



Development of a
Pilot Archaeological Database [PAD]
for use in the
WisDOT Transportation District 3
Project Development & Maintenance

Project ID: 0092-45-96

FINAL REPORT

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of Transportation

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| 16. Abstract <p>The research conducted under this grant was for the development of a <i>Pilot Archaeological Database</i> [PAD] for the Wisconsin Department of Transportation [WisDOT]. The primary objective was to compile information on archaeological sites and to organize it in a centralized database for use by District 3 staff to comply with federal and state historic preservation legislation. The database would include information on archaeological sites in, or adjacent to, Interstate Highways [IH], United States Highways [USH], State Trunk Highways [STH], and County Trunk Highways [CTH]. The study focused on three primary WisDOT District user groups: 1) Real Estate for the sale of excess lands; 2) Maintenance for the issuing of utility permits in highway right-of-way; and 3) Planning for use in the initial scoping of new transportation projects.</p> <p>As of 1998 there was no comprehensive and user friendly electronic information retrieval system for data generated during 40 years of archaeological research along Wisconsin's highways. Developing the database involved: 1) identifying user needs; 2) gathering all relevant data fields; 3) verifying the accuracy of the data; and, 4) creating data tables structured to meet the needs of the users. This pilot project created a database for archaeological sites along the IH/USH/STH/CTH highway systems in northeastern Wisconsin. The database correlates information on transportation projects with related archaeological survey information, archaeological site data, and with the status of the site in compliance with Section 106 of the National Historic Preservation Act, and <u>Wis.Stats.</u> 44.40 and 157.70. The WisDOT District 3 personnel can use this information in planning, designing, constructing, and in maintaining the highway system. It can also be used for real estate transactions and in the issuing of utility permits for highway right-of-ways.</p> | | | | | |
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TABLE OF CONTENTS

| | |
|--|-----|
| Notice..... | i |
| Technical Report Documentation Page | ii |
| List of Figures..... | iii |
| List of Tables | iii |
| Executive Summary..... | iv |
| | |
| Project Summary..... | 1 |
| Background..... | 3 |
| Process..... | 5 |
| Phase 1: Defining User Needs | 5 |
| Phase 2: Data Compilation and Verification | 11 |
| Phase 3: Testing and Modifying the PAD | 15 |
| Phase 4: Final Report..... | 15 |
| Findings and Conclusions..... | 16 |
| Recommendations for Future Actions..... | 21 |
| | |
| Appendix I. Project Personnel..... | 23 |
| Appendix II. Work plan for the Development of the PAD | 25 |
| Appendix II. Memorandum of Understanding for Data Sharing..... | 28 |
| Appendix III. User Manual for Project Development | 31 |
| Appendix IV. User Manual for Maintenance..... | 40 |
| Appendix V. User Manual for Real Estate | 47 |
| Appendix V. Glossary for the PAD | 53 |

LIST OF FIGURES

| | |
|--|----|
| Figure 1. Location of Twelve Counties in the Study Area..... | 2 |
| Figure 2. Data Fields by Type of Information for the PAD..... | 9 |
| Figure 3. Flow Chart Showing the PAD Development Process | 12 |
| Figure 4. Relationship between the Data Tables | 14 |

LIST OF TABLES

| | |
|--|----|
| Table 1. PAD Data Statistics for the IH/STH/USH Highways..... | 17 |
| Table 2. Status of Site Certification before the Pilot Study | 18 |
| Table 3. Status of Site Certification after the Pilot Study..... | 18 |

Executive Summary

The research conducted under this grant was for the development of a *Pilot Archaeological Database* [PAD] for the Wisconsin Department of Transportation [WisDOT]. The primary objective was to compile information on archaeological sites and to organize it in a centralized database for use by District 3 staff to comply with federal and state historic preservation legislation. The database would include information on archaeological sites in, or adjacent to, Interstate Highways [IH], United States Highways [USH], State Trunk Highways [STH], and County Trunk Highways [CTH]. The study focused on three primary WisDOT District user groups: 1) Real Estate for the sale of excess lands; 2) Maintenance for the issuing of utility permits in highway right-of-way; and 3) Planning for use in the initial scoping of new transportation projects.

As of 1998 there was no comprehensive and user friendly electronic information retrieval system for data generated during 40 years of archaeological research along Wisconsin's highways. Developing the database involved: 1) identifying user needs; 2) gathering all relevant data fields; 3) verifying the accuracy of the data; and, 4) creating data tables structured to meet the needs of the users.

The database was described by District 3 users as being well designed, containing the appropriate amount of information for each user's needs. The users found the PAD to be very easy to use. The information provided by a query in the PAD was described as being easy to understand with clear procedural instructions for how to proceed when an archaeological site was identified.

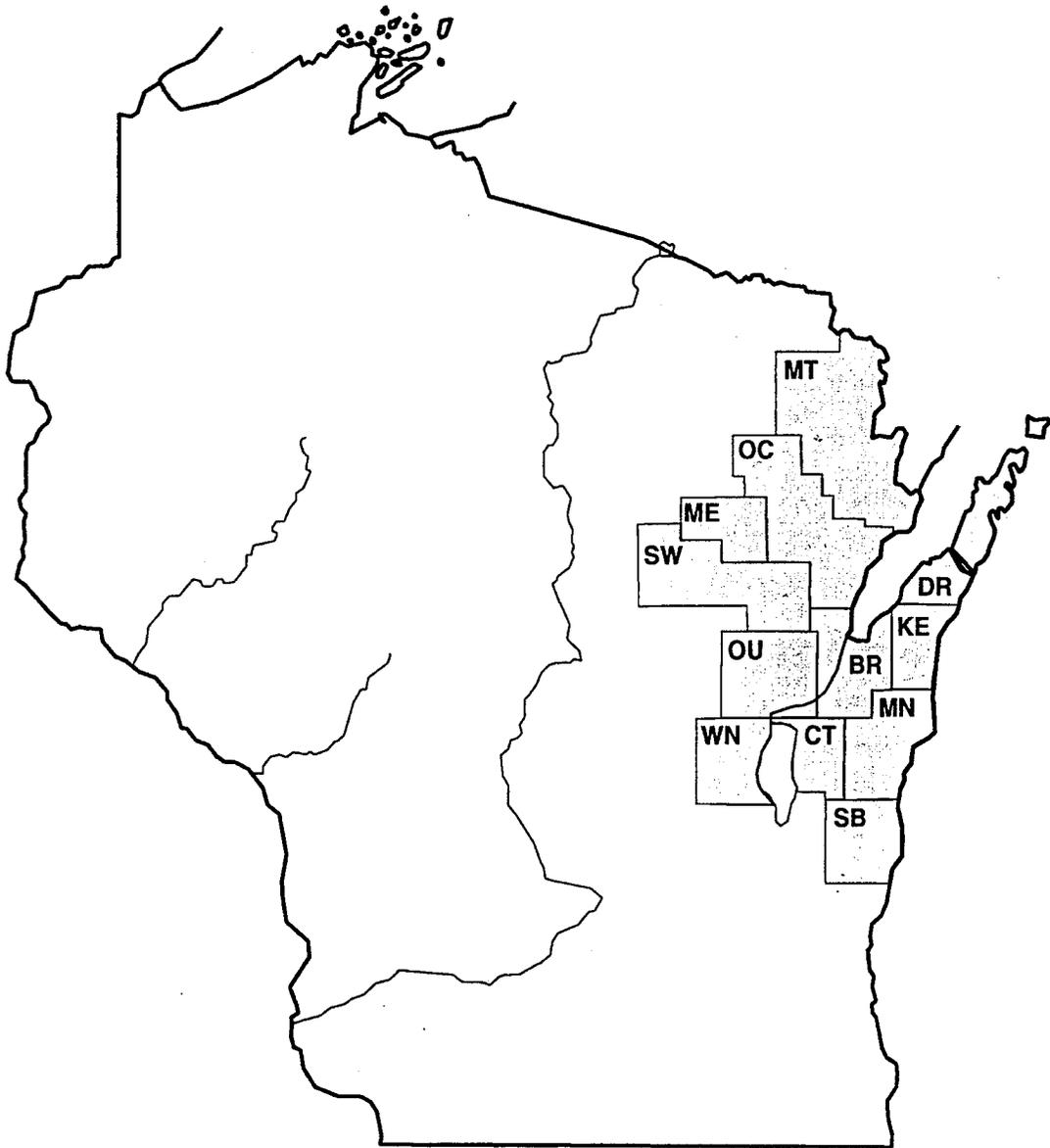
This pilot project created a database for archaeological sites along the IH/USH/STH/CTH highway systems in northeastern Wisconsin. The database correlates information on transportation projects with related archaeological survey information, archaeological site data, and with the status of the site in compliance with Section 106 of the National Historic Preservation Act, and Wis.Stats. 44.40 and 157.70. The WisDOT District 3 personnel can use this information in planning, designing, constructing, and in maintaining the highway system. It can also be used for real estate transactions and in the issuing of utility permits for highway right-of-ways.

Project Summary

The research conducted under this grant was for the development of a *Pilot Archaeological Database* [PAD] for the Wisconsin Department of Transportation [WisDOT] Transportation. The WisDOT Transportation District 3 was selected due to the number of on-going and anticipated major transportation related projects that would likely to effect archaeological & cemetery properties. The database would contain information on the location and nature of archaeological sites in an area incorporating twelve counties in northeastern Wisconsin: Brown, Calumet, Door, Kewaunee, Manitowoc, Marinette, Menominee, Oconto, Outagamie, Sheboygan, Shawano and Winnebago [Figure 1]. The primary objective was to make information on the location of archaeological sites in, and immediately adjacent to, highway right-of-ways accessible to District personnel who were responsible for compliance with federal and state historic preservation legislation.

The pilot project included one Interstate Highway [IH], 7 United States Highways [USH], 38 State Trunk Highways [STH], and 208 County Trunk Highways [CTH]. As of 1998 there was no comprehensive and user friendly electronic information retrieval system for data generated by over 40 years of archaeological research associated with Wisconsin's transportation system. Further, this data is not always accurately portrayed on maps or in the electronic databases of the Division of Historic Preservation at the State Historical Society of Wisconsin [SOCIETY]. Information on archaeological sites is housed in three separate offices at the Society, the *Burial Sites Preservation Office*, *Office of the State Archaeologist*, and the *Compliance Section*, and in formats which made it virtually inaccessible to District personnel.

The development of the *Pilot Archaeological Database* (PAD) involved a process of gathering data from maps, reports, archival sources, technical reports, and the SOCIETY's ASI and BAR PARADOX databases. Developing the database involved: 1) identifying user needs; 2) gathering all relevant data fields; 3) verifying the accuracy the data; and, 4) creating data tables structured to meet the needs of the users.



| | |
|----------------|----------------|
| Brown (BR) | Menominee (ME) |
| Calumet (CT) | Oconto (OC) |
| Door (DR) | Outagamie (OU) |
| Kewaunee (KE) | Shawano (SW) |
| Manitowoc (MN) | Sheboygan (SB) |
| Marinette (MT) | Winnebago (WN) |

Figure 1. Twelve Counties in the Study Area in Northeastern Wisconsin.

Background

The WisDOT is required to consider historic properties when planning transportation projects. The WisDOT works with several offices at the SOCIETY to obtain information on the location, type, and significance of Wisconsin's historic properties. Presently, it is not possible for the WisDOT staff to readily obtain information on archaeological properties without intensive research from several sources. The SOCIETY's database, the *Archaeological Site Inventory* (ASI) is comprised of information obtained throughout the 20th century. Thus, the quality of the information varies in terms of accuracy and completeness.

The purpose of this pilot project was to compile information on archaeological sites relevant to the compliance needs of District 3, and to organize it in a centralized database. Future applications of *Geographical Information System* [GIS] to portray location data in a visual manner to District personnel was also explored. There is critical need for District transportation project development staff to have access to information on archaeological & cemetery properties along state and county road to comply with state and federal historic preservation laws. A programmatic agreement signed in December 1996 between the WisDOT, FHWA and the Wisconsin State Historic Preservation Office [SHPO] places additional responsibilities on the WisDOT for compliance and ensuring that the historic properties are appropriately considered in the development of transportation projects.

Recent legislation gives a more prominent role to Native American Nations and Tribes in the consultation process under Section 106 of the *National Historic Preservation Act* [Section 106]. To comply, the WisDOT needs better access to information on archaeological/historical properties associated with transportation projects. Finally, there are an increasing number of incidents where archaeological sites within WisDOT right-of-way are being damaged by the issuing of permits by staff who lacks access to such information.

Data relevant to transportation projects includes:

- the areas that have been surveyed by professional archaeologists,
- the location of archaeological sites that were identified by these surveys,
- the location of archaeological sites recorded in the ASI, and
- the significance of the archaeological sites identified as determined by compliance with Section 106 or Wis.Stats. 44.40.

Process

This pilot project can conceptually be divided into four phases: 1) the initial concept and structural model for the PAD; 2) data compilation & entry; 3) testing & modifying the PAD to meet user needs; and, 4) completion of the final products & report. There were twelve individual steps described in the *Study Proposal* which can be condensed into four phases as follows:

- 1) Initial Development of PAD [Steps 1-3],
- 2) Data Compilation & Entry [Steps 4-6]
- 3) PAD Testing & Modification [Steps 7-9], and
- 4) Final Products & Report [Steps 10-12].

Phase 1: Defining User Needs

The first step, identify user needs, had four components:

- 1) Identify project personnel.
- 2) Define user information needs.
- 3) Identify level of data detail for each user.
- 4) Identify ways to measure project success.

The pilot project began with the selection of key personnel [e.g. researchers, technical support, programmers, and advisors] and to form a Technical Oversight Committee [Appendix I]. A work plan was drafted to guide the research and development of the PAD [Appendix II]. Attention was then turned to identifying potential users and to define user's information needs. Several sections or departments were identified which could benefit from having access to information on archaeological properties: Planning, Construction, Maintenance, Real Estate, the Environmental Coordinators, and the Archaeology Coordinator at the Central Office.

To identify user information needs interviews were conducted with each user group to:

- 1) clarify individual data needs,
- 2) determine how the data would be used,
- 3) identify the level of data explanation required by each user group, and,
- 4) develop procedures so the user knew how to appropriately meet compliance obligations.

The Planning Section staff identified several basic user needs based on their project scoping process:

- Visual representation of areas surveyed.
- Reliability of survey coverage (need for additional survey).
- Visual representation of archaeological site position on landscape using GIS; aerial photographs; USGS topographic maps).
- Reliability of location data.
- Status of site for legal compliance (does site need further study?).
- Identification of any "show stoppers" (eligible sites, cemeteries/burials, or other highly sensitive areas).

The transportation project design staff or managers identified the following information as important to their job tasks:

- Visual representation of areas surveyed (note: old station markers of no value as they change by project).
- Reliability of survey coverage (need for additional survey).
- Visual representation of archaeological site positions on landscape within 600' either side of existing right-of-way.
- Reliability of location data.
- Status of site for legal compliance (does site need further study?).
- Very general information on site type.
- Identification of any "show stoppers" which would require project redesign (eligible sites, cemeteries/burials, and other highly sensitive areas,
- Type of investigation & researcher (reports, databases).

The staff in the Maintenance Section were particularly interested in finding an efficient and effective way to deal with the issuing of special use & utility permits. Staff was aware that archaeological sites could be inadvertently damaged by construction associated with these permits. The utility company representatives, as well as many of the WisDOT staff, were unaware that what they consider to be minimal ground disturbance has the potential to severely impact an archaeological site, and can be in violation of state and federal laws which protect such sites. There was also concern about the quantity of permits which they must review each year, which exceeds 850 at the WisDOT District 3.

Due to the number of applications, which must be reviewed, the map or any other visual representation of location information must be able to be read easily and quickly. Maintenance staff identified the following information as important to their job tasks:

- Visual representation of archaeological site position on landscape (Geographical Information System (GIS); aerial photographs; USGS topographic maps).

- Status of site for legal compliance (does site need further study?).
- Need to get print out of map showing site location.

The staff of the Real Estate section was primarily concerned about the sale of excess lands. They identified relatively few data fields, which they felt would assist them in their jobs:

- Location information must be tied to Town/Range/Section data.
- Reliability of location data.
- Status of site for legal compliance (does site need further study?).

The Environmental Coordinators at the District and the Archaeology Program Coordinator at the Central Office identified much broader data needs and felt that they needed access to all levels of information to adequately address the different District user needs.

- Visual representation of areas surveyed.
- Reliability of survey coverage (need for additional survey).
- Visual representation of archaeological site position on landscape (Geographical Information System (GIS); aerial photographs; USGS topographic maps).
- Reliability of location data.
- Status of site for legal compliance (does site need further study?).
- Very general information on site characteristics and condition.
- Environmental data.
- Type of investigation & researcher.
- Ownership.

Based on the results of the user interviews the following levels of data detail were identified for each user group:

- Planning (scoping) - access to location information & status for legal compliance.
- Project Design - access to most data fields.
- Maintenance (issuing permits) - "hit" only, then procedural information to comply with state and federal laws.
- Real Estate (sale of excess land) - "hit" only, then procedural information to comply with state and federal laws.
- Environmental Coordinators & Archaeology Program Coordinator -access to all data fields.

The final component to the first step was to identify ways to measure the success of this pilot project. Four primary measures were developed: 1) each user is able to access data efficiently with the data in a user-friendly format, 2) the user is able to obtain the level of data needed quickly, 3) each user understands what the data or information means to their project or task, and 4) the user receives instructions regarding how to proceed.

The second step was the conceptual/logical modeling of the data. This step involved identifying the information sources and data formats (documents, maps, databases, files, etc.), and identifying new data fields for information not presently available [Figure 2). The data sources and formats needed for the development of the PAD varied significantly. Some information was available in an electronic format in the Society's PARADOX databases called the *Archaeological Site Inventory* (ASI) and the *Bibliography of Archaeological Reports* (BAR).

The information on the location of archaeological sites was recorded on U.S.G.S. 7.5' quadrangles. The information on the status and significance of the sites was in vertical paper files organized by either the compliance number assigned by the State Historic Preservation Office, or by the state codification number assigned when the site is recorded in the ASI. Data on the location and nature of burial sites and cemeteries was located in a separate office, which also maintained electronic, map and paper records.

Several new data fields were identified which were not easily obtainable in either the WisDOT or the SOCIETY's databases or paper files. These include:

- 1) WisDOT District number,
- 2) transportation project termini,
- 3) had the highway right-of-way been surveyed,
- 4) date of the archaeological survey;
- 5) amount of right-of-way surveyed,
- 6) site boundary information (how determined, accuracy, and UTM coordinates),
- 7) is the site in the right-of-way,
- 8) is the site adjacent to the right-of-way, and
- 9) status of the site according to the criteria for the National Register of Historic Places (NRHP).

The third step, developing a technology (system) model had several components:

1. Determine computer system needed to meet needs.
2. Identify security access detail.
3. Develop standards for data entry.
4. Identify data sharing procedures.
5. Identify procedures for updating PAD.

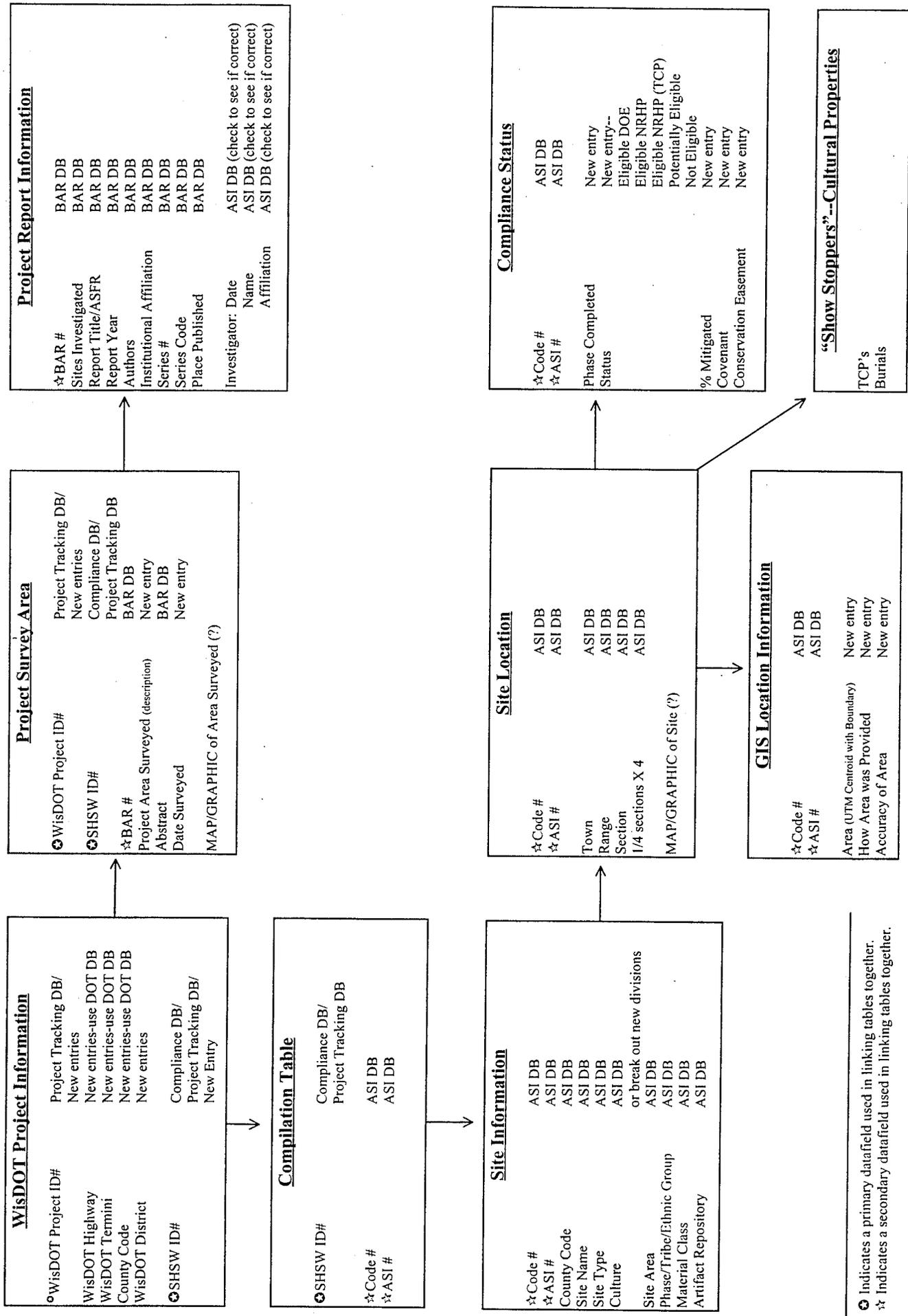


Figure 2. Data Fields by Type of Information for the PAD.

◉ Indicates a primary datafield used in linking tables together.
 ☆ Indicates a secondary datafield used in linking tables together.

The WisDOT had already made a commitment to using Microsoft ACCESS. The question was which version to use. At the onset of the pilot project the WisDOT District 3 was operating ACCESS 97. Based on the recommendation of District staff the PAD was developed using ACCESS 2000 as a conversation was expected within six month. Unfortunately, this did not happen and the PAD sat for over 18 months because ACCESS 2000 was not available to District 3 users.

The issues of security and the degree of data detail to be available to each user was also not particularly difficult. Once the data fields were defined for each user, the tables were structured according to the data detail needed. ACCESS 2000 is well suited for allowing differential access and further security is also provided by the IT staff at the District who can limit access not only to certain sections or departments, but also to individual users through their log-on's.

Developing procedures for data entry were relatively straightforward due to the nature of the data fields. In terms of data sharing all new information, changes, and additions made by project personnel to any data field in the Society's ASI or BAR would be submitted to the OSA to ensure that their records were updated. This would then allow a direct data transfer from the ASI and BAR, via the tables produced in EXCEL, into the PAD in ACCESS. While such a data transfer would be ideal if done quarterly, it was agree that such a transfer at least once a year would be sufficient at this time to ensure that the PAD is kept relatively current.

A *Memorandum of Understanding* was drafted to formalize the understanding and data sharing arrangements between the two state agencies (Appendix III).

Phase 2: Data Compilation & Verification

The data compilation process involved a series of steps that are outlined in Figure 3. The first step was to generate basic information on the location of the 45 State Trunk Highway system roads, and 382 County roads in the study area. One problem encountered was that many highway routes have changed since the U.S.G.S. quadrangle maps were last updated. To verify the current location of highway corridors the quadrangles were checked for accuracy against: 1) recent county plats; 2) online map databases such as *MapQuest*; and, 3) the *Wisconsin Gazetteer*. To facilitate data collection an atlas, based on DeLorme's *Wisconsin Gazetteer*, was made to illustrate the locational relationships.

The next step was to generate information on the location of archaeological surveys and sites along, or immediately adjacent to the highway and county road system in the study area. Two primary databases maintained by the *Office of the State Archaeologist* [OSA] in the Division of Historic Preservation [Society] were used: 1) the *Archaeological Site Inventory* [ASI] and the *Bibliography of Archaeological Reports* [BAR]. The compliance projects that were already recorded in the ASI and BAR along the IH/USH/STH/CTH road system were fully researched. In addition to the two databases, the OSA also plots information on survey and site locations on U.S.G.S. quadrangles [7.5' series]. A complete list of the U.S.G.S. [7.5'] quadrangles that are in the study area was generated. The 197 U.S.G.S. quadrangles in the OSA that comprise the study area were then photocopied.

A table was then generated which cross-referenced the IH/USH/STH/CTH road and the quadrangles associated with it. Additional information on the location of archaeological surveys and sites was generated by querying the BAR for information on compliance projects that had been conducted along these highways and roads in the study area.

Each quadrangle was then researched, and every site location along, or adjacent to IH/USH/STH/CTH roads, and every survey project was verified. This was accomplished by cross-checking the location information against the data in the ASI, and any technical reports which provide a more detailed description of the archaeological survey and any sites which had been discovered. Information on archaeological sites, which includes cemeteries and other burial areas that were within 300 feet of the centerline was considered to be in the highway/road right-of-way. Any archaeological site area with $\frac{1}{4}$ mile of the highway/road was considered to be adjacent to the right-of-way.

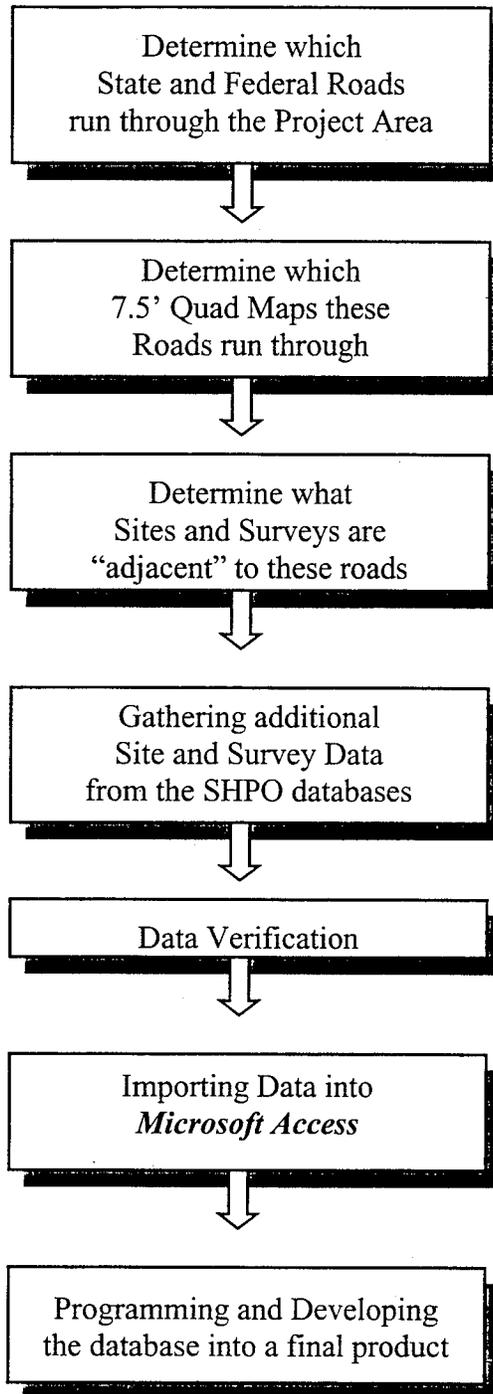


Figure 3. Flow Chart Showing the PAD Development Process.

When a complete table had been generated identifying the sites and surveys adjacent to each highway/road, data compilation shifted to specific information on each archaeological survey and each site. The relationship between data tables and the data fields they include is shown on Figure 4.

Several problems were consistently encountered:

- There were frequently discrepancies between the ASI database and the U.S.G.S. quad map with regards to a site's correct location.
- The ASI did not always list all the SHSW Compliance numbers and BAR numbers associated with a particular archaeological site.
- The BAR database did not always list all the sites associated with a particular SHSW Compliance number and BAR number.

All new information generated, and any corrections or updates, was provided to the OSA. A log of the amount of time spent on data compilation and verification tasks was kept. Based on this log it was determined that it takes an average of about eight to ten minutes to add a single archaeology site to the PAD. This includes finding the site, verifying its existing data, adding additional data, and importing this information into PAD.

The data compiled from electronic databases, maps, technical reports and paper files, was organized into EXCEL tables. This information was then imported into the PAD *Microsoft Access Program*. The screens for visual data outputs were then developed based on the information needs of each user group.

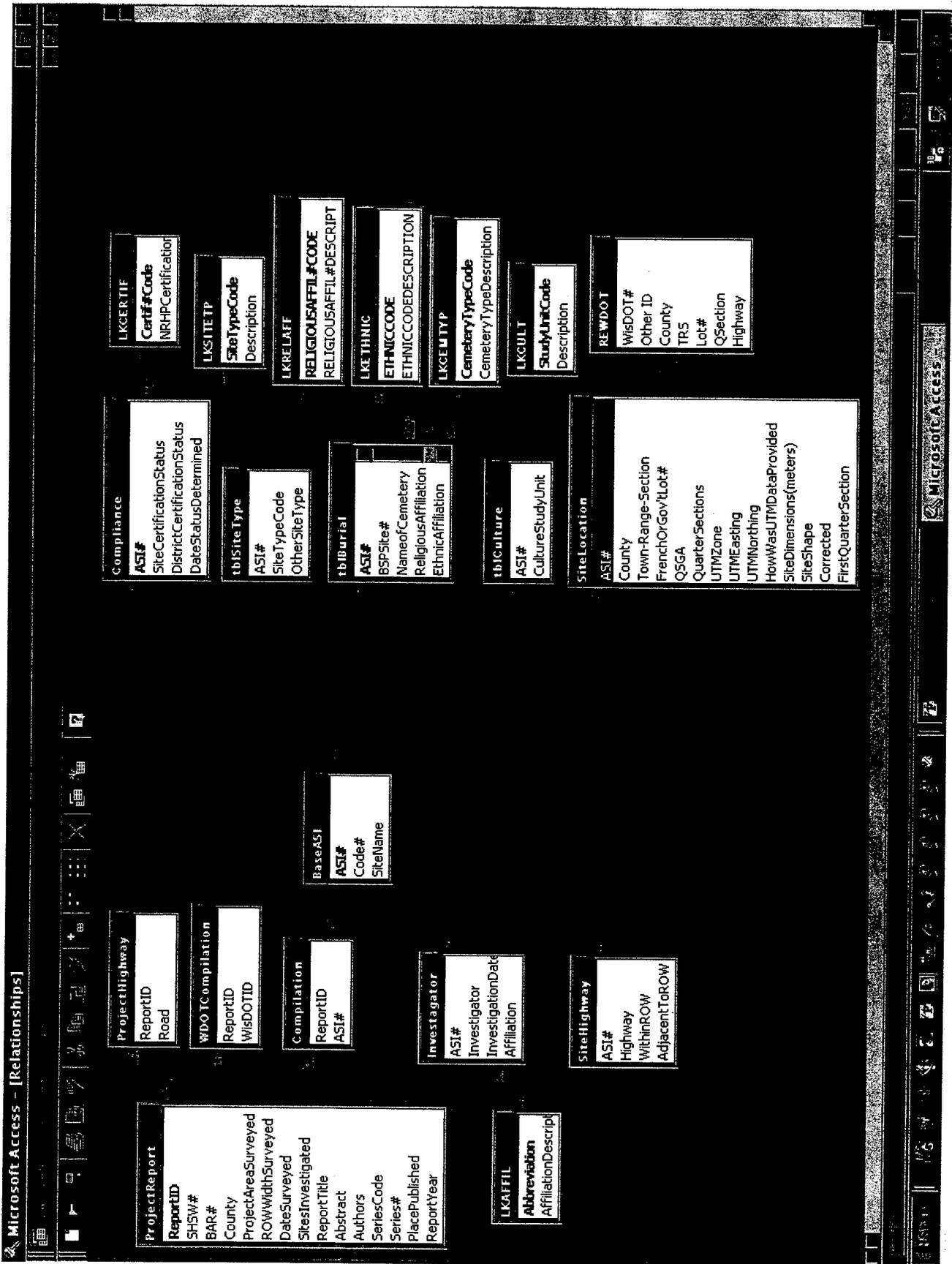


Figure 4. Relationship between the Data Tables and Associated Data Fields in the PAD.

Phase 3: Testing & Modifying the PAD

This phase of work on developing the PAD had three steps:

1. Develop user manuals.
2. Each user group tests the PAD.
3. Modify the PAD as needed.

A manual was written for each user group that included information on how to enter information requests, and an explanation of the results of each type of query [Maintenance, see Appendix IV; Project Development, see Appendix V; and Real Estate, see Appendix VI).

The PAD was taken to WisDOT District 3 for testing by each user group. Those testing the PAD provided the following comments. The user responses indicated that the database was easy to use, the amount of information provided was appropriate to their needs, the information could be obtained very quickly, and the users clearly understood the procedural instructions.

There were only two suggestions made to improve the PAD. One user indicated that a graphical interface in which they could query for sites using a GIS Application like *ESRI's ArcView Program* would be helpful. This interface should be fairly easy to accomplish as the PAD contains Universal Transverse Meridian [UTM] coordinates. A Geographical Information System [GIS] interface link was not part of this research proposal but it will be pursued by the WisDOT District 3 staff. The other comment was that there are no WisDOT Project ID Numbers for Maintenance utility permits. This correction was the only modification made to the PAD based on user group testing.

Phase 4: Final Report

This phase involved completion of the final report, user manuals and other documentation required to meet the objectives of the grant.

Findings and Conclusions

The development of the *Pilot Archaeological Database* [PAD] for WisDOT Transportation District 3 facilitated information sharing between two Wisconsin State agencies. Specifically, the Office of the State Archaeologist in the Division of Historic Preservation at the Society, and the Bureau of Environment and District 3 at the Wisconsin Department of Transportation cooperated to support this project by signing a data sharing agreement. In addition, the following objectives were met:

- Better protection of significant archaeological sites identified by this study in compliance with state and federal historic preservation legislation.
- District 3 will have access to better data on archaeological sites for use in planning and design of transportation projects.
- Real Estate will be in compliance with Wis.Stats. 44.40, by using the PAD to check for archaeological sites in the inventory before selling/transferring lands.
- Maintenance will review PAD prior to issuing permits for utilities in accordance with WisDOT Policy 96.08, and for other Maintenance actions which involve ground disturbance.
- Site location information will be compiled in manner compatible with future GIS applications.

The program ACCESS was selected for the PAD database as it could be used by both District personnel, the Archaeology Program Coordinator at the Bureau of Environment, and it could be updated efficiently as data is generated each year. The database was designed to require minimal staff training in its use.

As of August 2000 there were 2,064 archaeological sites in the PAD. Information regarding the number of archaeological surveys and sites by IH/USH/STH road system is summarized in Table 1. Over 1,400 archaeological sites are within ¼ mile of the centerlines of these highway systems in WisDOT District 3. These sites clearly have the potential to be affected by future transportation projects or actions. An additional 600+ sites are located along County Trunk Highways in the pilot study area.

Table 1. PAD Data Statistics for the IH, STH, and USH Highways.

| Highway | Sites in ROW** | Sites Adjacent to ROW** | Number of Sites | Number of Projects | Sites with Location Errors |
|---------|----------------|-------------------------|-----------------|--------------------|----------------------------|
| IH 43 | 36 | 23 | 59 | 24 | 6 |
| STH 21 | 9 | 12 | 21 | 13 | 0 |
| STH 22 | 20 | 22 | 42 | 29 | 1 |
| STH 23 | 5 | 11 | 16 | 9 | 1 |
| STH 26 | 1 | 2 | 3 | 8 | 1 |
| STH 28 | 7 | 8 | 15 | 10 | 0 |
| STH 29 | 27 | 38 | 65 | 50 | 9 |
| STH 32 | 47 | 31 | 78 | 67 | 2 |
| STH 42 | 67 | 60 | 127 | 45 | 2 |
| STH 44 | 4 | 0 | 4 | 7 | 1 |
| STH 47 | 33 | 25 | 58 | 44 | 8 |
| STH 52 | 0 | 0 | 0 | 2 | 0 |
| STH 54 | 19 | 18 | 37 | 41 | 6 |
| STH 55 | 40 | 36 | 76 | 50 | 8 |
| STH 57 | 153 | 67 | 220 | 64 | 10 |
| STH 64 | 17 | 11 | 28 | 30 | 0 |
| STH 67 | 10 | 4 | 14 | 15 | 0 |
| STH 76 | 9 | 7 | 16 | 11 | 1 |
| STH 96 | 16 | 19 | 35 | 22 | 2 |
| STH 110 | 34 | 35 | 69 | 27 | 3 |
| STH 114 | 7 | 9 | 16 | 17 | 2 |
| STH 116 | 15 | 7 | 22 | 17 | 3 |
| STH 117 | 1 | 2 | 3 | 2 | 0 |
| STH 125 | 0 | 0 | 0 | 0 | 0 |
| STH 144 | 5 | 1 | 6 | 5 | 0 |
| STH 147 | 13 | 9 | 22 | 8 | 3 |
| STH 149 | 0 | 0 | 0 | 5 | 0 |
| STH 150 | 1 | 1 | 2 | 7 | 0 |
| STH 153 | 0 | 0 | 0 | 0 | 0 |
| STH 156 | 4 | 1 | 5 | 5 | 0 |
| STH 160 | 0 | 2 | 2 | 5 | 0 |
| STH 163 | 12 | 1 | 13 | 8 | 1 |
| STH 168 | 0 | 0 | 0 | 2 | 0 |
| STH 172 | 3 | 8 | 11 | 8 | 2 |
| STH 175 | 9 | 7 | 16 | 11 | 2 |
| STH 180 | 15 | 6 | 21 | 4 | 1 |
| STH 187 | 7 | 6 | 13 | 8 | 2 |
| STH 310 | 5 | 2 | 7 | 7 | 0 |
| STH 441 | 7 | 1 | 8 | 12 | 0 |
| USH 8 | 8 | 1 | 9 | 10 | 0 |
| USH 10 | 25 | 21 | 46 | 45 | 2 |
| USH 41 | 52 | 35 | 87 | 80 | 2 |
| USH 45 | 46 | 21 | 67 | 68 | 1 |
| USH 110 | 4 | 4 | 8 | 0 | 0 |
| USH 141 | 33 | 47 | 80 | 38 | 8 |
| USH 151 | 17 | 18 | 35 | 22 | 2 |
| Total | 46 | 843 | 1482 | 962 | 92 |

** ROW in PAD is defined arbitrarily as 300 feet from the centerline. Adjacent to ROW are those sites within ¼ mile of the centerline.

Discrepancies between the ASI database and the U.S.G.S. quad maps regarding the location of archaeological sites occurred for 5% of the sites. Data on the UTM coordinates for archaeological sites was severely lacking, with only 349 (17%) of the 2,064 sites having UTM centroid coordinates in the ASI. As this could severely limit GIS applications, UTM centroid coordinates were calculated for 1,945 sites, or for 94% of the sites in the study area. Another area in the ASI where data is nearly absent is in the certification status for archaeological sites. Of the 2,064 sites in the PAD, 1,973 (95%) did not have any certification status designation [Table 2].

Table 2. Status of Site Certification before the Pilot Study.

| Number of Sites | Status of PAD sites as listed in the ASI Database |
|------------------------|---|
| 1973 | Cerification Status is not given in ASI Database |
| 8 | Determined Eligible for the National Register of Historic Places (NRHP)--in DOE process |
| 14 | Listed in National Register of Historic Places (NRHP) |
| 69 | Not Eligible for the National Register of Historic Places (NRHP) |
| 2064 | Total |

After further research and data verification, all 2,064 sites were assigned a certification status designation [Table 3].

Table 3. Status of Site Certification after the Pilot Study.

| Number of Sites | Results after data gathering and verification for PAD |
|------------------------|---|
| 621 | Protected under Burial Sites Preservation Law s.157.70, Wis Stats. |
| 12 | Determined Eligible for the National Register of Historic Places (NRHP)--in DOE process |
| 14 | Listed in National Register of Historic Places (NRHP) |
| 1266 | Eligibility has not been Determined |
| 151 | Not Eligible for the National Register of Historic Places (NRHP) |
| 2064 | Total |

There are 962 compliance projects that are reported to be in the study area along IH/USH/STH highways. Of the 2,064 sites in the study area, only 618, or 30%, were listed in the ASI as being associated with compliance projects. After further research 226 additional sites were found to be associated with compliance projects, increasing the number of sites to 844, or 41% of the total number of sites in the study area.

This pilot project generated the data to develop an inventory of archaeological sites along state trunk and US highway for Transportation District 3. The WisDOT has conducted archaeological investigations for transportation projects since 1957, but the State Historic Preservation Office at the State Historical Society maintained the data generated. The information was not recorded and maintained in a format useful to the WisDOT. Research must be conducted at several program offices at the State Historical Society.

Due to the issue of confidentiality for archaeological sites, the Office of the State Archaeologist will be consulted to develop the specific data fields for archaeological sites, which could be used in the Districts database. Specific data fields relevant to the needs of transportation project development and maintenance, which are presently not available in any format, will be developed. A complete inventory of areas previously investigated and information on the sources of these studies, such as date, results, and report titles will be compiled for use in agency consultations for future transportation projects.

The pilot project would result in the compilation and organization of location information for archaeological sites that would be ready for application in GIS. It would also generate a set of paper maps for use by the District until the GIS layer for archaeological site was completed. Data would also be compiled on the areas previously surveyed. The location information would be linked to a database, which would provide specific information on individual archaeological sites, and on the nature of previous archaeological investigations. This pilot project would also result in the development of a data system which could be easily updated and maintained annually as archaeological investigation are conducted for future transportation projects.

The usefulness of the location information and data available in the archaeology database will be evaluated as it is applied to project development at the District level, and to the management needs of the Bureau of Environment. It will then be evaluated to assess its applicability at other Districts. Based on consultation with the WisDOT GIS personnel, a report will be prepared exploring the application of GIS and any costs, issues, problems, associated with the development of an archaeology layer.

This pilot project created a database for archaeological sites along the IH/USH/STH/CTH highway systems in northeastern Wisconsin. The database correlates information on transportation projects with related archaeological survey information, archaeological site data, and with the status of the site in relation to Section 106 of the National Historic Preservation Act, and Wis.Stats. 44.40 and 157.70. This information can be used by the WisDOT District 3 personnel in planning, design, construction, maintenance, and in associated functions related to Real Estate and the issuing of utility permits for highway right-of-ways.

Recommendations for Future Actions

Between 1998 and 2000 the *Museum Archaeology Program* (MAP) conducted a pilot project to compile, verify, and organize data on archaeological surveys and sites in highway right-of-way, within ¼ mile the state highway system, and within ¼ mile of the county roads in the WisDOT District 3. This pilot study provided District 3 personnel in *Project Development, Construction, Maintenance, and Real Estate*, with valuable information on archaeological sites and cemeteries that are in, or immediately adjacent to their transportation project. The data is presented in a user-friendly electronic format using the software ACCESS.

This ACCESS database provides information on over 2,000 archaeological sites which includes cemeteries and other mortuary areas, all subject to compliance with both Section 106 of the National Historic Preservation Act and Wis.Stats. 44.40 and 157.70. The database does not negate or substitute for any part of the compliance process. The PAD provides information on the relationship of recorded archaeological sites to transportation projects, which are being proposed. The provides an opportunity for concerns and issues related to historic properties to be considered earlier in the project development process. Most importantly, the PAD allows District 3 staff access to information on archaeological sites for Real Estate transactions and in the issuing of utility permits. These program areas previously did not have any efficient and effective way to consider historic properties. Consequently, there should be a reduction in overall costs associated with historic preservation, accompanied by an enhancement of archaeological and historical site preservation.

The database also provides the user with procedures for determining appropriate actions when historic properties are identified. The PAD provides the user with the procedures to follow to comply with federal and state historic preservation legislation, while still meeting the demands of their daily jobs. Finally, UTM location points were recorded for each archaeological site so the user will be able to use a GIS application in the near future to gain a visual representation of the relationship of the archaeological site to the transportation project being considered.

In 1999 the Division of Historic Preservation (SHSW) received an ISTE A grant to convert the *Archaeological Site Inventory* (ASI) to a GIS application. The expansion of the pilot study for archaeological site data compilation and verification will augment and support the efforts to convert the ASI to a GIS

format. This pilot project verified and updated information in the state's *Archaeological Site Inventory* [ASI] database, and generated information for new data fields needed by WisDOT District 3 users. As requested by the WisDOT, the PAD was developed in ACCESS 2000. The WisDOT District 3 can begin using PAD, therefore, when they complete their migration to Windows 2000.

To expand the PAD to other WisDOT Districts the WisDOT would need to have the literature and archival research completed for the counties in each District. The existing table structure in ACCESS could be used with only minor modifications. There would be no need to modify any of the user manuals. Based on the training conducted with the WisDOT District 3 staff, only one training session would be needed for each of the other Districts. The session would require no more than two hours of staff time. There is no legislative changes to implement the PAD state wide. There are minor changes which could be made to clarify the use of PAD in Chapter 26 of the WisDOT manual.

It is recommended that the PAD first be expanded to include District 1 in south central Wisconsin and District 5 in the southwestern Wisconsin. This recommendation is based on the fact that these regions are experiencing major urban expansions and rural development. In addition, these regions have a high density of archaeological sites.

APPENDIX I:
PROJECT PERSONNEL

Pilot Archaeological Database [PAD] Project Personnel

Principal Investigator:

Jennifer L. Kolb
Director, Museum Archaeology Program
State Historical Society of Wisconsin
816 State Street, Madison, Wisconsin 53706

Study Monitor:

Shirley Stathas
Archaeology Program Coordinator
WisDOT Division of Transportation Infrastructure Development
4802 Sheboygan Avenue, Madison, WI 53707

Sponsoring Agency Representative:

Carol D. Cutshall
Director, Bureau of Environment
Division of Transportation Infrastructure Development
4802 Sheboygan Avenue, Madison, WI 53707

Technical Oversight Committee Members:

Christy Abing (WisDOT District 3; GIS Specialist)
Rebecca Burkel (WisDOT District 3, Environmental Coordinator)
Diann Danielsen (WisDOT Modal Divisions)- left the WisDOT during Study
Richard Dexter (State Historical Society Compliance Section)- replaced by
Robert Birmingham during the Study
Joe Hollister (WisDOT District 3; Engineer-Planning)
Jacki Lawton (Federal Highway Administration; Environmental Programs)
Steve Noel (WisDOT District 3; Engineer-Project Development)
Robert Pavlik (WisDOT District 3; Engineer-Maintenance)
Sandy Wendel (WisDOT-BOE; Information Specialist)

APPENDIX II

Work Plan for the Development of the Pilot Archaeological Database [PAD]

Work Plan for the Development of the Pilot Archaeological Database [PAD]

STEP 1. Identify User Needs

(7% time; 1% funding).

- Identify project personnel: users, researchers, technical support, programmers, etc.
- Define user's information needs through interviews with District 3 staff.
- Identify level of data detail for different users based on information needs.
- Identify ways to measure project success.

Deliverable: Summary report.

STEP 2. Conceptual/Logical Data Modeling (Develop PAD)

(10% time; 10% funding).

- Identify data sources and formats (documents, maps, databases, files, etc.).
- Verify data accuracy & compile new data for fields presently not available.
- Entity - Relationship Diagram (Identify data fields and relationships)
- Attributes.
- Data Definitions.
- Data Format and Structure (Structure data tables).

Deliverable: Prototype of PAD.

STEP 3. Technology (System) Model

(7% time; 5% funding).

- Determine system needed to meet needs.
- Identify security, data available, access detail.
- Begin to identify systems documentation procedures.
- Identify data sharing, procedures (measurable).
- Identify procedures for data input.
- Identify procedures for updating PAD.

Deliverable: Summary report.

STEP 4. Physical Data Model (Identify PAD Output)

(7% time; 5% funding).

- Develop visual data outputs.
- Develop District procedures for generating output.

Deliverable: Prototype of reports, forms, graphics to be generated by PAD.

STEP 5. Reassess Project Goals and Schedule

(0% time; 0% funding).

Deliverable: TOC meeting, if necessary.

STEP 6. Collect, Verify, and Enter Data into PAD

(33% time; 56% funding).

STEP 7. Systems Support Personnel Test PAD

(7% time; 1% funding).

Deliverable: Memo describing results of testing.

STEP 8. Users Test PAD's Effectiveness

(7% time; 1% funding).

Deliverable: Memo describing PAD's effectiveness.

STEP 9. Modify PAD as Needed

(3% time; 5% funding).

STEP 10. Develop and test effectiveness of PAD user manual.

(6% time; 5% funding).

Deliverable: Prototype & testing of User's Manual.

STEP 11. Recommendation for Future Applications of PAD

(7% time; 5% funding).

Deliverable: Report summarizing PAD's capabilities.

STEP 12. Final project report (Federal requirement)

(6% time; 5% funding).

- Summary of project accomplishments and PAD's capabilities.
- Summary of User comments.
- Recommendations for future applications.
- Report finalized & printed.

Deliverable: 140 copies of final report for distribution.

APPENDIX III

Memorandum of Understanding for Data Sharing between State Agencies

Memorandum of Understanding
Between the
State Historical Society of Wisconsin (SHSW)
Office of the State Archaeologist (OSA)
and the
Wisconsin Department of Transportation (WisDOT)
Bureau of Environment (BOE)

Authority

It is understood that the Office of the State Archaeologist (OSA) has the authority and responsibility to maintain the *Archaeological Site Inventory* (ASI) and the *Bibliography of Archaeological Reports* (BAR), and to control both access to, and use of, the ASI and BAR.

It is understood that the Bureau of Environment (BOE) has the authority and responsibility to oversee and monitor the use of the data obtained from the OSA, as defined in this agreement.

Purpose

To provide the WisDOT with information on archaeological sites to be used for transportation projects, including but not limited to planning and design activities, the sale of excess lands, issuing utility permits, and for the maintenance of WisDOT owned lands.

Data Sharing

The OSA will permit certain data fields in the ASI and BAR, to be downloaded by WisDOT under the stipulations of this Agreement. The WisDOT agrees to provide the OSA with information on new data generated by this Agreement. The SHSW Museum Archaeology Program will provide OSA with all information regarding needed updates to ASI records and will also provide OSA information generated during data compilation and the development of the ACCESS WisDOT Pilot Archaeology Database (PAD). WisDOT will provide OSA available data generated by consultant archaeologists in report form.

Stipulations

1. The BOE will be responsible for updating the PAD database semi-annually by completing a data transfer of the data fields in the PAD.
2. Access by WisDOT staff to data fields will be permitted only as agreed to by user needs.

3. The summary, manipulation, or interpretation of the data will only be undertaken by a qualified archaeologist, as defined in 36 CFR 800 (revised in 1997).
4. Data generated for Geographical Information Systems [GIS] applications by the WisDOT will be shared with the OSA.
5. This database may be used by the WisDOT to supplement procedures used to comply with Section 106 of the National Historic Preservation Act or state laws as they affect historic properties.
6. Representatives of OSA and BOE will meet once each year at which time the BOE will provide information on the effectiveness of PAD in implementing the objectives of Historic Preservation; meeting the needs of the District for planning; and identifying any problems encountered.
7. The data covered by this agreement is strictly for use by the WisDOT and its designee and may not be shared with any other agency, institution, organization, private group, or individual.
8. Either agency may request that this *Memorandum of Understanding* be amended, whereupon both agencies will consult to consider such amendment.
9. Either agency may terminate this *Memorandum of Understanding*, provided that both agencies consult prior to termination, should the termination be based on violation of the agreement.

This Memorandum is for the period beginning April 1, 2001 and ending December 31, 2001, at which time the Memorandum will be replaced by an agreement between WisDOT and SHSW for data sharing resulting from GIS. The terms of this Memorandum will be incorporated into the GIS data sharing agreement.

Wisconsin Department of Transportation
Bureau of Environment

By: Carol D Cutshall Date: 3-29-01
Carol Cutshall, Bureau Director

State Historical Society of Wisconsin,
Division of Historic Preservation

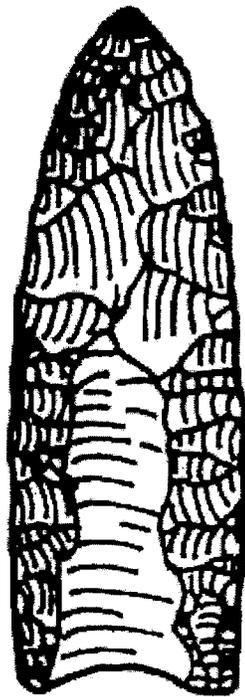
By: Alicia Goehring Date: 4/6/01
Alicia Goehring, Administrator

APPENDIX VI

User Manual for Project Development

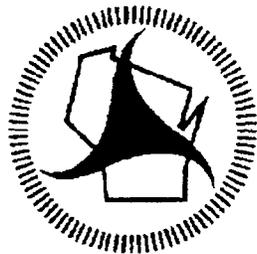
Pilot

Archaeological Database



Clovis Point - Paleo-Indian (9500 to 8500 B.C.)

Project Development User Guide



Project Development User

1. Double Click on the Project Development icon.
2. Upon doing so, you will be prompted for your **User Name** and your **Password** as shown in Figure A. (For the time being your User Name is **PL1** and your Password is **WDOT3**.) **NOTE:** Passwords are case sensitive. For instance, if you were to type *wdot3* as opposed to **WDOT3**, the database would not accept your password.

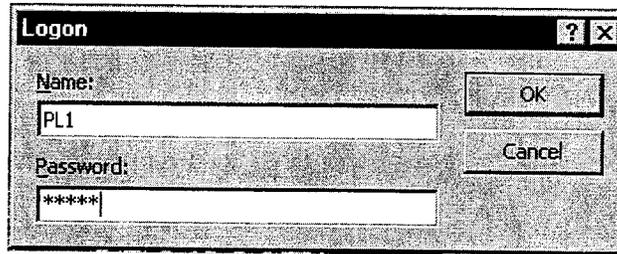


FIG. A Logon window that appears when you open PAD.

3. After you have successfully logged on, a menu (Figure B) will present you with two options for querying the database. You can either (1) search for sites or (2) search for Archaeological Project Reports.

For instructions on how to search for sites, go to the next page.

If you want to learn how to search for archaeological project reports, go to page seven.

To leave the database entirely, click EXIT.

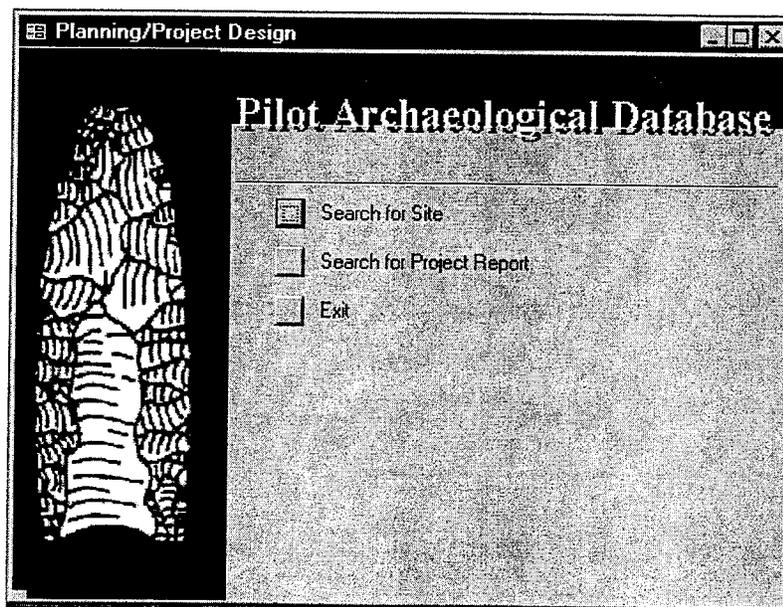


FIG. B Main menu that appears after you log into PAD.

4. SEARCHING FOR SITES

Upon selecting the first option button on the main menu (Figure B), a query window (as shown in Figure C) will appear giving you four options to search the database for sites:

OPTION 1. You can view all the site records present in the database.

OPTION 2. You can query the database for a particular site by entering its *Site Code*.

OPTION 3. You can query the database for a particular burial/cemetery site by entering its *Burial Site Number*.

OPTION 4. You can query the database by location. See page 5.

FIG. C Query window that allows you to search the database for sites.

Upon selecting any one of the first three options, you can choose to view the site information (as shown in Figures D through F) by clicking the VIEW SITE INFORMATION button. You can also, with the exception of Option 1, print out the same site information by clicking the PRINT SITE REPORT button as shown in Figures C through F.

If you wish to run another query, click the EXIT button shown in Figures D through F.

FIG. D Site Information tab: Window that first appears upon clicking the VIEW SITE INFORMATION button in Figure C. Allows you to view basic information associated with a site.

Site Information

Site Information for BR-0181 in Brown County

Site Information | Project Reports | Location Information

SHSW #: 88-1773 BAR #: 02340 County: Brown WisDOT ID:

Dirt, Victoria
1988 An Archaeological Survey Along The East Shore Of Green Bay For The Bayshore And Dyckesville Sanitary Districts.

Series Code and Series #: PR Place Published: Sturgeon Bay, WI

Abstract:
IN JULY AND AUGUST 1988 THE AUTHOR CONDUCTED A PHASE I ARCHAEOLOGICAL SURVEY, 17.7 MILES LONG, ALONG THE EAST SHORE OF GREEN BAY FOR THE PROPOSED ROUTING OF SEWER LINE IN THE BAYSHORE AND DYCKESVILLE SANITARY DISTRICTS TO BE CONNECTED WITH THE CITY OF GRE

Sites Investigated:
(13796) BR-0242 (ON); (641) BR-0157 (LW,ON,LP); (636) BR-0127 (ON,WO); (632) BR-0005 (ON,WO); (638) BR-0181 (WO); (2724) KE-0009 (ON,WO)

Highways adjacent to this project:
STH 57

Project Area Surveyed: BROWN COUNTY, SCOTT TWP.: 2421E-01, 12, 2521E-3B; & 2522E-20, 21, 28, 29, 30, 31; MANY

Date Surveyed:

Print Record
Record: 14 | 1 | of 1

Print Site Report | Exit
Record: 14 | 1 | of 1

FIG. E Project Reports tab: Allows you to view information about archaeological project reports associated with a site.

Site Information

Site Information for BR-0181 in Brown County

Site Information | Project Reports | Location Information

| T-R-S: | Lot #: | Section Grid Alignment: | Quarter Sections: | UTM Centroid Point: |
|---------|--------|-------------------------|-------------------|---------------------|
| S22E-13 | | NW,SE | | 16 / / |

Highway:
STH 57 Within 300 feet of the highway centerline Within 1/4 mile of the highway centerline

Print Site Report | Exit
Record: 14 | 1 | of 1

FIG. F Location Information tab: Allows you to view the location information of a site.

By clicking the fourth option button as shown in Figure C, you can query the database by location. Upon selecting this option, a second query window (Figure G) appears. From this screen, you must select one of three options for querying the database by location.

If you wish to return to the previous screen (Figure C), you can click the CANCEL button.

FIG. G Query window that allows you to search the database by location.

OPTION 1: Entering the Town-Range-Section and Quarter Section

Generally, when you write out the township, range, and section for an area, you would write, for example, *Section 13 of T.25N.-R.22E.* However, when you query this database, you only need to type the two digit township number, the two digit range number, whether the range is east or west of the fourth principle meridian, and the two digit section number. So, for instance, if your project area is in *Section 13 of T.25N.-R.22E.*, you would select the first option and type your town, range, and section as *2522E-13* in the box.

OPTION 2: Entering the Town-Range and Lot number

If your project takes place within a French or government lot, select the second option and enter the town, range, and lot number for your project area as shown in Figure H. The lot number must be entered as a three digit number. For instance, if your project is in *French Lot #3 of T.24N.-R.20E.*, you would type your town, range, and section as *2420E-00* in the first box and your lot number as *003* in the second box. (Because there is no section number, *00* is entered as the section for you.)

FIG. H Querying the database by town, range, and lot number.

OPTION 3: Entering the County and Highway

You can also query the database for a list of sites that lie adjacent to a particular highway by selecting the third option and entering the county and highway for your project area as shown in Figure I.

FIG. I Querying the database by county and highway.

After you have entered the location for your project, you can click ENTER. A window (Figure J) will appear listing all the sites (if any) within your project area.

| Site Code | Burial Site # | County | Site Certification Status | Date |
|-----------|---------------|--------|---|------|
| BR-0058 | | Brown | Eligibility has not been determined. | |
| BR-0127 | BBR-0113 | Brown | Protected under Burial Sites Preservation Law s.157.70, Wis. Stats. | |
| BR-0129 | | Brown | Eligibility has not been determined. | |
| BR-0228 | | Brown | Eligibility has not been determined. | |
| BR-0296 | | Brown | Eligibility has not been determined. | |
| BR-0295 | | Brown | Not Eligible for the National Register of Historic Places (NRHP) | |

FIG. J Window displays list of sites for your project area.

If you wish to view more detailed information associated with these sites, you can print this information out by clicking the PRINT SITE REPORTS button.

If you want to run another query, click EXIT.

5. SEARCHING FOR ARCHAEOLOGICAL PROJECT REPORTS

Upon selecting the second option button on the main menu (Figure B), a query window (as shown in Figure K) will appear giving you four options to search the database for Archaeological Project Reports:

OPTION 1: You can view all the reports present in the database.

OPTION 2: You can query the database for archaeological reports associated with a particular compliance project by entering a six digit *SHSW Compliance Number*.

OPTION 3: You can query the database for a particular report by entering it's five digit *BAR (Bibliography of Archaeological Reports) Number*.

OPTION 4: You can query the database for archaeological reports associated with a particular WisDOT project by entering an eight digit *WisDOT ID Number*.

FIG. K Query window that allows you to search the database for archaeological project reports.

Upon selecting any one of these options, you can view information about a report (as shown in Figure L) by clicking the VIEW REPORT INFORMATION button. You can also, with the exception of Option 1, print out the same report information by clicking the PRINT PROJECT REPORT button.

FIG. L Window that appears upon clicking the VIEW REPORT INFORMATION button in Figure K.

To print a copy of the archaeological report information, click the PRINT RECORDS button shown in Figure L.

You can view a list of sites (Figure M) associated with a particular archaeological report by clicking the VIEW SITES INVESTIGATED button shown in Figure L.

| Query Results | | | | |
|---------------|---------------|--------|---|------|
| Site Code | Burial Site # | County | Site Certification Status | Date |
| BR-0058 | | Brown | Eligibility has not been determined. | |
| BR-0127 | BBR-0113 | Brown | Protected under Burial Sites Preservation Law s.157.70, Wis. Stats. | |
| BR-0129 | | Brown | Eligibility has not been determined. | |
| BR-0228 | | Brown | Eligibility has not been determined. | |
| BR-0296 | | Brown | Eligibility has not been determined. | |
| BR-0295 | | Brown | Not Eligible for the National Register of Historic Places (NRHP) | |

Record: 1 of 6

FIG. M Window displays list of sites associated with a particular archaeological report.

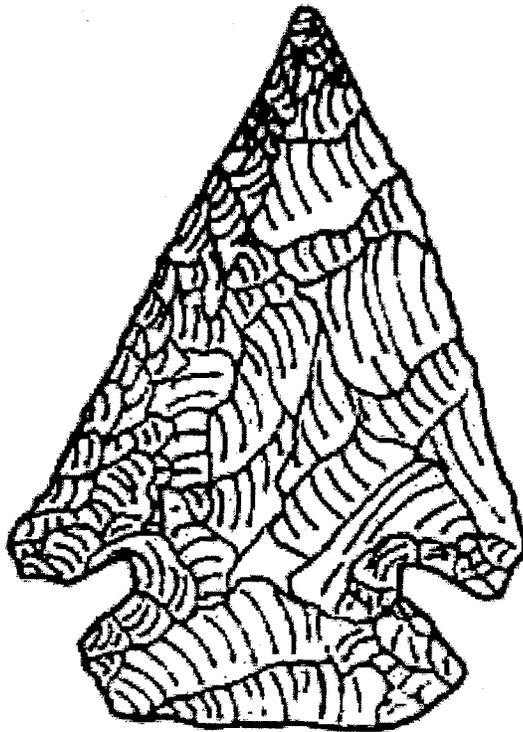
If you wish to run another query, click the EXIT button shown in Figure L.

APPENDIX V

User Manual for Maintenance

Pilot

Archaeological Database



Thebes Point - Early Archaic (8000 to 6000 B.C.)

Maintenance User Guide



Maintenance User

1. Double Click on the Maintenance icon.
2. Upon doing so, you will be prompted for your **User Name** and your **Password** as shown in Figure A. (For the time being your User Name is *MT1* and your Password is *WDOT2*.) NOTE: Passwords are case sensitive. For instance, if you were to type *wdot2* as opposed to *WDOT2*, the database would not accept your password.

FIG. A Logon window that appears when you open PAD.

3. After you have successfully logged on, you will be able to begin querying the database.

FIG. B Query window that appears after you log into PAD.

4. First, enter the ID number for your project. This ID number can either be an eight digit WisDOT ID (as seen in Figure B) or some other ID you might have (as seen in Figure D).
5. Next, you will want to enter the legal description for your project area as shown in Figures B and C.

OPTION 1: Entering the Town-Range-Section and Quarter Section

Generally, when you write out the township, range, and section for an area, you would write, for example, *Section 13 of T.25N.-R.22E*. However, when you query this database, you only need to type the two digit township number, the two digit range number, whether the range is east or west of the fourth principle meridian, and the two digit section number. In addition to the town, range, and section, you must also provide the first quarter section for your project area. So, for instance,

if your project area is in the *SE*¹/₄ of the *NE*¹/₄ of the *SW*¹/₄ in Section 13 of T.25N.-R.22E, you would select the first option and type your town, range, and section as **2522E-13** in the first box and your quarter section as *SW* in the second box.

OPTION 2: Entering the Town-Range and Lot number

If your project takes place within a French or government lot, select the second option and enter the town, range, and lot number for your project area as shown in Figure C. The lot number must be entered as a three digit number. For instance, if your project is in *French Lot #3 of T.24N.-R.20E.*, you would type your town, range, and section as **2420E-00** in the first box and your lot number as **003** in the second box. (Because there is no section number, **00** is entered as the section for you.)

The screenshot shows a window titled "Maintenance". Under the heading "Enter An Identification Number", there are two input fields. The first is labeled "Enter the WisDOT ID for your project" and contains the text "1154-01-00". The second is labeled "If no WisDOT ID exists, enter the Other ID that exists for your project" and is empty. To the right of these fields are "Enter" and "Exit" buttons. Below this is the "Choose A Query Type" section with three radio button options:

- Enter Town-Range-Section and Quarter Section
- Enter Town-Range and French Lot #
- Select a County and Highway

 The second option is selected. To its right are two input fields: the first contains "2420E-00" and the second contains "003".

FIG. C Querying the database by town, range, and lot number.

OPTION 3: Entering the County and Highway

You can also query the database for a list of sites that lie adjacent to a particular highway by selecting the third option and entering the county and highway for your project area as shown in Figure D.

The screenshot shows the same "Maintenance" window. In the "Enter An Identification Number" section, the "Other ID" field now contains "FAP 125". In the "Choose A Query Type" section, the third radio button option, "Select a County and Highway", is selected. To its right are two dropdown menus: the first is set to "Brown" and the second is set to "IH 43".

FIG. D Querying the database by county and highway.

- After you have typed in the ID number and the legal description for your project, you can click ENTER. A window will then prompt you as to what to do next. Figures E through H illustrate the various types of prompts you can receive:

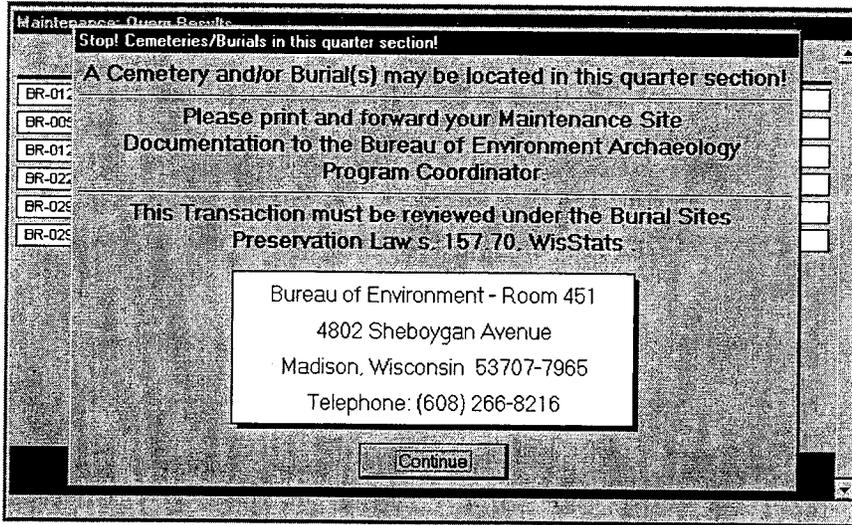


FIG. E Window prompt that appears when cemeteries and/or burials may be within your project area.

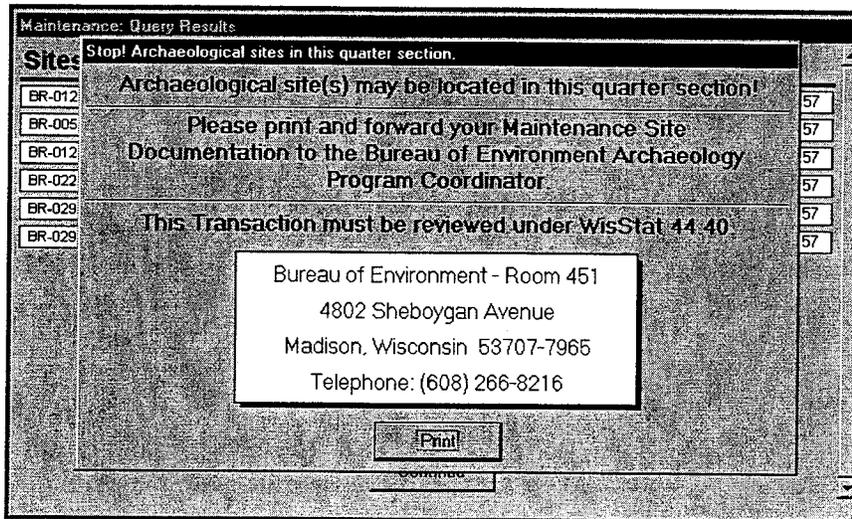


FIG. F Window prompt that appears when archaeological sites may be within your project area.

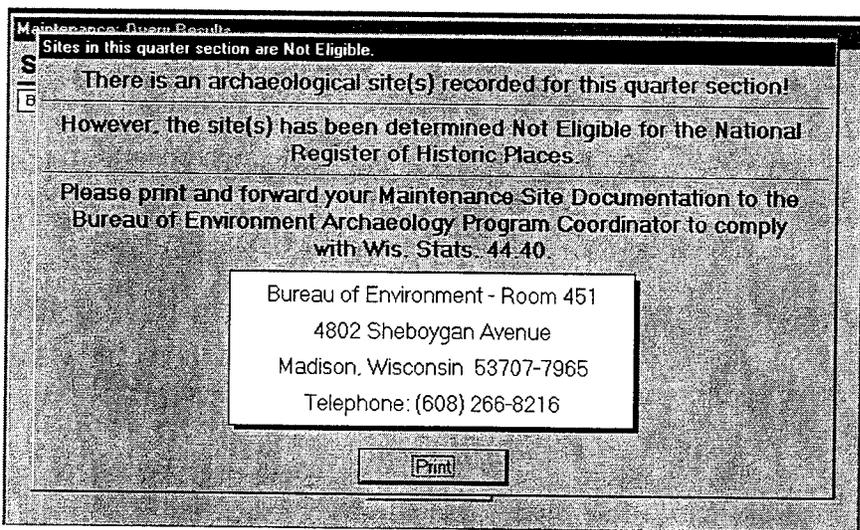


FIG. G Window prompt that appears when archaeological sites that are "Not Eligible for the National Register of Historic Places" may be within your project area.

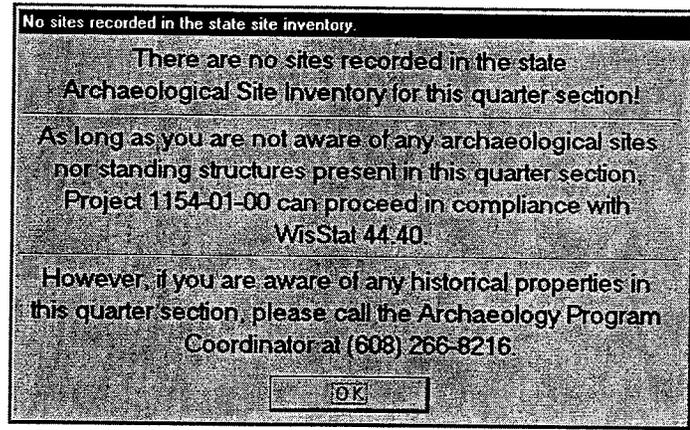


FIG. H Window prompt that appears when no archaeological sites are within your project area.

After you have followed the instructions of the prompts, a window (Figure I) will appear listing all the sites (if any) within your project area.

| Site Code | Burial Site Number | Site's Status | Year | Other Info |
|-----------|--------------------|---|------|--------------|
| BR-0127 | BBR-0113 | Protected under Burial Sites Preservation Law s.157.70, Wis. Stats. | | Along STH 57 |
| BR-0058 | | Eligibility has not been determined. | | Along STH 57 |
| BR-0129 | | Eligibility has not been determined. | | Along STH 57 |
| BR-0228 | | Eligibility has not been determined. | | Along STH 57 |
| BR-0296 | | Eligibility has not been determined. | | Along STH 57 |
| BR-0295 | | Not Eligible for the National Register of Historic Places (NRHP) | 1994 | Along STH 57 |

Site's Certification Status

Continue

FIG. I The above list of sites shows the Site Code, the Burial Site Number, the Site's Status, and the Year that its status was determined.

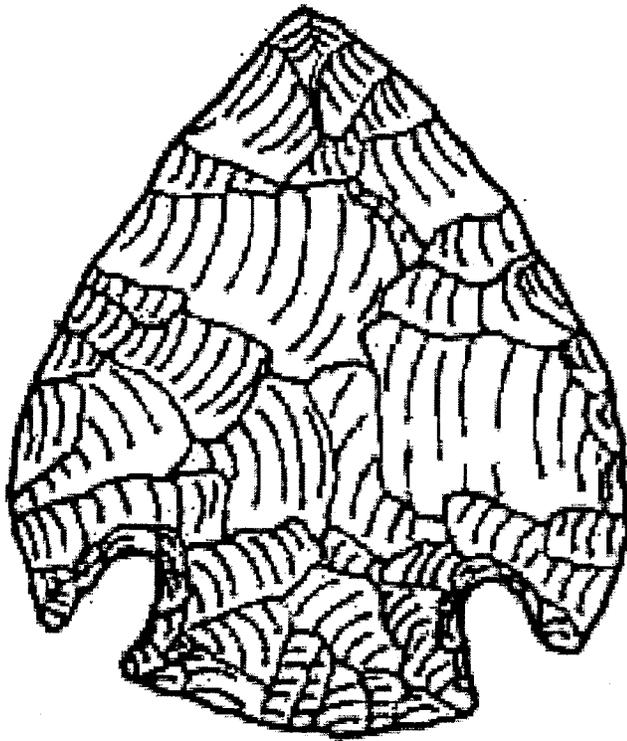
9. In order to run another query, click the CONTINUE button that is shown in Figure I.
10. If you wish to exit the database, click the EXIT button shown in Figures B, C, and D.

APPENDIX VI

User Manual for Real Estate

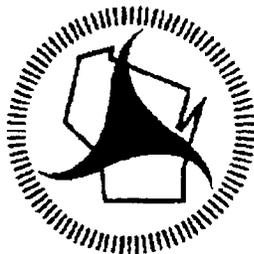
Pilot

Archaeological Database



Snyders Point - Middle Woodland/Trempealeau Phase (200 B.C. to 200 A.D.)

Real Estate User Guide



Real Estate User

1. Double Click on the Real Estate icon.
2. Upon doing so, you will be prompted for your **User Name** and your **Password** as shown in Figure A. (For the time being your User Name is **RE1** and your Password is **WDOT1**.) NOTE: Passwords are case sensitive. For instance, if you type *wdot1* as opposed to **WDOT1**, the database will not accept your password.

FIG. A Logon window that appears when you open PAD.

3. After you have successfully logged on, you can begin querying the database.

FIG. B Query window that appears after you log into PAD.

4. First, enter the ID number for your land transaction. This ID number can either be an eight digit WisDOT ID (as seen in Figure B) or some other ID you might have (as seen in Figure C).
5. Next, you must enter the legal description for your project area as shown in Figures B and C.

OPTION 1: Entering the Town-Range-Section and Quarter Section

Generally, when you write out the township, range, and section for an area, you would write, for example, *Section 13 of T.25N.-R.22E*. However, when you query this database, you only need to type the two digit township number, the two digit range number, whether the range is east or west of the fourth principle meridian, and the two digit section number. In addition to the town, range, and section, you must also provide the first quarter section for your project area. So, for instance, if your land transaction is in the *SE¹/₄ of the NE¹/₄ of the SW¹/₄ in Section 13 of T.25N.-R.22E.*, you would select the first option and type your town, range, and section as **2522E-13** in the first box and your quarter section as **SW** in the second box.

OPTION 2: Entering the Town-Range and Lot Number

If your land transaction takes place within a French or government lot, select the second option and enter the town, range, and lot number for your project area as shown in Figure C. The lot number must be entered as a three digit number. For instance, if your project is in *French Lot #1 of T.24N.-R.20E.*, you would type your town, range, and section as **2420E-00** in the first box and your lot number as **001** in the second box. (Because there is no section number, **00** is entered as the section for you.)

The screenshot shows a window titled "Real Estate" with the following fields and options:

- Enter An Identification Number**
 - Enter the WisDOT ID for your project: []
 - If no WisDOT ID exists, enter the Other ID that exists for your project: FAP 250
- Choose A Query Type**
 - Enter Town-Range Section and Quarter Section: 2420E-00
 - Enter Town-Range and French Lot #: 2420E-00 | 001

Buttons for "Enter" and "Exit" are visible on the right side.

FIG. C Querying the database by town, range, and lot number.

- After you have typed in the ID number and the legal description for your land transaction, you can click ENTER. A window will then prompt you as to what to do next. Figures D through G illustrate the various types of prompts you can receive:

The screenshot shows a window titled "Real Estate: Query Results" with a "Sites" list on the left and a central message box:

- Stop! Cemeteries/Burials in this area!**
- A Cemetery and/or Burial(s) may be located in this quarter section!**
- Please print and forward your Real Estate transaction documentation to the Bureau of Environment Archaeology Program Coordinator
- This transaction must be reviewed under the Burial Sites Preservation Law s. 167.70 WisStats
- Bureau of Environment - Room 451
4802 Sheboygan Avenue
Madison, Wisconsin 53707-7965
Telephone: (608) 266-8216
- [Continue]

FIG. D Window prompt that appears when cemeteries and/or burials may be within your project area.

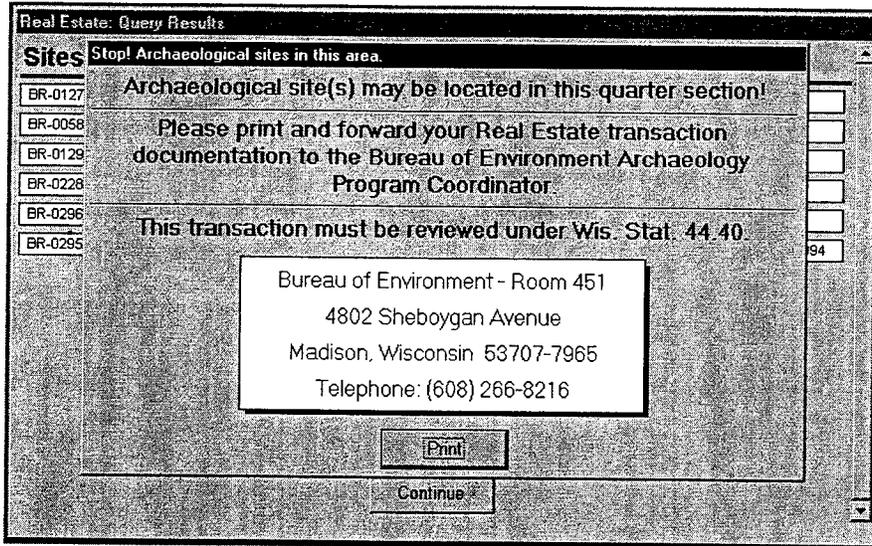


FIG. E Window prompt that appears when archaeological sites may be within your project area.

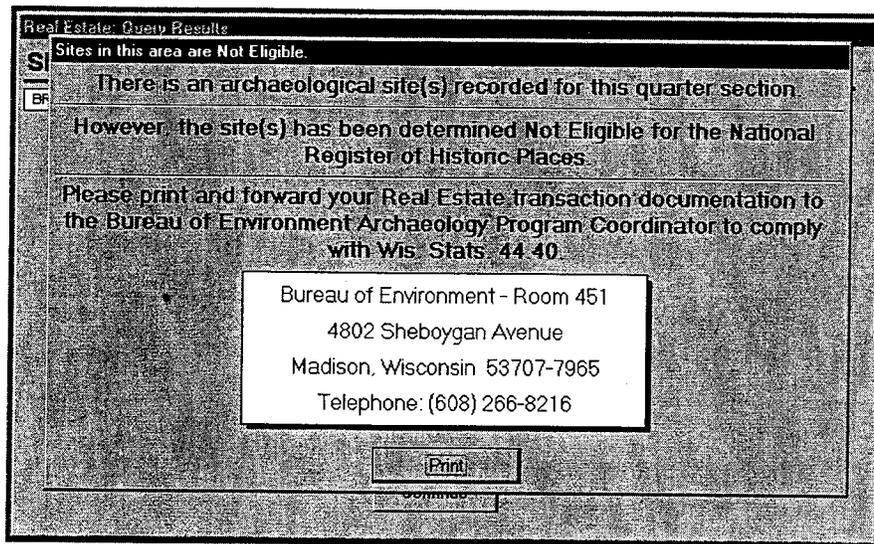


FIG. F Window prompt that appears when archaeological sites that are "Not Eligible for the National Register of Historic Places" may be within your project area.

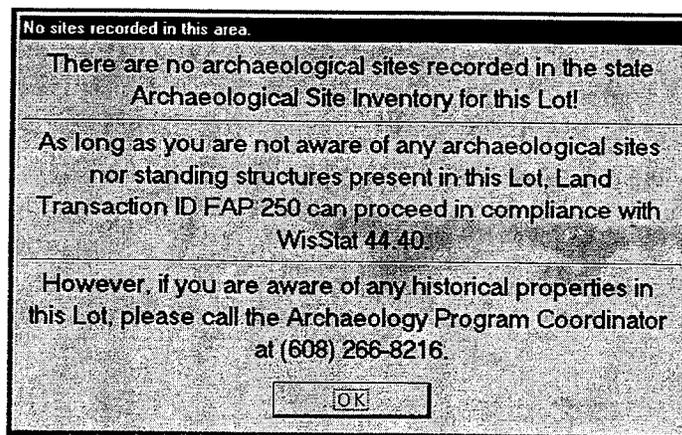


FIG. G Window prompt that appears when no archaeological sites are within your project area.

- After you have followed the instructions of the prompts, a window (see Figure H) will appear listing all the sites (if any) within the area of your land transaction.

| Real Estate: Query Results | | | |
|--|----------|---|------|
| Sites in the SW¼ of 2522E-13 in Brown County | | | |
| BR-0127 | BBR-0113 | Protected under Burial Sites Preservation Law s.157.70, Wis. Stats. | |
| BR-0058 | | Eligibility has not been determined. | |
| BR-0129 | | Eligibility has not been determined. | |
| BR-0228 | | Eligibility has not been determined. | |
| BR-0296 | | Eligibility has not been determined. | |
| BR-0295 | | Not Eligible for the National Register of Historic Places (NRHP) | 1994 |

Continue

FIG. H The above list of sites shows the Site Code, the Burial Site Number, the Site's Status, and the Year that its status was determined.

- In order to run another query, click the CONTINUE button that is shown in Figure H.
- If you wish to exit the database, click the EXIT button shown in Figures B and C.

APPENDIX VII

Glossary for the Pilot Archaeological Database

Archaeology: A social science that studies human societies of the past by analyzing the material remains (i.e., technology and artifacts) left by their behavior.

Archaeological Report: A report written by an archaeologist for a compliance project administered by the Office of the State Archaeologist. A report is typically written after archaeological investigations have been conducted.

Archaeological Site: Any place where artifacts—objects and features manufactured or modified by human beings—are found.

Bibliography of Archaeological Reports (BAR): An inventory of archaeological reports written for OSA compliance projects. Each report has a unique five-digit BAR number.

Burial Site Number: A sequential number assigned to burials and/or cemeteries by the state's Burial Sites Office. An example of such a number is BBR-0005. The first letter of the code denotes that the site is a burial or cemetery. The second two letters refer to the county while the last four digits are an arbitrary number assigned to each burial site in that county. So in this example, the letters "BBR" refer to a Burial Site in Brown County and digits "0005" refers to the 5th burial site in Brown County.

Compliance Project: An archaeological project of investigation administered by the Office of the State Archaeologist. Each compliance project has a unique six-digit SHSW Compliance Number.

Culture: An arbitrary name designation applied by archaeologists to peoples of a particular time and location. In PAD, the following cultures are applied to the peoples who occupied archaeological sites in Wisconsin. (Please note that dates given are approximate.)

Native American Cultures:

- Paleo-Indian 10,000 to 5500 BC
 - Early Paleo-Indian 10,000 to 8000 BC
 - Late Paleo-Indian 8000 to 5500 BC
- Archaic 8000 to 200 BC
 - Early Archaic 8000 to 4500 BC
 - Middle Archaic 4500 to 1500 BC
 - Late Archaic 1500 to 200 BC
 - Old Copper 2000 to 1500 BC
 - Red-Ocher 1000 to 800 BC
- Woodland 500 BC to 1600 AD
 - Early Woodland 500 BC to 0
 - Middle Woodland 0 to 450 AD
 - Late Woodland 450 to 1600 AD
 - Terminal Woodland 1000 to 1600 AD
- Middle Mississippian 1000 to 1200 AD
- Oneota 1000 to 1600 AD
- Late Prehistoric 1000 to 1600 AD

- Historic Indian..... 1600 to 1900 AD
- Unknown Prehistoric..... pre 1600 AD

Native American and/or Euro-American Cultures:

- Unknown..... Date and Culture not known
- Unknown Historic post 1600 AD

Euro-American Cultures:

- Historic Euro-American Unknown post 1600 AD

SHSW Compliance Number: A unique six-digit number assigned to each compliance project administered by the Office of the State Archaeologist. An example of such a number is 92-1500. The first two digits refer to the year the project was first administered while the last four digits are an arbitrary number assigned to each project for that year. So in this example, the "92" refers to the year 1992 while the "1500" refers to project #1500 in that year.

Site Certification Status: Is the criteria given to archaeological sites by the National Park Service's National Register of Historic Places (NRHP). Those sites that are listed with the NRHP are of extreme cultural significance and are likely to yield important information about the prehistory and/or history of places, people, and cultures in the State of Wisconsin. The following are the types of NRHP Status an archaeological site can have:

- *Protected under Burial Sites Preservation Law s.157.70, Wis. Stats.*
All Cemeteries and Burial Sites in the State of Wisconsin are protected under this law.
- *Determined eligible for the National Register of Historic Places (NRHP)--in DOE process*
An archaeological site is in the process of obtaining official status as a site listed with the NRHP.
- *Listed in National Register of Historic Places (NRHP)*
An archaeological site is listed with the NRHP. The site is of extreme cultural significance and is likely to yield important information about the prehistory and/or history of a place, person, and/or culture in the State of Wisconsin.
- *Eligibility has not been determined.*
No one has determined whether an archaeological site can be listed with the NRHP. Please note that the site has the potential to be considered significant enough for the NRHP. Further investigations must be conducted to determine the significance of such a site.
- *Not Eligible for the National Register of Historic Places (NRHP)*
The Office of the State Archaeologist has determined that an archaeological site is not significant enough to be listed with the NRHP.

Site Code: A number assigned to archaeological sites by the Office of the State Archaeologist (OSA). An example of such a code is BR-0181. The first two letters of the code refer to the county while the last four digits are an arbitrary number assigned to each site in that county. So in this example, the letters "BR" refer to Brown County and digits "0181" refers to the 181st site in Brown County. A

database of all the Site Codes and Burial Site Numbers in the State of Wisconsin is maintained by the Office of the State Archaeologist in the state's Archaeological Site Inventory (ASI).