nineteenth century house. The site was both owner and tenant occupied. No features were identified and no structural remains were located although historic maps and artifact distributions confirm the location of the site. On the basis of the degree of plow disturbance to the site, the lack of historic features and the low numbers of historic artifacts found, the site is not eligible for listing on the National Register of Historic Places and no further work is recommended. However, as the historic component of the Carey Farm Prehistoric Site which is eligible for the National Register, the portions of the Izat-Dyer Site excavated as part of the associated prehistoric site will constitute data recovery operations.

CONCLUSIONS AND RECOMMENDATIONS

IMPLICATIONS FOR REGIONAL HISTORY

The eleven historic archaeological sites in the Early Action Segment tested by Phase II operations can be used to study four primary research domains as identified by the Historic Archaeological Resource Management Plan for Delaware (De Cunzo and Catts, 1990) and the Delaware Statewide Comprehensive Historic Preservation Plan (Ames et al. 1987). Broadly interpreted, these research domains seek to reconstruct and analyze major changes over time and place in the social and economic landscape of central Delaware in the eighteenth, nineteenth, and twentieth centuries. Specifically, all of the sites tested are agriculturally-related and could be used to trace the critical social and economic changes that occurred in central Delaware over the eighteenth, nineteenth and early

TABLE 14

MAJOR TIME PERIODS IN DELAWARE HISTORY

1.	1630-1730 +/-	Exploration and Frontier Settlement
2.	1730-1770 +/-	Intensified and Durable Occupation
3.	1770-1830 +/-	Early Industrialization
4.	1880-1940 +/-	Urbanization and Early Suburbanization

twentieth centuries. Lindstrom (1973), Hancock (1947), Munroe (1984), and Hoffecker (1977) note that farmers in nineteenth century central Delaware adapted to the loss of a prosperous eighteenth century foreign grain based economy and the rise of a much different and more volatile later nineteenth and twentieth century regional economy built around expanding local urban markets, particularly Philadelphia and New York.

The broad social and economic changes occurring in central Delaware over time provide a convenient organization for the investigation and interpretation of historic archaeological sites in Delaware. These changes were used to define the major time periods of Delaware history (Table 14). These periods add a further dimension to the research potential and overall significance of each site as change over time is a critical aspect of each major research theme. Sites from each of the five major time periods are represented in the eleven historic sites in the Smyrna to Dover segment tested by Phase II operations.

A summary of the overall research potential for all of the historic archaeological sites tested by Phase II operations is summarized in Tables 15 and 16. The research potential of each

TABLE 15

SUMMARY OF THE RESEARCH POTENTIAL (RESEARCH DOMAINS) FOR ALL HISTORIC SITES IN THE SMYRNA TO DOVER SEGMENT

	Time Period	National Reister Elligible	Primary Occupation	Primary Research Domain	Secondary Research Domain
Buchanin-Savin Farm Site (N-6272, 7NC-J-175)	1830-1880+ 1880-1940±	Yes	Owner	Domestic Economy	Landscape
Mannee-Cahoon Site (K-6446, 7K-A-117)	1630-1730+ 1730-1770±	Yes	Owner Tenant	Domestic Economy	Landscape
John Denny House	1730-1770+ 1770-1830±	---	Owner	Domestic Economy	Landscape
G.W. Cummins Outbuilding Component (K-1562, 7K-A-104)	1830-1880+ 1880-1940±	No	Owner	Domestic Economy	Landscape
Denny Family Cemetery	1770-1830±	---	-----	Social Group Identity Behavior & Interaction	Landscape
Moore-Taylor Farm Site (K-6432, 7K-C-380)	1830-1880+ 1880-1940±	Yes	Owner	Domestic Economy	Landscape

TABLE 15 (cont.)

	Time Period	National Reister Elligible	Primary Occupation	Primary Research Domain	Secondary Research Domain
Lewis-E Site (K-6385, 7K-C-362)	1730-1770+ 1770-1830±	Yes	Tenant	Domestic Economy	Landscape
H. Wilson-Lewis Tenant Farm Site (K-6414, 7K-C-375)	1830-1880±	Yes	Tenant	Domestic Economy	Landscape
Lockerman's Range Site (K-6388B, 7K-C-365B)	1630-1730+ 1730-1770±	Yes	Tenant	Domestic Economy	Landscape
C. Kimmey Tenant Farm Site (K-644, 7K-D-19)	1830-1880+ 1880-1940±	Yes	Tenant	Domestic Economy	Landscape
Izat Dyer House Site (K-493, 7K-D-3)	1830-1880±	No	Owner Tenant	Domestic Economy	Landscape

TABLE 16

SUMMARY OF THE RESEARCH POTENTIAL (HISTORIC THEMES) FOR ALL HISTORIC SITES IN THE SMYRNA TO DOVER SEGMENT

	Time Period	National Register Elligible	Primary Occupation	Primary Historic Theme	Secondary Historic Theme
Buchanin-Savin Farm Site (N-6272, 7NC-J-175)	1830-1880+ 1880-1940±	Yes	Owner	Agriculture	Settlement patterns & Demographic change
Mannee-Cahoon Site (K-6446, 7K-A-117)	1630-1730+ 1730-1770±	Yes	Owner Tenant	Agriculture	Settlement patterns & Demographic change
John Denny House	1730-1770+ 1770-1830±	---	Owner	Agriculture	Settlement patterns & Demographic change
G.W. Cummins Outbuilding Component (K-1562, 7K-A-104)	1830-1880+ 1880-1940±	No	Owner	Agriculture	Settlement patterns & Demographic change
Denny Family Cemetery	1770-1830±	---	-----	Settlement patterns & Demographic change	Religion
Moore-Taylor Farm Site (K-6432, 7K-C-380)	1830-1880+ 1880-1940±	Yes	Owner	Agriculture	Settlement patterns & Demographic change

TABLE 16 (cont.)

	Time Period	National Register Elligible	Primary Occupation	Primary Historic Theme	Secondary Historic Theme
Lewis-E Site (K-6385, 7K-C-362)	1730-1770+ 1770-1830±	Yes	Tenant	Agriculture	Settlement patterns & Demographic change
H. Wilson-Lewis Tenant Farm Site (K-6414, 7K-C-375)	1830-1880±	Yes	Tenant	Agriculture	Settlement patterns & Demographic change
Lockerman's Range Site (K-6388B, 7K-C-365B)	1630-1730+ 1730-1770±	Yes	Tenant	Agriculture	Settlement patterns & Demographic change
C. Kimmey Tenant Farm Site (K-644, 7K-D-19)	1830-1880+ 1880-1940±	Yes	Tenant	Agriculture	Settlement patterns & Demographic change
Izat Dyer House Site (K-493, 7K-D-3)	1830-1880±	No	Owner Tenant	Agriculture	Settlement patterns & Demographic change

site was assessed according to the observed and predicted value of information applicable to the four primary research domains suggested for all historic archaeological sites in Delaware by De Cunzo and Catts (1990) and the Delaware Statewide Comprehensive Historic Preservation Plan (Ames et al. 1987). These research domains are outlined in the Research Design section of this report. A discussion of the specific applicability of each of the eleven sites within these research domains and current archaeological themes in Delaware historic archaeology follows.

The majority of the sites tested by Phase II excavations in the Dover to Smyrna segment are owner- and tenant-occupied farmsteads. Only one tested area, the Denny Family Cemetery near Smyrna, was not directly associated with the remains of a domestic site. The Denny cemetery, however, was not located. The primary research themes applicable to all of the sites within the Smyrna to Dover segment relate to questions concerning the domestic economy of rural agricultural sites and specifically, related changes in the historic landscape, agriculture, settlement patterns, and demographic change (Table 16).

All five major time periods in Delaware history are represented in the ten domestic agricultural sites tested by Phase II operations. The Mannee-Cahoon Site (7K-A-117) and the Loockerman's Range Site (7K-C-365) are the two earliest sites in the Smyrna to Dover segment. Both of these sites date to the period of initial exploration and frontier settlement of Delaware from 1630-1730+/- as identified by Ames et al. 1987 (Table 14).

Both sites, however, date to very late in this period and were both first occupied ca. 1725. Very little is known about this period in Delaware history and no other known historic archaeological sites in Kent County date to this period (De Cunzo and Catts, 1990: Table 14). Thus, both sites are considered to be National Register eligible.

As no other sites are known to date to this period in Kent County, a great number of specific research questions remain to be answered at the Mannee-Cahoon and Loockerman's Range sites. Data is needed on house and outbuilding construction techniques, farmstead layout, spatial utilization, activity areas, trash disposal patterns, and foodways are needed. Moreover, both sites include tenant occupations that can be compared to later eighteenth century tenant sites such as the Lewis-E Site (7K-C-362), St. Jones Neck area sites (Wise 1979) and the Dickinson Mansion in Kent County, Thompson's Loss and Gain, and Thomas (1983) sites in Sussex County, and the Whitten Road Site (7NC-D-100) in New Castle County (Shaffer et al. 1988).

Specifically, the initial period of owner occupation of the Mannee-Cahoon Site by William Strickland could be compared to the later tenant occupation of the site by Peter Mannee and the contemporary second and third quarter of the eighteenth century tenant occupation of the Loockerman's Range Site. Such comparisons are likely to yield data useful to current research questions concerning differences in socio-economic status and varying degrees of self-sufficiency and market participation visible in the material culture assemblage (especially faunal remains, ceramics, and imported consumer goods). In addition to

such questions concerning the domestic economy of such sites, data from the Loockerman's Range and Mannee-Cahoon sites can be used to reconstruct the early landscape of central Delaware. Such questions will also help scholars to determine the broad outlines of social group interaction and identity--current research themes that can be studied over time and at intra- and inter-site levels.

The Mannee-Cahoon and Loockerman's Range sites were both occupied into the next major period of Delaware history. This period, the period of intensified and durable occupation, lasted from approximately 1730-1770 (Table 14). Both sites appear to have been last occupied in the decade prior to the Revolutionary War. The end of occupation of these sites is evidence of the important social and economic changes that define this second period of Delaware history. Two other sites within the Smyrna to Dover segment date to this period: the Lewis-E Site (7K-C-362) and the Darrach Store Site (7K-A-101).

The Lewis-E Site was occupied by tenants during from third quarter of the eighteenth century until the first quarter of the nineteenth century. The remains of a root cellar and well containing diagnostic late eighteenth century artifacts in undisturbed contexts were located and the site determined to be National Register eligible. Archival research indicates that the site was tenant occupied--an occupation contemporary to the known tenant-occupation of the Whitten Road Site (7NC-D-100; Shaffer, et al. 1988). Key research questions within the 1730-1770 period of intensified and durable occupation include the

rebuilding of Delaware architecture into more permanent and durable forms as summarized by Herman et al. (1989). Another key research question is the development of a strong regional grain economy around a dynamic Philadelphia market and the corresponding rise in agricultural tenancy. The historical and archaeological investigation of agricultural tenancy, particularly in the domestic economy, settlement patterns, and spatial utilization of tenant sites is an important theme in Delaware history.

The Lewis-E Site was also occupied during the next phase of Delaware history. This phase, the period of early industrialization, lasted from ca. 1770-1830 (Table 14). This period saw critical changes in the social and economic life of Delaware. Beginning in 1790, the economy of Delaware underwent a fundamental transformation as the strong colonial grain markets declined in the 1810s and Delawareans struggled to adapt to new national, urban-based markets. Two other historic resources, the John Denny House and the related Denny Family Cemetery, date to this period. Although both of these resources were never located by Phase II testing and are not located within the proposed alignment of State Route 1, archival research completed on both sites yielded data significant to the study of this critical period in Delaware history. Furthermore, historic cemeteries such as the Denny Family Cemetery are likely to yield data pertaining to research questions concerning social group identity and demographic change (Table 15).

The majority of the sites in the Smyrna to Dover segment date to the next two periods of Delaware history. These two

periods are the periods of industrialization and early urbanization (1830-1880+/-) and urbanization and early suburbanization (1880-1940+/-) (Table 14). Six of the eleven sites date to at least one and typically to both of these periods: the Buchanan-Savin Farm Site (7NC-J-175), G. W. Cummins Outbuilding Component (7K-A-104), Moore-Taylor Farm Site (7K-C-380), H. Wilson-Lewis Tenant Farm Site (7K-C-375), C. Kimmey Tenant Farm Site (7K-D-114), and the Izat-Dyer House Site (7K-D-3). With the exception of the H. Wilson-Lewis Tenant Farm Site and the Izat-Dyer House Site that were only occupied during the 1830-1880 period, all of these sites were occupied from ca. 1830 until the beginning of the twentieth century.

The two primary research domains applicable to these mid-eighteenth to early twentieth century sites concern the domestic economy of the sites and changes in the local and regional social and economic landscape. Two related themes, changes in agriculture and settlement patterns, predominate (Table 16). The 1830-1880 and 1880-1940 periods in Delaware history saw three critical changes that could be studied through further archival and archaeological research. The three key changes are 1) transportation developments, 2) economic and agricultural change with the development of large scale fruit, truck produce, legume, and dairy industries that took advantage of changes in transportation and the expanding regional urban markets, and 3) changing agricultural labor and tenancy patterns. Elements of these three key changes can be seen in each of the six nineteenth century tenant- and owner-occupied farmstead sites tested by

Phase II excavations. Further research on the four National Register eligible sites in particular, the Buchanan-Savin Farm, Moore-Taylor Farm, H. Wilson-Lewis Tenant Farm, and the C. Kimmey Tenant Farm sites, could yield important information.

The two most important transportation developments in mid-nineteenth century Delaware were the completion of the Delaware railroad trunkline through to Seaford in 1856 and the increasingly widespread use of steamboat transportation in the second and third quarters of the nineteenth century. Related to the use of steamboats was the earlier completion of the Delaware and Chesapeake Canal in 1829. All of the historic sites tested by Phase II operations were within one half of a mile of an established railroad crossing or known steamboat landing and participated in the economic opportunities brought by improved transportation in the nineteenth and twentieth centuries.

In addition to easy access to railroad transportation, all of the historic sites tested by Phase II operations are located along major north-south and east-west roads. The Buchanan-Savin Farm Site and the Thomas England Outbuildings Component are all located near Smyrna and the conjunction of the railroad, and water transportation networks that serviced the agricultural, fruit processing, and light manufacturing industries located there. The Moore-Taylor and H. Wilson-Lewis sites are both located on major secondary roads less than one half of a mile from the Delaware railroad at Hughes Crossing and the Smyrna to Dover Road (present Rt. 13) and less than one and a half miles from the steamboat landings at Leipsic. The Izat-Dyer and C. Kimmey sites are located along the main Dover to Kitts Hummock

Road (present Rt. 13) and were serviced by public landings on the St. Jones in Lebanon and Dover and by a number of private landings on the river, including one on the Kimmey property itself.

The construction of the Dupont Highway in the 1920s was another pivotal event in the transportation history of central Delaware. The Buchanan-Savin Farm in particular was affected by the construction of present Route 13 which bisected the farm, forcing the removal of several buildings and the reorientation of the farm. Further research into the changing site layout and spatial use patterns of this site could yield important data on the synchronic and diachronic effect of a major change in the physical landscape of a site.

Transportation improvements and the presence of large, nearby urban markets in the nineteenth century stimulated the commercial production of perishable, but potentially very profitable agricultural goods. The demand for Delaware milk, peaches, fodder, and truck produce in nearby Wilmington, Philadelphia, Baltimore, and New York encouraged commercial production. The number of cultivated acres in Kent County alone rose from 283,000 acres in 1850 to 338,000 acres in 1900 (Bausman 1940:10).

Each of the six nineteenth and early twentieth century agricultural complex sites were occupied during this period of agricultural and population expansion that began in the second quarter of the nineteenth century. Not only was more land being farmed, and more owner- and tenant-occupied farms such as the

Buchanan-Savin, Moore-Taylor, C. Kimmey and Izat-Dyer sites being established, but what was being grown on them was also changing. Corn and wheat, the previous staples, were being replaced with orchard crops, truck produce and dairy products. The changing composition of crops produced in central Delaware continued to change into the twentieth century as peaches and corn were replaced with legumes, alfalfa, and a renewed emphasis on dairy products and truck produce.

The preliminary research presented in this report confirms the general pattern of economic change presented here. Evidence of each change can be seen in each of the six nineteenth and twentieth century farmstead sites. These changes are important historical events and could be studied by further research on these historic sites within the Proposed Delaware 1 Alignment. Changes in agriculture and the domestic economy, particularly the degree of market participation and consumer behavior, are expected to be the primary research themes. Further work on the four National Register eligible sites in particular could yield significant information. These four eligible sites, the Buchanan-Savin Farm, Moore-Taylor Farm, H. Wilson-Lewis Tenant Farm and C. Kimmey Tenant Farm sites, all underwent significant agricultural and economic change in the nineteenth and twentieth centuries.

Archival and archaeological research indicates that the primary agricultural change affecting two of the eligible sites, the Buchanan-Savin Farm Site and the C. Kimmey Tenant Farm Site, was the trend towards increased milk and dairy production. This trend began in mid-nineteenth century and continued into the

early twentieth century and was one of the primary transportation and urban market related changes that occurred in central Delaware. Jensen (1986) in particular explores the commercial impact of the rise of dairy operations in this period in the mid-Atlantic region. Jensen is particularly interested in the changing roles of women who provided most of the labor that increased butter, cheese, and milk production entailed and further work on the Buchanan-Savin and Kimmey farm sites could yield important information.

Bausman estimates that milk production in Kent County doubled between 1850-1900. Over the next 35 years, from 1900-1935, Bausman estimates that milk production increased an additional 30% (Bausman 1940:11-15). Improved transportation, particularly the advent of refrigerated railroad tank cars in the 1870s, was a powerful incentive for potentially profitable, but capital intensive, dairy operations (Atack and Bateman 1987:149). The following discussion of the archaeological and archival evidence of social, economic, and agricultural change at the Buchanan-Savin Farm Site is an example of the research directions suggested by Phase II research and what can be learned from further work on the five similar nineteenth and early twentieth century historic sites within the Proposed State Route 1 Relief Route.

The Buchanan-Savin Farm Site is a mid socio-economic level owner-occupied farm that was first settled in the second quarter of the nineteenth century. The Buchanan-Savin farm is located two miles north of Smyrna. Today the site consists of the

remains of a large dairy farm that supplied fluid milk to Wilmington through the mid-twentieth century. The roots of this emphasis upon commercial dairy and related corn silage production and its relationship to the peach boom can be seen in a comparison of the farm's returns in the 1850 and 1860 agricultural censuses and the archaeological and historical reconstruction of the local social and agricultural landscape.

In 1850, the Buchanan-Savin farm consisted of a 260 acre farm valued at $8,000. The owner of the farm, George W. Buchanan, owned two horses, one ass or mule, two milk cows, two working oxen, and 18 sheep. His livestock was valued at $200 and helped him to produce annually 40 lbs. of wool, 25 lbs. of butter, 260 bushels of wheat and 1600 bushels of Indian corn. According to the 1850 census, Buchanan also produced small amounts of buckwheat, Irish potatoes, peas, and beans.

Ten years later, after the Delaware railroad one half mile to the west was completed, the 1860 agricultural census described a much different farm. In that year, George Buchanan's 300 acre farm was valued at $15,000, nearly double its value in 1850. By 1860, Buchanan also owned seven horses and mules, six milk cows, and 16 other cattle--in all, over five times as many cattle and three times as many horses and mules as in 1850. Buchanan's livestock was valued at $1500 which is over seven times the value of his livestock listed in 1850.

By 1860, Buchanan was no longer producing any buckwheat, Irish potatoes, peas, beans, or wool. In their place was a new emphasis on dairy products and a continued interest in wheat and corn. Buchanan's production of butter alone increased twelve

times-- by 1860 his six milk cows were producing 300 lbs. of butter a year. Oats, sweet potatoes, and orchard products were also new crops that reflected the more specialized and commercial oriented operations on the farm. The appearance of oats is especially significant--the 700 bushels that Buchanan produced in 1860 fed the four new horses and mules that replaced his two oxen and that allowed him and his three young farm laborers to operate the $200 worth of machinery that helped make such specialization possible. This specialization continued at the Buchanan-Savin Farm Site until today where the concrete block fodder silos, dairy barn, and milking sheds typical of a large dairy farm are still visible.

After the death of George W. Buchanan and his wife Anna by the third quarter of the nineteenth century, the farm passed to their son-in-law Samuel Armstrong, a wealthy local peach farmer. Armstrong had married the Buchanan's daughter Anna in 1857 and by the late 1880s owned over 10,000 peach trees. Armstrong probably shipped his peaches by rail from nearby Sassafras Station or by steamboat from nearby Smyrna Landing.

While Armstrong owned the farm, it is likely that his brother Francis Armstrong tenanted the farm until he purchased it in 1910. Francis Armstrong owned the farm until 1921. What Armstrong produced on the farm is not known, but it is likely that he continued the dairy operations while growing corn and hay for silage.

Francis Armstrong sold the farm in 1921 to Thomas R. Moffitt, a local farmer and dairyman. In the deed for this transaction, a strip of land was reserved for the construction of

part of the Dupont Highway, present Route 13. The construction of the Dupont Highway forced the relocation of at least one agricultural outbuilding and determined the present orientation of the extant concrete block dairy barns and agricultural equipment sheds and activity area patterns as identified by artifact densities from archaeological testing.

The C. Kimmey Tenant Farm Site was also oriented to an intensive mixed corn, silage, and dairy farming. The C. Kimmey Site was occupied by the relatively high socio-economic class tenants who were employed by a wealthy and influential Dover jurist. Further research on the tenant occupation of the site could be compared to the owner-occupied Buchanan-Savin and Moore-Taylor farms and to the earlier, but similar socio-economic level tenancy at the John Dickinson Plantation (Guerrant 1987). The C. Kimmey farm also represents a higher socio-economic strata than either the Buchanan-Savin or Moore-Taylor farms and further research could identify significant information on different social and economic levels. All of the sites could be compared to the poor tenant occupation of the H. Wilson-Lewis Site.

Improved transportation in the first decades not only changed physically some central Delaware farms as it did the Buchanan-Savin Farm, but also ushered in a series of social and economic changes that could be addressed by further research on historic sites within the Proposed Delaware 1 Alignment. Bausman notes that between 1900 and 1935 the amount of farmland cultivated in Kent County decreased by 13.2% as farming generally became less profitable and more and more people moved to higher

paying industrial jobs (Bausman 1940:10, and 1933:169). The improved transportation that increased access to regional urban markets also encouraged many to abandon farming and move to those urban areas. As agricultural labor prices rose, many marginal farmers were forced to abandon their farms.

Two such marginal farms abandoned during this period appear to be the Moore-Taylor and H. Wilson-Lewis farms. Like the nearby H. Wilson-Lewis Tenant Farm, the Moore-Taylor Farm is located on relatively poor soil northeast of Dover. The late nineteenth and early twentieth century owner and tenant occupation of the Moore-Taylor Farm Site could be compared to the slightly earlier tenant occupation of the H. Wilson-Lewis Site and to the contemporary owner- and then tenant-occupation of the Buchanan-Savin Farm. These occupations of the Buchanan-Savin Farm also appear to have been related to larger changes in the local labor market and the declining general prosperity of agriculture in the early twentieth century.

The Moore-Taylor and H. Wilson Lewis sites represent tenant occupations from the lower strata of the socio-economic spectrum. The H. Wilson-Lewis Site, in particular, represents a relatively poor white tenant occupation. Such sites are in general poorly preserved in both the architectural and archaeological records. These sites represent important historic resources and further work on both sites could be used to reconstruct the social and economic landscapes of an important social group. Data from these two sites in particular could be compared to black-occupied tenant sites of similar wealth such as the Williams Site (Catts et al. 1990). Such data may help to identify ethnicity-related

patterns while controlling for variations in socio-economic status. Similarly, the Moore-Taylor and H. Wilson-Lewis sites could be compared to sites occupied by wealthier tenants such as the C. Kimmey Site. Such comparisons may help to identify wealth-related archaeological patterns while controlling for ethnic variables.

Further research on the documentary and archaeological evidence of transportation and agricultural change, particularly the process of dairy specialization, would provide important information on these social and economic changes in the nineteenth and early twentieth centuries. By focusing on agricultural and economic change, further research could identify the role of primary changes in transportation access, market opportunities, and agricultural change within the domestic economy and the historic landscape.

Similar social and economic changes have been seen in other middle and late nineteenth century historic sites in central and northern Delaware (Grettler et al. 1988; Hoseth et al. 1990; Catts et al. 1988, 1989a, 1989b; Catts and Custer 1990; Coleman et al. 1983, 1984, 1985; Heite and Heite 1985, 1986, 1989; Heite 1984; Lothrop et al. 1987) and further work on sites in the present alignment of Proposed Delaware 1 could provide comparable data. Specifically data from the Temple Site (Hoseth et al. 1990), Patterson Lane Site (Catts et al. 1989b), Hawthorn Site (Coleman et al. 1984), Ferguson Site (Coleman et al. 1983, Mudstone Branch Site (Heite 1984) and the Durham Site (Heite and Heite 1985) could be compared to the historic site within the

State Route 1 project areas. Data from further work on the Buchanan-Savin, Moore-Taylor, H. Wilson Lewis, and C. Kimmey sites could also be compared to each other and to the other historic archaeological sites in the proposed alignment tested by the Phase II survey. On a regional and national scale, a number of historians have dealt with site-specific interpretations of nineteenth century agricultural and economic change (Jensen 1986, Bogue 1963, Barron 1984, Gates 1960, and Faragher 1986).

In conclusion, the goal of all further research on the historical archaeological sites within the Proposed State Route 1 Corridor is to collect comparable data and to ask comparable questions over time in order to better understand diachronic cultural processes. Data from further work on the seven National Register eligible sites (Buchanan-Savin Farm, Mannee-Cahoon House, Moore-Taylor Farm, Lewis-E, H. Wilson-Lewis Tenant Farm, Loockerman's Range, and C. Kimmey Tenant Farm sites) in particular are expected to yield data significant to current research questions in historical archaeology and the history of Delaware and the surrounding mid-Atlantic region.

CULTURAL RESOURCE MANAGEMENT RECOMMENDATIONS

A total of eleven historic archaeological sites within the Early Action Segment of the State Route 1 Relief Route were tested by Phase II operations. Five sites were determined to require no further work. Two of the sites, the John Denny House and the Denny Family Cemetery, were not located by Phase II testing. Two additional sites, the G. W. Cummins House Outbuilding Component Site (K-156.2, 7K-A-104) and the Izat-Dyer

TABLE 17

SUMMARY OF EARLY ACTION SEGMENT OF THE PROPOSED STATE ROUTE 1 RELIEF ROUTE PROJECT AREA REQUIRING NO FURTHER WORK

CRS#	Site Number	Site Name	Phase I Site #
		John Denny House	45
K-156.2	7K-A-104	G.W. Cummins House Outbuildings Component	46
		Denny Family Cemetery	--
K-6388B	7K-C-365B	Lockerman's Range Site	--
K-493	Historic Component of 7K-D-3	Izat-Dyer House Site	

House Site (K-493, 7K-D-3) were determined to be ineligible for listing on the National Register. A fifth site, the Loockerman's Range Site (K-6388B, 7K-C-365B) was determined to be eligible, but is located outside the proposed right-of-way and will not be affected by the construction of the Proposed State Route 1 Corridor. No further work is recommended for any of these sites (Table 17).

Six historic archaeological sites were determined to be National Register eligible and likely to be impacted by the construction of the Proposed State Route 1 Alignment. Thus if avoidance, the first mitigation alternative proves impossible, further work is recommended for all six sites (Table 18). All of these sites were found to contain significant intact archaeological deposits and features. These seven sites are eligible for listing on the National Register of Historic Places under Criterion D in that the sites have and are likely to yield significant information relating to the historical development of the region.

TABLE 18

SUMMARY OF EARLY ACTION SEGMENT OF THE PROPOSED STATE ROUTE 1 RELIEF ROUTE PROJECT AREA REQUIRING DATA RECOVERY

CRS#	Site #	Site Name	Phase I I.D. #
N-6272	7NC-J-175	Buchanan-Savin Farm Site	41
K-6446	7K-A-117	Manree-Cahoon House Site	--
K-6432	7K-C-380	Moore-Taylor Farm Site	23
K-6385	7K-C-362	Lewis-E Site	--
K-4614	7K-C-375	H. Wilson-Lewis Tenant Farm Site	21
K-6440	7K-D-119	C. Kimmey Tenant Farm Site	4

Phase II testing determined that seven sites were eligible for inclusion on the National Register of Historic Places, and thus warrant further work. If avoidance of the sites is impossible, data recovery operations are recommended. These seven sites are the Buchanan-Savin Farm Site (N-6272, 7NC-J-175), Mannee-Cahoon Site (K-6446, 7K-A-117), Moore-Taylor Farm Site (K-6432, 7K-C-380), Lewis-E Site (K-6385, 7K-C-362), H. Wilson-Lewis Tenant Farm Site (K-6414, 7K-C-375), Loockerman's Range Site (K-6388B, 7K-C-365) and the C. Kimmey Tenant Farm Site (K-6440; 7K-D-119). With the exception of the Loockerman's Range Site, all of these sites require data recovery operations if avoidance is impossible (Table 18). No further work is recommended for the Loockerman's Range Site because the site is not located within the proposed right-of-way and the site will not be affected by proposed construction.

Each of these six eligible sites will be negatively impacted by proposed construction under the current alignment of the proposed right-of-way. The Loockerman's Range Site is located outside of the proposed right-of-way. The Buchanan-Savin Farm, Mannee-Cahoon House, Moore-Taylor Farm, Lewis-E, and H. Wilson-

Lewis Tenant Farm sites in particular will be impacted by proposed construction; the entirety of both sites are within the proposed right-of-way. Only a small portion of the eastern-most part of the C. Kimmey Tenant Farm Site will be affected by proposed construction. However, if the Island Farm and Carey Farm properties are subjected to gravel pitting operations as current construction plans call for, all of the site will be impacted.

Archaeological testing determined that each of these six National Register eligible sites in the proposed right-of-way contained intact subsurface historic features and artifacts in undisturbed stratigraphic contexts. Two of the eligible sites, the Buchanan-Savin and Moore-Taylor sites, were determined by archival research to be predominantly owner-occupied agricultural complexes occupied from the mid-nineteenth to the twentieth centuries. Both of the sites, however, were owner-occupied at various times. One site, the Mannee-Cahoon House Site was determined to be both owner- and tenant-occupied. The remaining three eligible sites, the Lewis-E, H. Wilson-Lewis Tenant Farm, and C. Kimmey Tenant Farm sites, were predominantly tenant-occupied.

Preservation of these six eligible sites within the proposed right-of-way is the preferred mitigation alternative. However, if this alternative is not possible, data recovery investigations are recommended (Table 18). Specifically, data recovery excavations at these site should seek to examine the historic context of social, economic, and agricultural change in Kent County in eighteenth, nineteenth, and twentieth centuries. The

preliminary historic research for this Phase II project indicates that the six eligible sites represent a range of owner and tenant occupied agricultural sites from distinct socio-economic strata. The sites are likely to yield important information on eighteenth, nineteenth, and twentieth century farm site housing and layout, the domestic economy and agricultural change, and changes in farm ownership, tenancy, and labor patterns. Agricultural and economic change, particularly as affected by transportation changes and changing regional urban market opportunities, will be important research topics. One of the sites, the Mannee-Cahoon House Site, dates to the earliest phase of Delaware History and represents a particularly important historic resource.

Recommended data recovery excavations for each Area I of the Buchanan-Savin (Figure 4), Mannee-Cahoon (Figure 22), Moore-Taylor (Figure 47), Lewis-E (Figure 57), H. Wilson-Lewis (Figure 63), and C. Kimmey (Figure 88) sites would include complete excavation and screening of all soils above and directly adjacent to the locus of most intense domestic activity (i.e. the extant domestic structures in the case of the Buchanan-Savin and C. Kimmey sites), a 25% stratified, systematic, unaligned sampling consisting of the excavation of a randomly chosen 5' X 5' square for every 10' X 10' unit area not directly associated with the area of domestic activity. Following this sampling, the remainder of each Area I would be mechanically stripped to expose all intact, subsurface features, and all of these cultural features would be excavated. These recommended excavation

procedures would be directly comparable to the data recovery excavations recently conducted at the Temple Site (Hoseth et al. 1990), the Williams Site (Catts and Custer 1990), and approved for the Darrach Store Site (De Cunzo et al. 1990).

The recommended data recovery excavations of each Area II of the six eligible sites would include the mechanical removal of the plowzone to expose any intact, subsurface features and the complete excavation of all cultural features thus identified. The level of investigation of all, or any portion of, Area II will be considerably less than for Area I.

In conclusion, the Buchanan-Savin, Mannee-Cahoon, Moore-Taylor, Lewis-E, H. Wilson-Lewis, and C. Kimmey sites are important and significant resources that deserve either preservation or intensive excavation constituting data recovery. The excavation of these sites and further archival research on each will allow the archaeological study of important components of the history of central Delaware.