MANAGEMENT CONSIDERATIONS

The site location data and analyses which have been presented can be used to develop a series of recommendations for the management of archaeological cultural resources within the "problem areas" of the New Castle county portion of the proposed Route 13 corridor. The main types of recommendations to be presented here are maps of sites of various significance for each of the problem areas.

ASSESSMENTS OF SITE SIGNIFICANCE

The first cultural resource planning study of the Route 13 corridor (Custer et al. 1984:113-129) developed a basic interpretive framework for the assessment of prehistoric and historic archaeological site significance. All sites noted on the maps included with the first report received a preliminary significance assessment based on the data available at that time. The present report mainly provides refined assessments for sites within the problem areas. The refined assessments are based on the more extensive site-specific data gathered during the field survey. For the most part, the original report's framework for determining site significance was utilized. However, in a few instances this framework was altered in light of new information and these alterations are discussed below.

For prehistoric and historic sites discovered during field survey of the study areas, all unplowed sites were considered to be of high significance because the survey data showed that the uplowed fringes of cultivated fields along major drainages and unplowed, isolated well-drained knolls within poorly-drained woodlands contained undisturbed and intact sites which could yield important data. Site 7NC-H-20, which was subjected to intensive testing during this survey, is a good example of this type of significant site which is eligible for listing on the National Register of Historic Places. It is also important to note that in many cases the sites which were found during sub-surface testing of wooded, unplowed areas are quite different from those identified from surface survey of plowed fields. For example, in the Appoquinimink area a series of small Woodland II sites (7NC-G-59, 60, 62, 63, 64) were discovered in the unplowed woodlands which fringed the south side of Drawyer's Creek north of Odessa. These were the only Woodland II sites discovered in the Appoquinimink area and their study will provide important data, in fact the only data available, on late prehistoric adaptations for the area.

Any plowed sites with Archaic or late Paleo-Indian components were also considered to be of high significance and certainly eligible for listing on the National register of Historic Places. These sites are all considered significant because they are rare and will provide important information on a poorly known period of Delaware's prehistory, (see earlier discussion in prehistoric site location analysis and Custer 1983a). It should be noted that plowed Archaic and late Paleo-Indian sites are included because even when plowed these sites can yield significant information. However, if a site was plowed and had been subjected to extensive erosion, it was not considered to be of high significance.

All plowed base camp sites from all time periods were also considered to be of high significance with a high probability of being eligible for listing on the National Register of Historic Places. Macro-band base camps, micro-band base camps, and generalized base camps are included here and are sources of data on a wide range of prehistoric activities. As was the case with Archaic sites, plowed sites are included in this significance category as long as they are not also disturbed by natural erosion.

All of the sites in the high significance category would require at least Phase II testing to determine their eligibility for listing on the National Register. In some cases, mainly the plowed sites in the high significance category, Phase II testing may be sufficient to mitigate any adverse effects on the site. However, all the unplowed sites would most likely require Phase III data recovery.

A second category of sites of medium significance was also recognized and consisted of all plowed historic sites and any non-procurement plowed prehistoric sites associated with bay/basin features. These sites all would probably require at least Phase II testing to determine National Register eligibility. However, they would probably only require Phase III data recovery if subsurface features were encountered. The historic sites would be the most likely sites to contain subsurface features in this category.

Two additional categories of sites encountered during the field survey were discovered and were also recognized. The first was a category of low significance which included sites which would not require Phase II determination-of-eligibility testing. All plowed, disturbed, and eroded sites fall into this category along with plowed procurement sites. The final class of sites noted is comprised of sites of unknown significance. For the most part, plowed sites for which no function can be determined comprise this category. Appendix VII lists the various sites by significance categories and study areas.

Assessments of historic site significance built from the basic assessments presented in the original report (Custer et al.

1984: Appendices II and III), but also included data from the field checks of the historic structures and potential archaeological sites taken from the various atlases. An index of archaeological potential was developed for each historic site listed in Tables 9 - 11 and this index was based on the following data:

1. **Preservation:** Sites containing well preserved structural, faunal, floral, or skeletal remains are more significant.

2. **Multi-Function** (Number and type of outbuildings): Sites exhibiting a range of well-defined activity/functional loci are more significant.

3. **Size and Density** (Number and type of archaeological features): Larger sites and those containing dense deposits of material culture are more significant.

4. **Duration of Occupation:** Sites exhibiting descrete temporal loci whether in the context of long-term or short-term occupations are more significant.

The archaeological significance ratings and historical significance ratings, which were taken from the work of the BAHP and the first Route 13 planning study (Custer et al. 1984:27), were combined to produce a four level system of ranking total cultural resource potential for the historic sites. The sites of the highest significance had high historic significance and high archaeological potential and the lower ranks had lesser composite rankings. Appendix VII lists the varied sites by area and total cultural resource potential categories. The historic significance and archaeological potential rankings are also noted in Appendix VIII.

CULTURAL RESOURCE PLANNING MAPS

The various significance categories of sites listed in Appendices VII and VIII were plotted on a series of large scale maps, which are included as attachments to this report.

Attachment I consists of maps of all known prehistoric sites of various significance levels for each study area. Where no site-specific data are available, the probability zones from the first report (Custer et al. 1984: Attachment V) were plotted for the study areas. For the Blackbird area, the probability zones were adjusted in accordance with the new findings of this report.

Attachment II consists of maps of all known historic sites of various significance levels for each study area. Again, where no site-specific data are available, a series of predictive zones were plotted. These historic predictive zones were plotted on

the basis of the predictive zones noted in the original report (Custer et al. 1984: Attachments VI and VII) and the descriptions of typical site settings noted in Table 72.

Attachment III provides composite site significance maps for the study areas and these maps can be used as guides to the Route 13 corridor planning within the study areas. These maps represent the best current data on archaeological cultural resource sensitivity for the St. Georges, Appoquinimink, and Blackbird study areas.

FUTURE MANAGEMENT AND RESEARCH ISSUES

This final part of the report will consider some specific management and research issues which go beyond the scope of the general management considerations considered up to this point. An important management issue to consider is the individual assessment of the uniqueness of sites in relation to their significance. Table 74 shows the frequencies of prehistoric sites of various types within the study area, the entire Delmarva Archaeological Data System (DADS), the entire state of Delaware, the High Coastal Plain, the Low Coastal Plain, and the general Coastal Plain. Tables 75-78 show the frequencies of historic sites of various types within the study area and the total corridor. These tables can be used to determine the uniqueness of particular classes of sites for future management decisions and determintations-of-eligibility.

Guide to Attachment Maps

These attachment maps record the prehistoric (Attachment 1) and historic (Attachment II) sites by the significance categories noted in the management section of the report and listed in Appendices VII - VIII. The management zones noted in the maps on Attachment III are defined below:

Zone I - High prehistoric sigificance and/or high and medium - high historic significance

Zone II - Medium prehistoric significance and/or medium - low historic significance

Zone III - Low prehistoric significance and low historic significance

ATTACHMENT I

Prehistoric Sites by Significance Categories
for the
St. Georges Study Area

Site location information may be obtained by
written request to: Delaware Department of Transportation
Division of Highways - Location Studies
P.O. Box 778
Dover, DE 19903

302-736-4644

ATTACHMENT I

Prehistoric Sites by Significance Categories
for the
Apppquinimink Study Area

ATTACHMENT I

Prehistoric Sites by Significance Categories for the Blackbird Study Area

ATTACHMENT II

Historic Sites by Significance Categories
for the
St. Georges Study Area

Site location information may be obtained by
written request to: Delaware Department of Transportation
Division of Highways - Location Studies
P.O. Box 778
Dover, DE 19903

302-736-4644

ATTACHMENT II

Historic Sites by Significance Categories
for the
Apppquinimink Study Area

ATTACHMENT II

Historic Sites by Significance for the Blackbird Study Area

ATTACHMENT III

Management Zones for Prehistoric and Historic Sites in the St. Georges Study Area

Site location information may be obtained by written request to:

Delaware Department of Transportation
Division of Highways - Location Studies
P.O. Box 778
Dover, DE 19903

302-736-4644

ATTACHMENT III

Management Zones for Prehistoric and Historic Sites in the Appoquinimink Study Area

ATTACHMENT III

Management Zones for the Prehistoric and Historic Sites
in the
Blackbird Study Area

TABLE 74

PREHISTORIC SITE FREQUENCIES

Site Type	DADS	DE	High C.P.	Low C.P.	Tot. C.P.
Paleo-Indian	96	63	3	72	75
Procurement	5	4	0	3	3
Macroband	9	9	1	7	8
Microband	0	0	0	0	0
Gen. B.C.	8	8	2	6	8
Archaic	281	55	12	58	70
Procurement	3	2	0	1	1
Macroband	9	8	1	4	5
Microband	0	0	0	0	0
Gen. B.C.	13	13	4	9	13
Woodland I	504	245	29	332	613
Procurement	7	5	2	2	4
Macroband	20	19	1	16	17
Microband	1	1	0	1	1
Gen. B.C.	49	48	11	34	45
Woodland II	446	205	45	292	373
Procurement	8	6	3	1	4
Macroband	22	20	1	15	16
Microband	2	2	2	0	2
Gen. B.C.	42	42	8	31	39

TABLE 75

HISTORIC SITE FREQUENCIES - PRE-1802

Site Function	Survey	Potential Arch. Sites	BAHP Survey	Total Corr.
AGCX	4	1	31	32
GMCX	2	6	1	7
BRID	1	0	0	0
CHUR	1	2	4	6
MANUFY	1	0	1	1
LANOP	0	1	0	1
AGMCX	0	1	4	5
MMCX	0	1	0	1
SMCX	0	2	0	2
DWCX	0	0	4	4
EST	0	0	13	13
PLANT	0	0	2	2
STO	0	0	1	1
TAV	0	0	1	1

TABLE 76

HISTORIC SITE FREQUENCIES - 1802-1849

Site Function	Survey	Potential Arch. Sites	BAHP Survey	Total Corr.
AGCX	49	106	110	216
AGTEN	10	37	11	48
INDTEN	2	2	0	2
GMCX	1	5	1	6
DWCX	1	8	12	20
SCH	2	9	1	10
RRSTA	1	1	0	1
HOT	0	0	1	1
STRUC	1	2	0	2
CHUR	1	4	2	6
LANOP	1	2	2	4
AGBLDG	1	0	0	0
PEACH	1	0	3	3
BRID	0	1	0	1
WKSH	0	1	0	1
COMM	0	3	0	3
EST	0	1	7	8
MMCX	0	1	0	1
RR	0	2	0	2
SMCX	0	3	0	3
STO	0	5	4	9
MANUFY	0	0	1	1
ALMHSE	0	0	1	1
PO	0	0	1	1
SCOSTA	0	0	1	1

TABLE 77

HISTORIC SITE FREQUENCIES - 1849-1868

Site Function	Survey	Potential Arch. Sites	BAHP Survey	Total Corr.
AGCX	23	263	168	431
AGTEM	29	286	40	326
IDTEN	4	17	1	18
DWCX	8	60	14	74
SCH	1	21	2	23
RRSTA	1	0	2	2
STRUC	1	15	1	16
WKSH	1	3	0	3
MANUFY	1	5	1	6
TENANT	2	3	1	4
PEACH	1	0	8	8
GMCX	0	2	2	4
BRID	0	1	0	1
CHUR	0	9	4	13
LANOP	0	1	0	1
AGMCX	0	2	1	3
ALMHSE	0	1	1	2
BSSH	0	5	0	5
CCBLDG	0	3	0	3
CEM	0	1	0	1
EST	0	7	5	12
HOT	0	3	0	3
PHYS	0	1	0	1
PO	0	2	0	2
RR	0	1	3	4
SMCX	0	1	0	1
SOMCX	0	2	0	2
STO	0	13	3	16
WARE	0	7	0	7
AGBLDG	0	0	1	1
PLANT	0	0	1	1
SLAVQ	0	0	1	1

TABLE 78

HISTORIC SITE FREQUENCIES - 1868-1893

Site Function	Survey	Potential Arch. Sites	BAHP Survey	Total Corr.
AGCX	11	24	43	67
AGTEN	5	33	1	34
BRID	1	0	0	0
DWCX	8	21	47	68
HOT	1	1	0	1
STRUC	5	15	2	17
INDTEN	0	2	0	2
RRSTA	0	2	1	3
TENANT	0	4	0	4
CEM	0	1	2	3
EST	0	2	1	3
RR	0	2	1	3
RT	0	1	0	1
STO	0	1	1	2
SCH	0	0	5	5
CHUR	0	0	4	4
MANUFY	0	0	1	1
WARE	0	0	1	1

Another management issue to consider includes research issues which can be addressed during future archaeological research in the Route 13 corridor. A number of research issues pertaining to prehistoric sites can be investigated. One of the most important research problems to consider is the improvement of the predictive models for prehistoric sites in the Blackbird area. As was discussed earlier, the medium and high probability zones can be combined into a single high probability zone and this combined zone was used in the preparation of Attachment I. However, there is still a problem with discrimination of bay/basin features. Although the combination of zones can be used for planning purposes, the discrimination problem means that non-proportional sampling of rights-of-way should not be attempted until the model is upgraded. As was noted earlier one possible way to upgrade the model would be to undertake a new logistical regression analyis of the Blackbird using data from the LANDSAT 4 thematic mapper with supplemental low altitude aerial photos.

Other research issues for prehistoric sites can be noted and these deal primarily with site distribution questions and their effects on site-specific research. For example, an interesting point to consider is the apparent absence of Paleo-Indian sites in the study areas. As was noted earlier, bay/basin features have been noted as foci of Paleo-Indian sites. However, Paleo-Indian sites were not found associated with bay/basin features, or any other topographic features for that matter, in our survey. Several potential explanations of this absence were noted earlier and these in part related to the age and developmental history of

the bay/basin features. Consequently, an important part of future research in the Route 13 corridor will be geomorphological analysis of these bay/basin features. Radiocarbon dates from organic-rich sediments will be required and samples should be taken from bay/basin sites which show varied time periods of utilization to see if the age of the bay/basins affect the ways in which humans used them. Within this research context, both wet (unplowed) and dry (plowed) features will have to be studied. Also in relation to the question of Paleo-Indian utilization of bay/basin features, it will be important to identify those bay/basin features which are associated with secondary cobble lithic sources. As was noted earlier, these bay/basin sites would be more likely to be associated with Paleo-Indian sites.

With regard to the Archaic Period, an important question for further research relates to site size. Within the study area, and the Delmarva Coastal Plain in general, Archaic sites generally tend to be small. The only large sites are located near large interior swamp settings. Careful excavation and survey techniques should be developed so that accurate estimates of Archaic site size and settlement intensity can be developed. Archaic sites may indeed all be small, but this impression may be a result of biased and incomplete samples.

An interesting question relating to further research concerning the Woodland I Period is the timing of Woodland I settlement. No Woodland I ceramics were recovered from any of the sites studied. Taken at face value, this absence could indicate that all Woodland I settlement pre-dates 1200 B.C. However, there may be a preservation bias. Nonetheless, the absence of Woodland I ceramics from all the study area sites is a puzzling problem which will require further study.

With regards to the Woodland II Period, analysis of site size is an interesting issue for future research. All of the Woodland II sites found in the study area seem to be smaller than the earlier Woodland I sites. Future research could seek to ascertain if there really is a population reduction moving into Woodland II times and could also seek to explain such a population reduction.

Field survey data could also be used to address a series of general methodological problems. First, the complete surveys of the Appoquinimink areas, and portions of the Blackbird area, provide a firm basis for undertaking sampling simulation studies. The data from such simulation studies would provide an interesting contrast to other simulations from the Middle Atlantic area which focused on high elevation, high relief settings (Custer 1979; 1984). The site data from this study could also be used as part of a new test of the logistical regression model's predictions. In a new test a target area could be restratified on the basis of three sets of variables: projected probability zones, environmental zones, and social model predictions (Custer et al.1984:92-100).

With regard to historic archaeological research, the large size of the Route 13 Relief Route planning corridor allows for the development and testing of a number of research questions framed within the economic and settlement pattern paradigms current in historical geography and archaeology. The theoretical framework for research would be partly based on several assumptions developed from previous archaeological research in Delaware and the surrounding region. Based upon the known post-1802 site locations and the predictive model developed in the initial planning volume for pre-1802 sites, a series of high and medium probability zones for the location of pre- and post-1802 sites was developed in the original planning study (Custer et al. 1984: Attachments VI - VII). The projected presence of certain site types was based upon the regional historical context and economic and settlement pattern relationships summarized in earlier studies. The expectations of the assemblages to be recovered from the individual site types was developed from previous excavations in Delaware and through consultation with the available historical archaeological literature. The following research questions and topics will be integrated into a general research design that will allow both interdisciplinary research and the coordination of all different phases of the eventual mitigation program.

The present historic archaeological data base existing prior to any mitigation program consists of a small number of urban and rural sites in Delaware. The urban environment of Wilmington has been intensively explored by Thomas (1980), Klein and Garrow (1984), and Cunningham et.al. (1984). The excavation of several rural sites in northern Delaware under contract with the Department of Transportation has provided a small data base for comparisons with site types in southern Delaware. The mitigation programs of these northern Delaware sites included questions on topics like settlement patterns, agricultural development, transportation networks, and other aspects of the region (Coleman et al. 1983, 1984).

Most of the Route 13 corridor has been, and continues to be, an important agricultural area. The roots of that livelihood provides a focus for inquiry. For example, little is known about the lower class of non-landed tenant farmers. Few of their dwellings survive and the historical record makes little reference to the role played by this group in the rural society. Most known agricultural tenant dwellings are of less substantial construction and appear to be situated near the roadsides of each farmstead, while the landowner's more imposing dwelling is located back from the road. How this is related to the agricultural community and the general social structure has not yet been explained.

As has been stated above numerous times, there has been a general shift through time from a subsistence to market agriculture. However, farm-specific and inter-farm preferences for marketable versus subsistence foodstuffs are poorly known. From primary documents like agricultural censuses, orphans court

records, and deeds, some indication of regional agricultural preferences could be obtained and the overall pattern of agricultural land use could be better understood. The location analysis generated here could also be an important part of this research.

Related to both agriculture and settlement pattern is the question of farmstead design. How were the agricultural complexes laid out, what was the arrangement and function of outbuildings, where were the yard areas and how was each used, and, in a more general sense, where were the early farmsteads placed within each land parcel? The relative importance of transportation, soils, markets, and other factors should be studied further on a more site-specific basis to see how they influenced farmstead design and placement through time. It has also been shown that the "long-lot" system of land use was prevalent in the early historic period in Tidewater Maryland, and Virginia and it is postulated that it was also used in the project area. However, this remains to be demonstrated and a detailed study of early land records and plat maps would be required.

Transportation has always been an important consideration in the marketability of Delaware agricultural produce, and through time, various types of transportation have served that need. At the same time, the emphasis on each type has shifted and with it have come subtle changes in town development and size, rural settlement pattern, population density, and opportunities for light manufacturing and foodstuff processing. The general improvement of the transportation system also allowed for the appearance of some manufacturing in a number of towns in an otherwise highly agrarian economy. Pursuits like carriage-making, tanning, and peach processing were introduced. Very little of this activity is present today, most of it having presumably declined with changing market conditions. This aspect of the local economy has never been documented and future archaeological research could seek to reconstruct these activities.

The earliest forms of travel in the Route 13 corridor were probably by boat and on foot, as the few early roads were frequently unsuitable for cart travel. The heads of stream navigation became transhipment centers and thus foci of settlement. During the 19th century, the establishment of adequate roads and then railroads altered the commercial pattern and emphasized the junctions of these later modes of travel. Hamlets grew up around road/railroad intersections and the importance of places like Blackbird Landing, Smyrna Landing, and Odessa was eclipsed by Blackbird Station, Clayton, and Middletown. Research within the proposed Rt. 13 Corridor should try to reveal the mechanisms of this change and document its ramifications for village life, commercial patterns, and population change. Not to be overlooked is the impact of the construction of the present Rt. 13 on the lifeways of the people of the Upper Delmarva Peninsula. This road, which essentially

replaced an older Philadelphia to Lewes Post Road, drastically altered the traffic pattern on the Delmarva when it was opened in the early 1920s.

One of the features of the early road network was taverns or inns placed at intervals of approximately a day's ride along the major thoroughfares. If the establishment could be situated at a crossroads, so much the better. Research into the Buck Tavern, at Summit Bridge, Delaware (Wilkins and Quick, 1976) suggested that rural inns and taverns in Delaware were often ephemeral businesses which were licensed, but otherwise loosely defined, were often contained in farmhouses or dwellings only slightly modified for the purpose, and as a group are presently poorly documented. The analysis of such an establishment may present thorny problems for it is currently unknown how many inns and taverns have existed within the Rt. 13 Corridor. So far only three such structures have been identified so far in the survey: one 18th century structure in Kenton Hundred and two 19th century examples in St. Georges Hundred.

Another aspect of the historic settlement pattern is the element of church building placement and the demographics of the supporting congregations. Churches were especially important gathering places for a variety of social events during the seventeenth and eighteenth centuries when they were often one of the first structures erected in the community. Furthermore, ministers were frequently the most literate individuals in the community and thus assumed leadership roles. Church records are valuable sources of demographic information, for they were often the only repository of personal records in newly settled areas which lacked strong local governments with record keeping facilities. These sorts of records should be examined for information on congregation size, areal extent, and the kinds of activities, both secular and ecclesiastical, conducted at the church site.

The black enclave south of Townsend, Delaware, known locally as "New Discovery", presents an opportunity to study a late 19th and 20th century rural ethnic community and its associated social structure. Areas of inquiry should include land tenure, land size and use for each landowner, land transferral practices, subsistence and cash crop growing practices, house type and preference and construction practices, and group identity and cohesion through time.

In sum, by evaluating the site-specific data available from the sites discovered during this study within broader research questions, the significance of prehistoric and historic archaeological sites can be evaluated. Furthermore, analyses of these data can yield valuable insights on human behavior in the Delmarva region through time.