 makes it an important site for the study of regional settlement patterns. It is the richest and best preserved of a complex of sites surrounding the

marshy stream in the Osborne Wetland Replacement Area. At least 12 prehistoric sites are present in this small area (10 hectares [25 acres]). Previous surveys in the adjacent portion of the SR 1 corridor have located many similar sites in the Blackbird vicinity. These sites represent a different settlement pattern from that found further north around Odessa, where prehistoric sites are concentrated along tidal marshes associated with the mid-drainage areas of the Appoquinimink River and Drawyer Creek. Site 7NC-J-212 therefore has the potential to reveal differences in the settlement patterns associated with these different physiographic areas of Delaware's Mid-drainage zone. The site's complex internal structure, as revealed during the Phase II investigations, suggests that it may also provide information on internal site structure and the differential use of space within this single settlement area.

The Osborne Wetland No. 3 Site therefore has sufficient integrity and sufficient information potential to make it eligible for listing in the NRHP.

3. *Marginal Sites*

Sites 7NC-G-144 and 7NC-G-145, the Augustine Creek North and South Sites

The Augustine Creek North Site (7NC-G-144) and the Augustine Creek South Site (7NC-G-145) are both farms dating to the mid- to late eighteenth century. De Cunzo and Catts (1990:267) distinguish farms and tenant farms as separate property types, but in these cases it is not possible to specify whether the farms were owner- or tenant-occupied; indeed, they may have been both. The sites have been plowed, and no intact strata or subplowzone features were discovered during the Phase I and Phase II investigations. The sites are not well documented in the written records, and it therefore seems unlikely that the occupants can be positively identified. The Augustine Creek North Site yielded more than 3,000 artifacts, but two-thirds of them were small brick fragments, and the remainder had also been severely fragmented by repeated plowing. Although architectural artifacts were recovered from the site, no structural features were identified. Only 610 historic artifacts were recovered from the Augustine Creek South Site, all but 188 of them brick fragments. No intact features were identified. Although sites dating to the eighteenth century are relatively rare, the Phase II investigations failed to identify well-preserved contexts for the recovered artifacts, structural features, landscape data, or detailed historical documentation. The investigations did not demonstrate that the sites could contribute information relevant to the understanding of architecture or landscape use in the colonial period. However, the integrity requirements for this site type are relatively low because of its rarity, and the hand excavations carried out to date can hardly be said to have ruled out the possibility of intact, subplowzone features. Therefore, additional evaluations of the sites should be considered.

Site 7NC-G-150, the Eisenbrey Wetland Site

The Eisenbrey Wetland Site is a moderately dense scatter of prehistoric artifacts, predominantly lithic debitage, over a large cultivated field adjacent to Drawyer Creek. The Phase I and Phase II investigations identified three loci of relatively high artifact density which may represent different occupational components. Three diagnostic projectile points and a few unidentified

ceramic sherds suggest that the site occupation dates primarily to the Woodland I period of Delaware prehistory. While the site retains some degree of spatial patterning, as evidenced by three distinct loci of artifact concentration, the fact that roughly 90 percent of the cultural material was recovered from plowzone contexts indicates a low level of integrity. One possible prehistoric feature, similar to others found in Delaware which some investigators believe to be house pits, was identified at the site. If the pit is indeed a prehistoric house pit, the site would be assignable to the microband base camp property type. If the pit is non-cultural, perhaps a tree throw, the site would be assignable to the procurement site property type, and the presence of the pit would provide additional evidence of the site's lack of integrity. Although the site has a low level of integrity, it may contain significant information regarding Woodland I settlement types; therefore, additional evaluation of the site should be considered.

B. ASSESSMENT OF EFFECT FROM THE UNDERTAKING

Adverse impacts which may affect the archaeological resources in the study area are generally related to highway construction, relocation of utilities, and construction of storm water management areas and wetland replacement areas. Such projects generally begin with the removal of vegetation and organic surface soils by the use of heavy machinery. Grading for the roadway may result in further removal of archaeological features and deposits, or their burial beneath fills and roadway pavement. Since most of the archaeological deposits are located in surface soils or shallow subsoil contexts, these types of construction activities have a direct, primary adverse effect on the archaeological resources. The specific effect of the proposed undertaking must be determined by reference to design plans, which are not final at this juncture.

Among the sites considered eligible for the NRHP, the Appoquinimink North Site (7NC-F-13) and the Drawyer Creek South Site (7NC-G-143) are within the roadway corridor and will therefore be destroyed by roadway construction. The Locust Grove Site (7NC-F-73) is located within an interchange area at the juncture of SR 299 and SR 1. The Whitby Branch Site (7NC-G-151) is located within a storm water management area, where it will be destroyed by direct construction impacts. The design specifications for the Osborne Wetland Replacement Area are not yet final, so the effects to the Osborne Wetland No. 3 Site (7NC-J-212) are uncertain at this juncture.

C. RECOMMENDED TREATMENT

There are three general strategies for treatment of significant archaeological resources which are threatened by adverse effects: avoidance of impacts through project redesign, *in situ* preservation, and data recovery. Among these, avoidance of impacts is often favored because such measures may completely remove a significant resource from the threat of destruction and may be less costly than preservation or data recovery.

Avoidance is generally not practical in the present situation. The alignment of SR 1 was chosen after a long process of consultation in which many factors were considered, including the presence or likely presence of archaeological resources. At this juncture, realignment of the

corridor would not be practical, and other alignments would probably have equal or greater impacts on archaeological resources. In particular, any alignment in the Odessa vicinity would have to cross the Appoquinimink River and Drawyer Creek, and it is likely that significant archaeological sites would be encountered at any crossing place. The Whitby Branch Site (7NC-G-151) is located in a storm water management pond, but because storm water management ponds at the location of the site are necessary to protect the water quality of Whitby Branch and the Appoquinimink River, the Whitby Branch Site cannot be avoided.

The second mitigation strategy, *in situ* preservation, may be preferred when two conditions exist: first, when the project design modifications would be impractical, and second, when viable engineering solutions are available to effectively protect and preserve a resource from the impending project impacts. The third mitigation strategy, data recovery, has become the most common solution, because of the impracticality of avoidance or *in situ* preservation.

Under the terms of a Memorandum of Agreement governing the identification and treatment of archaeological resources in the SR 1 project area, and in accordance with the regulations set forth in 36 CFR 800, mitigation plans are to be developed and implemented as a result of consultations between DelDOT and DESHPO.