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Computerizing Arizona's Cultural Resource Files

Implementation Plan

by
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AZSITE

A collaborative project of:
Archaeological Research Institute, Arizona State University
Arizona State Museum, The University of Arizona
Museum of Northern Arizona
State Historic Preservation Office

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Summary

This report represents the “end of the beginning” of a multi-year project to computerize archaeological and historical site files for the state of Arizona. The AZSITE consortium, which has undertaken this project, was formed in 1995 by a memorandum of agreement signed by the Arizona State Museum, the Archaeological Research Institute at Arizona State University, the Museum of Northern Arizona, and the State Historic Preservation Office. The State Land Department and the Arizona State Office of the BLM have been active participants from the beginning.

In December, 1995, as its first interagency collaboration, the consortium applied to the National Center for Preservation Technology and Training for a planning grant. Under the terms of that grant, the consortium undertook three objectives: a needs assessment, a planning phase, and development of additional funding proposals. All three objectives were directed toward meeting the consortium’s goals of establishing a computerized cultural resource database for the state and making it available electronically to authorized users. Using the NCPTT grant, the consortium has systematically planned and implemented a centralized archaeological site and survey database and systematically solicited advice and support from other concerned agencies in Arizona. It may be that, in terms of agencies and personnel involved, if not actual dollars spent, the AZSTTE project is one of the largest collaborative cultural resource management projects yet undertaken in Arizona.

Through funding provided by NCPU, the consortium has held a series of meetings involving members of the consortium as well as federal and state land managers, tribal representatives and private contrast firms. As a result of these meetings, the database has been developed and modified and is currently in use at ASM and ASU. Over the course of the coming year, the remaining two consortium members, SHPO and MNA, will be networked to the system and all four consortium members will work to refine the process, incorporate each agency’s backlog of non-computerized paper records into the system, and implement a plan to make the database available to authorized users over an internet server. Additionally, over the course of the next two years, the consortium plans to work with several federal and state agencies to

incorporate these agencies' records. As proposed in the NCPTT grant, the consortium has already prepared and submitted funding proposals to help us accomplish these goals.

It is clear from the needs assessment portion of the project that, with few exceptions, every site files repository has a mix of computerized and non-computerized records and that planning a computer system in the absence of a plan to computerize paper records is only half the project. Only one agency had survey data in digital form to be imported directly into AZSITE. It is also clear that there is a wide range of computer literacy present in Arizona's archaeological community. To make this project succeed the AZSTTE consortium will need to concern itself with the actual desktop implementation of the database in the offices of the various federal, state and tribal agencies involved if these agencies are to gain the fullest benefit of this project.

Few, if any, other states have needed to solicit public support and participation as Arizona has and this process has introduced certain complications of its own. Public discussion of the content and uses of archaeological and historical site files has raised many questions concerning ownership of information and rights of access to that information that will take some time to resolve in a manner satisfactory to all participants. It is undoubtedly true, however, that given current funding options, the fact that this was done as a collaborative partnership among state, federal, tribal and private agencies has been a major factor in the consortium's ability to generate funding from state and federal agencies. The products of the NCPTT planning grant have already produced tangible results in the form of pilot project funding from the Arizona Heritage Funds, as well as a grant from the Federal Geographic Data Committee.

* * *

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Introduction

The State of Arizona is rich in prehistoric and historic resources of importance to many modern populations within the state. Over the course of the past century, these cultural resources have suffered from the intentional destruction for profit by looters and vandals and from the unintentional destruction for profit by urban developers. In response to the loss of history resulting from this destruction, both federal and state laws mandate protection and management of prehistoric and historic resources.

Section 106 of the National Historic Preservation Act (NHPA) requires federal agencies to take into account the effects of their undertakings on prehistoric and historic archaeological properties. Section 110 of the NHPA requires that heritage management planning be an integral part of land use planning. The State Historic Preservation Act (SHPA) and the Arizona Antiquities Act (AAA) serve similar roles to protect the interests of state prehistoric and historic resources. Through a process of consultation with the State Historic Preservation Office (SHPO), attempts must be made to avoid or to effectively mitigate the adverse affects of development on prehistoric and historic properties. Normally, the first step in this process is a review of records to determine what reconnaissance has been done and whether sites are known to exist in the area.

Definition of the Problem

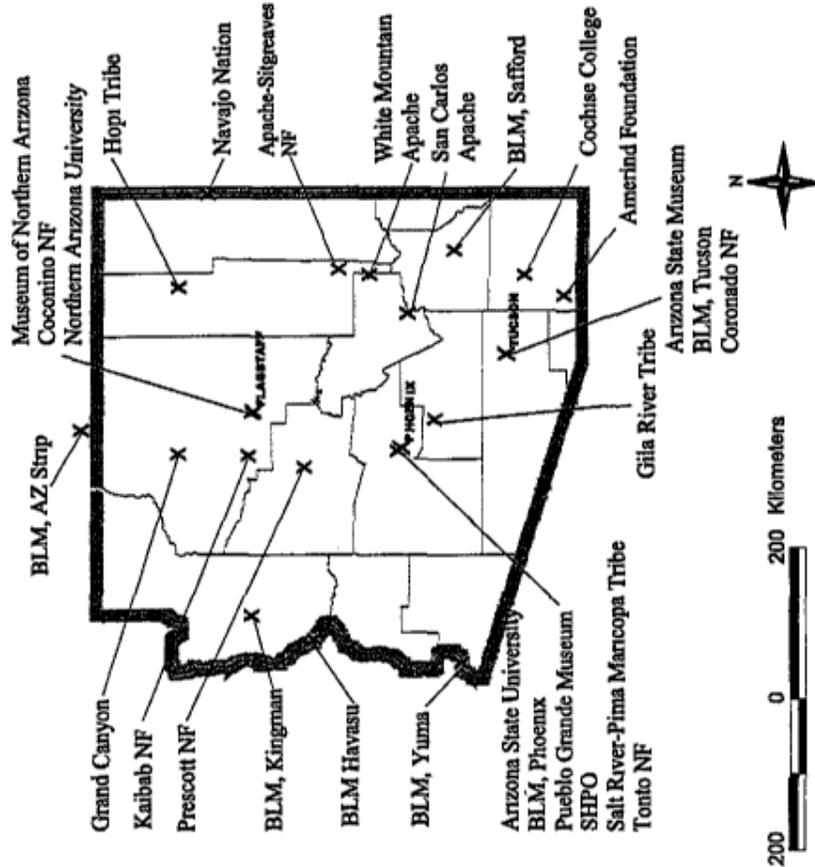
The practical implications of cultural preservation legislation required the development of a site inventory. However, in Arizona, there is no single centralized database containing the location and cultural information of previously identified sites. Nor is there currently any standardized statewide method of recording newly discovered sites. There are at least twenty-eight record holding agencies (see figure 1). Each of these agencies has a database containing archaeological records, sometimes regional, sometimes statewide, organized in an agency specific method. While these numerous efforts are the direct result of the historical and legislative efforts designed to inventory, preserve and protect prehistoric and historic sites, the lack of a centralized database and uniform recording procedures complicates attempts at effective site preservation and management.

Figure 1. Location of Site Record Repositories

Archaeological Site Record Repositories in Arizona

Agency	Location	Number of Records
Apache-Sitgreaves NF	Lakeside, AZ	6000
Arizona State Museum	Tucson, AZ	20000
Arizona State University	Tempe, AZ	4500
BLM, Arizona Strip FO	St. George, UT	4000
BLM, Havasu FO	Lake Havasu, AZ	700
BLM, Kingman FO	Kingman, AZ	500
BLM, Phoenix FO	Phoenix, AZ	500
BLM, Safford FO	Safford, AZ	1500
BLM, Tucson FO	Tucson, AZ	500
BLM, Yuma FO	Yuma, AZ	2500
Cochise College	Sierra Vista, AZ	500
Coconino NF	Flagstaff, AZ	8500
Coronado NF	Tucson, AZ	1820
Gila River Indian Community	Sacaton, AZ	600
Grand Canyon NP	Grand Canyon, AZ	0
Hopi Tribe	Kykotsmovi, AZ	1800
Kaibab NF	Williams, AZ	6000
Museum of Northern Arizona	Flagstaff, AZ	25800
Navajo Nation	Window Rock, AZ	500
Northern Arizona University	Flagstaff, AZ	3000
Prescott NF	Prescott, AZ	1900
Pueblo Grande Museum	Phoenix, AZ	0
SHPO	Phoenix, AZ	19000
Salt River-Pima Maricopa Tribe	Scottsdale, AZ	0
San Carlos Apache	San Carlos, AZ	200
Tonto NF	Phoenix, AZ	8000
White Mountain Apache	Fort Apache, AZ	2000

Number of records is approximate number of site records held by each agency
 "0" records indicate no record data received



The decentralized manner which these records are currently maintained requires extensive, time consuming and expensive research at multiple repositories. A survey conducted by the consortium indicated most records searches required visiting on average 3-4 repositories. The geographical location of these repositories requires traveling to various cities and spending, in many instances, several days researching paper files and cross referencing them with files from other repositories. As a consequence, and despite the best efforts of researchers, prehistoric and historic sites may be overlooked, contributing to the inadvertent destruction of culturally significant areas. Additionally, the rapid pace of land development in Arizona and the consequent growth of the cultural resource management industry fueled increasing dissatisfaction on the part of government agencies and private industry with the state of site files.

In 1995, four institutions began discussions on possible remedies to this situation. The four agencies are the Arizona State Museum, the State Historic Preservation Office, the Museum of Northern Arizona and the Archaeological Research Institute at ASU. Each agency has its own mandate to keep records, but the product of this project will benefit all of them. Originally established as the Territorial Museum in 1893, the Arizona State Museum (ASM) was assigned the task of overseeing the archaeological resources of the Territory and subsequently the State. The 1960 AAA assigned protection and preservation responsibilities for state land archaeological sites to ASM. The 1966 NHPA and the 1982 SHPA directed the SHPO to maintain records of all state and federal properties eligible for inclusion in the National Register of Historic Places within the state. Both ASM and SHPO have databases containing thousands of prehistoric and historic sites. The Museum of Northern Arizona (MNA) was established in 1928 by Harold S. Colton. A private institution, its goal was to maintain and preserve the archaeological collections from northern Arizona. Arizona State University's (ASU) database was implemented in the 1960's and contains records for the central part of the state. Northern Arizona University's (NAU) records have grown through years of research under the auspices of their anthropology laboratory. Federal land managing agencies such as the National Park Service (NPS), the U.S Forest Service (USFS) and the Bureau of Land Management (BLM) have created and maintained their own records management systems. Tribal cultural preservation offices maintain records on sites within their reservation boundaries and other areas outside these boundaries considered by the tribe to be of cultural significance. BLM, Apache-Sitgreaves National Forest (A-SNF),

Coronado National Forest (CorNF) and several tribes have been regular contributors to both the ASM and SHPO databases. Coconino National Forest (CocNF) and several tribes have contributed to the MNA database. ASU currently receives records from Tonto National Forest (TNF), other federal lands, private and tribal lands. NAU maintains records on state, private, tribal and forest service lands as required during the course of research. None of these institutions' databases is comprehensive, nor are they mutually exclusive.

Development and Goals of the AZSITE Consortium

The nature of the problem provided two clear goals for the AZSITE consortium, as outlined in a joint memorandum of agreement signed June, 1995:

- 1) Establish and maintain a computerized cultural resource database, termed AZSITE, for the State of Arizona.
- 2) Make AZSITE available electronically to all federal, tribal, state, local and private agencies concerned with cultural resource management in Arizona.

With funding provided by the NCPTT, the AZSITE consortium has undertaken a series of objectives to reach these goals:

Objective 1: Needs assessment

- 1) Define the user community and invite participation.
- 2) Through survey and workshops, delineate the scope of site file holdings in Arizona.
- 3) Establish criteria for a consolidated file.
- 4) Determine the special concerns of Native American communities with respect to archaeological records.

Objective 2: Review of available options

- 1) Review other state's experience that may serve as models for Arizona.
- 2) Determine hardware and software options.

Objective 3: Prepare plan of action

Objective 4: Prepare grant proposals for selected funding agencies

The consortium first outlined the requirements of a centralized database designed to meet the ever-increasing needs of a multi-agency use system. With the diversity of state and federal mandates, the first undertaking in meeting this initial goal was to define the data fields required

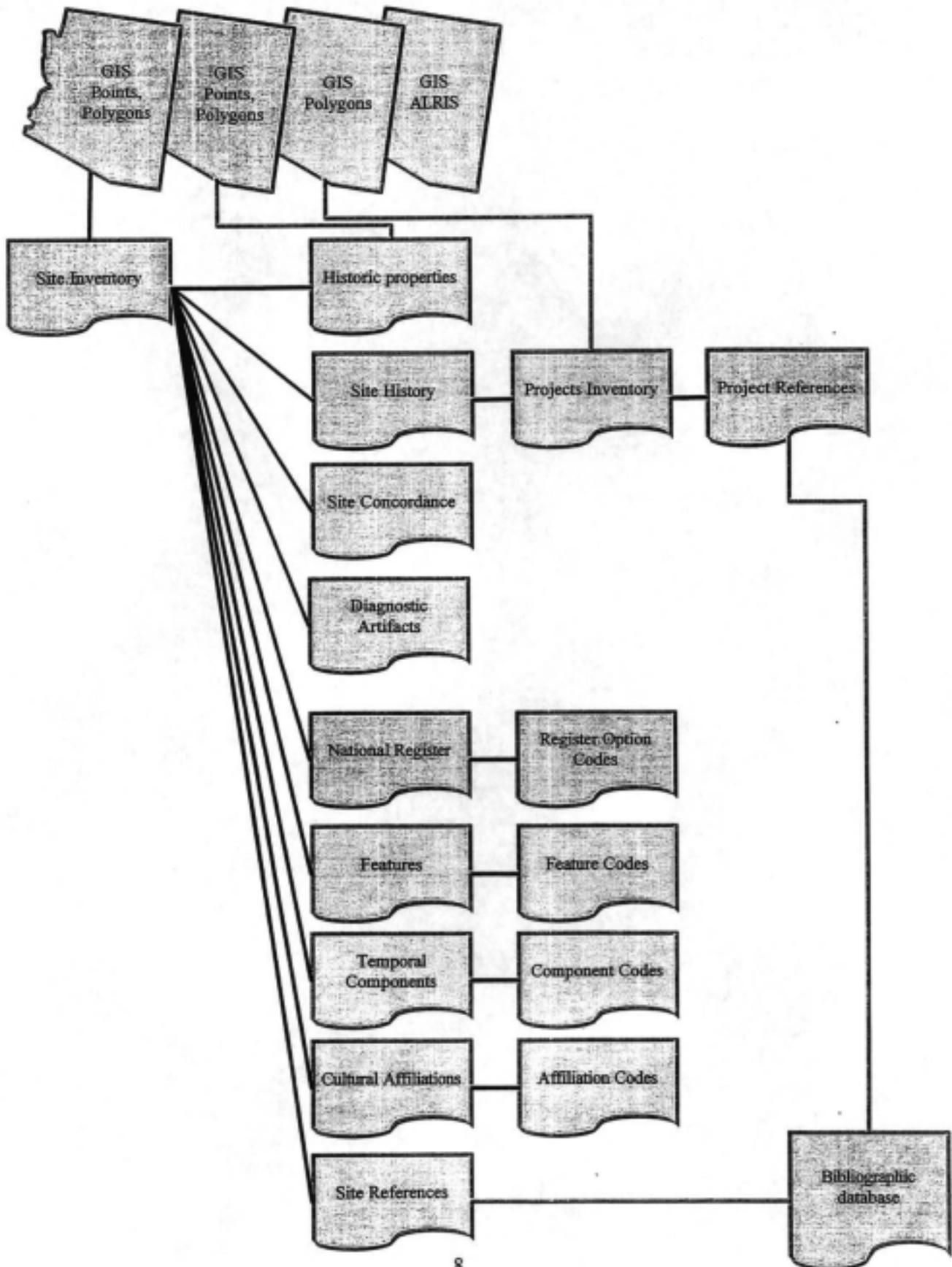
to fulfill these mandates. Through the cooperative efforts of the consortium members, recording agencies, tribal representatives and private contractors, 60 general data fields and several agency specific subfields were outlined to meet the needs of a class 1 archaeological survey. Figure 2 provides a schematic of the database content.

The second task was to develop a geographical information system (GIS) to handle spatial data in ArcView software. Spatial data are critical to the success of this undertaking for two reasons. First, most queries of the file involve a request for known sites and surveys within a particular geographic area, usually a specified section of land or an area within certain distances of some known feature like a highway. Electronically available spatial data will allow users to define their search area from their desktops and obtain the information over a modem or internet connection. Secondly, because many of the existing repositories in Arizona have overlapping jurisdictions, sites may be recorded in several databases under several different unique keys called site numbers. Spatial layers in a GIS format will allow users to realize instantly which sites are the same, despite differing site numbers. The database will return, in tabular format, all the recorded sites and surveys within the specified area.

The third task was to make the database available electronically, via Internet or modem, to all qualified users. To meet this goal, a client server operating system, Microsoft Windows NT was selected; the database will be maintained in Microsoft SQL Server with a Microsoft Access front-end. A world-wide web browser will make the database available across platforms to MAC, Windows and Unix users. The client server architecture will offer optimum data security in a network environment. To make the spatial data available in a similar client server environment it will be necessary to adopt ESRI's Spatial Database Engine. We are exploring options on this now, as it is expensive software. Figure 3 provides a diagram of system design.

The funding received from the National Center for Preservation, Technology and Training (NCPTT) was channeled toward planning for and initial implementation of a centralized, statewide prehistoric and historic database. The result of the work by the consortium was the AZSITE pilot project. The pilot project database currently contains 27,000 site and 3000 survey attribute records and accompanying spatial data. The number of records in the database will double by the end of 1997 as the databases from other land managing agencies are converted and integrated into the AZSITE database

Figure 2. Schematic of the Database



Key:

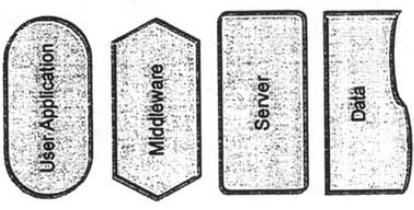
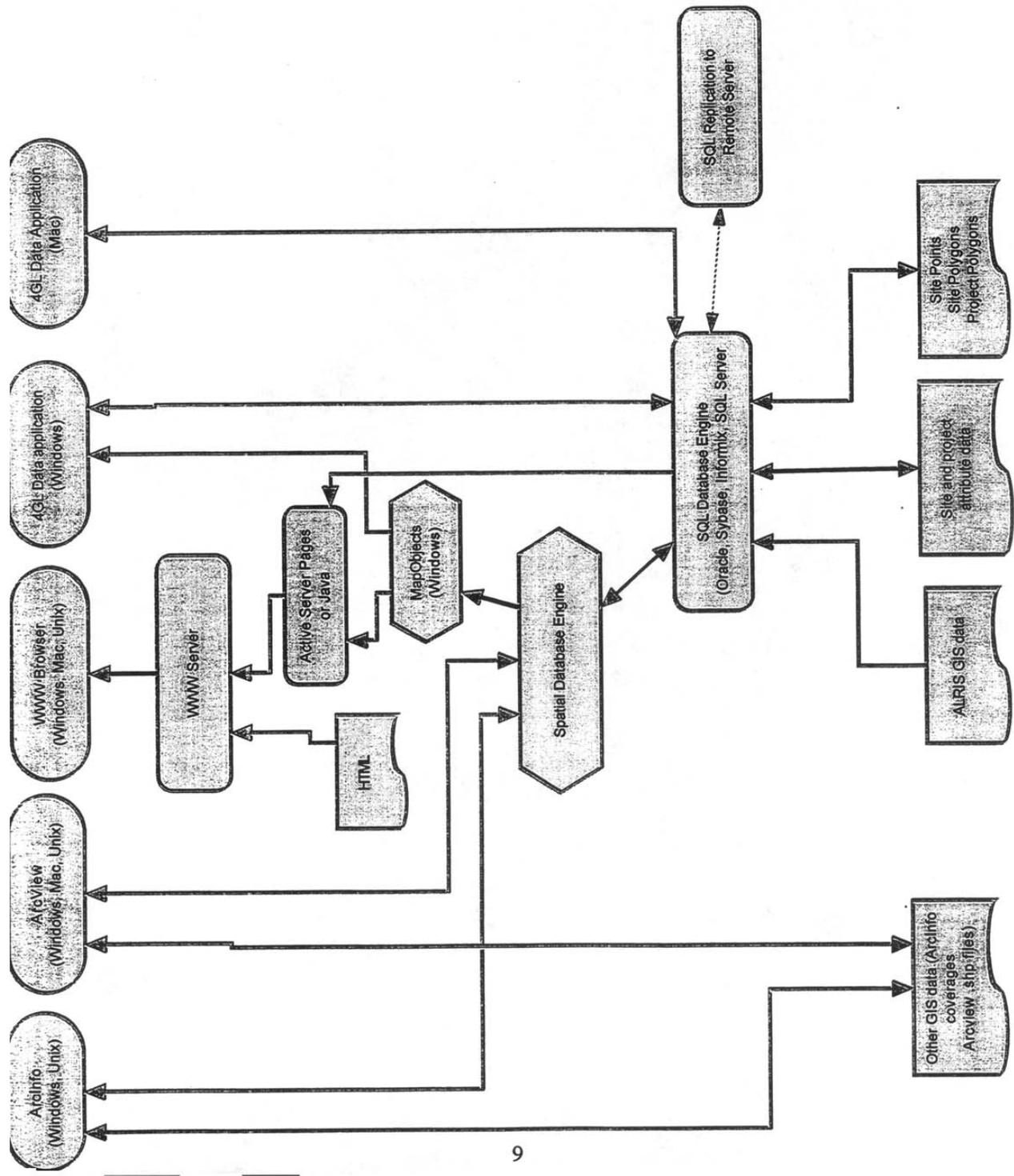


Figure 3. Diagram of System Design



AZSITE Needs Assessment and Outreach

A survey of the records holdings of land managers and site file repositories in Arizona netted solid information on the nature of site file organization in the state. As the survey (Appendix A) indicates, each agency has its own method of organizing data using numerous agency specific numbering and files management systems and computerized databases. Many of these agencies' databases overlap, creating a redundancy of records which is difficult to efficiently detect. The differing media in which the records are archived further complicates statewide research and management of records. Several agencies have paper records using various forms of documentation and/or incomplete electronic databases. For example, one agency has an "indeterminate" number of records. Some have been computerized, but many are in paper format and reside in boxes stacked in a closet. Another land managing agency holds several thousand records maintained in two different paper record forms. Nearly half of these records have been computerized but research capabilities are limited and time consuming due to out-dated hardware.

In summary, the survey revealed there were approximately 120,000 site records maintained at twenty-eight different repositories. As many as 40% of these records may be redundant. Approximately 65% of the agencies have records in both electronic and paper. The availability of these records ranges from inaccessible to readily available with proper permission.

The consortium recognized early by that the establishment and maintenance of a centralized database would require the cooperation and participation of all site record repositories, land managing agencies and contract archaeology firms. Toward this goal, representatives from these agencies have been encouraged to attend and participate in the regularly held AZSITE consortium meetings. An AZSITE Newsletter, (see Appendix B) updating the progress of the consortium and briefly outlining the previous meeting's minutes, is mailed to nearly 200 concerned parties. The AZSITE web page (located at URL <http://archaeology.la.asu.edu/azsite>) provides AZSITE updates and will be used in the future to allow remote access to the database by authorized users. To keep interested parties informed and to solicit comments and suggestions for the project, the consortium has conducted several meetings, presentations and workshops.

On February 20 and 21, 1997, the AZSITE consortium conducted an information dissemination and collection workshop at the BLM National Training Center in Phoenix, Arizona. The purpose of this workshop was two fold. First, it presented a preliminary proposal for a centralized, comprehensive prehistoric and historical site database. This was accomplished through the presentation and demonstration of the AZSITE pilot project. Secondly, the workshop served to gather feedback from the participants and potential users.

Over 100 concerned professionals attended the workshop, including contract and research archaeologists, federal and state land managers, state and tribal historic preservation office, tribal cultural resource managers and concerned tribal members (see Appendix C for list of participants).

The topics of the two-day workshop consisted of presentations illustrating the proposed database content and the method of data entry and querying through the internet, security provisions for the database, and a discussion of funding and long-term management of the system (see Appendix D for expanded agenda).

Following each segment of the workshop, participants joined small groups based on similar data needs and concerns to discuss and pose questions concerning the information previously presented to them. There were five such groups:

- ◆ Group 1: Tribal members
- ◆ Group 2: Private contractors
- ◆ Group 3: Forest Service and Department of Defense
- ◆ Group 4: State and municipal government
- ◆ Group 5: BLM and the National Park Service

Within each discussion group, a facilitator led the discussion and a recorder made notes of each group's concerns, comments and questions. Prior to its return to the main group, each small group selected a spokes-person to present the main topics of their discussion. For a summary of the discussion topics and individual group responses see Appendix E.

Since its inaugural presentation at the February workshop, the AZSITE pilot database has been demonstrated on several occasions. The goals of these subsequent presentations were to solicit support for the database, to gather problem solving information from GIS users, and to

view established databases in other states in the hopes of avoiding previous encountered problems.

- ◆ On October 1, 1996, Beth Grindell of ASM and Peter McCartney of ASU attended a meeting at ESRI's Boulder Colorado offices with representatives of site file curators from New Mexico, Colorado and Nevada, to consult with ERIS staff on geographical databases.
- ◆ On March 6, 1997, Grindell spoke with the Inter-Tribal Counsel of Arizona at the San Xavier District offices in Tucson, Arizona. There she described the AZSITE project and discussed issues of database security with tribal representatives.
- ◆ On March 24 Grindell attended a meeting at the National Park Service, Washington DC, regarding the need for computerization of SHPO inventory records.
- ◆ At the April 25 and 26 meeting of the Arizona Archaeological Council, in Tucson, McCartney presented the method AZSITE was currently pursuing regarding the recording of linear sites and solicited questions on ways to make this method more efficient.
- ◆ On May 9, Rick Karl of ASM presented AZSITE at a meeting of the Southern Arizona Geographical Information System users in Tucson.
- ◆ On May 19, Karl demonstrated to members of the Consortium of Arizona Museum Archives and Libraries how the AZSITE database could be linked to the library system and researchers could retrieve related bibliographical information.
- ◆ On June 13, McCartney attended a meeting in Las Vegas, Nevada, sponsored by the Department of Defense, to discuss the need for interstate database compatibility.
- ◆ At the August 12 Arizona Geographical Information Council conference in Tempe, McCartney presented the AZ SITE pilot project and demonstrated how a spatial database could be used to protect and preserve culturally significant areas.

The consortium held meetings on June 18 and 19, 1997, at MNA in Flagstaff, to present the current status of the AZSITE database and to discuss regional and agency specific concerns with the database. June 18 was devoted to federal lands managed by the forest service and the BLM and how their current databases could best be incorporated into AZSITE. There was a general discussion on the site numbering system and a review of the general data fields. This

meeting resulted in minor adjustments to the data fields and several agency representatives agreed to collaborate in the conversion of their data and preparing it for entry into AZSITE.

June 19 focused on tribal concerns, most notably the control of information recovered from sites on tribal lands. The AZSITE consortium understood concerns tribes have about including culturally sensitive information in the database. Early in the AZSITE planning stages, efforts were made by the consortium to include tribal representatives in planning of the proposed database. This collaboration with tribal representatives has continued since the presentation of the pilot project in February. During the June meeting, the consortium reached tentative verbal agreements with several tribes to include reservation sites in AZSITE, provided proper security and access restrictions are incorporated. For a summary of the June meeting see Appendix F.

Implementation

With the research and planning stages of AZSITE nearing completion, the task of implementing the system becomes the primary issue. To meet the challenge of implementing the system, the consortium has established a work plan, which is divided into six specific work tasks. These six areas are not mutually exclusive and may be conducted simultaneously.

Task 1 is the preparation of the site GIS themes for all participating contributors. McCartney and Karl will work with agency staff to acquire GIS data files and if necessary convert the data to the ArcView shape file format used by AZSITE. At the end of this task, site locations from all agencies will be submitted to the AZSITE team for entry into the central system.

Task 2 will be the preparation of the survey GIS themes of the participating contributors. Survey boundaries have been previously digitized for some areas and these files will be converted to ArcView format and imported to the AZSITE server. UA, ASU and MNA staff will digitize the remaining survey boundaries. McCartney and Karl will coordinate the digitizing efforts; staff from the respective agencies will be responsible for the selection and preparation of materials to be digitized.

Task 3 requires the preparation of the associated attribute databases for the site and survey GIS themes. McCartney and the ASU staff will work with data administrators from the

participating agencies to arrive at solutions for making local attribute databases complete and compatible with the AZSITE system.

Task 4 will be the concordance of these site and survey GIS themes and corresponding attribute databases to remove redundant records. Once the GIS themes and attribute data files have been imported to the AZSITE server, the spatial locations and attribute descriptions will be compared to sort out the overlap between the various data sources. Karl will be responsible for this task which will terminate with the insertion of the contributed records into the central database.

Task 5 will establish client connectivity with the central AZSITE server. Connectivity with the AZSITE server at ASU will be established for each participating agency and a user database will be created to control security. McCartney will act as system administrator and will consult with each agency to develop solutions for updating the AZSITE system with new and corrected records from the separate database systems.

Task 6 calls for the development and distribution of client software. Integrated client software enabling access to GIS and attribute data stored on the central sever will be developed and made available to all participating agencies with appropriate connectivity. McCartney and the ASU staff will be responsible for this part of the project.

Incorporation of Federal Lands Data

Currently the data held at federal agencies are in various states of conversion and compatibility with AZSITE. As a consequence of these varying stages, data are being handled on an agency by agency basis. Land managers are working in conjunction with AZSITE personnel to establish a protocol for data entry.

The in-house databases held by the Forest Service have either been or are in the process of being converted to an AZSITE compatible format. KNF data (approximately 5000 sites) have already been converted and incorporated into AZSITE. The software used to convert KNF's CRAIS (a USFS proprietary database management system) database to AZSITE will be used for PNF, CocNF and CorNF as well. Much of CocNF's site data are already incorporated into MNA files. A-SNF uses a UNIX platform and new conversion software will be developed to incorporate their data. TNP has no electronic database and all records will be entered by hand directly into the AZSITE system. Over one thousand sites from TNF are already included in AZSITE.

The BLM has been a regular contributor to the ASM database since 1985. As such, their attribute data records have already been converted and included in the AZSITE system. Surveys for the Phoenix district office have been digitized and forthcoming funding from Federal Geographic Data Committee will be used to digitize other districts' survey records. The Department of Defense has also been a regular contributor to the ASM database. Currently, only Luke Air Force Base maintains its own separate records. The inclusion of these records will be negotiated in the months ahead. The attribute database for state trust lands held at ASM has been converted and included in AZSITE. The digitizing of site and survey information held at ASM into the GIS database is underway.

The Western Archeological and Conservation Center and the Grand Canyon National Park retain site records for the NPS land holdings within the state. Many of these records have been digitized and some have been recorded at ASM. Those records digitized will be incorporated into AZSITE. MNA's database is in the process of being converted and incorporated into AZSITE. MNA staff will digitize surveys by hand. Table 1, below, summarizes the general status of each agency's data conversion.

Table 1. Status of Agency Data Conversion

Record Status	Already Submits Data to ASM	Site Data in Paper Form. Must be Computerized into AZSITE	Site Data in Electronic Form. Conversion Protocols are Being/Have Been Written	Survey Data in Paper Form. Must Be Digitized and Computerized	Survey Data in Electronic Form That Can Be Translated Directly in AZSITE
Agency					
A-SNF	X		X	X	
CocNF		X	X	X	
CorNF	X		X	X	
KNP			X	X	
PNF		X	X	X	
TNF		X		X	
ASU			X	X	
ASM	X	X	X	X	
BLM	X		X	X	
NAU					
MNA			X	X	
NPS-WACC			X		X
SHPO			X	X	
DOD	X		X	X	
Ak Chin		X			
Hopi	X		X	X	
Navajo		X		X	
Hualapai		X		X	
GRIC	X		X	X	
SRPMiC					
WM Apache		X	X	X	
SC Apache		X			
TON	X				

Tribal Participation

Because of its history of dispersed databases, Arizona has had to solicit participation through a consensus building process that has not been necessary in states with centralized site files. The AZSITE consortium has had to actively seek cooperation from both federal and tribal land managing authorities. In the case of tribal land managing agencies a lack of awareness of the nature and content of site files and growing concerns about tribal sovereignty combined to raise serious concerns about tribal willingness to participate (see Appendix H). Nine of Arizona’s 20 tribes have actively participated in meetings on site files development. These nine tribes control 97% of all tribal lands in Arizona. Based on several meetings with different tribes, it is possible to summarize tribal concerns as follows:

- ◆ Archaeological site information is confidential; the mere fact that such information is available in databases may make sites more vulnerable to destruction through looting.
- ◆ There is not any difference, for some tribes, between Sites and traditional cultural properties even though, under law, not all sites are eligible to be TCP's as defined under the National Historic Preservation Act and National Register Bulletin 38.
- ◆ Tribal sovereignty requires some form of tribal control over access to archaeological records.
 - ◆ Some tribes have requested that no one see information on lands under their control without their prior permission.
 - ◆ Some tribes are establishing systems through which records will be available only at the tribal office, they are entering into discussions with agencies that hold records on their lands over issues of access control.
 - ◆ Some tribes will permit records to be retained in a centralized file but only certain information will be available without direct tribal permission. This includes generalized location and site description information.

The above concerns notwithstanding, the nine tribes with whom the AZSITE consortium has consulted are interested in some form of participation because there are certain advantages:

- ◆ Participating in AZSITE can relieve tribes of the need to develop their own databases and thereby devote more time to managing the information instead of the computer.
- ◆ AZSITE offers greater data security at two levels. First, all data from the state will be centralized in one location, and a participating tribe will be able to locate records of sites on its lands, even if the sites were recorded with different agencies around the state. Second, the AZSITE server will be backed up on a regular basis to prevent data loss.
- ◆ The ability to monitor database usage will allow a tribe to see who is making requests for information on sites under its control.
- ◆ Use of AZSITE can relieve a repository of some of the flow of traffic through its office as many types of data searches can be done remotely.
- ◆ Determination of data content and quality control will remain with the tribe; the system does not override any tribe's proprietary interest in its own information.
- ◆ An AZSITE connection will provide access to ALRIS (AZ. Land Resource Information System) data from the State Land Department that is not easily accessible in other ways.

- ◆ “Sensitivity maps” may eventually be prepared from AZSITE data that do not themselves reveal the underlying data but indicate what areas are of concern with respect to cultural resource management.
- ◆ Access to the database will allow tribes to monitor sites and survey activities in lands adjacent to tribal lands.

Table 2 details the current level of participation of tribes with whom the consortium has consulted. It is apparent that there will need to be ongoing consultation with tribal archaeologists and land managers concerning the AZSITE database. Two tribes have asked ASM to assist in negotiating a memorandum of agreement between the tribe and ASM as a method of detailing the ground rules for AZSITE participation. Any agreement that ASM (or any other consortium member) enters into concerning records in AZSITE will be reviewed by and agreed upon by other members of the consortium. Such an agreement would not be binding on each institution’s paper records, only such records as it submits electronically to the AZSITE database.

Because each tribe has different computer and record management capabilities, it will be necessary for the consortium to work with each individually to determine its level of interest and ability to participate in AZSITE. A major concern for virtually all the tribes is the lack of in-house hardware, software or computer expertise. For such tribes, successful participation in AZSITE will require a great deal of training. All are interested in some sort of “turn-key” system, which they can then adapt for themselves. It will be necessary to seek separate funding to develop an implementation plan for each tribe that chooses to participate and then assist the tribe in installing and implementing the system.

Table 2. Summary of tribal participation in AZSITE planning process:

Tribe	Current status
Ak Chin Indian Community	Is interested in further discussions on AZSITE, sees the value but not yet ready to commit to participation.
Gila River Indian Community	Is establishing its own electronic database; is interested in database compatibility with AZSITE but has not yet addressed the issue of full participation.
Hopi Tribe	Maintains its own electronic database and submits data to ASM, wants to make certain non-sensitive data available to researchers in the AZSITE database. The tribe has asked to develop a memorandum of agreement concerning tribal participation in AZSITE.
Hualapai Tribe	Has established a Tribal Historic Preservation Office. Sees AZSITE as a useful tool for getting its own site files established. The tribe does not yet know what data it will make available to the database.
Navajo Nation	Has established a Tribal Historic Preservation Office and has a large paper file of sites covering 3 states. Is interested in AZSITE as a database program it can adopt to computerize its records. Currently allows its NM data to be entered into the NM Cultural Resource Information System.
Salt River Pima Maricopa Indian Community	Is interested in further discussions on AZSITE, sees the value but not yet ready to commit to participation.
San Carlos Apache Tribe	The tribe does not want information disseminated to anyone without tribal permission; much of the information collected about tribal lands is in the hands of agencies not under tribal jurisdiction and therefore the information is not under their control. The tribe would like to see some assurance that participation will increase their control over their own information.
Tohono O’odham Nation	Does not have a site file and since all records are on file at ASM are interested in participating in some way still to be defined. Are very concerned about issues of security.
White Mountain Apache Tribe	Has established a Tribal Historic Preservation Office and has approximately half its records in electronic format. Is interested in adopting the AZSITE database but records will not be available except through personal visits to the THPO on the reservation. Is interested in maintaining compatibility with AZSITE and plans to use AZSITE to monitor sites off reservation lands in which it is interested. The tribe has asked to develop a memorandum of agreement concerning tribal participation in AZSITE.

Funding Initiatives

Funding for this project has come from several sources:

1) The National Center for Preservation Technology and Training (NCPTT) planning grant funded many consortium meetings around the state, including the 2-day February, 1997, workshop in Phoenix and the 2-day June, 1997, meeting in Flagstaff NCPTT funding especially facilitated tribal participation in these meetings. NCPTT funding also provided computer consulting for ASM.

2) Arizona Heritage Funds (AHF) administered by Arizona State Parks funded the pilot project undertaken by ASU to develop and test the AZSITE database and explore software options. AHF funds have also provided funds for digitizing survey records at ASM and MNA. AHF funds provided computer equipment to MNA and internet connectivity to ASM.

3) The Office of the Vice President for Research, University of Arizona, provided ASM with a server and the Director, ASM, provided training funds. Data entry computers for ASM have been provided through Site Files and Records Management user fees at ASM.

The information on site records repositories in Arizona has been gathered as part of the planning grant funded by NCPTT. This has already provided sufficient information to submit proposals to other possible funding sources:

1) In May, 1997, the AZSITE consortium submitted a proposal to the Federal Geographic Data Committee, part of the National Spatial Data Infrastructure. The proposal has been accepted for funding and BLM's Arizona State Office will serve as lead agency. The project will provide funds to assist 6 national forests and 7 BLM field offices in incorporating their data into AZSITE, according to the implementation plan, above.

2) In August, 1997, the consortium submitted a proposal to the Arizona Department of Transportation for Intermodal Surface Transportation Enhancement Act (ISTEA) funds. If funded, this project will concentrate on building archaeological spatial and attribute databases for Arizona's state and federal highway corridors.

The AZSITE consortium will assume responsibility for long term management and maintenance of the AZSITE database. Software upgrades and the installation of new hardware will require a systems manager. The constant flow of data will require a data entry manager and data entry personnel to insure the database is updated in a timely and efficient manner. The

personnel and needed software and hardware will be funded in part through a schedule of user fees, as yet to be determined. The consortium will continue to seek outside funding for the management and preservation of cultural resources to supplement the fee program.

Conclusion

Since the formation of the AZSITE consortium in 1995, the foundation for a statewide centralized prehistoric and historic database has been firmly laid. Records are being converted into a standardized electronic form and will soon be incorporated into a centralized database. In the coming months, the database will be implemented to expedite site and survey searches. Continued progress will eventually make the database available via remote access terminals.

It is through not just the efforts of the consortium, but the cooperation of all concerned agencies that the database has made remarkable strides toward reality. None of these steps forward could have been taken without the funding provided by NCPTT and the consortium thanks the center. Further inter-agency cooperation and outside finding will allow the database to function and serve as a tool for the protection and preservation of the cultural heritage of the State of Arizona.

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APPENDIX A

LAND MANAGER DATA STATUS SURVEY

Managing Agency Amerind Foundation Contact Amy Salvato
Number of Site Records 560 Number of Project Records 0
What Form are the Site Records In Paper PC Yes
What Number System is Used State/ASM Digitizer No
Records at ASM,SHPO,MNA 0 Number of Times Records Searched 10
Notes Windows, can log on to internet
Very few site file inquires
Not sure how many project records they have
Doubt many if any sites have been submitted to ASM/SHPO/MNA sent some in, but they were returned for an unknown reason

Managing Agency Apache-Sitgreaves Contact Linda Martin
Number of Site Records 6000 Number of Project Records 1800
What Form are the Site Records In Both Electronic & Paper PC Yes
What Number System is Used NS/ASM/MNA Digitizer No
Records at ASM,SHPO,MNA 1500 Number of Times Records Searched 20
Notes Unix, Oracle Wants to get compatible with new AZSITE
Is supportive of the AZSITE database

Managing Agency Arizona State Museum Contact Beth Grindell
Number of Site Records 20000 Number of Project Records 5000
What Form are the Site Records In Both Electronic & Paper PC Yes
What Number System is Used ASM Digitizer Yes
Records at ASM,SHPO,MNA 20000 Number of Times Records Searched 1200
Notes Server Node

Managing Agency Arizona State University Contact Peter McCartney
Number of Site Records 4500 Number of Project Records 3000
What Form are the Site Records In Both Electronic & Paper PC Yes
What Number System is Used ASU/ASM Digitizer Yes
Records at ASM,SHPO,MNA 0 Number of Times Records Searched ?
Notes Server Node

Managing Agency BLM AZ Strip Contact Diane Hawks
Number of Site Records 4000 Number of Project Records 1000
What Form are the Site Records In Paper PC Yes
What Number System is Used BLM/ASM Digitizer Yes
Records at ASM,SHPO,MNA 180 Number of Times Records Searched 12
Notes ArcInfo/ArcView
Some projects digitized

Managing Agency BLM Havasu Contact Aline LaForge
Number of Site Records 700 Number of Project Records 500
What Form are the Site Records In Paper PC Yes
What Number System is Used ASM/BLM+ Digitizer Yes
Records at ASM,SBPO,MNA 400 Number of Times Records Searched 150
Notes DOS/UNIX
60% at ASM (numbers to follow)
Probable duplication w/BLM Phoenix

Managing Agency BLM Kingman Contact Don Simonis
Number of Site Records 500 Number of Project Records 500
What Form are the Site Records In Both Electronic & Paper PC No
What Number System is Used ASM4- Digitizer No
Records at ASM,SHPO,MNA 240 Number of Times Records Searched 8
Notes

Managing Agency BLM Phoenix Contact Cheryl Blanchard
Number of Site Records Number of Project Records ?
What Form are the Site Records In Both Electronic & Paper PC Yes
What Number System is Used ASM/BLM Digitizer No
Records at ASM,SHPO,MNA ? Number of Times Records Searched 300
Notes Lots of Sites & projects .Numbers to come

Managing Agency BLM Safford Contact Gay Kinkade
Number of Site Records 1500 Number of Project Records 500
What Form are the Site Records In Both Electronic & Paper PC Yes
What Number System is Used ASM+ Digitizer Yes
Records at ASM,SHPO,MNA 750 Number of Times Records Searched 6
Notes

Managing Agency BLM State Office Contact Gary Stumpf
Number of Site Records Number of Project Records ?
What Form are the Site Records In Both electronic & Paper PC Yes
What Number System is Used ASM/BLM Digitizer Yes
Records at ASM,SHPO,MNA 0? Number of Times Records Searched ?
Notes Records submitted to ASM since 1992
Some information unavailable

Managing Agency BLM Tucson Contact Max Watkind
Number of Site Records 500 Number of Project Records ?
What Form are the Site Records In Both Electronic & Paper PC Yes
What Number System is Used ASM+ Digitizer Yes
Records at ASM,SHPO,MNA 500 Number of Times Records Searched 12
Notes 6 file cabinets, disks from phoenix office 75% Win95, digi in mail
needs someone to do the work

Managing Agency BLM Yuma Contact Boma Johnson
Number of Site Records 2500 Number of Project Records 540
What Form are the Site Records In Paper PC Yes,
What Number System is Used >1985-ASM Digitizer Yes
Records at ASM,SHPO,MNA 800 Number of Times Records Searched 20
Notes

Managing Agency Cochise College Contact Amy Campbell
Number of Site Records ? Number of Project Records ?
What Form are the Site Records In Paper PC No
What Number System is Used ASM+ Digitizer No
Records at ASM,SHPO,MNA ? Number of Times Records Searched 5
Notes Boxes of Records uncountable Wants to buy equipment .what do I need.

Managing Agency Coconino NF Contact Peter Pillis
Number of Site Records 8500 Number of Project Records 0
What Form are the Site Records In Paper PC Yes
What Number System is Used FS/ASM Digitizer Yes
Records at ASM,SHPO,MNA 4200 Number of Times Records Searched 300
Notes Data general CRAIS; will be getting update w/Access (?)

Managing Agency Coronado NF Contact Jim McDonald
Number of Site Records 1820 Number of Project Records 2300
What Form are the Site Records In Both Electronic & Paper PC Yes
What Number System is Used FS/ASM Digitizer Yes
Records at ASM,SHPO,MNA 600 Number of Times Records Searched 3
Notes atamax site num, data general, CRAIS; will be in access, oracle; san rafael valley

Managing Agency Gila River Indian Community Contact John Ravesloot
Number of Site Records 600 Number of Project Records 0
What Form are the Site Records In Paper PC No
What Number System is Used GR (temp)/ASM Digitizer No
Records at ASM,SHPO,MNA 180 Number of Times Records Searched 10
Notes Does not let O/S contractors into sites; not opposed to integrating records into AZSITE
Not sure of Project Number counts

Managing Agency Grand Canyon NP Contact Janet Balsom
Number of Site Records 0 Number of Project Records 0
What Form are the Site Records In ? PC Yes
What Number System is Used ? Digitizer
Records at ASM,SIPO,MNA 0 Number of Times Records Searched 0
Notes Data to Come

Managing Agency Hopi Tribe Contact Cindy Dongoski
Number of Site Records 1800 Number of Project Records 500
What Form are the Site Records In Both Electronic & Paper PC Yes
What Number System is Used ASM/MNA Digitizer No
Records at ASM,SHPO,MNA 1800 Number of Times Records Searched 5
Notes Pentium2000, CD Rom, Borland dBase Win

Managing Agency Kaibab NF Contact Neil Weintraub
Number of Site Records 6000 Number of Project Records 2000
What Form are the Site Records In Electronic PC Yes
What Number System is Used FS/AZSITE Digitizer Yes
Records at ASM,SHPO,MNA 5500 Number of Times Records Searched 20
Notes Sites up to 95 included in AZSITE pilot

Managing Agency Museum of Northern Arizona Contact Noland Wiggins
 Number of Site Records 25800 Number of Project Records 2000
 What Form are the Site Records In Both Electronic & Paper PC Yes
 What Number System is Used MNA+ Digitizer Yes
 Records at ASM,SHPO,MNA 25800 Number of Times Records Searched 200
 Notes Argus (?) Records will be integrated with AZSITE soon

Managing Agency National Park Service, Tucson Contact
 Number of Site Records 0 Number of Project Records 0
 What Form are the Site Records In ? PC
 What Number System is Used Digitizer
 Records at ASM,SHPO,MNA 0 Number of Times Records Searched 0
 Notes No Data Available

Managing Agency National Park Service, Sante Fe Contact Bob Powers
 Number of Site Records 0 Number of Project Records 0
 What Form are the Site Records In ? PC
 What Number System is Used Digitizer
 Records at ASM,SHPO,MNA 0 Number of Times Records Searched 0
 Notes No Data Available

Managing Agency Navajo Nation Contact Nina Swidler
 Number of Site Records 500 Number of Project Records 0
 What Form are the Site Records in Paper PC Yes
 What Number System is Used Navajo Digitizer No
 Records at ASM,SHPO,MNA 0 Number of Times Records Searched 0
 Notes No electronic capabilities

Managing Agency Prescott NF Contact Jim McKie
 Number of Site Records 1900 Number of Project Records 1600
 What Form are the Site Records In Both Electronic & Paper PC Yes
 What Number System is Used FS Regional #3 Digitizer Yes
 Records at ASM,SHPO,MNA 0 Number of Times Records Searched 15
 Notes CRAIS Will be included in AZSITE soon

Managing Agency Pueblo Grande Museum Contact Todd Bostwick
Number of Site Records 0 Number of Project Records 0
What Form are the Site Records In PC
What Number System is Used Digitizer
Records at ASM,SHPO,MNA 0 Number of Times Records Searched 0
Notes No Data Available

Managing Agency Salt River-Pima-Maricopa IC Contact Laurene Montero
Number of Site Records 0 Number of Project Records 0
What Form are the Site Records In PC
What Number System is Used Digitizer
Records at ASM,SHPO,MNA 0 Number of Times Records Searched 0
Notes No Data Available

Managing Agency San Carlos Apache Contact Chad Smith
Number of Site Records 200 Number of Project Records 0
What Form are the Site Records In Electronic PC Yes
What Number System is Used ASM+ Digitizer No
Records at ASM,SHPO,MNA 200 Number of Times Records Searched 200
Notes Paradox, ArcInfo Accession of records primarily by internal personnel

Managing Agency SHPO Contact Carol Heathington
Number of Site Records 19000 Number of Project Records 2024
What Form are the Site Records In Both Electronic & Paper PC Yes
What Number System is Used ASM+ Digitizer Yes
Records at ASM,SHPO,MNA 19000 Number of Times Records Searched 400
Notes Access/ArcInfo .recently acquired

Managing Agency Tonto NF Contact Scott Wood
Number of Site Records 8000 Number of Project Records 0
What Form are the Site Records In Paper PC Yes
What Number System is Used NF/ASU/ASM Digitizer
Records at ASM,SHPO,MNA 0 Number of Times Records Searched 0
Notes

Managing Agency White Mountain Apache Tribe Contact John Welch
 Number of Site Records 2000 Number of Project Records 350
 What Form are the Site Records In Both Electronic & Paper PC Yes
 What Number System is Used FAIR Site Digitizer Yes
 Records at ASM,SHPO,MNA 500 Number of Times Records Searched 30
 Notes SunMicro Systems; ArcInfo; Paradox 300 sites Electronic form

Managing Agency Totals Contact
 Number of Site Records nisoo Number of Project Records 22714
 What Form are the Site Records In Various PC
 What Number System is Used Digitizer
 Records at ASM,SHPO, MNA 82770 Numberof Times Records Searched 2926
 Notes: Totals are approximate. Some agencies were unable to respond.

APPENDIX B

AZSITE NEWSLETTER

AZSITE NEWS

March 20, 1997

Dear Colleague:

As many of you know, over one hundred people concerned with Arizona archaeology turned out for the AZSITE conference in Phoenix on February 20 and 21. Thanks to all of you who participated and helped to make it a useful and informative exercise.

The purpose of the workshop was to discuss the plans developed by the AZSITE Consortium for a centralized, statewide archaeological site and survey database. Activities included a look at the pilot project developed at the Archaeological Research Institute, ASU, and discussions of data access, security and plans for long-term management and funding of the system.

This mailing includes the results of the workshop and information on further activities. We will publish these periodically, as budget allows, to bring you up-to-date on current events in the AZSITE project. We will also send items to the AAC Newsletter and post updates to the Southwest Archaeology list.

Comments or questions ? See attached for how to contact us.

Sincerely,

Beth Grindell
Arizona State Museum

AZSITE

a collaborative project of:
Archaeological Research Institute, Arizona State University
Arizona State Museum, The University of Arizona
Museum of Northern Arizona
State Historic Preservation Office

with funding from the National Center for Preservation Technology and Training (NPS) and

Workshop Results

In general, the system was carefully critiqued but well-received. Most participants felt that a state-wide system is long overdue and that while we are doing it, we should get it right! Consortium members came away from the workshop believing that we are on the right road, however long the road may be. It was clear that further discussions will be needed to insure that all land managing agencies can participate without simply adding more work to their current workloads. Funding will also be an important issue.

We Need Additional Feedback

The consortium is planning to establish working groups to deal with specific issues attached to implementing AZSITE. These working groups will include non-consortium members. The consortium meets every 4 to 6 weeks, usually in Tempe. If you would like to attend a meeting to express a particular concern, please contact Beth Grindell to get the meeting date and address.

Attached to this letter is a small survey seeking a bit more information. Please take a minute to complete it and send it back to Rick Karl at ASM. If it's easier, give him a call and talk!

How You Can Get Information

In addition to this letter, or attending a consortium meeting if you like, AZSITE has a web site. We will post updates on current activities there as well as general information on the project. Check it out at:

<http://archaeology.la.asu.edu/azsite>

Or contact:

Beth Grindell or Rick Karl
grindell@u.arizona.edu or karlr@u.arizona.edu
phone: 520-621-1271
FAX: 520-621-2976

Arizona State Museum
The University of Arizona
P.O. Box 210026
Tucson, Arizona 85721-0026

AZSITE NEWS

May 21, 1997

Database Update

Since the unveiling of the AZSITE pilot project at February's workshop, the consortium has been working toward incorporating other agencies' records into the database.

The last consortium meeting was held April 30 at Archaeological Research Institute in Tempe, Arizona. The focus of the meeting was the preparation and submission of a grant proposal to the Federal Geographic Data Committee. This proposal requested funds to incorporate spatial data for sites and surveys on federal lands within the State of Arizona into

Upcoming Meetings

The next AZSITE Consortium meeting will be held at Pearson Hall, Museum of Northern Arizona in Flagstaff, Arizona, on June 18 and 19 at 10am.

The June 18 meeting will include representatives of the six national forests. The June 19 meeting was established in collaboration with the cultural resource staff at Hopi, Hualapai and Navajo.

If you are interested in attending any of the AZSITE consortium meetings, call Beth Grindell.

Survey Results

The results of the survey provided the consortium with information concerning the preparation of records for incorporation into the AZSITE information system. There are approximately 136,000 site records held at 29 different records repositories. Approximately 40% of these are duplicate records. These records are searched nearly 3000 times a year. Private contractors on an average searched 4 different land managing agency's during a record search.

Only 50% of records held at land managing agencies were in some kind of electronic form. The remaining records' status ranged from file boxes of 5x8 cards to paper files in cardboard boxes stacked in a closet. Most agencies have, or will soon have, access to a PC and the internet.

Beth Grindell
grindell@u.arizona.edu
phone: 520 621 1271
FAX: 520 621 2976

Rick Karl
karlr@u.arizona.edu

AZSITE

A collaborative project of:
Archaeological Research Institute, Arizona State University
Arizona State Museum, The University of Arizona
Museum of Northern Arizona
State Historic Preservation Office

With funding from the National Center for Preservation Technology and Training (NPS) and the Arizona Heritage Fund, administered by Arizona State Parks

APPENDIX C

FEBRUARY WORKSHOP PARTICIPANTS

Bruce	Donaldson	Apache-Sitgreaves National Forests
Barbara	Macnider	Archaeological Consulting Services, Inc
Fred	Oglesby	Archaeological Consulting Services, Inc.
Serelle	Laine	Archaeological Research Services, Inc.
Robert	Gasser	Arizona Department of Transportation
Owen	Lindauer	Arizona Department of Transportation
Kenneth C.	Rozen	Arizona State Land Department
Chuck	Adams	Arizona State Museum
Beth	Grindell	Arizona State Museum
Rick	Karl	Arizona State Museum
Karen	Lominac	Arizona State Museum
Sharon	Urban	Arizona State Museum
Renee'	Buhe	Arizona State Parks
Cathy	Johnson	Arizona State Parks
Brad	McNeil	Arizona State Parks
Michael	Barton	Arizona State University
Sylvia	Gaines	Arizona State University
Warren	Gaines	Arizona State University
Peter	McCartney	Arizona State University
Robert	Rowe	Aztlan Archaeology, Inc.
Mark	Sullivan	Aztlan Archaeology, Inc.
Jack	Johnson	BLM Arizona State Office
Gary	Stumpf	BLM Arizona State Office
Diana	Hawks	BLM AZ Strip Field Office
Aline	LaForge	BLM Havasu Field Office
Don	Simonis	BLM Kingman Field Office
Cheryl	Blanchard	BLM Phoenix Field Office
Bill	Gibson	BLM Phoenix Field Office
Jane	Pike Childress	BLM Phoenix Field Office
Connie	Stone	BLM Phoenix Field Office
Gay	Kinkade	BLM Safford Field Office
Boma	Johnson	BLM Yuma Field Office
Diana	Christensen	BLM AZ Strip Field Office
John	Czaplicki	BOR Phoenix Field Office
Marlene	Tuesink	City of Scottsdale
Peter J.	Pilles, Jr.	Coconino National Forest
Betty	Cornelius	Colorado Indian Tribes
Weldon	Johnson	Colorado Indian Tribes
A. E.	Rogge	Dames & Moore
Kristopher	Shepard	Dames & Moore
Catherine	Gillman	Desert Archaeology, Inc.
Mark	Heimer	El Paso Energy
Jim	Holmlund	GEO-MAP
Michael	Foster	Gila River Indian community
Nancy	Andrews	Grand Canyon Archaeology Project
T. J.	Ferguson	Heritage Management Consultants
Cindy	Dongoske	Hopi Cultural Preservation Office
Monza	Honga	Hualapai Tribe
Jupiter	Martinez	INAH Sonora, MX
Elisa	Villalpando	INAH Sonora, MX
John	Hanson	Kaibab National Forest

Neil	Weintraub	Kailbab National Forest
Deborah	Dosh	Kinlani Archaeology, Ltd
Steve	Daron	Lake Mead National Recreation Area
Adrienne	Rankin	Luke Air Force Base
Brian	Kenny	Maricopa County DOT
Larry	Wolfson	Maricopa County DOT
Sandy	Walchuk	Maricopa County Recreation Services Dept.
Jerry	Howard	Mesa Southwest Museum
Tracy	Murphy	Museum of Northern Arizona
David	Wilcox	Museum of Northern Arizona
Rolf	Nabahe	Navajo Nation Historical Preservation Dept
Mary	Carroll	NCPU
Kathleen	Henderson	Northland Research, Inc.
Johna	Hutira	Northland Research, Inc.
Tim	Seaman	Office of Cultural Affairs, New Mexico
Glen	Rice	Office of Cultural Resource Management/ASU
Brenda L.	Shears	Office of Cultural Resource Management/ASU
James M.	McKie	Prescott National Forest
Elaine	Zamora	Prescott National Forest
Doug	Mende	PSOMAS
K. J.	Schroeder	Roadrunner Archaeology
Ronald	Chiago	Salt River Indian Community
Laurene	Montero	Salt River Indian Community
Linda	Countryman	Salt River Project
Chad	Smith	San Carlos Apache Tribe
Melissa	Schroeder	Science Center
John	Giacobbe	SFC Engineering Co.
Coty	Breternitz	Soil Systems, Inc.
Chris	Robinson	Soil Systems, Inc.
Mary	Estes	State Historic Preservation Office
James	Garrison	State Historic Preservation Office
Christy E.	Garza	State Historic Preservation Office
Carol	Griffith	State Historic Preservation Office
Carol	Heathington	State Historic Preservation Office
Ann V.	Howard	State Historic Preservation Office
Joanne	Miller	State Historic Preservation Office
Chuck	Riggs	Statistical Research
Tom	Euler	SWCA, Inc.
Amy	Salvato	The Amerind Foundation, Inc.
Austin	Lenhart	Tierra Archaeology
Chaz	Tompkins	Tierra Archaeology
Daniel L.	Preston	Tohono O'odham Nation
Gloria	Mortana	Tohono O'odham Nation
Marco	Rivera	Tohono O'odham Nation
Kenneth	Williams	Tohono O'odham Nation
Fernando	Valentine	Tohono O'odham Nation
John	Reno	Tohono O'odham Nation
Joseph	Joaquin	Tohono O'odham Nation
Manuel	Osequeda, Jr.	Tohono O'odham Nation
Greg	Saxe	Tohono O'odham Nation
Michael	Sullivan	Tonto National Forest
J. Scott	Wood	Tonto National Forest
Tom	Lincoln	USD1 Bureau of Reclamation
Trinkle	Jones	Western Archeological and Conservation Center
John R.	Welch	White Mountain Apache Heritage program
Mark	Ziem	Yavapai County Public Works

APPENDIX D

EXPANDED AGENDA

AZSITE CONSORTIUM WORKSHOP

Agenda Background

February 20 and 21, 1997
BLM National Training Center
Phoenix, Arizona

Thursday, February 20, 1997

1. Welcome and Meeting Overview

Fish, Curator of Archaeology, Arizona State Museum, will welcome the participants. W. Garrison, State Historic Preservation Officer, will recount the history of the AZSITE consortium and describe the goals of the project.

Wilcox, Sr. Research Archaeologist, Museum of Northern Arizona, will discuss the criteria used to establish the database.

Timothy J. Seaman, Program Manager, Archaeological Records Management Section, New Mexico Office of Cultural Affairs, will discuss collaborative inter-state efforts on centralized files.

Beth Grindell, Arizona State Museum, will review meeting process and schedule.

2. Database content, data queries and data entry (Peter McCartney, ASU)

Thursday morning sessions will be devoted to a discussion of structure, content and use of the AZSITE database.

The content of the proposed AZSITE database has been designed to serve as an inventory of known archaeological sites (historic and pre-historic) to facilitate Class 1 surveys for Arizona archaeology. Secondly, it will serve as a starting point for other types of research projects.

To accomplish these goals, the database contains selected locational, management and archaeological information. Most of the information is contained in tabular form in a database using ACCESS-style query and data entry applications. Spatial data related to locational information are incorporated into graphic files that can be accessed through a GIS application like ArcView or MapInfo.

The pilot project being viewed today contains records from several agencies' files. The final project will contain the complete databases of, at least, ASU, ASM, the SHPO and MNA. A couple of land managing agencies have already expressed interest in participating in the database. We will work with other data repositories or land managing agencies that wish to have their data incorporated into this file.

Most new information coming into the system will be provided by primary users (land managers, archaeological contract firms), some will be provided through GIS themes provided by the State Land Department's Arizona Land Resource Information System (ALRIS). The latter includes themes such as township/range, county boundaries, ownership information, geology and vegetation. In small group discussions, participants will be asked to address the following questions:

To discuss during small group sessions Thursday afternoon (see note on page 3):

1. Define the extent of participation you see for your agency/institution/firm: as data contributor or data user or both.
2. Do you have experience with remote access databases in other states? What do you like or dislike about such systems and what states should we look at as models?
3. What factors would preclude your agency from participating in this database? Include consideration of database content and your agency's/institution's electronic abilities.
4. What would you see as the preferred method of data contribution? A stand-alone PC based program available (at cost) to users, an internet based program or a remote access login?
5. What agency's or institution's data would you like to see included in this database?

Friday morning, February 21, 1997

3. Access to system and security

As with many other historical endeavors, the reconstruction of past lifeways and cultures has always relied on the open exchange of information in archaeology and history. Only in this way can ideas be evaluated and accepted, revised or discarded.

Electronic database systems and the internet can make lots of information available very quickly. However, control of the information both to insure its integrity and to insure that it does not become available to unauthorized users becomes critically important. The federal Freedom of Information Act and state precedent provide legal protection to agencies refusing to release protected site information except for bonafide scientific or management purposes.

Electronic databases can be restricted to authorized users; certain portions of the file can be made available to interested members of the public without compromising the integrity of the archaeological record. Authorized users with access to restricted information can be defined as 1) permittees of state and federal agencies engaged in CRM archaeology; 2) researchers associated with recognized research institutions and who have provided a written rationale for need to precise locational data. Public users, which may include many academic researchers, may see a portion of the database that contains information on site age, cultural affiliation and function but which provides only general locational information (e.g., to the township or 7.5' USGS map).

There will be brief discussions of FOIA issues at the state and federal levels, an overview of access and security in New Mexico and a brief review of practices by AZSITE consortium members. In small group discussions, participants will be asked to address the following questions:

To discuss during small group sessions Friday morning (see note on page 3):

1. What are appropriate security concerns?
2. What security policies and procedures does your agency/institution currently have in place?
3. Are you familiar with data sharing agreements in other states? Provide details, assess their value.
4. What are your recommendations for file security in Arizona?
5. Are there issues that have not been raised that you consider important?

Friday afternoon, February 21, 1997

4. Long-term management and funding of the system

The AZSITE consortium was formed through the implementation of a Memorandum of Agreement in 1995, signed by ASM, ASU, MNA and the SHPO. ASLD and ADOT were invited to join the consortium as it developed the pilot project. The pilot project has been funded by Arizona Heritage Fund, administered through Arizona State Parks/State Historic Preservation Office; the Office of the Vice President for Research, UA, and the National Center for Preservation Technology and Training (National Park Service). Given the current budget outlook at both state and federal levels, no one agency will be able to fund the implementation and long-term management of the system. Even assuming that funding is found for putting the system in place, long-term management will necessitate some sort of fee-for-service or annual subscription charge. In small group discussions, participants will be asked to address the following questions:

To discuss during small group sessions Friday afternoon (see note on page 3):

1. What is an appropriate structure for managing and making future decisions about the system?
2. Who should be charged for access to the system?
3. What fee structures are you familiar with in other states? What do you like or dislike about them?
4. What issues have not been raised that you consider important?

Note:

There will be 3 opportunities for discussion of issues in small groups. The small groups will then reassemble so that we can share viewpoints. We have divided participants into 5 small groups based on perceived shared interests. During small group discussion, the following should happen:

1. Each group has been assigned a discussion facilitator and a note taker.
2. Review and discuss the questions listed for each session. The notetaker should list salient points discussed. Note all consensus of opinion but do not feel that you need to reach consensus. If the group has split opinions on a topic, the notetaker should make an effort to record that. Make a note of issues you did not discuss but that you felt were important. Also note issues that were not raised in the public presentations but which you feel are important.
3. Select a spokesperson for your group. This person will summarize the group's findings to the larger group when we re-assemble.

APPENDIX E

SUMMARY OF FEBRUARY AZSITE WORKSHOP

The following is a summation of the session's presentations, a list of the questions posed to the small discussion groups, a summation of their concerns and questions and a response (in italics) by the consortium to these concerns and questions.

THURSDAY PM - The Database

Thursday afternoon's presentation discussed data entry and querying the database. Peter McCartney explained how information could be gathered and retrieved via standard computer hardware and inexpensive software. His presentation included an afternoon session of demonstrating the pilot test program with hands on application by the attendees with the assistance of students from Arizona State University. The pilot involved the use of the Internet as an access point for data entry and querying using Microsoft Access and ArcInfo as the primary engines. A test AZSITE homepage was viewed and participants could actively search a limited mock database. No specific locational data was made available to the workshop participants during this pilot demonstration. The data available was generic and was provided only as a means of demonstrating the potential of the AZSITE Database. Upon completion of the workshop, the access to the homepage and its data were restricted.

The questions posed to the five individual groups regarding data entry and querying were as follows:

- 1) Define the extent of participation you see for your agency/institution/firm: as data contributor or data user or both.
- 2) Do you have experience with remote access databases in other states? What do you like or dislike about such systems and what states should we look at as models?
- 3) What factors would preclude your agency from participating in this database? Include consideration of database content and your agency's/institution's electronic abilities.
- 4) What would you see as the preferred method of data contribution? A stand-alone PC based program available (at cost) to users, an internet based program or a remote access login.
- 5) What agency's or institution's data would you like to see included in this database?

Group 1 (Tribes): Facilitator - Carol Griffith; Recorder Brenda Shears; Spokes-person - John Welch

Within this group there appears to have been three main topics of concern. The first was the security of the database itself. They saw potential benefit from the consolidated system, but

feared the locational and cultural information would be too easily accessed by the general public through the Internet. The security of the system must be resolved before contribution of data by any of the tribes present would be considered. The suggestion was made that permission from the tribe affiliated with the potentially impacted site and survey area be granted prior to any information being disseminated. There was the possibility that the some tribes would never be interested in contributing to the central system, but some could see advantages in it's use.

Their second point revolved around the possible benefit of the centralized system in relation to maintaining better control over the sites. With site location known and this locational information readily available to and controlled by the tribes, better preservation could be possible. The San Carlos Apache who supply information to local ranches to keep track of site activities and the Hopi, who use GIS to track the extent of site looting, cited examples of this use. The computerized database system could be used as a productive cultural resource management tool, but the need for greater tribal participation in the planning stages of AZSITE was necessary.

Third, and of primary concern with Group 1, was what they viewed as a total lack of communication between the AZSITE consortium and the tribal council members. Most felt the Database had progressed much too far without consulting the tribes for their input. When the pilot program displayed known sites that appeared within tribal lands, concern that this information was already available prompted tribal representatives to question why they were not contacted prior to the pilot program being implemented. The tribal representatives felt more communication channels between the consortium and the tribes should have been opened prior to the workshop and requested a copy of the MOA.

The pilot program as it was demonstrated at the workshop is, in fact, the very first step in developing the proposed system. No intentional attempt to exclude any specific group was made. Prior to this workshop, there was very little to display or to gather input about. What has been developed is the hardware and technical mechanics of establishing a centralized system. What will be displayed and how it will be accessed will be decided by cooperative input from all parties concerned.

The pilot demonstration did not reveal any locational or culturally sensitive data to anyone. The pilot program displayed on the Internet was a bare minimum of information designed to demonstrate the potential capabilities of the AZSITE Database. What little information there was on the Internet required password access.

Group 2 (contract firms): Facilitator - Carol Heathington; Recorder - Tracy Murphy; Spokes-persons - Catherine Gilman and Chaz Tompkins

Seeing themselves as both contributors and users, they expressed concerns over how the data would be entered what fields would be available and the accuracy and completeness of the data within the database. The database would need to be able to serve their section 106 class 1 survey requirements completely. The addition of data fields such as site testing/excavation information and acreage surveyed would be needed to fulfill the private contractors' needs. If the database would not meet these requirements and a physical paper search was still necessary, the system would be of no use and they would neither support nor use it. In addition, some desired an electronic version of the reports be made available and they referenced the planned Consortium of Arizona Museum Libraries and Archives (CAZMAL) project as a possible method. There was also concern as to the site numbering system: would they be able to retain their own system or must all sites be converted to the new AZSITE system.

Further restricting their participation in the system would be the fee structure. If they were to be charged by the site or survey as they contributed, most felt they would be less likely to utilize the system. The granting of a fee waiver for those contributors who submitted complete and accurate electronic data would be an incentive to use the system. Another concern regarding cost was the equipment required to make use of the system and its upkeep (i.e. system upgrades, database manager).

The accuracy of the data within the system, specifically the legacy data, concerned most potential users, as well as the accuracy with which new data was entered. The group as a whole agreed on the Internet as the most accessible method of data entry and for querying the system Security, although of concern, did not seem an insurmountable problem.

One of the primary functions of the AZSITE Database will be to eliminate most if not all of the paper research currently required for 106 compliance. The database, with your help, will contain all required information to meet this compliance. One of the reasons for this workshop is to find out what data fields agencies and land managers need recorded within the database.

The database will assign sequential site numbers as the sites are enter. The first site entered is designated AZ1, followed by AZ2. This is to facilitate data entry. Your agency numbers, as well as previously assigned ASM, MNA, BLM, etc. site numbers, will be cross referenced within the system and all sites can be queried via any of these numbers.

Group 3 (USFS and DOD): Facilitator - Ann Howard; Recorder - Christy Garza Spokes-person - Bruce Donaldson

The consensus was that the system could be of benefit as a management tool. Most (Forest Services) had their own system and expressed hesitation in switching to new system except in areas of overlapping land control. Department of Defense representatives however, felt the new database system would be better than what they had. Generally, most agreed they could contribute to the system, but would not pay to do so. Since they already have their own database system, they saw no need to use the AZSITE Database except in these areas of overlapping land control, but felt their agencies were under-funded and unable to pay for using a system that would be of limited benefit to them. Some would consider paying if AZSITE undertook the responsibilities of caring for basic Forest needs so they didn't have to fund a staff position to do so.

There was concern with the accessibility of the system based on experience with AZSITE's current system. The Forest Service representatives felt the consortium members had crossed a line in attempting to exercise managerial control over lands that were not under their control. All agreed that making the data accessible over the internet would be wrong and just asking for security problems.

The consortium is not trying to control your lands The function of the AZSITE Database is to create a cohesive system that will facilitate research and 106 compliance.

Group 4 (state/municipal agencies, private museums): Facilitator - Carol Griffith; Recorder - Sharon Urban; Spokes-Person - David Wilcox.

This group saw many benefits to the presented system and felt they could both contribute and use the proposed system effectively. They felt the data would be more accurate, allow for

more efficient planning and compliance with 106, decrease costs related to and time spent doing survey research, and the prospect of obtaining standardization in report forms was attractive. The accessibility of the database through the Internet appealed to most, but some wanted the freedom to submit data via disks if hardware or software were unavailable.

In addition to the presented data fields, it was suggested that survey areas, land ownership, paleontology of the site and a record of any previous research (i.e. testing, excavation, surveys) be considered.

Possible drawbacks to the system included the need for an adequate security system and to establish a hierarchical level of access to the system. A filtering system allowing access to a specific level of information without the authorization of the land managers was suggested.

The accuracy and the availability of the legacy data and how it could be “cleaned up” and included into the database was questioned. They wanted to know who would be responsible for data entry of legacy data and who would pay for its entry.

Data entry into the AZSITE Database can be accomplished in one of three ways: direct access through the internet; submitting data via 3.5 diskette; by paper forms and reports as currently being done.

It is the intention of the AZSITE consortium to provide as accurate data as possible. Currently, all information is screened for errors prior to its entry into the database. Data entry personnel are then required to periodically proof read the data they enter to insure no typographical errors were made.

Group 5 (BLM and NPS): Facilitator Carol Heathington; Recorder Rick Karl; Spokesperson - Gary Stumpf

Most appeared ready, willing and able to both contribute data and to rely on it for research and class 1 106-compliance survey searches. BLM noted they had been contributing to for some time and no longer maintained their own database. Concerning them was the accuracy of the data and its availability. With the accuracy of the system would come confidence in the system and the desire to use and contribute more. They wished to see “a truly user friendly system” and the removal of any redundant data entry on their part. The system should be able to receive the data on a standardized form and generate the necessary site cards, project forms and all required documents to satisfy a class 1 survey. Once data had been submitted electronically to the database, they wished to regain control over its dissemination.

In addition to the proposed data fields, fields such as environmental data and any data required by their specific land managing agency would be necessary to fulfill their needs. This could be handled with a “remarks” field provided this field could be sensitive to keyword queries.

They would like to see all agencies holding data (i.e. USFS, Tribes, Museums, state agencies) at least contribute their data to the system so it is available if needed by user agencies

Summary of Thursday PM Session

Most agree the Internet would be the method of choice for data entry and queries, but only if the system was secured from the general public and that all necessary data to complete their required research was available. Additional fields to those presented would be required to satisfy this concern. The data entered into the system must be clean and as accurate as possible to

Concern was expressed that by putting the information on the Internet it would be too readily available to anyone with Internet access. They would like to see restricted access to locational and cultural information by creating levels of access. There is concern that the TCPs and all tribal cultural information would be made public. They suggest displaying a presence or absence “red flag” indicator notifying the researcher that a site is located within their research boundaries and that they must contact the tribal office for further information prior to the implementation of any research in the area. The tribes want to control their own data.

There was general agreement that the Inter-Tribal Council Cultural Resource Working Groups needed to be consulted and presented with information on the proposed AZSITE Database system for their input. Additionally, each tribe will have specific requirements and should be addressed individually.

Safeguards restricting access to the AZSITE Database will be instituted prior to the database being accessible over the internet. Merely by being on the Internet does not mean the data is open to the public. The AZSITE Consortium views the new system as a way to maintain better control of the data and who is gaining access to it, thus creating a higher degree of security surrounding the data.

Group 2: Facilitator Karen Lominac; Recorder - Tracy Murphy; Spokes-person - Karen Lominac

They recognized the vulnerability of the Internet and electronic data in general, but were also aware that security could be implemented to confidently contain the data and restrict its access to only those authorized. What they suggested was a firm and well-defined set of guidelines and restrictions regarding the use of the database. A clear policy of how the system can be used, as well as who can use the system must be established and adhered to. Users of the system should be fully informed of their responsibilities regarding the use and dissemination of the data. They further suggested that differing levels of access would be a favorable method of controlling access to data and that the land managers could exert some control over who is allowed access to what data within the system.

With the advent of the AZSITE Database will come the necessity of establishing a comprehensive standard operating procedure that must be adhered to by all users of the database.

Group 3: Facilitator Tom Lincoln; Recorder Christy Garza Spokes-person Peter Pilles

Security problems were not considered insurmountable. Although concerned with security, they recognized that access over the Internet can be restricted and that the probability of anyone intentionally “hacking” their way into the system was minimal. Of more concern to this group, was who controlled access to the data. They want to see more agency involvement and control over who gained access to data regarding sites within their domain. They want it made clear who owns the data and that FOIA allows them to control who receives access to this data. It was noted that MNA and DOD consider data gathered by them as their property and thus feel they should have a say in who views it.

further confidence and support for the system. The legacy data would be the biggest challenge in satisfying this.

The main concerns of the small group discussion regarding data entry and querying methods were:

- 1) The general consensus was that internet would be the best choice provided adequate security was established. However, tribal participants were very concerned about unwarranted public access to the data via the internet.
- 2) Some agencies requested additional data fields to satisfy their needs: i.e. land ownership, acreage of survey and site, archaeological survey history of the site.
- 3) All the data entered into AZSITE must be clean, including the legacy data.

FRIDAY AM - System Security

Friday morning's session on the security of the system began with information concerning the Freedom of Information Act (FOIA) presented by Pat Day and Gary Stumpf from the BLM and by Ken Rozen of ASLD. Tim Seaman from ARMS in New Mexico explained how their similar system operates and the extent of security measures implemented. Concluding the presentation portion was Chuck Adams of ASM who explained the current security measures in place and proposed security measures to be implemented. The purpose of these presentations was to assure potential users and contributors that the data would not be disseminated over the Internet without proper safeguards and that the access to this sensitive information would be closely controlled and monitored.

The five discussion groups were to address the following questions concerning the security of AZSITE:

- 1) What are appropriate security concerns?
- 2) What security policies and procedures does your agency/institution currently have in place?
- 3) Are you familiar with data sharing agreements in other states? Provide details, assess their value.
- 4) What are your recommendations for file security in Arizona?
- 5) Are the issues that have not been raised that you consider important?

Group 1: Facilitator John Welch; Recorder Brenda Shears; Spokes-person - Brenda Shears

What is more of a security issue at this time is all the copies of site records and maps currently and previously being used by researchers. These can not be controlled and provide a greater risk to site degradation than implementing any form of electronically controlled access to data.

Concern was expressed that if TCPs were not included in the database, the lack of this knowledge would enhance the probability of inadvertently impacting these areas. Information should be available to those who need it so as to lessen the likelihood of destroying sites.

Group 4: Facilitator Chuck Adams; Recorder Sharon Urban; Spokes-person - Chuck Adams

Discussion began by citing other databases they knew of such as New Mexico's, MNAs, ASLD's and Maricopa County's and the security procedures used at them. They suggested the possibility of access to the AZSITE Database being restricted to specific geographical or cultural areas based on what is needed to conduct the user's research. The database could be protected sufficiently to restrict information to users on a need to know basis. Many research projects do not require specific locational information and would not need location of sites, just cultural information.

Group 4 would not want to allow all users access to the complete system. They feel a hierarchical ladder of access could be established. There should be a system to record who is gaining access to what information and the land manager of the geographical area would be notified. It was suggested that if the AZSITE data managers did not know an individual requesting access, the individual should be referred to the managing agency for approval. The consortium or the AZSITE repositories should not have the final say on who is allowed access.

There are security measures in place at many of the data repositories, but there is no standard procedure. New Mexico had statutes restricting access, MNA required David Wilcox's approval, Maricopa County has their files locked up and Brian Kenny granted access. Completed access request forms containing a CV and reasons for requesting access to the database should be submitted for approval by the land manager and/or repository agency. The user, in signing this request, accepts specific responsibilities regarding the security of the data accessed. The establishment of a standard operating procedure would be desirable to remove any confusion. All agencies holding data should be required to follow the same procedures.

Group 5: Facilitator - Carol Heathington; Recorder Mike Barton; Spokes-person - Gary Stumpf

This group voiced concerns that hackers and unauthorized users might gain access to the database through the Internet, but felt sufficient security procedures could be established to minimize the risk. The use of passwords seemed to be a minimum requirement and these passwords and access should be issued on an individual basis. In this way each individual can be kept accountable for entry into the database via a personal password with the repositories recording individual user accesses.

There is a need to define "authorized users" and the criteria used to identify them. Authorized individuals should be given full access to the database. The level of access, however, (i.e. exact locational information, cultural affiliation or site use) could be limited depending on a user's status. Students, volunteers, researchers or CRMs could all be given varying levels of

informational access. There is a need for standardization in access policies. ASU, BLM, ASM, NPS all appear to have different methods for allowing or denying access.

The Internet homepage for AZSITE should be kept boring, possibly with a separate public access homepage containing less vulnerable general site information with no specific culturally sensitive data available. A separate data entry/query homepage could be established with a more subdued appearance so as not to draw attention to it.

Summary of Friday AM Session

Summary of the security for the AZSITE Database discussion contains three main points echoed by all five groups. The first was the desire, or need, for each land managing agency to play an active role in deciding who should gain access to the database. The agencies want to know who is accessing data within the realm of their responsibility and why. FOIA allows the managing agencies to restrict access to data and they wish to retain control over this.

The second point suggests a hierarchical ladder of data access be established with restricting “firewalls” in place to limit the amount of data accessed by users. They all recognize there are varying classes of user (volunteers, student researchers, CRMs, contractors) and all have varying degrees of informational needs. The type of limits to be imposed differed among discussion groups. Group 1 may want total informational restriction through the database on many sites including the TCPs. The other groups agreed to a restriction of data access based on a need to know criteria limiting information to specific geographical or cultural information needs. In example: A researcher seeking information along the San Pedro would not be given access to information along the Little Colorado. Group 5 sees allowing access to the entire Database geographically, but restricting the level of information. E.g. A researcher who needs information on how many Pueblo III sites are along the San Pedro, does not need to know their exact location. His access is restricted to what he needs, a count of specific chronologically identified sites.

The third point was the need for standard procedures detailing how access is granted, who should be granted access, who should grant the access and to what level access would be granted. These procedures should also include a detailed explanation of the users responsibilities when using the database and their limitations of use with the data received.

There was general concern over the security in using the Internet to disseminate the information. Most groups felt these security issues could be adequately resolved and access over the Internet could be used as the prime information dispersal mechanism. Group 1 however, expressed concern that the information would be too accessible regardless of the security precautions implemented.

The main concerns of the small group discussion on security issues were:

- 1) The land managers want control over who is accessing information within their management areas.
- 2) It was suggested that access to the information system could be controlled via a hierarchical ladder based on user needs: i.e. geographical limitations could be imposed to restrict a user to a certain area or informational limitations could restrict the release of certain types of information (usually locational).

- 3) There must be an established standard operating procedure regarding access and use of the information system.

FRIDAY PM - Funding and Management

Prior to the conclusion of the morning session, Tim Seaman from the State of New Mexico Office of Cultural Affairs, addressed the workshop regarding the funding of the database. His opening comment was “You can’t please everyone, don’t even try”. All users, contributors, repositories and land managers would need to compromise a little to allow the system to benefit all participants.

After lunch, a roundtable discussion consisting of representatives of the possible users and contributors to the system convened to discuss the funding and long term management of the system. These discussants were not selected as representatives to speak for their entire group, but merely to bring their perspective for the use and implementation of the centralized database within a specific user group (i.e. State, Private, Federal, Tribal). The discussion was centered on how the SITE Database would be managed and how the system could be funded. The panel was moderated by David Wilcox from the Museum of Northern Arizona (MNA). The following is a summation of comments made by the individual members of the roundtable discussion centered around how the AZSITE Database could be managed and funded. The individual discussants and their organizational affiliation are:

Chuck Adams	ASM	Gene Rogge	Dames & Moore
Jim Garrison	SHPO	Trinkle Jones	WACC
Peter Piles	Coconino NF	Joe Joaquin	Tohono O’odham

Gene Rogge began by citing a recent Dames & Moore project in example to explain the need for a comprehensive centralized database. He noted how this project during the course of a 106 research project required his employees to visit eight different agencies only to receive incomplete data. The location of the sites must be known before construction begins so impact can be avoided. Recognizing a site after the backhoe has worked through part of it is not the time to note its location. This pre-construction identification cannot be done with the current method of data management.

Trinkle Jones, speaking on behalf of the Parks Service, explained how each park maintains its own records and handles its cultural resources differently. WACC is working to consolidate some of these databases at ASM, but does not use the current ASM file as much as she would like due to lack of confidence in the data and the difficulty in obtaining information. She would like to be a user and is willing to pay a reasonable fee provided the database is comprehensive, accurate and accessible.

Jim Garrison opened his comments by noting the difficulty in receiving a quick response from SHPO. SHPO is required to maintain specific records, but admitted an increasing difficulty in doing so. SHPO is currently receiving AZ Heritage funds towards the fulfillment of this mandate, but those funds are dwindling. SHPO is willing to contribute both data and funds, if available, to the AZSITE Database because it would facilitate their role in managing cultural resource data.

Chuck Adams stated the Arizona State Museum also has a mandate. They are required to maintain records for all state, county and city lands. Currently some funding is received from the University of Arizona to fulfill this mandate and NCPTT grant to research the AZSITE pilot

program. ASM is willing to make a long-term commitment to maintain the database, but can not fund the system on its own. Current funding for this pilot project research terminates in August 1997 and without a commitment from the users, the AZSITE Database will not materialize.

Peter Pilles began by stating that national forests were interested in participating in an AZSITE partnership provided the database could quickly and efficiently meet their informational and compliance needs. The database must be more than a compilation of site forms. They currently have their own database, which has in the past fulfilled their needs, but sees the need for a more comprehensive system.

Joe Joaquin bluntly stated the Tohono O'odham had no database, no management and no available funding to establish or maintain such a system. The O'Odham recently decided a cultural office was necessary, but the neither funding nor the office's establishment were, as yet, complete. He expressed concern over the data being too accessible and having no control over ancestral lands. Different tribes have different perspectives about culture and require individual attention. He felt the tribal representatives needed to be kept informed on how and when tribal cultural information was collected, maintained and disseminated.

In closing the roundtable, David Wilcox stated that only by working together could we competently maintain a comprehensive database. It would be with this database that cultural resources could be better protected.

With the close of the roundtable discussion, workshop participants returned to their respective small groups to consider the following questions:

- 1) What is an appropriate structure for managing and making future decisions about the system?
- 2) Who should be charged for access to the system?
- 3) What fee structures are you familiar with in other states? What do you like or dislike about them?
- 4) What issues have not been raised that you consider important?

Group 1: Facilitator - T.J. Ferguson; Recorder - Rick Karl; Spokes-person - Rolf Nabahe

Discussion of the funding and management of the database was limited to questioning why they should pay to acquire data from their own cultural resources. They would like to see some kind of waiver for the tribes using data within their domain. In relation to the management, they want control over who accesses data within their tribal boundaries. The "red flag" system of alerting users *to* a possible cultural impact in the project area and requiring them to contact the respective tribal office for further details appealed to many.

Most of this discussion was directed to delineating the benefits or drawback to tribal participation in and using such a system. Heading the list of the benefits was the ability of the tribal offices to control locational data and to better manage their lands. By knowing where the sites are located and who is attempting access for what reason, the possibility for halting the destruction of sites prior to the fact existed and appealed to many. Some saw the system as a way to better educate the next generation via the

massive amounts of ancestral information that could be stored and disseminated to The People.

Deterrents to involvement included their inability to control their own data or to know who was accessing data on tribal lands. Based on past experiences, many felt this was just another way to expedite environmental exploitation of their lands and feared this database would cause even greater destruction. They felt that locational information must be kept to a minimum and that the need to know scenario regarding data dissemination should be determined by the tribal representatives.

Further complicating the tribes' involvement would be the cost of the equipment to properly access and manage their database. Many do not have computer knowledge or equipment, nor do they have the funding to acquire such. The security of the Internet was still a concern, though this seemed to be lessening as knowledge of the system was gained.

Group 2: Facilitator - Ken Rozen; Recorder Beth Grindell; Spokes-person -Kathleen Henderson

Discussion of funding the database was based on who were the major users of the system and who would benefit the most from its implementation. All would benefit from the ease with which concise accurate data could be obtained, however, it was noted that SHPO would benefit much through the improved information database. The biggest long-term benefit would be reaped by the land managing agencies. The projects requiring 106 compliance would be the major users and thus should bear the brunt of the cost. This cost should come at the beginning of a project to allow researchers to bill the sponsors up front. A possible fee payment scenario suggested was to charge a flat \$100 per project rate. Assuming an average of 5,000 projects per year, this would nearly meet the projected costs suggested by the New Mexico budget presented earlier (\$513,139).

Management of the system focused on quality control of the data being entered, including the legacy data and ownership of the data itself. Most felt that the ownership of the data fell with the collector of the data, not necessarily the sponsor. They noted that contractors who survey for utility companies collect the data within their own database and presume it to be theirs.

It was suggested that the quality control of incoming data be the responsibility of the land managers. There was concern about who would take responsibility for the quality of the legacy data and who was going to pay for its being digitized and entered into the system. They believed the guidelines needed to be established for the input of data and that all must be required to adhere to them.

Group 3: Facilitator - Tom Lincoln; Recorder Tracy Murphy; Spokes-person -Tom Lincoln

It was believed the short and mid-term funding could come from small grants and should be used to get the system up and running. Regarding long-term commitment most felt both SHPO and the State needed to make a commitment. They were receptive to access and user fees but saw a major problem with paying to contribute their data. The forest services were willing to contribute their data but would not pay to do so. They would possibly be amenable to paying for access to the database.

Some suggested that instead of a central database system, perhaps each agency could maintain their own databases and links could be established between each. Noted by others, however, was the necessity of data managers for each site and the accompanying increased cost.

This group wanted to know the exactness of the fee structure: who was going to pay how much. They wanted to know if there would be an annual or a project by project fee. Also, they wanted to see a break down of fee dispersal.

Management of the system focused on the quality of the data, specifically the legacy data. This group believed many of the land managers were already cleaning up their data (i.e. Forest Service). They did not want to allow private contractors the right to enter their own data, but felt the agency should control this.

Group 4: Facilitator - Jim Garrison; Recorder - Sharon Urban; Spokes-person Mark Ziem

Their discussion focused on two points. The first related to the AZSITE consortium membership size and its continued role in the AZSITE Database. They saw a place for a managerial group consisting of a representative from each of the major participants (i.e. ASM, BLM, BOR, DOD, Forest Service, MNA, SHPO, Tribal). A smaller portion of this group could act as a governing body, but must not be allowed to expand beyond the point of controllability.

Their second point centered on who was going to pay and when. Most agreed in theory that a partnership would be one of the better ways to fund AZSITE. Most agreed that payment for use rather than contribution was a better method. As the system came on line, other agencies would note its benefits and wish to enter into partnership or as a user. This would ultimately reduce individual costs.

Other aspects briefly touched on by group 4 were the quality of the data within the database system, how the system would benefit the counties and whether it could be used as an educational tool.

Group 5: Facilitator - Connie Stone; Recorder - Christy Garza; Spokes-person - Amy Horn Wilson

Their view on the funding was firmly focused on the user end of the system. They did not wish to see fees based on the number of sites recorded. If the fee was at the user end of the system this fee could be charged to the project. They believed a partnership cooperating on a centralized system would be feasible.

Management of the system should be handled by the consortium or by a single agency. Most agencies felt that confidence in the quality of the database could be maintained if they entered their own data. With this confidence would come a more willing attitude to pay for its use as would the systems ability to provide 106 compliance. There was concern about compatibility of existing databases with the AZSITE Database

Summary of Friday PM Session

In summation, discussions of the long-term funding and management brought two points to the forefront. Agencies and land managers are willing to contribute their data,

but are not going to pay to do so. Many have an existing agency specific database that generally serves their needs and saw no reason to pay someone else to keep a duplicate set of data. Should a situation arise where the need for data out of their fiefdom presented itself; they would consent to paying user fees for the use of the system, provided the data was clean and current.

Some believed that a partnership would be in their best interest and implied their willingness to enter into a partnership to help support AZSITE. They believed in this way a comprehensive, quality database could be maintained and at their disposal when needed. The tribal representatives will balk at any attempt to charge them for data collected within their tribal boundaries.

Their second main concern was the quality of the data within the database. Most discussion groups in some way or another were concerned about the degree of accuracy of the data and who would be ultimately responsible for this. Land managers felt they would have more confidence in the system if they were responsible for the data's accuracy or in some other way could be convinced the data they contributed and received from the database was indeed accurate. This quality assurance must include the legacy data. The extensive quantity of previously recorded sites must be incorporated into the system in a timely and as accurately a manner as possible.

The main concerns of the small group discussion which followed the round table were:

(1) Payment for the information must be at the user end. Potential participants are willing to contribute their data, but are not willing to pay for this contribution.

(2) The fee structure must be established prior to any agency committing to the information system.

(3) The quality of the data maintained within the system must be high and maintained by a full-time data manager.

Upon the conclusion of the small group discussion summaries, closing remarks by Mike Barton and David Wilcox paralleled each other by emphasizing the need for a cooperative agreement among the land managers, repositories and user agencies. Individual agencies would be unable to fund AZSITE. Partnerships must be formed if the AZSITE Database was to materialize.

The Proposed Future

Prior to the AZSITE Database going on line, it was believed that a coherent, comprehensive directive of standard operating procedures needed to be established. Potential users, contributors and data managers must be informed of the rights and restrictions concerning the use and management of the information contained within.

Legal definitions of phases such as "need to know basis" and "authorized user" needed to be precisely explained and understood by all parties concerned. Working within the bounds of FOIA and yet restricting the wholesale distribution of sensitive cultural and locational data, will

be a difficult challenge that must be competently hurdled prior implementing the AZSITE Database.

Current policies regarding the dissemination of data are outdated. Many are vague and incapable of dealing with ever changing regulations, restrictions, requests and advanced technology. The AZSITE consortium will, in the coming months, outline a standardized proposal governing the access and dissemination of cultural resource data within the state of Arizona.

APPENDIX F

JUNE 18 AND 19 MEETING IN FLAGSTAFF, ARIZONA

After a brief welcome by Ed Wade of MNA and Beth Grindell of ASM, the meeting opened on both days with Peter McCartney from ASU explaining the status of the pilot project and demonstrating the capabilities of the database. The demonstration included a mock records search typical of that required for compliance of sections 106 and 110 of NHPA. This included selecting a specific geographical area and creating a table of the recorded sites and surveys within that area. It was then shown how this table could be expanded to include specific information such as cultural affiliation and recorded associated artifacts of a site or date and recording agency of a survey. McCartney stated the pilot project was nearing completion and the consortium felt new incoming data from participating agencies would be entered directly into the AZSITE database by the end of the summer.

The meeting on June 18 was convened with federal land managing agencies (i.e. Forest Service and BLM) to discuss the specific requirements for the conversion and entry of their data into the AZSITE database. In attempting to meet the needs of these agencies, minor changes in the original data entry form and the method of digitizing sites and surveys were made.

A bibliography field was added to provide researchers the ability to reference the report associated with the site or survey in question. Historic districts would be recorded as sites with an added associated subtable for historic properties to fulfill the SHPO's needs for recording these areas in the register of historic places. A site-use subtable was reinstated as participants felt it necessary to help identify sites without features.

The restructuring of the phase name/date field was discussed. The meeting participants believed the establishment of a standardized statewide phase-name/date sequence was necessary and long over due. This would require the reconfiguration of several decades of previous phase-name/date usage and the consortium agreed subsequent in-depth discussions were needed to resolve this issue.

A discussion on the recording of sites and linear surveys as points and lines respectively resulted in the decision to record them as polygons to facilitate searching the database. Previously recorded linear surveys were plotted using varying widths of "sharpies" and no accurate survey widths could be gleaned from the maps. All linear survey widths would have to come from the original reports. Recording sites as polygons faces a similar problem since previous site boundary information was not recorded in any specific pattern. This lack of a data entry standard will require each site's location be researched and plotted from the originally submitted site form's location field. Both of these activities will require extensive time and additional funding. These changes would be incorporated when standards are established and funding becomes available.

Beth Grindell of ASM initiated a discussion on the method of numbering sites. It had been previously believed only the newly established "AZ" number would be required for site identification. During this discussion it was noted that each agency may require its own number for identification purposes. It was agreed that the "AZ" number would be used as the primary key number in the database and that the use of this number would expedite database queries. The agency number would be retained in a separate field to identify the sites association with a land managing agency and to facilitate records search should the "AZ" number not be assigned prior to the publication of the survey report. It was noted that agency site numbers are often used in

combination with artifact curation and could not be removed completely without redeveloping each agency's curation numbering procedures, The undertaking of this task was not within the scope of the AZSITE consortium.

A land ownership field was included to record land ownership at the time the survey and/or site were recorded. This information would be necessary to identify the agency responsible for repatriation negotiations and the location of the original survey and site documentation should further information be required.

The populating of the database with records from the attending federal agencies was discussed as two separate entities. The first was the legacy data, or that data which currently exists in either paper or electronic form. Peter McCartney from ASU would work with individual agencies and develop conversion software to transfer data into AZSITE. The concordance of this data and the removal of any redundant records would be handled by AZSITE consortium members from ASM under separate funding.

The second item of data entry into AZSITE focused on how newly acquired data would be routed to the AZSITE database. The attendees generally agreed there should be some form of "corral" to hold new data until all required agencies had ample time to review, correct and approve the data prior to its incorporation into the AZSITE database. Two different routings were suggested. The first would require the contracting agency to connect with the AZSITE database initially to acquire "AZ" site numbers. These numbers would be assigned when the site's location, the recording agency and a brief description of the site were recorded on the AZSITE electronic site form. All newly recorded sites would be held in the "corral" awaiting additional information, review and approval by the required agencies. This had the advantage of assigning "AZ" numbers immediately so they could be included and referenced in the reports. This would allow quicker information retrieval from the database. The land managing agencies felt this routing by-passed the agency during the initial steps of site recording and would reduce their control over sites within their jurisdiction.

The second routing possibility placed the initial contact with the land managing agency that would assign agency site numbers. The data would be forwarded to AZSITE by the contracting agency only after the records had been approved by all involved agencies. This allowed the land managing agencies more control over the data being submitted to AZSITE and over the sites in their jurisdiction. The disadvantage of this routing method is the time lag between the discovery of a site and its inclusion into the database. This has the potential for allowing recently discovered sites to go unrecorded in AZSITE for considerable lengths of time and being missed during subsequent searches. The establishment of a centralized versus an agency specific "corral" would avoid this.

Thursday's meeting was convened for the northern tribal representatives to discuss their possible participation in the AZSITE database. This day's meeting was different from the previous days with the federal agencies. The focus was not on the mechanics of incorporating data into the system, rather on the restrictions of accessing the system, the individual tribe's costs in establishing a link to the system and requiring recording agencies to fill out an AZSITE site form.

All of the five tribes present (Hopi, Hualapai, Navajo, San Carlos Apache, and White Mountain Apache) saw benefits to having the sites located on their land included in the database (i.e. greater control over their cultural properties and the probable reduction of inadvertent site destruction). They were concerned with how access would be gained and who would be granting access to the database. All tribal participants requested this access be granted through the tribal historical preservation offices only. Information on culturally sensitive areas within tribal

reservations would be released in accordance with signed MOAs. It was agreed in principle that during a records search, the researcher would be notified during a query that tribal lands may be affected during the proposed land altering activities and the appropriate tribal representative must be contacted.

Costs for establishing and maintaining a computerized database on the reservation concerned all. Many tribes do not have computer access, or in some cases are unable to access the Internet due to the limited capabilities of their electric and communication utilities. The consortium, recognizing the tribes' difficulties, stated they assist the tribes in applying for the appropriate grants to acquire computer hardware. A copy of the AZSITE database and accompanying survey and site recording software would be provided.

The tribes who attended the meeting currently have their own site form in use and were hesitant to require contractors to fill out a separate form for inclusion into AZSITE. Most survey and site forms require the same general information, however, and by adding a tribal specific subform, AZSITE and tribal data requirements could be adequately met on a single form.

In summary, this two-day meeting had a much different tone than the two-day workshop held in February. The participants of February's workshop were asking, "Why should we participate?". During June's meeting the participants all saw benefits to the AZSITE database and came to the meeting with the attitude of: "How can we participate?". The June meeting concluded with positive support for AZSITE and the prospect of its statewide implementation in the not too distant future.

APPENDIX G

JUNE MEETING PARTICIPANTS

JUNE 18

Ken	Rozen	ADOT
Bruce	Donaldson	Apache-Sitgreaves NF
Chuck	Adams	ASM
Beth	Grindell	ASM
Rick	Karl	ASM
Peter	In-Albon	ASM CAP Repository
Peter	McCartney	ASU
Gary	Stumpf	BLM
Kathy	Kemp	Grinnell College
Monza	Honga	Hualapai Cultural Resources
Loretta	Jackson	Hualapai Cultural Resources
Neil	Weintraub	Kaibab NP
Deb	Hill	MNA
Tracy	Murphy	MNA
Ed	Wade	MNA
Noland	Wiggins	MNA
David	Wilcox	MNA
Nancy	Andrews	NATJ
Jim	McKie	Prescott NF
Jim	Garrison	SHPO
Christy	Gaxza	SHPO
Carol	Griffith	SHPO
Carol	Heathington	SHPO
Mary-Ellen	Walsh-Anduze	SWCA
J. Scott	Wood	Tonto NP

JUNE 19

Beth	Grindell	ASM
Rick	Karl	ASM
Peter	McCartney	ASU
Cindy	Dongoske	Hopi Tribe
Mike	Yeatts	Hopi Tribe
Monza	Honga	Hualapai Cultural Resources
Loretta	Jackson	Hualapai Cultural Resources
Deb	Hill	MNA
Ed	Wade	MNA
David	Wilcox	MNA
Nina	Swidler	Navajo Nation
Chad	Smith	San Carlos Apache
Jim	Garrison	SHPO
Christy	Garza	SHPO
Carol	Griffith	SHPO
Carol	Heathington	SHPO
Dennis	Gilpin	SWCA
Lynn	Neal	SWCA
Raymond	Kane	White Mountain Apache
John	Welch	White Mountain Apache

APPENDIX H

LETTER FROM JOE JOAQUIN, TOHONO O'ODHAM NATION

AN OPEN LETTER TO MEMBERS OF THE AZSITE CONSORTIUM

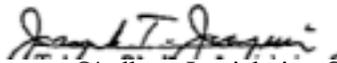
As representatives of the Tohono O'odham Nation, the Tohono O'odham Legislative Council Cultural Committee, expresses extreme dismay about the potential impact the creation of the proposed archaeological sites data base will have on Tribal efforts to protect cultural sites Oftentimes the remoteness and obscurity of these sites is their best protection Increased accessibility to data will only encourage artifact thefts and site damage.

Any data base compilation effort which increases accessibility to information regarding the existence and location of archaeological sites is a potential threat to the integrity of these cultural resources. In particular, use of the Internet and Geographic Information System technologies greatly increases accessibility to information In the research community of agencies, Universities, and consultants it is taken for granted that this is a good thing. For Tribes this is but another factor In the consistent erosion of sovereignty and a threat to the ability to preserve the cultures of Native Americans

The Tohono O'odham Nation is sovereign, with the rights and responsibilities of all recognized Nations Additionally, the Jaws of the U.S.A. grant Tribes certain control over and protection of sacred and archaeological sites found in any geographic jurisdiction. Executive Order 13007, signed May 24, 1996, assures Native Americans that the physical integrity and confidentiality of sacred sites found on Federal land will be maintained Presidential Memorandum of April 29, 1994 guides the Heads of Executive Departments and Agencies to ensure the rights of sovereign tribal governments to act in a government-to-government relationship with the United States of America These directives allow the decision-making role over archaeological and sacred sites which has been continuously asserted by Indian Nations

Furthermore, while we appreciate the opportunity to speak to the AzSite Consortium workshop. It must be made clear that this workshop in no way constitutes "consultation" with Tribal entities Individuals in attendance may express additional concerns However they cannot sufficiently express the opinions of the entire Tohono O'odham Nation, and most certainly cannot even begin to speak for tribes which are not present. In our experience when outside groups hold meetings to which tribal members and representatives are invited these groups use these sessions to portray consultation requirements of their own interpretation of consultation, rather than actually taking into consideration tribal concerns, or making a good faith effort to contact all potentially affected individuals and entities

This after-the-fact overture for tribal input mirrors the paternal and disrespectful treatment of Native American cultures, and is contrary to the government to government relationship created by executive order of the President of the United States of America. The Consortium provides an opportunity to implement the good faith requirements of the Government to Government directives of the President of the United States to enhance the relationship between agencies and educational institutions of the US and the Tohono O'odham Nation to fully protect the archeology and sacred sites of the land



Tony O'odham Legislative Council
Cultural Resources Committee Chairperson