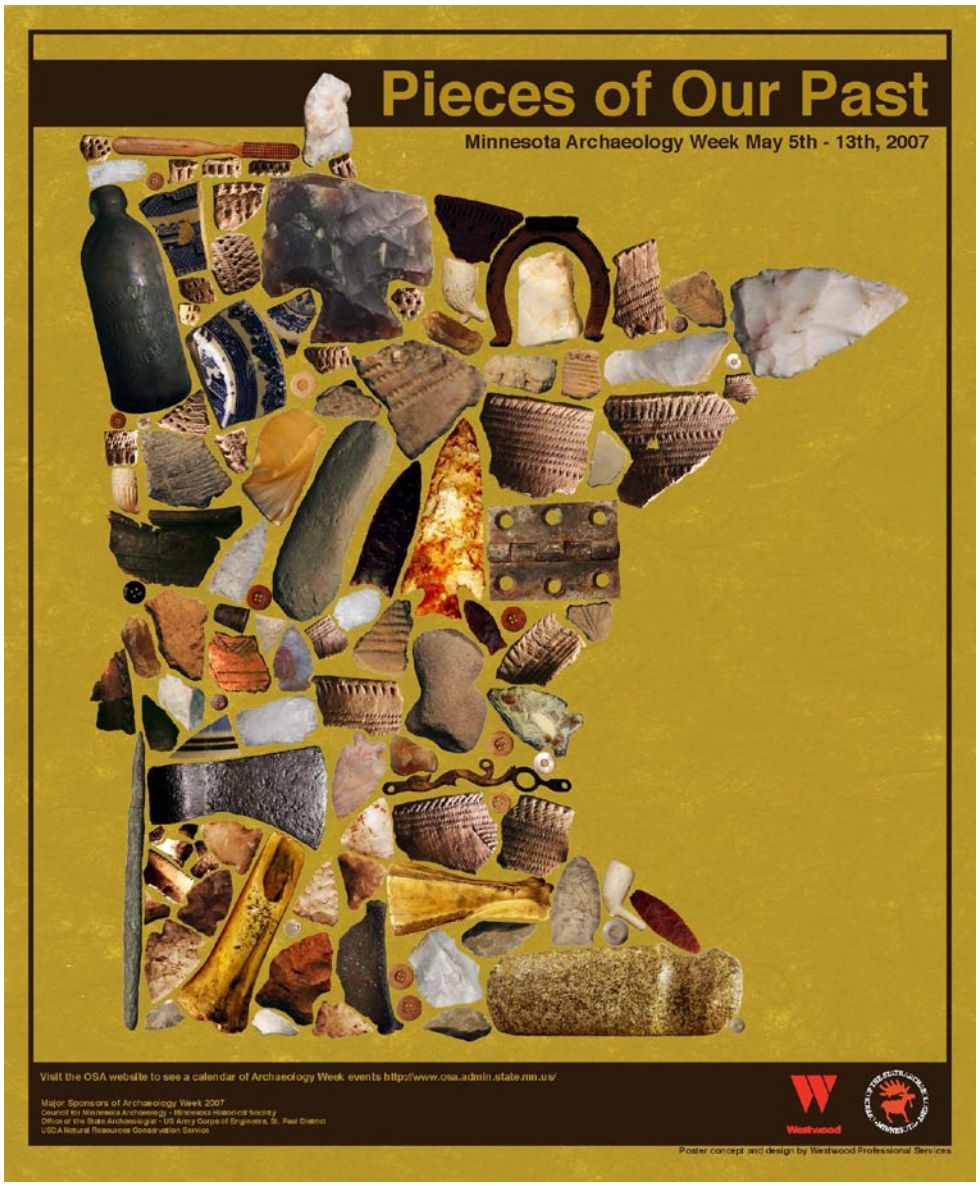
Archaeology in Minnesota
Annual Report of the State Archaeologist
Fiscal Year 2007



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Minnesota Department of Administration
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Mission Statement

The mission of the State Archaeologist is to promote archaeological research, share archaeological knowledge, and protect archaeological resources for the benefit of all of the people of Minnesota.

Abstract

In fiscal year 2007, the Office of the State Archaeologist (OSA) was involved in a wide variety of activities in order to fulfill legal obligations, protect archaeological sites, and support the advancement of Minnesota archaeology.

Chapter 1 of the Annual Report provides a brief history of the OSA and lists the principal duties and responsibilities of the State Archaeologist.

Chapter 2 summarizes OSA activities in FY 2007 by program area. Major 2007 accomplishments include preparing and supporting legislative revision of the Private Cemeteries Act (MS 307.08), preparing a procedures manual for OSA implementation of MS 307.08, taking over maintenance of the archaeological site database, expanding the joint OSA-MHS research facility, becoming an official participant in the Environmental Quality Board's (EQB) EAW/EIS review process, and formulating artifact and data curation guidelines for the state.

Basic OSA Fiscal Year (FY) 2007 and Calendar Year (CY) 2007 statistics are:

	FY07	CY07
Licenses approved:	54	50
Site Forms Reviewed:	256	260
Site Numbers Assigned:	187	194
Reports Added:	97	113
Projects Reviewed:	48	-
Major Burial Cases:	20	-
Burial Authentications:	8	-

Chapter 3 provides an assessment of the current state of Minnesota archaeology including recent improvements, new problems, and a plan for FY 2008.

A glossary of common archaeological terms used in Minnesota is appended at the end of the report.

Acknowledgements

The Office of the State Archaeologist (OSA) is a department within the Office of Geographic and Demographic Analysis (GDA) within the Minnesota Department of Administration. David Arbeit very effectively supervises the diverse GDA and consistently provides the OSA with needed guidance and sound advice. Other Administration and GDA staff provide daily support to the OSA for financial, technical, and personnel matters.

The Minnesota Indian Affairs Council (MIAC) is one of the most important partners of the OSA in protecting burial sites and maintaining essential communication with Minnesota's Indian communities. Jim Jones is the long-serving point person for archaeology at MIAC and Jim's always ready assistance is much appreciated.

The Minnesota Historical Society (MHS) is another important partner of OSA. Deputy Director Michael Fox co-signs license applications, Archaeology Department Head Pat Emerson and her very competent staff provide day-to-day support at the Ft. Snelling History Center, and State Historic Preservation Office (SHPO) staff including Dennis Gimmestad, David Mather, Tom Cinadr, Susan Roth, and Kelly Gragg-Johnson provide much needed advice and records management assistance. The OSA leases office space at Ft. Snelling from the MHS and they have generously supported the development of the Joint Research Area. Brenda Williams and Kurt Shimek at Ft. Snelling provide much appreciated logistical assistance essential to the efficient operation of the OSA.

The OSA initiative that resulted in the successful revision of MS 307 could not have been done without the help and guidance of Administration legislative liaison Jim Rhodes and his counterpart at the Minnesota Historical Society, David Kelliher. Their experience and patience was greatly appreciated. The OSA would also like to acknowledge the legislative sponsors of the MS 307 revisions, Rep. Bill Hilty and Sen. Jim Vickerman. Mark Shepard of House Research was very helpful in revising early drafts of the bill.

It would be impossible for the OSA to function effectively and efficiently without the assistance of the entire archaeological community in Minnesota. This includes agency archaeologists, private contract archaeologists, academic and museum archaeologists, and avocational archaeologists. The three OSA interns for FY 2007 - Jon Stone, Steven Blondo, and Stephen Kelly – are thanked for their assistance with OSA mapping initiatives. The support of my entire family, especially my wife Pat, makes my job much easier. Pat and daughter Emily also help me with graphic design issues.

Last, but certainly not least, Bruce Koenen has served as the assistant to the State Archaeologist since 1995. Bruce carries out many of the essential daily tasks at OSA including license application processing, site form review, records maintenance, financial accounting, secondary school liaison, and avocational interaction. He serves as the institutional memory for the OSA and his wealth of knowledge and easy-going personality are absolutely essential to the State Archaeologist and the rest of the Minnesota archaeological community.

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Chapter 1: Introduction

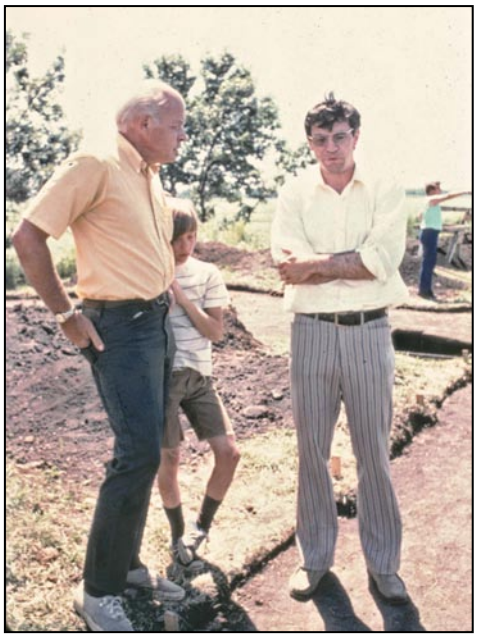
This report summarizes the activities of the Office of the State Archaeologist (OSA) for Minnesota State Fiscal Year 2007, the period from July 1, 2006 through June 30, 2007. It also includes some statistics for the 2007 Calendar Year.

The State Archaeologist is a civil service employee of the Department of Administration and resides within the Division of Geographic and Demographic Analysis (GDA). The OSA has two staff members, the State Archaeologist and an assistant. The OSA leases office space from the Minnesota Historical Society (MHS) at the Ft. Snelling History Center. The OSA receives a biennial appropriation from the state legislature for salaries and operating expenses. The funding level has remained at $196,000 annually since 2001.

Minnesota Statutes (MS) 138.38 requires that the State Archaeologist complete annual reports. The law states that the reports must be sent to the Commissioner of Administration with copies to the Minnesota Historical Society and the Minnesota Indian Affairs Council. Copies are also sent to the Minnesota Legislative Reference Library, the Council for Minnesota Archaeology, the Minnesota Archaeological Society, the Department of Transportation, the Department of Natural Resources, and to other organizations and individuals upon request. The annual report will also be made available on the OSA website (http://www.admin.state.mn.us/osa/).

The Office of State Archaeologist – Historical Background

The Field Archaeology Act (MS 138.31 - .42) established the Office of the State Archaeologist (OSA) in 1963. Initially, the Director of the Minnesota Historical Society (MHS) appointed the State Archaeologist for a four-year term and the State Archaeologist was required to be a staff member at the University of Minnesota. These requirements have been altered several times over the last 34 years. In 1996, the State Archaeologist became a state civil service employee of the Department of Administration and is now appointed by the Commissioner of Administration.



Elden Johnson (right) with Guy Gibbon at site 21MU1 in 1971

Elden Johnson, an archaeologist and professor of anthropology at the University of Minnesota, was appointed the first State Archaeologist in 1963 and served until his resignation in 1978. Christy Hohman-Caine, a student of Johnson's and a staff member of the Anthropology Department at Hamline University, was appointed State Archaeologist in 1978 and served until her resignation in late 1992. Neither Johnson nor Hohman-Caine were paid a salary for

their service as State Archaeologist and it was thus necessary for them to maintain other employment.

From December of 1992 through January of 1995, there was no State Archaeologist. Mark Dudzik was appointed State Archaeologist in February 1995 and became the first to be paid a salary. Dudzik, a Wisconsin native, had been working as a highway survey archaeologist for the MHS and then as an archaeologist for the Institute for Minnesota Archaeology (IMA) prior to his appointment. Dudzik hired Bruce Koenen as the first full-time assistant to the State Archaeologist in June 1995.

Following Dudzik's resignation in July 2005, Scott Anfinson was appointed Acting State Archaeologist in mid-August 2005 and State Archaeologist in January 2006. Anfinson had been the archaeologist for the Minnesota State Historic Preservation Office (SHPO) of the MHS from May 1990 through December 2005. Koenen continues to serve as the assistant to the State Archaeologist.

Duties of the State Archaeologist

The principal duties of the State Archaeologist are assigned by two state laws, the Field Archaeology Act (MS 138.31-.42) and the Private Cemeteries Act (MS 307.08). The State Archaeologist is given some additional duties in rules implementing Minnesota Water Law (MS 103) and the Minnesota Environmental Policy Act (MS 116D) and also carries out traditional duties that have evolved since 1963.

Field Archaeology Act (MS 138.31 – 138.42)
While the Field Archaeology Act has been revised 10 times since 1963, the duties of the State Archaeologist specified in that law have not changed. These duties can be summarized as:

- acts as the agent of the state to administer and enforce the act
- sponsors, engages in, and directs fundamental archaeological research
- cooperates with agencies to preserve and interpret archaeological sites
- encourages protection of archaeological sites on private property
- retrieves and protects artifacts and data discovered on public property
- retrieves and protects archaeological remains disturbed by agency construction
- helps preserve artifacts and data recovered by archaeological work
- disseminates archaeological information through report publication
- approves the licensing of archaeologists to work on public property
- formulates licensing provisions for archaeological work on public property
- issues emergency licenses for archaeological work on public property
- revokes or suspends archaeological licenses due to good cause
- approves curation arrangements of artifacts and data from state sites
- repossesses artifacts from state sites that are not being properly curated
- consults with MHS and MIAC regarding significant field archaeology
- completes annual reports about OSA and licensees' activities
- reviews and comments on agency development plans that may affect state sites

Private Cemeteries Act (MS 307.08)
In 1976, the Private Cemeteries Act was amended and the State Archaeologist was given additional duties including the "authentication" of unmarked cemeteries. This law has been amended eight times since 1976, most recently in 2007.

The State Archaeologist's duties under MS 307.08 are:

- grants permission for alterations of or removals from non-Indian cemeteries
- allows posting and approves signs for authenticated non-Indian cemeteries
- authenticates all unrecorded burial sites over 50 years old
- maintains unplatted cemetery data
- provides burial sites data to the Land Management Information Center (LMIC)
- determines the ethnic identity of burials over 50 years old
- helps determine tribal affiliation of Indian burials
- determines if osteological analysis should be done on recovered remains
- helps establish provisions for dealing with unaffiliated Indian remains
- reviews development plans that may impact unplatted burials

Minnesota Water Law (MS 130) - Rules 6120.250, Subpart 15a
The State Archaeologist has one duty specified in Minnesota Water Law Rules, which implement MS 103. Under these rules the State Archaeologist can determine if sites are eligible to the state or national historic registers.

Minnesota Environmental Policy Act (MS 116D) – Rules 4110.1500
Responsible Governmental Units (RGUs) for Environmental Assessment Worksheets (EAWs) are required to provide a copy of all EAWs to the State Archaeologist. The State Archaeologist has 30 days to comment on the EAW.

Traditional Duties
Besides performing the duties assigned by Minnesota law listed above, the State Archaeologist also carries out a number of "traditional" duties:

- designs archaeological site inventory forms and reviews completed forms
- assigns official state site numbers to archaeological sites
- maintains an archaeological site inventory
- maintains archaeological research and report files
- organizes the annual Minnesota Archaeology Week
- consults with Indian tribes and federal agencies about archaeological activities
- works closely with MIAC to help develop Indian cemetery management procedures
- provides archaeological information and comments on private developments

Summary of Duties

The most important function of the State Archaeologist is to act as the principal archaeologist for the State of Minnesota. On a day-to-day basis, this involves six major task areas:

1) approving license applications in a careful yet timely manner and monitoring the activities of the licensees
2) editing site forms, issuing official inventory numbers, maintaining the inventory of known and suspected sites, and organizing submitted archaeological reports
3) reviewing development plans submitted by government agencies and private entities to evaluate the potential for harm to archaeological sites
4) promoting and undertaking research in Minnesota archaeology
5) providing public education and answering archaeological questions from the public
6) ensuring burial sites protection through careful record keeping, development plan review, interaction with MIAC, consultation with experts, and doing fieldwork

State Archaeologist Scott Anfinson probing for the wreck of the *USS Essex* on Park Point in Duluth in 2007.

Chapter 2: Summary of OSA Activities – FY 2007

Licensing and Activities of Licensees

As specified in MS 138.36, the State Archaeologist approves the qualifications of an archaeologist applying for a license and forwards approved applications to the director of the Minnesota Historical Society (MHS). While the MHS technically "issues" the license under MS 138.36, the OSA is the entity that develops licensing procedures, reviews license applications, handles all correspondence with licensees and prospective licensees, and monitors the activities of the licensees.

Beginning in the 1960s, licenses were typically issued to qualified archaeologists on a project-by-project basis or as yearly licenses to large agency-specific survey programs such as the Trunk Highway Archaeological Survey (1968 – 1994). In response to public comments, the newly appointed State Archaeologist undertook a review of the licensing process in FY 2006. A revised licensing procedure was implemented in May of 2006, which issued yearly licenses to individuals for the purposes of reconnaissance (Phase I) or evaluative (Phase II) archaeological surveys on non-federal public property. Licensees are required to notify the OSA of each project to be surveyed under their license, provide a separate report for each survey project, and provide a brief yearly summary of all archaeological work conducted under their license. Separate licenses are required for extensive excavation projects (Phase III) or for burial authentication work.

The licensing totals for Fiscal Year (FY) 2007 and Calendar Year (CY) 2007 are:

Yearly License (new form):	**FY07**	**CY07**
Survey:	51	50
Excavation:	3	0
Authentication:	0	1
Total:	54	51

Most licensed projects involve reconnaissance surveys of relatively small areas and most of these surveys do not locate archaeological sites, although a few of these surveys can involve large areas and locate multiple sites. Evaluation surveys investigate the importance of individual sites located by reconnaissance surveys. Excavations involve intensive site investigations that usually involve opening large formal units at specific sites and usually produce the most valuable information about Minnesota's archaeological past.

The majority of archaeological work done in Minnesota is not subject to state licensing, as work done on federal lands and private lands is excluded. The OSA is not required to receive reports on non-licensed archaeological activities. A few of the notable licensed projects carried out in FY 2007 are summarized below.

An example of a significant Phase I – II licensed survey was the continued archaeological work on the Garrison Kathio West Mille Lacs Sewer Project. The 2007 work on this project was carried out by Great Lakes Archaeological Research Center. The 2007 reconnaissance survey focused on the section from St. Albans Bay to the City of Garrison. Phase II testing

was undertaken at three sites in the route of the sewer line – 21CW86, 21CW140, and 21CW226.

The Department of Natural Resources (DNR) continues to fund archaeological programs in several divisions and the archaeological personnel for these programs are provided through contracts with MHS. Dave Radford assisted by LeRoy Gonsior and Doug George run State Parks Archaeology. Tim Tumberg assisted by Grady Larimore run the Trails and Waterways program. Mike Magner assisted by Stacy Allan handle DNR Forestry/Wildlife and Fisheries Program. These DNR archaeological programs do Phase I, Phase II, and occasional Phase III work and provide a yearly summary in an annual report.

In FY 2007 DNR-sponsored archaeological work included State Parks Program monitoring of golf course development at Ft. Ridgely State Park where an early prehistoric hearth was discovered and continued survey and testing on a number of prehistoric sites at Father Hennepin State Park.

There were three mitigation (Phase III) excavations subject to OSA licensing during FY 2007. These licenses were for an examination of the Ft. Snelling flagpole replacement by the MHS Archaeology Department, an examination of a utility line through 21ML6 by St. Cloud State University, and an examination of the Washburn Sawmill site (21AN169) in Anoka by The 106 Group. Final reports have not been completed for these projects.

Records Maintenance

Archaeological Site File

Elden Johnson started a state archaeological site file at the University of Minnesota Department of Anthropology in 1957. Johnson began the file "to facilitate future problem-oriented research" (Johnson 1957:14). The file was kept on 5" x 8" cards organized by county and containing basic locational, descriptive, and reference information. Site numbers were assigned using the Smithsonian Institution's trinomial system with a numerical prefix based on state alphabetical position (Minnesota was 21 in 1957), then a two letter county abbreviation (e.g., AN for Anoka), and finally a one-up unique number for each site in a county. The initial compilation of sites was based on the field notes of archaeologist Lloyd Wilford and the T.H. Lewis-surveyed mound sites contained in Newton Winchell's *The Aborigines of Minnesota* (1911). Archaeologists who found previously unrecorded sites were asked to fill out a standard form and submit it to the University's Archaeology Lab. The University of Minnesota's file became the official state site file with the appointment of Johnson as the first State Archaeologist in 1963.

A major change in site file record keeping occurred in the late 1970s with the initiation of the Statewide Archaeological Survey (SAS) by the Minnesota State Historic Preservation Office (SHPO) at MHS. SAS personnel made photocopies of the State Archaeologist's site file cards and created a separate folder for each site, organizing the folders in file cabinets by county. Because so many new sites were recorded by the SAS-sponsored surveys, the SAS took over assigning the official state site numbers from 1978 through 1981. In 1981, the

Minnesota Land Management Information System (MLMIS) at the State Planning Agency created a computerized version of SAS site file, although this "data bank" was never utilized for state planning purposes and was not available to archaeologists as it had to be accessed through a main frame computer. The MLMIS computerized data was not updated after 1981. With the demise of the SAS in late 1981, the assignment of official site numbers reverted to the State Archaeologist.

The first widely available computerization of the archaeological site file occurred in 1982 when Scott Anfinson, then head of the MHS Municipal - County Highway Archaeological Survey, undertook an extensive literature search and review of the archaeological site file. The purpose of the project was to compile a more comprehensive and accurate list of archaeological sites that were recorded in basic archaeological sources so potential effects to "known" sites could immediately be considered during highway construction plan review. A major result of the project was word processor files that included five major tables: Numbered Sites, Numbered Sites Corrections, Unnumbered Sites, Unconfirmed Sites, and Find Spots. The tables were compiled in a report that was submitted to the State Archaeologist in early 1983 (Anfinson 1983). Anfinson's word processor files were then converted into a database file combining the various tables and a few new data fields. Under the Site Number field, unnumbered and unconfirmed site were assigned "alpha" numbers (e.g., 21ANa). Over the next decade, additional fields were added to the database mainly to foster Elden Johnson's 1957 site file research goals.

When Anfinson became the SHPO archaeologist in May of 1990, his computerized database became the SHPO's official archaeological site database. In 1994, MnDOT provided the SHPO with a grant to refine and augment the computerized site file. Under the direction of Homer Hruby, the SHPO completed the project in 1996. The project not only expanded and made corrections to the electronic site database, it cleaned-up and added materials to the SHPO's hard copy folders and added folders for each "alpha" (officially unnumbered) site. Universal Transverse Mercator (UTM) locational fields using approximate site centers were added to the database to facilitate Geographic Information System (GIS) applications like MnDOT's MnModel project that began in 1995 (www.mnmodel.dot.state.mn.us/).

A new database procedure was also implemented during the Mark Dudzik tenure as State Archaeologist. Field archaeologists submitted newly completed state site forms to the OSA. The OSA carefully reviewed the forms, assigned an official site number, and sent copies of the numbered forms to the SHPO. SHPO staff added the information to the master archaeological site database and filed the paper copy in their site file. The SHPO then provided a copy of the electronic database to the OSA. The database was also made available to appropriate state and federal agencies (e.g., MnDOT, DNR, NRCS).

Because SHPO staff also maintain extensive historic building records, there was often a significant time delay in updating the archaeological site database following the assignment of new site numbers. On January 1, 2007, the OSA took over updating the master electronic archaeological site database. This means that the database is now quickly updated following the OSA review of new site forms and the assignment of new site numbers. The OSA provides copies of the database to SHPO and other appropriate government agencies.

It should be stressed that the site database maintained by the OSA is not entirely accurate or consistent with respect to certain fields of information. There are four common sources of error: 1) the original data reported on the site form may be inaccurate, 2) the data reported on the site form may be a unique interpretation or have inconsistent interpretations by archaeological investigators, 3) correct data from a site form may have been incorrectly entered into the database, and 4) different data input personnel may have used inconsistent codes for the data. A great effort has been made by the OSA, the SHPO, and MnDOT to ensure that the locational data is as accurate as possible, but fields such as Site Function and Cultural Context have significant accuracy and consistency problems.

Besides the site database, the OSA also maintains extensive paper site files. There are several major differences between OSA and SHPO paper files besides the presence of unique data in each entity's folders. The OSA does not have individual folders for the alpha sites, although an intern project began in 2007 seeks to make copies of the SHPO alpha files, which will be filed in a single OSA folder for each county. The SHPO does not have most of the data contained in the OSA burial site files and the OSA Burial Sites database is not shared with the SHPO, although this database does not include any burial sites not contained in the SHPO archaeological site database. The SHPO also depicts both numbered and unnumbered sites on a set of 7.5' USGS maps, while the OSA depicts numbered site locations on a set of county maps. In 2007, the OSA began work to produce a set of USGS maps with site locations depicted and now puts newly recorded sites on a master set of USGS maps.

The *SHPO Manual for Archaeological Projects in Minnesota* (Anfinson 2005) and OSA/MHS licensing requirements specify that professional archaeologists must submit site forms when previously unrecorded sites are located or significant new information is obtained for previously recorded sites. OSA Research Assistant Bruce Koenen takes primary responsibility for the review of submitted site forms and assignment of official state site numbers. Site forms are required when sites are found on public or private land.

During 2007, the OSA performed the following site file actions:

	FY07	CY07
New Forms Reviewed and Site Numbers Assigned:	187	194
Revised Forms Reviewed:	69	66
Total Forms Reviewed:	256	260

As of June 30, 2007 there were 17,050 archaeological sites listed in the archaeological site database. Of these, only 10,226 (60%) were assigned official state site numbers. The majority of unnumbered sites (alpha sites) are federal land sites in Chippewa and Superior National Forests and Post-contact sites documented on early historic maps (e.g., Trygg, Andreas), but as of yet unconfirmed in the field by archaeologists. As of December 31, 2007 there were 17,183 total sites in the site database of which 10,359 (60%) were numbered.

If we compare current site totals to previous years, in 1964 there were 1,160 archaeological sites (all numbered, all prehistoric) in the OSA files and in 1983 there were 3,208 (2,999 numbered, some historic). The SHPO files in 1990 had 5,871 sites of which 3,838 were numbered.

It is conservatively estimated that less than 1% of the total archaeological sites in the state are known and contained in the site database. This estimate is obtained by multiplying 10 groups of people making 10 unique sites per year by 10,000 years, which equals 1,000,000 sites divided by the 10,000 currently numbered sites. If we add potential historical archaeological sites that are currently unnumbered, we could include 200,000 farmsteads and hundreds of thousands of house lots in cities.

Total intensively investigated sites in 1963 were 170 (15% of the total numbered sites), 440 (14%) in 1983, 491 (8%) in 1990, and 991 (9%) in 2007. Intensively investigated sites include sites that have been subject to university field school excavations and those subject to extensive investigations for CRM purposes, including both Phase II (Evaluation) and Phase III (Data Recovery) projects.

There are about 300 Minnesota archaeological sites listed on the National Register of Historic Places (NRHP). Individual site nominations account for 104 of these listings with perhaps another 200 sites included within 17 archaeological districts. Archaeological sites account for only about 6% of the total NRHP listed historic properties in Minnesota. Perhaps 10 times as many archaeological sites have been considered eligible to the NRHP through the federal Section 106 process. No new archaeological sites were added to the NRHP in FY 2007. There are 63 archaeological sites listed on the State Register of Historic Places (MS 138.57).

Burial Site File

State Archaeologist Christy Hohman-Caine started a separate burial site file in the early 1980s. This file now contains detailed information on burial sites examined by or subject to inquiries by State Archaeologists Hohman-Caine, Dudzik, and Anfinson. It includes both numbered and unnumbered sites. The file also contains some information on unconfirmed burial sites that have been reported to the State Archaeologist over the last 30 years. These unconfirmed sites have either not been field checked by an archaeologist or field checked but not found. The Burial Site File is not open to the general public as the data are considered *security information* (see MS 13.37) as specified in MS 307.08, Subd. 11.

In the late-1990s, the OSA parsed burial site information from the master archaeological site database and created the separate Burials Site Database. This database does not contain information on all of the unconfirmed sites in the OSA's paper burial site files, only those sites that have OSA-assigned official state site numbers or SHPO-assigned alpha numbers.

The OSA makes the Burials Site Database partially available to local governmental agencies on a webpage maintained by the Land Management Information Center (LMIC). This webpage went on-line in September 2003. At that time, a letter was sent to all county governments and assigned them a password to access the site. The site provides a graphic

interface allowing local governments to determine if a burial site exists within a specific quarter-quarter section of land (40 acres). If a site does exist within the quarter-quarter, the agency can contact the OSA to get more specific information about a particular burial.

As of June 30, 2007, there were 2,859 burial sites listed in the OSA's Burial Sites Database. (The end of December 2007 total was 2,867.) This includes about 12,500 mounds in over 1,600 discrete sites. Over 350 of the non-mound burials date to post-1837, the beginning of intensive White settlement. There are 580 known or suspected burial sites that do not have an official site number, although a few of these may be duplicates of numbered sites. A compilation of post-White settlement burials in Minnesota by Pope and Fee (1998) lists about 6,000 cemeteries, the majority of which are not contained in the OSA burials database. Many of these cemeteries are officially recorded and managed by active cemetery associations and thus are not under the jurisdiction of the State Archaeologist per MS 307.08.

Archaeological Report Files

The OSA maintains a file of archaeological reports. Archaeologists conforming to the requirements of state licensing have submitted most of these reports. The SHPO also maintains an archaeological reports file that mainly includes reports have been submitted as part of the federal Section 106 process. As not all SHPO-reviewed projects require state archaeological licensing and not all MS 138 licensed projects require SHPO review, the OSA and SHPO report files are far from identical, although there is some overlap. Both the OSA and SHPO maintain databases of the reports they have on file. As of the end of December 2007, the OSA had 3,831 reports listed in its files.

Since 1998, the OSA has published yearly (calendar) compilations of abstracts of reports submitted to the OSA. They are produced by Bruce Koenen, the OSA research assistant. They can be found at the OSA website (http://www.admin.state.mn.us/osa/research.html).

Development Plan Review

Development plan review by the OSA is principally done under three Minnesota statutes:

> 1) Under MS 138.40, Subd. 3, *agencies* must submit plans to the State Archaeologist and the Minnesota Historical Society (MHS) for developments on their lands where archaeological sites are known or scientifically predicted to exist. The State Archaeologist and MHS have 30 days to comment on the plans. In August 2007, the State Archaeologist asked the Minnesota Attorney General's Office for a clarification as to the definition of "agency." A reply dated 8/21/07 from Assistant Attorney General David Iverson stated that it would be reasonable to assume that "agency" applied to all units of government in Minnesota, not just *state* agencies.
>
> 2) MS 116d requires that an Environmental Assessment Worksheet (EAW) be prepared whenever there is a government action (e.g., building permit) that could result in significant environmental effects. If the EAW determines that there is good

potential for significant effects, a more detailed Environmental Impact Statement (EIS) is prepared. The state or local agency controlling the action is designated the Responsible Governmental Unit (RGU). The RGU determines if an EAW or EIS is necessary and what actions should be carried out based on an analysis of the documents. Rules (Mn Rules 4410) for implementing the EAW/EIS process are developed by the Environmental Quality Board (EQB) and the EQB monitors EAW/EIS activities. Any citizen can comment as part of this process. Large area, multi-phased projects can be dealt with under an Alternative Urban Areawide Review (AUAR) rather than multiple EAWs. The OSA was added to the official EAW/EIS contact list in FY 2007.

3) MS 307.08, Subd. 10, as revised in the Spring of 2007, requires that state agencies, local governments, and private developers submit development plans to the State Archaeologist when known or suspected human burial may be affected by developments on their lands. Plans must also be sent to the Minnesota Indian Affairs Council (MIAC) if the burials are thought to be Indian. OSA and MIAC have 30 days to review and comment on the plans.

The State Historic Preservation Office (SHPO) at the Minnesota Historical Society (MHS) acts as the principal environmental review agency for the state with regard to assessing the impacts of developments on historic properties. Historic properties include both standing structures and archaeological sites. While the SHPO's focus is on federal undertakings as specified in Section 106 of the National Historic Preservation Act, the SHPO also acts for the MHS with regard to Minnesota Statutes 138.40 and 116d. Because the SHPO has well-established systems and experienced staff dedicated to environmental review, the OSA has traditionally deferred to the SHPO for commenting on development projects under MS 138.40 and 116d. This allows the OSA to focus on MS 307.08 reviews and other duties.

Due to budget and staff cuts, in May 2004 the SHPO stopped reviewing EAWs submitted by local government RGUs. Thus in FY 2006, the State Archaeologist requested to be added to the EAW official comment list and this was implemented by the Environmental Quality Board (EQB) as of January 2007.

The State Archaeologist also reviews plans and reports based on informal agency or developer requests, although no official OSA action is required if the development is on private land or does not threaten burial sites. Citizens often ask the State Archaeologist for information regarding potential impacts to archaeological resources by developments in their neighborhood. This information is provided as necessary. Some of the requests result in field visits by the State Archaeologist.

During FY 2007, the OSA completed substantial review of 48 development projects, of which 44 were part of the state EAW/EIS process. Because the OSA was not added to the EAW review list until January 2007, the FY 2007 total represents only half a year of reviews. Three of the four non-EAW/EIS project reviews were requests from agencies for the purposes of MS 138.40. The other request was from a county planning agency about possible archaeological sites being impacted by a private development.

Because the State Archaeologist has many duties and is short-staffed, replies to EAW submittals are sent only if an archaeological survey is recommended or a known archaeological site should be avoided within the Area of Project Effect (APE). Furthermore, if the project will be reviewed under federal Section 106 or will otherwise be reviewed by the SHPO (e.g., State Agency RGU), the OSA defers comment to the SHPO unless unplatted burials are involved.

Of the 48 FY 2007 substantial project reviews, archaeological surveys or site avoidance were recommended by letter on nine (9) projects. These projects are:

Project	Agency/RGU	County	Authority
Gladstone AUAR	City of Maplewood	Ramsey	116d
Sartell AUAR	City of Sartell	Stearns	116d
Pete's Retreat	County	Aitkin	116d
Nature's Preserve	Chisago City	Chisago	116d
One Riverfront View	City of Lilydale	Dakota	116d
Hackberry Creek RV	County	Pope	116d
Big Island Shores	County	Grant	request
The Wave	City of Minneapolis	Hennepin	116d
CSAH 11-34-42	County	Douglas	138

The State Archaeologist was appointed to the Dakota County Parks Technical Advisory Committee (TAC) in 2006. This committee is charged with helping to plan for the expansion, maintenance, and focus of the Dakota County park system. A number of parks are known to contain significant archaeological sites. The State Archaeologist attended a meeting of the TAC on July 12, 2006 to discuss the status of research in Dakota County parks.

The State Archaeologist attended a meeting on 1/8/07 regarding potential archaeological impacts of the proposed D, M, and E Railroad in southern Minnesota. The project's archaeological consultant team from HDR and SWCA briefed the State Archaeologist on the current status of the project.

Archaeological Research

OSA - MHS Joint Research Area – In 2006, the OSA and the Archaeology Department of the Minnesota Historical Society established a Joint Research Area at the Ft. Snelling History Center. The OSA purchased shelving and provided computer equipment for the facility and the MHS donated the space. The initial core elements of this facility were the Elden Johnson Library, the Institute for Minnesota Archaeology (IMA) Library, the Minnesota Archaeological Society (MAS) Library, and the OSA Library.

The Joint Research Area is now made up of the Johnson/MAS/IMA collections and the OSA library, as well as copies of Minnesota theses and dissertations, and journals to which the OSA subscribes (adjacent state's and province's archaeological journals as well as several

national and international archaeological journals). A number of file cabinets house manuscript collections that are organized by author or topic (e.g., Historical Archaeology). The research area also has two computer stations, one with image scanning and mass storage capabilities and the other with historic property inventory databases.

The research area is open to use by the archaeological community, although only professional archaeologists are granted access to site database files stored in one of the computers. All materials must be used on-site as this is not a lending library, although facilities exist for limited scanning and photocopying of materials. It is hoped that other archaeologists will donate written materials and images to the research area and the facility will become a principal research resource for Minnesota archaeologists.

OSA – MHS Joint Research Area at the Fort Snelling History Center.

In FY 2007, there was one major donation to the Joint Research Area: the library of archaeologist Wilda Anderson Obey who was a student of Elden Johnson's in the 1960s. Ms. Obey donated numerous books as well as several important journal collections including back issues of *The Minnesota Archaeologist*. The OSA greatly appreciates this donation.

The OSA began a major effort in FY 2007 to scan site and artifact images from 35mm slide collections and prints of black/white and color photographs. Several hundred images have been scanned and placed on a large external hard drive. These files are available for public use, although some may be subject to copyright regulations.

Radiocarbon Dates File and Database – When the current State Archaeologist was the SHPO Archaeologist, he developed and maintained a database of Minnesota radiometric dates. This database is now housed and maintained at the OSA. Along with the electronic database are paper copies of articles and laboratory reporting sheets for radiocarbon dates (also known as ^{14}C dates) from Minnesota archaeological sites.

The database currently contains 431 dates from 128 sites. The best-dated site in the state is the Bryan site (21GD4) with 26 dates. Other sites with reported dates in double digits are: Hannaford (21KC25) with 23, McKinstry (21KC2) with 21, Smith (21KC3) with 15, Donarski (21MA33) with 12, and Mooney (21NR29) and J Squared (21RW53) both with 10. Forty-two (42) sites have only a single date. The oldest reasonably accurate date from a Minnesota archaeological site is 10,390 RCYBP $\pm$ 120 from the J Squared site (21RW53), followed by 9220 RCYBP $\pm$ 75 from Bradbury Brook (21ML42) and 9049 RCYBP $\pm$ 82 from Browns Valley (21TR5).

In FY 2007, four (4) new radiocarbon dates from one site was added to the radiocarbon database. These were dates from the Little Floyd Lake site (21BK110) discussed in the Burial Sites Protection section of this report.

The OSA encourages archaeologists who have obtained radiocarbon dates to submit their laboratory reporting sheets to the OSA so all researchers can share in this critical information. Laboratory sheets for radiocarbon dates should always be included in final reports when contractors or agencies obtain dates as part of the environmental review process or research-driven archaeology.

Institutional Field Research - Historically, colleges, universities, and museums have been principally responsible for archaeological research in Minnesota. This began to change in the 1970s with the rapid ascent of government-mandated cultural resource management (CRM) archaeology and increased institutional sensitivity to ethnic or politically charged aspects of archaeological work.

Currently, there are five university-based archaeological programs in Minnesota affiliated with majors in Anthropology. These are at the University of Minnesota – Minneapolis, Hamline University, Moorhead State University, St. Cloud State University, and Minnesota State University - Mankato. Normandale Community College also offers courses in archaeology. The University of Minnesota, St, Cloud, and Mankato offer graduate programs in archaeology, with only the University of Minnesota-Minneapolis offering a PhD track in archaeology.

In FY 2007, the following university-based field research was undertaken:

University of Minnesota – Minneapolis:
- no formal field school in Minnesota
- assisted with urban archaeology at Elliot Park site in Minneapolis

Moorhead State University
- no formal field school in Minnesota
- electronic remote sensing and surface mapping at the Beisterfeldt site, ND

St. Cloud State University
- no formal field school in Minnesota
- Archaeology Week excavation at farmstead near Foley

Minnesota State University – Mankato
- field school at Silvernale site (21GD3) in Red Wing

Hamline University
- no formal field school in Minnesota

Other Research - A significant amount of archaeology is done in Minnesota each year that is not reviewed by the OSA, licensed by the OSA, or sponsored by the OSA. Most of these projects are carried out by federal agencies or otherwise reviewed by federal agencies and the SHPO under Section 106 of the National Historic Preservation Act due to federal licenses,

land, or funding. The OSA occasionally receives complementary reports on these projects or is asked for advice on the projects.

Federally sponsored CRM projects for FY 2007 included joint research by the Bureau of Land Management and the 1854 Authority at Blackduck Lake (21SL___) in St. Louis County. The National Forest Service sponsors Passport in Time (PIT) archaeological volunteer projects in Minnesota. In the summer of 2006, Chippewa National Forest sponsored excavations at the West Moss Lake site (21CA___), a multi-component prehistoric site in Cass County.

David Mather, the SHPO archaeologist, and Jim Cummings, an archaeologist/naturalist for Kathio State Park, continued their research at the Petaga Point site (21ML11). In 2007, they excavated a 1x1 meter unit in a possible house depression dating to about 1000 years ago. They found a burned layer associated with thin cordmarked ceramics and quartz debitage.

Public Education and the Media

Archaeology Week - The OSA has served as the major sponsor of Minnesota Archaeology Week since 1998. The first Archaeology Week was held in 1995. Major financial assistance is provided by the Minnesota Archaeological Society and the Council for Minnesota Archaeology as well as a number of state and federal agencies including the Minnesota Department of Transportation, the Minnesota Historical Society – Archaeology Department, the Minnesota Indian Affairs Council, the US Army Corps of Engineers – St. Paul District, the USDA Natural Resource Conservation Service, and the US Fish and Wildlife Service.

Minnesota Archaeology Week 2007 was held May 6 – 14. There were 27 officially sponsored events in 20 counties. Over 1,600 people attended the events. Featured events included excavations at a farmstead in Benton County sponsored by St. Cloud State University, flint knapping demonstrations in Carver County, a lecture on the U.S. – Dakota War in Kandiyohi County, and the annual Ft. Snelling Archaeology Fair. The annual Elden Johnson Distinguished Lecture was presented by Dr. Michael Michlovic of Moorhead State University at the University of Minnesota. The OSA sponsored an open house at our offices at Ft. Snelling.

OSA Archaeology in the Schools – Assistant to the State Archaeologist Bruce Koenen takes the lead in this initiative and has assembled a teaching kit of artifacts that he takes with him on school visits. In FY 2007 he made presentations at three secondary schools – Southview Middle School in Edina, Eden Lake Elementary School in Eden Prairie, and Kimball Elementary in Kimball. Koenen also put on flintknapping workshops at Normandale Community College during both fall and spring semesters.

The State Archaeologist continues to serve as an Instructor in the University of Minnesota Department of Anthropology. In FY 2007, he taught one course on Heritage Management.

Internships – The OSA sponsors internships to not only train students of archaeology in practical skills, but to accomplish needed work within the office. In FY 2007, OSA had three interns, Jon Stone from Prescott College in Arizona, Steven Kelly from Minnesota State University – Mankato, and Steven Blondo from the University of Minnesota. All three interns worked on archaeological mapping projects.

Media Exposure - The State Archaeologist typically receives a certain amount of media exposure every year not only due to the controversial nature of some of the duties, but because the public has an intensive interest in archaeology and history. Thus most media contacts with the State Archaeologist are either media reaction to a newsworthy situation or are generated by the media due to a perceived or real public interest.

The incident in Walker created the most media interest in FY 2007. This incident was reported in the 2006 Annual Report and involved a purported early prehistoric site that gained national and international attention. Detailed examination of the stone "artifacts" by number of Minnesota experts demonstrated that they were most likely made by glacial meltwater not humans. The State Archaeologist wrote an analysis of the Walker site based on the experts' examination and made the document available on the OSA website.

Controversial local development projects often involve archaeological aspects. In FY 2007, the Anoka County Harness Race Tract generated considerable local media attention. The St. Paul Pioneer Press and Forest Lake area newspapers interviewed the State Archaeologist regarding this project. The Lake Osakis Copper Fields project in Todd County also received local media attention and included interviews with the State Archaeologist. Both of these projects are discussed in the Burial Sites Protection section of this report. *Finance and Commerce* did a feature story on the State Archaeologist on September 25, 2006 regarding the Bureau of Mines property at Ft. Snelling.

The Lake Shetek Sewer and Water Project in Murray County included archaeological impacts and was widely reported around the state. DNR archaeological monitoring of golf course development at Ft. Ridgely State Park uncovered an early prehistoric fire hearth, which received statewide media attention.

Major electronic media exposure for the OSA included an interview of the State Archaeologist by Tim Post of Minnesota Public Radio and an on-site conversation about Lake Minnetonka Dakota Indian history with Twin Cities Public Television's (TCPT) Mary Lahammer. TCPT also interviewed the State Archaeologist on location on the St. Paul riverfront to discuss the Indian history of Mounds Park and Carver's Cave.

Professional Conference Attendance and Public Presentations –The State Archaeologist participated in a panel discussion at the Central State Anthropological Society meeting in Minneapolis in November 2006. Assistant archaeologist Bruce Koenen delivered a paper on the state site files at the Council for Minnesota Archaeology (CMA) symposium in Mankato in February 2007. The State Archaeologist also attended this symposium. The State Archaeologist attended a CMA meeting at Ft. Snelling in May 2007.

The State Archaeologist attended the Statewide Historic Preservation Conference in Red Wing in September 2006. The State Archaeologist participated in the State Managers Conference held in October 2006 in St. Paul. The State Archaeologist attended the Gales of November Shipwreck Conference in Duluth in November 2006. During the Gales conference, he met with a representative of the DNR Coastal Zone Program and representatives of the Great Lakes Shipwrecks Preservation Society (GLSPS) to discuss possible grant opportunities to study underwater cultural resources in Minnesota. The State Archaeologist attended the Plains Anthropological Conference in Topeka, Kansas in November, 2006. The State Archaeologist attended the Society for American Archaeology (SAA) and National Association of State Archaeologists (NASA) meeting in Austin, Texas in April 2007. Bruce Koenen attended the Midwest Archaeological Conference in Urbana, Illinois in October 2006 and the Pine City Knap-In in June 2007.

Council for Minnesota Archaeology (CMA) meeting at Ft. Snelling.

The State Archaeologist presented a talk on the archaeology of the Minneapolis riverfront to the People's University at the Minneapolis Public Library in August 2006. The State Archaeologist made a presentation on Archaeology in Minnesota at the Slice of Summer state employees gathering at the State Judicial Building in July 2006.

Professional Publications – The State Archaeologist had an article published in the September 2006 issue of the Society for American Archaeology (SAA) Bulletin. Entitled "The Education of Government Archaeologists," the article examines potential effects of massive baby-boomer retirement to cultural resources management (CRM) and the status of post-secondary education of North American CRM archaeologists. The State Archaeologist serves on the SAA's Committee on Government Archaeology.

Burial Sites Protection

A major aspect of the day-to-day work of the OSA is spent dealing with the duties assigned to the State Archaeologist by the Private Cemeteries Act (MS 307.08). These duties principally involve maintaining a file of unrecorded burial site locations, answering public and agency inquiries about known or suspected burial sites, coordination with the Minnesota Indian Affairs Council (MIAC) when Indian burials are threatened, formally determining the presence or absence of burial grounds through field work in particular areas (authentication), reviewing development plans submitted by agencies and developers, and advising landowners on management requirements of burial grounds.

Minnesota law basically treats human burials and cemeteries two ways: as Public Cemeteries under MS 306 and as Private Cemeteries under MS 307. These laws were initially passed in the first decade of the 20th century. Public cemeteries are not restrictive regarding who can be buried there and tend to be active (i.e., open to new burials). Local units of government usually own public cemeteries.

Private cemeteries are those with restricted use governed by procedures established by a private association and they exist on private property. Most private cemeteries are affiliated with religious groups. Lands containing private cemeteries are exempt from public taxes and assessments. Some well-known and well-marked private cemeteries are no longer active primarily due to church closure.

The Public Cemeteries Law includes a section on "abandoned" cemeteries (306.243) that applies to both public and private cemeteries. An abandoned cemetery is one where the cemetery association has disbanded or the cemetery is neglected and contains graves dating prior to 1875 or graves of war veterans. County boards are in charge of abandoned cemeteries.

History of MS 307.08 - Prior to 1976, little consideration was given to ancient Indian burials or other kinds of cemeteries that had never been officially platted or officially declared abandoned. This meant that most of the over 12,500 Indian burial mounds, the numerous pioneer-era burial grounds, and scattered individual burials in Minnesota were given little or no legal protection unless they were located on public land where they were treated as archaeological sites.

By the mid 1970s, despite increased public awareness and a voluntarily imposed archaeological ban on excavating Indian burials, burial mounds and other unmarked burial sites in Minnesota continued to be destroyed by private land developments and were subject to vandalism by pothunters. In order to better preserve mounds and other unplatted burial sites, section 307.08 of the Private Cemeteries Act, was amended in 1976 to include consideration of "authenticated and identified" Indian burial grounds. The amendment was sponsored by State Archaeologist Elden Johnson, the Minnesota Indian Affairs Intertribal Board (MIAIB), and the Minnesota Historical Society (MHS). The State Archaeologist and the Intertribal Board (originally a Commission) had both been established by state laws in 1963 (MS 138.35-.42; MS 3.922).

The Private rather than Public Cemeteries Act was chosen for the Indian burial section because MS 307 included a penalty section (307.08) for disturbance and most unmarked Indian burial sites were privately owned and no longer active. The revised Private Cemeteries law made it a misdemeanor to willfully disturb burials or cemeteries on public or private land. Unmarked burial grounds were to be "authenticated and identified" by the State Archaeologist and the Indian Affairs Board when requested by a political subdivision. The political subdivision was responsible for the cost of authentication. The revised law also stated that authenticated Indian burial grounds should be posted every 75' around the

perimeter and the Minnesota Historical Society must approve the design of any signs. Only the Indian Affairs Board could approve requests to relocate authenticated Indian burials.

Although the revised Private Cemeteries law explicitly protected Indian burials outside of platted cemeteries, a problem still existed with respected to unplatted (i.e., unauthenticated) burials on private land. The law stated that political subdivisions could request authentications on land where they held title, but no one could require an authentication on private land. Although it was still against the law to destroy cemeteries and Indian burials on private land, without an authentication unmarked, burials were not *proven* to exist and therefore such burials could not be "willfully" destroyed.

The inadequacies of the amended version of 307.08 were graphically demonstrated in late 1976 when an extensive but unmarked and unauthenticated historic Dakota burial ground (21DK25) was encountered by borrow pit operations for the new Cedar Avenue bridge over the Minnesota River in the south metro area. Because the land was private and the land owner would not request an authentication, there was nothing to legally prevent the destruction of the suspected burial ground. The landowner did, however, allow for burials encountered by the construction to be removed. MHS archaeologists under the direction of Les Peterson quickly removed a number of burials exposed by surface scraping in the spring of 1977 and the site was then destroyed by heavy equipment. The human remains and the associated grave goods were reburied in September of 1977 at the Lower Sioux Dakota Community in western Minnesota.

In order to better protect burials on private land, legislation to amend 307.08 was introduced by the MHS and the MIAIB in 1979, but it failed to pass. The amendments were reintroduced in 1980 and were passed. These amendments greatly increased the workload of the State Archaeologist. Minimal funding ($15,000) was provided to help with authentication, posting, removal, and reburial. These funds did not go directly to the State Archaeologist, but could be allocated by the State Archaeologist for 307.08 purposes.

The 1980 revisions to 307.08 were quite sweeping. A Legislative Intent section was added at the beginning to make it clear that all burials were to be given equal treatment under the law. The State Archaeologist and the Intertribal Board were given cemetery management responsibilities regarding the right to give permission to discharge firearms over cemeteries. Authentications were to be carried out by qualified professional archaeologists who were approved by the State Archaeologist and the Intertribal Board. Indian burial grounds were to be authenticated when requested by the local government subdivision, a concerned scientific group, or an Indian ethnic group. Thus almost anyone could request an authentication on private or public land, but the State Archaeologist and the Intertribal Board no longer did the authentications. The cost of authentication was no longer the responsibility of the political subdivision, but was to be borne by the state.

Also added in 1980 was a contorted Subd. 7, which specified the age and type of burials that were subject to authentication. The law now applied to all burials dating prior to 1886 outside of "platted, recorded, or identified" cemeteries. If the remains were determined by the State Archaeologist to be Indian and dating after 1700, an attempt was to be made to determine

tribal affinity so the remains could be returned to the tribe. The State Archaeologist or the Intertribal Board could request that a qualified archaeologist study the remains prior to their delivery to the affiliated tribe. If tribal affinity could not be determined and if the remains dated prior to 1700, the State Archaeologist determined their disposition. If large Indian burial grounds were involved, the state was supposed to make an effort to purchase the land. Finally, following the language of the Field Archaeology Act, the 1980-amended 307.08 required state agencies to submit development plans to the State Archaeologist and the Intertribal Board if known or suspected burials might be impacted on lands they controlled and these agencies were to help carry out the provisions of the law.

The Private Cemeteries Act was amended again in 1983 mainly to clarify the authentication process and agency responsibilities on public lands. The state was supposed to retain the services of professional archaeologists for the purposes of authentication when Indian burials were known or suspected on public lands thus the actual authentication was placed back in the hands of the State Archaeologist and the Intertribal Board. The inference that burials on private lands were subject to the authentication process was essentially deleted, as was the option of authentication requests coming from political subdivisions. The costs of removal of Indian burials on public land were to be borne by the agency controlling the land. The penalty for disturbing burials or burial grounds was changed from a misdemeanor to a gross misdemeanor.

In 1986, there were sweeping changes made to 307.08 initiated by State Archaeologist Christy Hohman-Caine and supported by the MIAC. Willful disturbance of a burial was now a felony. A new Subd. 3a was added giving the State Archaeologist sole responsibility for authenticating unplatted, historic burials, but the State Archaeologist could still retain the services of other archaeologists to “gather information” to assist with an authentication. The State Archaeologist was given the right to enter property for authentication purposes (essentially the right to trespass). Descendants of people buried on private land were given the right to visit the burials if it did not unreasonably burden the landowner. The contorted Subd. 7 on the age and type of burials subject to authentication was simplified to read “in contexts which indicate an antiquity greater than 50 years.” Non-Indian burials were to be dealt with by the State Archaeologist. Indian burials whose tribal affiliation could not be determined were to be dealt with by the State Archaeologist and the Intertribal Council (the Board was changed to a Council in 1984). Procedures for dealing with such burials were written by the State Archaeologist in 1984 and adopted by the MIAC in 1985.

The only change made in 1989 was in Subd. 4 where the State Archaeologist was required to provide locational information on burial sites to the Land Management Information Center (LMIC) so it could be used for planning purposes. The costs for this were to be borne by the state.

In 1993, during the hiatus when there was no State Archaeologist following the resignation of Christy Hohman-Caine, there was a small but not minor amendment of MS 307.08. The word “grounds” was added after “burial” in the felony portion of Subd. 2. The change was suggested by White Earth Reservation officials following the construction of a mobile home development within a burial mound group in Otter Tail County (21OT13). While no burials

were initially disturbed by the development and the State Archaeologist had approved the development as consistent with existing law, the integrity of the burial area (i.e., the mound group as a whole) was certainly harmed.

In 1999 a few minor "housekeeping" changes were made to 307.08. These were limited to placing descriptive titles on each of the 10 subdivisions (e.g., Subd.1. Legislative intent; scope) and changing Intertribal *Board* to Intertribal *Council* in a number of sections where this correction had not been made in the 1986 revisions.

In 2003, Subdivision 11 was added to 307.08 titled "Burial sites data." This addition was based on interpretations of the Minnesota Data Practices law and an initiative by the State Archaeologist Dudzik to provide local units of government online access to burial sites locational information for planning and development purposes. The new subdivision forbids misuse of burial sites data or dissemination of the data beyond the original user. This applies only to data maintained by the State Archaeologist and accessible through the Web.

2007 Legislation – When the current State Archaeologist was appointed in January 2006, it became quickly apparent that MS 307.08 still had a number of flaws that made the law difficult to interpret and implement. The most significant flaw was the lack of a Definition section. Following careful consultation with MIAC, DNR, MnDOT, and the archaeological community, the State Archaeologist wrote a revised version of MS 307.08 and this was submitted to the Legislature by the Department of Administration during the 2007 session.

The main objectives of the proposed changes were:

1) To clarify meanings of key concepts such as *authentication, burial grounds,* and *human remains.*
2) To define certain activities that can be done with proper authorization and who the proper authorities are.
3) To clarify responsibilities of the State Archaeologist, MIAC, and other entities.
4) To fully implement the concept of burial *grounds* added in 1993.
5) To organize the law in a more logical, understandable, and consistent manner.
6) To give landowners more say in management of their property.
7) To clarify the financial and legal responsibilities of state and local governments and private landowners.
8) To better provide for the *equal* treatment of *all* burials

Important elements to remain unchanged were:

1) The basic responsibility of the State Archaeologist to exclusively authenticate historic (over 50 years), unrecorded burials.
2) The state's obligation to assist agencies and landowners with identifying and managing burial grounds.
3) The primary responsibility of MIAC to manage authenticated Indian burials.

Following appearances by the State Archaeologist at both Senate and House Subcommittee meetings, the revised Private Cemeteries Law was passed by the Legislature in the spring of 2007 and signed into law by the Governor. It took effect August 1, 2007. All of the

legislative objectives of the State Archaeologist were included in the revised law except an attempt to make landowners and private developers responsible for the costs of authentication and various other 307.08 activities on privately owned land. The law still requires that "the state" is responsible for these costs, but it is not specified what state budget is responsible. The revised law can be viewed at: http://www.leg.state.mn.us/leg/statutes.asp

Procedures - In 1985, State Archaeologist Hohman-Caine and MIAC developed formal burial ground management procedures. These procedures were revised several times, but had not been revised after a major change in the MS 307 legislation occurred in 1993. That change involved only the addition of one word, "grounds", in 308.07, Subd. 2, but it had major implications for authentication, management, and enforcement. It is now a felony to willfully disturb a "burial *ground*" not just a burial. This requires that the State Archaeologist define burial ground limits during the authentication process, that all land within those limits be properly treated, and that human remains do not have to be directly disturbed to represent a violation of the law.

In FY 2007, the OSA completed a draft of new burial site procedures that address all recent revisions of MS 307.08, including the 2007 revisions. The major difference between the new procedures and the ones developed by State Archaeologist Hohman-Caine in the 1980s is that the new procedures apply only to the OSA. This is consistent with the MS 307.08 revisions signed into law in 2007, which further separated the duties of the State Archaeologist and the MIAC and gave the MIAC the principal responsibility for managing Indian cemeteries once the State Archaeologist had authenticated them. The first draft of these procedures was sent to MIAC and the Department of Administration in FY 2007 for review. No substantial comments were received from either agency. The revised 307.08 procedures will be fully implemented in 2008.

MS 307.08 FY 2007 Activities - The OSA dealt with 20 major burial cases in FY 2007. "Major" is defined as a case where substantial OSA review is required as indicated by the need for fieldwork, extensive research, and/or official correspondence. Not all major cases result in formal authentication as defined in MS 307.08. The OSA typically receives at least one email or telephone inquiry every day relating to possible burial cases, but most of these can be dealt with quickly and without the need for fieldwork. Individually these "minor" cases do not cause a significant expenditure of OSA time or resources, although as a whole and with the addition of the major cases, burial site protection accounts for over half the workload of the OSA.

Of the 20 major burial cases, 17 involved OSA fieldwork and 8 of these resulted in formal authentication. Authentication involves four steps: 1) determining if the site is indeed a burial ground, 2) defining the limits of the burial ground, 3) attempting to determine ethnic identity, and 4) sending official correspondence with an authentication conclusion to the landowner as well as the zoning authority and/or county recorder. All FY 2007 major cases are discussed below.

MS 307.08 Formal Authentications

21AK102 – Sandy Lake Cemetery, Aitkin County
In 2005, a landowner building a new cabin on Sandy Lake encountered human burials while excavating the foundation. Based on the location and associated grave goods the site appeared to be of historic Ojibwe affiliation. Local law enforcement authorities called in OSA and MIAC. The State Archaeologist authenticated the site as a burial site in 2005, but did not establish burial ground limits. A private archaeological contractor, Soils Consulting, was hired by MIAC to map the site based on small diameter soil coring.

At the request of the landowner, OSA returned to the site in August of 2006 and established official boundaries based on the site topography and the 2005 map produced by Soils Consulting. Jim Jones of MIAC approved the boundaries in the field. An OSA letter dated 10/3/06 notified the landowner of the boundaries and provided a map. The OSA-established boundaries should allow the landowner to construct a new cabin on the lot to the south or west of the authenticated cemetery.

21BK110 - Little Floyd Lake Burials, Becker County
In early 2005, human remains were discovered during house construction overlooking Little Floyd Lake in Becker County. The Becker County Sheriff's Department conducted excavations in the garage area finding additional human remains. The OSA was called in and visited the site on April 6, 2005. As the remains were clearly ancient and of Indian affiliation, the State Archaeologist turned management of the site over to MIAC, although no burial limits were defined. MIAC conducted investigations at the site throughout the spring of 2005, screening much of the backdirt from the foundation excavation. Copper artifacts and multiple radiocarbon dates on the bone suggested the site was of Archaic Period affiliation and about 4,000 years old.

Construction on the house was halted in 2005 and MIAC attempted to obtain state funds to purchase the site during the 2007 Legislative session. The Legislature passed the funding bill, but the Little Floyd Lake cemetery land purchase appropriation was line-item vetoed by the Governor.

In June 2007, the current State Archaeologist visited the site at the request of the landowner in order to formally define burial ground limits. Jim Jones of MIAC also attended the field meeting. Based on the earlier MIAC mapping, a 40' x 32' area was defined as the burial ground just east of the existing house foundation. This limited area definition should allow the landowner to complete the house construction by moving the garage to another side.

21BN7 – Little Rock Lake Mounds, Benton County
In 1988, State Archaeologist Christy Hohman-Caine and her assistant Grant Goltz mapped the Little Rock Lake mound site (21BN7) in response to a proposed housing development. This group of 59 mounds had originally been reported in 1937. Hohman-Caine sent the map to the landowner and recommended a 50-foot buffer beyond the base of each individual mound. The land south and east of the mound group was subsequently developed for housing.

In 2006, the current owner of the mound group wanted to sub-divide the land and requested that the cemetery boundary be clearly defined. On October 5, 2006, OSA staff visited the site and determined it was in the same basic condition as 1988, although a mobile home had been removed from the western side of the mound group. Using the map produced by Goltz in 1989, a buffer zone was established around the entire mound group, not just each individual mound. The buffer was set at 20-feet beyond the base of the outermost mounds and a new map of the cemetery limits sent to the landowner. Based on 2007 changes to MS 307.08, management of the cemetery now is under the dual control of the landowner and the MIAC.

21CY76 - Moorhead Park Find, Clay County

On November 22, 2006, the Moorhead Police Department was informed of human skeletal remains eroding from the edge of the Red River in M.B. Johnson Park in north Moorhead. Because the bones appeared to be old, Mike Michlovic, an archaeologist at Moorhead State University, was asked to examine the site. Michlovic's examination of the site suggested that it had originally been a coffin burial exposed by river bank erosion. As there was no evidence for a burial shaft in the soil column, it is assumed that the remains were the result of flood deposition over 100 years ago.

Due to the onset of winter conditions, the burial could not be removed at the time of discovery. At the request of the State Archaeologist, Michlovic took possession of the bones that had been removed and agreed to monitor the site until a complete removal could take place. High water during the spring and early summer of 2007 prevented the removal and eroded most of the skeleton, but the remaining bones were finally removed in August 2007. The skull was not recovered. An 1868 5-cent piece was found with the remains along with several other metal objects. Heather Gill-Robinson, a physical anthropologist at North Dakota State University, is examining the remains. The State Archaeologist greatly appreciates the assistance of Dr. Michlovic and Dr. Gill-Robinson on this project.

21DL1 – County Road 42 Reconstruction, Douglas County

In July 2006, an engineering consulting firm on behalf of the Douglas County Highway Department contacted the State Archaeologist about proposed reconstruction of County Road 42 on the north side of Lake Le Homme Dieu. The project was adjacent to the Hoffman Mounds (21DL1). The University of Minnesota excavated two of the original six mounds in 1963 and a museum was built into the side of the largest mound utilizing the University's excavation trench. The museum was removed in the early 1990s. The mounds were surveyed by the Minnesota Trunk Highway Archaeological Survey (MTHARS) in 1983, finding that three mounds were still basically intact, two were partially intact, and one had been destroyed. In 1992 Grant Goltz of Leech Lake Heritage Sites under contract with Douglas County re-mapped the site, confirming the condition reported by the MTHARS survey in 1983.

In response to the proposed highway work, the State Archaeologist visited the site on August 13, 2006. The site conditions were approximately the same as 1983 and 1992, although several new buildings had been constructed nearby. The consulting firm was notified by OSA letter on 8/15/06 that all highway construction should be confined to existing construction

limits in the vicinity of the mounds. Final plans have not been completed as of yet and the State Archaeologist has requested to be kept informed as to the project's status.

21DL68 – Heaven in the Woods Development, Douglas County
In 2003, the OSA investigated a burial mound group, 21DL68, associated with a residential development called Heaven in the Woods (originally Whimsical Woods). The group consists of 12 mounds and was originally mapped in 1981. In response to the proposed development, OSA in 2003 suggested a 20-foot buffer around the individual mounds be maintained, but no site limits were officially defined at that time.

At the request of the current landowner due to a Douglas County requirement that the mounds be fenced off, the State Archaeologist visited the site on August 12, 2006. Based on this visit and previous OSA work, burial ground limits were officially established by utilizing a 20-foot buffer around the outer mounds in two separate groupings within the development. The landowner was given a map of the officially authenticated boundaries and told that there was not a requirement that these areas be fenced as long as they were avoided by any development.

21GD17 – Proact Parking Lot Development, Goodhue County
In August 2006, Proact Incorporated proposed to reconstruct their parking lot in the Red Wing Industrial Park. Much of this park was constructed within the largest burial mound group known in Minnesota, 21HE17. Of the over 250 mounds that were once present, only a few are still visible. No visible mounds are present within the Proact property. Because of the possible presence of subsurface burial pits, the State Archaeologist recommended that an archaeologist be on hand during the grading. Ron Shirmer of Minnesota State University – Mankato (MnSU) was brought in by Proact to do the monitoring.

The construction monitoring took place August 16 – 23, 2006. Shrimer was assisted by physical anthropologist Kate Blue (MnSU), Bruce Koenen (OSA), and several (MnSU) students. Following the removal of the existing parking lot surface, Dr. Shirmer identified a number of soil features near the southeast corner of the Proact building and also recovered some shell-tempered pottery and a few lithic artifacts. The features were not burial pits, but appeared to be trash/storage pits and a row of postmolds. These features may have been associated with burial ritual activities or even an earlier habitation site. Two of the larger features were excavated, one a shallow basin-shaped pit and the other a larger bell-shaped pit. Organic materials were recovered from the pits and these may be radiocarbon dated in the near future. Following the completion of the archaeological work on the features, the parking lot construction was allowed to proceed.

Ron Shirmer, Kate Blue, and Bruce Koenen at the 21GD17 monitoring.

21PO2 – Fingerson Mound Authentication, Pope County
In late June and early July 1938, the University of Minnesota excavated a lone burial mound on a hill overlooking the southeast side of Lake Minnewaska. The report (Wilford et al. 1969:41-42) erroneously stated the mound location and confused it with a mound reported by Theodore Lewis in 1886 (Winchell 1911:299). Although the University's 1938 excavation was also reported by local newspapers and visited by many local people, the exact location of the mound was not apparent in OSA or Pope County Historical Society files.

In 2006, the director of the Pope County Historical Society, Merlin Peterson, became interested in the Fingerson Mound and contacted the State Archaeologist. Through deed searches for the mound landowners in 1938 (Fingar and Carrie Fingerson), topographic analysis, and photographic analysis, an approximate location for the mound was determined and the current landowners were informed. A 2006 OSA inspection of the area indicated the mound was no longer visually apparent.

In May of 2007, the landowners requested an official MS 307.08 authentication for 21PO2 as they were planning to sell or develop the land. On May 11, 2007 OSA personnel accompanied by Merlin Peterson and SHPO Archaeologist David Mather visited the location and completed extensive sub-surface testing in an attempt to relocate the mound. The testing consisted of soil probes and shovel testing. This testing discovered no artifacts or features. It appears as if following the 1938 excavations, the area was used as a borrow pit and then the land re-shaped prior to continuing cultivation. The excavation and subsequent disturbances have removed all traces of prehistoric cultural activity. The landowners were informed by letter on 5/23/07 that no burial could be authenticated on their parcel, but any development of the areas should proceed with caution in case human remains were encountered.

Bruce Koenen, David Mather, and Merlin Peterson soil coring the Fingerson site.

21TO9 – Copper Fields Development, Todd County
In June of 2006, a DNR official contacted the OSA about a proposed residential development on the east side of Lake Osakis in Todd County. The project was within an area thought to contain numerous burial mounds based on the accounts of Jacob Brower (Brower 1902). Brower published a very generalized map of the mound locations on Lake Osakis. Apparently, Brower did not examine the mounds himself, but relied on a local informant (Otto Guy Jeffers) for the information. Although the mounds have never been mapped by modern archaeologists, the site number 21TO9 had been assigned to all the mounds noted by

Brower on the southeast side of the lake. Because of the possible mounds, the State Archaeologist informed the DNR official that an archaeological survey should precede any development. This request was forwarded by DNR to the Todd County zoning authority.

There was intensive public interest in the development (know as Copper Fields) as it involved re-routing Trunk Highway 27 and County Highway 37, which was a lake road serving many existing lakeshore cabins and a resort. The State Archaeologist received numerous calls from local residents and the media concerning the development. The State Archaeologist examined the area on 7/3/06, noting a few possible mounds near the resort, but did not undertake a detailed examination of the area. The developer hired Bolton and Menk, Inc. to conduct an archaeological survey of the development area, but the survey was deemed inadequate by the OSA as it only examined the proposed trunk highway re-routing and did not cite the Brower information. After the county zoning administrator was informed of the inadequacy of the Bolton and Menk survey, the county informed the developer and the developer finally made direct contact with the State Archaeologist in December 2006.

In January 2007, the developer hired Archaeological Research Services (ARS) to complete a comprehensive survey of the proposed Copper Fields development including the road re-routing and the residential area. This survey was completed in several phases during the winter and spring of 2007. No burial mounds or prehistoric artifacts were located within the development area. An Environmental Assessment Worksheet (EAW) was issued for the Copper Fields development in February 2007. By email dated 5/14/07, the State Archaeologist informed the county zoning administrator that the Copper Fields development held little potential to affect burials or other archaeological sites, but that archaeological monitoring should be done of any new road construction to ensure that no burial were inadvertently disturbed. An archaeologist for MnDOT later confirmed that MnDOT would require archaeological monitoring for the removal of TH 27.

Other OSA MS 307.08 Activities of Note

21AN159 – Harness Track Development, Anoka County

In 2004, an archaeological survey of the proposed Anoka County Harness Track located three prehistoric habitation sites. The survey was required by the Army Corps of Engineers (COE) under the federal Section 106 process as a wetland filing permit was necessary. Because this was a private development on privately-owned land, no MS 138 license was required. Two of the archaeological sites were determined to be eligible to the National Register of Historic Places and thus the COE recommended that any adverse effects be mitigated through intensive archaeological excavation.

During the archaeological work, a possible burial mound was noted. Because the possible mound was a lone mound, had a relatively low profile, and was in a somewhat unusual location, authentication would have required extensive fieldwork including trenching or shovel testing the feature. The State Archaeologist recommended avoidance and the developer concurred. A 25-foot buffer was established around the mound perimeter and this area was fenced off during construction.

21BL228 – The Pines Development, Beltrami County
In June of 2007, a homeowner on the east side of Lake Bemidji noticed a human mandible in a backdirt pile adjacent to her newly constructed home in a development called The Pines. The Bemidji police were contacted and they sent the mandible to Hamline University forensic anthropologist Sue Myster. Dr. Myster determined that the human remains were over 50 years old and of probable Indian affiliation so the OSA and MIAC were called in. MIAC personnel visited the location and determined that multiple burial mounds were present within the development area. MIAC then began screening backdirt piles associated with two houses already constructed. No additional human remains were recovered by the screening.

OSA personnel visited the location on 6/26/07 and met with Jim Jones of MIAC. The realtor representing the development also attended the site meeting. The original mandible find location was examined and at least six possible burial mounds were noted within or immediately adjacent to the development area. Two of 10 lots in the development already had residences constructed. The OSA recommended a full archaeological survey be done of the development prior to construction on any additional lots in the western half (lakeside) of the development. This survey has not yet been completed. A mound site had not been previously recorded at the location, but Jacob Brower had reported prehistoric village materials in the vicinity (Winchell 1911:367).

Jim Jones and an MIAC crew screening backdirt at the Pines Development in Bemidji.

21GD52 – Automated Equipment Property, Red Wing
At the request of the City of Red Wing, the State Archaeologist visited mound site 21GD52 on 9/28/06 to assess the current condition of the site. This property is part of the Energy Park Development that began in the 1980s. The mound group originally consisted of 64 mounds, although because of intensive cultivation no mounds are clearly visible today. There is also a major Mississippian village site (21GD158) north of the mounds that was excavated by the Institute for Minnesota Archaeology (IMA) in the 1980s. The village site has been excluded from development by the City and the mound area was purchased by the State of Minnesota in 1984. The MIAC manages the mound area property for the State.

The September 2006 visit by the State Archaeologist determined no major change of condition at the site. Digital photos of the site were taken. The area that contained the two western-most mounds of 21GD52 may not be within the state-owned parcel. The City of Red

Wing was notified as to the possible existence of mounds in the northeastern portion of the Automated Equipment property and was asked to notify any new owner of the property about the requirements of MS 307.08.

21HE8 – Van Ness Mounds Land Sale, Hennepin County
A realtor with United Properties contacted the State Archaeologist in October 2006 with regard to an option to purchase land that contained burial mound site 21HE8. This mound group once contained 24 mounds, many of which are no longer visible due to over a century of cultivation. No recent archaeological survey has been completed to assess the condition of the site. The site's proximity to the Mall of America makes it a high potential area for commercial development.

On 10/25/06, the State Archaeologist visited the property and took digital photos from the northern edge. No clearly visible mounds were apparent, but the lack of intensive development suggests that some mounds probably survive and that burial pits are present in former mound areas. The realtor was informed that an intensive archaeological survey will be necessary prior to any development.

21HE61 – Bay Ridge Development, Hennepin County
In April of 2007, the State Archaeologist received a request from the City of Minnetrista to review a preliminary plat application in the Bay Ridge development. The development contains site 21HE61, a mound group that once contained seven burial mounds. The University of Minnesota excavated Mound 6 and a portion of Mound 2 in 1947. A survey by the OSA in 1986 at the request of the landowner resulted in the complete excavation of Mound 1 by the OSA. In 2005, the OSA reviewed the Bay Ridge development and recommended a 20-foot setback buffer from the surviving six mounds.

The State Archaeologist visited the site on 4/19/07 and took digital photographs. Based on this visit and the OSA file information, the State Archaeologist informed the City of Minnetrista that the preliminary plat they submitted conformed to the 2005 OSA recommendations.

21HEbi - Hermitage Shores Development, Hennepin County
In March of 2006, the City of Minnetrista contacted the OSA regarding the Heritage Shores Development and the possible presence of an early historic settlers grave within the development. Several neighbors also contacted OSA about the development. Based on historical research, George and Frank Halsted were supposedly buried near their cabin on Lake Minnetonka and this spot is supposedly marked with a flagpole in front of a late 20th century residence. The State Archaeologist visited the site in May of 2006, located the flagpole, and photographed the vicinity. There was no obvious surface evidence for a gravesite or any marker denoting one.

The State Archaeologist recommended that an archaeological survey be done of the entire development parcel because it was located on Lake Minnetonka, although such a survey was not mandatory as it was a private development on private land. Archaeological Research Services (ARS) completed this survey in July of 2007, but no archaeological materials were

recovered. ARS sub-surface testing was just beyond a 20-buffer of the flagpole, but no features or artifacts were noted. The State Archaeologist has recommended that a 20-foot no-development setback be maintained from the flagpole in case there are indeed burials there.

21ML128 – Wahkon Mound Restoration, Mille Lacs County

In June 2006, a large burial mound near the south shore of Lake Mille Lacs in Wahkon was extensively disturbed by a landowner grading his lot for cabin construction. Fill from this mound was deposited at four off-site locations and at one of these locations human remains were noticed in the fill. Law enforcement personnel assisted by forensic anthropologists from Hamline University determined that the remains were of Indian affiliation and were over 50 years old. Many of remains were from children.

OSA and MIAC staff examined the mound and fill locations and the State Archaeologist informed the landowner by letter that the mound was a burial ground and that further disturbance was not permitted. Based on an MIAC suggestion, the burial ground limits were set at the former basal perimeter of the mound. It was recommended that the mound be restored to its original configuration and the excavated human remains be re-interred in the mound. MIAC in cooperation with the Mille Lacs Ojibwe and Minnesota Dakota communities began a major effort to recover and identify all human remains and grave goods from the mound.

In June 2007, the landowner encountered additional bone when digging a utility trench outside the mound limit. This bone was probably from backdirt removed from the mound during the earlier disturbance. The MIAC-supervised mound restoration also took place in June 2007. The State Archaeologist visited the site on 6/20/07 to view the restoration.

Tom Ross of the Upper Sioux Dakota Community helps supervise the restoration of the mound in Wahkon.

21PO1 – Nordic Heights Lot Development, Pope County

In May 2006, the State Archaeologist met a prospective residential lot developer at the Nordic Heights Development near Glenwood to assess potential imoacts to the Bartke mound site (21PO1). This mound group had originally been surveyed by Theodore Lewis in 1886, when 30 mounds were recorded. A University of Minnesota archaeological field school had excavated four of the mounds in 1939 and much of the site at that time was in a cultivated field. Continued cultivation obscured many of the mounds. In 1995 the site was further damaged by road grading for the Nordic Heights Development. The State Archaeologist made a detailed map of the site in 1996 and informed the developer that no additional

disturbance was permitted within the mound area. The 2006 lot development was approved by the State Archaeologist after the landowner hired a surveyor to delimit the 1996 OSA designated mound locations and agreed to maintain a 20-foot no-build buffer. In 2006, the State Archaeologist officially defined the burial ground limits 20-feet beyond the outermost mounds in 21PO1.

In October of 2006, the owner of the easternmost lots in the Nordic Heights development made a preliminary plat application to the City of Long Beach. This was forwarded to the State Archaeologist for consideration. The State Archaeologist had no objections to the plat as it maintained the no-development boundary established earlier in the year.

21SL799, 800, 801 – Public Safety Building, St. Louis County
A citizen of Duluth informed the State Archaeologist in August 2006 of possible impacts to three late 19th century cemeteries by development of a new St. Louis County Public Safety Building in Duluth. In 1991, the OSA had determined there might be as many 700 unmarked graves in the three sites associated with the St. Louis County Hospital and the Cook Nursing Home (1891- 1947), but only limited field research has been done to relocate any graves. The State Archaeologist visited the locations on 11/4/06 and determined that the proposed public safety building should not impact any of three suspected burial grounds.

21WR1 – Trunk Highway 12 Reconstruction, Wright County
In 2004, MnDOT Cultural Resources contracted for an archaeological survey of the reconstruction of Trunk Highway 12 through Delano. The project went adjacent to site 21WR1, a mound group that once contained perhaps 15 mounds. Only one mound was still visible in 1887 when examined by Theodore Lewis (Winchell 1911:212). The archaeological survey of the project conducted by Summit Envirosolutions in 2004 could not relocate this mound, but recommended formal authentication of the mound site by the OSA.

In July 2006, MnDOT contacted OSA asking for an assessment of the TH 12 impact to 21WR1. The State Archaeologist visited the location on 7/12/06. Due to extensive commercial, residential, utility, and highway disturbances, MnDOT was informed by the State Archaeologist that the TH 12 project held little potential to impact any human remains. Because some areas were not surveyed in 2004 due to a lack of landowner consent, the State Archaeologist recommended that survey be completed on these parcels and that construction monitoring be considered in the vicinity of 21WR1.

21WR16 – Buffalo-Montrose Trail County Road 12, Wright County
In December 2006, an HDR archaeologist working under contract for the Wright County Highway Department asked the OSA for recommendations as to the potential effects of the trail project on mound group 21WR16. The site contained 20 mounds when mapped by Theodore Lewis in 1886. On 4/18/07, OSA personnel visited the location. No clearly visible mounds remained and it is likely that construction of County Road 12 destroyed most of the mounds.

There is some possibility that burial pits may survive on the east side of the county highway. As the trail is planned for the west side of highway, the State Archaeologist informed the

consultant that there was little chance for encountering burials by the trail construction and no formal archaeological monitoring of the construction was necessary. The State Archaeologist did request that the construction crews be notified as to the possibility of encountering human remains in the 21WR16 vicinity and to immediately cease work if any bones were encountered during construction. MnDOT confirmed these recommendations in a letter from archaeologist Craig Johnson to Wright County on May 7, 2007.

A burial mound on Lake Minnetonka with a garage built into the side.

Chapter 3: The Status of Minnesota Archaeology in 2007

In the 2006 OSA Annual Report, the State Archaeologist discussed in detail the status of Minnesota archaeology by providing a historical overview, highlighting some of the current problems, and suggesting courses of action that could improve Minnesota archaeology. The FY 2007 status has not changed greatly, although there have been some improvements and some new threats.

Recent Improvements

Site Protection: The revision of the Private Cemeteries Act (MS 307.08) and the addition of the State Archaeologist to the official contact list for Environmental Assessment Worksheets (EAWs) are two notable improvements that occurred in FY 2007. Both of these actions should assist in site preservation and help streamline and clarify the environmental review process.

Curation: MS 138.37, Subd. 1 requires that archaeological data and objects from public lands be "properly cared for" and "conveniently available to students of archaeology." Colleges, universities, and museums have been the traditional repositories of archaeological materials because they were the institutions doing most of the archaeology. With the ascent of contract archaeology, there was a need for curation services for outside investigators. The Minnesota Historical Society (MHS) has been the principal institution fulfilling this role. MHS is one of the few institutions in the state that meets federal artifact and data curation standards (36 CFR 79).

Over the last few years there have been major changes in MHS policies regarding the curation of artifacts. The MHS now not only charges a substantial fee for this service, but requires training and has implemented overly burdensome cataloguing procedures for most state archaeological needs. Because proper curation is a requirement of licensing in Minnesota, there have been many requests for alternatives to MHS curation. In FY 2007, the OSA developed curation guidelines for artifacts and data from "state" sites. As long as the two requirements of MS 138.37, Subd. 1 are fulfilled (proper care and convenient access) and the curational institution can provide written procedures demonstrating this, the OSA will approve alternatives to MHS. Most of these institutions will be local museums or post-secondary schools with archaeological programs.

Education: The University of Minnesota Department of Anthropology has advertised for a tenure-track position for a full-time North American archaeologist. This archaeologist will replace an existing North American Archaeologist (Guy Gibbon) who will retire in 2009. The Department has made a commitment to once again offer *local* summer field schools in archaeology. The new archaeologist will be principally a historical archaeologist and will actively assist with the Heritage Management graduate program.

Archaeological programs at the state universities at Moorhead, St. Cloud, and Mankato continue to be robust and the addition of new faculty members in recent years bodes well for archaeological research and education. This is also true at Hamline University and

Normandale Community College. The recent loss of archaeological programs at Bemidji State University and the University of Minnesota – Duluth leaves a void in post-secondary archaeology in north central and northeastern Minnesota

Research: In FY 2006, MnDOT began a study of Woodland historic contexts in Minnesota and the State Archaeologist was appointed to the steering committee. The Mississippi Valley Archaeological Center (MVAC) of La Crosse, Wisconsin was hired to complete the project. The purpose of the project is to prepare a Multiple Property Documentation Form (MPDF) that will greatly assist the significance assessment of Woodland Period sites (500 BC – AD 1000), one of the most common types of prehistoric sites in Minnesota. Steering committee meetings are held quarterly to discuss and comment on the individual historic context documents that will be the major component of the MPDF. The project will be completed at the end of FY 2008.

New Threats

Ft. Snelling Visitor's Center

The greatest new threat to the well being of archaeology in Minnesota is a proposal by the Minnesota Historical Society (MHS) to eliminate the archaeological research center at Ft. Snelling. It is part of a larger MHS plan to build a new Visitor's Center at Ft. Snelling and mothball two adjacent historic structures, Buildings 17 and 18. While the MHS has continually reduced its commitment to archaeology since the early 1980s, the Ft. Snelling Visitor's Center remains the principal archaeological facility for the entire State of Minnesota.

The current Ft. Snelling Visitor's Center was constructed in 1983 to serve a dual purpose: to facilitate the interpretation of Old Ft. Snelling and to house the MHS Archaeology Department. A significant portion of the funding for the Visitor's Center was provided by the Federal Highway Administration (FHWA) under the Great River Road program for interpretive facilities (State Project 94-100-01; SHPO # G340). The Visitor's Center now houses the MHS Archaeology Department Offices, the MHS Archaeology Library, the MHS Archaeological Research Laboratory, the MHS Archaeological Artifact Comparative Collections, the University of Minnesota Archaeological Collections and Records (transferred to MHS in 2001), the Minnesota Archaeological Society Office and Files, the Office of the State Archaeologist (leased space), and the Joint OSA – MHS Research Facility. The proposed Visitor's Center will not include space to house any of these archaeological programs.

The adverse effects to Minnesota archaeology caused by the loss of the Ft. Snelling Visitor's Center would be immediate and multi-dimensional. These adverse effects would include:

1) The separation of the Office of the State Archaeologist (OSA), the MHS Archaeology Department (MHS-AD), and the Minnesota Archaeological Society (MSA) would greatly hamper data sharing, archaeological research, archaeological education, and peer interchange. Currently, the OSA and the MHS-AD share the official state site

files. These files are vital to both entities on a daily basis to review development projects and conduct research. The files consist of 40 5-drawer cabinets. The cost and effort to duplicate these files would be considerable and, once separated, they would no longer be duplicates of the same file as records would be independently added.

2) MHS-AD would most likely be forced to re-locate to a facility that would not provide anywhere close to the same amenities available in the current Ft. Snelling Visitor's Center. There would be smaller laboratory space, smaller office space, and smaller research space. The U of M Archaeological Collections would be in a more inaccessible location and there may not be space to include the MHS-AD Artifact Comparative Collections or the Archaeological Library. The official site files would remain with the OSA. The disposition of the materials in the Joint Research Area would have to be worked out.

3) The OSA would also be forced to re-locate to a facility that would not provide the same amenities available in the current Ft. Snelling Visitor's Center. There would certainly be smaller laboratory space and smaller research space. The U of M Archaeological Collections, the MHS-AD Artifact Comparative Collections, and the MHS Archaeological Library would stay with MHS and most likely not be conveniently accessible to the OSA. The cost of leasing comparative new space or even lesser space might be prohibitive to the limited OSA budget.

4) The Minnesota Archaeological Society (MAS), a non-profit organization meant primarily to serve the avocational archaeological community, is currently given space for no charge at the Ft. Snelling Visitor's Center for their office, files, and publication storage. Ft. Snelling has been the mailing address for the MAS since 1972. It is unlikely that the MHS would continue to provide space for MAS at any location if the current Ft. Snelling Visitor's Center is demolished.

5) The separation of the OSA, MHS-AD, and MAS would promote fewer cooperative initiatives and have a detrimental effect to current cooperative ventures such as Minnesota Archaeology Week and the OSA-MHS Joint Research Facility, which includes the former MAS library. A major event of Archaeology Week is the Ft. Snelling Archaeological Fair, which would be difficult to continue without a resident MHS Archaeology Department and OSA presence.

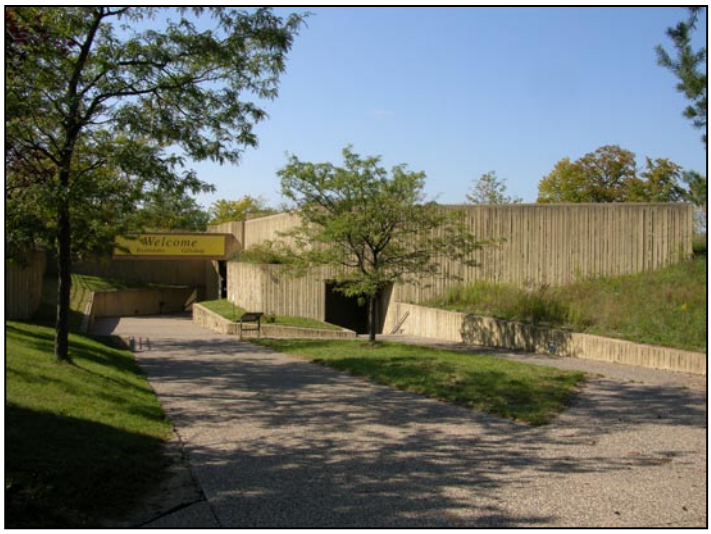
6) Ft. Snelling is conveniently located with good highway access and free parking. Members of the public seeking archaeological expertise and professional archaeologists seeking research help visit the Ft. Snelling Visitor's Center every day. If OSA archaeologists are out of the office, there is usually an MHS archaeologist available to answer questions or vice-versa. Any new location would no doubt lack the access amenities, but also cause a separation of OSA and MHS-AD so we couldn't cover for each other.

The current State Archaeologist had an office in the Ft. Snelling History Center when it first opened and is now once again a resident. He has talked to other residents of the building,

some of whom have continuously occupied it since 1983. Thus the OSA has firsthand knowledge of the building's strengths and deficiencies. While everyone agrees that the building design was flawed from the start, in many ways it had more physical problems when it was first occupied than it has today. The building is structurally sound, but has water leaks and heating-ventilating-air conditioning (HVAC) problems. Both of these problems can probably be dealt with effectively and economically, however, when compared to constructing a new facility.

There is no doubt that the MHS facilities at Ft. Snelling need upgrading and the archaeological community should support this effort. It is the need for a new building that is questionable, especially when that new building does not include archaeological facilities and is not in keeping with the mission of the Minnesota Historical Society. The MHS has an obligation to research and interpret all of the State's history, not just the non-archaeological past.

Furthermore, because MHS houses the State Historic Preservation Office (SHPO), it has an obligation to not only preserve historic buildings, but to set an example for their re-use. Thus if the existing Visitor's Center at Ft. Snelling cannot be rehabilitated, the second option should be to rehabilitate the adjacent historic structures both as a Visitor's Center and as an archaeological facility. The costs for either of these options should be lower than that of a new facility. They are also more "green" options.



The Ft. Snelling Visitor's Center as viewed from the east.

OSA Budget

The OSA has not had a budget increase since FY2001. As costs for benefits, salaries, travel, and supplies have steadily increased, the funds available for accomplishing the duties of the State Archaeologist have decreased. As listed in Chapter 1, the State Archaeologist's duties are of both a regulatory and leadership nature. These duties cannot be accomplished by sitting in the office answering the telephone, sending emails, and opening the mail. Effective site protection, research, and education require traveling around the entire state and active participation in fieldwork, professional meetings, and public events.

Minnesota Statutes 307.08, Subd. 5 states that "the cost of authentication, recording, surveying, and marking burial grounds and the cost of identification, analysis, rescue, and reburial of human remains" on private property "shall be borne by the state." Who in the state is not specified in the law, but because *authentication* is clearly the unique responsibility of the State Archaeologist, it is assumed that OSA must bear the costs of this

activity. Because authentication of actual remains also involves ethnic identification, this cost too is the responsibility of OSA.

There are instances when OSA staff are unable to complete authentication fieldwork due to the scope of a private lands project, the need for technical expertise and equipment not available at OSA, or due to time constraints. OSA staff are also not forensic anthropologists and thus cannot make ethnic identifications based on subtleties of skeletal morphology. In these instances, the OSA needs the assistance of outside consultants. In the past, OSA has paid for these services, but current budget constraints no longer allow this. Thus if private landowners are not willing to voluntarily pay for external authentication and identification costs, some private development projects may not be completed.

Minnesota Statutes 138.35, Subd. 2 states that the State Archaeologist shall "sponsor, engage in, and direct fundamental research into the archaeology of this state." Fundamental research cannot just be done by the State Archaeologist, volunteers, and unpaid interns. Fundamental research requires funding for such things as radiocarbon dates, equipment, technical expertise, and large field projects. Research is worthless without public dissemination of the results and publication of monographs also requires funding. Based on the current budget, the State Archaeologist's ability to further *fundamental research* is very limited.

MS 138.40, Subd. 3 requires that the State Archaeologist review public agency plans that may affect archaeological sites on public lands and MS 307.08, Subd. 10 requires that the State Archaeologist review public and private development plans that may affect burial sites. If agencies and private developers fully complied with these laws, the OSA would be overwhelmed. Clearly another full-time staff person would be needed at OSA if agencies and developers fully complied.

It is clear that the ability of the OSA to carry out MS 307 and 138 obligations will continue to be limited and will even decrease if the OSA budget remains at a level established eight years ago. The very survival of a functioning State Archaeologist's Office will be threatened without a budget increase within the next few years.

A Plan for 2008

Legislation: The OSA intends to begin a major legislative initiative in 2008 to address problems with the Field Archaeology Act (MS 138.31 - .42), although the introduction of a bill will wait for the 2009 session. The Field Archaeology Act has a number of problem areas including: 1) the *Legislative Intent* section emphasizes regulation of archaeology rather than preservation of sites; 2) the *Definition* section lacks several key concepts such as *agency, paramount right of the state, significant site*, and *undertaking*, as well needing revision of certain words (e.g., *object* should eliminate "skeleton" and add "artifact" and *state site* should only refer to sites on non-federal public land and should eliminate the 1875 bottle/ceramic exclusion); 3) the MHS role in licensing should be eliminated as it is redundant with the OSA role and unnecessary; 4) environmental review sections should be more consistent with federal legislation (e.g., review of *all* state *sponsored* undertakings that

could harm significant sites); 5) it should be coordinated with and refer to other pertinent statutes such as 307 and environmental laws that involve archaeological matters and the State Archaeologist; and 6) the roles of various agencies should be clarified and expanded (e.g., agencies should submit development plans to MHS-SHPO, OSA, and when appropriate to MIAC). This initiative will be done in careful consultation with all major stakeholders including the MIAC, MnDOT, DNR, MHS, and the Council for Minnesota Archaeology (CMA). An increase in the OSA budget could also be an element of the legislative initiative.

Development Plan Review: The OSA began officially reviewing Environmental Assessment Worksheets (EAWs) in 2007, but there is still a major deficiency in the environmental review process with respect to archaeological sites. MS 138.40, Subd. 3 requires all public agencies, not just state agencies, to submit *their* development plans to OSA and MHS if known or scientifically predicted archaeological sites may be affected on lands they control. The majority of local governments do not conform to this requirement unless the project is required to have historic impact review under some other state or federal law. For instance, counties and cities rarely submit non-federal highway projects for review, although such projects represent the majority of local highway development activity in the state.

The OSA will work with state and local agencies to make them more aware of impacts to archaeological sites by various types of projects and will attempt to help agencies efficiently and effectively fulfill their review obligations. Ways to accomplish this include easy but secure access to the archaeological site database and access to predictive models, such as MnDOT's MnModel. The OSA could also pursue additional funding to add a staff archaeologist whose primary duty would be development plan review. This would require a significant OSA budget increase, which will be difficult (see OSA Budget section above).

Information Management: Because effective agency plan review, response to calls from the public requesting information, and even many aspects of research rely on accurate and easily accessible knowledge of site distribution and site type, the site databases maintained by the OSA are essential. Yet the current databases are neither comprehensive nor widely accessible.

The *Site* and *Report* databases do not include boundaries of sites and survey areas. The *Burial Site Database* does not include many reported or suspected burial sites contained in OSA paper files if these sites have not been confirmed by professional archaeologists or are not listed in the *Archaeological Site* database. In addition, a compilation of historic era burials by Pope and Fee (1998) lists about 6,000 cemeteries, some unplatted, the majority of which are not contained in the OSA burials database.

Most agencies and all contract archaeologists in Minnesota do not have direct access to the OSA databases. To obtain complete site information they must visit the OSA offices, but OSA has limited ability to handle large numbers of visitors, requests for extensive photocopies, or complicated database searches.

Burials Site Database - As all confirmed burial sites subject to State Archaeologist review are defined as archaeological sites under both state and federal law, an effort will be made in

FY 2008 to assign official state site numbers to any confirmed but unnumbered sites. Alpha numbers may be assigned to burial sites that are unconfirmed, but are based on relatively reliable information. All such sites will be added to the database.

Archaeological Site Database - As of January 1, 2007, the OSA took over updating the master archaeological site database that is shared with the SHPO. The OSA is working with the Minnesota Land Management Information Center (LMIC) to attempt to provide access to the site database on-line both for data input and output. This on-line access should be available to appropriate agencies and contract archaeologists. Iowa, South Dakota, and Wisconsin already have access to their site databases on-line. The OSA will also attempt to add site boundaries in GIS format by re-designing the site inventory form.

Archaeological Survey Manual: Agencies and contract archaeologists in Minnesota must follow various guidelines to insure their fieldwork and reporting is completed in a comprehensive and professional manner. Some of these guidelines are agency specific, while others apply to all projects reviewed under federal and state authorities. The current State Archaeologist while at the SHPO wrote the guidelines used in Minnesota for archaeological projects reviewed by the OSA and the SHPO (Anfinson 2005). Due to information that has been obtained from the MnDOT-sponsored Deep Testing, Farmstead, and Woodland Context projects as well other insights and advances over the last few years, the Survey Manual is in need of an update. The State Archaeologist will take the lead in this effort, but will coordinate with the SHPO, state agencies, contract archaeologists, and the CMA.

Archaeological Research: Critical research needs include radiocarbon dates for certain sites and complexes, site locational surveys and site excavations in certain regions to establish the basic cultural sequence and fine-tune predictive models, and investigations of the Early Prehistoric Period including finding and excavating well-preserved Paleoindian sites. University based research will still have to take the lead in some of these investigations, especially those involving major excavations, but state level initiatives are essential to fulfilling others. The OSA will attempt to contribute staff time and resources to further these research goals.

For example, the OSA Education Fund may be used to obtain a number of radiocarbon dates to help define the chronological limits of Brainerd Ware ceramics. Elden Johnson first defined Brainerd ceramics following excavations at the Gull Lake Dam site (21CA37). They were originally thought to date between AD 600 – 800, but more recent radiocarbon dates from charred material on Brainerd sherds have suggested that Brainerd may be as old as 1400 BC. This would make Brainerd ceramics some of the oldest in North America. However, there is some evidence that dates taken from pot scrapings may date older than they should due to carbonate contamination. An OSA initiative in 2008 may seek to shed light on the age of Brainerd ceramics and the carbonate contamination question.

A Brainerd vessel from 21CA37.

Another key Minnesota research need is a Mound Status Survey. Theodore Lewis and Jacob Brower first mapped most of Minnesota's 12,500 known burial mounds in the late 19th century. Some of these mound sites have not been visited by an archaeologist in over 100 years. The actual current condition of most mound sites is not known and very few have been officially authenticated by the State Archaeologist. While it is against the law to willfully disturb a burial ground, most land owners are unaware that mounds were mapped on their property and thus they do not know what to avoid disturbing.

A major effort should be undertaken to assess the status of mound sites in Minnesota. While a site by site field assessment of the status would be the preferred method, some basic research can be done without time-consuming and costly field research. Utilizing land use data maintained by the Minnesota Land Management Information Center (LMIC), known mound site locations could be compared to current land use and the probability of various site disturbances evaluated. For instance, if land containing a mound site was in an agricultural field, residential area, or industrial park, it is likely that significant disturbance has taken place. If the land is wooded, the mounds may be in good condition.

Another method of remotely assessing mound condition utilizes recently perfected LIDAR surveys. LIDAR stands for Light Detection and Ranging. It basically is like RADAR except laser light pulses from an airplane are used instead of radio waves. Current LIDAR technology can achieve vertical elevation resolutions of six inches (15 cm) thus resulting in Digital Elevation Modules (DEMs) that show surface topography that is accurate to within a foot. Several state agencies and many Minnesota counties have already sponsored LIDAR surveys of many areas in Minnesota. Because most burial mounds in Minnesota were originally higher than one-foot and even mounds in long-cultivated areas can still be evident at this vertical resolution, a LIDAR survey could be very useful in remotely and efficiently assessing mound condition. The OSA will investigate cooperative LIDAR ventures in FY 2008 with other units of government. An LCCMR grant may even be prepared to further a mound status survey.

The OSA acknowledges the contributions to Minnesota archaeology of geologist and paleoecologist Herbert Wright, Jr. on the occasion of his 90th birthday.

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Glossary of Minnesota Archaeological Terms

Agency – any agency, department, board, office or other instrumentality of the state, any political subdivision of the state, any public corporation, any municipality, and any other local unit of government (MS 114c.02).

Archaic Tradition – The post-Paleoindian cultural tradition characterized by the disappearance of lanceolate projectile points and the appearance of stemmed and notched points beginning about 8000 B.C. Other Archaic developments include ground stone tools, domestic dogs, cemeteries, copper tools, and diverse hunting-gathering economies. The Archaic lasts until about 500 B.C.

Archaeological Site – a discrete location containing evidence of past human activity that holds significance for archaeologists.

Area of Potential Effect (APE) – the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of archaeological sites.

Archaeology - the scientific study of important physical remnants of the cultural past.

Artifacts - natural or artificial articles, objects, tools, or other items manufactured, modified, or used by humans that are of archaeological interest.

Authenticate - to establish the presence of or high potential of human burials or human skeletal remains being located in a discrete area, to delimit the boundaries of human burial grounds or graves, and to attempt to determine the ethnic, cultural, or religious affiliation of individuals interred.

BP – Before Present; this is an expression of age measured by radiocarbon dating with "present" set at 1950, the first year radiocarbon dating became available. It is more correctly stated as "radiocarbon years before present" or RCYBP. It does not mean the same as "years ago" because raw radiocarbon dates need to be corrected for several inherent errors in order to be converted to actual calendar years.

Burial - the organic remnants of the human body that were intentionally interred as part of a mortuary process.

Burial Ground - a discrete location that is known to contain or has high potential to contain human remains based on physical evidence, historical records, or reliable informant accounts.

Cemetery - a discrete location that is known to contain or intended to be used for the internment of human remains.

Complex - a group of sites or phases linked by trade or behavioral similarities, but not necessarily of the same ethnic, linguistic, or cultural grouping (e.g., Hopewell)

Component - a discrete cultural entity at a particular site; one site can have multiple components (e.g., prehistoric and historic, multiple prehistoric)

Contact Period – the initial period of intensive Euroamerican and Indian interaction prior to the signing of any major treaties (1650 – 1837)

Context – the relationship between artifacts and where they are found, such as depth from surface, association with soil or cultural features, or cultural component assignment. Not the same as *historic context*.

Cultural Resource Management (CRM) – the identification, evaluation, treatment, and management of archaeological sites, historic structures, and other types of cultural heritage properties; synonymous with Historic Preservation and Heritage Management.

Disturb - any activity that significantly harms the physical integrity or setting of an archaeological site or human burial ground.

Feature – non-artifactual evidence of human activity at an archaeological site usually expressed as noticeable soil disturbances such as pits and hearths. It can also refer to masonry walls and other structures at historical archaeological sites.

Field Archaeology - the study of the traces of human culture at any land or water site by means of surveying, digging, sampling, excavating, or removing objects, or going on a site with that intent (MS 138.31).

Geomorphology – the study of the earth's surface and how it has evolved generally with regard to soils and sediments.

Grave Goods – objects or artifacts directly associated with human burials or human burial grounds that were placed as part of a mortuary ritual at the time of internment.

Historic Context – an organizational construct that groups related property types (e.g., *archaeological sites*) together based on a similar culture, geographical distribution, and time period. The Minnesota SHPO has developed a number of statewide historic contexts for the Precontact, Contact, and Post-Contact periods. An example of a Precontact context is Clovis. Not the same as *context* used in a purely archaeological sense.

Historic Period – synonymous with the *Contact* and *Post-Contact* periods when artifacts of Euroamerican manufacture are present or written records available; begins about 1650 in the Upper Midwest.

Horizon - a technological or behavioral attribute with broad geographical distribution, but not necessarily at the same time (e.g., fluted point horizon); also a particular layer within an archaeological site.

Human Remains - the calcified portion of the human body, not including isolated teeth, or cremated remains deposited in a container or discrete feature.

Lithic – made of stone; lithic artifacts are generally manufactured by either chipping or flaking high quality materials (e.g., chert, chalcedony) to produce tools such as knives, scrapers, and projectile points or by grinding or pecking granular rocks (e.g., sandstone, granite) to produce tools such as mauls, hammerstones, or axes.

Lithic Scatter – an archaeological site evidenced almost exclusively by the presence of stone tools or stone tool manufacture.

Mississippian Tradition – A Late Prehistoric cultural tradition associated with developments originating at the Cahokia site on the Mississippi River across from St. Louis. Characteristics include the use of shell-tempered pottery, intensive corn horticulture, settled village life, and small triangular arrowheads. Mainly found in southern Minnesota, it lasts from about A.D. 1000 to A.D. 1650.

Qualified Professional Archaeologist - an archaeologist who meets the United States Secretary of the Interior's professional qualification standards in Code of Federal Regulations, title 36, part 61, appendix A, or subsequent revisions. These standards require that the archaeologist has a graduate degree in archaeology or a closely related field, has at least one year's full-time experience doing archaeology at the supervisory level, and has a demonstrated ability to carry research to completion. There are specific additional standards for prehistoric, historic, and underwater archaeologists.

Paleoindian Tradition – The earliest major cultural tradition in the New World characterized by the use of well-made lanceolate projectile points and the hunting of now extinct animals such as mammoth and giant bison. It is dated to 12,000 B.C. – 8000 B.C.

Period - a temporal span often associated with a particular cultural tradition (e.g., Woodland)

Petroglyph - a design inscribed into a rock face by grinding, pecking or incising; examples can be seen at the Jeffers site in Cottonwood County and Pipestone National Monument.

Phase - a geographically discrete taxonomic unit represented by a group of sites with cultural and temporal similarity (e.g., *Fox Lake* in southwestern Minnesota)

Phase I Survey – synonymous with a reconnaissance survey; a survey whose objective is to find archaeological sites, map the horizontal limits of the sites, and define the basic historic periods present.

Phase II Survey – synonymous with an evaluation survey; intensive fieldwork whose objective is to determine the significance of an archaeological site by assessing the site's research potential as demonstrated by the robustness of the identifiable historic contexts present and the integrity of artifacts and features associated with those contexts. Significance is generally equated with eligibility to the National Register of Historic Places.

Phase III Project – synonymous with a treatment activity or site excavation; very intensive fieldwork generally done to mitigate the adverse effects of development upon a significant archaeological site through data recovery utilizing numerous formal excavation units or other intensive investigative methods.

Pictograph – a design painted or drawn on a rock face.

Plains Village Tradition - A Late Prehistoric cultural tradition associated with the establishment of settled village life along major river valleys in the Great Plains. Characteristics include the use of globular pots that are smooth surfaced and grit tempered as well as intensive corn horticulture and fortifications. Found in western Minnesota, the tradition lasts from about A.D. 1000 to A.D. 1500.

Post-Contact Period – the period of Euroamerican as opposed to Indian dominance in Minnesota beginning with the first major land cession treaties in 1837.

Precontact Period –the time period dating from the earliest human occupation up to the significant incursion of European culture usually dated to about 1650 in the Upper Midwest; synonymous with *Prehistoric Period*.

Prehistoric Period – synonymous with the *Precontact Period* (see above); sometimes divided into Early (12,000 – 5000 B.C.), Middle (5000 B.C. – A.D. 1000), and Late (A.D. 1000 – 1650).

Recorded Cemetery - a cemetery that has a surveyed plat filed in a county recorder's office.

Section 106 – refers to Section 106 of the National Historic Preservation Act of 1966, which states that federal agencies must *consider* the impacts their undertaking have on significant historic properties and *consult* with knowledgeable entities (e.g., SHPO) about these impacts.

State site or state archaeological site - a land or water area, owned or leased by or subject to the paramount right of the state, county, township, or municipality where there are objects or other evidence of archaeological interest. This term includes all aboriginal mounds and earthworks, ancient burial grounds, prehistoric ruins, historical remains, and other archaeological features on state land or on land subject to the paramount rights of the state (MS 138.31).

Tradition - a prehistoric culture based on lasting artifact types or archaeological features (e.g., *Paleoindian*)

Woodland Tradition – The post-*Archaic* cultural tradition first identified in the Eastern Woodlands of the United States. It is characterized by the appearance of pottery and burial mounds. Wild rice use becomes intensive in northern Minnesota with limited corn horticulture eventually appearing in the southern part of the state. Woodland begins about 500 B.C. and lasts until A.D. 1650 in northern Minnesota, but is replaced by Plains Village and Mississippian cultures in southern Minnesota about A.D. 1000.