

National Historic Property Inventory Initiative

Building Capacity to Preserve and Protect Our Cultural Heritage



Project Partners:



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Prepared by

SWCA Environmental Consultants

May 13, 2009

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May 13, 2009

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EXECUTIVE SUMMARY

The National Historic Property Inventory Initiative Report, “Building Capacity to Preserve and Protect Our Cultural Heritage,” is a direct product of the Preserve America Summit held in New Orleans, Louisiana, on October 18–20, 2006. Preserve America is a federal initiative that encourages and supports community efforts to preserve and enjoy the United States’ priceless cultural and natural heritage. The Summit, led by honorary chair Laura Bush, was an opportunity to acknowledge the accomplishments of and difficulties within historic preservation/cultural resource management since the passage of the National Historic Preservation Act of 1966 (NHPA), while looking toward the future of our nation’s historic preservation endeavors. As a result of the conference, 13 critical issue areas were identified.

Of these, two issue areas were prioritized. One of the two primary recommendations of the Preserve America Summit was to

Create a comprehensive inventory of historic properties through a multi-year plan that expands current inventories and makes them more compatible and accessible.

The National Park Service (NPS) and Advisory Council on Historic Preservation (ACHP) were tasked with implementing this priority recommendation. The NPS and ACHP, after identifying the project as the National Historic Property Inventory Initiative (NHPII), established a NHPII Working Group that eventually included State Historic Preservation Offices (SHPOs), Tribal Historic Preservation Offices (THPOs), Federal Preservation Offices (FPOs), the National Conference of State Historic Preservation Officers (NCSHPO), the National Barn Alliance (NBA), and other private preservation organizations to assess the electronic data collection, management, and distribution capabilities of SHPOs, THPOs, and FPOs across the nation. After a series of meetings, the NPS, in collaboration with the NHPII Working Group, developed a survey to administer to SHPOs, THPOs, and FPOs as a vehicle to collect the baseline information necessary to begin this assessment.

The resulting web-based NHPII Survey benefited from two previous reports conducted by NCSHPO in 2007 and 2008. Those reports established a dialogue among SHPOs regarding this issue. The web-based NHPII Survey expanded on these earlier efforts by including THPOs and FPOs. The Survey addressed the current and proposed data collection, management, and distribution practices as well as the operative database management systems (DBMS) in SHPOs, THPOs, and FPOs. In addition, it reviewed the nature and scope of paper legacy data maintained by these offices and current work plans and hurdles associated with digitizing legacy records.

The web-based NHPII Survey was disseminated to SHPOs, THPOs, and FPOs online beginning in May 2008. At the conclusion of the survey period, NCSHPO contracted with SWCA Environmental Consultants (SWCA) to synthesize, analyze, and produce a report of their findings on the information obtained through the web-based Survey to the NPS, NCSHPO, and the NHPII Working Group. SWCA was also charged to conduct follow-up work to a) seek more comprehensive participation in the Survey by individual SHPOs, THPOs, and FPOs; b) undertake 44 on-site interviews with a representative number of SHPOs, THPOs, and FPOs that were selected in consultation with the NPS; and c) identify

and report on current DBMS best practices and limitations within those SHPOs, THPOs, and FPOs.

This report, compiled by SWCA, based on information from the web-based NHPII Survey, supplemented by SWCA's follow-up work, therefore serves as a comprehensive review and analysis of the current status, conditions, and best practices of historic preservation property DBMS and practices used by the SHPOs, THPOs, and FPOs around the country. The following is a summary of SWCA's overall findings.

SUMMARY OF FINDINGS

- **There were 109 valid respondents: 47 SHPOs, 24 FPOs, 38 THPOs responded in part or in whole to the NHPII Survey and supplemental reporting.**
 - Of the 24 FPOs reporting, only 7 are located in "land-management" agencies or bureaus that have substantial historic properties. However, these 7 agencies manage historic properties on lands that account for 60% of contiguous land mass of the United States.
- **Preservation priorities for the SHPOs and THPOs are as follows:**
 - Historic Resource Surveys for Section 106 compliance and National Register of Historic Places (NRHP) purposes.
 - Over the next 5 to 10 years, meeting the pressing need to complete additional historic property surveys constitutes the number 1 preservation priority of virtually every SHPO and THPO.
- **Funding Needs and Priorities**
 - SHPOs, THPOs, and FPOs typically have limited funding, if any, available to develop, implement, and maintain a DBMS.
 - SHPOs report needing \$1,260,000.00 for labor costs to upgrade and implement a more functional database, as well as \$192,000.00 in technology costs.
 - THPOs indicate that lack of funding is the foremost reason why historic properties databases do not exist, are not well organized, or are not digitized or electronically automated.
 - FPOs surveyed suggest that very little room exists in their budgets to implement and maintain a DBMS, however FPOs that have some type of DBMS in place have found that their DBMS has been a key to early reporting with the Office of Management and Budget, as well as accurate reporting on historic properties.
- **The DBMS needs for the various SHPOs, THPOs, and FPOs range from simple tabular spreadsheets listing historic properties to offices with multiple resource types, including text, spatial data, photographs, and video.**
 - The needs of the SHPOs and land-management FPOs are closely aligned. Tracking of Section 106 projects/reviews is a critical function of FPOs and SHPOs.
 - Most THPOs use simple tabular spreadsheets as DBMS to track their cultural resources.

- All THPO respondents report that they need additional staff and funding to search, share, and make Section 106 compliance readily available.
- **Most SHPOs (64%) and THPOs (55%) use Microsoft Access® to create and manage their database. Fifty percent of FPOs use Oracle®, while 38% use Access.**
 - Most SHPOs and FPOs have multiple databases, which include archeology, architecture, compliance, tax credits, gray literature, and spatial information.
 - ESRI GIS (geographic information system) software is the overwhelming choice for spatial data. Only three SHPOs currently use other software.
 - Off-the-shelf solutions are more commonly used by FPOs, SHPOs, and THPOs because the staff members who implement the systems are not information systems specialists.
- **The DBMS of SHPOs, THPOs, and FPOs are largely managed by personnel with advanced degrees in Arts and Sciences (anthropology/archeology or in architecture/history).**
 - DBMS development and management is frequently undertaken by these staff members as a collateral duty and with no formal training.
- **Web-based historic property inventories offer greater accessibility to outside users, as well as a greater capacity for overall return on investment in reducing project costs.**
 - Fifty-six percent of SHPOs have some web-accessible historic property inventory data, but only 6% of FPOs and no THPOs have data accessible online.
 - Colorado, Indiana, South Carolina, Texas, Wisconsin, and Wyoming are examples of states that provide extensive access to their historic property inventories online.
 - Security of restricted data is a major concern for THPOs.
 - THPOs would like to develop web-based systems for public outreach and education without compromising sensitive cultural resource data.
- **Currently, relatively few SHPOs, THPOs, and FPOs are capable of easily sharing historic property data in compatible formats.**
 - Many SHPO, THPOs, and FPOs still rely on paper copies, or scanned documents for inter-office data transfer.
 - Many SHPOs and FPOs could benefit by sharing data related to Section 106 compliance projects and surveys.
 - Increased ability to share data could decrease respective workloads of SHPOs, THPOs, and land-management FPOs handling Section 106 compliance matters.
 - A data-sharing partnership is in place between the Bureau of Land Management (BLM) and 13 states in the Intermountain West region (Alaska, Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, North Dakota, Oregon, South Dakota, Utah, and Wyoming).
 - DBMS software like Oracle and Microsoft SQL® (Structured Query Language) Server has effective built-in security measures such as data

encryption, password protection, and restricted access protocols to protect sensitive historic property information.

- Obstacles to data sharing:
 - Lack of adequate DBMS development, implementation, training, and funding.
 - Security requirements for restricted information related to archeological sites and traditional cultural properties that are protected from public access.
 - Software/technology incompatibilities/inconsistencies.
- **Integrating legacy data into existing DBMS is a major drain on already hard-pressed resources, requiring staffing and funding.**
 - Two options for integrating:
 - Data entry by hand (“key punching”).
 - Scanning existing documents into a digital format.
- **SHPOs indicated that additional data development (scanning, quality control, integrating legacy data, GIS development, etc.) is needed for legacy data.**
 - SHPOs are more concerned than FPOs and THPOs with digitizing data. Legacy data and reducing the backlog of paper files is a major problem for SHPOs.
 - While the majority of SHPOs, THPOs, and FPOs have plans to address legacy data, most SHPOs (69%) and THPOs (65%) acknowledge that the legacy data that has already been digitized is in need of updating.
 - The U.S. Department of Agriculture Forest Service (USDAFS) uses a document “holding tank” to allow access to legacy data without integrating those data into their DBMS; this allows for retention of a “clean original” record that is digitally accessible.
- **SHPOs, THPOs, and FPOs indicate that training for DBMS and related systems use is minimal. The most frequent training that does occur is related almost entirely to Section 106 compliance activities and GIS.**
 - SHPOs rely more on in-house employees (archeologists and architectural historians by background and training who have some familiarity with DBMS) to design and maintain DBMS.
 - FPOs are equally split on the use of in-house staff or outsourced contractors to build and manage their DBMS.
 - THPO DBMS are generally in the developmental stage.
 - SHPOs face the problem of only one person designing and implementing their DBMS.
 - Fifty percent of the 20 SHPOs that were visited on-site and interviewed do not have a trained individual as a backup DBMS administrator.

SUMMARY OF BEST PRACTICES

The “Best Practices” for DBMS and information relating to historic property inventories as identified and defined in the methodology of this report are solely dependent on the responsibilities and assets (both in human capital and financial capital) that are currently available to SHPOs, THPOs, and FPOs. Not all of the practices summarized below necessarily apply to all SHPOs, THPOs, or FPOs.

➤ DBMS Design

- In offices that maintain diverse historic property inventories, managing all inventories via a relational database management system.
 - ✓ *Practice in place or under development: SHPOs in Colorado, Florida, South Carolina, Washington, Wisconsin, and Wyoming; THPOs in Navajo Nation Historic Preservation Department, Agua Caliente Band, Blue Lake Rancheria, Leech Lake Band of Ojibwe, Mashantucket Western Pequot Tribe, Penobscot Indian Nation, Lac Du Flambeau Band of Lake Superior Chippewa Indians, and Seminole Tribe of Florida; and in the USDAFS.*
- Using relational databases, including diverse sets of data that hide selected content from non-approved users.
 - ✓ *Practice in place: SHPOs in Colorado, Indiana, South Carolina, Wisconsin, and Wyoming; and in General Services Administration (GSA), NPS, and USDAFS.*
- Developing and implementing DBMS “business” plans through a collaboration of historic preservation office staff, cultural-resource information technology (IT) professionals, and constituent users that outline projected costs, type of DBMS to be developed, timetable for implementation, training and staffing projections, lexicon terminology, GIS, and nature and scope of user access.
 - ✓ *Practice in place: SHPOs in Colorado, Maryland, Michigan, Minnesota, Vermont, Washington, Wisconsin, and Wyoming; and in NPS and USDAFS.*

➤ Data Input

- Ensuring that databases use lexicon terms in drop-down menus where possible to limit the amount of input error.
 - ✓ *Practice in place: SHPOs in Arizona, Colorado, Florida, Georgia, Idaho, Indiana, Maryland, Missouri, North Carolina, South Carolina, Texas, Vermont, Washington, Wisconsin, and Wyoming; THPOs in Blue Lake Rancheria and the Seminole Tribe of Florida; and in GSA, NPS, and USDAFS.*
- Providing online access to databases that enable users to input information, when proper quality assurance/quality control (QA/QC) measures are taken with data.
 - ✓ *Practice in place: SHPOs in Florida, Georgia, Missouri, South Dakota, and Wisconsin; and in NPS and USDAFS.*

- Evaluating and, as appropriate, providing for data input directly from the field using a system that enables proper QA/QC.
 - ✓ *Practice in place: SHPOs in Florida, Maryland, Wisconsin, and Wyoming; and in USDAFS and NPS (Historic American Landscapes Survey Program).*

➤ **GIS Spatial Component**

- Developing and integrating a geospatial component (i.e., universal property locational assignment) within the DBMS.
 - ✓ *Practice in place: Most SHPOs across the country; in THPOs in Blue Lake Rancheria, Navajo Nation Historic Preservation Department, Agua Caliente Band, Blue Lake Rancheria, Leech Lake Band of Ojibwe, Mashantucket Western Pequot Tribe, Lac Du Flambeau Band of Lake Superior Chippewa Indians, Seminole Tribe of Florida, and Yurok; and in NPS, USDAFS, GSA, Department of Defense (DOD), Bureau of Reclamation (Reclamation), and some BLM field offices.*
- Direct data sharing between spatial data component and the DBMS.
 - ✓ *Practice in place: SHPOs in Texas and Wyoming. Most SHPOs and FPOs maintain separate DBMS for their spatial and non-spatial data.*
- Using ESRI ArcGIS® or compatible software for GIS applications.
 - ✓ *Practice in place or under development: Most SHPOs and FPOs are currently using spatial-data software; and THPOs in Agua Caliente Band, Blue Lake Rancheria, Leech Lake Band of Ojibwe, Mashantucket Western Pequot Tribe, Lac Du Flambeau Band of Lake Superior Chippewa Indians, and Seminole Tribe of Florida.*

➤ **Web-Based Systems**

- Providing online, web-based public access to as much unrestricted historic property data as possible and appropriate.
 - ✓ *Practice in place: Many SHPOs, with particularly good examples being Colorado, Delaware, Florida, Louisiana, Texas, Wisconsin, and Wyoming; many THPOs, including the Navajo Nation Historic Preservation Department, White-Earth Nation, and Penobscot Indian Nation, which have web-based detailed histories of their respective tribes; and in NPS, USDAFS, BLM, Reclamation, and GSA.*
- Allowing constituents to input data into DBMS allows users to input information, as long as proper QA/QC measures are in place.
 - ✓ *Practice in place: SHPOs in Florida, Georgia, Missouri, South Dakota, and Wisconsin; and in USDAFS.*
- Ensuring password protocols, or some other type of protective system, are in place for any web-based historic property information.
 - ✓ *Practice in place: SHPOs in Colorado, Florida, Georgia, Indiana, South Carolina, and Wisconsin. Most FPOs have password protocols for internal use.*

- Making more information readily accessible online.
 - ✓ *Practice in place: SHPOs in Colorado, Delaware, Florida, Louisiana, Texas, Wisconsin, and Wyoming stand out as providing a variety of content via their website.*
- Ensuring digital data file formats meet established accepted archival standards and required current and future storage capabilities.
 - ✓ *Practice in place: Most SHPOs have some of their information stored in archivally stable formats, but most offices still use non-archival electronic media as well; and in NPS, Library of Congress, and the National Archives.*
- Requiring all survey information to be submitted in electronic formats that are fully DBMS compatible.
 - ✓ *Practice in place: SHPOs in Massachusetts, South Dakota, and Washington.*
- Scanning of text documents should make use of Object Character Recognition (OCR) software to allow for digitized files to be “word searchable.”
 - ✓ *Practice in place: SHPOs in Florida and Maryland; and in NPS and DOD.*
- Ensuring scanned images are embedded with, or attached to, metadata information.
 - ✓ *Practice in place: SHPOs in Colorado, Florida, Georgia, and Wisconsin; and in NPS and USDAFS.*
- **Data Sharing and Public Access**
 - Developing/using a common database architecture to enable more effective and efficient sharing of historic property information among SHPOs, THPOs, and FPOs.
 - ✓ *Practice in place: SHPOs in New Mexico and Oregon; and in USDAFS.*
- **Data Security**
 - Ensuring that database security protocols and policies are sufficient to protect sensitive/restricted historic property information.
 - ✓ *Practice in place: SHPOs in Arkansas, Colorado, Florida, Georgia, Hawaii, Indiana, New York, South Carolina, and Wisconsin; and THPOs in the Blue Lake Rancheria; most FPOs have password protocols for internal use only.*
- **Section 106-Related Activities**
 - Identifying Section 106-related projects and Section 106-related recorded properties within the database.
 - ✓ *Practice in place: SHPOs in Hawaii, Maryland, Minnesota, and Washington; and in USDAFS.*
 - Organizing Section 106 data within the DBMS to facilitate data sharing between federal, state, and tribal entities.

- ✓ *Practice in place: SHPOs in Idaho, New Mexico, Oregon, and Wyoming; and in BLM and USDAFS.*
- Tracking Section 106 project-associated correspondence in a database that can relate it to both the project/undertaking and historic properties affected.
 - ✓ *Practice in place: SHPOs in Georgia, Maryland, and Wyoming; and in USDAFS.*

➤ **Training**

- Ensuring that, at any time, at least two active staff members are sufficiently trained in the operation and maintenance of the DBMS.
 - ✓ *Practice in place: Not in place in any offices included in this analysis.*
- Developing detailed operational manuals for the maintenance, upkeep, architecture, and use of DBMS.
 - ✓ *Practice in place: None of the offices included in this analysis. Although most offices have some type of user manual regarding the operation of the database, these do not usually include the upkeep or maintenance of the database. A backup plan and a well written operational manual for the operation and maintenance of the DBMS are essential and should be available in every office.*
 - ✓ *Practice in place: Not in place in any offices included in this analysis.*

- DBMS and GIS training for staff members should be included in each annual budget.

While budgets are already stretched to their limits, periodic training and refresher courses ensure that staff members keep up with the latest changes in technology and are able to adapt existing systems to the most recent technology. Training in both database operation and GIS should be available for all members using these systems.

- ✓ *Practice in place: Most SHPOs and FPOs provide some training, but none of the interviewed offices had funding specific for training in their annual budget.*

➤ **Partnerships**

- Partnering with other SHPOs, federal agencies, and/or tribes to fund data and services used cooperatively.
 - ✓ *Practice in place: The 13-state BLM/SHPO western consortium (Alaska, Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, North Dakota, Oregon, South Dakota, Utah, and Wyoming); SHPOs in Florida, Georgia, Indiana, Maryland, Massachusetts, Michigan, Minnesota, South Carolina, Texas, and Wisconsin.*

TERMINOLOGY

For the benefit of the reader, several frequently used terms, words, acronyms, and usages that appear in the text are also defined below.

Several terms used throughout this document have dual meanings in historic preservation and database construction and management. Since the central focus of this document is the NPHII Survey conducted to assess DBMS in various offices, the language is geared towards database terminology.

A more complete listing of terms, words, and acronyms appearing in this document are included in the Glossary provided in Appendix A.

In accordance with the National Historic Preservation Act of 1966, and for purposes of this study, an **historic property** is defined as a building, site (including archeological sites), structure, object, or district that a SHPO, THPO, or FPO maintains or seeks to maintain information about, for the purposes of historical designation, preservation, or protection at the federal, state, tribal, or local level. This includes artifacts and human remains within such properties, but not separate records or artifact collections.

For the purposes of this document, the terms **Survey** and **NPHII Survey** both refer to the web-based questionnaire administered for the purposes of this project by the NPS over the course of the spring and summer 2008.

The term **Inventory** is used to refer to historic property information (including information related to archeological sites and traditional cultural properties) stored at the several SHPOs, THPOs, and FPOs.

When talking about historic property surveys, or historic property inventories (including archeological sites), used by offices to refer to the systematic recording of various cultural resources, we describe them explicitly as **Historic Property Surveys**.

Within this document, the word **architecture** refers to structures associated with databases or database management systems (i.e., computer structures of software and hardware). It does not refer to buildings.

The acronyms **SHPOs**, **THPOs**, and **FPOs** are used herein to mean State Historic Preservation Offices, Tribal Historic Preservation Offices, and Federal Preservation Offices (rather than State Historic Preservation Officers, Tribal Historic Preservation Officers, or Federal Preservation Officers).

The acronym **DBMS** is used as shorthand for database management system or systems. **RDBMS** refers to relational database management system, a database consisting of a set of linked (related) two-dimensional data tables.

Gray literature refers to documentary material that is not commercially published and therefore is not available through conventional sources. These documents are typically technical reports, working papers, business documents, and conference proceedings and are often archived in the various offices to which they are submitted. Archeological reports, architectural surveys, and historic contexts fall under this category of document.

Traditional cultural properties/places or **TCPs** are places or resources that are deemed to be important and integral to maintaining a Native American tribal group's traditional culture or religion. Some TCPs may not necessarily be associated with easily definable sites or objects, such as is the case with mountains or landscapes that may be considered sacred by Native American tribal groups.

Legacy data refers to historic property inventory data that are not currently accessible through electronic means.

INTRODUCTION

The National Historic Property Inventory Initiative Report, “Building Capacity to Preserve and Protect Our Cultural Heritage,” is a direct product of the Preserve America Summit held in New Orleans, Louisiana, on October 18–20, 2006. Preserve America is a federal initiative that encourages and supports community efforts to preserve and enjoy the United States’ priceless cultural and natural heritage. The Summit, led by honorary chair Laura Bush, was an opportunity to acknowledge the accomplishments of and difficulties within historic preservation/cultural resource management since the passage of the National Historic Preservation Act of 1966 (NHPA), while looking toward the future of our nation’s historic preservation endeavors. As a result of the conference, 13 critical issue areas were identified.

Of these, two issue areas were prioritized. One of the two primary recommendations of the Preserve America Summit was to

Create a comprehensive inventory of historic properties through a multi-year plan that expands current inventories and makes them more compatible and accessible.

The National Park Service (NPS) and Advisory Council on Historic Preservation (ACHP) were tasked with implementing this Preserve America priority recommendation. After identifying the project as the National Historic Property Inventory Initiative (NHPII), NPS and ACHP initiated work on the project by establishing a Working Group composed of State Historic Preservation Offices (SHPOs), Tribal Historic Preservation Offices (THPOs), Federal Preservation Offices (FPOs), National Conference of State Historic Preservation Officers (NCSHPO), the National Barn Alliance (NBA), and other private preservation organizations. The Working Group was tasked to assist the NPS and ACHP in assessing the data collection and electronic management and distribution capabilities of SHPOs, THPOs, and FPOs across the nation. After a series of meetings, the NPS, in consultation with the Working Group, developed and administered a comprehensive survey of SHPOs, THPOs, and FPOs as a vehicle to collect the baseline information necessary to begin this assessment.

The resulting web-based NHPII Survey benefited from two previous surveys conducted by NCSHPO in 2007 and 2008. The reports from those surveys established a dialogue among SHPOs regarding this issue. The web-based NHPII Survey expanded on these earlier efforts by including THPOs and FPOs. The Survey addressed the current and proposed data collection, management, and distribution practices as well as the operative database management systems (DBMS) in SHPOs, THPOs, and FPOs. In addition, it reviewed the nature and scope of paper legacy data maintained by these offices and current work plans and hurdles associated with digitizing legacy records.

The web-based NHPII Survey was disseminated to SHPOs, THPOs, and FPOs online beginning in May 2008. At the conclusion of the survey period, NCSHPO contracted with SWCA Environmental Consultants (SWCA) to synthesize, analyze, and produce a report of their findings on the information obtained through the web-based Survey to the NPS, NCSHPO, and the NHPII Working Group. SWCA was also charged to conduct follow-up work to a) seek more comprehensive participation in the Survey by individual SHPOs, THPOs, and FPOs; b) undertake 44 on-site interviews with a representative number of SHPOs, THPOs, and FPOs that were selected in consultation with the NPS; and c) identify

The resulting NPS-generated 2008 NHPII Survey benefited from two previous surveys conducted by NCSHPO in 2007 and 2008.

and report on current DBMS best practices and limitations within those SHPOs, THPOs, and FPOs.

PREVIOUS SURVEYS AND THE NHPII SURVEY

On February 26, 2007 (revised March 12, 2007), Mary Hopkins and Christopher Young of the Wyoming SHPO, in partnership with Karyn de Dufour of the Nevada SHPO, presented to NCSHPO the compiled results of an informal, non-scientific survey of SHPOs throughout the United States. This survey assessed the sophistication, complexity, and interchangeability of data management technologies employed by various SHPOs. Entitled “National Conference of State Historic Preservation Officers Square Table Discussion, Data Management in SHPOs: Organized by Wyoming SHPO [sic],” the purpose of this report was to initiate a dialogue among the members of NCSHPO regarding the current needs and problems facing SHPOs in terms of historic property data collection, their management policies and practices, the feasibility of enhancing deficient DBMS through data sharing and interoffice dialogue, and the need for further funding, development, and maintenance of historic property DBMS.

Participation in the 2007 NCSHPO survey was substantial, with 47 of the 59 SHPOs responding. From a battery of 26 questions, the 2007 survey indicated that while most of the nation’s SHPOs maintained at least one electronic system for data management, most respondents were more than 12 months behind in the “digitization” process. The 2007 survey also indicated a significant need among SHPOs for improved/updated historic property DBMS and the need for significant increases in the dedicated funding necessary to address this deficiency.

In May 2008, Christopher Young of the Wyoming SHPO performed a follow-up survey on behalf of NCSHPO regarding the DBMS used by the various SHPOs, entitled “2008 Data Management Survey of State Historic Preservation Offices.” Although the wording varied, the concepts defining 13 of the 26 questions in the preceding 2007 NCSHPO survey were repeated in the questionnaires provided in this follow-up survey. The 2008 survey also sought responses to 13 additional questions from SHPOs and FPOs and 19 additional questions from THPOs related to funding, public data access, operating systems, the volume of inventoried geography compared with non-inventoried areas, and the nature and status of DBMS training among the THPOs. However, only 35 of the 59 SHPOs responded to the 2008 follow-up survey.

The 2008 NPS-generated NHPII Survey differs significantly from the previous NCSHPO surveys in that it is more comprehensive, expanding beyond SHPOs to incorporate responses elicited from THPOs and FPOs, as well as expanding the nature and scope of the questions posed. In an effort to gain greater clarity on the issue of policies and practices, SWCA expanded on the 96 questions posed by the NHPII Survey. SWCA also a) completed on-site visits/interviews with 44 SHPOs, THPOs, and FPOs to discuss, augment, and clarify survey responses; b) identified a series of current “best practices” for the collection, management, and distribution of historic property inventory data and DBMS; and c) developed a series of recommendations to create a “work plan” modeled after the determined best practices from various offices throughout the country. A preliminary analysis of the raw data collected as part of the NHPII Survey was presented to the NPS, ACHP, and the NHPII Working Group on September 30, 2008. That preliminary

The NHPII Survey was designed to analyze data collection, management policies, and practices currently used by SHPOs, THPOs, and FPOs throughout the country.

The 2008 NPS-generated NHPII Survey differs significantly from the previous NCSHPO surveys in that it is more comprehensive, expanding beyond SHPOs to incorporate responses elicited from THPOs and FPOs, as well as expanding the nature and scope of the questions posed.

analysis, which summarizes SWCA’s initial review of the web-based NHPII Survey responses, is provided in Appendix D.

DATA COLLECTION AND METHODS OF ANALYSIS

Data for the NHPII Survey were collected via the Internet, site visits, and telephone interviews. Some offices were unable to access the Survey electronically, so they completed the Survey by hand and submitted the completed Surveys to SWCA. Upon completion of the Survey, a series of follow-up questions was developed by SWCA for use during site visits to individual SHPOs, THPOs, and FPOs. These supplementary questions are included in Appendix C.

SHPOs, THPOs, and FPOs that could not be scheduled for site visits were interviewed over the telephone. Additional survey data were collected between August 2008 and January 2009. Site visits to selected, representative SHPOs and THPOs were conducted between October 2008 and January 2009.

SURVEY RESPONDENTS

The operational structure and missions of SHPOs, THPOs, and FPOs are distinct, and even within these groups significant differences exist that influenced their various responses to the Survey. The following section outlines some of the differences between and within these various offices.

SHPOs

SHPOs are offices that provide staffing support for State Historic Preservation Officers, who are appointed by the Governors of their respective states for the purpose of managing that state’s cultural resources. State Historic Preservation Officers and staffs are responsible for fulfilling federal mandates for the administration of the NHPA programs at the local and state levels. This includes United States territories, commonwealths, and districts. SHPOs are often responsible for the greatest proportion of historic property administration; they are charged with tasks that include (but not limited to) conducting and managing ongoing historic-property surveys and resulting inventories; evaluation and consultation of Section 106 review documentation for projects conducted within their state’s boundaries; review and approval of National Register of Historic Places (NRHP) nominations; maintaining and updating historic property documentation; and supporting and developing public education programs regarding cultural resources within the state. These roles result in the creation of data management instruments that are diverse and unique to each state’s inventory compositions, cultural regulations, and resource management structures.

Although all SHPOs were created as result of the NHPA, by design a great deal of diversity has developed in their structures and organizations. State to state, in Washington, D.C., and the United States territories, SHPOs fall under different departments within their state-level governments. For example, the Colorado SHPO falls under the Department of Higher Education; in Florida it falls under the Department of State; in Oregon it falls under the Parks and Recreation Department; and in Texas, it is the Texas Historical Commission, essentially an independent state agency. The parent agency for a SHPO not only affects its

Data for the NHPII Survey were collected via the Internet, site visits, and telephone interviews. Some offices were unable to access the Survey electronically, so they completed the Survey by hand and submitted the completed Surveys to SWCA.

State Historic Preservation Officers are state-appointed officers who are charged with the management of cultural resources within their given state. SHPOs are typically tasked with greatest amount of historic property management, compared with other agencies.

budget, but in some cases also the budgetary requirements and regulations regarding funding, staffing, training, and even software and hardware acquisition.

Organizational differences within each state also impact the types of resources managed by the SHPO. In some cases these different departments, such as the Office of Archeology or the State Archeologist, are located in different buildings, or under a different administrative system, such as in Georgia, whose Office of Archeology is administered through the University of Georgia and whose SHPO office is administered by the state’s Department of Natural Resources. Site visits revealed that some of these organizational differences resulted in survey responses that heavily favored one category of resource over the other, depending on who completed the Survey.

Out of the 59 SHPOs in the United States and its territories, 47 responded to the NHPII Survey.

FPOs

According to the ACHP, Federal Preservation Officers are defined as historic preservation officers who are assigned to federal agencies that operate at a national level and who are responsible for preservation activities concerning historic properties owned and/or managed by a given federal agency. The type and volume of historic properties managed by and the data management needs of an FPO can vary widely, as they are dependent on the type of agency an FPO serves. FPOs represent diverse agencies that serve in a variety of capacities, including land-management agencies, regulatory agencies, and development agencies.

Land-management agencies are those that have significant responsibilities for the management and preservation of public lands, buildings, structures, and sites. Properties under the management of these agencies constitute over 60% of the contiguous United States land area. Consequently, land-management agencies are responsible for a great volume of historic properties. As a result, the budget and resource values provided by land-management agencies are substantially larger than those provided by other types of FPOs. Examples of land-management FPOs include the Bureau of Land Management (BLM), the Bureau of Reclamation (Reclamation), the U.S. Department of Agriculture Forest Service (USDAFS), and the NPS.

In contrast, both regulatory (e.g., Federal Communications Commission) and development (e.g., Department of Commerce) agencies are responsible for only a limited number of properties owned and operated by the agencies. Most are used for administrative purposes, are to be acquired or sold by the subject agency, or require official oversight or regulatory permits from the respective agency prior to modification or disposition. Accordingly, the historic property–related data management needs of regulatory and development agencies tend to be relatively minimal.

The categorical differences in federal agencies, as noted above, result in a misleading raw analysis of FPO responses. However, with only 24 FPO respondents to the survey, separating FPOs categorically by agency would have created too small a sample for statistical analysis. For the purposes of this report, FPO responses are considered together, with the differences between the various agencies highlighted through contextual information gathered during site visits.

Federal Preservation Officers are historic preservation officers assigned to federal agencies that oversee the management of historic properties. Federal Preservation Officers are present in several types of federal agencies.

Land-management agencies are those that have significant responsibilities for the management and preservation of public lands, buildings, structures, and sites.

In contrast, both regulatory (e.g., Federal Communications Commission) and development (e.g., Department of Commerce) agencies are responsible for only a limited number of properties owned and operated by the agencies.

In total, 24 FPOs completed the NHPII Survey. An additional four FPOs—Reclamation, BLM field offices in Idaho and California, and a USDAFS field office in California—were interviewed either by telephone or through site visits. Since these interviews followed the format of follow-up site visits, and these offices never completed the NHPII Survey, this information is not included in the statistical analysis. Information from these interviews was used in the development of the “Best Practices” section. Of the 24 FPOs completing the survey, four function strictly as land-management agencies, and two function in a combined role of development and land-management agencies. Of the remaining 18 agencies, 11 can be categorized as regulatory agencies and seven as development agencies.

THPOs

Under federal laws, THPOs from federally recognized tribes have responsibilities similar to SHPOs. They are historic preservation officers designated by a given Native American tribe to manage historic, archeological, and traditional cultural properties/places (TCPs) and practices that fall within tribal lands or lands historically associated with tribal heritage. The responsibilities of THPOs include consultation on federally assisted projects impacting cultural resources of tribal ceremonial or religious importance. They also oversee any Native American Graves Protection and Repatriation Act (NAGPRA)-related consultation or repatriation pertaining to their tribe, as well as education of and outreach to local communities. The extent of land area, be it reservation land or land outside the reservation but historically associated with tribal heritage, varies widely. Likewise, the volume and types of historic properties vary significantly from tribe to tribe. And the extended responsibilities of THPOs beyond reservation boundaries mean that even tribes without reservation holdings may need to collect and maintain tribal historic resource inventories.

While the organizational differences among THPOs across the country are not as dramatic as those among FPOs, differences among tribal jurisdictions and practices sometimes produce significant variance in the reported data management needs of individual THPOs. Average THPO response values, then, also do not necessarily always reflect average needs, policies, or practices. This was one of the reasons that efforts were made in this report to include site visits with as many tribes as possible, along with the individual needs and responsibilities of each THPO, into the following analysis.

In total, 38 THPOs from federally recognized tribes completed the NHPII Survey and are included in the statistical analysis. An additional two THPOs, Narragansett Indian Tribe and the Ponca Tribe of Nebraska, were interviewed in person and over the telephone. These interviews followed the format of follow-up site visits, and these tribes never completed the NHPII Survey; therefore, this information is not included in the statistical analysis.

NHPII WEB-BASED SURVEY

The NHPII Survey was created by NPS staff with guidance from the NHPII Working Group. The Survey was then made available to agencies via SurveyMonkey.com, an online, third-party survey application that was used to gather and organize responses. After the Survey information was submitted by the SHPOs, THPOs, and FPOs (and other Survey results from the NPS through SurveyMonkey.com), SWCA transferred the data to a state-of-the-art database management analysis platform. Data were downloaded into Microsoft

Tribal Historic Preservation Officers are preservation officers designated by a particular tribe to manage and preserve cultural resources that fall within tribal lands. THPOs also provide consultation on some federal projects that include TCPs.

Excel® spreadsheets and imported into a relational database management system (RDBMS) for cleanup and analysis (see Appendix D for data cleanup notes and methodology). From this platform, SWCA produced charts and statistics to analyze the answers to each question in the NHPII Survey. The final analysis accumulated 109 completed responses in the data downloaded from SurveyMonkey.com.

The overall goal of the Survey was to identify current DBMS and the management practices of historic properties, as well as to assess current conditions of the electronic historic property inventories used by SHPOs, THPOs, and FPOs through a series of detailed questions. These questions were divided into sections that could elicit specific information about DBMS practices in place at preservation offices across the nation. The following is an outline of the sections of the NHPII Survey. In the following pages, we present a detailed analysis of the Survey, along with a list of “best practices” determined from analysis of the Survey and follow-up site visits. For a more detailed analysis of each question, please refer to the amended SWCA report regarding the initial survey (see Appendix D).

Sections 1 through 3 include background information and instructions for completing the Survey. There are no questions within these sections.

Section 4 was designed to collect information on the respondent organization, as well as on the person completing the Survey. A number of questions in this section are respondent-specific. Aggregate analysis of the responses to these questions would have no bearing on this analysis; therefore, responses to Questions 4.1, 4.3, 4.5, 4.7, and 4.8 are not included.

Section 5 was intended to collect background information on the use of electronic historic properties databases and the contents of these databases. The bulk of the questions were designed to elicit information relevant to the contents of the databases, in terms of both data types and property types.

Section 6 focuses on property and archeological data collection, entry, management, and dissemination. Because of the diversity of the section, it is difficult to highlight general trends for the entire section.

Section 7 was intended to discern respondent practices concerning the distribution and dissemination of historic property inventory data. This includes both sharing of data between institutions and agencies and the availability of data to the general public and to historic preservation professionals. Some questions in this section were also intended to discern the extent to which legacy data are becoming available electronically.

Section 8 addresses the levels of funding available to the respondents, by respondent category, and also the general categories of sources of that funding. The questions also attempt to assess the level of priority place on digitization of historic property data.

Section 9 addresses issues of staffing, training, and support in the development and operation of electronic historic property inventory systems.

Section 10 was directed towards two themes: the existence and operation of web-accessible historic property information, and the sharing of historic property information through electronic media. The majority of responses in this section are from SHPOs, with FPOs and THPOs providing a sample too small for statistical analysis.

The goal of the survey was to identify current DBMS trends across the country. The results of this survey helped develop a “best practices” list, outlined in this report.

Section 11 was intended to elicit information about the planning priorities of respondents with respect to historic property inventory development. Responses regarding the priorities and planning directions of respondents varied widely.

In summary, 47 of the 59 SHPOs (including states and territories) submitted a response to the NHPII Survey (Table 1). SHPOs that did not respond cited various reasons, mainly the lack of key personnel to adequately complete the Survey. On average SHPOs answered 69% of the questions. Twenty-four FPOs submitted responses to the NHPII Survey (Table 2). On average, FPOs only responded to 49.5% of the questions, likely because many FPOs that were included do not hold historic properties, but rather are regulatory agencies overseeing projects focusing on historic properties held by others. In total, 38 THPOs submitted responses to the NHPII Survey (Table 3). On average, THPOs answered 20% of the Survey questions. Several other THPOs were contacted (in person, by telephone, and/or via email), but reported they did not feel the Survey was relevant to them and they therefore did not complete a formal Survey. In general, tribes and THPOs that do not have a DBMS for resource tracking or storage simply chose not to complete the Survey. THPOs also declined for other reasons, such as absence of tribal council approval or a reluctance to interact with government agencies. Some simply did not respond and did not cite a reason.

47 out of a total 59 SHPOs responded to the Survey, along with 24 FPOs and 38 THPOs.

DETERMINATION OF SITE VISITS AND ADDITIONAL OUTREACH

In October 2008, SWCA began to schedule and perform site visits to SHPOs, THPOs, and FPOs. A second group of questions was developed (see Appendix C), and SHPOs, THPOs, and FPOs were identified for follow-up interviews. A preliminary list of site visits was included in the preliminary report released to NCSHPO and the NHPII Working Group in September 2008. Offices to be visited were selected based on several factors, such as initial responses about the type of DBMS and practices currently in use. SHPOs, THPOs, and FPOs were selected from all regions of the United States to ensure that a balance of cultural resource sites and practices would be considered in the site visits. Respondents were contacted by email and by telephone when necessary to schedule site visits. Initial emails included an attached letter from Paul Loether, a Working Group member and chief of the NRHP and National Historic Landmarks Division at the NPS, regarding the goals of the NHPII Survey. If site visits were delayed by weather or a last-minute cancellation, the interview was conducted via telephone at a later date, or an interview with a different office was substituted.

A second group of questions was developed, and SHPOs, THPOs, and FPOs were identified for follow-up interviews.

INTERVIEWS

SHPO and FPO interviews involved meeting with the person or persons most knowledgeable about the agencies' DBMS applications. Many SHPO interviews involved meeting with multiple informants; on average, three people at each SHPO were interviewed. Prior to each site visit, SWCA project personnel reviewed the completed Survey from SurveyMonkey.com and identified for further discussion Survey answers that required clarification. In addition, project personnel identified and asked a series of follow-up questions (see Appendix C).

THPO interviews were conducted in a very different way for various reasons. Consistent with SWCA’s contracted scope of work, follow-up interviews were attempted with every THPO that completed the NHPII Survey. SWCA divided the nation into sectors and concentrated on placing SWCA employees with tribal experience in each sector. Some interviews were conducted prior to receiving a completed NHPII Survey. During THPO interviews, a standard set of questions was presented to ensure that comparable information was collected during each site visit. In an effort to increase the sample size of THPO respondents, six additional interviews were conducted via telephone.

Interviews were open-ended in structure, which allowed for a more comfortable interview session; however, SWCA staff attempted to adhere to the core Survey questions (see Appendix B). As part of each site visit, interviewers had a chance to observe firsthand the type of DBMS currently in use at the various offices. The site visits also gave the interviewers the opportunity to gather information on DBMS currently under development at these offices. Interviewers took detailed notes, which they used as part of the analysis. All attempts were made to record whatever information was relayed during the course of these interviews. In general, taking notes by hand was the principle recording method used by SWCA during telephone and face-to-face interviews. All notes were then submitted to SWCA’s Denver office for further comprehensive compilation and analysis.

Site visits gave the interviewers the opportunity to gather information on DBMS in use and under development at these offices.

Table 1. SHPO Survey Respondents.

State Historic Preservation Office Respondents to Survey	Office Location	
Office of History and Archeology	Anchorage	AK
Alabama Historical Commission	Montgomery	AL
Arkansas Historic Preservation Program	Little Rock	AR
California Office of Historic Preservation*	Sacramento	CA
Colorado Historical Society*	Denver	CO
Commission on Culture and Tourism	Hartford	CT
D.C. Historic Preservation Office	Washington	DC
Delaware Division of Historical and Cultural Affairs	Dover	DE
Florida Division of Historical Resources	Tallahassee	FL
Historic Preservation Division, Department of Natural Resources*	Atlanta	GA
Hawai'i State Historic Preservation Division	Kapolei	HI
Idaho State Historical Society*	Boise	ID
State Historical Society of Iowa	Des Moines	IA
Indiana Division of Historic Preservation and Archeology*	Indianapolis	IN
Guam Department of Parks, Recreation and Historic Preservation	Agana Heights	Guam
Kentucky Heritage Council	Lexington	KY
Louisiana, Department of Culture, Recreation & Tourism*	Baton Rouge	LA
Massachusetts Historical Commission*	Boston	MA
Maryland Historical Trust*	Crownsville	MD
Michigan State Historic Preservation Office*	Lansing	MI

State Historic Preservation Office Respondents to Survey	Office Location	
Minnesota State Historic Preservation Office *	St. Paul	MN
Missouri State Historic Preservation Office*	Jefferson City	MO
Mississippi Department of Archives and History	Jackson	MS
Montana State Historic Preservation Office	Helena	MT
North Carolina State Historic Preservation Office*	Raleigh	NC
State Historical Society of North Dakota	Bismarck	ND
Nebraska State Historical Society*	Lincoln	NE
New Hampshire Division of Historical Resources	Concord	NH
New Jersey State Historic Preservation Office	Trenton	NJ
Nevada State Historic Preservation Office	Carson City	NV
New York State Office of Parks, Recreation and Historic Preservation*	Waterford	NY
Ohio Historic Preservation Office, Ohio Historical Society	Columbus	OH
Oklahoma State Historic Preservation Office	Oklahoma City	OK
Oregon Parks/Recreation – State Historic Preservation Office	Salem	OR
PA Historical and Museum Commission – Bureau for Historic Preservation	Harrisburg	PA
Puerto Rico, State Historic Preservation Office	San Juan	PR
Rhode Island Historical Preservation and Heritage Commission	Providence	RI
South Carolina, Department of Archives & History*	Columbia	SC
State Historical Society Archeological Research Center	Rapid City	SD
Tennessee Historical Commission	Nashville	TN
Texas Historical Commission*	Austin	TX
Utah Division of State History*	Salt Lake City	UT
Vermont Division for Historic Preservation*	Montpelier	VT
Department of Archeology and Historic Preservation*	Olympia	WA
Wisconsin State Historic Preservation Office*	Madison	WI
West Virginia State Historic Preservation Office	Charleston	WV
Wyoming State Parks and Cultural Resources – State Historic Preservation Office *	Laramie	WY

* Indicates site visit.

Table 2. FPO Survey Respondents

Federal Historic Preservation Office Respondents to Survey	Manage Public Property Y/N	Office Location	
American Battle Monuments Commission***	Y	Arlington	VA
Bureau of Engraving and Printing	N	Washington	DC
Bureau of Indian Affairs*	Y	Billings	MT
Bureau of Land Management* (Field Offices in California** and Idaho*)	Y	Washington	DC
Bureau of Reclamation**	Y	Denver	CO
Department of Defense**	Y	Washington	DC
Department of Energy***	Y	Washington	DC
Department of Homeland Security***	Y	Washington	DC
Economic Development Administration, U.S. Dept. of Commerce***	N	Washington	DC
Federal Aviation Administration**	N	Washington	DC
Federal Communications Commission	N	Washington	DC
Federal Emergency Management Agency***	N	Washington	DC
Federal Highway Authority***	N	Washington	DC
Housing and Urban Development*	N	Washington	DC
Institute of Museum and Library Services	Y	Washington	DC
NASA	Y	Washington	DC
National Archives and Records Administration	N	College Park	MD
National Indian Gaming Commission	N	Washington	DC
National Park Service*	Y	Washington	DC
Treasury Department	N	Washington	DC
U.S. Commission of Fine Arts***	N	Washington	DC
USDA, Agricultural Research Service	Y	Beltsville	MD
USDA/Farm Service Agency***	Y	Washington	DC
USDA Natural Resources Conservation Service	N	Washington	DC
USDA – Rural Development	Y	Washington	DC
U.S. Fish and Wildlife Service*	Y	Washington	DC
U.S. Forest Service (Field Office in Denver* and Sacramento**)	Y	Washington	DC
U.S. General Services Administration*	Y	Washington	DC

* Indicates site visit.

** Indicates telephone interview.

*** Indicated in communication that no database exists for cultural resources.

Table 3. THPO Survey Respondents.

Tribal Historic Preservation Office Respondents to Survey	Office Location	
Navajo Nation Historic Preservation Department*	Window Rock	AZ
White Mountain Apache Tribe*	Fort Apache	AZ
Wiyot Tribe*	Loleta	CA
Agua Caliente Band	Palm Springs	CA
Timbisha Shoshone Tribe*	Death Valley	CA
Stewarts Point Rancheria Kashia Band of Pomo Indians*	Santa Rosa	CA
Bear River Band Rohnerville Rancheria*	Loleta	CA
Smith River Rancheria*	Smith River	CA
Elk Valley Rancheria*	Crescent City	CA
Yurok Tribe*	Klamath	CA
Blue Lake Rancheria*	Blue Lake	CA
Pinoleville Pomo Nation*	Smith River	CA
Big Pine Paiute Tribe of the Owens Valley**	Big Pine	CA
Tribal Historic Preservation Office, Seminole Tribe of Florida	Clewiston	FL
Coeur d'Alene Tribe	Plummer	ID
Mashantucket Western Pequot Tribe	Mashantucket	MA
Wampanoag Tribe of Gay Head (Aquinnah)*	Aquinnah	MA
Penobscot Indian Nation	Indian Island	ME
Ketegitigaaning Ojibwe Nation	Watersmeet	MI
Lower Sioux Indian Community	Mortin	MN
White Earth Nation**	White Earth	MN
Leech Lake Band of Ojibwe*	Cass Lake	MN
Chippewa Cree Tribes	Box Elder	MT
Three Affiliated Tribes*	New Town	ND
Standing Rock Sioux Tribe*	Fort Yates	ND
Ponca Indian Tribe of Nebraska*	Nuribarra	NE
Seneca Tribe	Salalamca	NY
Choctaw Nation of Oklahoma	Durant	OK
Narragansett Indian Tribe**	Hope Valley	RI
Catawba	Rock Hill	SC
Sisseton-Wahpeton*	Sisseton	SD
Rosebud Sioux Tribe of Indians*	Rosebud	SD
Cheyenne River Sioux Tribe**	Eagle Butte	SD
Confederated Tribes of Warm Springs	Warm Springs	OR
Skokomish Tribe	Skokomish Nation	WA
Colville Confederated Tribes	Nespelem	WA
Lac Du Flambeau Band of Lake Superior Chippewa Indians*	Lac Du Flambeau	WI
The Ho-Chunk Nation**	Black River Fall	WI

* Indicates site visit.

** Indicates telephone interview.

FINDINGS

The following findings are based on statistics and information gathered from answers provided for the NHPII Survey, supplemental survey questions, and information and observations garnered during SWCA’s on-site interviews with SHPOs, THPOs, and FPOs. In most cases, site visits and interviews revealed different information from the statistical analysis based solely on the NHPII Survey responses.

THPOs were under-represented in the 2008 NHPII Survey, but additional responses were collected through supplemental site visits, subsequent follow-up telephone calls, and emails to successfully provide a larger sample size for analysis. SHPO responses were increased with the addition of two territories and two states that did not answer the original Survey.

FPOs are the least represented group in the final analysis. To acquire a more comprehensive understanding of the systems that FPOs use, SWCA interviewed FPOs at three additional agencies, as well as representatives from various field offices of the BLM, USDAFS, and Reclamation. Site visits concentrated on regional field offices. The relative lack of FPO participation in the process as a whole is directly related to the fact that most are regulatory agencies or development agencies and do not directly manage historic properties.

A review of individual responses generally confirms that representatives of SHPOs, THPOs, and FPOs who completed the Survey are the most knowledgeable, except in cases where the office maintains separate databases for architectural properties and archeological sites (e.g., State Historical Society Archeological Research Center, Ohio Historic Preservation Office). In such cases, most interviews included a knowledgeable representative for each database. Site visits revealed that most SHPOs and FPOs have more than two databases. In addition to databases for historic property inventories, many SHPOs and FPOs have developed systems for historic-property and archeological surveys, tax credits, maintenance covenants and easements, Section 106/compliance, and underwater cultural resources.

Most DBMS have been developed at SHPOs, THPOs, and FPOs by archeologists or architectural historians. One advantage of this is that the system is specifically tailored for managing cultural resources information by specific staff within a specific jurisdiction. However, usually only a single person designs and maintains the system, and when this individual retires or is otherwise lost, the resultant loss of institutional knowledge of the DBMS can be devastating to the organization. This is a problem that is discussed below in the section on “Training.” The following sections break down the Survey questions and site visit information into some of the key topics associated with DBMS and historic property inventories. As noted above, data for each of these sections was derived from a combination of Survey results, site visits, and inspections of existing databases.

In most cases, site visits revealed a different outlook from the actual statistical analysis based on the questionnaire responses.

In addition to databases for historic property inventories, many SHPOs and FPOs have developed systems for historic-property and archeological surveys, tax credits, maintenance covenants and easements, Section 106/compliance, and underwater cultural resources.

Most SHPOs, THPOs, and FPOs do not have formal training in DBMS. Most are trained in anthropology/ archeology or in architecture/history.

DATABASE MANAGEMENT SYSTEMS AND RELATIONAL DATABASE MANAGEMENT SYSTEMS

This section provides a brief description of the types of DBMS and RDBMS being developed and used by SHPOs, THPOs, and FPOs. This information was generated from Sections 5, 6, and 10 of the NHPII Survey and information gathered from site visits. During site visits, DBMS currently in use by the various offices were examined, and detailed notes were taken of the functions and limitations of these systems. Where possible, systems under development were also examined to understand the direction a given office is taking with respect to future DBMS practices and policies. SWCA sought to elicit information regarding not only the types of software used in the construction of these databases, but also regarding the overall architecture of DBMS in use by a SHPO, THPO, or FPO. Included in this section is a brief description of some of the different types of DBMS and RDBMS available, along with their capabilities and limitations.

Database systems can be divided into two basic types: tabular (or “flat file”) and relational. The most common type of tabular database systems is the spreadsheet. Common tabular database platforms include Microsoft Excel®, Lotus 123®, and OpenOffice.org® Calc. Tabular database systems are commonly used to store and manage relatively small data sets that are used by a limited number of people.

Larger data sets that are accessed by large numbers of users are typically managed via an RDBMS. Relational databases store data in sets of structured and related tables that can be accessed using a standardized query language, most commonly the Structured Query Language (SQL). RDBMS provide sophisticated capabilities for managing, storing, and manipulating data, including various mechanisms to enforce referential integrity, to limit user access based on a permissions scheme, and to automate tasks through one or more Application Programming Interfaces (APIs). Most RDBMS also allow multiple users to view and modify information concurrently.

RDBMS can be divided very generally into desktop and enterprise RDBMS platforms. Desktop platforms, such as Microsoft Access®, Filemaker Pro®, SQLite®, and OpenOffice.org Calc., are easier to use and typically less expensive than enterprise platforms, but are more limited in their capabilities. Because of their ease of use and reasonable costs, desktop RDBMS are widely used by survey respondents.

Enterprise RDBMS platforms provide more advanced features, such as atomic transactions, cursors, stored procedures and triggers, clustering and replication, schemas, partitioning, advanced security features, and query optimization engines. Common enterprise RDBMS platforms include Oracle®, PostgreSQL®, Microsoft SQLServer®, Firebirdsql®, Sybase®, and DB2®. These systems typically require experienced database administrators for their implementation and management, and many of them are very expensive. The distinction between desktop and enterprise RDBMS is not a clear one, and many platforms, such as Sun Microsystems’s open source RDBMS, MySQL®, occupy the broad middle ground between them.

Most SHPOs that were interviewed during site visits indicate that their DBMS was initially created and implemented in the 1980s. Overall, DBMS systems vary widely, depending on the expertise of the designer who in most cases was not formally trained to create and maintain DBMS. Fewer than 50% DBMS in use by SHPOs and FPOs were designed by

Database systems observed during the survey can be broken into two distinct types: tabular (Microsoft Excel, Lotus, etc.) and relational (Microsoft Access, Filemaker Pro, etc.).

Tabular databases consist of two-dimensional tables of columns and rows that are not linked systematically to one another.

RDBMS provide sophisticated capabilities for managing, storing, and manipulating data, including various mechanisms to enforce referential integrity, to limit user access based on a permissions scheme, and to automate tasks through one or more Application Programming Interfaces.

professional consultants, and in most cases professional consultants were only used for DBMS that focused on geographic information system (GIS) and spatial information. Most DBMS in use by SHPOs and FPOs are relational and not tabular in structure (site visits revealed only one SHPO using a tabular database). None of the THPOs that responded to the NHPII Survey maintain RDBMS, with most employing some type of tabular DBMS (spreadsheets).

Access is the software platform most widely used by NHPII Survey respondents. Access is in use at 76% of SHPOs, 82% of THPOs, and 44% of FPOs. The interface of each DBMS observed ranged from a simple text-based page form to complex, yet user-friendly, windows applications. Although Access is not as capable as other systems such as SQL Server or Oracle, it is easy to learn and operates under a very user-friendly format as part of the ubiquitous Microsoft Office® suite of products. Although a few SHPOs (Massachusetts Historical Commission, Maryland Historical Trust, and Wisconsin Historical Society) and FPOs (NPS, General Services Administration [GSA], USDAFS) use high-end database software such as SQL Server or an Oracle enterprise database product, Access is often used in addition to these systems for user interface design. The heavy use of the user-friendly Microsoft Access is related to the lack of trained cultural-resource information technology (IT) professionals.

In general, site visits revealed that while SHPOs usually have more than one database, they also usually have only one DBMS. SHPOs and THPOs tend to keep their databases separated by purpose/program area, such as archeology, architecture, tax credits, and Section 106 projects. Maintenance of the archeological data within the inventories is done directly by staff at SHPOs, THPOs, and, in cases where the federal agency manages significant numbers of historic properties, by FPOs. As previously mentioned, a majority, if not all, of SHPOs maintain separate archeology and architectural databases, and in most cases, both types of cultural resources are in some type of relational DBMS and are therefore network-accessible to qualified researchers and to the SHPO staff.

Some SHPOs (31%) maintain their archeological databases at a location outside their facility. A state university or separate state office of archeology is the most common place for off-site storage of archeological information. One problem with this arrangement is that the state is maintaining two DBMS that could in theory be consolidated on the same software platform. This increases maintenance costs in most cases, unless the assigned office of each DBMS has sufficient staff and funding, which is not usually the case for SHPOs. Universities that hold archeological DBMS typically have access to more up-to-date technology and more available staffing. The separation has more to do with a policy decision than design.

Almost all SHPO and THPO respondents report maintaining basic “historic properties” inventories inclusive of archeological and architectural resources; however, only 56% of FPOs report maintaining such a database. Among respondents that have not implemented an electronic historic property management system, most FPO respondents do not consider it to be a priority. Of the 24 FPOs that responded to the survey, seven are either land-management agencies or bureaus, or have some type of land-management function. Of these, six (86%) maintain some type of historic property inventory. This is in contrast to the agencies with no direct oversight of federal property, only two of which (12%) maintain some type of historic property inventory. This statistic is not surprising since

Fewer than 50% of SHPO and FPO DBMS have been designed by outside professional consultants.

The heavy use of the user-friendly Microsoft Office Access is related to the lack of trained personnel.

agencies directly responsible for the direct oversight of federal property are more likely to require some management of cultural or historic resources associated with those properties.

SHPOs list a diverse array of impediments to developing and adopting DBMS, including regulatory and security issues, vendor lock-in, and data quality concerns. Most commonly SHPOs and THPOs cite a lack of resources (time, money, and staff) as the reason they do not yet have an electronic historic property inventory. According to the 2007 report released by NCSHPO, each state on average needs \$1.235 million to upgrade their electronic data system and GIS, as well as an additional \$168,000 in technology costs for software and servers.

Systems in place at several different FPOs highlight some of the steps taken by these agencies to develop DBMS specific to their needs. The Government Performance and Results Act of 1993 was a starting point for federal agencies to develop strategic plans and be accountable for their activities and resources. Some Department of the Interior bureaus, for example, developed strategic planning goals related to the condition of the cultural resources under their jurisdiction, such as historic buildings, archeological sites, and museum collections. The Federal Accounting Standards Accountability Board also issued a directive in the 1990s for federal agencies to report on the inventories and condition of “heritage assets” in their annual financial report. Executive Order (EO) 13287 (Preserve America) and EO 13327 (Federal Real Property Asset Management), issued in 2003 and 2005, respectively, require accountability for the assets owned and managed by federal agencies, including historic properties. These laws, EOs, and other directives have compelled some federal agencies to develop sophisticated DBMS or RDBMS to effectively meet varied annual reporting requirements.

EO 13327 also directs federal agencies to identify and categorize all the real property they own, lease, or otherwise manage and prioritize actions to improve the operational and financial management of the agency’s real property inventory. Many federal agencies, therefore, operate separate databases for maintenance on historic and non-historic properties that are real property. In a few cases, these databases are linked in order to share critical data for both types of assets. Ultimately, key data on historic properties that are real property are uploaded annually by federal agencies to the Federal Real Property Profile, a database managed by GSA. FPOs also have been slowly integrating GIS into these efforts.

The GSA operates a DBMS that links maintenance tables, finance tables, agency ownership, and NRHP eligibility. This was a departure from the original system used by GSA in the early 2000s that did not adequately address historic preservation concerns and requirements.

Another agency that has been active in developing its historic property inventory infrastructure is the USDAFS. The USDAFS began developing a new DBMS in 2002. Its DBMS for site recording has a standard nationwide interface, which does not deviate from forest district to forest district. Site visits revealed that their DBMS is easily navigable, with several features not found at other FPOs, including the ability to generate appropriate site forms for each individual state. The USDAFS system has a client-server architecture that is based on Access and Oracle. The interface allows for easy access to maintenance records, real property values, site recordings, and a document holding tank. A document holding tank is a page or area within a page that contains hyperlinks to various documents such as site forms, photographs, and gray literature reports. The USDAFS has had

According to the 2007 report released by NCSHPO, each state on average needs \$1.235 million to upgrade their electronic data system and GIS, as well as an additional \$168,000 in technology costs for software and servers.

The Federal Accounting Standards Accountability Board also issued a directive in the 1990s for federal agencies to report on the inventories and condition of “heritage assets” in their annual financial report.

Laws, EOs, and other directives have compelled some federal agencies to develop sophisticated DBMS to meet numerous and varied annual reporting requirements in efficient and effective ways.

The USDAFS has had difficulties storing photographs, but as they develop the document holding tank to accommodate larger files, this problem should be resolved.

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In their responses most SHPOs (86%) and FPOs (90%), and 75% of responding THPOs, responded that they have access to full-time, dedicated IT support personnel. Site visits confirmed that most of these full-time IT staff are available only to troubleshoot connectivity and software problems, and cannot or do not develop additional applications, or implement systems such as DBMS or web-based historic property inventories. The development of these systems has often fallen to staff members with limited knowledge of DBMS and IT systems. While it may seem more efficient to have IT personnel directly involved with the design of these systems, most professional IT personnel available to these agencies are not trained in cultural resources management policies and practices and may not be able to design and build reliable DBMS that meet the specific needs of historic preservation staff. Ideally, DBMS should be designed and maintained by staff members trained in both historic preservation/cultural resource management and IT. In order for DBMS development to move forward, dedicated funding is required to secure the services of personnel who are adequately trained in both database management and historic preservation/cultural resources management to oversee the DBMS.

Both the web Survey and the site visits indicate that while most SHPOs and THPOs, and a little less than half (45%) of the FPOs, maintain some kind of database for managing cultural resources, the systems and capabilities of these DBMS vary greatly. The complexity of these databases and the differences between RDBMS and non-relational DBMS appear to be based more on the funding and the expertise of the database managers. Smaller databases tend to operate on a single platform, with Microsoft Access being the most common DBMS software. More robust systems tend to use software such as SQL server or Oracle software. These systems tend to have increased functionality with the ability to query multiple sets of data within the same system. Additionally, the directions that offices are taking with their DBMS appear to be based on the specific needs of the offices (e.g., Massachusetts Historical Commission, Maryland Historical Trust, NPS, and GSA).

DBMS INVENTORIES

The variety in the types of database systems is often related to the inventory maintained by of each office. Most DBMS are capable of handling a wide variety of data, although the greater the amount of information, the greater the complexity of the system. This section presents information regarding the types and diversity of historic property inventories and its impact on the structure of the DBMS. The information in this section is based on questions from Sections 5, 7, 8, and 11 of the NHPII Survey, as well as from the site visits with various SHPOs, THPOs, and FPOs.

SHPOs report having very broad-based historic property inventories, inclusive of archeological and architectural resources, and including a wide range of property types. More than 80% of the responding SHPOs indicate that their inventories include archeological sites, historic buildings and structures, tax credit projects, underwater sites, districts, and objects. Over half of the SHPOs also include landscapes and TCPs in their inventories. THPOs tend to have more homogeneous inventories, with 71% including archeological sites and TCPs, but only half including objects, buildings, or structures. FPOs tend to have a greater emphasis on historic architectural resources, with exception of

In order for DBMS development to move forward, dedicated funding is required to secure the services of personnel who are adequately trained in both database management and historic preservation/cultural resources management to oversee the DBMS.

The type of DBMS in use at various offices is often directed toward their specific needs.

the NPS, USDAFS, BLM, and Department of Defense (DOD), all with large inventories of archeological sites. As the central repository of historic property information in most states, SHPOs have more comprehensive databases, while FPOs are more likely to have databases catered to their specific needs.

Site visits revealed that there is some geographic division between SHPOs regarding the numbers of each type of resource, with inventories dominated by architectural resources in the east, and inventories dominated by archeological resources in the west. The higher percentage of federally managed lands in the west results in a greater number of Section 106 projects on unimproved lands. Survey of these unimproved lands more commonly result in archeological discoveries. With less federally managed lands in the east, a greater percentage of survey projects are associated with local governments inventorying architectural resources.

Regardless, most offices are required to manage information on both architectural and archeological cultural resources. Offices with more inclusive DBMS and with a greater variety of resources being managed are likely to require multiple forms for different property types. SHPOs tend to have multiple forms for each of the property types in their database, while THPOs and especially FPOs are more likely to use a single form. Site visits revealed that the greater the number and diversity of forms, the greater the complexity of the DBMS for historic property management.

The diversity of resources, or the number of forms each office uses, does not necessarily impact the type of DBMS in use. However, with architectural and archeological information managed by different offices in some states, operating under different budgets, and with different responsibilities regarding the dissemination or protection of information, the diversity of historic property inventories has impacted the past development of DBMS. These differences are also likely to impact any future development, as DBMS, by necessity, must meet the specific needs of each individual office.

During site visits, many THPOs expressed a desire to develop inventories that will be more useful for culturally appropriate educational opportunities. Such inventories will provide access to archival documents and gray literature, such as historic and ethnographic literature, archival photograph collections, historic and contemporary photographs and videos of site and place locations, and video footage featuring elders explaining the importance of specific places in relation to tribal culture. In addition, the desire to harness digital inventories to preserve native languages exists, whether in the pronunciation of place names, description of practices, or place-based stories told in native language. THPOs also expressed interest in linking digital inventories to tribal genealogies. Finally, THPOs want to harness tribal inventories of repatriation activities, including linking photographs of items in tribal or other museums or heritage centers to locational referents.

The size and complexity of the inventories are related most often to the complexity of the information being recorded and stored in particular DBMS, variety of media for the information being stored, and the overall purpose for the inventory. DBMS that include only a few types of resources, storing only text data, tend to be simpler than those encompassing multiple resource types and including text, spatial data, photographs, and video. SHPOs, THPOs, and FPOs may have different needs based on the resources they manage, and may have different goals for the ultimate use of historic property inventories. The goals of SHPOs or landholding FPOs may be directed more toward the management

Many THPOs have expressed a desire to develop inventories that would serve as a culturally appropriate educational tool.

DBMS that include only a few types of resources, storing only text data, tend to be simpler than those encompassing multiple resource types and including text, spatial data, photographs, and video.

of resources, where other FPOs and THPOs may have a greater desire for education and outreach. The specific needs of each agency and the goals for their historic property inventories play a large role in determining the types of DBMS needed to meet those needs.

DATA INPUT

Part of the role of a functioning DBMS is to provide an interface for inputting data. While traditional, manual data-entry methods are the most common, several offices make use of systems designed to aid data input and data entry. This section looks at the various systems in place and under development for the input of information into DBMS, including information uploaded directly from the field computers to the DBMS, the transfer of data to the DBMS over the Internet, and more traditional terminal-based data entry. Information in this section comes from Section 6 of the NHPII Survey as well as from follow-up questions asked during site visits.

Several offices make use of systems that allow the input of data directly from the field. The NHPII Survey results point to very few SHPOs (22%) or THPOs (8%) that have the capability to enter data remotely from the field. The majority of FPOs did not respond to this question, but the BLM and the USDAFS responded as using handheld global positioning system (GPS) units by employees.

The USDAFS, Indiana SHPO, and Vermont SHPO currently use direct field-data entry. The systems used by these agencies differ in their structure and their overall cost. On the top end is a custom-made device that boasts an interface with the State of Indiana’s site form. This machine also has the capabilities of collecting Universal Transverse Mercators (UTMs) and photographs, and allows the person recording historic properties to include notes. This came at a price of \$3,000 per unit, compared with the two other offices, Vermont and the USDAFS, which use Dell Axiom Personal Digital Assistants (PDAs), at \$300 per unit. The Dell Axiom is equipped with a standard interface that was designed to be used in all 50 states. The unit also uses a Microsoft Windows software package and has wireless and satellite Internet capabilities, although a person recording archeological or architectural resources with a PDA still has to carry a camera and perhaps a GPS unit. In the case of the USDAFS, only USDAFS personnel use these PDAs; Indiana and Vermont make their units available to contractors as well as employees.

Survey questions involving the use of laptop computers for field-data entry were somewhat misinterpreted by most respondents. A closer examination of individual responses and information obtained from site visits revealed that laptops are most commonly used in an office setting to transcribe paper field forms. While most respondents are interested in direct field-data entry, very few have instituted or seriously investigated this practice or have funding available to implement such a program. Direct field-data entry could have tremendous return on investment capabilities if the appropriate system is able to be implemented by the agency.

In some cases, the use of PDAs or other field-data entry systems may depend on the specific needs and contexts of the individual offices. At least one office reported that direct field-data entry is not preferred by users. The Wisconsin SHPO developed a direct field-data entry system years ago, and their users told them that they prefer to gather the information in the field, but to submit it after processing the information in their offices.

Several offices make use of systems designed to aid data input and data entry.

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Site visits revealed that SHPOs in Georgia, South Dakota, and Wisconsin each have developed a DBMS that allows qualified contractors and agencies to transfer information within a template of their DBMS over the Internet. In general, this type of data collection is done with various levels of security protocols. One system allows a contractor access to the system at a “write-only” security level for inputting new information. Once complete, the electronic submittal is then subjected to a quality assurance/quality control process, at which time a member of the SHPO staff might have “read-only” access for reviewing purposes, and the next SHPO staff member might have “edit-only” privileges. This particular application is in use by all three of the above-stated SHPOs and seems not only cost effective but also time efficient. Another process involves a template copy of the DBMS that can be copied to the contractor’s computer. The contractor or agency then uses the template to create additional entries into the copied database. When complete, the file can be returned to the SHPO for review and insertion into their DBMS.

Florida SHPO uses electronic submittals in what they refer to as a “Smart Form.” This “Smart Form” can be reviewed and then inserted into the DBMS. The “Smart Form” has the capabilities of transmitting data both ways, to the original creator and the agency, thus allowing for more interaction between the agency and the contractor. A document holding tank is another interesting feature under development or being implemented by several SHPOs and at least one FPO. Scanned documents such as photographs, reports, site forms, and other gray literature are included with hyperlinks for easy access once the site is displayed within the DBMS. This allows the user access to these scanned documents, without loading each image into the database, which can quickly overwhelm the memory capacity of many DBMS. This practice is most common with the more advanced systems and generally associated with DBMS that use Oracle or robust client-server architecture.

One data input tool, the use of a standardized data dictionary, is built into the DBMS itself, and therefore applies whether information is uploaded from a remote location, or through traditional terminal-based data entry. Lexicon terms are an agreed-upon set of terms for specific form fields that limit the possible input options. Several offices make use of lexicon terms in an effort to both streamline data input and facilitate querying of data within the DBMS. While the use of lexicon terms limits the descriptive quality of each field, it helps to limit data entry errors and makes it easier to query specific information within the database.

Several offices have developed systems allowing input into the database through methods other than manual data entry at in-house terminals. The key advantage of the DBMS developments described above is time saved in data entry. In general SHPOs, THPOs, and FPOs using paper or electronic Microsoft Word files enter the site information manually into their DBMS, requiring a considerable labor investment. Other components of developed systems such as the document holding tank prove useful in preserving original digitized documentation and making them easily accessible through the DBMS. Systems in place are catered to the specific needs of the office; however, in most cases the use of DBMS in this fashion has shown an excellent return on investment.

SPATIAL DATA

Many of the DBMS in place, and the majority of those under development, at the various SHPOs, THPOs, and FPOs include a spatial component using some type of GIS software. The information in this section details the types and capabilities of GIS and spatial

Several offices make use of lexicon terms in an effort to both streamline data input and facilitate querying of data within the DBMS.

database systems currently in place and under development at the various offices involved in the Survey. Data for this section come from Sections 6, 10, and 11 of the NHPII Survey, as well as from the follow-up site visits. Spatial components to the DBMS were also viewed firsthand during site visits to get a more detailed understanding of their operation, capabilities, and limitations.

Results of the NHPII Survey indicate that most SHPO (91%) and THPO (89%) respondents have access to GIS software in the office. However, fewer than half of the responding FPOs (45%) have access to GIS. Of the 43 SHPOs (91%) who have access to GIS, 10 indicate that their GIS systems are managed through an outside agency and 33 responded their GIS systems are managed in-house.

GIS software allows spatial or geographic data to be managed, edited, shared, and analyzed all in one software package. This allows the information to be more accessible to all staff and provides easier data management for an organization. GIS software is configured with internal databases and has solid database capabilities. This allows many offices to use GIS as a surrogate DBMS to store and query both geographic or spatial data, as well as non-spatial data (reports, photographs, textual information). The GIS software most widely used by SHPOs, THPOs, and FPOs is produced by ESRI, the leading private GIS company in the United States. Based on site visit interviews, there are at least two offices that use different software for GIS. The Maryland and Georgia SHPOs instead use Computer Aided Design (CAD) software, such as AutoDesk's AutoCAD®, for mapping purposes.

Spatial databases that are in use and/or under development at a number of SHPOs, including Massachusetts, Vermont, and South Carolina, allow users to query historic property databases by geographic location by simply drawing a boundary on a map. Additionally, the 13-state (Alaska, Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, North Dakota, Oregon, South Dakota, Utah, and Wyoming) western consortium currently funded by the BLM also uses spatial databases. Rather than using text-based queries of data such as legal location or address, these GIS-based queries allow for historic property information to be queried within irregular shaped boundaries defined by the user. Many of these systems also make use of state-run clearinghouses for additional spatial information such as topographic maps and wetland boundaries. Wyoming is one case that is currently combining Microsoft Access information with their ESRI spatial data to provide more robust information for the user and their office.

Numerous SHPOs have incorporated or tried to incorporate narrative fields for such things as historical backgrounds, photographs, and site descriptions into their spatial databases, but integration of spatial and narrative information has been cumbersome and time-consuming. For those who do have the fields developed, data entry lags behind DBMS development. This is another funding issue that SHPOs and THPOs face. Data entry is time- and personnel-intensive, straining budgets that are in many cases already marginal.

The Bureau of Indian Affairs (BIA), BLM, and Federal Emergency Management Agency (FEMA) have made an effort to increase the use of GIS software among SHPOs and THPOs across the country. The 13 states (Alaska, Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, North Dakota, Oregon, South Dakota, Utah, and Wyoming) that currently receive funding by BLM (see below in Funding) in the western United States have concentrated on maintaining spatial data using ESRI ArcGIS®

The GIS software most widely used by SHPOs, THPOs, and FPOs is produced by ESRI. ESRI's ArcGIS product is a complete, integrated system for geographic data creation, management, sharing, and analysis.

Numerous SHPOs have incorporated or are attempting to incorporate text and/or photographs in their spatial database, but this practice is proving time intensive and is straining budgets.

Data entry is time- and personnel-intensive, straining budgets that are in many cases already marginal.

The BIA currently has a license that allows tribes free access to ESRI products.

software. Most of these states have hired the same private consultant to help design and implement their GIS and DBMS.

One interesting item revealed during site visits was that BIA has an enterprise license agreement with ESRI that allows tribes to access ESRI products free of charge. This agreement also includes training on the products. Tribes on the West Coast use this agreement more than the rest of the country. However, its use is still sporadic among tribes and THPOs because generally no funding is provided to obtain adequate staff to use this software. Again, this is an area where, if funding is provided for training local, state, federal, and private entities, there would be a return on the investment for Section 106 reviews.

The NHPII Survey indicates that most SHPOs and THPOs make use of spatial information using GIS software. Fewer FPOs make use of spatial information, but this seems to be limited to land-management agencies. Although several types of software exist, ESRI software such as ArcGIS is in use by a large percentage of offices. Integration of this technology with existing database systems, and an attempt to expand the capabilities of the spatial database systems, has been limited by funding and training. There has been an effort on the part of some FPOs to fund the adoption of GIS systems among SHPOs and THPOs, but problems still exist with integrating older systems with spatial information, as well as with training personnel in the use of this software.

WEB-BASED SYSTEMS

The intention of the NHPII Survey was not only directed toward DBMS, but also to systems involving access to historic property inventories via the World Wide Web. The information discussed in this section addresses the Internet accessible web component of the various DBMS in place and under construction at the various SHPOs, THPOs, and FPOs who responded to the Survey. The information for this section comes from Sections 5, 6, and 10 of the NHPII Survey and from the follow-up questions and site visits. Web-based systems currently in place were also examined online where possible, to evaluate their capabilities and limitations.

Of those who responded to this survey question, 56% of SHPOs maintain a web-based historic property inventory, while only 6% of FPOs and none of the THPOs report having any form of web-based interface to their historic property information (Figure 1). The web-based systems currently in place in SHPOs vary in terms of their content with NRHP nomination information, photographs, and some spatial data being the most commonly provided information. Most states do have gray literature available in a web-based format. Colorado, Wisconsin, Florida, Wyoming, and South Dakota SHPOs make some of their prehistoric and historic context studies available online. Massachusetts SHPO has bibliographic information available, and Louisiana SHPO has a similar system currently under development.

The majority of responding SHPOs maintain some kind of web-based historic property inventory. These web-based systems vary in terms of their content.

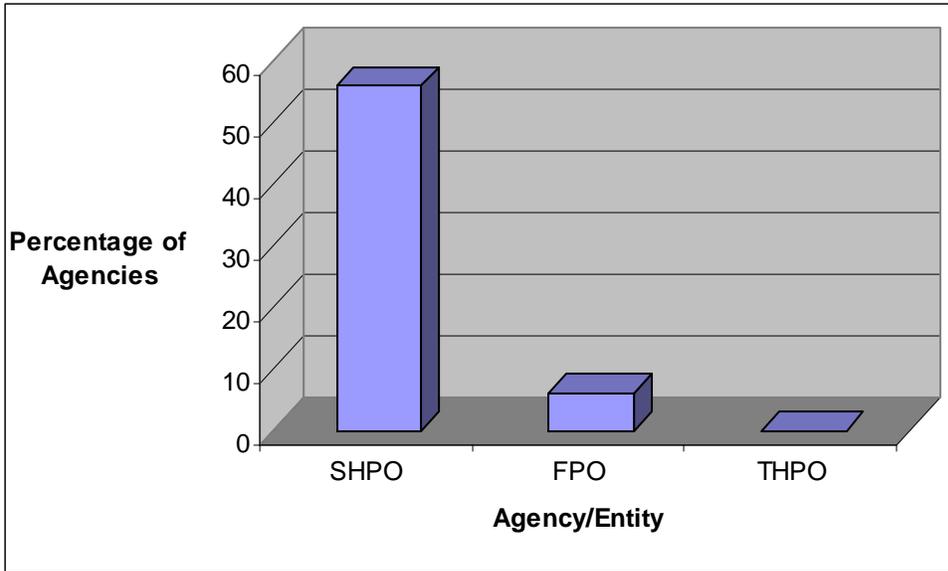


Figure 1. Percentage of SHPOs, FPOs, and THPOs maintaining web-based historic property inventories.

Obstacles facing offices attempting to develop a web component to their inventories are funding and staffing, and their own regulations regarding restricted content. Overwhelmingly, funding and staffing appear to be the major impediments to the establishment and development of web-based systems by SHPOs. In an effort to address the problem of restricted historic properties and archeology sites, the majority of SHPOs who have implemented a web-based system use combinations of password-protection or restricted access to servers, with access to the material determined by SHPO staff members; others have chosen to make only non-sensitive material available online. But SHPOs in some states such as Colorado, Indiana, South Carolina, Texas, Wisconsin, and Wyoming do have web-based systems that allow users to complete file searches online. Maryland and Washington are in the process of developing web-based systems for users.

The overall trend, visible in both phases of the Survey, indicates a strong desire on the part of SHPOs to increase the amount of historic property information (inclusive of archeological and architectural) available through a protected website. While each SHPO recognizes the need to protect sensitive information, limiting access to this information to professionals and researchers who have a demonstrated need for this information appears to be an established means of protection for many of the systems already in place. Only one FPO (GSA) from the NHPII Survey reported maintaining web-accessible historic property information, but in fact other FPOs (such as Reclamation, USDAFS, NPS, and BLM) do maintain some web-accessible historic property information. The limited responses to this and other questions relating to web-based systems may be an indication that establishing a public access website for this information is a low priority for most FPOs, who may rely on SHPOs for this service.

Site visits confirmed that very few FPOs maintain web-based historic property inventories. Exceptions to this include land-management agencies like the USDAFS, NPS, GSA, and Reclamation, and some administrative agencies, such as the Library of Congress. GSA, for example, is currently revising text on NRHP historic buildings to be posted on their

There is a strong desire on the part of SHPOs to increase the amount of historic property information available through a protected website.

website in a format that includes a photograph, architecture information, and an historic background narrative. According to GSA representatives, members of the public will be able to view and locate historic buildings by searching such features as location, architect, building style, and date of construction. Reclamation currently has a website that features many of these same attributes. These agencies feel that the public wishes to view these NRHP sites and should be given adequate access to information on historic public buildings and structures.

The NPS maintains the National Archeological Database (NADB), which includes an extensive bibliography of gray literature. This bibliography is searchable by several fields, including state, county, author, and culture. Sensitivity models and archeological site densities by state and county are also available. The information available through the NADB is limited by the legal protections in place for sensitive archeological information. The NPS is also finishing the development and implementing of a system that is web-based and geocoded. This system, reviewed by a variety of SHPOs and FPOs during site visits, is recognized as being functional.

The Library of Congress has made available through their website scans of Historic American Buildings Survey/Historic American Engineering Record/Historic American Landscapes Survey (HABS/HAER/HALS) documentation. The web-based system is keyword searchable and includes digitized images of measured drawings, black-and-white photographs, color transparencies, photo captions, and additional documentation, such as written histories and supplemental materials.

According to the survey, none of the THPOs maintain web-accessible historic property information. During site visits, THPOs expressed discomfort with continual (i.e., 24 hours a day, 7 days a week, or 24/7) remote and unfiltered web access. THPOs disapprove of open access to information concerning historic properties that they normally consider to be confidential, i.e., sacred sites, TCPs, and archeological sites. THPOs do not express similar concerns for publicly accessed digital systems that provide information on historic buildings and structures.

Most THPOs, when prompted, recognize the need for digitized inventories to be immediately accessible following natural disasters, such as wildfire, flooding, hurricanes, and earthquakes, or other emergencies. While generally opposed to web-accessed inventories, many THPOs also acknowledge that such web-accessed systems may be the only way to adequately identify and protect resources as part of natural disaster response efforts. Many THPOs also wonder how massive amounts of released data would be treated (stored, secured, deleted, shredded) after the emergency response efforts were completed.

Some THPOs express a desire to use automated and publicly accessible inventories for purposes of educating tribal members and the general public about their cultural heritage. There is much enthusiasm and desire for a system wherein tribal members (and the general public as appropriate) could remotely access general locational maps and view pictorial histories (past to present), genealogies, elder interview data pertaining to the area, and integrated language learning tools, such as sound bites of place names, phrases, and stories in traditional language, with opportunities for viewers to be queried for language repetition with accuracy feedback features.

With the exception of property-holding agencies like USDAFS, NPS, GSA, and Reclamation, it would appear that very few FPOs or THPOs maintain historic property databases for public access.

THPOs express discomfort with 24/7 remote and unfiltered web access.

While generally opposed to web-accessed inventories, many THPOs also acknowledge that such web-accessed systems may be the only way to adequately identify and protect resources as part of natural disaster response efforts.

Some THPOs express a desire to use automated and publicly accessible inventories for purposes of educating tribal members and the general public about their cultural heritage.

Overall, while the majority of SHPOs, as well as large percentages of FPOs and THPOs, maintain some kind of DBMS, only a small number of those have some form of web-based component to those systems. For SHPOs and THPOs, protection of sensitive information appears to be the largest deterrent to the creation of those systems, although lack of funding also plays a role in the limited number of offices employing this technology. SHPOs with web-based access to historic property information have done so using systems that limit access to sensitive information. The primary deterrent to creation of web-based systems among FPOs appears to be need rather than security. All offices listed funding and training as issues in the development of these types of systems.

SCANNING AND LEGACY DATA

In addition to new information that SHPOs, THPOs, and FPOs are asked to manage, a significant roadblock in the development of DBMS involves the processing of legacy data, or historic property inventory data not currently accessible by electronic means. This section addresses the integration of legacy data into DBMS, particularly through the scanning of legacy data into various electronic formats. Information in this section was compiled using responses from Sections 6, 7, 8, and 11 of the NHPII Survey and follow-up questions asked during site visits.

With the implementation of new DBMS, one issue that faces all offices is the integration of past information. Both the electronic conversion of legacy data and updating of previously digitized data can be a large and expensive task, particularly for offices with large historic property inventories. Most offices have some plan in place for updating legacy information, with 78% of SHPOs, 48% of THPOs, and 68% of FPOs indicating such a plan is in place. Of these plans, most (79% of SHPOs, 42% of THPOs, and 41% of FPOs) involve updates to the paper forms themselves. The general trend appears to reflect a strong commitment to retaining paper records in parallel with the development of computerized inventories. Site visits confirmed this attitude; most agencies keep paper copies on file. Nevertheless, SHPOs foresee this practice as a problem going forward, having seen storage space dwindle over the last few years. In addition, certain SHPOs must retain paper forms to adhere to their state’s Record Management Policies.

In addition to paper forms, some offices intend to scan legacy information into electronic formats. SHPOs, more so than THPOs or FPOs, make use of scanning as a means of updating legacy data, with 32% of the SHPOs including some type of electronic record in their legacy data updates. A handful of SHPOs do not plan to scan documents but rather are interested in inputting the information from legacy data directly into their database. These entities have robust narrative fields within their DBMS that allow for simple word queries. These offices feel that the same simple word queries would not be possible on scanned documents.

Although the NHPII Survey indicated that SHPOs are more actively involved in scanning legacy data, a minority of SHPO respondents (33%) reported that more than half of their historic properties survey forms have been scanned. Slightly more FPOs (40%) and THPOs (50%) have more than 50% of their inventories scanned. Although other types of legacy data were not included in this Survey question, across the board site visits confirmed that even a smaller percentage of other types of legacy data had been scanned. The large historic property survey inventory maintained by many SHPOs is most likely the reason for the low percentage of scanned legacy information.

The processing of legacy data has proven to be a costly roadblock in the implementation of a new DBMS.

SHPOs and THPOs both indicated that a significant proportion of their scanned legacy data need to be updated. Sixty-nine percent of responding SHPOs and 65% of responding THPOs indicate that some update is needed for the already scanned historic property information. This may be due to changes in recording protocols regarding historic property surveys since the time when the legacy data were originally recorded.

NHPII Survey results indicate that SHPOs have a greater desire than THPOs and FPOs to digitize additional material. SHPOs that currently provide some scanned material indicated in site visits that they wish to make more of this information available online to meet user demand for greater access. Materials that SHPOs have digitized include reports, site forms, photographs, and documents such as Memoranda of Agreement, Programmatic Agreements, and letters of confidentiality. Most SHPOs do not have 35 mm negatives and transparencies (slides) scanned but may have photographs of the historic property or site scanned in a PDF format. Older photographs have proved to be a problem for most offices. SHPOs are also under pressure to make limited server space available for storing digital images, which are now acceptable during the designation process for historic properties.

The Wyoming SHPO has been working with the library at the University of Wyoming to scan and store the SHPO's historic photographs. These photographs will be eventually linked to a database so that in-house personnel can view them as well. The digital images have attached metadata, which are files used to tag digital imagery and spatial data. These metadata are designed using standards outlined by the Dublin Core Metadata Project. The Dublin Core is a non-profit organization that has worked to develop standards for encoding metadata associated with digital imagery and spatial data. These standards allow for information to be more easily shared between different types of computer software. Dublin Core metadata standards are in use by large research libraries across the country for digital images to facilitate sharing between institutions.

A diverse body of information, including historic property surveys, reviews, gray literature reports, photographs, historic documents, and forms, is maintained in the historic property inventories. This information comes in a range of formats used for storage of digital images, such as JPEG, PDF, or TIFFs. While some formats are specific to the type of image being scanned (text, photograph, map, etc.), Adobe Acrobat software, which produces scanned documents as PDF files, seems to be the preferred choice because of the availability of Adobe's free on-line reader software available for all users.

Very few SHPOs have a defined plan or a budget in place to scan documents or legacy data. The Florida SHPO scanned all reports and gray literature when it was received, whether the literature was a report, an obscure dissertation, or conference paper. As of this writing, this particular state has not suffered as many budget cuts as others. Scanning of legacy documents is being completed by sufficient staff and the agency has the equipment to accomplish the job.

Maryland SHPO has a different outlook on scanning documents worth explaining. This SHPO scanned documents from its whole collection with the help of grant funding from their state's Department of Transportation (DOT). These scanned documents were then made available within the SHPO database by a simple hyperlink. This method has been very efficient in keeping legacy data separate from current data or site recordings. It is also a deterrent for overwriting previous site recordings within the narrative portions of some DBMS. Overwriting of legacy narratives is problematic for preserving the history of the

Survey results indicate that SHPOs have a greater desire to digitize material, which suggests that their user base desires access to resource information and documents in digital form.

Very few SHPOs have a plan or the available funding in place to scan documents or legacy data, although states like Florida and Maryland have found effective ways to digitize their state's legacy data.

site. Property owners modify homes and vandalism takes place at archeological sites; the proper upkeep of legacy data can help the appropriate agency in determining protective measures or tax credit issues.

The cost of scanning legacy data for SHPOs, THPOs, and FPOs, with already stretched budgets, may play an important role in the limiting the advancement of the process. Based on responses to the NHPII Survey, necessary staffing seems to be a major concern for SHPOs and THPOs, while access to necessary hardware is the primary concern among FPOs. Among THPOs, the protection of sensitive material plays as much of a role as budget issues in the decision to scan historic property information. Overall, THPOs are concerned about digitizing sensitive information due to issues of data security. This is discussed in greater detail later in the report.

Legacy data present a problem for many agencies in the process of developing new DBMS. Overall, the web-based Survey and site visits show that while scanning paper legacy data into digital formats saves on space and may provide some benefit in time and staffing, it does not necessarily replace the need to update and maintain hard copy historic property information. Some of the methods and systems currently in use by various SHPOs and FPOs regarding digitization promise to provide solutions for both budget and space concerns in the future.

DATA SHARING AND ACCESS

Even for offices with a DBMS in place for internal use only, collaboration and data sharing of historic property information is often a necessity. Access to data by the public, professionals, and other agencies and entities varies from office to office. For some offices, such as with THPOs, data sharing is approached hesitantly, but even between SHPOs and FPOs, protection of some information is necessary. This section presents information regarding data sharing processes, both public and inter-office, and collaborative products toward the sharing of historic property information. The information in this section comes from Sections 6 and 10 of the NHPII Survey, as well as from site visits to the various SHPOs, THPOs, and FPOs.

SHPOs are split on who can access and how to access historic property information. Some states have strict archeology information laws to reduce vandalism, pot hunting, and possible overuse by the public of a site. Many states require individuals to sign an agreement that prohibits the above-mentioned scenarios.

In general, no TCPs are viewable even within these agreements. FPOs generally have very explicit agreements with THPOs on what sensitive information they can share with users and other agencies. This may be due to the diversity of a FPO agency/department and the need to keep data confidential outside the purview of the direct users. However, SHPOs and THPOs vary greatly in the degree to which they allow other government entities to access their archeological information. SHPOs typically provide THPOs access to their inventory. The variance in policies for data sharing can provide an indication of different mandates and diversity of users within a state. All respondent types collaborate with other agencies on data recording, management, and dissemination of property inventories. However, only SHPOs and FPOs favor collaboration on data management policies.

Based on responses to the NHPII Survey, staffing seems to be a major concern for SHPOs and THPOs, while hardware is the primary concern among FPOs.

Legacy data present a problem for many agencies in the process of developing new DBMS.

For some offices, such as with THPOs, data sharing is approached hesitantly, but even between SHPOs and FPOs, protection of some information is necessary.

Policies for data sharing can provide an indication of different mandates and diversity of users within a state.

Although most offices make some effort to control the dissemination of information to the public, they recognize the need to share information between agencies/entities. Overwhelmingly, more than 90% of the responding SHPOs indicate that they collaborate with other agencies/entities regarding the recording, management, and/or dissemination of historic property data. THPO responses indicate that approximately 48% to 60% of those offices collaborate with other agencies. Too few FPOs provided any information regarding collaborative projects to serve as a useful sample; however, site visits revealed some specific collaborative projects.

Most offices have the capacity for the transfer of some type of electronic media to other entities, including GIS shapefiles, scanned PDFs, and database information. Most SHPOs, FPOs, and THPOs also have a need for regular transfer of this information, as other agencies within their jurisdiction collect, maintain, or possess historic property information. Most SHPOs (71%) maintain a centralized repository for historic property information within the state, and approximately 60% of SHPOs receive some funding from other entities to help maintain such repositories.

Although data sharing between offices is seen as a necessary part of most SHPOs and FPOs (and a majority of THPOs), archeological information is not always accessible, even for internal staff at SHPOs. Sensitive archeological information is only available to those that meet state or federal qualifications. There are some SHPOs that allow access to all internal staff for compliance projects and compliance reviews. SHPOs tend to rely on signed agreements with users (i.e., consultant, student, agency, or academic) to ensure confidentiality and adherence to state and federal laws that prohibit the dissemination of archeological information.

There are a few data management collaboration projects in place among SHPOs and FPOs. In particular, the BLM has financed database development to streamline the Section 106 process in 13 western states (Alaska, Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, North Dakota, Oregon, South Dakota, Utah, and Wyoming). The Federal Highway Authority (FHWA) has also been instrumental in supplying states with grants to develop DBMS. These organizations understand the need for each individual SHPO to decide what type of system and layout is necessary to accomplish their tasks. The USDAFS is collaborating with New Mexico SHPO and Oregon SHPO on a new process of disseminating information between the FPO and the SHPOs. The USDAFS has developed general-purpose data architecture that can be imported into any state's database. In essence, the files are downloaded into a review/holding tank for SHPO approval, and these sites enter the SHPO database without additional data entry.

Data sharing is common between offices, particularly between SHPOs and FPOs during Section 106 projects. In some cases, data sharing occurs only through commonly used formats such as email or PDF files. Offices and agencies that have developed GIS are also capable of sharing spatial data. The USDAFS operation allows for information to be transferred through the database itself. Operational DBMS facilitate data sharing, even in cases of dissimilar systems. Programs initiated by the BLM and FHWA have provided funding for the creation of DBMS but have not governed the structure of these databases.

Sensitive archeological information is only available to those that meet state or federal qualifications.

DATA SECURITY

Data sharing helps to streamline the Section 106 process, and aids in the collaboration between SHPOs, THPOs, and FPOs for the protection and management of historic properties. For SHPOs and FPOs, public access to information is also an important part of managing historic properties. With some historic property information legally available to the public and other information protected by law, SHPOs, THPOs, and FPOs have had to develop security measures to protect certain portions of their data from the public. This section provides a brief summary of the different levels of data security available for both web-accessible inventories and DBMS, and looks at the various data security measures in use and under development by various SHPOs, THPOs, and FPOs. Information in this section comes from Sections 6, 7, and 10 of the NHPII Survey and from follow-up questions asked during the various site visits.

Public access to federal records, including historic property information, is ensured by the Freedom of Information Act (FOIA) (FOIA, 5 United States Code [USC] 552), except where certain types of information are protected from public disclosure. Information, such as the location of archeological sites and TCPs, is protected under Section 304 of the NHPA. This protection includes information on sites that are listed or eligible for listing on the NRHP. Similar protections are in place for archeological material under Section 9 of the Archeological Resources Protection Act (16 USC 470). Access to information gathered on tribal lands is not permissible by FOIA, with the tribes themselves making the final determination about the dissemination of historic property information.

Data security for historic property and web-accessible inventories can be implemented on several levels, including Internet security through the network, security through the operating system of the terminals accessing the DBMS, and through the DBMS itself. For networks, firewalls provide the first line of defense from both unauthorized Internet access and intranet access from within the network. Firewalls are systems designed to prevent unauthorized access to or from a private network and can prevent unauthorized Internet users from accessing private networks connected to the Internet.

Generally, any “web” accessible system or service being provided to users outside an internal network should be placed in the Data Management Zone (DMZ.). It is not common practice for a web server to communicate directly with the internal database server. Instead, an application server is usually installed to act as a conduit for communication between the web server and the database server. This allows some protection of the database server by not being in the DMZ, while exposing the application server to external requests through the DMZ. Several other network security systems are available, and for most offices, this level of security is handled by the IT staff that manages the network.

Security can be enforced at the operating system level by providing operating system controls for authorization into the system. These are often as simple as password protocols included with the operating system for login verification. For protection of the DBMS, most server operation systems have a system of data file encryption that can be used as a security control to ensure that data on the file system is not compromised.

On the RDBMS level, data security systems can be used to restrict access to tables and records, allowing access to only a certain groups of users. Basic low-level security controls

Access to information gathered on tribal lands is not permissible by FOIA, with the tribes themselves making the final determination about the dissemination of historic property information.

can also be implemented to restrict access, allowing only certain information to be presented to a user based on that user's assigned organizational role.

Questions regarding security of data access in the NHPII Survey were primarily directed towards the web-based systems. For SHPOs that maintain web-based historic property information, 63% make use of some kind of password protection protocols. The remaining 37% either do not include sensitive information in their web-accessible DBMS (15%), or use some unspecified protection method (15%) (Figure 2). Site visits supported these data, with somewhat more complexity. With many SHPOs using a number of different databases for different sets of data, many use a combination of password protection, as well as providing sensitive information only on in-house systems, where access can be directly controlled.

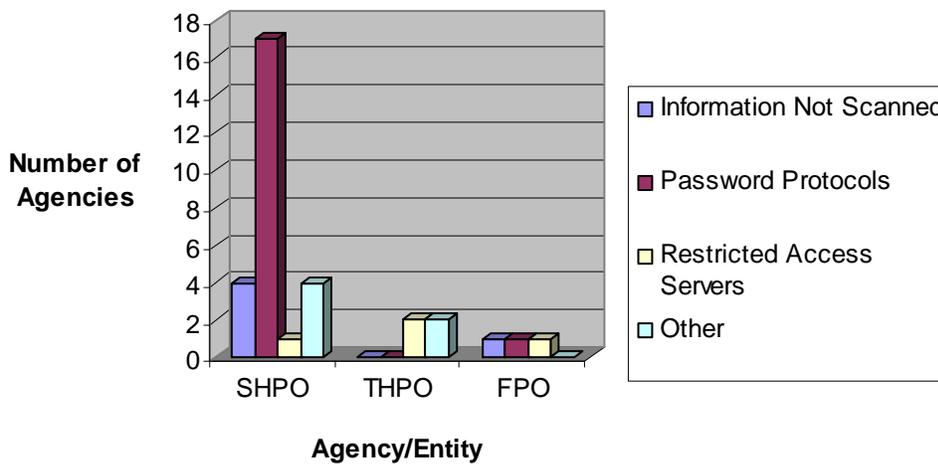


Figure 2. Graph illustrating the types of security measures currently in use to protect sensitive historic property information.

SHPOs who responded to the Survey indicate that access to sensitive material can be obtained by qualified professionals or those who can demonstrate a need for specific information. Sixty-two percent of SHPOs indicate that qualified professionals are allowed access, based on a determination made by staff members or senior administrators. During site visits, SHPOs did not express much concern over security issues currently in use to protect sensitive material.

The Massachusetts Historical Commission (MHC) controls access to its sensitive archeological information by limiting the data layers available for viewing through their GIS database. Archeological information is available only at the MHC office itself, and is only available to approved consultants. A similar system is in place at the New York SHPO, with one additional feature. Off-site access to the GIS database shows archeological information, but site locations are shown with a large buffer area to protect the exact location of the site.

FPO responses to questions about security issues were very low. Most questions regarding security issues in the NHPII Survey were directed mainly towards public access websites,

Most SHPOs that maintain web-based inventories use some type of password protection system.

With many SHPOs using a number of different databases for different sets of data, many use a combination of password protection, as well as providing sensitive information only on in-house systems, where access can be directly controlled.

SHPOs who responded to the Survey indicate that access to sensitive material can be obtained by qualified professionals or those who can demonstrate a need for specific information.

and 94% of FPOs responded that they do not maintain any web-accessible historic property information. Site visits indicated that there has been only one security breach and that was with the NPS List of Classified Structures (LCS) database.

Although most SHPOs and FPOs are satisfied with the current level of data security for the information currently made available, all interviewees are concerned that digitization will lead to increased potential for inappropriate information release or access. Additional release of confidential information will result in additional exploitation of tribal cultural resources. Such exploitative activities are further broken into the following:

- illegal looting of sites,
- tribally unauthorized archeological excavation,
- heritage tourism conducted by unauthorized outsiders, and
- further inappropriate publication, pictorial representation, or dissemination.

THPOs, in general, are not satisfied with the protections of confidentiality laws, such as Section 304 of the NHPA. Further, fear of hackers, or deliberate security breaches, are exacerbated by ongoing news reports of major information breaches in the military, other government agencies, and the banking, credit card, and health-care industries. THPOs feel that the government in general—and computer systems, programmers, and systems managers in particular—is not capable of managing such information.

A “prove it,” “show me,” or “wait-and-see” attitude pervades THPOs regarding the ability to have intrusion-proof automated systems and fail-proof access and management protocols. Despite the above-described security concerns, most THPOs express a desire to have automated inventories for internal use by tribal staff.

While some THPOs are adamant about not allowing outsiders to use/access digital THPO inventories, other THPOs are comfortable with outsiders (government agency personnel and other professionals with a need) having access to such systems and related information. This access must be performed on-site, under the direct supervision of the THPO staff, with strict sanctions for violators. THPOs seem to prefer a system in which individuals seeking access travel to the office of the THPO that maintains the digitized inventory in question. Before being allowed to view any sensitive material they have to be vetted, and only then are they provided with appropriate access. Some THPOs are concerned about such professionals leaving with electronic information (via copy to memory sticks, copy to CD, or direct download to laptop computer). Other THPOs are comfortable with such people leaving with sensitive information if properly vetted, if proper restrictions and infringement consequences are spelled out in writing and agreed to, and if mechanisms are in place for the enforcement of sanctions in the event that such agreements are violated. Some THPOs are comfortable allowing professionals, placed in a “tribally trusted” category, to receive such information from a remote location, either by means of emailed PDFs or by means of a separate, but linked, secure system.

Data security is an important facet in the development of both internal DBMS and web-accessible inventories. The three entities all have very different needs regarding accessibility of historic property information. SHPOs, which have a legal responsibility to make some of the historic property information accessible to the public, have developed systems to protect sensitive material. The most common system in use is some form of password protocol, but many offices still limit access by requiring users to use specific

THPOs that are comfortable with having people access their cultural resources inventories prefer to have individuals travel to the THPO, as opposed to accessing their data via the web.

servers available only at SHPO locations. Access to most of the information managed by THPOs is not protected by FOIA, and tribes in general are more guarded about allowing access to historic property information. Some THPOs do allow access to information, but usually require information to be accessed in person under the supervision of a tribal member. Many FPOs, including the NPS, GSA, and Reclamation, make non-sensitive historic property information available to the public. Ideally, data security on all three levels, the network, the operating system, and through the DBMS itself, should be used, however the specific security needs depend on both the agency/entity maintaining the data, as well as the specific types of information being managed by that office.

TRAINING

Several questions in the NHPII Survey, either directly or indirectly, addressed training and staffing issues in the construction of DBMS. While most offices indicate that the bulk of their funding goes towards staffing, most also report being understaffed. This section summarizes the responses regarding the training of staff members in DBMS construction, operation, and maintenance. Some issues of funding are also addressed, but the bulk of the funding issues are addressed in the funding section of this report. Information for this section comes from Sections 9 and 11 of the NHPII Survey, as well as from follow-up questions asked during site visits.

Responses to the Survey indicate that although DBMS currently in place at offices play an important part in the day-to-day operations of these offices, the smallest percentage of the budget goes towards training for database systems. The lack of funding for DBMS has clearly impacted the development of these systems. When listing reasons for the lack of development of computerized inventories, SHPOs, THPOs, and FPOs all respond that a dearth of trained personnel is the largest hindrance to the development of these systems. The lack of funding and training is in contrast with the large number of DBMS now under development by many offices. This lack of training can, however, have an impact on the functionality and stability of these systems, as well as the level of maintenance they will receive once created.

Site visits further highlighted the problem with staffing and training. The majority of offices that were visited have only one person that is familiar with the design and construction of that agency’s current DBMS. As stated above, most systems were constructed by archeologists and architectural historians that may or may not have had any formal training in DBMS design and maintenance. Development typically seems to proceed by trial and error. In addition, development has been hampered by the lack of personnel specifically trained as Cultural Resources Database Managers. Just as important, an additional person within the office should be able to step in, in the absence of the primary manager. Two people also enhance the development of DBMS through a collaboration of minds. For a DBMS to survive and continue to be useful, a more formal and systematic training process must take place at all agencies.

Survey responses and site visits clearly show a contrast between the need for training in database systems and the lack of funding and staffing dedicated for that purpose. Survey results suggest that, due to the small budgets of most offices, SHPOs, THPOs, and FPOs are not able to meet all of their needs, and therefore DBMS development and training suffer. As important as functioning DBMS appear to be to these offices, evident in the

SHPOs, THPOs, and FPOs all state that a lack of trained personnel is hindering the development of a DBMS.

The majority of offices that were visited have only one person that is familiar with the design and construction of that agency’s current DBMS.

number of systems currently under development, staffing and training continues to hinder the progress of these offices.

SECTION 106

SHPOs, THPOs, and FPOs have a variety of responsibilities, but with increasing frequency Section 106 functions are consuming a larger portion of staff and resources. Section 106 of the NHPA of 1966 (36 Code of Federal Regulations [CFR] 800) requires federal agencies to take into account the effects of their undertakings on historic properties. This requires them to consult with the appropriate SHPO or THPO regarding said undertaking. Projects associated with compliance with Section 106 of the NHPA (36 CFR 800) constitute a large part of the historic property management at SHPOs and FPOs, and a part of THPO resource management as well. This section looks at how various SHPOs, THPOs, and FPOs track and manage Section 106 projects. Information for this section was compiled from Sections 6, 8, and 10 of the NHPII Survey and from follow-up questions during the various site visits.

Most SHPOs keep track of whether a property was involved in a Section 106 review. Answers to the NHPII Survey indicate that 89% of SHPOs and 78% of THPOs maintain information directly related to Section 106 work. Site visits suggest that not all SHPOs keep electronic records of Section 106-related projects or properties.

Two ways of developing DBMS to track Section 106 projects emerged as prominent during site visits. SHPOs such as Maryland and Minnesota simply added a field or pick-list choice on their digital survey form indicating designation for Section 106 and the property/site’s NRHP Determination of Eligibility. Section 106 information can then be selected within the database using a simple database query.

In some cases, SHPOs simply keep a separate DBMS for Section 106 projects/undertakings. The content of these databases varies widely ranging from tracking cultural resources associated with a project to only tracking project communications between stakeholders. Offices such as Colorado use a project-based DBMS. In these systems, Section 106 projects are assigned an internal project number and are tracked through correspondences between stakeholders. When appropriately coded, this project number can then be linked to each site associated with the undertaking, thus giving a searchable DBMS product. A few SHPOs link resulting gray literature reports to the project number as well, thus giving a full review of the project activities.

SHPO site visits revealed that a sizeable portion of budgets is used for Section 106 reviews. This infers a high probability of gray literature present in various offices related to Section 106 reviews. Limited storage space for paper copies has forced some SHPOs to discard Section 106 compliance reviews after as few as three years. Having documentation in an accessible DBMS for future projects that might be associated with the cultural resources identified in previous projects is necessary. Some SHPOs have to adhere to the respective state records Management Retention Schedule, thus making the parallel electronic storage of information more important.

The percentage of Section 106 work, in relation to other NHPA tasks, performed within the various SHPOs differs greatly across the country. Site visits revealed that even more SHPOs are developing some DBMS means of tracking some of their Section 106-specific

Site visits to SHPOs revealed that a high proportion of SHPO budgets are dedicated to Section 106 reviews. Some SHPOs maintain a Section 106 DBMS.

In some cases, SHPOs simply keep a separate DBMS for Section 106 projects/undertakings. The content of these databases varies widely ranging from tracking cultural resources associated with a project to only tracking project communications between stakeholders.

information. This is particularly true of project correspondence. This work-division information is of particular importance to SHPOs, is somewhat less so for THPOs, and is split nearly equally for FPOs. The types of systems that different offices have developed appear to be driven by the specific needs of the offices, with some tracking resource-specific information, and others tracking only correspondence relating to final decisions.

FUNDING

Development and maintenance of a DBMS requires funding dedicated to DBMS development and for training staff in its construction, maintenance, and use. All respondents indicate that budgets are tight, and that funding is a serious impediment to the development of DBMS. The following section looks at the funding problems facing many of the offices, and the needs for funding to move forward with the development of DBMS. The information in this section comes from Sections 8, 9, and 11 of the NHPII Survey and from follow-up questions asked during site visits.

SHPOs, THPOs, and FPOs typically have limited funding, if any, available to develop, implement, and maintain a DBMS. Budget cuts to SHPOs, THPOs, and FPOs have severely hampered professional staffing levels, leaving little if any funding for DBMS development. The NHPII Survey also revealed another troubling aspect: most SHPOs have a hard time obtaining the matching funds needed to secure their federal Historic Preservation Fund (HPF) grants from the NPS. These circumstances hamper the top three priorities of the offices surveyed. These priorities are additional cultural resource surveys, more NRHP nominations, and the development of DBMS.

The last three Surveys show great consistency regarding funding needs for SHPOs (Figure 3). In 2007 it was estimated that on average each SHPO surveyed would need an additional \$1,235,000.00 in labor costs to upgrade to and implement a more functional DBMS. In addition to these costs, SHPOs surveyed believed \$168,000.00 of funding would be needed to purchase the appropriate technology to implement these systems. In 2008, SHPOs reported needing \$1,117,143.00 for labor costs to upgrade and implement a more functional database, and another \$243,857.00 in new technology costs. Currently, SHPOs report needing \$1,260,000.00 for labor costs to upgrade and implement a more functional database, as well as \$192,000.00 in technology costs.

One possible source of funding for SHPOs is user fees. Currently, very few (33%) SHPOs charge a fee. Current fees for those that do charge range from \$250 to \$3,000. A few states currently operate regional service centers, which in turn charge a fee for their services. These fees are directly tied to operations, and in most cases the revenue keeps these centers open. Other SHPOs are prohibited by state law from charging such fees.

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Budget cuts at SHPOs, THPOs, and FPOs have hampered funding for DBMS development.

Currently, SHPOs report needing \$1,260,000.00 for labor costs to upgrade and implement a more functional database, as well as \$192,000.00 in technology costs.

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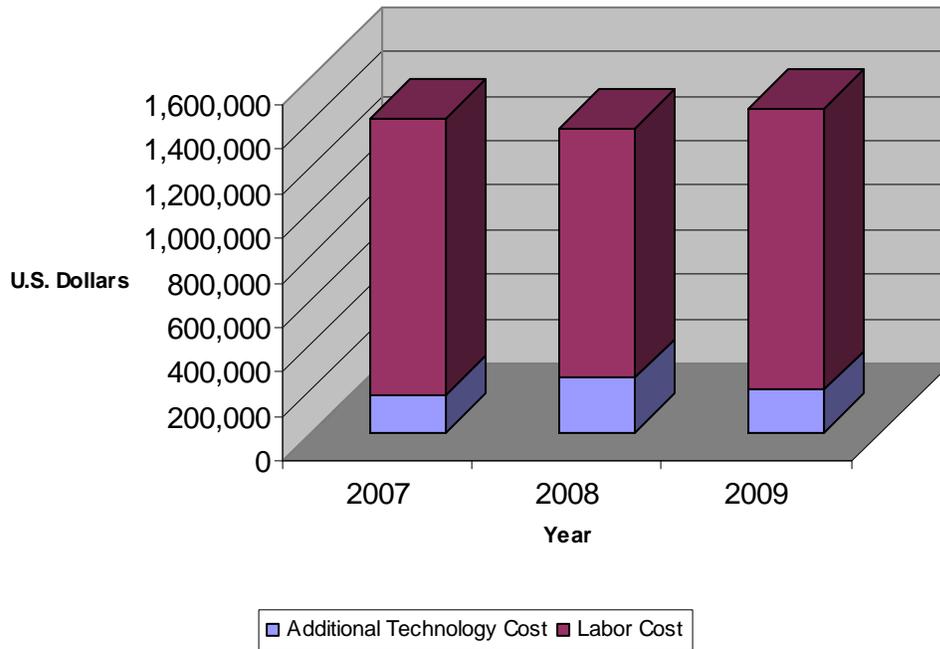


Figure 3. Approximate budgetary requirements to upgrade DBMS, including both technology and labor costs.

THPOs are not required to match the Historic Preservation Fund (HPF) grant, but in general THPO funding from the individual tribes only minimally provides for technology resources and staffing. THPOs indicate that lack of funding is the foremost reason why historic properties databases do not exist, are not well organized, or are not digitized or electronically automated.

Organizations such as NATHPO and Preservation Action, Inc., have documented that funding available to up-and-coming THPOs is inadequate and disproportionate. Specifically, congressional appropriations have not been met or been proportional to the rate of annual NPS approval of THPO programs. Current funding barely covers one staff position at each tribe to fulfill all of the NHPA (Section 101[B][3]) responsibilities. Most tribal governments also impose additional cultural resource-related tasks on one or a few THPO staff members. Such additional duties are often tribal consultation coordination, archival, language, and NAGPRA related responsibilities. Therefore, while inventories are a cornerstone of any successful historic preservation compliance program, most THPOs lack related software, hardware, staff, and training. Properly funded programs budgeted specifically to automate tribal inventories, while requiring up-front investment, should allow otherwise underfunded programs to operate. Additional research will be needed to determine a specific level of funding for each tribe.

Some FPOs surveyed suggest that very little room exists in their budgets to implement and maintain a DBMS. FPOs that have some type of DBMS in place, however, have found that designing their DBMS to produce regular reports to the Office of Management and Budget (OMB) has been a key to early reporting, as well as accurate reporting, on historic properties.

THPOs indicate that lack of funding is the foremost reason why historic properties databases do not exist, are not well organized, or are not digitized or electronically automated.

FPOs that have some type of DBMS in place have found that designing their DBMS to produce regular reports to the Office of Management and Budget has been a key to early reporting, as well as accurate reporting, on historic properties.

FPOs vary the most regarding funding. The GSA receives more funding for historic preservation from the federal government than all other FPOs combined (NPS excluded). They also are responsible for hundreds of buildings. As more buildings from the 1950s and 1960s become NRHP eligible, the more taxing the problem will become for the GSA to incorporate maintenance schedules regarding NRHP-eligible and NRHP-listed properties. But, to the GSA's credit, they have upgraded their system in the past year to better facilitate the realistic inflow of new historic buildings. DBMS offer a unique way to increase productivity for agencies like this when multiple reports are required by the OMB. These reports often can be expedited with DBMS and also allow for more comprehensive reporting with the ability of tying more fields from an RDBMS into the document.

FPOs varied the most with regard to funding.

Funding is an area in which the DOD has been very creative in developing unique solutions to unique problems. The DOD has tied much of their historic preservation database funding to programs already in use for internal accounting and military purposes. The DOD makes use of systems like their Real Property Inventory and GIS or spatial information already available to them.

The USDAFS has taken another course and internally funded a national database for cultural resource sites. Like the GSA and the NPS, the USDAFS has a national DBMS that is used by all regions within their respective agency. In each agency's case, a contractor was hired to develop the DBMS for the agency, and each has seen a varying degree of success.

A matching-grant funding system to help with DBMS development would be difficult for SHPOs and THPOs. State funding levels at SHPOs have dropped tremendously over the past decade. Cuts in staff members reached a point that many government agencies (both state and federal, such as state DOTs through the FHWA) have provided grant monies to the SHPOs to hire necessary staff. This is usually done to help provide a more timely effort regarding compliance with Section 106 at the federal agency, state, or local levels. Partnerships of this type are further addressed in the following section.

A matching-grant funding system would be difficult for SHPOs and THPOs.

PARTNERSHIPS

Partnerships are important in all aspects of historic preservation. SHPOs, THPOs, and FPOs have partnerships and agreements for a number of purposes, including coordination and consultation for Section 106 projects, data sharing, as well as budgeting and staffing issues. This section outlines some of the partnerships currently in place between various offices. Information on partnerships comes from Sections 6, 7, and 10 of the NHPII Survey as well as from follow-up questions asked during site visits.

Several SHPOs have acquired grants from federal agencies to upgrade their current databases. For instance, the BLM is currently funding a 13-state consortium in the West (Alaska, Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, North Dakota, Oregon, South Dakota, Utah, and Wyoming). Interestingly, the BLM does not dictate to the states what or how they upgrade their respective systems, resulting in many different efforts. Most of these states have developed robust GIS systems using ESRI software and a similar DBMS contractor, Gnomon, Inc. These SHPOs have also developed their tools in tandem with their DBMS development. The main goal of the BLM for funding these entities is to streamline the Section 106 process for land-use permits.

This is also a priority for FEMA. FEMA has been instrumental in developing spatial information for various SHPOs and even FPOs during natural disasters. FEMA has developed or helped with GIS information beginning with the Northridge, California, earthquake in 1993 and continuing through to the recent disasters on the Gulf Coast.

SHPOs have also received funding from FHWA through state DOTs in the form of Transportation Enhancement grants from ISTEA, TEA21, and SAFETEA funding. In one case, the Michigan SHPO presented a business plan to their state DOT asking for complete funding in developing a new DBMS. The plan outlined their current need to update their system, their financial requirements, and where they foresaw their DBMS in years to follow. Eventually the Michigan SHPO was awarded the funding to provide a phased approach, but with clear guidance on how the funds would be used. SHPOs have also received various grants from their state’s DOTs to hire additional staff for compliance-related projects. In addition to Michigan, several other states visited during this project have received some type of funding from a transportation-oriented agency, including Arizona, California, Florida, Georgia, Idaho, Indiana, Maryland, Massachusetts, Minnesota, and Texas.

Other partnerships within state agencies and between SHPOs, THPOs, and FPOs have proven to be helpful in sharing information and in the creation of some of the spatial database inventories. Many states have GIS that facilitates spatial imagery for vegetation, hydrology, orthographic layers, and other information is available for use free of charge. This allows offices with smaller budgets to include this spatial information with their GIS information from their historic property inventories, saving on costs, and providing more detailed information to the user.

Forming partnerships is key as SHPOs, THPOs, and FPOs move forward to implement more robust historic property inventories. With multiple agencies/entities within a jurisdiction managing historic property information, coordination between these groups can provide a more detailed inventory, streamline compliance, provide additional protection to historic properties, and decrease the budgetary needs of these offices. Whether formal or informal, these partnerships should be strongly considered by historic preservation offices in the future.

Partnerships between SHPOs, THPOs, and FPOs and other federal and state agencies have proven beneficial in reducing overall cost and providing additional protection for cultural resources.

BEST PRACTICES

SUMMARY OF BEST PRACTICES

The “Best Practices” for DBMS and information relating to historic property inventories as identified and defined in the methodology of this report are solely dependent on the responsibilities and assets (both in human capital and financial capital) that are currently available to SHPOs, THPOs, and FPOs. Not all of the practices summarized below necessarily apply to all SHPOs, THPOs, or FPOs.

➤ DBMS Design

- In offices that maintain diverse historic property inventories, managing all inventories via a relational database management system.
 - ✓ *Practice in place or under development: SHPOs in Colorado, Florida, South Carolina, Washington, Wisconsin, and Wyoming; THPOs in*

Navajo Nation Historic Preservation Department, Agua Caliente Band, Blue Lake Rancheria, Leech Lake Band of Ojibwe, Mashantucket Western Pequot Tribe, Penobscot Indian Nation, Lac Du Flambeau Band of Lake Superior Chippewa Indians, and Seminole Tribe of Florida; and in the USDAFS.

- Using relational databases, including diverse sets of data that hide selected content from non-approved users.
 - ✓ *Practice in place: SHPOs in Colorado, Indiana, South Carolina, Wisconsin, and Wyoming; and in General Services Administration (GSA), NPS, and USDAFS.*
- Developing and implementing DBMS “business” plans through a collaboration of historic preservation office staff, cultural-resource information technology (IT) professionals, and constituent users that outline projected costs, type of DBMS to be developed, timetable for implementation, training and staffing projections, lexicon terminology, GIS, and nature and scope of user access.
 - ✓ *Practice in place: SHPOs in Colorado, Maryland, Michigan, Minnesota, Vermont, Washington, Wisconsin, and Wyoming; and in NPS and USDAFS.*

➤ **Data Input**

- Ensuring that databases use lexicon terms in drop-down menus where possible to limit the amount of input error.
 - ✓ *Practice in place: SHPOs in Arizona, Colorado, Florida, Georgia, Idaho, Indiana, Maryland, Missouri, North Carolina, South Carolina, Texas, Vermont, Washington, Wisconsin, and Wyoming; THPOs in Blue Lake Rancheria and the Seminole Tribe of Florida; and in GSA, NPS, and USDAFS.*
- Providing online access to databases that enable users to input information, when proper quality assurance/quality control (QA/QC) measures are taken with data.
 - ✓ *Practice in place: SHPOs in Florida, Georgia, Missouri, South Dakota, and Wisconsin; and in NPS and USDAFS.*
- Evaluating and, as appropriate, providing for data input directly from the field using a system that enables proper QA/QC.
 - ✓ *Practice in place: SHPOs in Florida, Maryland, Wisconsin, and Wyoming; and in USDAFS and NPS (Historic American Landscapes Survey Program).*

➤ **GIS Spatial Component**

- Developing and integrating a geospatial component (i.e., universal property locational assignment) within the DBMS.
 - ✓ *Practice in place: Most SHPOs across the country; in THPOs in Blue Lake Rancheria, Navajo Nation Historic Preservation Department, Agua Caliente Band, Blue Lake Rancheria, Leech Lake Band of Ojibwe, Mashantucket Western Pequot Tribe, Lac Du Flambeau Band of Lake Superior Chippewa Indians, Seminole Tribe of Florida, and Yurok; and*

in NPS, USDAFS, GSA, Department of Defense (DOD), Bureau of Reclamation (Reclamation), and some BLM field offices.

- Direct data sharing between spatial data component and the DBMS.
 - ✓ *Practice in place: SHPOs in Texas and Wyoming. Most SHPOs and FPOs maintain separate DBMS for their spatial and non-spatial data.*
- Using ESRI ArcGIS® or compatible software for GIS applications.
 - ✓ *Practice in place or under development: Most SHPOs and FPOs are currently using spatial-data software; and THPOs in Agua Caliente Band, Blue Lake Rancheria, Leech Lake Band of Ojibwe, Mashantucket Western Pequot Tribe, Lac Du Flambeau Band of Lake Superior Chippewa Indians, and Seminole Tribe of Florida.*

➤ **Web-Based Systems**

- Providing online, web-based public access to as much unrestricted historic property data as possible and appropriate.
 - ✓ *Practice in place: Many SHPOs, with particularly good examples being Colorado, Delaware, Florida, Louisiana, Texas, Wisconsin, and Wyoming; many THPOs, including the Navajo Nation Historic Preservation Department, White-Earth Nation, and Penobscot Indian Nation, which have web-based detailed histories of their respective tribes; and in NPS, USDAFS, BLM, Reclamation, and GSA.*
- Allowing constituents to input data into DBMS allows users to input information, as long as proper QA/QC measures are in place.
 - ✓ *Practice in place: SHPOs in Florida, Georgia, Missouri, South Dakota, and Wisconsin; and in USDAFS.*
- Ensuring password protocols, or some other type of protective system, are in place for any web-based historic property information.
 - ✓ *Practice in place: SHPOs in Colorado, Florida, Georgia, Indiana, South Carolina, and Wisconsin. Most FPOs have password protocols for internal use.*
- Making more information readily accessible online.
 - ✓ *Practice in place: SHPOs in Colorado, Delaware, Florida, Louisiana, Texas, Wisconsin, and Wyoming stand out as providing a variety of content via their website.*
- Ensuring digital data file formats meet established accepted archival standards and required current and future storage capabilities.
 - ✓ *Practice in place: Most SHPOs have some of their information stored in archivally stable formats, but most offices still use non-archival electronic media as well; and in NPS, Library of Congress, and the National Archives.*
- Requiring all survey information to be submitted in electronic formats that are fully DBMS compatible.

- ✓ *Practice in place: SHPOs in Massachusetts, South Dakota, and Washington.*
 - Scanning of text documents should make use of Object Character Recognition (OCR) software to allow for digitized files to be “word searchable.”
 - ✓ *Practice in place: SHPOs in Florida and Maryland; and in NPS and DOD.*
 - Ensuring scanned images are embedded with, or attached to, metadata information.
 - ✓ *Practice in place: SHPOs in Colorado, Florida, Georgia, and Wisconsin; and in NPS and USDAFS.*
- **Data Sharing and Public Access**
 - Developing/using a common database architecture to enable more effective and efficient sharing of historic property information among SHPOs, THPOs, and FPOs.
 - ✓ *Practice in place: SHPOs in New Mexico and Oregon; and in USDAFS.*
- **Data Security**
 - Ensuring that database security protocols and policies are sufficient to protect sensitive/restricted historic property information.
 - ✓ *Practice in place: SHPOs in Arkansas, Colorado, Florida, Georgia, Hawaii, Indiana, New York, South Carolina, and Wisconsin; and THPOs in the Blue Lake Rancheria; most FPOs have password protocols for internal use only.*
- **Section 106-Related Activities**
 - Identifying Section 106-related projects and Section 106-related recorded properties within the database.
 - ✓ *Practice in place: SHPOs in Hawaii, Maryland, Minnesota, and Washington; and in USDAFS.*
 - Organizing Section 106 data within the DBMS to facilitate data sharing between federal, state, and tribal entities.
 - ✓ *Practice in place: SHPOs in Idaho, New Mexico, Oregon, and Wyoming; and in BLM and USDAFS.*
 - Tracking Section 106 project-associated correspondence in a database that can relate it to both the project/undertaking and historic properties affected.
 - ✓ *Practice in place: SHPOs in Georgia, Maryland, and Wyoming; and in USDAFS.*
- **Training**
 - Ensuring that, at any time, at least two active staff members are sufficiently trained in the operation and maintenance of the DBMS.
 - ✓ *Practice in place: Not in place in any offices included in this analysis.*

- Developing detailed operational manuals for the maintenance, upkeep, architecture, and use of DBMS.
 - ✓ Practice in place: *None of the offices included in this analysis. Although most offices have some type of user manual regarding the operation of the database, these do not usually include the upkeep or maintenance of the database. A backup plan and a well written operational manual for the operation and maintenance of the DBMS are essential and should be available in every office.*
 - ✓ Practice in place: *Not in place in any offices included in this analysis.*
- DBMS and GIS training for staff members should be included in each annual budget.

While budgets are already stretched to their limits, periodic training and refresher courses ensure that staff members keep up with the latest changes in technology and are able to adapt existing systems to the most recent technology. Training in both database operation and GIS should be available for all members using these systems.

- ✓ Practice in place: *Most SHPOs and FPOs provide some training, but none of the interviewed offices had funding specific for training in their annual budget.*

➤ **Partnerships**

- Partnering with other SHPOs, federal agencies, and/or tribes to fund data and services used cooperatively.
 - ✓ Practice in place: *The 13-state BLM/SHPO western consortium (Alaska, Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, North Dakota, Oregon, South Dakota, Utah, and Wyoming); SHPOs in Florida, Georgia, Indiana, Maryland, Massachusetts, Michigan, Minnesota, South Carolina, Texas, and Wisconsin.*

ADDITIONAL RECOMMENDATIONS

Based on its review and analysis of the information compiled in the process of producing this report, SWCA includes the following sets of additional recommendations relative to the ongoing advancement and development of historic property DBMS and RDBMS by SHPOs, THPOs, and FPOs.

GENERAL RECOMMENDATIONS

1. The NPS should establish an ongoing, annual, joint SHPO/THPO/FPO historic property inventory survey/database conference.
2. GIS data related to historic properties should be collected, organized, maintained, and documented based on federal standards. Federal standards for GIS data are currently under development.
3. Database encryption protocols, such as those provided in Oracle and MySQL, should be used to protect information stored in a DBMS.

4. Whenever possible, scanned historic property legacy information should meet national as well as individual state standards for archival records.
5. SHPOs, THPOs, and FPOs should have at least two active staff members that have sufficient training in the operation and maintenance of the DBMS at any time.
6. The NPS should develop a grant funded program to provide specific funding for DBMS and GIS training for staff members. This training should be included in SHPO and THPO budgets, as well as in budgets for FPOs within federal agencies that administer historic properties.
7. Federal grant funding for creating an accessible, comprehensive national historic property inventory should be across the board and not need based. Grants provided for this purpose should, however, be limited to the following activities: identifying and collecting information about historic properties, DBMS/RDBMS construction maintenance and improvement, GIS/spatial databases, or the development and distribution of web-accessible historic property information.

SHPO RECOMMENDATIONS

1. Establish and maintain ongoing working relationships with other entities that share similar goals such as state and federal agencies, universities, and local governments. Funding can be creative. For instance, the NPS may fund regional interns over the summer, much as they do for HABS/HAER/HALS projects and the Historic Preservation Internship Training Program, in which selected individuals perform 10 weeks of cultural resource work for various government agencies.
2. Increase the annual federal appropriation for the HPF, which provides grants to the states and tribes for federal preservation activities conducted by the states and tribes from its current (2009) level of \$42.5 million to the HPF’s maximum congressional authorization limit of \$150 million.
3. Develop additional, equitable non-matching grant-in-aid programs accessible to SHPOs for the *specific purpose* of developing and maintaining a comprehensive and accessible inventory of historic properties on a nationwide basis. Under the current federal HPF requirements, and state matching grants programs, SHPOs (unlike THPOs) must match federal preservation grant funding on a 60%/40% (federal/state) basis. Currently several states would not be able to produce the necessary money to match additional federal funding provided through the HPF, even if such additional funding became available. Such a program would produce a significant return on investment to both the public and private sectors, especially with respect to improving the timeliness and cost-effectiveness of mandatory environmental reviews of federally funded and licensed projects pursuant to Section 106 of the NHPA.
4. Conduct a more exhaustive budgetary needs assessment of developing and maintaining a comprehensive and accessible inventory of historic properties on a nationwide basis.
5. Research impediments and solutions to the development of DBMS, and data sharing between offices resulting from differential access to technology.
6. Work with federal and state agencies to ensure that effective Internet security measures are in place for Internet-accessible databases.

THPO RECOMMENDATIONS

1. Develop, administer, and analyze a THPO survey of historic property inventory needs specific to tribes.
2. Organize and conduct regional and national tribal “summits” for information gathering and sharing concerning THPO inventory status and development.
3. Further research and articulate THPO digital inventory impediments in relation to digital-divide issues.
4. Further explore THPO inventory back-up (electronic) and archive (paper) needs.
5. Examine alternative data systems and practices focusing on needs specific to tribal communities, and expose such systems to THPOs.
6. Conduct a more detailed and intensive assessment of best THPO inventory models (includes systems assessments in conjunction with other ancillary functions such as ordinances, guidelines, and partnership information sharing agreements).
7. Collect, analyze, and document the best models for tribal inventory ordinances, and data collection and management protocols and guidelines.
8. Conduct a more exhaustive budgetary needs assessment related to tribal historic property data collection, management, and access.
9. Develop information-sharing agreements for collection, analysis, and development of best templates for THPO use with respect to data collection and management.
10. Facilitate the transfer of inventory data from SHPOs, FPOs, and other preservation or institutional organizations (universities) holding inventory related data pertaining to THPO tribal lands to THPOs.
11. Research and develop possible hacking/firewall security options specific to THPO needs and security concerns.
12. Provide THPOs with the means to develop robust RDBMS and spatial GIS inventories. Even with resources made available by the BIA such as access to ArcGIS, many tribes lack the budget to provide training for members to learn to use this software.

FPO RECOMMENDATIONS

1. Facilitate inventory data transfer from SHPOs, THPOs, FPOs, and other preservation or institutional organizations (universities) holding inventory related data pertaining to federally owned historic properties.
2. Establish and maintain an annual SHPO/THPO/FPO digital historic property inventory conference.
3. Develop information-sharing agreements for collection, analysis, and development of best templates for FPO use.
4. Conduct a more exhaustive budgetary needs assessment.
5. Develop DBMS in field and regional offices of land holding agencies and bureaus such as the U.S. Fish and Wildlife Service, Reclamation, and BLM.
6. Work with federal and state agencies to develop common Internet security proposals and a best practices document.

APPENDIX A
Glossary

GLOSSARY

Architecture: When used in the context of database management systems, architecture refers to the overall structure of the database, and how it organizes information.

Archeological Resource: Any material remains of past human life or activity greater than 100 years old which are of archeological interest as defined by Section 4(a) of the Archeological Resources Protection Act and 43 CFR Part 7.3.

Client-Server Architecture: A software model whereby, in the case of database systems, data are stored and processed centrally on a server, while functions such as data entry or reporting take place on distributed client computers. Servers typically are enterprise database systems, such as Oracle®, PostgreSQL®, or Microsoft SQL Server®, while clients are normally lighter-weight systems such as Microsoft Access® that are specialized for interface design.

Computerized Data: Data that are collected, stored, and accessible through a computer or other electronic means.

Data: Any documentary, tabular, or locational information collected, maintained, and/or disseminated by a SHPO, THPO, or FPO, either manually or through electronic means, that contributes to documentation of an historic property or properties for the purpose of historic designation, preservation, or protection.

Database Management System (DBMS): A program or collection of programs that enables you to store, modify, and extract information from a database. DBMS can have different types of structures and usually include ways of managing both the input and output of information within the database.

Digital: Information that can read, write, or be stored in a numerical format for the purposes of being accessed, stored, or modified through the use of electronic equipment such as a computer, scanner, GPS unit, or other device.

Digitize: The conversion of one type of media (text, image, audio, video) to a digital format for the purposes of being viewed, modified, or stored by electronic equipment such as a computer, scanner, GPS unit, or other device.

Geocoding: The process of assigning a location, usually in the form of coordinate values (points), to an address by comparing the descriptive location elements in the address to those present in the reference material. With geocoded addresses, address locations can be spatially displayed and patterns within the information recognized.

GIS (Geographic Information System): A realm of computerized theory and methods, as well as a set of software tools, GIS enables the processing, storing, maintenance, management, analysis, and visualization of digital geographic data.

GPS (Global Positioning System): A device that uses satellite signals to determine precise geographic positions on the earth. GPS is used for navigation as well as data collection.

Gray Literature: Documentary material that is not commercially published and therefore is not available through conventional sources. These documents are typically technical reports, working papers, business documents, and conference proceedings and are often kept in the various offices to which they are submitted. Archeological reports, architectural surveys, and historic contexts fall under this category of document.

Inventory: Information retained in an agency’s files or records, either gathered manually or in electronic format survey forms related to historic properties.

Historic Property: A building, archeological resource (site), structure, object, or district that a SHPO, THPO, or FPO maintains or seeks to maintain information about, for the purposes of historical designation, preservation, or protection at the federal, state, tribal, or local level. This includes artifacts and remains within such properties, but not separate records or artifact collections.

Historic Property Inventory: A list (or group of lists) of historic or potentially historic properties, including various types of property-based data collected and maintained by SHPOs, THPOs, or FPOs for the purpose of designation, preservation, or protection.

Historic Property Survey: The systematic gathering and recording of pre-designated or designated documentation on a potential historic property or properties.

Jurisdiction: FPO – properties owned/managed by the federal agency; THPO – properties owned/managed by the tribe or that the tribe feels responsible for; SHPO – the state boundaries.

Legacy Data: Historic property inventory data not currently accessible by electronic means.

Metadata: Data that are used to characterize other data. In the case of digital images or spatial data, it is commonly a file that contains the reference or contextual information for those data.

Non-Spatial Data: Data that are essentially documentary in nature, including text, photographs, or other graphics, such as scanned text and maps.

Real Property: Property that includes land, improvements to land, or anything attached to the land. This includes buildings, fences, ditches, trees, and any land improvements.

Relational Database Management System (RDBMS): A database consisting of a set of linked (related) two-dimensional data tables. Common examples of relational database platforms include Oracle, PostgreSQL, MySQL, and Microsoft Access, although there are many more.

Scanned: Any text, map, etc., recorded in an electronic format.

Shapefile: A file format developed by ESRI, Inc., that is used to store the geometry, geographic location, and attribute information for geographic data. Shapefiles contain data for polygon, line, or point features.

Spatial Data: Usually stored as coordinates and topology; data that can be mapped; often accessed, manipulated, or analyzed through GIS.

SQL (Structured Query Language): A standardized computer language for interacting with relational databases.

Tabular Database: A database consisting of a single two-dimensional array of columns and rows (i.e., a table). Spreadsheets such as Microsoft Excel® files are the most common example of this type.

Trimble Unit: A brand of GPS. Most popular are the various Trimble handheld GPS units that combine the data collector and the GPS receiver into one device.

Traditional Cultural Property/Place (TCP): Places or resources that are deemed to be important and integral to maintaining a Native American tribal group’s traditional culture or religion. TCPs may not be necessarily associated with easily definable sites or objects, such as is the case with mountain peaks or landscapes that may be considered sacred by Native American tribal groups.

Universal Transverse Mercator (UTM): Standardized coordinate system based on the metric system and a division of the earth into 60, 6-degree-wide zones. Each zone is projected onto a Transverse Mercator projection, and the coordinate origins are located systematically. Both civilian and military versions exist.

AGENCY GLOSSARY

ACHP (Advisory Council on Historic Preservation): “An independent federal agency established in 1966 that promotes the preservation, enhancement, and productive use of our nation's historic resources, and advises the President and Congress on national historic preservation policy.” (<http://www.achp.gov/aboutachp.html> 2009)

ABMC (American Battle Monuments Commission): “A federal agency established by Congress to commemorate the service and achievements of U.S. armed forces where they have served overseas since 1917, and within the U.S. when directed by public law. The commission is responsible for designing, constructing, operating and maintaining permanent American cemeteries in foreign countries, establishing and maintaining U.S. military memorials, monuments and markers where American armed forces have served overseas since April 6, 1917, and within the U.S. when directed by public law. Also, the commission is responsible for controlling the design and construction of permanent U.S. military monuments and markers by other U.S. citizens and organizations, both public and private, and encouraging their maintenance.” (<http://www.abmc.gov/home.php> 2009)

ARS (USDA Agricultural Research Service): The U.S. Department of Agriculture’s (USDA’s) chief scientific research agency, and is one of four agencies in the USDA’s Research, Education, and Economics mission area. “ARS conducts research to develop and transfer solutions to agricultural problems of high national priority and provide information access and dissemination to ensure high-quality safe agricultural products, assess the nutritional needs of Americans, sustain a competitive agricultural economy, enhance the natural resource base and the environment, and provide economic opportunities for rural

citizens, communities, and society as a whole.” (<http://www.ars.usda.gov/AboutUs/AboutUs.htm> 2009)

BEP (Bureau of Engraving and Printing): “A federal bureau within the Department of the Treasury tasked with the design and manufacture of official US security documents including Federal Reserve Notes, identification cards, naturalization certificates, and other special security documents.” (<http://www.bep.treas.gov/2009>)

BIA (Bureau of Indian Affairs): “A federal management and regulatory bureau within the Department of the Interior (DOI) responsible for the administration and management of land held in trust by the United States for American Indian, Indian tribes, and Alaska Natives.” The BIA’s mission is to: “... enhance the quality of life, to promote economic opportunity, and to carry out the responsibility to protect and improve the trust assets of American Indians, Indian tribes, and Alaska Natives.” (<http://www.doi.gov/bia/2009>)

BLM (Bureau of Land Management): “A federal management bureau of the Department of the Interior responsible for the management and conservation of public surface acreage as well as subsurface mineral estate, and cultural resources within public land. These public lands make up more than 40 percent of all land managed by the Federal government.” (http://www.blm.gov/wo/st/en/info/About_BLM.html 2009)

CFA (Commission of Fine Arts): “The Commission is authorized to advise on the location of statues, fountains and monuments in public areas in the District of Columbia, advise on plans for public buildings erected by the Federal Government within the District of Columbia and to regulate the height, exterior design and construction of private and semipublic buildings in designated historic areas. The Commission of Fine Arts is composed of seven members. They are appointed by the President and serve without compensation for four-year terms.” (<http://www.cfa.gov/about/index.html> 2009)

DOD (Department of Defense): The federal agency that manages the facilities, operations, and personnel of the various armed forces of the United States through the Department of the Navy, the Department of the Army, the Department of the Air Force, along with the Commander-in-Chief and the Joint Chiefs of Staff.

DOE (Department of Energy): “A federal management agency established to defend energy security, maintain the safety, security and reliability of the nuclear weapons stockpile, clean up the environment from the legacy of the Cold War, and develop innovations in science and technology through research and development. The Department now operates research laboratories and facilities, power marketing administrations, and an energy information administration, as well as managing the environmental cleanup from 50 years of nuclear defense activities in communities across the country.” (<http://www.energy.gov/organization/index.htm> 2009)

DOI (Department of the Interior): The Department of the Interior (DOI) is the nation's principal conservation and land-management agency. The DOI is a large decentralized federal agency that administrates public surface land use, cultural resources management, reclamation projects, conservation projects, energy development projects, mining projects, and federal tribal relations. In addition, the DOI raises revenues collected from energy, mineral, grazing, timber, recreation, land sales, and other revenue producing activities. A number of Bureaus and Services are administrated by the DOI, including the Bureau of Indian Affairs, the Bureau of Reclamation, the Bureau of Land Management, the U.S.

Geological Survey, the U.S. Fish and Wildlife Service, the National Park Service, Minerals Management Service, and the Office of Surface Mining. (<http://www.doi.gov/facts.html> 2009)

DHS (Department of Homeland Security): A federal security and law enforcement agency established for the enforcement of the United States’ domestic borders, provide relief in the event of natural disaster, and administer immigration into the United States. The department consolidates the functions and facilities of several previous federal agencies, including U.S. Customs Service, Immigration and Naturalization Service, the Transportation Security Administration, the U.S. Coast Guard, the U.S. Secret Service, and the Federal Emergency Management Agency.

EDA (Economic Development Administration): A federal regulatory agency developed in 1965 in accordance within the U.S. Department of Commerce pursuant to the Public Works and Economic Development Act to “generate jobs, help retain existing jobs, and stimulate industrial and commercial growth in economically distressed areas of the United States.” The administration works in partnership with state and local governments, regional economic development districts, public and private nonprofit organizations, and Indian tribes in order to achieve their goals. (<http://www.eda.gov/AboutEDA/Mission.xml>)

FAA (Federal Aviation Administration): A federal regulatory agency that is responsible for the enforcement of civil aviation safety regulations, the development of civil aeronautics, the operation and development of both civil and military air traffic control, the regulation of United States commercial space transportation, and the control and mitigation of environmental factors associated with aviation. (<http://www.faa.gov/about/mission/activities/>)

FCC (Federal Communications Commission): “An independent regulatory federal agency established to regulate both interstate and international communications via radio, television, wire, satellite, and cable.” (<http://www.fcc.gov/aboutus.html> 2009)

FEMA (Federal Emergency Management Agency): A federal regulatory agency under the direction of the Department of Homeland Security that represents the federal response to natural disasters that may occur within the domestic borders of the United States in the form of coordinating disaster relief, reconstruction, and the restoration of ravaged areas.

FHWA (Federal Highway Administration): A federal administrative agency that is organized under the U.S. Department of Transportation. The primary responsibility of the FHWA is to enforce and develop highway safety legislation as well as maintain and improve the nation’s extensive surface transit corridor network. The agency provides financial and technical support for the construction, improvement, and preservation of highways owned by state, local, and tribal governments. This budget is divided between two major programs: the Federal-Aid Highway Program and the Federal Lands Highway Program. (<http://www.fhwa.dot.gov/whoware/whoware.htm> 2009)

FPO (Federal Preservation Officer, or Office): Historic Preservation Officers designated to federal agencies in accordance to Section 110 of the NHPA 1966 (amended 1992) who serve to administer the preservation programs attached with the activities of various federal agencies as mandated in NHPA 1996.

USDAFS (USDA Forest Service): “The Forest Service was established as a federal management agency of the U.S. Department of Agriculture (USDA) responsible for managing public lands and facilities within national forests and grasslands.” (<http://www.fs.fed.us/aboutus/mission.shtml> 2009)

FSA (USDA Farm Service Agency): “A federal regulatory and management agency regulated by the Department of Agriculture (USDA) that administers and manages farm commodity, credit, and conservation, disaster and loan programs as laid out by Congress through a network of federal, state and county offices.” (<http://www.fsa.usda.gov/FSA/webapp?area=about&subject=landing&topic=sao> 2009)

FWS (Fish and Wildlife Service): “The U.S. Fish and Wildlife Service is a federal conservation bureau within the Department of the Interior. Their mission is to work with others to conserve, protect and enhance fish, wildlife and plants and their habitats for the continuing benefit of the American people. FWS manages the National Wildlife Refuge System (NWRS) of more than 520 National Wildlife Refuges and thousands of small wetlands and other special management areas. Under the Fisheries program they also operate 69 National Fish Hatcheries, 64 fishery resource offices and 78 ecological services field stations.” (http://www.fws.gov/help/about_us.html 2009)

GSA (General Services Administration): The GSA is a federally funded management agency that provides workplaces by constructing, managing, and preserving government buildings and by leasing and managing commercial real estate. In addition the GSA offers private sector professional services, equipment, supplies, telecommunications, and information technology to government organizations and the military. (<http://www.gsa.gov/Portal/gsa/ep/home.do?tabId=7> 2009)

HUD (Housing and Urban Development): A federal regulatory agency established to increase homeownership, support community development, and increase access to affordable housing, free from discrimination. This department is headed by the U.S. Secretary for Housing and Urban Development and is supported by many program and support offices throughout the federal and state governments. (<http://www.hud.gov/about/index.cfm> 2009)

IMLS (Institute of Museum and Library Services): The Institute of Museum and Library Services is a federal management and regulatory agency that is the primary source of federal support for the nation’s libraries and museums. The Institute works at the national level and in coordination with state and local organizations to sustain heritage, culture, and knowledge; enhance learning and innovation; and support professional development of library and museum professionals. (<http://www.imls.gov/about/about.shtm> 2009)

NASA (National Aeronautics and Space Administration): A federal agency established for the research, development, implementation, and administration of space exploration, multidisciplinary scientific research, and aeronautics research. NASA maintains numerous facilities throughout the United States to achieve these goals including NASA Headquarters in Washington, 10 field centers, and a variety of installations including laboratories, air fields, wind tunnels, and control rooms. (http://www.nasa.gov/about/highlights/what_does_nasa_do.html 2009)

NARA (National Archives and Records Administration): A federal administrative agency responsible for the safeguarding and preserving of Government records and developing educational programs and services built around this documentary heritage. NARA works in coordination with the Information Security Oversight Office, the National Historical Publications and Records Commission, and the Office of the Inspector General. (<http://www.archives.gov/about/organization/2009>)

NCSHPO (National Conference of State Historic Preservation Officers): “The National Conference of State Historic Preservation Officers (NCSHPO) is the professional association of the State government officials who carry out the national historic preservation program as delegates of the Secretary of the Interior pursuant to the National Historic Preservation Act of 1966, as amended (NHPA) (16 USC 470).” (<http://www.ncshpo.org/about/index.htm> 2009)

NIGC (National Indian Gaming Commission): “As an independent federal regulatory enforcement agency established pursuant to the Indian Gaming Regulatory Act of 1988 (Act). The Commission’s primary responsibility is to regulate gaming activities on Indian lands for the purpose of shielding Indian tribes from organized crime and other corrupting influences; to ensure that Indian tribes are the primary beneficiaries of gaming revenue; and to assure that gaming is conducted fairly and honestly by both operators and players.” (<http://www.nigc.gov/AboutUs/tabid/56/Default.aspx> 2009)

NPS (National Park Service): The National Park Service is a management bureau within the U.S. Department of the Interior organized for the maintenance of the U.S. National Park system and the preservation of natural and cultural resources for the purposes of recreation and education. NPS staff cooperate with internal (e.g., the parks) and external (e.g., the SHPOs) partners to extend the benefits of natural and cultural resource conservation and outdoor recreation throughout this country and the world. (<http://www.nps.gov/aboutus/mission.htm>)

NRCS (USDA Natural Resources Conservation Service): “The Natural Resources Conservation Service is a federal conservation agency operated under the Department of Agriculture (USDA) that provides leadership in a partnership effort to help America’s private land owners and managers conserve their soil, water, and other natural resources.” (<http://www.nrcs.usda.gov/2009>)

NRHP (National Register of Historic Places): “The National Register of Historic Places is the official list of the Nation’s historic places worthy of preservation regulated by the National Park Service (NPS). Authorized by the National Historic Preservation Act of 1966, the National Park Service’s National Register of Historic Places is part of a national program to coordinate and support public and private efforts to identify, evaluate, and protect America’s historic and archeological resources.” (<http://www.nps.gov/nr/about.htm> 2009)

Reclamation (Bureau of Reclamation): A federal management bureau administered by the Department of the Interior responsible for public waterway management including the construction and maintenance of water diversion and storage facilities, and the sale of water usage rights. In addition, Reclamation is responsible for the production of hydroelectric power in several western states. (<http://www.usbr.gov/main/about/2009>)

RD (USDA Rural Development): “The Rural Development agency is a federal management subsidiary of the United States Department of Agriculture (USDA) responsible for the development of rural areas in the US. The RD uses its financial programs to support such essential public facilities and services as water and sewer systems, housing, health clinics, emergency service facilities and electric and telephone service. They promote economic development by supporting loans to businesses through banks and community-managed lending pools, as well as offer technical assistance and information to help agricultural and other cooperatives get started and improve the effectiveness of their member services. They also provide technical assistance to help communities undertake community empowerment programs.”
(<http://www.rurdev.usda.gov/> 2009)

SHPO (State Historic Preservation Officer, or Office): “State Historic Preservation Officers (SHPOs) administer the national historic preservation program at the State level, review National Register of Historic Places nominations, maintain data on historic properties that have been identified but not yet nominated, and consult with Federal agencies during Section 106 review. SHPOs are designated by the governor of their respective State or territory. Federal agencies seek the views of the appropriate SHPO when identifying historic properties and assessing effects of an undertaking on historic properties. Agencies also consult with SHPOs when developing Memoranda of Agreement.” (<http://www.achp.gov/shpo.html> 2009)

Treasury (Department of the Treasury): “The Treasury Department is the executive agency responsible for the operation and maintenance of systems that are critical to the nation's financial infrastructure. The Department works with other federal agencies, foreign governments, and international financial institutions to encourage global economic growth, raise standards of living, and to the extent possible, predict and prevent economic and financial crises. The Department of the Treasury is organized into two major components the Departmental offices and the operating bureaus.”
(<http://www.ustreas.gov/education/duties/2009>)

DOT (Department of Transportation): “A federal regulatory agency that aims to *serve the United States by promoting a fast, safe, efficient, accessible and convenient transportation system that meets the vital national interests and enhances the quality of life of the American people.* Leadership of the DOT is provided by the Secretary of Transportation, who is the principal adviser to the President in all matters relating to federal transportation programs. The Office of the Secretary (OST) oversees the formulation of national transportation policy and promotes inter-modal transportation. Other responsibilities range from negotiation and implementation of international transportation agreements, assuring the fitness of US airlines, enforcing airline consumer protection regulations, issuance of regulations to prevent alcohol and illegal drug misuse in transportation systems and preparing transportation legislation.”
(<http://www.dot.gov/summary.htm> 2009). In some references, “DOT” also refers to a state Department of Transportation, usually cooperating with USDOT.

THPO (Tribal Historic Preservation Officer, or Office): Historic Preservation Officers designated by Indian tribes delimited in the National Park Service list of tribal offices in accordance with Section 101(d)(2) of the National Historic Preservation Act of 1966 for the purposes of Section 106 compliance. THPOs are empowered with the same responsibilities as SHPO and are consulted with by federal agencies in lieu of SHPO when

a Section 106 compliance undertaking that either occurs on or may affect cultural resources located on tribal lands. (<http://www.achp.gov/thpo.html> 2009)

USDA (U.S. Department of Agriculture): The USDA is a federal management and regulatory agency headed by the Secretary of Agriculture, responsible for the regulation and management of the food and agricultural industries, natural resources, agricultural scientific research, the improvement of rural areas in the United States, and the conservation of existing natural environments and resources. The agency works in coordination with many other federal offices, including the Inspector General, the General Counsel, the Office of the Secretary for Civil Rights, and the Office of the Secretary for Administration, among others. Several additional agencies fall under the auspices of the USDA including Rural Development, Farm Service Agency, the Natural Resources Conservation Service, the Agricultural Research Stations, and the USDA Forest Service. (<http://www.usda.gov/wps/portal> 2009)

APPENDIX B
NHPII Original Survey Questions

NHP II ORIGINAL SURVEY QUESTIONS

National Historic Property Inventory Initiative Survey

1. Introduction

In October 2006, under the leadership of First Lady Laura Bush, the Preserve America Summit recommended the completion of a more accessible and comprehensive nationwide inventory of historic properties as one of the top thirteen goals for historic preservation in the United States in the coming decade.

As a first step in the implementation of this recommendation, the National Park Service (NPS) and the Advisory Council on Historic Preservation (ACHP) are undertaking this comprehensive survey of historic-property data collection and management policies and practices currently utilized by State Historic Preservation Offices (SHPOs), Tribal Historic Preservation Offices (THPOs), and Federal Preservation Offices (FPOs) throughout the country.

Your office's timely completion and return of this National Historic Property Inventory Initiative (NHPII) Survey questionnaire by May 5, 2008, is critical; it will ensure that the NPS and the ACHP have information that is as current, complete, and accurate as possible with respect to the costs, needs, and best practices associated with ongoing SHPO, THPO and FPO survey and inventory programs. Please ensure the lead person filling out this survey is the most knowledgeable of your office's electronic data systems.

The information obtained through this survey will enable the NPS and the ACHP to plan and implement more sensible and effective federal assistance programs (including grants) designed to help the SHPOs, THPOs, and FPOs expand and manage their historic-property inventories more efficiently and cost effectively. Copies of the aggregated survey results will be made available to all respondents following the completion of the survey project.

2. Instructions on how to complete this survey

In order to ensure that the final data derived from the NHPII Survey is consistent and coordinated, it is very important that only one electronic submittal of the completed NHPII Survey form be provided by each SHPO, THPO, and FPO.

If more than one individual in a SHPO, THPO, or FPO needs to participate in compiling the response to one or more questions, we suggest that they be provided paper printouts of the survey, answer the questions which require their input, have that input aggregated into the final, single electronic submittal made by your office.

Some SHPOs, THPOs, and/or FPOs may deem it useful to have other organizations/ agencies that they work with on a regular basis for cultural-resource management purposes to have an opportunity to participate in the NHPII Survey. We welcome such input with the understanding that these other entities ensure that they identify their status as "Other" for question 2 of Section 3 of the survey (i.e., "What type of office is your agency?"). Other entities can participate in the survey by direct electronic submittal if your office forwards them the web link to the electronic survey questionnaire.

If your office is aware of any "outside" organizations that collect or manage data related to the preservation and protection of historic properties that may want to participate in the survey, please contact Alexis Abernathy of the NPS at the phone number or email address listed below.

Please note that the individual who fills out this survey electronically may save their answers at any time, and return to complete the survey at a later date prior to submitting to the NPS. However, it is strongly recommended that a printed, paper "working draft" of the survey be completed prior to filling it out and submitting it electronically. Completing a paper "working draft" may be particularly useful if more than one individual in your office needs to be involved in answering the survey questions. A "working draft" can also prove a useful back-up should the final electronic copy be lost or become otherwise inaccessible.

To ensure the NPS and the ACHP can keep the NHPII as a whole moving forward on a timely basis, we ask that your office complete and submit an electronic copy of this NHPII Survey questionnaire to the NPS no later than Monday, May 5, 2008.

To submit a completed copy of the survey electronically, simply hit the "Done" button at the end of the survey.

Should the need arise for any clarification of specific questions included in the survey, please do not hesitate to contact: Alexis Abernathy of the NPS at 202-354-2236 or Alexis_Abernathy@contractor.nps.gov.

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National Historic Property Inventory Initiative Survey	
Thank you for participating in National Historic Property Inventory Initiative.	
3. Glossary	
When used in this NHP II survey, the following meanings should be applied to the words/phrases below:	
<p>Data: Any documentary, tabular, or locational information collected, maintained, and/or disseminated by a SHPO, THPO, or FPO, either manually or through electronic means, that contributes to the documentation of a historic-property or properties for the purpose of historic designation, preservation or protection.</p> <p>Computerized: Data that is collected, stored, and accessible through a computer or other electronic means.</p> <p>Graphic: Computerized data of photos, maps, etc.</p> <p>Historic-Property: A building, site, structure, object or district that a SHPO, THPO, or FPO maintains or seeks to maintain information about for the purpose of historic designation, or preservation, or protection at the Federal, state, tribal or local level.</p> <p>Historic Property Inventory: A list (or group of lists) of historic or potentially historic properties, including various types of related data that is collected and maintained by a SHPO, THPO or FPO for the purpose of designation, preservation or protection.</p> <p>Jurisdiction: FPO-Properties owned by the Federal Agency; THPO-Properties owned by the Tribe or the Tribe feels is their responsibility; SHPO-All properties within the state boundaries that the SHPO keeps track of.</p> <p>Legacy Data: Historic property inventory data not currently accessible by electronic means.</p> <p>Non-Spatial Data: Data that is essentially documentary in nature, including text, photographs or other graphics including scanned text and maps.</p> <p>Scanned: Any text, map, etc. recorded in an electronic format.</p> <p>Spatial Data: Usually stored as coordinates and topology; is data that can be mapped; often accessed, manipulated or analyzed through Geographic Information Systems.</p> <p>Survey: The systematic gathering and recording of pre-designated or designated documentation on a potential historic property or properties.</p> <p>Inventory: Information retained in an agency's files or records, either gathered manually, or in electronic format related to historic properties.</p>	
4. Respondent Information	
* 1. Please tell us who you are and where you are from:	
Name:	<input type="text"/>
Agency	<input type="text"/>
Address:	<input type="text"/>
Address 2:	<input type="text"/>
City/Town:	<input type="text"/>
State:	<input type="text" value=""/>
Email Address:	<input type="text"/>
Phone Number:	<input type="text"/>

National Historic Property Inventory Initiative Survey

2. What type of office is your agency?

SHPO
 THPO
 FPO
 Other

If Other please specify

3. What are your formal job title(s) under state or federal law?

1.
2.
3.
4.

4. What is your academic background? (Choose as many as apply)

History/Historic Preservation/Architectural History
 Archeologist/Anthropologist
 IT Specialist
 GIS Specialist
 Landscape Architecture
 Other

If other please specify

5. What are your principle job functions?

1.
2.
3.
4.
5.
6.

National Historic Property Inventory Initiative Survey

6. Are you the person most knowledgeable about your office's electronic collection and management systems with respect to historic properties?

Yes
 No
 Partial (I have some/most of the answers but not all)

7. If you answered "no" or "partial" to the previous question please indicate who else we should contact? Please indicate name, phone number, and email.

Name:
Agency:
Job Title:
Email Address:
Phone Number:

8. Is there anyone else you believe we should contact regarding this survey?

Name, email, agency:
Name, email, agency:
Name, email, agency:

5. Historic Property Inventory Background Information

1. Does your office currently maintain any inventory or inventories of historic properties?

Yes
 No

If you answered 'no' to question 1 you will be forwarded directly to section 7 of this survey.
-----stop-----stop-----stop-----stop-----

If you are drafting your answers by hand and answered 'no' to question 1 please proceed to section 7 of this survey

National Historic Property Inventory Initiative Survey

2. If your office keeps an inventory (inventories) of historic properties, please identify which specific types of resources that are included (check all that apply):

- Districts
- Archeological Sites
- Historic buildings
- Structures
- Objects
- Landscapes
- Properties of traditional Religious and Cultural Importance
- Other

Other (please specify)

3. Does your office's inventory system still utilize paper-based survey forms as a means of recording data (including text and/or photographs) related to historic properties?

Yes
 No
 Sometimes

If yes or sometimes, please explain:

4. What are the different types of inventory forms your office utilizes?

Single form for all historic properties (archeological and non-archeological)
 Two forms- one for archeology, one for everything else
 Not sure
 More than two types of forms

If more than two, please describe forms

National Historic Property Inventory Initiative Survey

5. What is the estimated percentage of all potentially historic non-archeological properties within your office's jurisdiction that have been inventoried?

0-25%

26-50%

51-75%

76-100%

6. How did you arrive at this estimate?

7. What is the estimated percentage of all potentially historic archeological properties within your office's jurisdiction that have been inventoried?

0-25%

25-50%

51-75%

76-100%

8. How did you arrive at this estimate?

9. Please provide estimated percentages of historic properties, by type, which are included your office's current historic-property inventory (inventories):

	0-25%	26-50%	51-75%	76-100%	Unkown
Districts	<input type="radio"/>				
Sites	<input type="radio"/>				
Archeological Sites	<input type="radio"/>				
Individual Historic Buildings	<input type="radio"/>				
Individual Structures	<input type="radio"/>				
Individual Objects	<input type="radio"/>				
Individual Landscapes	<input type="radio"/>				
Properties of Traditional Religious and Cultural importance	<input type="radio"/>				

10. How did you arrive at this estimate?

6. Historic Property Inventory Data Collection and Input

National Historic Property Inventory Initiative Survey

1. How does your office currently collect and enter historic-property inventory data?

Manually--paper based
 Electronically
 Both
 Other
 Don't Know

If both or other please explain:

2. If the answer to the question above is "electronically" or "both," what kind of electronic data entry tools are being used (e.g. handheld GPS locators, direct field input via laptop, field collection/office input, etc.)?

1.
2.
3.
4.
5.
6.

3. Does your office maintain or have access to a GIS?

Yes--maintained in house
 Yes--have access to
 No

Additional comments, if any:

National Historic Property Inventory Initiative Survey

4. If the answer to the question above is either "maintains" or "has access to," how is GIS data developed and/or input?

Geocoding
 Manually
 GPS plotting
 Don't know

Other (please specify)

5. Does your office accept data collected in the field by consultants, either directly or indirectly?

Yes
 No
 Don't know

6. If your office accepts electronic historic-property and utilizes data information directly or indirectly from consultants, does one of your office's staff members check the data?

Yes
 No
 Don't Know

7. If the answer to questions concerning accepting data from consultants is yes, in your opinion how accurate is the data?

Very accurate
 Mostly accurate (usually just needs a little tweaking)
 Hit or miss (depends on consultant)

Please use this space to briefly describe experiences

National Historic Property Inventory Initiative Survey

8. What types of non-spatial data are stored in your office's historic property inventory in an electronic format (e.g. surveys, historical documents, photographs, slides, etc.)?

1.

2.

3.

4.

5.

6.

7.

8.

9.

10.

9. Does your office maintain different databases for different purposes? (i.e. survey data, archeological data, images, spatial data, etc.)

Yes

No

Don't know

10. Is there a separate database for archeological data included in your office's historic-property inventory?

Yes

No

Don't know

11. Does your office directly maintain the archeological historic properties database?

Yes

No

Don't Know

National Historic Property Inventory Initiative Survey

12. If your office has access to an archeological historic-property database that is not maintained "in house", please describe who maintains the database (e.g. state archeological office, state university, etc):

- State Archeologist office
- State Library
- State University
- Agency contractor
- N/A
- Other

Please explain

13. If another entity maintains the archeological database, is the archeological data contained within the database readily accessible to your agency?

- Yes
- No
- N/A

If yes or no, please explain

14. Is the archeological database information readily accessible to other governmental agencies (Federal, state, and/or local)?

- Yes
- No
- Don't Know

If yes or no, please explain:

National Historic Property Inventory Initiative Survey

15. What types of electronic data file formats does your office typically use for graphic historic property information? (i.e. .jpeg, .tiff, .pdf, etc.)

Yes/No/Don't Know

.jpeg	<input type="text"/>
.tiff	<input type="text"/>
.pdf	<input type="text"/>
bitmaps	<input type="text"/>
.gif	<input type="text"/>
.png	<input type="text"/>
other	<input type="text"/>

If other, please explain

16. Are text portions of scanned historic-property inventory forms "keyword searchable"?

Yes

No

Don't Know

If yes, please explain:

17. Does your office's data collection/management system include information specifically related to Section 106 Review?

Yes

No

If yes, please describe

National Historic Property Inventory Initiative Survey

18. Does your office collaborate with other agencies/entities concerning data recording, management, and/or dissemination of historic-property data (check all that apply)?

	Recording	Management	Dissemination
Yes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
No	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Don't Know	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

If yes, please explain?

19. Does your office collaborate with other agencies/entities concerning data-management policies?

yes

No

Don't know

If yes, please explain?

National Historic Property Inventory Initiative Survey

20. Is your office required adhere to any non-Federal requirements concerning historic properties data collection, maintenance, or dissemination? (e.g. state, tribal statutes, regulations or procedures, etc.)

- Yes
- No
- Don't know
- N/A

If yes, please explain

21. What host database-management system(s) does your office utilize for your historic property inventory or inventories (e.g., Oracle, MSAccessSQL, MySQL, Foxpro, File Maker etc. If none, please list "none" in text box 1. below)?

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.

National Historic Property Inventory Initiative Survey

22. Does your office currently have the capability for direct data entry into its historic-property database(s) from the field? (e.g. remote, via a laptop, internet)

Yes
 No

If yes, please describe:

23. If your office does not have the capability for direct data entry into its historic-property database(s), how helpful would this type of capability be with respect to completing your office's Section 106 reviews more efficiently?

Incredibly helpful
 Very helpful
 Somewhat helpful
 Marginally helpful
 Not helpful
 Don't Know
 N/A (Our office does not have an electronic historic-property database)

24. In your opinion what does your office need to be able to search, share and make readily available Section 106 data?

7. Historic Property Inventory Accessibility

National Historic Property Inventory Initiative Survey

1. Does your office charge any fees to outside users for access to historic property inventory data?

Yes
 No
 Sometimes
 Don't know

If "yes" or "sometimes", please describe briefly who is charged and why (e.g., developers, contractors; legislative mandate, agency policy, etc.).

2. If the answer to question 1 above is yes, is there a free layer of searchable information (e.g. Can the public access National Register Nominations of survey forms/information for free)?

Yes
 No
 Don't Know
 N/A

3. Does your office currently pay any other governmental agencies (not including public academic institutions) for access to historic-property data?

Yes
 No
 Don't know

If yes, please explain:

National Historic Property Inventory Initiative Survey

4. Does your office currently pay any non-governmental entities (including any academic institutions) for access to historic-property data?

Yes
 No
 Don't Know

If yes, please explain

5. Does your office still utilize one or more types of forms/ formats for the presentation of combined historic-property inventory data?

Yes
 No
 Don't know

6. If the answer to question 5. above is "yes," are any of your office's historic-property inventory forms scanned?

Completely scanned (100%)
 Mostly scanned (70-99%)
 Partially scanned (50-69%)
 Somewhat scanned (20-49%)
 Hardly scanned (0-19%)

Use this space for additional comments, if desired

National Historic Property Inventory Initiative Survey

7. If the answer to question 6. above is less than "100%," does your office currently have a plan to scan the balance of its historic-property inventory forms?

Yes
 No
 Don't know

If yes or no, please explain briefly:

8. Do the scanned historic-property inventory forms include scanned maps or photographs?

	Maps	Photographs	Other
Yes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
No	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Don't Know	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

If other, please explain

9. Do you believe some or all of your office's already scanned historic-property inventory forms need to be updated?

Some
 All
 None

If some, please explain:

National Historic Property Inventory Initiative Survey

10. Does your office currently have a plan for updating any other types of historic-property inventory documents or graphics (e.g., slides, maps, photographs, etc.)?

Yes
 No
 Don't know

If yes, please list:

11. If your office has a plan to update its historic-property inventory legacy information, how is the update going to be done?

Paper (scanned at a later date)
 Electronically (entered directly from the field)
 Both
 N/A

Please explain

12. Do governmental or non-governmental entities other than your office hold, manage, and/or own historic-property legacy data that your office relies on for properties within your office's jurisdiction?

Yes
 No
 Don't know

If yes, please explain:

National Historic Property Inventory Initiative Survey

13. If the answer to question 12 is "yes," do these entities have plans to update and/or convert this legacy data into a readily accessible electronic format?

Yes
 No
 Don't know

14. If the answer to the question above is yes, what are the names of these other entities? (Please be as agency/program specific as possible)

1.
2.
3.
4.
5.
6.
7.
8.

8. Historic Property Inventory Priorities, Budgeting, and Funding

1. What are your office's five top budget priorities for historic-property inventory data management?

1.
2.
3.
4.
5.

2. What are the approximate \$ levels of Federal, state, and (if applicable) private funding currently available to your agency for any historic preservation related activities that are eligible under Federal, state and/or tribal law?

Federal
State
Private

National Historic Property Inventory Initiative Survey

3. How did you arrive at these figures?

Hard Numbers
 Estimates
 Don't Know

Please explain

4. What is the approximate categorical \$ value of staffing and other resources your office currently dedicates annually for: Section 106 reviews, ongoing historic-property surveys, digital data collection, and management and training activities:

Section 106 reviews
Ongoing historic-property surveys
Digital data management, collection and training

5. How did you arrive at these figures?

Hard numbers
 Estimates
 Don't know

Please explain

6. If you represent a SHPO or THPO, would your office be able to match additional Federal Historic Preservation Funds \$(i.e., over and above the its annual HPF apportionment) on a 60% Federal/40% nonFederal basis?

Yes
 No
 Don't Know
 N/A--respondent not a SHPO or THPO

If no, please explain briefly:

National Historic Property Inventory Initiative Survey

7. Please list, by line item below, the estimated total costs (in 2008 \$) associated with converting the balance of your office's unscanned historic-property inventory legacy data to an appropriate electronic format?

Hardware	<input type="text"/>
Software	<input type="text"/>
Staffing	<input type="text"/>
Training	<input type="text"/>
Other	<input type="text"/>

8. How did you arrive at these figures?

- Hard numbers
- Estimates
- Don't know

Please explain

9. Agency Staffing and System Management

1. How much of your office's staff time is currently dedicated to data-collection/management training?

	Couple hours weekly	Couple hours monthly	Couple hours yearly	Rarely	Other
GIS training	<input type="radio"/>				
Data Base Management	<input type="radio"/>				
System training	<input type="radio"/>				
Content training (i.e. scanning text, photographs)	<input type="radio"/>				

Other (please explain):

National Historic Property Inventory Initiative Survey

2. Does your office have access to dedicated IT/Systems support professionals?

Yes
 No
 Don't Know

Use this space for comments, if desired:

3. If the answer to question 2 above is 'yes', are the IT professionals:

Full time
 Part time
 Occasional

Other (please specify)

4. Is IT development work outsourced or performed by in-house staff, or both?

Outsourced (e.g. contractors, other agencies, etc.)
 In-house staff
 Both

Use this space for comments, if desired:

National Historic Property Inventory Initiative Survey

5. If the answer to question 2 is 'yes', are your office's IT management staff trained in cultural-resource management practices?

- Yes
- No
- N/A

Use this space for comments, if desired:

6. Briefly list factors (if any) other than funding that prevent your office from instituting and supporting a fully computerized historic-property data collection and management system:

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.

10. Historic Property Inventory Data Accessibility and Sharing

1. Does your office have a website(s) that makes your offices historic-property inventory information directly accessible to the public? (If the answer to this question is 'no', please go directly to question 4 of this section.)

- Yes--no fee
- Yes--fee
- Yes--some requests carry a fee
- No--proceed to question 4
- Don't know

If there is a fee, please explain:

National Historic Property Inventory Initiative Survey

2. If the answer to question 1 above is 'yes', is the website hosted by your office?

Yes
 No
 Partially
 Don't know

3. If the answer to question 2 above is 'no' or 'partial', who hosts the website(s)?

1.
2.
3.
4.

4. If the answer to question 1 above is 'no', what has prevented your office from doing so? (Please check all that apply; then go directly to question 11 below in this section.)

Funding only
 Staffing only
 Funding and Staffing
 Legislative or regulatory requirements
 Administrative Policy

Other (please specify):

National Historic Property Inventory Initiative Survey

5. If your office hosts a publicly accessible historic-property inventory website, in what type of formats is data presented (e.g. inventory forms, data files, reports, National Register nominations, historic district maps, photographs, drawings shape files, etc.)

1.

2.

3.

4.

5.

6.

7.

8.

9.

10.

6. If your office hosts a historic-property inventory website. What types of historic property data not currently available would your office like to make accessible over the internet?

1.

2.

3.

4.

5.

6.

7.

8.

7. What types of website systems and procedures are in place to ensure protection of restricted or limited-access data?

Password protocols

Restricted-access servers

Information not scanned

Other

If other (please specify):

National Historic Property Inventory Initiative Survey

8. If the access is limited, why?

Sensitive archeology data

Data provided on fee-for-service basis

Other

If other (please specify)

9. What criteria are used to decide who will have access?

1.

2.

3.

4.

4.

6.

10. Who makes the decision to limit access?

11. What is the estimated total percentage of your office's historic-property data currently accessible via a website?

0-25%

26-50%

51-75%

76-100%

Unknown

12. How did you arrive at this estimate?

National Historic Property Inventory Initiative Survey

13. Is your office capable of sharing with other entities by electronic means?

Yes
 No
 Don't know

14. If the answer to question 13. above is 'yes', what administrative procedures, if any, govern such transfers?

Casual agreements
 Formal agreements
 Both of the above
 None
 Don't know

If the answer is "Casual" or "Formal" or "Both," please briefly explain your answer

15. If the answer to question 13 is 'yes', what is the electronic export/import format (s) used by your office?

1.
2.
3.
4.
5.

16. Do other entities or agencies regularly collect, maintain, or possess information (electronic or paper-based) regarding historic properties located in your office's jurisdiction?

Yes
 No
 Don't know

If yes, Please specify

National Historic Property Inventory Initiative Survey

17. Do other agencies regularly contribute funding and/or collection of data to support centralized and shared historic-property inventory data?

- Yes
- No
- Don't Know

If yes, please specify name and type of agency/entity

11. Future Historic Property Inventory Systems Development

1. What are your office's top five priorities with respect to improving historic-property inventory collection and management technical capabilities over the next five years (e.g. remote data entry, GIS server technology, imaging processes, security, staff training, scanning survey forms, or other legacy data, etc.)?

- 1.
- 2.
- 3.
- 4.
- 5.

2. What are your office's top five preservation work-program priorities over the next five years? (e.g. more archeological surveys, more architectural surveys, more National Register nominations, increasing state/tribal register listings, more CLGs, more restoration grant and/or historic tax credit programs, programs, etc.)

- 1.
- 2.
- 3.
- 4.
- 5.

National Historic Property Inventory Initiative Survey

3. What measures are your office proactively engaged in that promote the growth and development of electronic historic-property inventory collection and management systems?

1.

2.

3.

4.

5.

4. Approximately what percentage of unsurveyed areas in your office's jurisdiction can be classified as rural (i.e. per-square-mile population < 500)?

80-100%

60-79%

30-49%

10-29%

< 10%

Unknown

Additional Comments, if any

5. Concerning question 4 above, how was this estimate arrived at?

Thank you for helping us with this very important survey. If there is anything else you think needs to be covered, should be covered in phase two of the project, and/or needs to be covered more thoroughly, please use the remaining space in this box.

APPENDIX C
NHPII Follow-up Questions

NHPI FOLLOW-UP QUESTIONS

The following questions were implemented during SHPO and FPO site visits.

FUNDING AND COST SHARING

1. What are the approximate budgets of staffing and other resources your office currently dedicates annually for the categories of Section 106 reviews; ongoing historic property surveys; digital data collection; and management and training activities?
2. If your office currently has separate databases for historic and archaeological sites, how are the two (or more) systems compatible?
3. What types of cost- and data-sharing agreements do you currently have with other SHPOs, THPOs, and FPOs? Which specific agencies share database information with you?
4. What additional funding from outside sources does your agency receive to upgrade or use your database system?
5. How much funding is needed to completely scan your legacy data, or ongoing inventory and data accumulation, in a key word-searchable format?
6. How much funding would your office need to perform, and continue, adequate training of one or more current cultural resource employees to enhance their IT training and database skills?

COMPLIANCE

7. How do you identify Section 106-reviewed properties within a single (or multiple) database?
8. How much of your legacy data includes Section 106 projects and related properties?

ORGANIZATION AND ACCESS

9. What is your plan for converting legacy data to an accessible database?
10. What types of various data management protocols does your agency apply to storage and access of oral histories, photographs, historic contexts, and/or reports?
11. If your office already hosts a property-based website, what types of property data not currently available would your office like to make accessible through the website?

TECHNOLOGY AND ACCESS

12. What type of direct field data entry device do you use or would like to acquire? How do data-contributing consultants use such devices, and transfer information electronically to you?
13. Are you using, or would you like to use, a multi-level security controlled website that provides information on a credential or standard quality? What security issues do you detect for multi-level access? What specific state law might prohibit access?

The following questions were implemented during THPOs site visits.

1. What type of data sharing agreements do you currently have with other SHPOs, THPOs, and FPOs?
2. With what agencies do you share information (be specific)?
3. Does your office track Section 106 reviews differently than resources data within your database?
4. Do you have the ability to identify Section 106-reviewed properties within your database?
5. Does your agency receive additional funding from outside sources to upgrade or use a database system?
6. How much funding is needed to completely scan your inventory into a word-searchable format?
7. Is your legacy data Section 106 related? What is your plan for converting legacy?
8. What type of direct field data entry device would you feel more comfortable using?
9. Does your agency have data management protocols for oral histories?
10. How much money would your office need to perform adequate training of one (or more) current cultural resource employee to enhance IT training and database skills?
11. If your office has separate databases for architectural and archaeological sites, are the two systems compatible?
12. What is the approximate categorical dollar value of staffing and other resources your office currently dedicates annually for Section 106 reviews, ongoing historic property surveys, digital data collection, management activities, and training activities?
13. If your office hosts an historic property inventory website, what types of historic property data not currently available would your office like to make accessible over the internet?
14. How does your office manage the combined responsibility of survey and inventory?
15. Does your office have ordinance, protocols, requirements, or guidelines that stipulate how agencies/professionals interact with the inventory?
16. Does your office have cultural resources information confidentiality policies?
17. What is your general comfort level with outsiders accessing your database? Physical access? Email interaction? Web-based access?
18. What other tribal responsibilities do you or your office handle in addition to THPO?
19. Does your tribal government match your THPO funds?

APPENDIX D

Preliminary Report on National Historic Property Inventory Initiative Survey Data Analysis, Addendum 1

Preliminary Report on National Historic Property Inventory Initiative Survey Data Analysis, Addendum 1

Prepared by

SWCA Environmental Consultants

February 4, 2008

**Preliminary Report on National Historic Property Inventory Initiative
Survey Data Analysis, Addendum 1**

Prepared by:

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February 4, 2008

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INTRODUCTION

SWCA was awarded a contract from the National Conference of State Historic Preservation Offices (NCSHPO) on July 31, 2008 to complete work associated with the National Park Service (NPS) National Historic Property Inventory Initiative (NHPII), initiated in May 2008. The NHPII is a NPS-guided study designed to assess the current status of databases in use by State Historic Preservation Offices (SHPOs), Tribal Historic Preservation Offices (THPOs), and Federal Historic Preservation Offices (FPOs) across the country. The NPS wishes to identify “Best Practices” through this survey in order to move closer to a decentralized data gathering and sharing platform, as well as to identify direct funding opportunities through a match grant program.

The NHPII survey was created by NPS staff members and SurveyMonkey.com was utilized to gather and retrieve responses. Upon receiving the survey forms submitted by respondents from the NPS (through SurveyMonkey.com), SWCA created a state-of-the-art database management analysis platform. From this platform SWCA produced charts and statistics to analyze the answers to each question contained on the NHPII survey. This information is currently being stored on a stand-alone dedicated server, which is located in SWCA’s Denver, Colorado office. In the time since the original data was downloaded from SurveyMonkey.com an additional SHPO (“SD SHPO”), THPO (“Agua Caliente Band of Cahuilla Indians”), and two FPOs (“HABS/HAER/HALS,” USDA Forest Service”) have responded to the original survey. These responses will be included in subsequent analyses, but are not included in the dataset analyzed here.

Upon completing the comprehensive database and analyzing the responses to each question in the survey, SWCA identified categories for which additional information would be useful and which could be obtained in a follow-up survey. At this point, a second group of SHPOs, THPOs and FPOs were identified for participation in the follow-up survey. The selection criteria included reference to geography, as well as offices whose systems and information collection and maintenance are exemplary and have been classified in groups for the “Best Practice and Worst Practices” category.

This report is an addendum to the *Preliminary Report on National Historic Property Inventory Initiative Survey Data Analysis* submitted to the NPS by SWCA on September 30, 2008. This addendum includes additional survey information collected after the original report was submitted. Survey responses from an additional 6 SHPOs, 3 FPOs, and 24 THPOs were included in this Addendum Report. Although the additional data resulted in minor changes to the statistical analysis, these data resulted in little change to the original conclusions.

DATA QUALITY ISSUES

Issues with data quality and survey design have required us to eliminate 24 responses from the final dataset, to recode the responses to a number of questions, and to discard one question entirely. The survey response dataset contains at present 122 respondents.

DUPLICATE RESPONSES

Five responses in the dataset downloaded from SurveyMonkey.com were attributed to the “PA Historical & Museum Commission - Bureau for Historic Preservation.” Four of these were incomplete and therefore deleted. The most complete (and most recent) response was retained.

Three responses in the dataset downloaded from SurveyMonkey.com were attributed to the “Mashantucket Pequot Tribe.” The two responses were incomplete and the most complete (and most recent) response was retained.

Two responses in the dataset downloaded from SurveyMonkey.com were attributed to each of the “US General Services Administration,” the “Minnesota SHPO,” the "Blue Lake Rancheria," the "Bureau of Indian Affairs," the "Bureau of Land Management," "Housing and Urban Development," the "Missouri SHPO," the "Puerto Rico SHPO", the "Tennessee Historical Commission," the "US Fish and Wildlife Service," the "Louisiana Division of Archaeology," the "Wiyot Tribe," the "NPS National Historic Landmark program," and the "Narraganset THPO." In each case, the most recent or the most complete response from a particular agency was retained and the other deleted.

BLANK RESPONSES

Four responses in the dataset downloaded from SurveyMonkey.com were entirely blank. These were attributed to the “Department of Parks, Recreation and Historic Preservation (HI),” “RITA (MA),” the “Idaho State Historical Society,” and the “Maine Historic Preservation Commission.” All four of these blank responses were deleted.

INAPPROPRIATE RESPONSES

One response in the dataset downloaded from SurveyMonkey.com was attributed to the “Pipelines and Hazardous Materials Safety Administration.” However, in its survey response this agency noted (Question 4.2) that:

We regulate the movement of hazardous materials in commerce. There was some thought that we would do a permit streamlining process that could involve historic preservation issues, but the streamlining program has been cancelled. We don't currently have any historic preservation issues.

Since this agency is not involved in historic preservation issues, this response was deleted from the database.

MISCLASSIFIED AGENCY TYPES

Ten respondents appear to have misclassified themselves in their responses to Question 4.2. These errors were corrected.

The "Maine Historic Preservation Commission" did not classify itself in its response. It was reclassified as a SHPO.

The "Treasury Department" classified itself in its response as a SHPO. It was reclassified as a FPO.

Two of the California regional information centers classified themselves in their responses as "SHPOs." They were reclassified as "Other," as were all other California regional information centers.

The "Federal Highway Administration" did not classify itself in its response. It was classified as a FPO.

The "FAA," the "U.S. Commission of Fine Arts," "USDA Rural Development," the "USDA Agricultural Research Service," and the "USDA Forest Service" all classified themselves as "Other." They were reclassified as FPOs.

All responding NPS database managers (NRHP, HABS/HAER/HALS, NHL, and the NPS Archeology Program) classified themselves in their responses as "Other." This classification was retained for the analysis.

SURVEY DESIGN ISSUES

Several issues with the design of the survey in SurveyMonkey.com required modifications to the final dataset. These modifications included recoding responses, deleting some responses from the final dataset, and in one case the deletion of all responses to a particular question (Question 7.8). These responses are discussed on a case-by-case basis below.

Use of Text Entry Fields for Numeric Data

In three cases (Questions 8.2, 8.4, and 8.7), text entry fields were used to elicit numerical information. The resulting data was recoded in order to remove idiosyncratic formatting, and also to remove clearly inappropriate responses. For example, one respondent reported that "a lot" of state funds were available in response to Question 8.2, and another respondent provided percentage breakdowns (60-20-20) in response to this question rather than actual figures. Inappropriate responses were removed from the final dataset, resulting in 65 valid responses to Question 8.2, 45 valid responses to Question 8.4, and 50 valid responses to Question 8.7.

Inappropriate use of Checkboxes for Single-Response Questions

In five cases (Questions 5.5, 5.7, 7.5, 7.6, and 10.14), checkboxes were used in the place of radio buttons where a single response was clearly required. This opened the possibility that a single respondent could choose more than one response to these questions. Cases in which multiple responses were provided to these five questions were identified and the responses were removed from the final dataset.

In the case of Question 5.5, two responses ("Mississippi Dept. Archives & History" and "Michigan SHPO") were invalidated for this reason.

In the case of Question 5.7, no responses were invalidated for this reason.

In the case of Question 7.5, no responses were invalidated for this reason.

In the case of Question 7.6, one response (“Colorado Historical Society”) was invalidated for this reason.

In the case of Question 10.14, one response (“American Battle Monuments Commission”) was invalidated for this reason.

Errors in Question Design

For Question 7.9, rows and columns were reversed in the initial survey design. Therefore, instead of being able to respond “Yes,” “No,” or “Don’t Know” to each of “Maps,” “Photographs,” and “Other,” respondents were required to respond “Maps,” “Photographs,” and “Other” to each of “Yes,” “No,” or “Don’t Know.” In other words, respondents were permitted to check only one radio button in each row, rather than one in each column as clearly was intended by the survey designer. This design error prevented respondents from responding adequately to Question 7.9. Responses to this question were therefore meaningless, and were removed from the final dataset.

SUMMARY

Data cleaning and quality control resulted in the removal of 11 invalid responses from the analyzed dataset. In addition, one question was removed from the analysis due to a survey design error. Problems such as these are to be expected in any survey of the scope and complexity of the one analyzed here. Despite these problems, more than 90% of the responses are included in this analysis and the results of almost all survey questions can be interpreted in a meaningful manner.

NATIONAL HISTORIC PROPERTY INVENTORY INITIATIVE SURVEY
SECTION 4: RESPONDENT INFORMATION

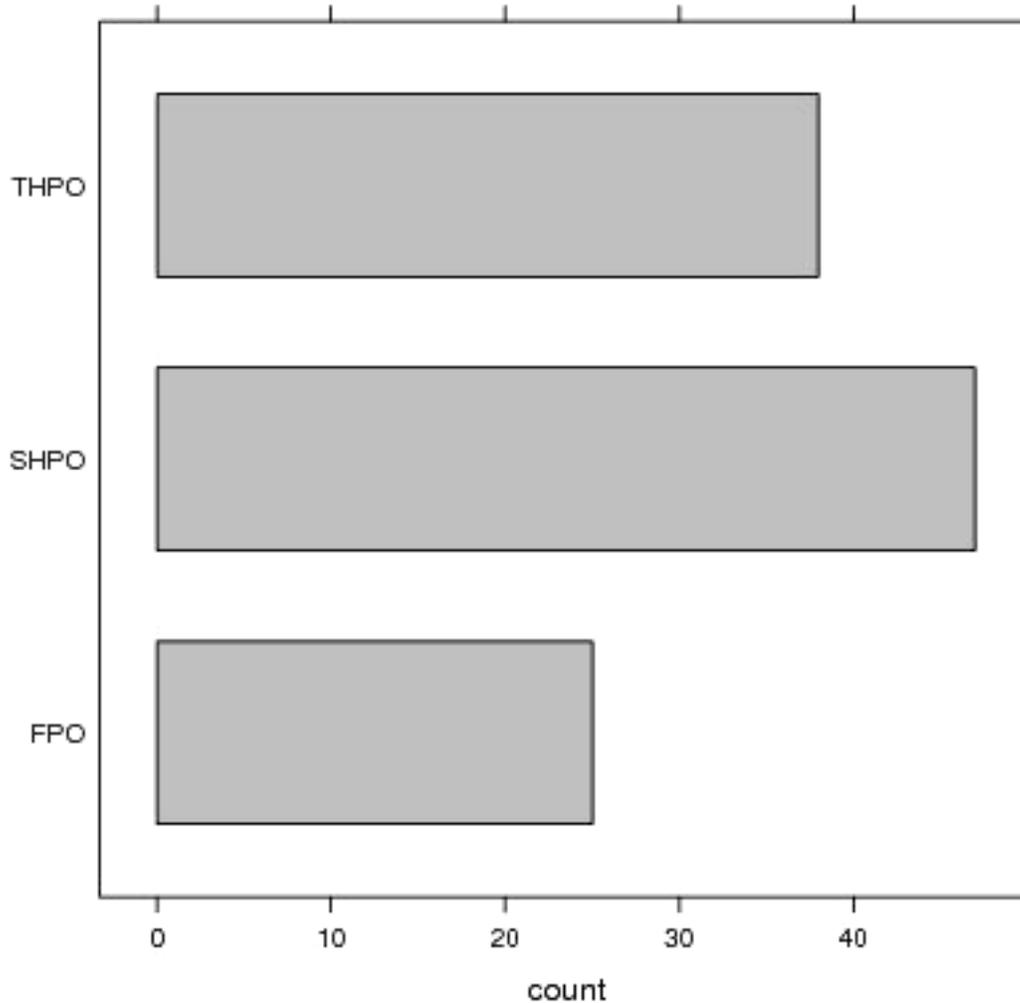
This section was designed to collect information on the respondent organization, as well as on the person completing the survey. A number of questions in this section were respondent-specific. Aggregate analysis of the responses to these questions would be meaningless, and they are not included in this analysis. These excluded questions are: 4.1, 4.3, 4.5, 4.7, and 4.8.

Most respondents to the survey were SHPOs, with fewer FPOs and even fewer THPOs. SHPO and THPO respondents were mostly trained in anthropology/archaeology or in architecture/history. FPO respondents, on the other hand, included few anthropologists/archaeologists and larger numbers of architects/historians and “others.” Few IT or GIS specialists completed the survey.

For all respondent types, the persons completing the survey in most cases reported that they were the most knowledgeable person in their organization on the topic of electronic data collection and management systems with respect to historic properties.

4.2. What type of office is your agency?

Question 4.2



Of the 78 survey respondents, 47 were SHPOs, 25 were FPOs, 38 were THPOs. Clearly, SHPOs dominated the survey responses with fewer responses from FPOs and THPOs.

Table 1. SHPO Survey Respondents.

State Historic Preservation Office Respondents to Survey	Office Location	
Office of History and Archeology	Anchorage	AK
Alabama Historical Commission	Montgomery	AL
Arkansas Historic Preservation Program	Little Rock	AR
California Office of Historic Preservation	Sacramento	CA
Colorado Historical Society	Denver	CO
Commission on Culture and Tourism	Hartford	CT
D.C. Historic Preservation Office	Washington	DC
DE Div. of Historical and Cultural Affairs	Dover	DE
Florida Division of Historical Resources	Tallahassee	FL
Historic Preservation Division, Department of Natural Resources	Atlanta	GA
Hawai'i State Historic Preservation Division	Kapolei	HI
Idaho State Historical Society	Boise	ID
State Historical Society of Iowa	Des Moines	IA
Indiana Division of Historic Preservation and Archeology	Indianapolis	IN
Guam Department of Parks, Recreation and Historic Preservation	Agana Heights	Guam
Kentucky Heritage Council	Lexington	KY
Louisiana, Department of Culture, Recreation & Tourism	Baton Rouge	LA
Massachusetts Historical Commission	Boston	MA
Maryland Historical Trust*	Crownsville	MD
Michigan State Historic Preservation Office	Lansing	MI
Minnesota State Historic Preservation Office	St. Paul	MN
Missouri State Historic Preservation Office	Jefferson City	MO
Mississippi Department of Archives and History	Jackson	MS
Montana State Historic Preservation Office	Helena	MT
North Carolina State Historic Preservation Office	Raleigh	NC
State Historical Society of North Dakota	Bismarck	ND
Nebraska State Historical Society	Lincoln	NE
New Hampshire Division of Historical Resources	Concord	NH
New Jersey State Historic Preservation Office	Trenton	NJ
Nevada State Historic Preservation Office	Carson City	NV
New York State Office of Parks, Recreation and Historic Preservation	Waterford	NY
Ohio Historic Preservation Office, Ohio Historical Society	Columbus	OH
Oklahoma State Historic Preservation Office	Oklahoma City	OK
Oregon Parks/Recreation – State Historic Preservation Office	Salem	OR
PA Historical and Museum Commission – Bureau for Historic Preservation	Harrisburg	PA
Puerto Rico, State Historic Preservation Office	San Juan	PR
RI Historical Preservation and Heritage Commission	Providence	RI
South Carolina, Department of Archives & History	Columbia	SC
State Historical Society Archeological Research Center	Rapid City	SD
Tennessee Historical Commission	Nashville	TN

State Historic Preservation Office Respondents to Survey	Office Location	
Texas Historical Commission	Austin	TX
Utah Division of State History	Salt Lake City	UT
Vermont Division for Historic Preservation	Montpelier	VT
Department of Archeology and Historic Preservation	Olympia	WA
Wisconsin State Historic Preservation Office	Madison	WI
West Virginia State Historic Preservation Office	Charleston	WV
Wyoming State Parks and Cultural Resources – State Historic Preservation Office	Laramie	WY

Table 2. THPO Survey Respondents.

Tribal Historic Preservation Office Respondents to Survey	Office Location	
Navajo Nation Historic Preservation Department	Window Rock	AZ
White Mountain Apache Tribe	Fort Apache	AZ
Wiyot Tribe	Loleta	CA
Agua Caliente Band	Palm Springs	CA
Timbisha Shoshone Tribe	Death Valley	CA
Stewarts Point Rancheria Kashia Band of Pomo Indians	Santa Rosa	CA
Bear River Band Rohnerville Rancheria	Loleta	CA
Smith River Rancheria	Smith River	CA
Elk Valley Rancheria	Crescent City	CA
Yurok Tribe	Klamath	CA
Blue Lake Rancheria	Blue Lake	CA
Pinoleville Pomo Nation	Smith River	CA
Big Pine Paiute Tribe of the Owens Valley	Big Pine	CA
Tribal Historic Preservation Office, Seminole Tribe of Florida	Clewiston	FL
Coeur d'Alene Tribe	Plummer	ID
Mashantucket Western Pequot Tribe	Mashantucket	MA
Wampanoag Tribe of Gay Head (Aquinnah)	Aquinnah	MA
Penobscot Indian Nation	Indian Island	ME
Ketegitigaaning Ojibwe Nation	Watersmeet	MI
Lower Sioux Indian Community	Mortin	MN
White Earth Nation	White Earth	MN
Leech Lake Band of Ojibwe	Cass Lake	MN
Chippewa Cree Tribes	Box Elder	MT
Three Affiliated Tribes	New Town	ND
Standing Rock Sioux Tribe	Fort Yates	ND
Ponca Tribe	Nuribarra	NE
Seneca Tribe	Salalamca	NY
Choctaw Nation of Oklahoma	Durant	OK
Narragansett Tribe	Hopevally	RI
Catawba	Rock Hill	SC
Sisseton-Wahpeton	Sisseton	SD
Rosebud Sioux Tribe of Indians	Rosebud	SD

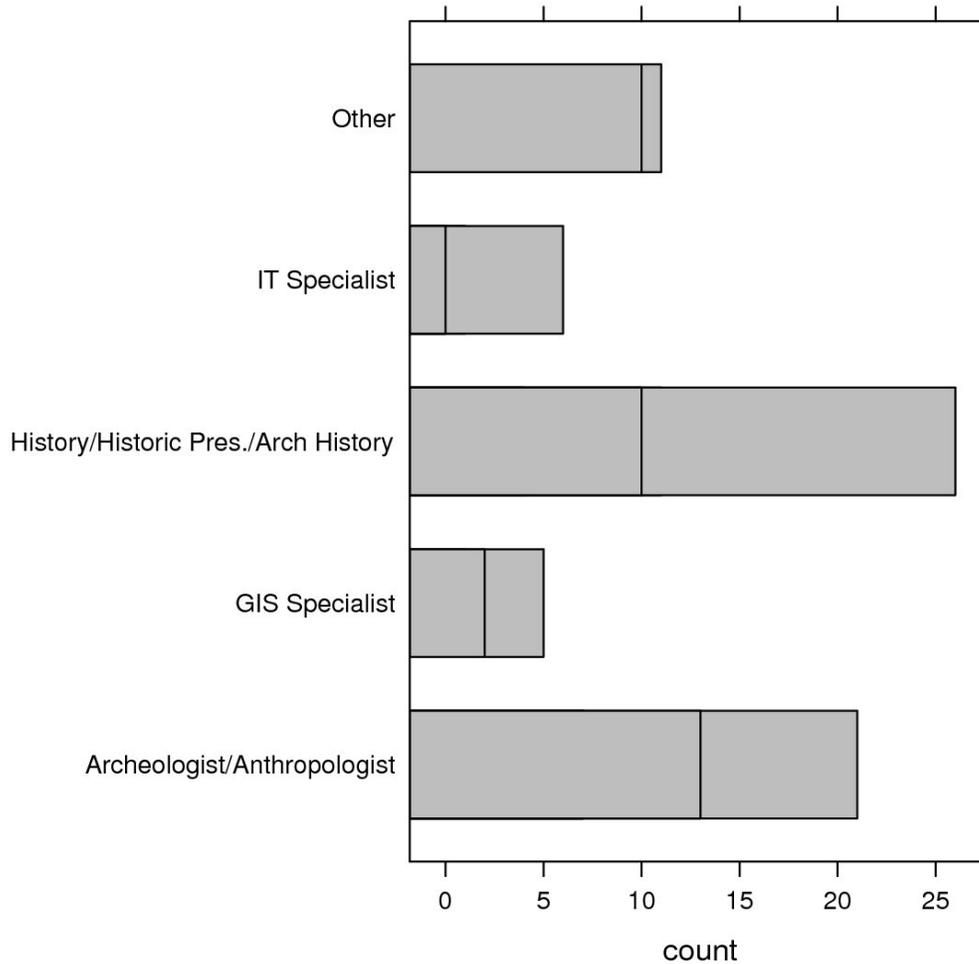
Tribal Historic Preservation Office Respondents to Survey	Office Location	
Cheyenne River Sioux Tribe	Eagle Butte	SD
Confederated Tribes of Warm Springs	Warm Springs	OR
Skokomish Tribe	Skokomish Nation	WA
Colville Confederated Tribes	Nespelem	WA
Lac Du Flambeau Band of Lake Superior Chippewa Indians	Lac Du Flambeau	WI
The Ho-Chunk Nation	Black River Fall	WI

Table 3. FPO Survey Respondents.

Federal Historic Preservation Office Respondents to Survey	Office Location	
American Battle Monuments Commission	Arlington	VA
Bureau of Engraving and Printing	Washington	DC
Bureau of Indian Affairs	Billings	MT
Bureau of Land Management (Field Offices in California and Idaho)	Washington	DC
Bureau of Reclamation	Denver	CO
Department of Defense	Washington	DC
Department of Energy	Washington	DC
Department of Homeland Security	Washington	DC
Economic Development Administration, U.S. Dept. of Commerce	Washington	DC
Federal Aviation Administration	Washington	DC
Federal Communications Commission	Washington	DC
Federal Emergency Management Agency	Washington	DC
Federal Highway Authority	Washington	DC
Housing and Urban Development	Washington	DC
Institute of Museum and Library Services	Washington	DC
NASA	Washington	DC
National Archives and Records Administration	College Park	MD
National Indian Gaming Commission	Washington	DC
National Park Service	Washington	DC
Treasury Department	Washington	DC
U.S. Commission of Fine Arts	Washington	DC
USDA, Agricultural Research Service	Beltsville	MD
USDA/Farm Service Agency	Washington	DC
USDA Natural Resources Conservation Service	Washington	DC
USDA – Rural Development	Washington	DC
U.S. Fish and Wildlife Service	Washington	DC
U.S. Forest Service (Field Office in Denver and Sacramento)	Washington	DC
U.S. General Services Administration	Washington	DC

4.4 What is your academic background? (Choose as many as apply)

Question 4.4



98% of SHPOs responded and 79% of THPOs responded.

Strong patterns are evident in the previous training of survey respondents. The majority of SHPO respondents were trained in either History/Architectural History or Archaeology/Anthropology. THPO respondents, on the other hand, were primarily Archaeologists/Anthropologists. In the case of FPOs, Archaeologists/Anthropologists were underrepresented relative to Historians/Architectural Historians and persons with other training. IT or GIS specialists were uncommon for all respondent types.

NATIONAL HISTORIC PROPERTY INVENTORY INITIATIVE SURVEY SECTION 5: HISTORIC PROPERTY INVENTORY BACKGROUND INFORMATION

Section 5 was intended to collect background information on the use of electronic historic properties databases and the contents of these databases. The bulk of the questions were designed to elicit information relevant to the contents of the databases, in terms of both data types and property types.

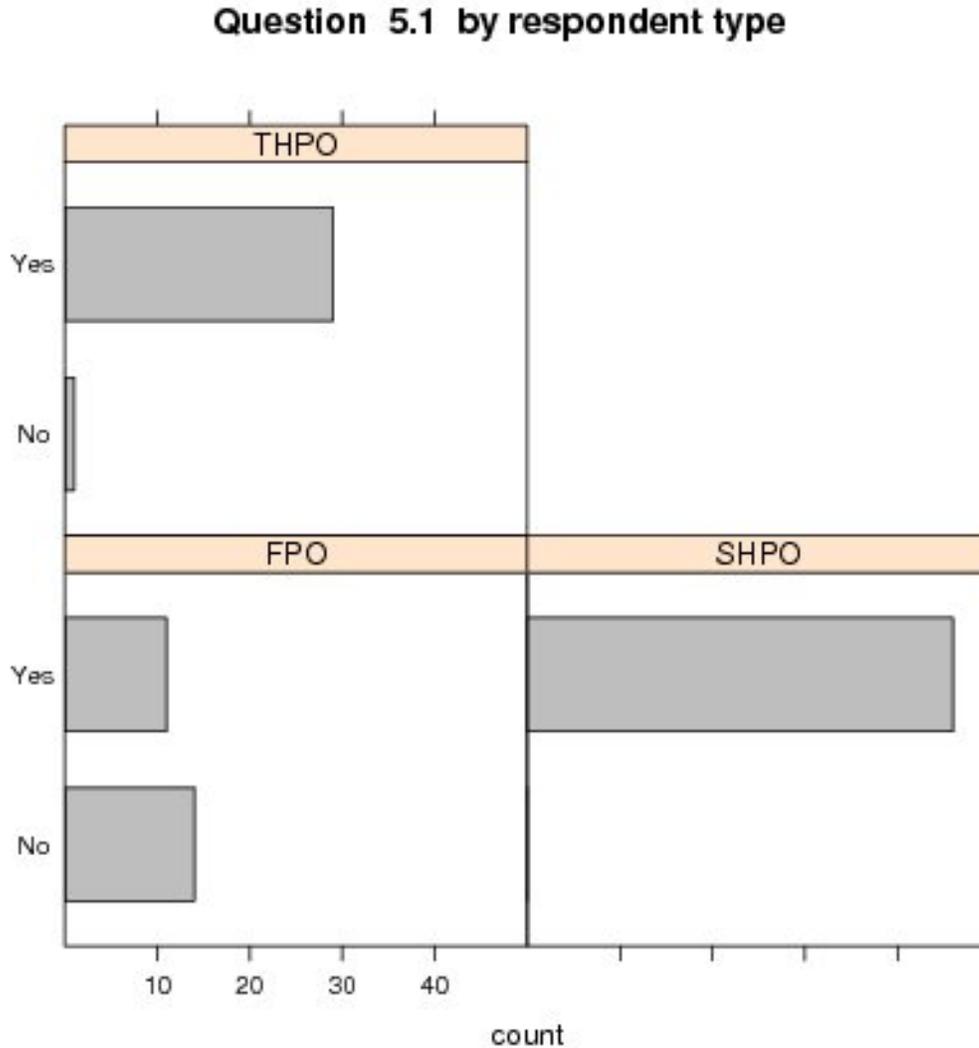
All SHPO and THPO respondents reported that their office maintains an electronic historic properties inventory system. However, fewer than half of the FPO respondents responded positively to this question. This means that only nine FPOs responded to the majority of the survey. FPOs, therefore, are the most poorly represented group for the purposes of most of this analysis.

SHPOs report having very broad-based historic property inventories including a wide range of property types. THPOs tend to have more focused inventories with an emphasis on archaeological sites and TCPs, while FPOs tend to be more focused on historic architectural resources. Understandably, SHPOs are more likely to use multiple forms for different property types while THPOs and especially FPOs are more likely to use a single form.

SHPOs and THPOs generally report that only a small percentage of historic and archaeological resources within their jurisdiction have been inventoried. FPOs display a bimodal distribution, with one group reporting low inventory rates, comparable to the SHPOs and THPOs, and the other reporting very high inventory rates. This may reflect a distinction between FPO offices with large and heterogeneous versus small and homogeneous jurisdictions.

Most SHPO historic property inventories are dominated by historic buildings. THPO inventories, on the other hand, tend to be dominated by archaeological sites, TCPs, and individual objects. FPOs seem to have relatively diverse inventories, with few being dominated by single property type. Nevertheless, a general emphasis on historic architectural resources is evident.

5.1 Does your office currently maintain any inventory or inventories of historic properties?

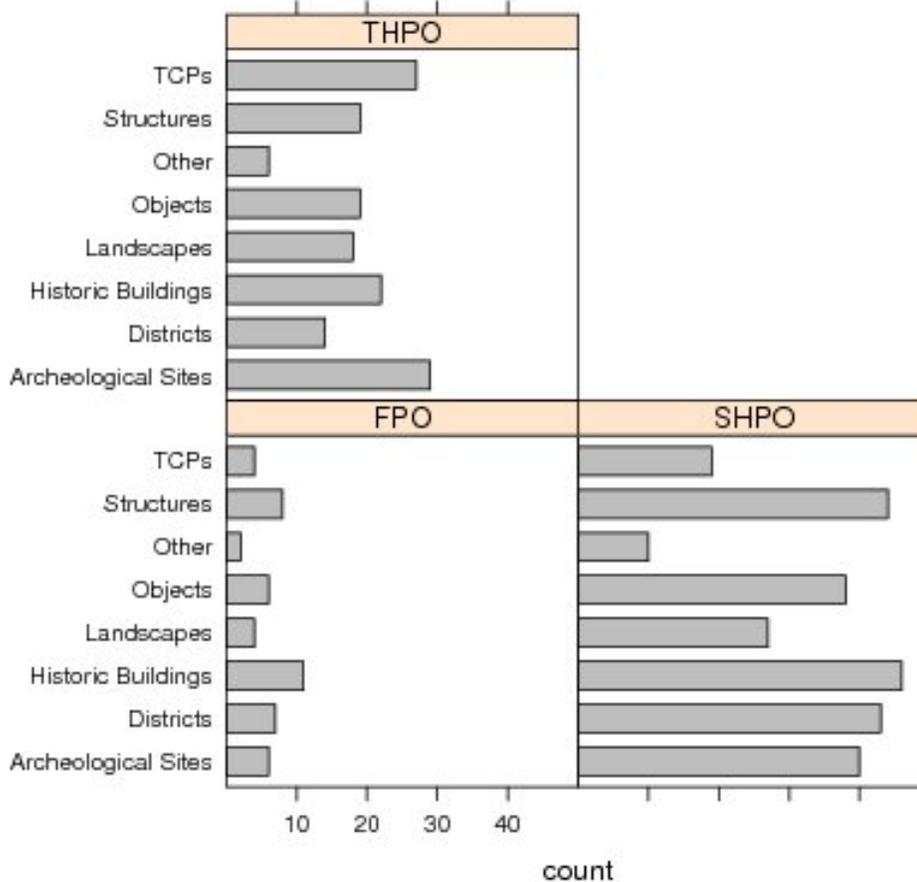


98% of SHPOs responded and 79% of THPOs responded.

All SHPO and THPO respondents reported maintaining a basic historic properties inventory. Over 56% of FPOs, on the other hand, reported not maintaining such a database, with only eleven of the FPO respondents answering “Yes.” This means that although a healthy number of FPOs responded to the survey, patterns in FPO responses to Sections 5 and 6 are based on the small subset that maintains an historic properties inventory. This fact must be remembered when attempting to characterize FPOs as a group in this analysis.

5.2 If your office keeps an inventory (inventories) of historic properties, please identify which specific types of resources are included.

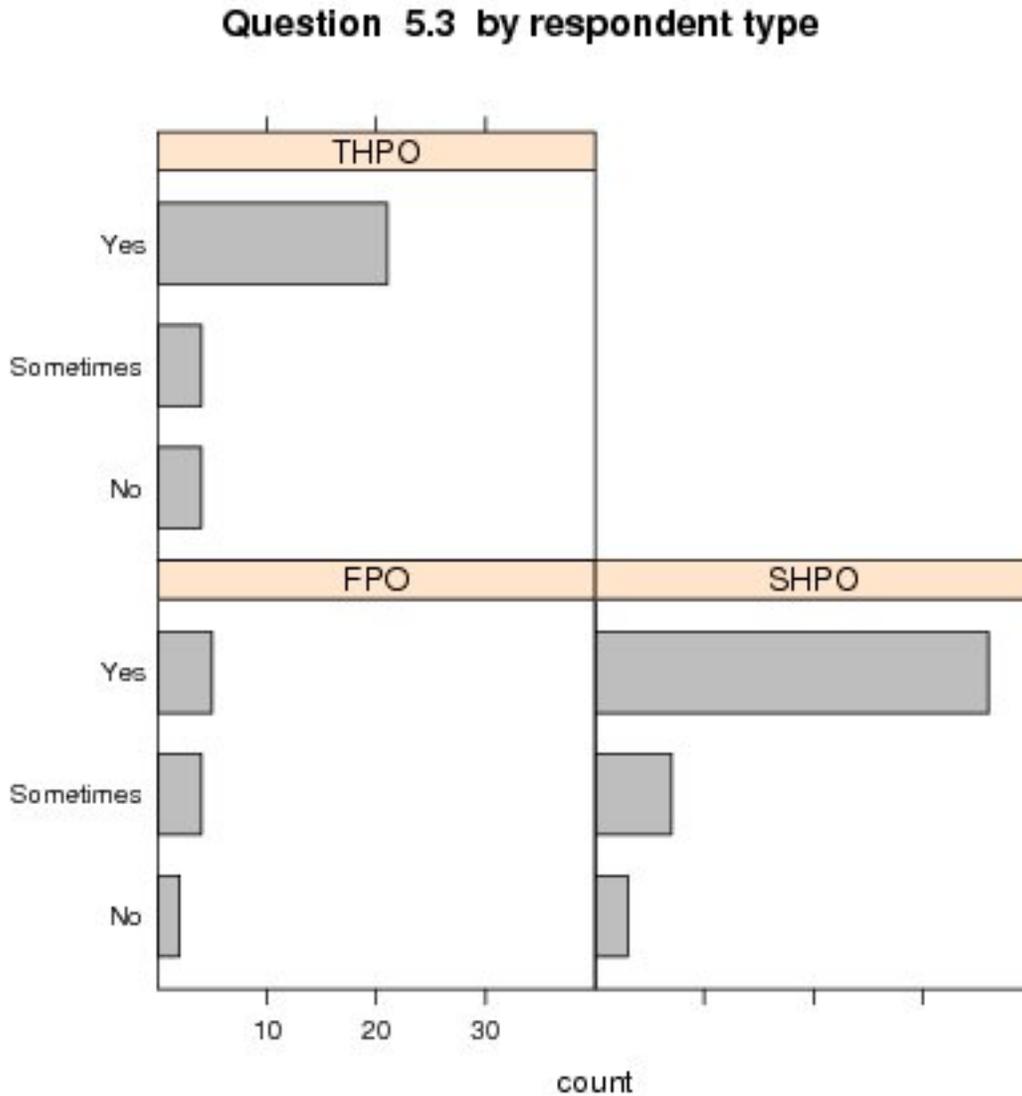
Question 5.2 by respondent type



44% of FPOs responded, 98% of SHPOs responded and 76% of THPOs responded.

SHPOs report very comprehensive historic property inventories, with more than 80% including archaeological sites, structures, historic buildings, districts, and objects. Landscapes and TCPs are inventoried by half or fewer of SHPO respondents. THPOs typically have more focused inventories with more than 71% including archaeological sites and TCPs, but with only 58% including historic buildings, 50% including objects and structures, and 50% or fewer including landscapes and districts. All FPO respondents include historic buildings in their inventories, and most include structures as well. Slightly more than half of FPOs include districts, and fewer than half include archaeological sites or objects. Very few FPOs include TCPs or landscapes in their inventories. In sum, responding SHPOs have very comprehensive inventories, THPOs are more focused on archaeological sites and TCPs, and FPOs appear to be highly focused in historic architectural resources.

5.3. Does your office’s inventory system still utilize paper-based survey forms as a means of recording data (including texts and/or photographs) related to historic properties?

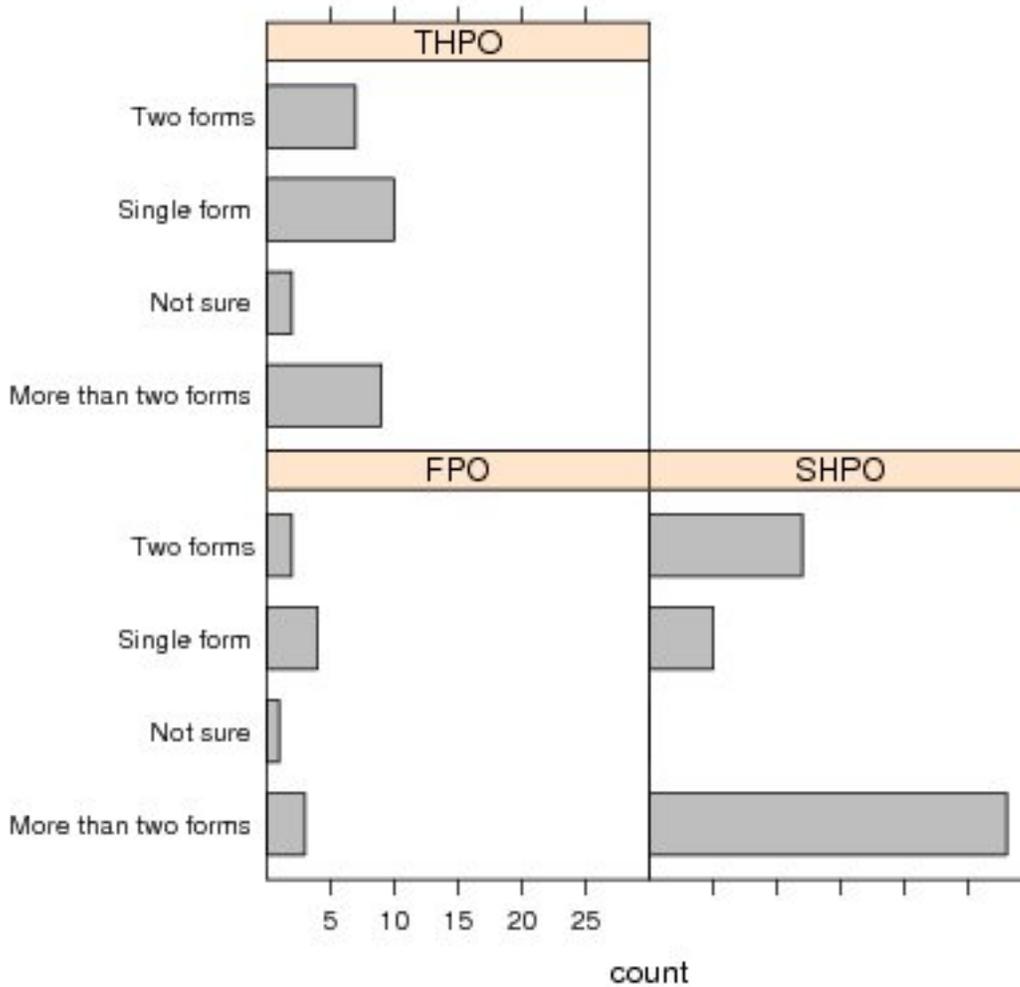


44% of FPOs responded, 98% of SHPOs responded and 76% of THPOs responded.

Unsurprisingly, most respondents of all types still use paper-based survey forms, at least occasionally.

5.4. What are the different types of inventory forms your office utilizes?

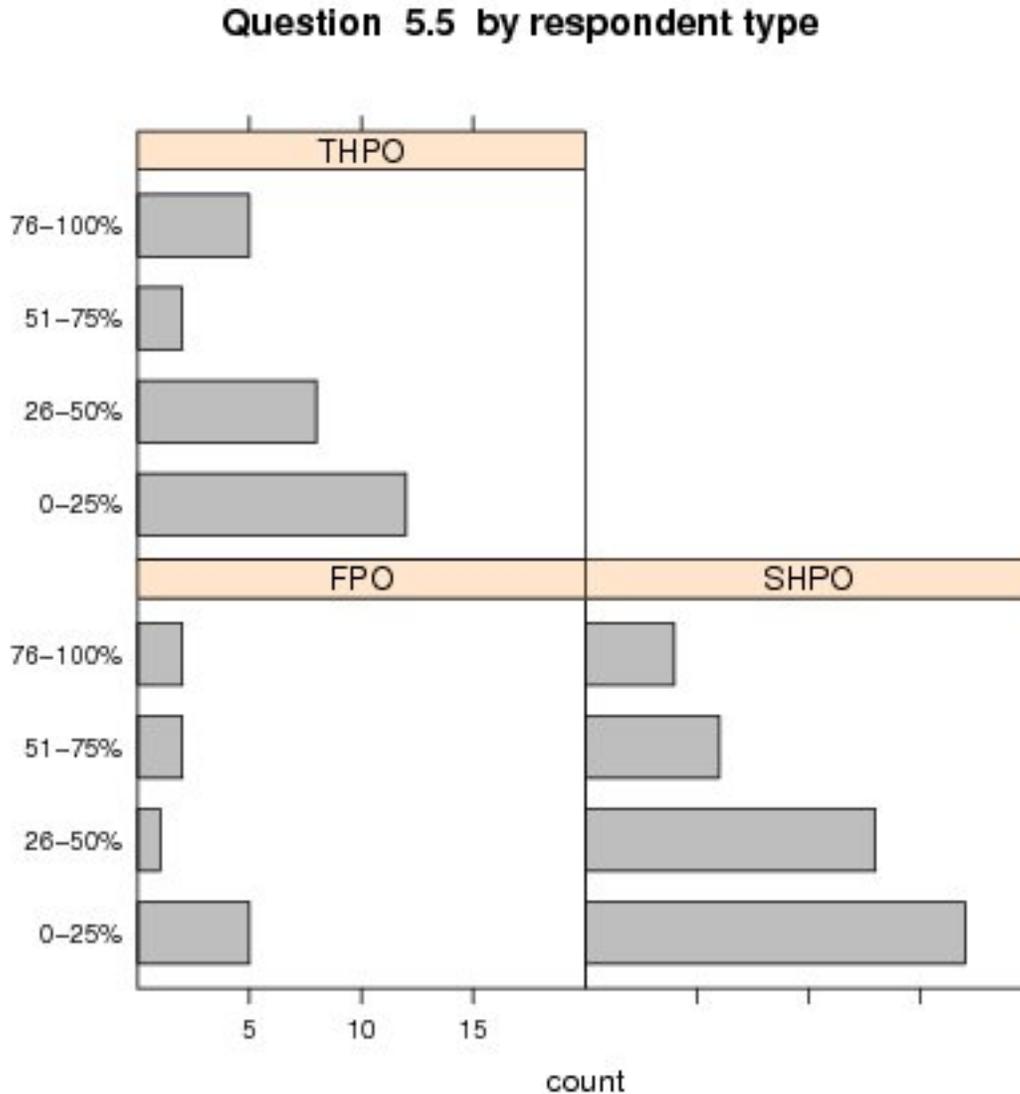
Question 5.4 by respondent type



40% of FPOs responded, 96% of SHPOs responded and 76% of THPOs responded.

The great majority of SHPO respondents (89%) use two or more kinds of forms for different classes of historic properties, and very few (11%) use only a single form. By contrast, only 55% of THPO respondents use two or more forms, and 36% use a single form. FPO respondents were less likely (30%) to use two or more kinds of form and more likely to use a single form (40%). This pattern is consistent with the results of Question 5.2 which showed that SHPOs tend to inventory a wide range of historic property types, while THPOs and SHPOs are typically more focused of a narrow range of property types.

5.5. What is the estimated percentage of all potentially historic non-archaeological properties within your office’s jurisdiction that have been inventoried?

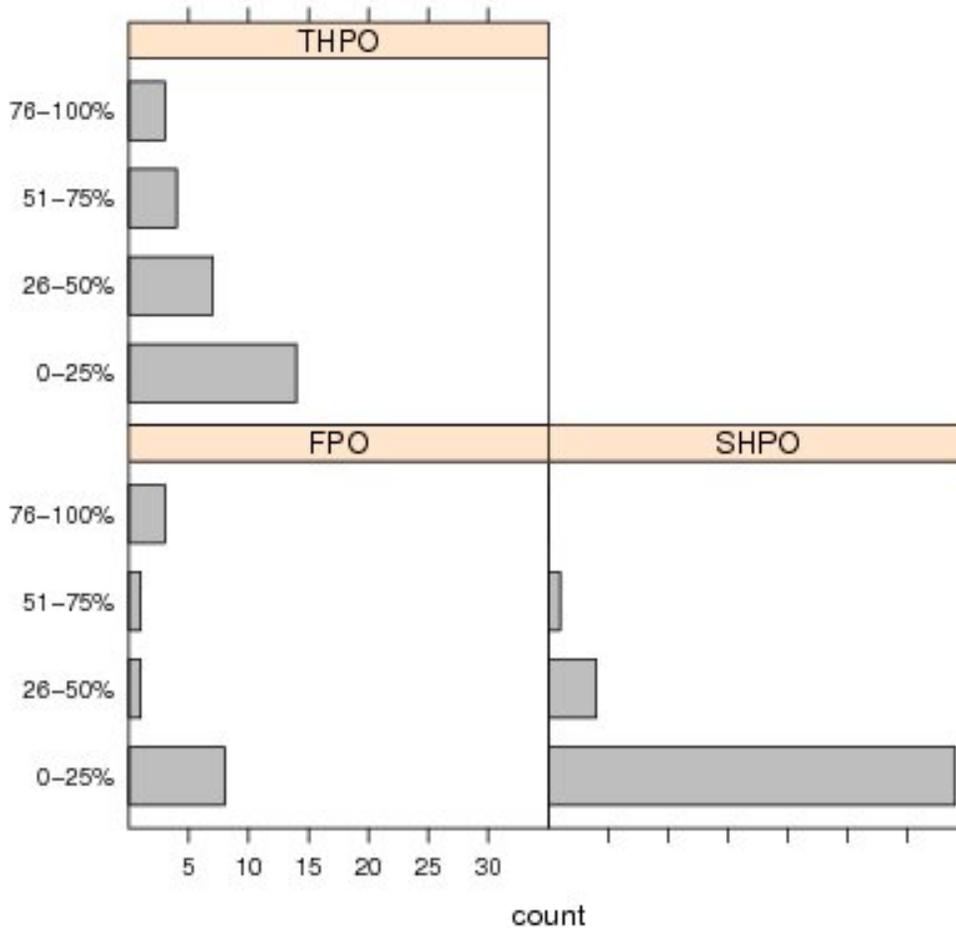


40% of FPOs responded, 85% of SHPOs responded and 71% of THPOs responded.

The great majority of SHPO and THPO respondents reported that fewer than 50% of non-archaeological historic properties in their jurisdiction had been inventoried. By contrast, the FPO respondents displayed a bimodal distribution, suggesting a distinction between FPOs with large versus small jurisdictions. FPOs reporting high inventory rates included the GSA, NASA, and the Department of Homeland Security. FPOs reporting low inventory rates included the BLM, USDA Agricultural Research Service, and the U.S. Forest Service, as well as the Bureau of Engraving and Printing and the U.S. Commission of Fine Arts.

5.7. What is the estimated percentage of all potentially historic archaeological properties within your office’s jurisdiction that have been inventoried?

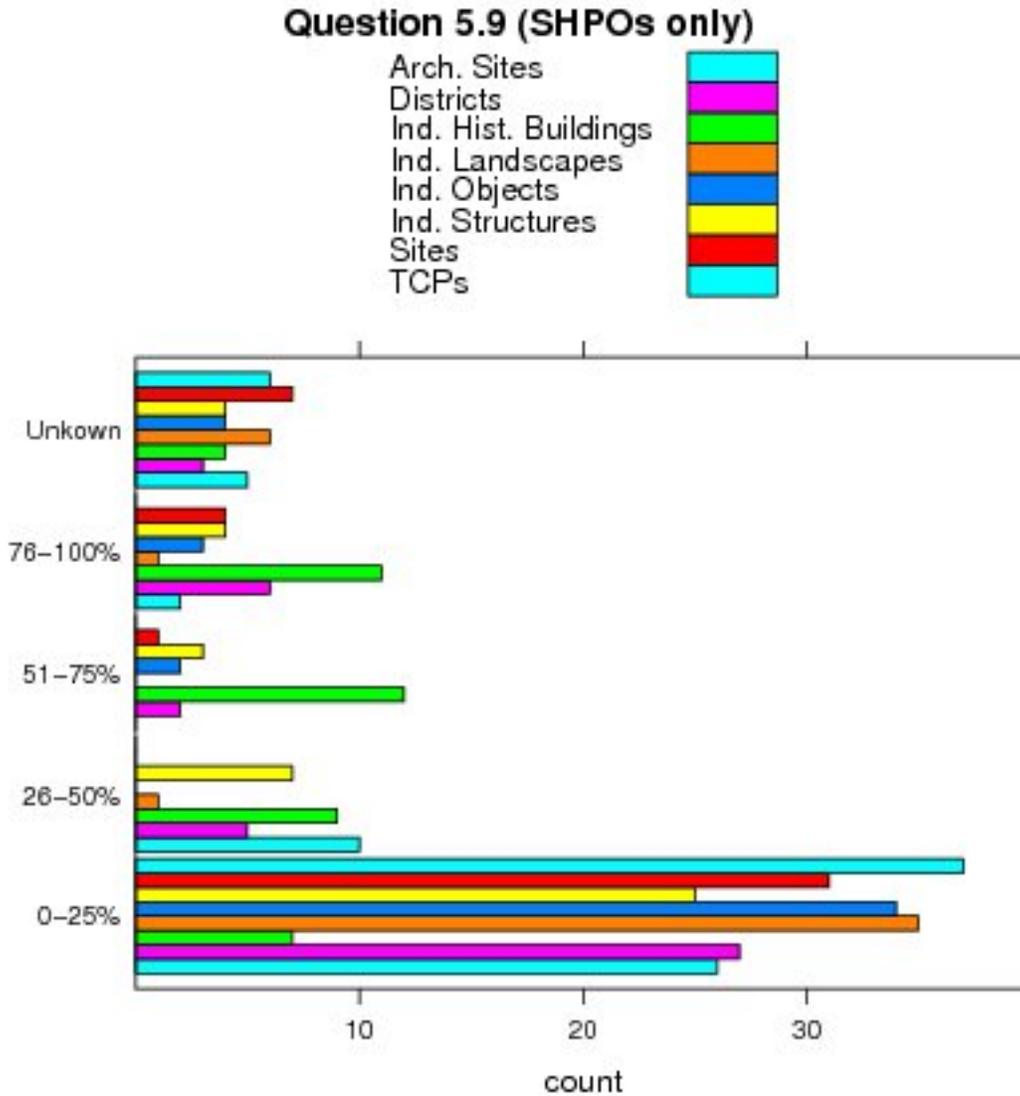
Question 5.7 by respondent type



52% of FPOs responded, 83% of SHPOs responded and 26% of THPOs responded.

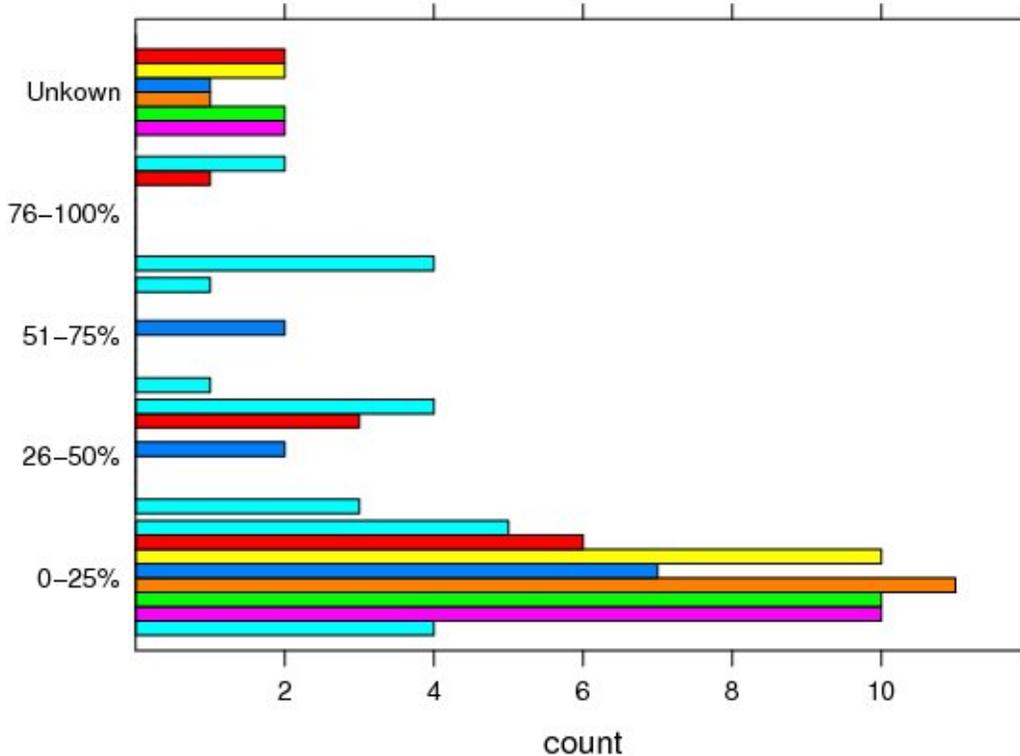
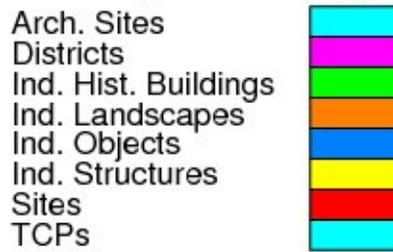
As with Question 5.6, most SHPO respondents reported that a very low percentage of archaeological properties had been inventoried. THPO respondents reported a higher inventory rate, but the majority still reported that fewer than 50% of archaeological sites had been inventoried. FPO respondents again displayed a bimodal distribution, suggesting a distinction between FPOs with large versus small jurisdictions. FPOs reporting high inventory rates included the GSA, NASA, the Department of Homeland Security, and the American Battle Monuments Commission. FPOs reporting low inventory rates included the BLM, USDA Agricultural Research Service, USDA Rural Development, the FAA, and the U.S. Forest Service, as well as the National Indian Gaming Commission and the U.S. Commission of Fine Arts.

5.9. Please provide estimated percentages of historic properties, by type, which are included in your office’s current historic-property inventory (inventories).



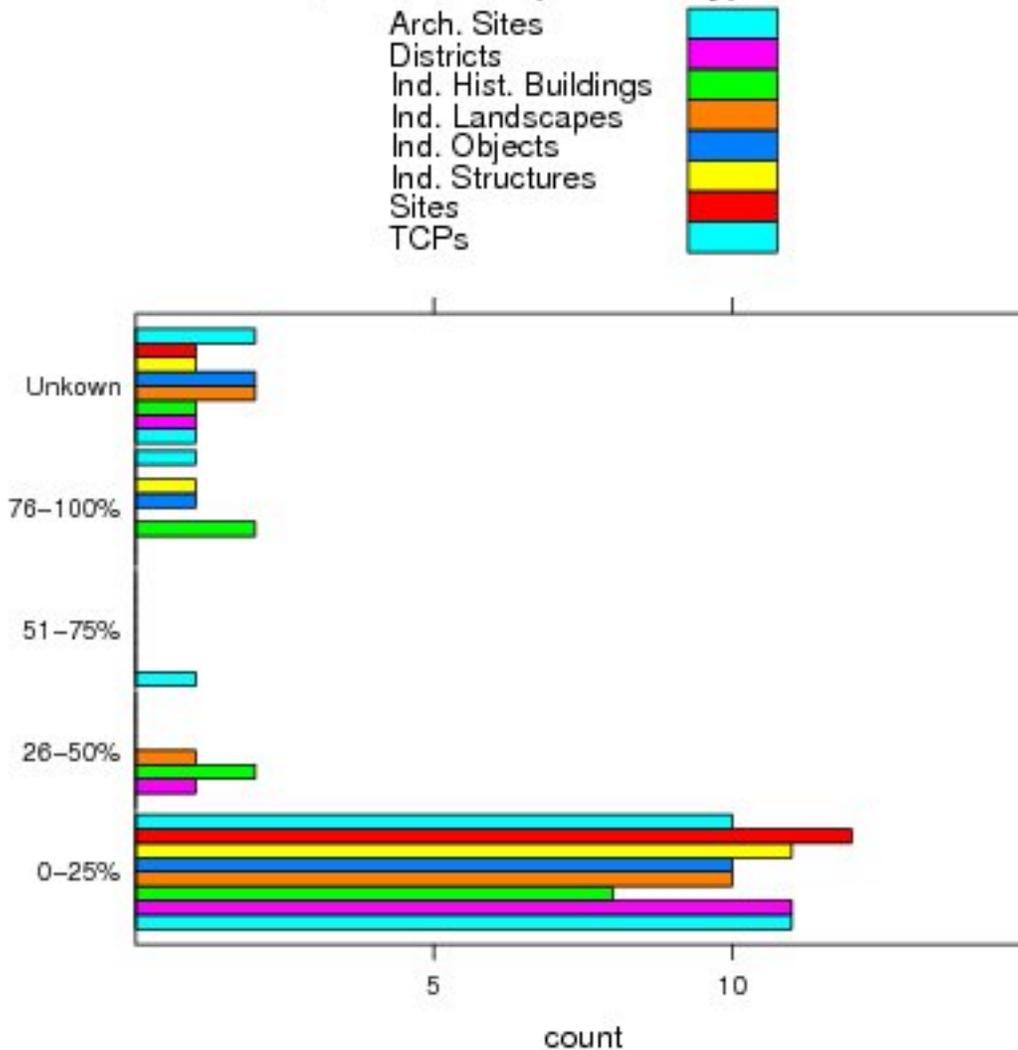
54% of SHPO respondents reported that individual historic buildings comprised more than half of the properties in their inventory. However, other properties formed the focus of a smaller number of respondents. In 5% of reported cases archaeological sites accounted for more than half of inventoried properties, districts in 19% of cases, landscapes in 2% of cases, individual structures in 16% of cases, sites in 13% of cases, and objects in 13% of cases. In no case were TCPs reported as comprising more than 25% of inventoried properties. The alert reader will note that the percentages above, when summed, total 119%. This is a result of inadequate input validation in the survey. Respondents could in theory have reported that each property type comprised 100% of their inventory. However, the broad patterns outlined above should still be valid.

Question 5.9 (THPOs only)



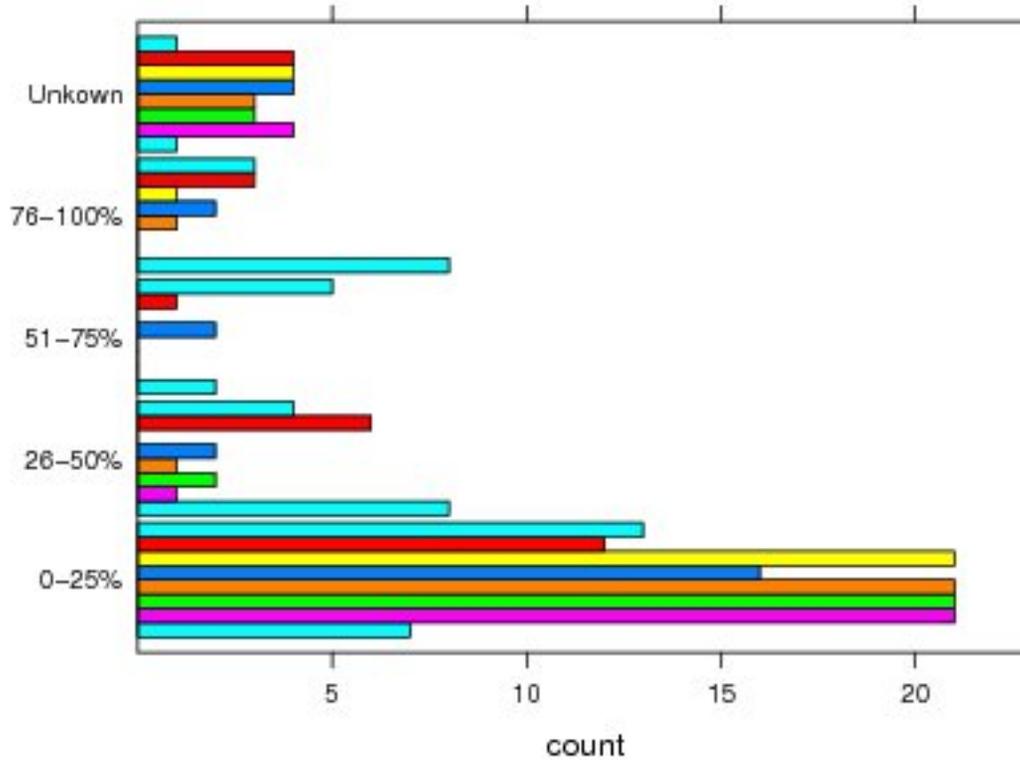
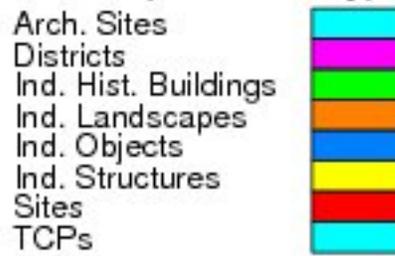
The picture for THPOs is very different than for the SHPOs as outlined above. In 31% of reported cases TCPs accounted for more than half of inventoried properties, sites in 16% of cases, objects in 16% of cases, and archaeological sites in 38.5% of cases. These percentages total 100% and are therefore plausible. In general, while SHPOs are more likely to be focused on historical buildings and districts, THPOs are more likely to be focused on TCPs and archaeological sites.

Question 5.9 (FPOs only)



Eleven FPOs responded to this question, although only nine reported having an electronic inventory system (see Question 5.1). In 7% of reported cases archaeological sites accounted for more than half of inventoried properties, individual historic buildings in 15% of cases, objects in 7% of cases, structures in 7% of cases, and TCPs in 7% of cases. In no cases were landscapes, sites, or districts reported as comprising more than half of the inventory. These percentages total 46% and are therefore plausible. Interestingly, these results indicate that FPOs are, on the whole, less specialized in their historic property inventories, with 42% having an inventory that is not dominated by a single property type. By contrast, only 8% of THPOs and 0% of SHPOs reported an inventory not dominated by a single property type. This result is somewhat at odds with the results of Question 5.2, above, which seemed to indicate that most FPOs have inventories tightly focused on historic architectural properties. The reason for this discrepancy is not clear. The small sample of FPO respondents could be a factor.

Question 5.9 (THPOs only)



52% of FPOs responded, 92% of SHPOs responded and 69% of THPOs responded.

NATIONAL HISTORIC PROPERTY INVENTORY INITIATIVE SURVEY SECTION 6: HISTORIC PROPERTY INVENTORY DATA COLLECTION AND INPUT

Section 6 focused on property and archeological data collection, entry, management, and dissemination. Because of the diversity of the section, it is difficult to highlight general trends for the entire section. Therefore, summaries and observations of various themes in the Section will be described.

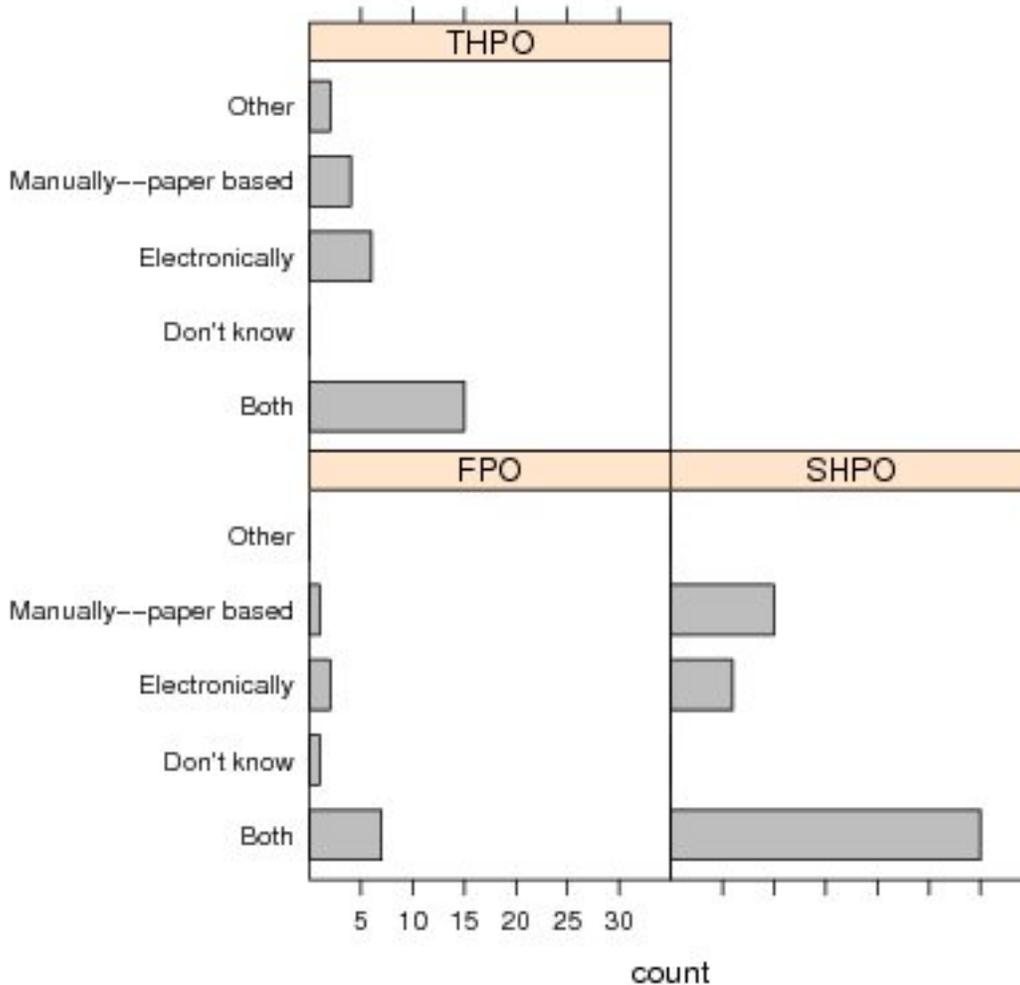
Overall, each of the respondent types (SHPOs, THPOs, and FPOs) are using digital collection methods, such as GPS and field laptops, to collect geographic and non-geographic information in the field. A diversity of information, including surveys, reviews, reports, photographs, historical documents, and forms are all being maintained in the inventories. A range of digital formats for keeping graphical data are also being used, such as JPEG, PDF, or TIFFs. Some SHPOs and THPOs are even offering their scanned historic property inventory forms in a searchable format. A majority of the respondents also had access to some level of GIS support, although the proficiency varied.

SHPOs and THPOs tended to keep their databases separated by purpose, including archeological data. Maintenance of the archaeological data within the inventories was done directly by SHPOs and THPOs, but not by FPOs. When data was not maintained in-house, state agencies/organizations dominated in providing access to this information for all three respondent types. Archeological information was accessible to internal staff for SHPOs and THPOs, but not for FPOs. This may be due to the diversity of a FPO agency/department and the need to keep data confidential outside of the direct users. SHPOs and THPOs however varied greatly in providing access to their archaeological information to other governmental entities. SHPOs typically provided access to their inventory where THPOs and FPOs did not. The policies for data sharing can provide an indication of different mandates and diversity of users within a state. All respondent types collaborated with other agencies on data recording, management, and dissemination of property inventories. However, only SHPOs and FPOs favored collaboration on data management policies.

No database management system dominated among the respondent types. MS Office Access, Oracle, and MS SQL Server were among the top systems used. FPO databases tended to be enterprise level systems, where THPOs used more desktop database systems (MS Office Access, MS Office Excel.) SHPOs were divided among desktop (MS Office Access) and enterprise systems (Oracle, MySQL, MS SQL Server, etc.).

6.1. How does your office currently collect and enter historic-property inventory data?

Question 6.1 by respondent type

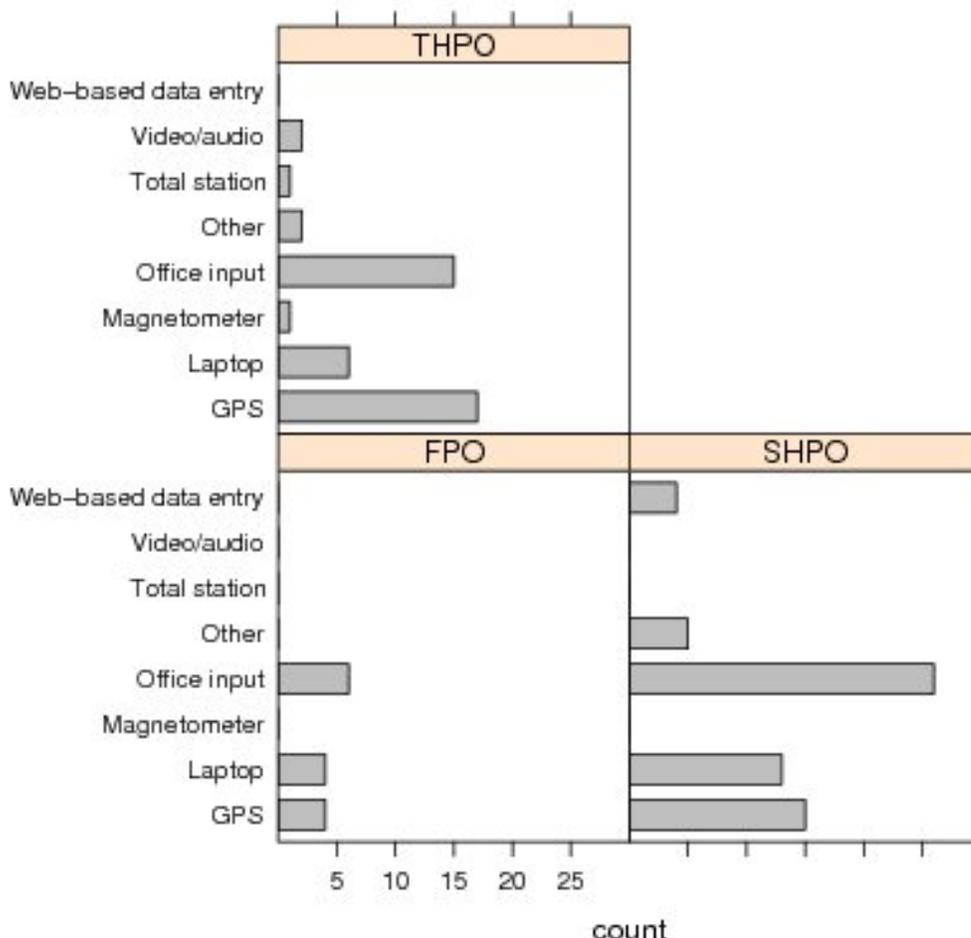


44% of FPOs responded, 98% of SHPOs responded and 71% of THPOs responded.

Not surprisingly, there was not a clear method of how historic-property data are collected by all the survey respondents. The majority reported using both manual (paper-based) and electronic collection methods: 65% of the SHPO respondents, 55.5% of THPOs, and 64% of the FPOs indicated they use both methods. Among respondents using only a single method, electronic methods were somewhat more common among FPOs and THPOs than among SHPOs.

6.2. If the answer to the question above is “electronically” or “both,” what kind of electronic data entry tools are being used (e.g. handheld GPS locators, direct field input via laptop, field collection/office input, etc.)?

Question 6.2 by respondent type

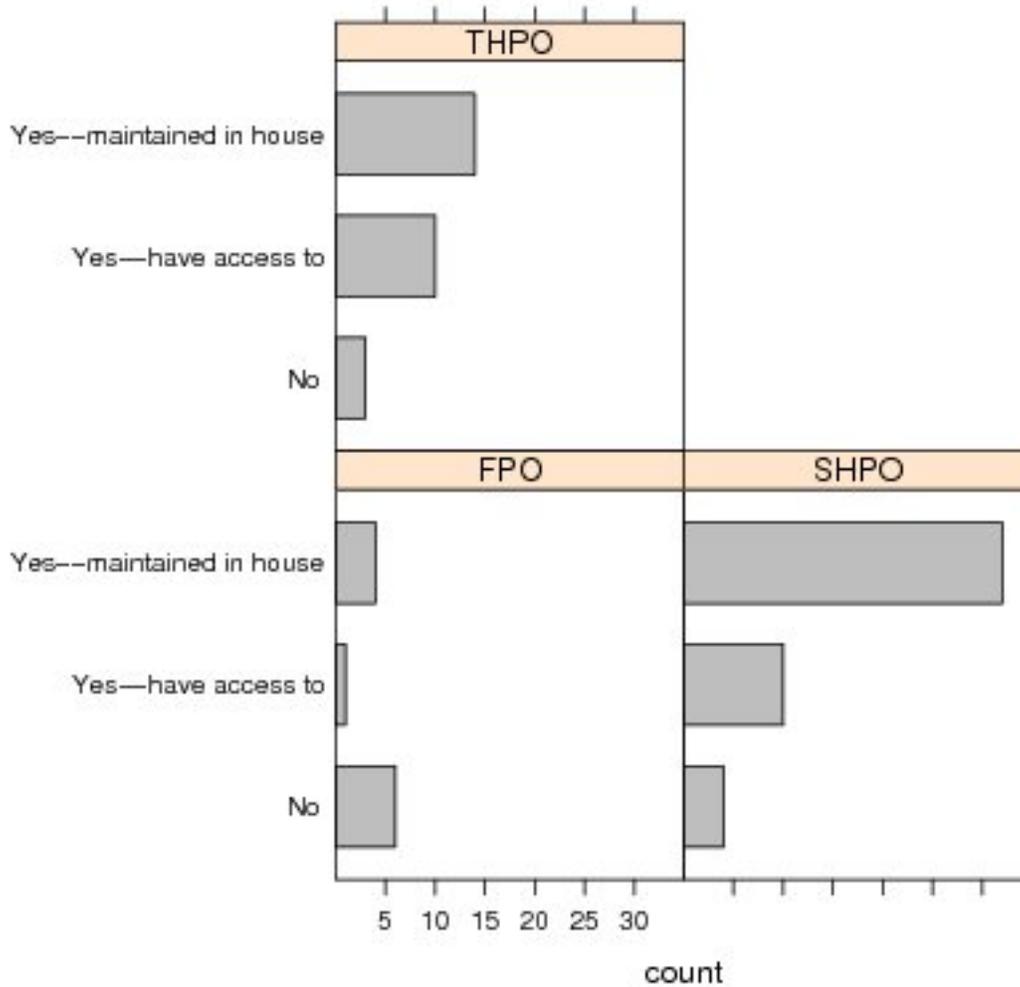


32% of FPOs responded, 72% of SHPOs responded and 50% of THPOs responded.

A majority (more than 75%) of respondents of all types report using office input as a data entry tool. This trend is consistent with the results of question 6.1, where most respondents reported using both manual and electronic methods. This would imply that paper forms may be used in the field and converted or entered into the system via office staff. A significant percentage of SHPOs (44%), and a majority of THPOs (89%), and FPOs (50%), report using GPS and/or in-field data collection via laptops. A small percentage (12%) of SHPOs report web-based data entry methods for consultants’ use. Interestingly, 10.5% of the THPOs report using video/audio methods for data entry. Presumably this is related to recording interviews or oral histories. Further investigation of how this tool is being used may prove informative.

6.3. Does your office maintain or have access to a GIS?

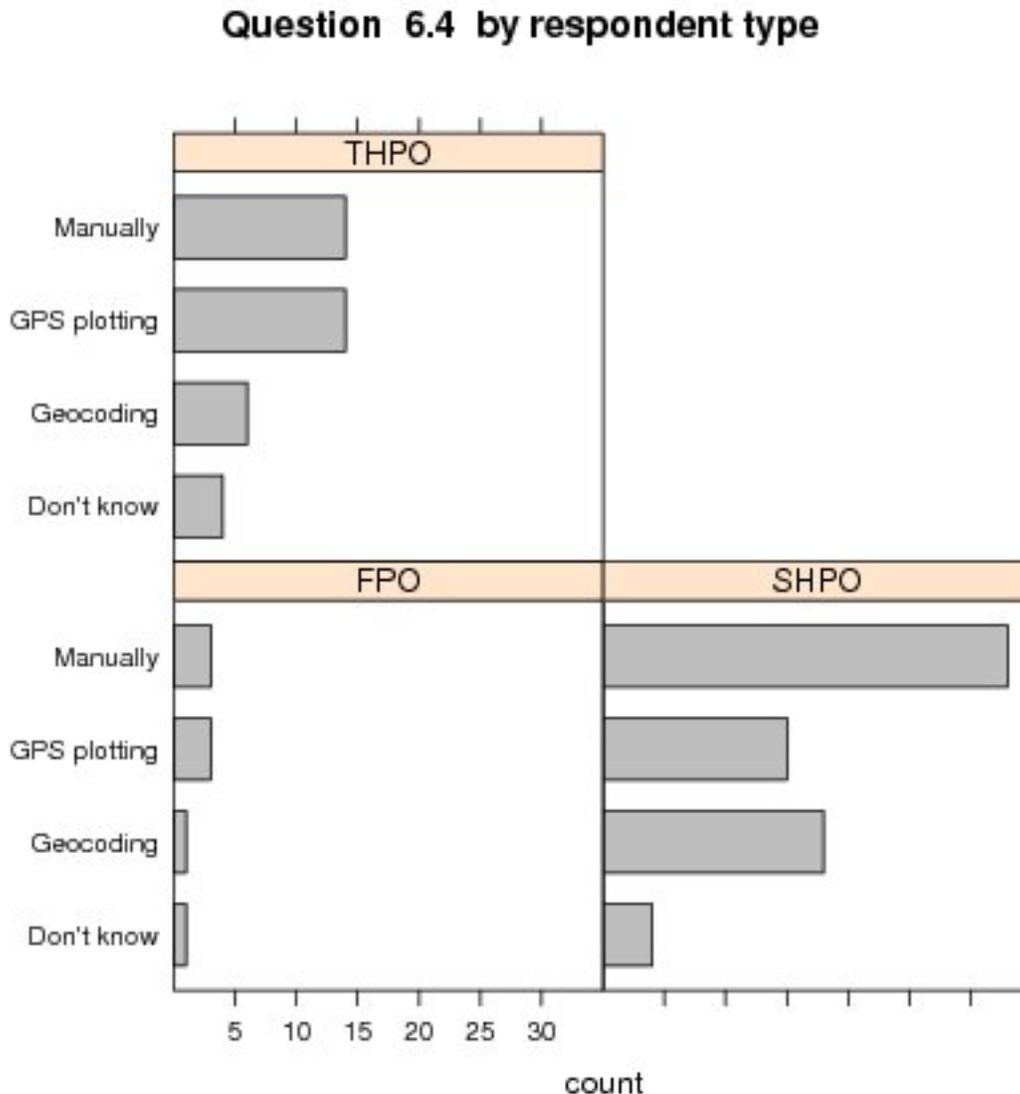
Question 6.3 by respondent type



44% of FPOs responded, 98% of SHPOs responded and 71% of THPOs responded.

The general trend among the respondents is that SHPOs (91%) and THPOs (89%) are able to access or have in-house GIS capabilities, while only 45% of FPOs have this capability. Based on the additional comments entered for this question, 24% of the SHPOs that responded “Yes—have access to” have access to a state-maintained GIS system or are just beginning to implement an in-house GIS system. The SHPOs that responded “Yes—maintained in house” have systems ranging from beginning data entry to robust GIS data and usage.

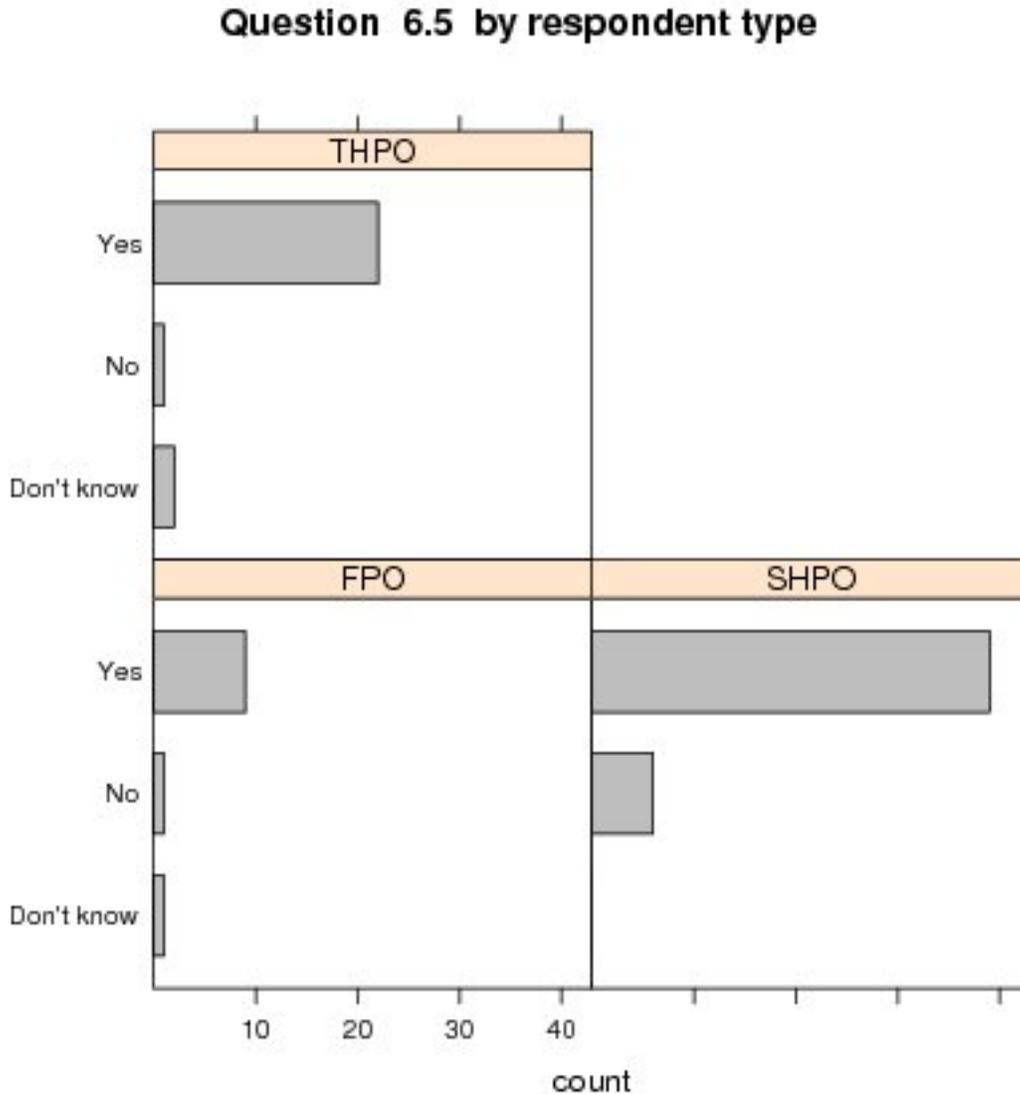
6.4 If the answer to the question above is either “maintains” or “has access to,” how is GIS data developed and/or input?



28% of FPOs responded, 89% of SHPOs responded and 61% of THPOs responded.

The general trend among the respondents is that SHPOs (91%) and THPOs (89%) are able to access or have in-house GIS capabilities, while only 45% of FPOs have this capability. Based on the additional comments entered for this question, 24% of the SHPOs that responded “Yes—have access to” have access to a state-maintained GIS system or are just beginning to implement an in-house GIS system. The SHPOs that responded “Yes—maintained in house” have systems ranging from beginning data entry to robust GIS data and usage.

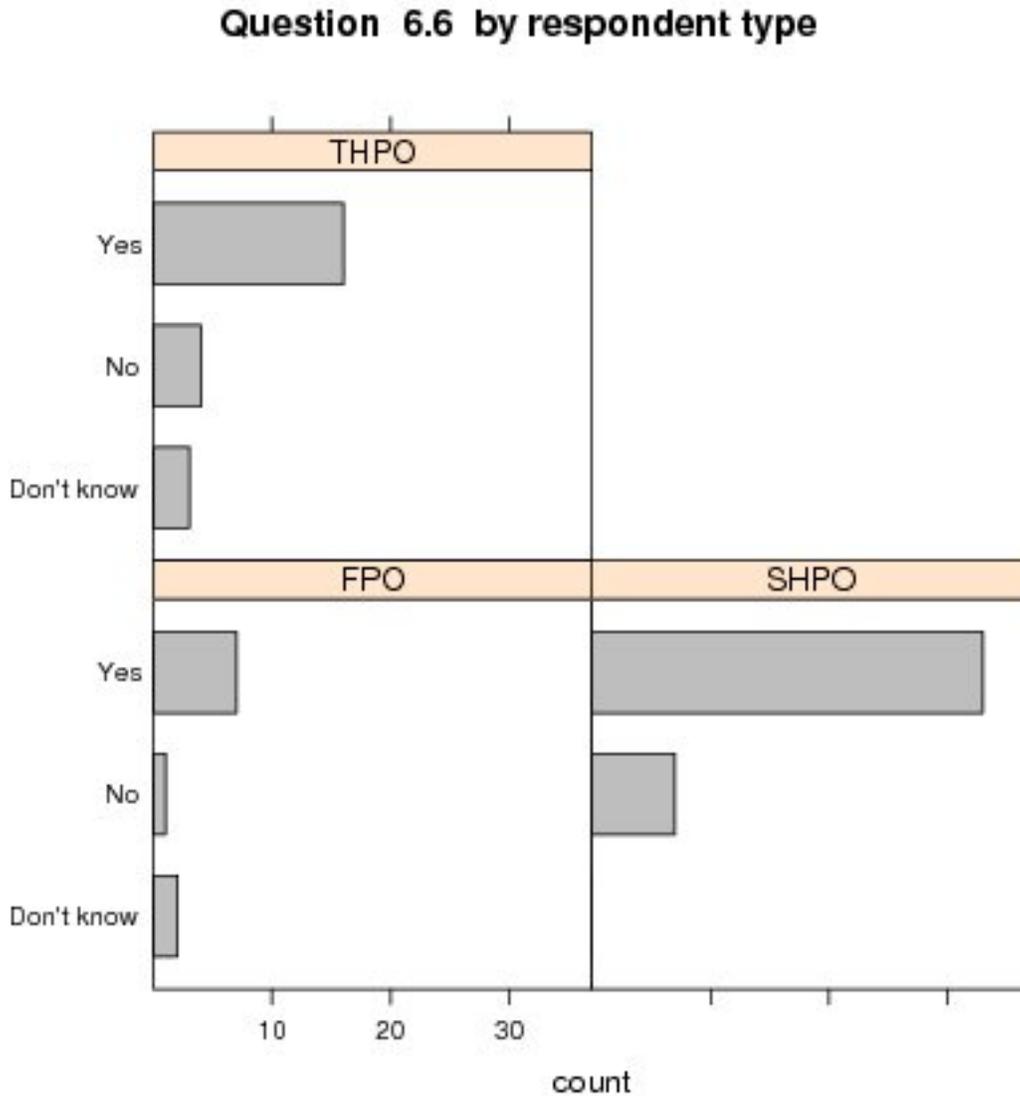
6.5. Does your office accept data collected in the field by consultants, either directly or indirectly?



44% of FPOs responded, 96% of SHPOs responded and 66% of THPOs responded.

Over 80% of the respondents of each respondent type replied that data are delivered directly from consultants. More information and follow up to this question follows in Question 6.6.

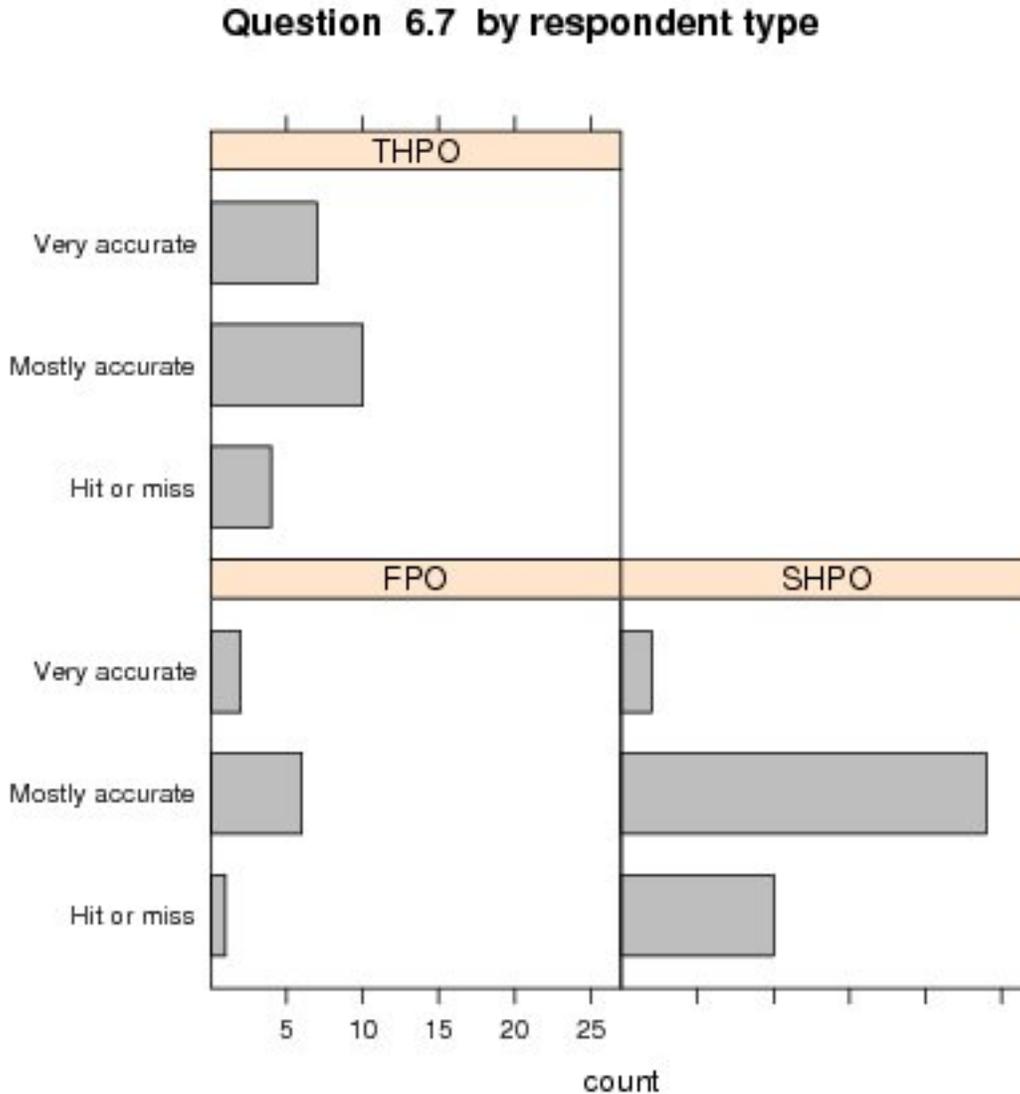
6.6. If your office accepts electronic historic-property and utilizes data information directly or indirectly from consultants, does one of your office’s staff members check the data?



40% of FPOs responded, 85% of SHPOs responded and 61% of THPOs responded.

The great majority of SHPOs (70%), THPOs (69.5%), and FPOs (70%) that provided a “Yes” or “No” answer to this question do in fact perform an in-house quality check on data submitted by consultants.

6.7. If the answers to questions concerning accepting data from consultants is yes, in your opinion how accurate is the data?

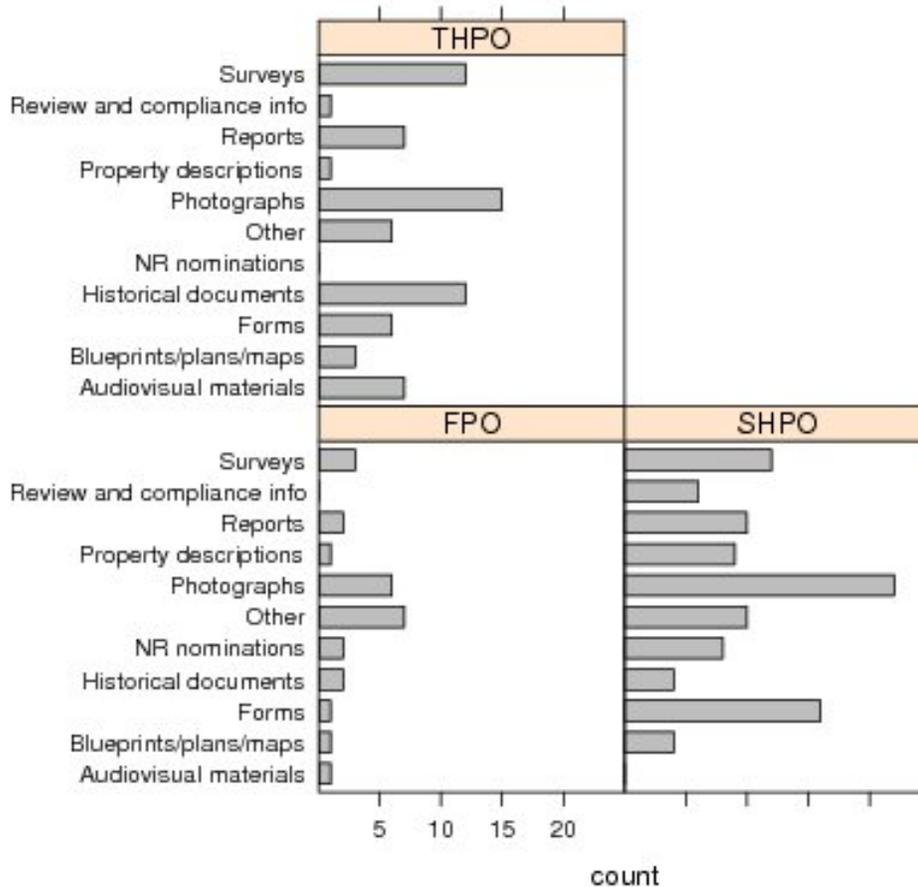


40% of FPOs responded, 79% of SHPOs responded and 42% of THPOs responded.

Not surprisingly, most respondents report some problems with consultant-generated data. However, the majority of respondents report that consultant-generated data are mostly accurate. The pattern is the same for all respondent types. In aggregate, respondents had a 21% response rate for “Hit or Miss,” a 23% response rate for “Very Accurate” and a 62.5% response rate for “Mostly Accurate.”

6.8. What types of non-spatial data are stored in your office’s historic property inventory in an electronic format (e.g. surveys, historical documents, photographs, slides, etc.)?

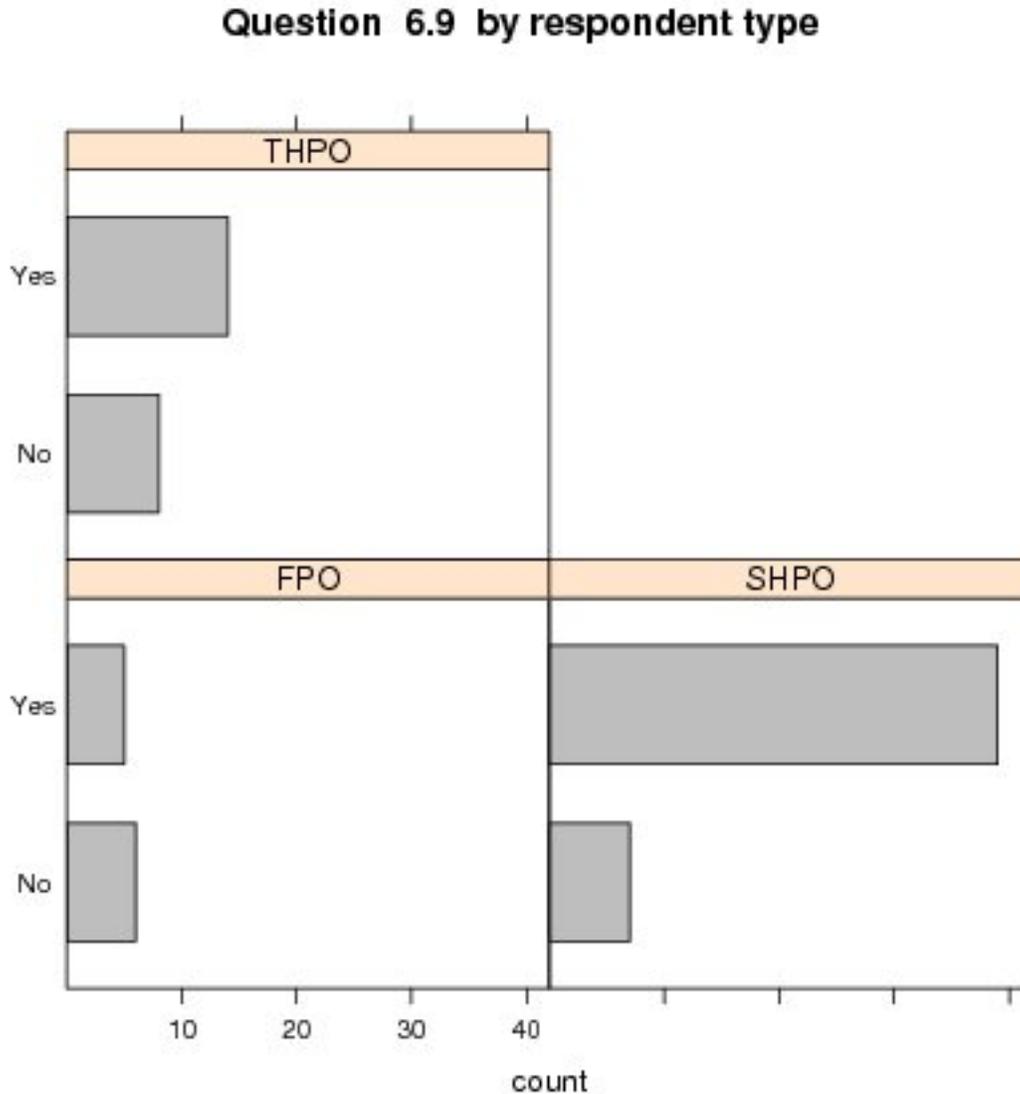
Question 6.8 by respondent type



32% of FPOs responded, 85% of SHPOs responded and 53% of THPOs responded.

To better analyze the responses, the free text answers were classified into common categories representing the possible electronic document types. All respondent types use their historic property inventories to store a diverse collection of non-geographic information. SHPOs store all categories of information, except for Audio/Visual materials. Photographs are the most common type of non-spatial data stored by all respondent types (SHPOs: 55%. THPOs: 75%, FPOs: 75%). Interestingly, photographs are much less likely to be electronically stored in SHPO inventories than in those maintained by THPOs and FPOs. On the other hand, SHPOs are much more likely to store forms (40%) and property descriptions (22.5%) electronically than are FPOs (12.5% and 12.5%) and THPOs (30% and 5%). Small numbers of THPOs and FPOs store audiovisual material electronically, but no SHPOs. Interestingly, very few SHPOs (15%), THPOs (5%), or FPOs (0%) report storing review and compliance information electronically.

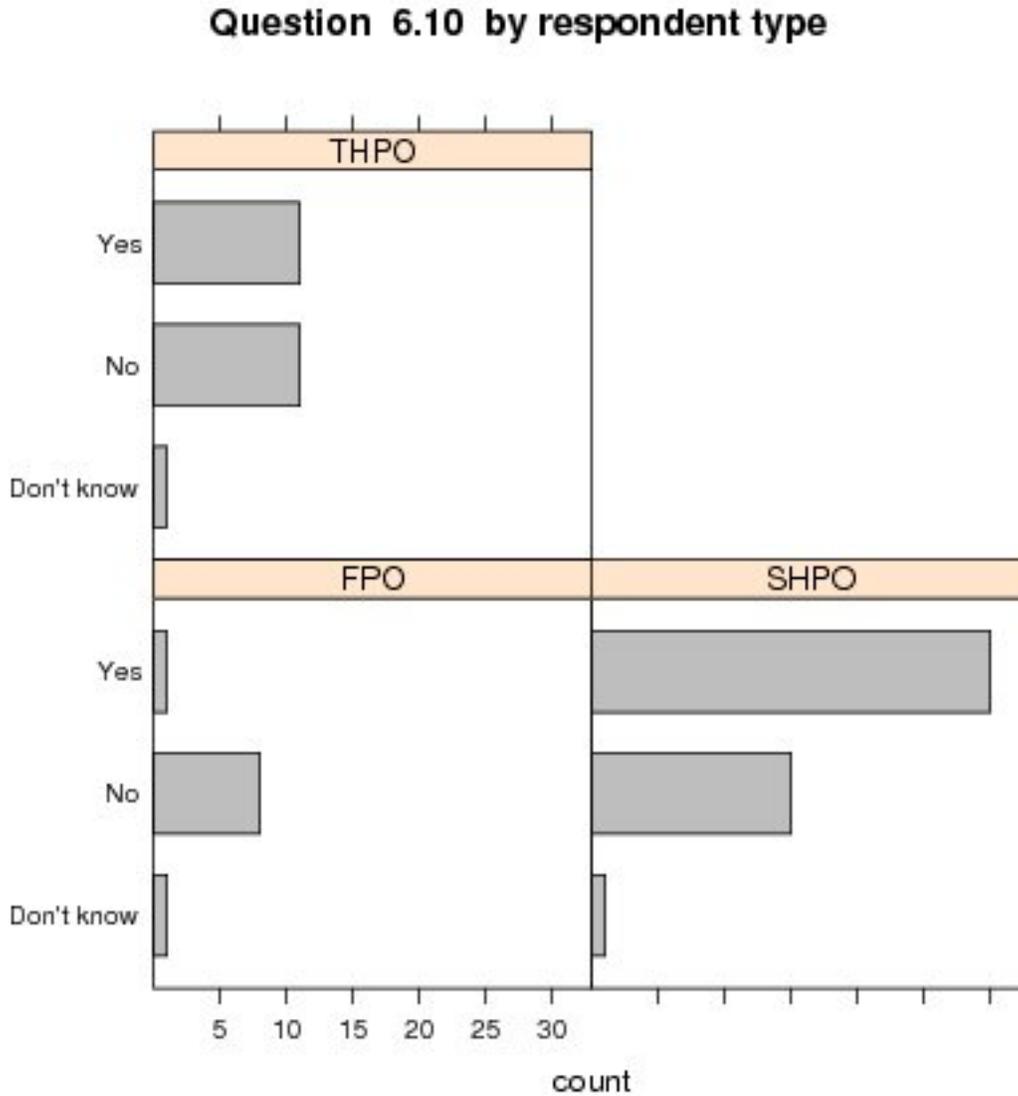
6.9. Does your office maintain different databases for different purposes (i.e. survey data, archaeological data, images, spatial data, etc.)?



44% of FPOs responded, 98% of SHPOs responded and 58% of THPOs responded.

Most SHPO (85.75%) and THPO (64.5%) respondents maintain separate databases for different purposes. The practice is less common among FPOs (45.5%). Given that FPOs tend to have better IT staffing and support than do SHPOs and THPOs, it is possible that the placement of archaeological properties in separate databases is an expedient measure and not a best practice.

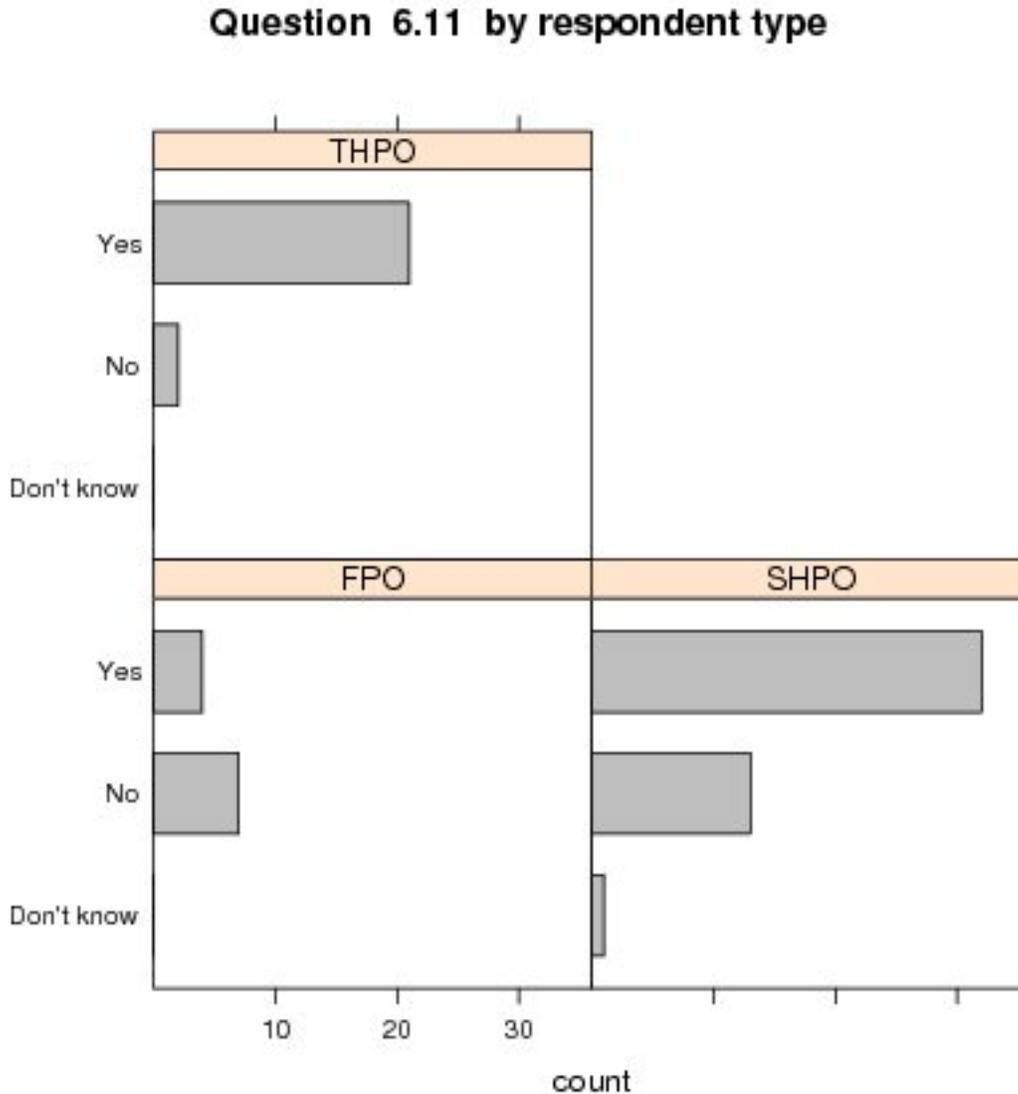
6.10. Is there a separate database for archaeological data included in your office's historic-property inventory?



40% of FPOs responded, 98% of SHPOs responded and 61% of THPOs responded.

Consistent with the results of Question 6.9, many SHPOs (65%) and THPOs (48%) maintain a separate database for archaeological data. Few FPOs do so (10%).

6.11. Does your office directly maintain the archaeological historic properties database?

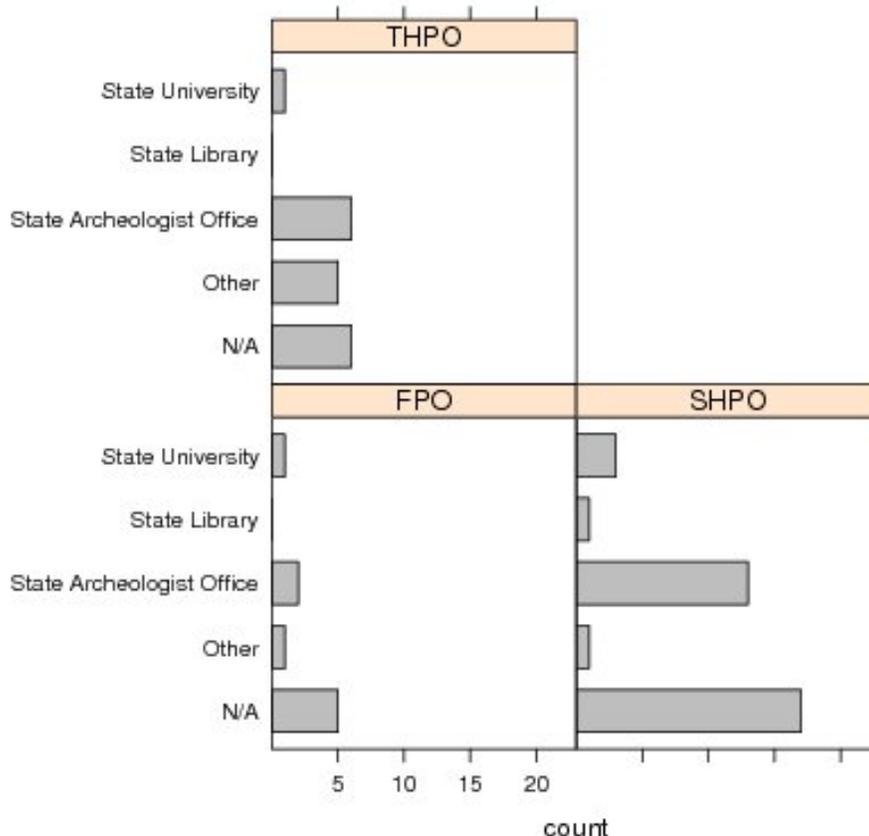


44% of FPOs responded, 98% of SHPOs responded and 61% of THPOs responded.

The answers to this question help to explain the disparate answers in Question 6.10 between the SHPOs and THPOs on the one hand and the FPOs on the other. Over 69% of SHPO and 90% of THPO respondents directly maintain their archaeological database, while only 36% of FPOs do so. The fact that few FPOs directly maintain their archaeological data may explain why they mostly keep all of their historic property data in a single database. Further investigation as to the best practices of a separate or combined database may be needed.

6.12. If your office has access to an archaeological historic-property database that is not maintained “in house,” please describe who maintains the database (e.g. state archaeological office, state university, etc.).

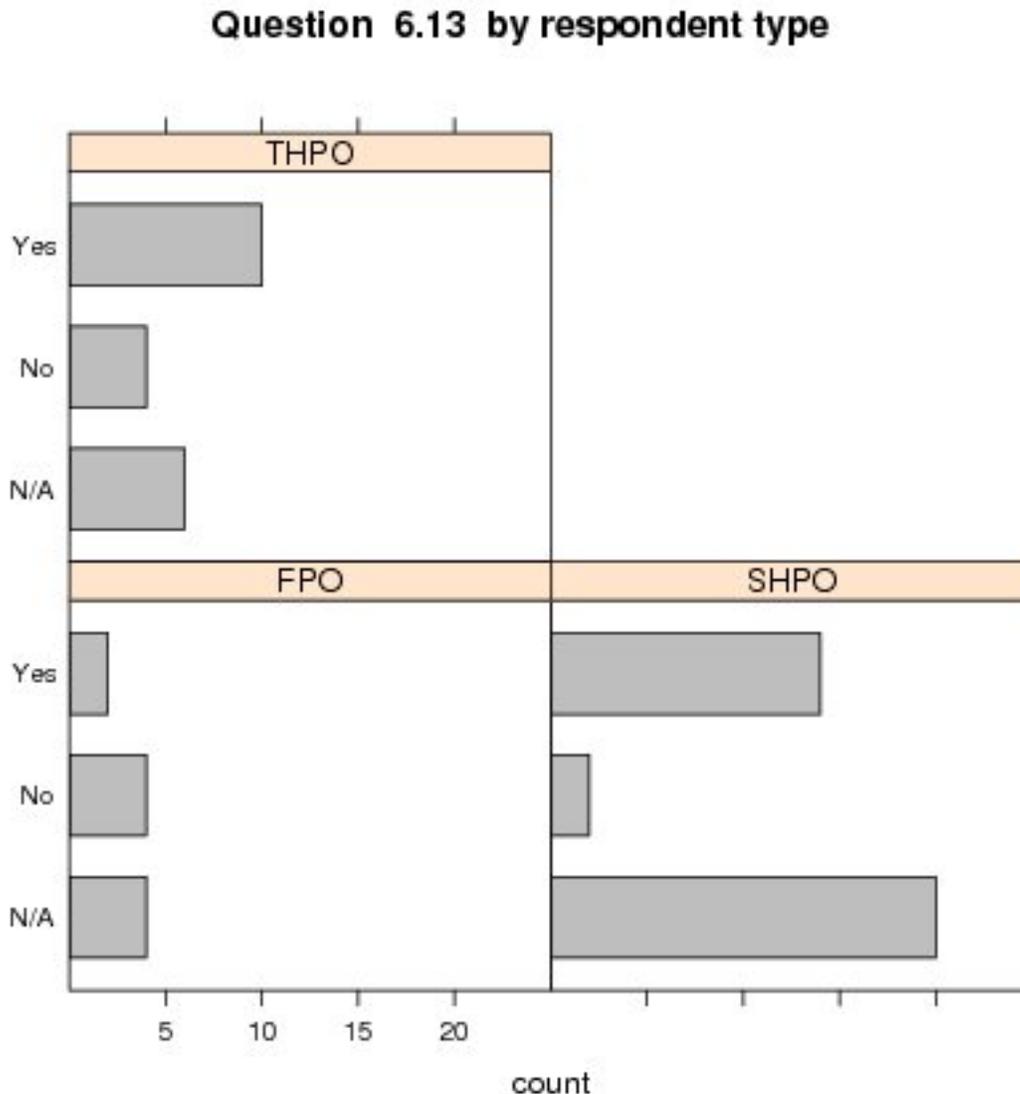
Question 6.12 by respondent type



46% of FPOs responded, 74% of SHPOs responded and 48% of THPOs responded.

The responses to this question are somewhat difficult to interpret, mainly because of the pattern of respondents. In response to Question 6.11, 13 SHPOs, 7 FPOs, and only 2 THPOs reported that they did not directly maintain their archaeological historic-property database. However, when asked who does maintain their external archaeological historic-property database (in this question) 34 SHPOs, 18 THPOs, and only 11 FPOs responded (“N/A” responses exception). In other words, a total of 23 respondents answered this question as if they did not directly maintain their archaeological historic-property database although they had indicated the opposite in their response to Question 6.11. In any event, the responses, as summarized above, do seem to show that a significant percentage of SHPOs use an archaeological historic-property database maintained by the state archaeologist’s office. This trend likely reflects the fact that while the SHPO and the state archaeologist are often administratively linked, they are in some cases administratively separate, with the state archaeologist often being attached to a university.

6.13. If another entity maintains the archaeological database, is the archaeological data contained within the database readily accessible to your agency?

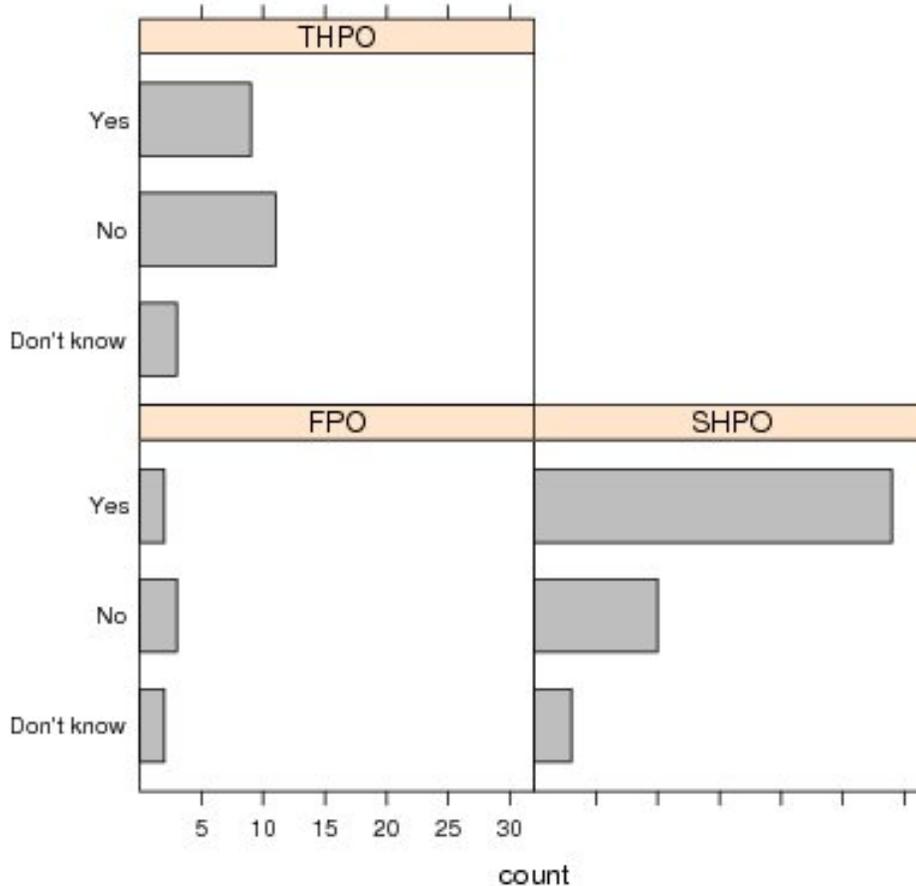


40% of FPOs responded, 77% of SHPOs responded and 47% of THPOs responded.

As with Question 6.12, this question is difficult to interpret since many SHPOs and THPOs responded to the question as if they did not directly maintain their own archaeological historic-property database. One possible explanation could be that both “N/A” and “Yes” were chosen by some respondents to represent both in-house maintenance and direct access with shared databases.

6.14. Is the archaeological database information readily accessible to other governmental agencies (Federal, state, and/or local)?

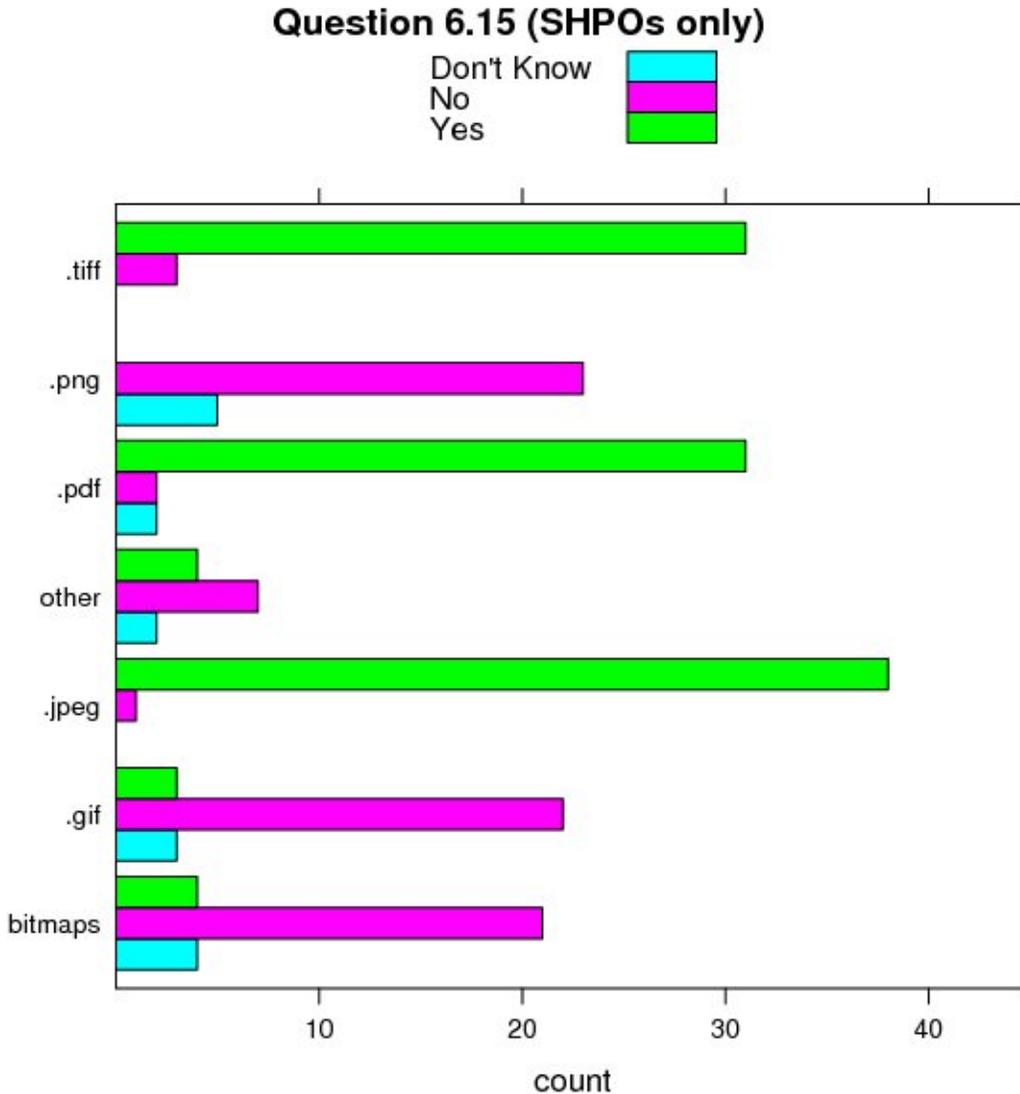
Question 6.14 by respondent type



46% of FPOs responded, 89% of SHPOs responded and 61% of THPOs responded.

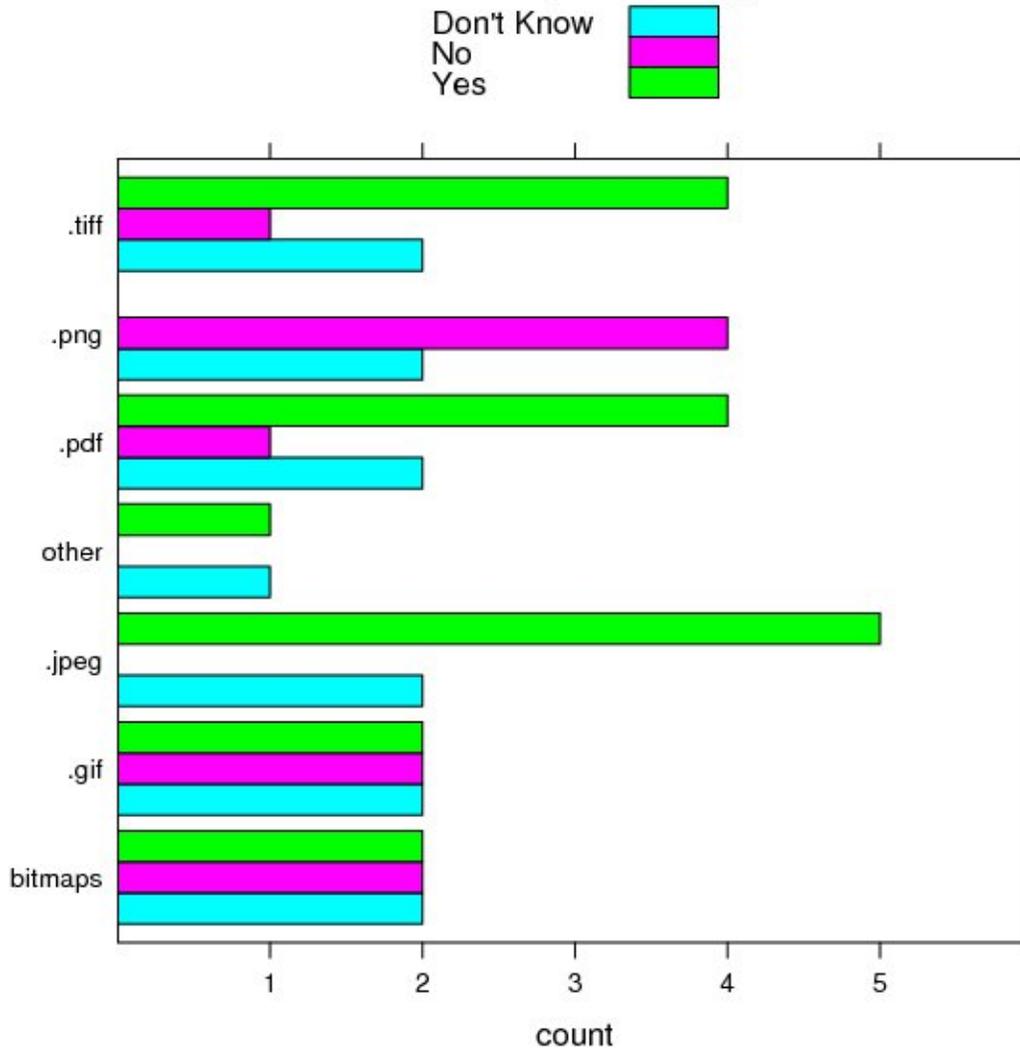
Discounting the “Don’t Know” responses, most SHPOs (69%) make their archeological databases accessible to other governmental agencies. THPOs and FPOs, on the other hand, are much less likely to make their archaeological historic-property database information available to other agencies (38% and 17% respectively) This question may reflect two interacting processes: on the one hand, SHPOs have interagency responsibilities in historic preservation and the Section 106 compliance process that make them more likely to share data, while FPOs and THPOs typically have smaller jurisdictions and less frequent interaction with other agencies on historic preservation issues. In addition, THPOs may be proprietary in respect to their archaeological databases since this information will frequently be related to sensitive topics such as TCPs and cultural landscapes. In any case, the results of this question together with the results of Question 6.13 suggest that SHPOs tend to be producers and providers of information while THPOs and FPOs are more likely to be producers and consumers of information.

6.15. (SHPOs only): What types of electronic data file formats does your office typically use for graphic historic property information (i.e. .jpeg, .tiff, .pdf, etc.)?



SHPOs show a strong use of the most common graphic formats, with JPEG, PDF, and TIFF being the most common formats in use. The PDF format is probably used for scanned survey forms, while JPEG and TIFF formats are most likely used to store photographs.

Question 6.15 (FPOs only)

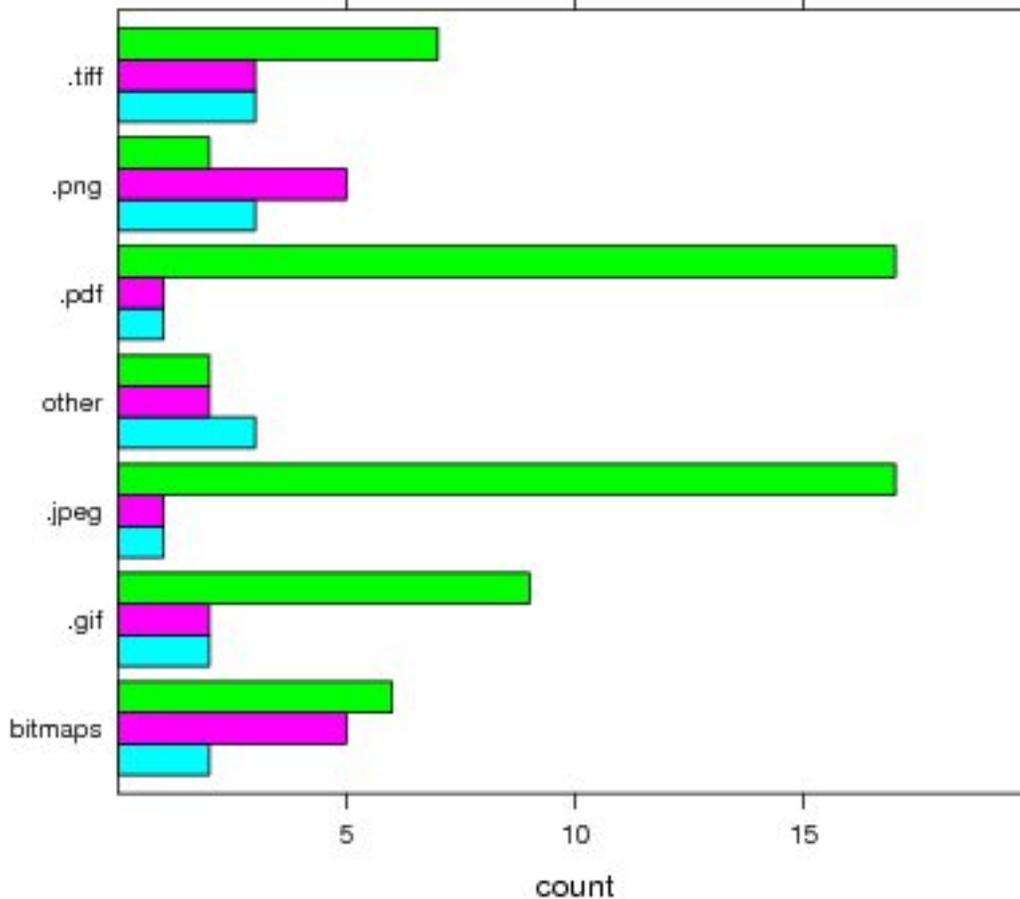


FPOs show a strong use of the most common graphic formats, with JPEG, PDF, and TIFF being the most used. This result is identical to the answers of SHPO respondents.

Overall, PDF and JPEG formats are accepted by almost all respondents of all types and are the most commonly used and stored formats.

Question 6.15 (THPOs only)

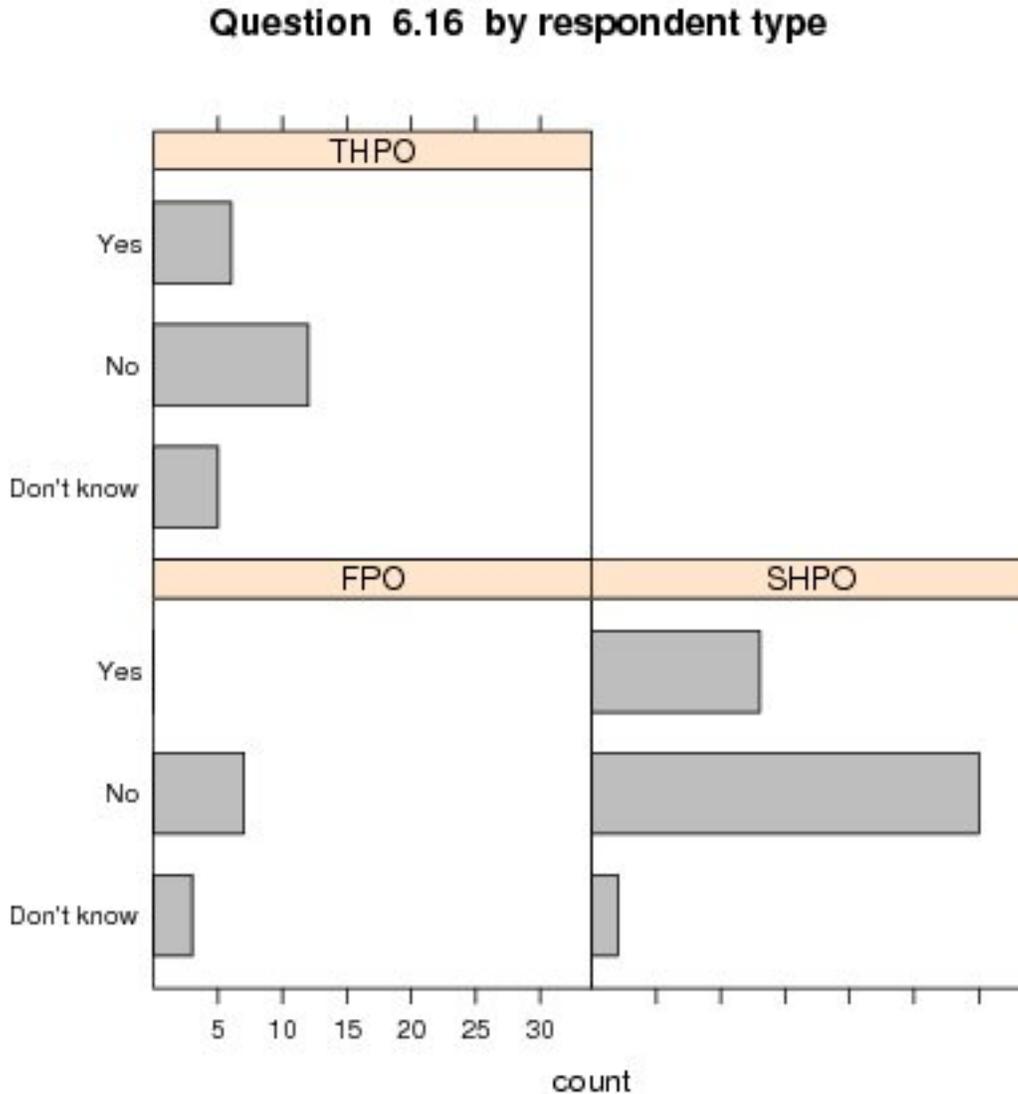
Don't know
No
Yes



40% of FPOs responded, 96% of SHPOs responded and 53% of THPOs responded.

THPOs show a strong use of the most common graphic formats, with JPEG, PDF, and GIF being the most used. Interestingly, THPOs are more likely to use GIF than TIFF, the opposite of the SHPO pattern. This could be related to system storage capabilities and technology in general, since TIFF files are usually generated by a separate scanning machine that may not be available to most THPOs.

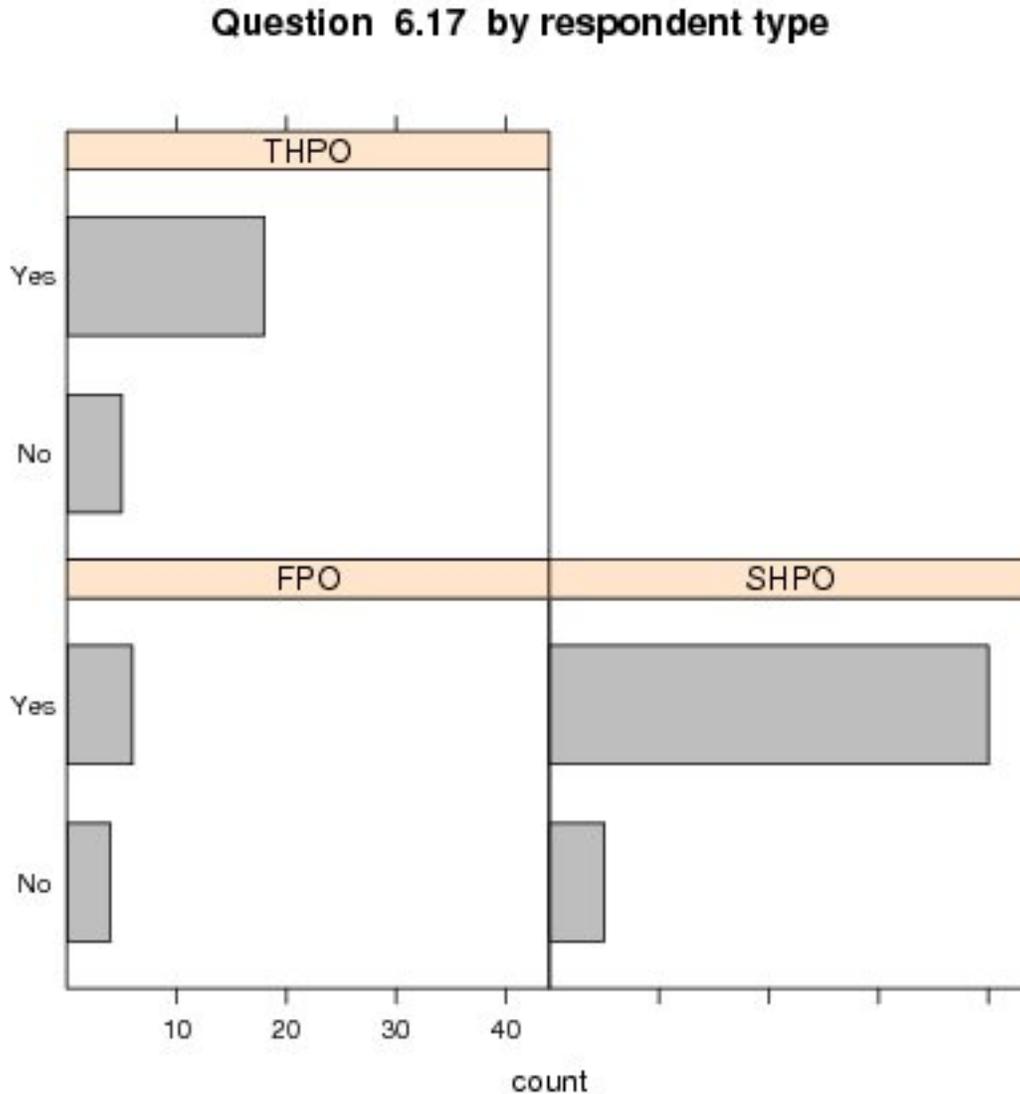
6.16. Are text portions of scanned historic-property inventory forms “keyword searchable”?



44% of FPOs responded, 96% of SHPOs responded and 61% of THPOs responded.

The general pattern among all the respondents is that scanned inventory forms are not keyword searchable. However, a small percentage of SHPOs (28%) and THPOs (25%) report that they do have keyword searchable scanned forms.

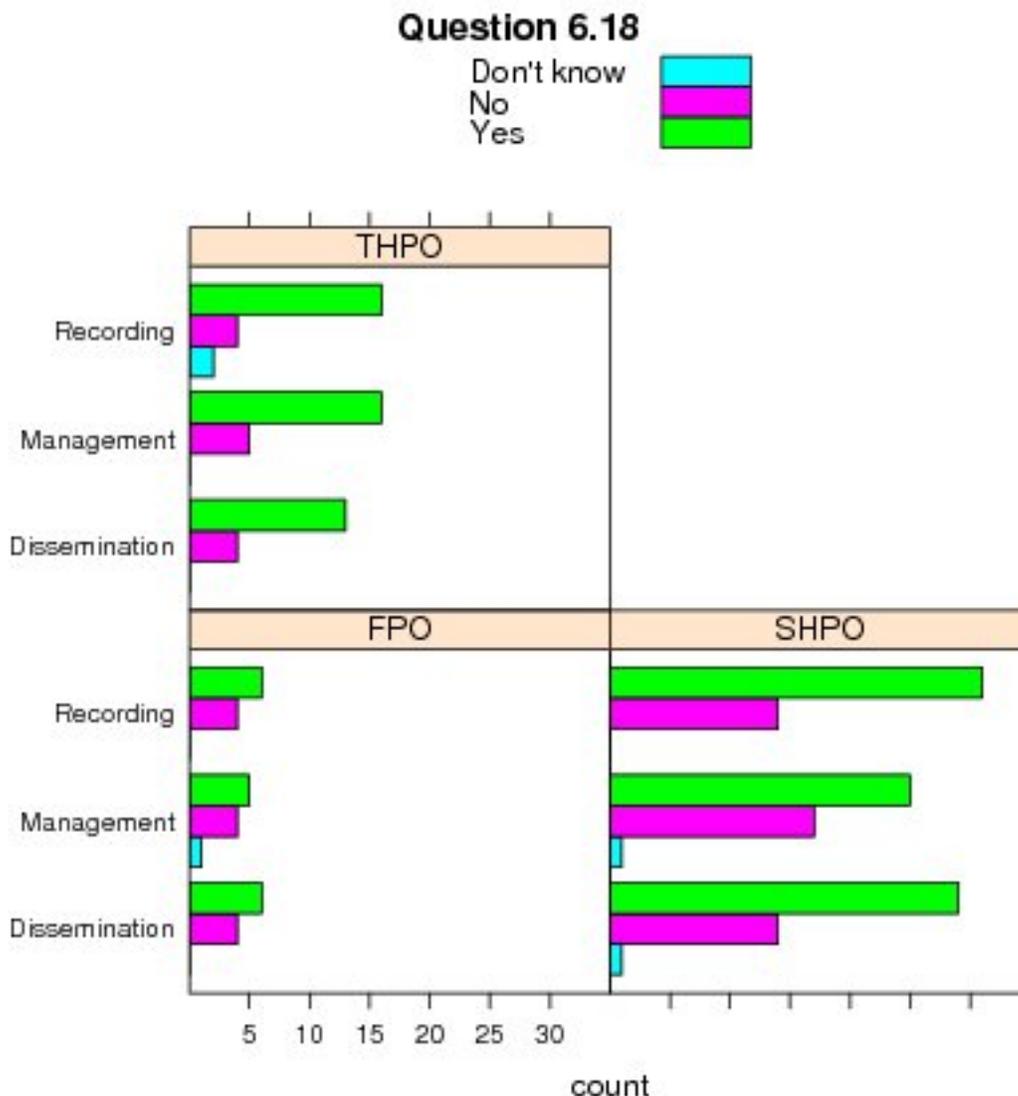
6.17. Does your office’s data collection/management system include information specifically related to Section 106 review?



40% of FPOs responded, 96% of SHPOs responded and 61% of THPOs responded.

89% of SHPOs and 78% of THPOs collect and maintain information specifically related to Section 106 reviews. Only 40% of FPOs collect and manage this information. However, it is difficult to evaluate the significance of this pattern, especially since the question itself is ambiguous. It is not clear whether the question intends to ask specifically about digital information relating to Section 106 reviews, or about any form of record, including paper. It is possible that respondents interpreted the question in varying ways, accounting for the discrepancy with the results of Question 6.8.

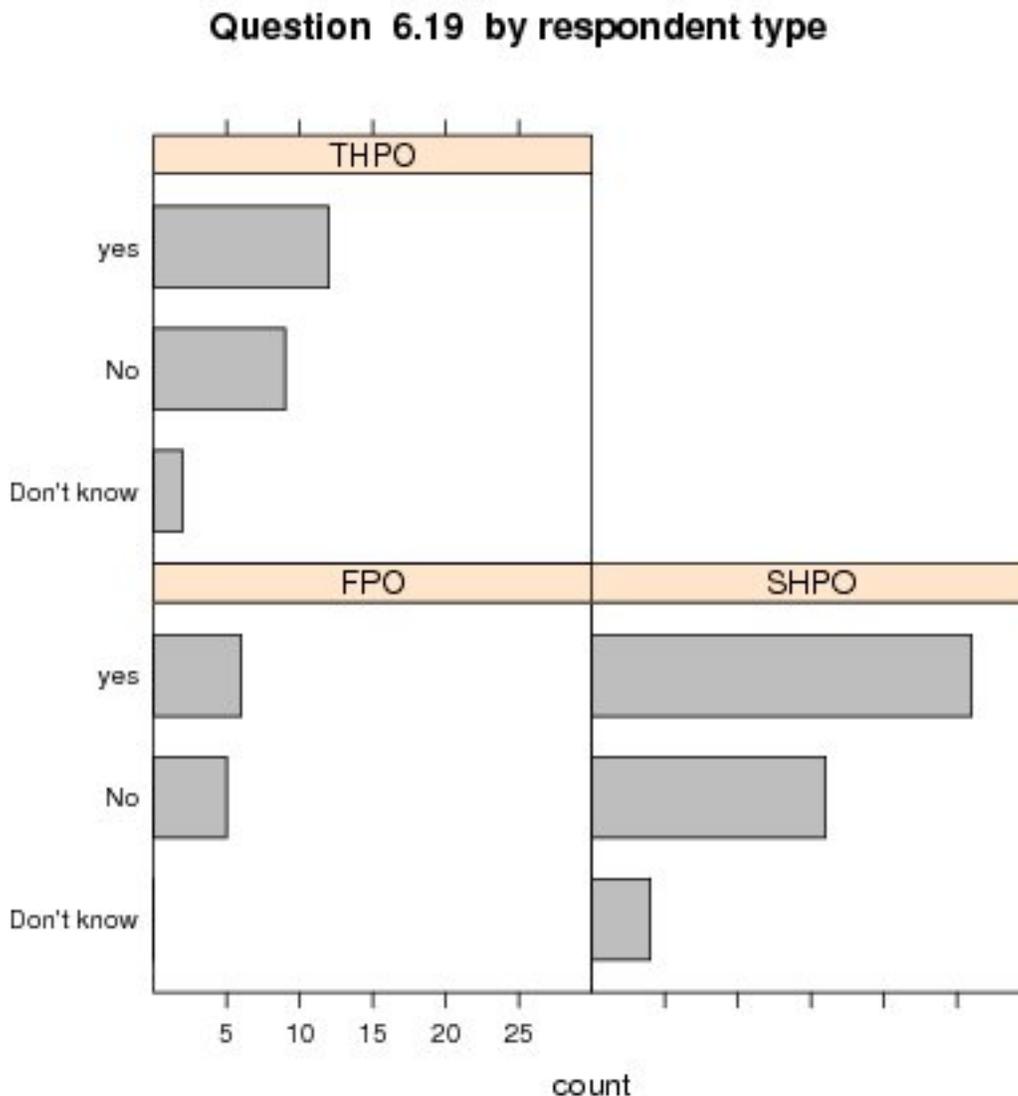
6.18. Does your office collaborate with other agencies/entities concerning data recording, management, and/or dissemination of historic-property data (check all that apply)?



24% of FPOs responded, 58% of SHPOs responded and 42% of THPOs responded.

Generally, all respondent types collaborate with other agencies concerning data recording, management, and dissemination. Approximately 90% to 100% of SHPO respondents and 48% to 60% of THPO respondents report collaborating with other agencies/entities in all three categories of also likely to collaborate with other agencies (80% to 100% in all three categories of collaboration). The response from FPOs is consistent, with THPO and SHPO responses, however, the limited number of FPO response may indicate a limited level of sharing with some federal preservation offices.

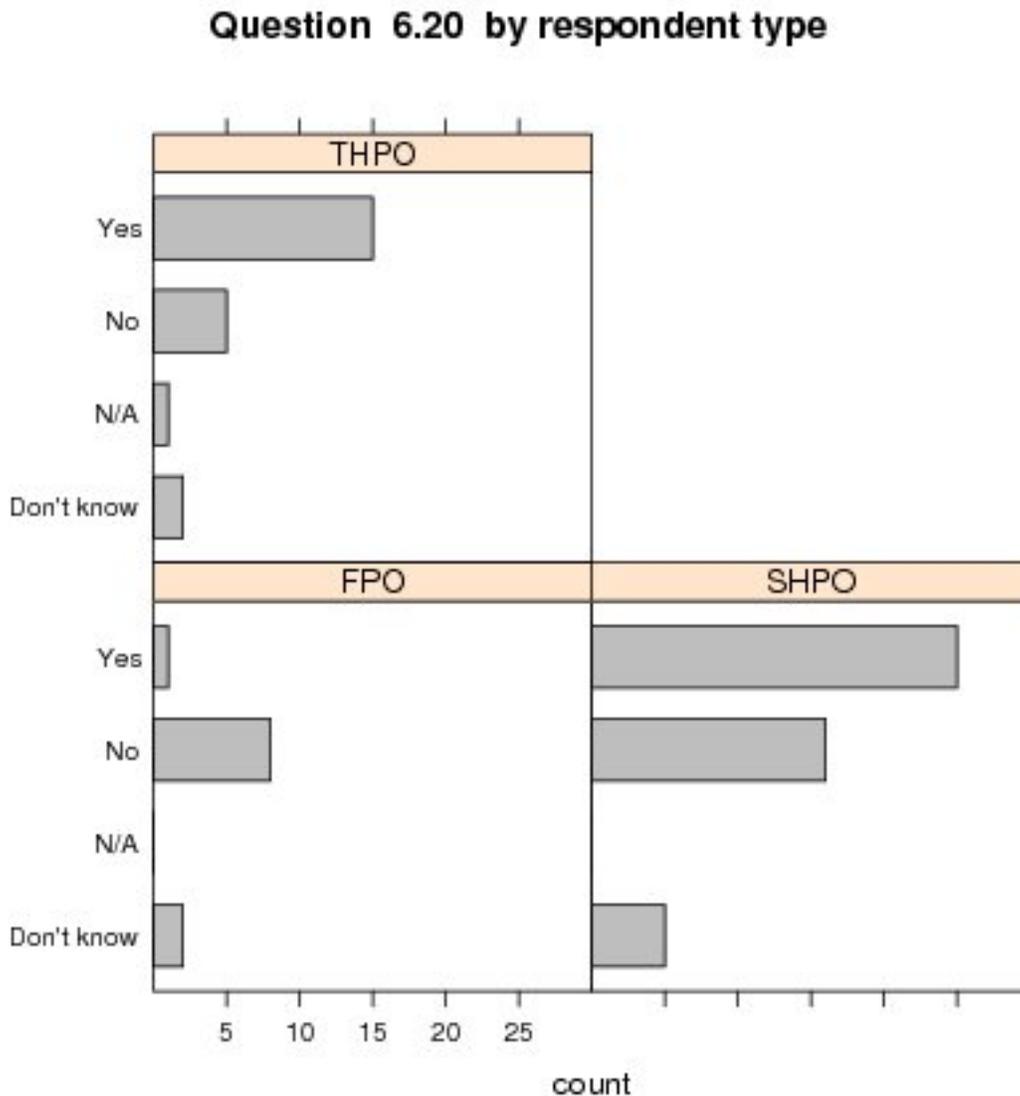
6.19. Does your office collaborate with other agencies/entities concerning data-management policies?



44% of FPOs responded, 98% of SHPOs responded and 61% of THPOs responded.

Questions 6.18 and 6.19 are related, though the responses indicate some differences between collaboration related to data collection, management, and dissemination versus collaboration related to policy. SHPOs consistently collaborate with other agencies related to all aspects of their inventories, recording, management, dissemination, and policy (56% Yes and 35% No). THPOs also responded favorably to collaboration in Question 6.18 with 52% “Yes” and 39% “No” responses. FPO responses to the two questions are consistent, with approximately half (55%) participating in collaboration with other agencies.

6.20. Is your office required to adhere to any non-Federal requirements concerning historic properties data collection, maintenance, or dissemination (e.g. state, tribal statutes, regulations or procedures, etc.)?

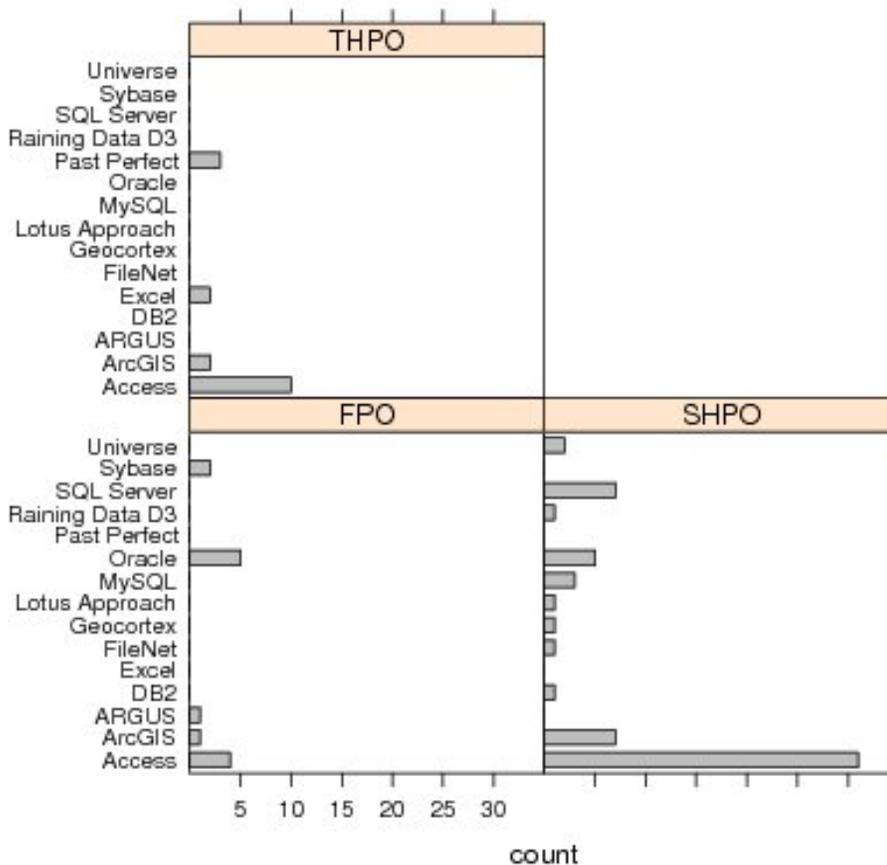


44% of FPOs responded, 98% of SHPOs responded and 61% of THPOs responded.

Discounting responses of “Don’t Know,” most SHPOs (54%) and THPOs (65%) are required to adhere to non-federal requirements concerning properties data, presumably including state and tribal laws and regulations. However, only a small minority of FPOs (9%) report being bound by non-federal requirements.

6.21. What host database-management system(s) does your office utilize for your historic property inventory or inventories (e.g. Oracle, MSAccessSQL, MySQL, Foxpro, Filemaker, etc. If none, please list “none” in text box 1 below)

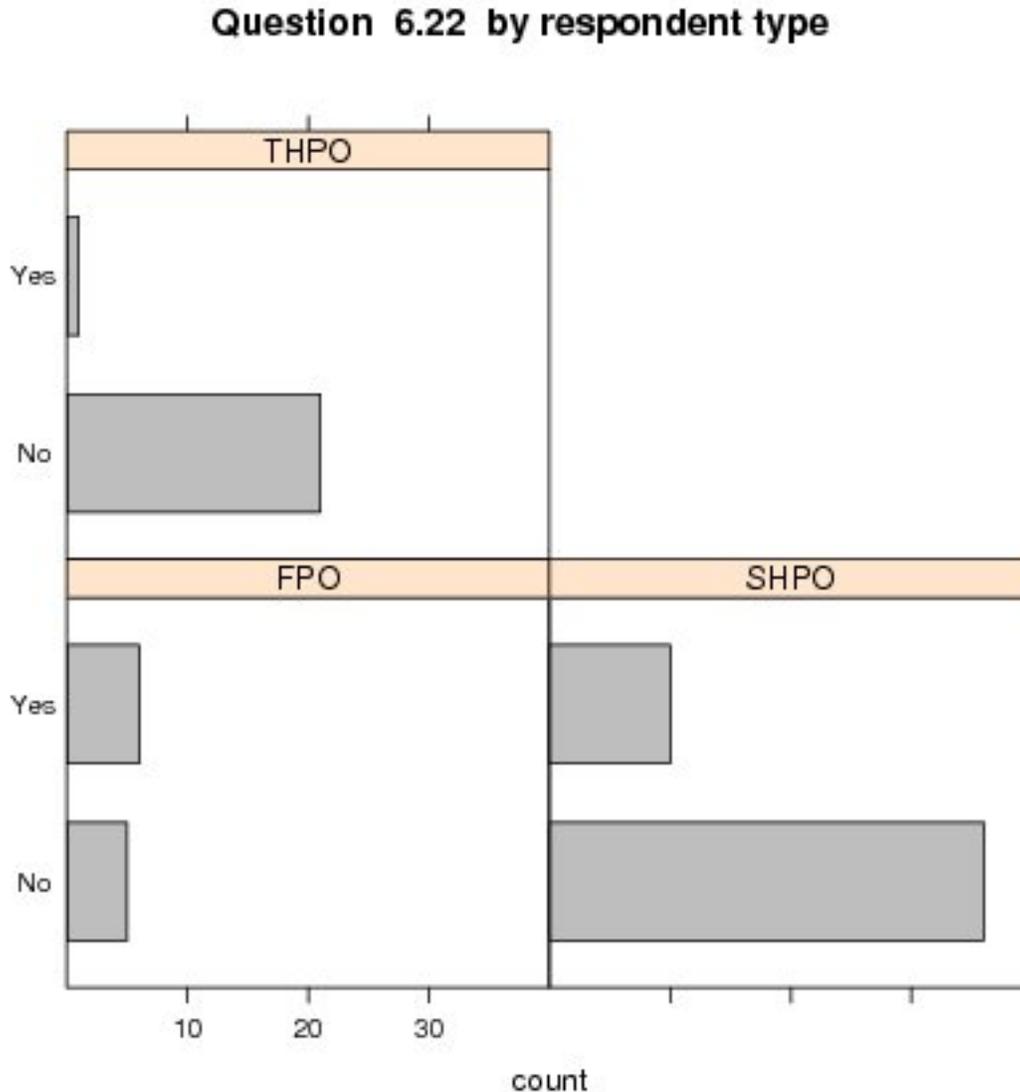
Question 6.21 by respondent type



36% of FPOs responded, 87% of SHPOs responded and 32% of THPOs responded.

MS Office Access seems to be used by most SHPOs (76%) and THPOs (82%), but is in less common use among FPOs (44%). Oracle is used by a little over half of the FPO respondents (56%), but by fewer SHPOs (12%) and by no THPOs. SHPOs as a group use a greater diversity of database management systems than other respondent types, ranging from very robust (Oracle [12%], SQL Server [17%], MySQL [7%]) to more common desktop based solutions such as MS Office Access (76%). ArcGIS is also used by a fair number of SHPOs (17%). THPO respondents use fewer platforms with desktop solutions such as MS Office Access (82%) and MS Office Excel (16%) predominating. Some THPOs (25%) use Past Perfect museum software, an unusual platform. FPO respondents tend to use enterprise solutions such as Oracle (56%) and Sybase (22%), with desktop solution like MS Office Access being less common (44%). The strong use of Oracle among FPO respondents may be due to the availability of enterprise software and full-time database administrators in large-government offices.

6.22. Does your office currently have the capability for direct data entry into its historic property database(s) from the field (e.g. remote, via laptop, internet)?

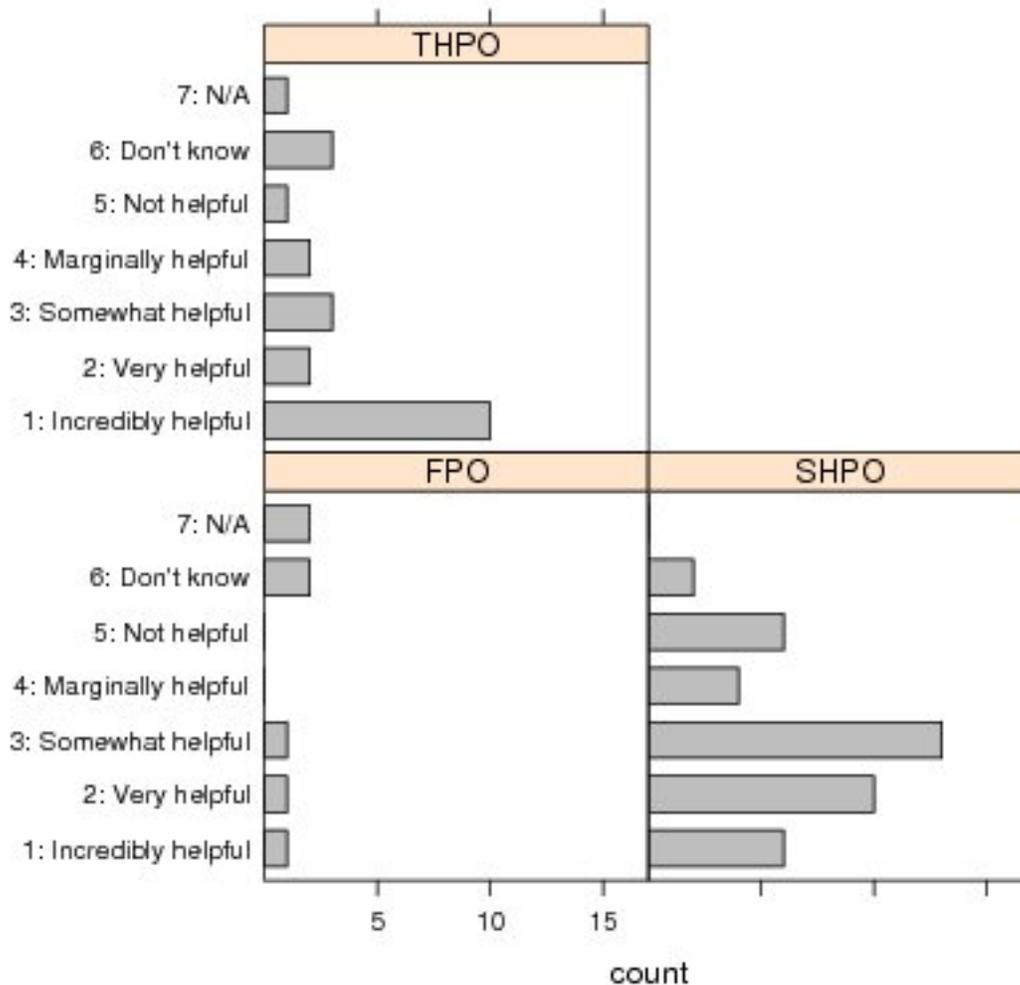


44% of FPOs responded, 98% of SHPOs responded and 61% of THPOs responded.

Overwhelmingly SHPOs (78%) and THPOs (91%) indicated they do not have the ability to remotely connect to their inventory and enter data directly from the field. A slight minority of FPO respondents (45%) lack this capability. Although not all respondent types currently have the capability to remotely connect to their inventory for field data entry, the responses to Question 6.2 indicate that many of them do use laptops in the field for electronic data collection. Together these two questions imply that data are often recorded in the field electronically using a laptop, but that staff does not directly enter the data into the database from the field.

6.23. If your office does not have the capability for direct data entry into its historic-property database(s), how helpful would this type of capability be with respect to completing your office’s Section 106 reviews more efficiently?

Question 6.23 by respondent type

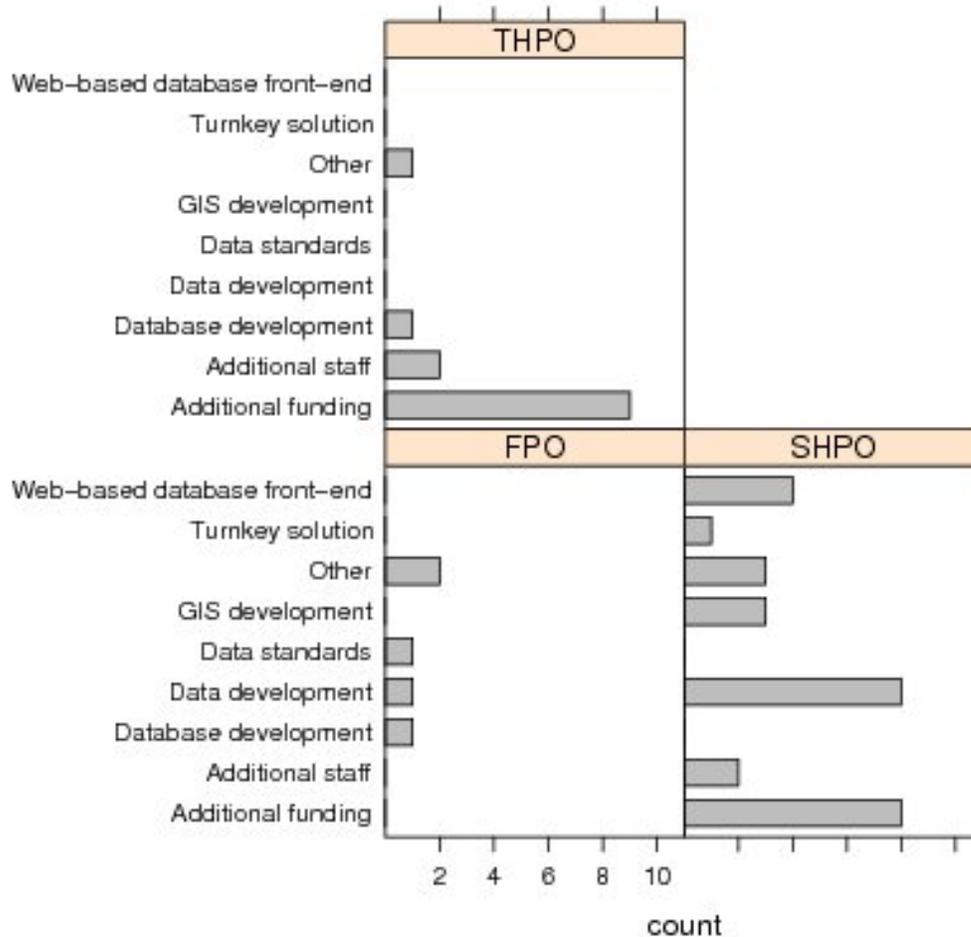


28% of FPOs responded, 87% of SHPOs responded and 58% of THPOs responded.

Discounting “N/A” and “Don’t Know” responses, there is broad interest in developing direct field data entry capability across all respondent types. THPOs are also strongly interested, with 54% of respondents reporting that this capability would be very or incredibly helpful. Among SHPO respondents 39% report that this capability would be incredibly or very helpful, 32% that it would be somewhat helpful, and 25% that it would be only marginally helpful or not helpful. The limited number of FPO responses make it difficult to determine the level of interest FPOs may have in developing these types of systems.

6.24. In your opinion, what does your office need to be able to search, share, and make readily available Section 106 data?

Question 6.24 by respondent type



20% of FPOs responded, 62% of SHPOs responded and 34% of THPOs responded.

THPO respondents (85%) report that they need additional staff or funding in order to search, share, and make readily available Section 106 data. Many SHPOs (34%) also need additional staff and funding. Significantly, however, even more SHPO respondents (37%) indicate that additional data and GIS development (scanning, quality control, integrating legacy data, etc.) will be required. This is clearly an area in which grant programs could be of real assistance. A smaller number of SHPOs (17%) reported that they need a web-based database front-end or a turnkey solution. FPO respondents mentioned the need for data development (20%), database development (20%), and the formulation of useful data standards (20%). Only five FPOs responded to this question, however.

NATIONAL HISTORIC PROPERTY INVENTORY INITIATIVE SURVEY SECTION 7: HISTORIC PROPERTY INVENTORY ACCESSIBILITY

The section was intended to evaluate respondent practices concerning the distribution and dissemination of historic property inventory data. This includes both sharing of data between institutions and agencies and the availability of data to the general public and to historic preservation professionals. Some questions in this section are also intended to evaluate the extent to which legacy data is becoming available electronically.

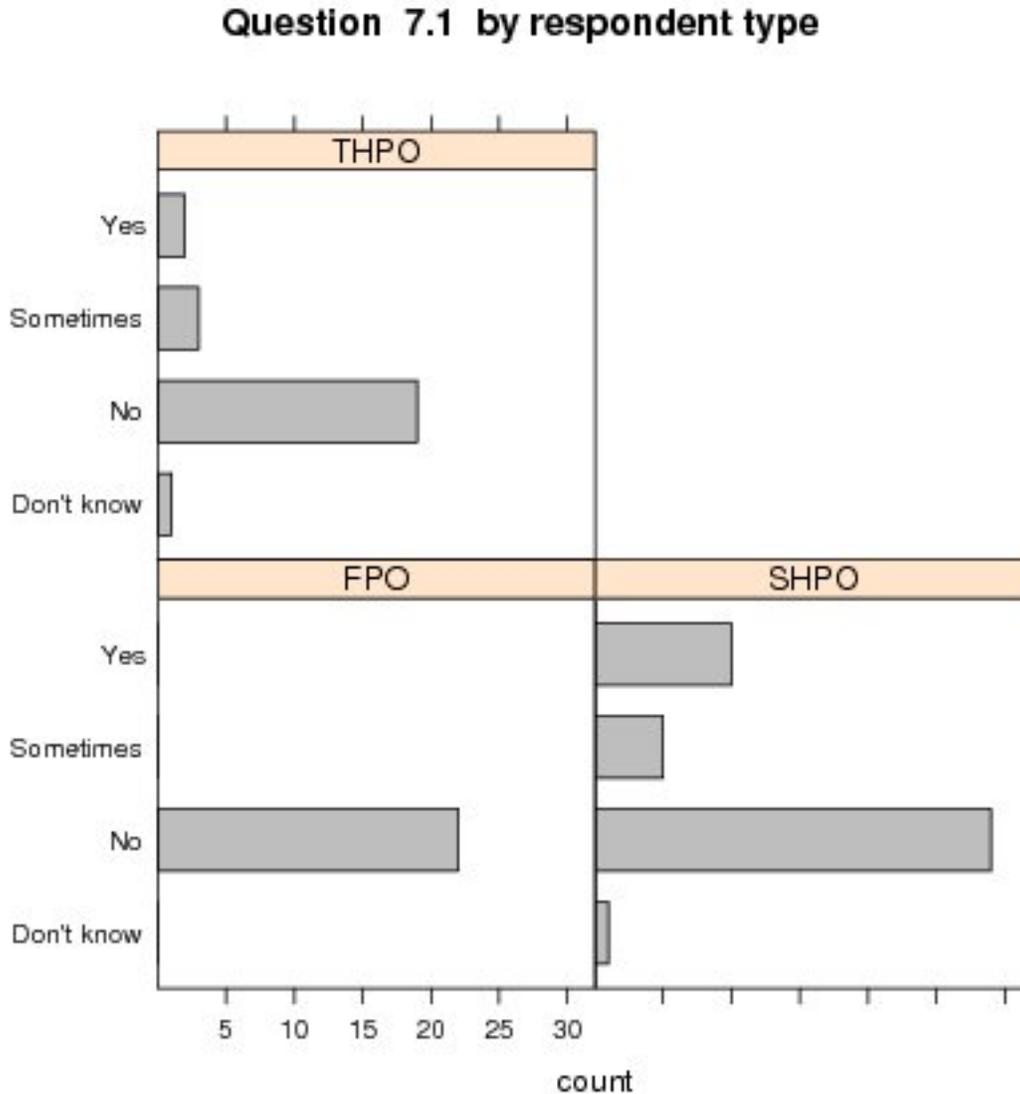
Few respondents of any type reported charging fees to outside users for the use of their historic property data. The practice, though rare, was most common among SHPOs. Among respondents that do charge fees, only SHPOs reported making available a layer of free, publicly available information. Similarly, very few respondents reported that they pay fees to other institutions or entities for access to historic property data.

All respondent types reported that few of their paper forms had been scanned. SHPOs on average reported the lowest percentage of forms scanned. This may be related to the very large jurisdictions and inventory holdings of many SHPOs compared to THPOs and to most FPOs.

Questions 7.7 through 7.13 address not only legacy data but whether there is a plan in place to update older data. There is only a slight difference in the percentage of SHPOs that have a plan to scan current and legacy data compared to THPOs. Few FPOs, however, have such a plan in place. In addition SHPOs and THPOs indicated that a significant proportion of their legacy data that is currently scanned will need to be updated. This may be due to changes in survey protocols since the time at which the legacy data was originally recorded. THPOs were the most likely to report having a plan in place to update their data with SHPOs and FPOs trailing significantly.

Most respondents plan to keep some form of paper record when updating their legacy data, and only half of the SHPO respondents plan to input updated legacy data into their database. Overall, 79% of SHPO respondents plan to retain paper records in their updates, as do the majority of THPO (88%) and FPO (60%) respondents. The general trend appears to reflect a strong commitment to retaining paper records in parallel with the development of computerized inventories.

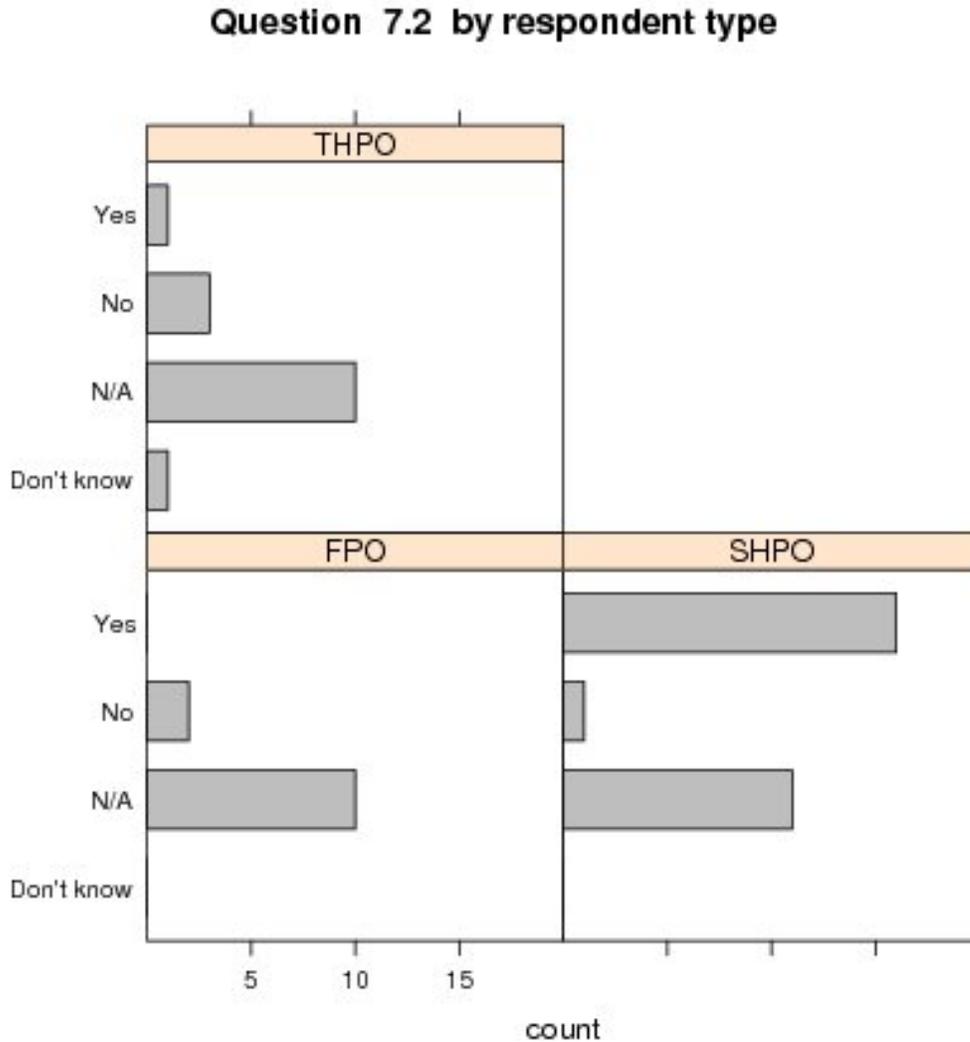
7.1. Does your office charge any fees to outside users for access to historic property inventory data?



96% of FPOs responded, 96% of SHPOs responded and 66% of THPOs responded.

A majority of respondents report that they do not charge fees for access to historic property inventory data. A minority of SHPOs (33%) and THPOs (20%) do charge access fees, at least occasionally. The practice, though unusual, seems most common among SHPOs. This may relate to the existence of laws in many states that limit or prohibit charging fees for access to public information.

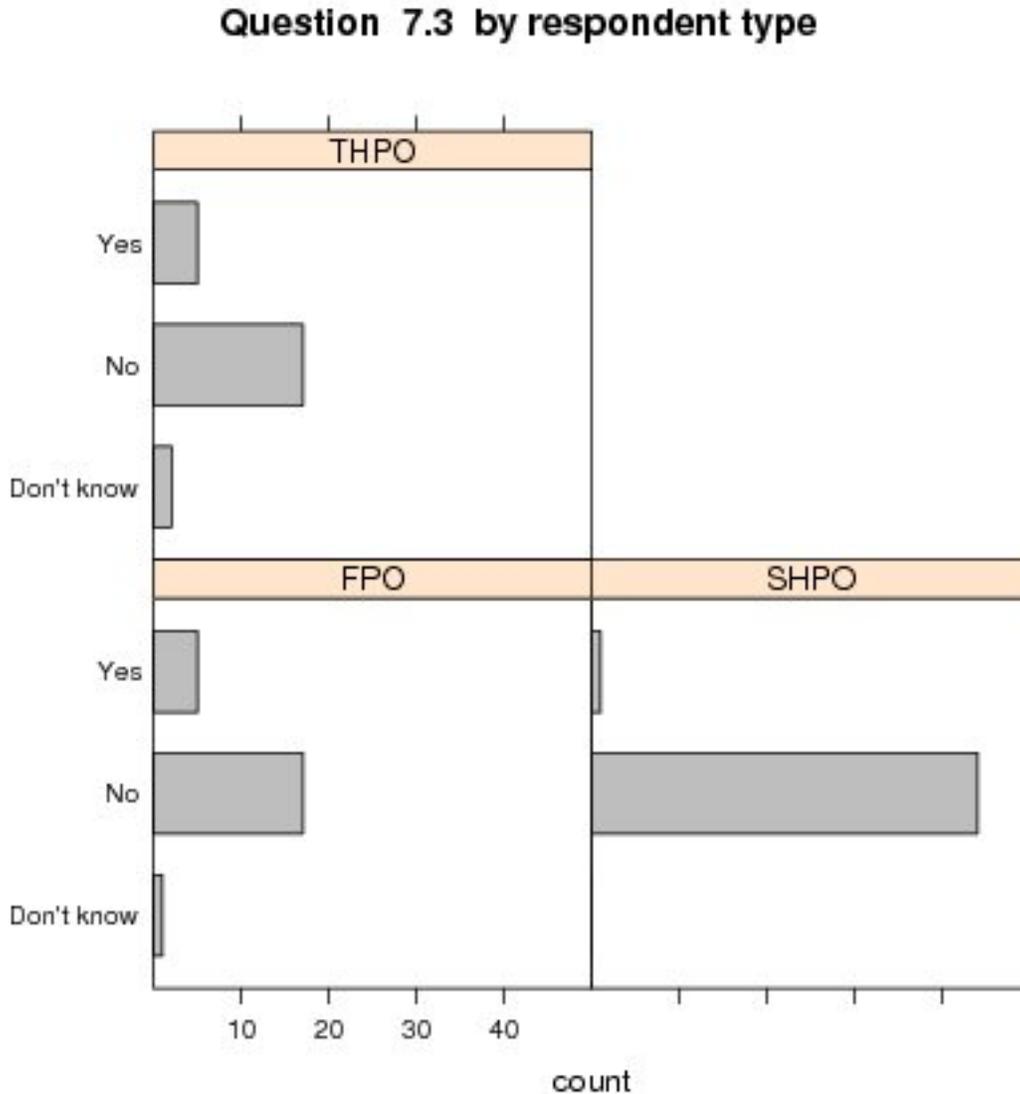
7.2. If the answer to question 1 above is “yes,” is there a free layer of searchable information (e.g. can the public access National Register Nominations of survey forms/information for free)?



48% of FPOs responded, 60% of SHPOs responded and 60% of THPOs responded.

Many SHPOs who charge for access to historic property data also have a layer of information that is freely available to the public. This result is made difficult to interpret by the fact that while only 15 SHPOs reported charging access fees in response to Question 7.1, 17 SHPOs responded “Yes” or “No” to the current question. The reason for this discrepancy is not clear, but the difference is not enough to cast the larger pattern into doubt. FPOs and THPOs who charge access fees do not provide a free layer of information, though again more THPOs (23) and FPOs (12) than expected responded to this question. Only five THPOs and no FPOs reported charging access fees in response to Question 7.1.

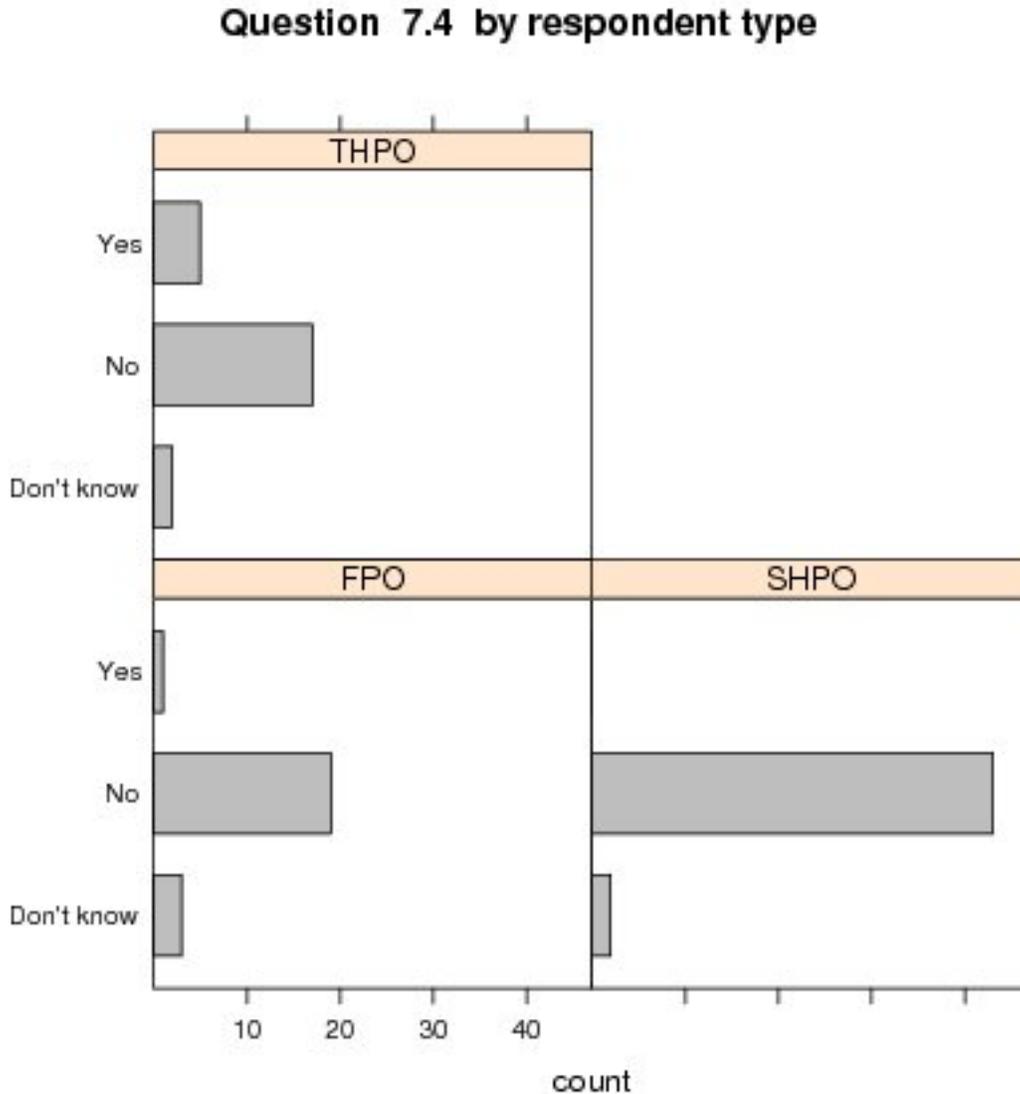
7.3. Does your office currently pay any other governmental agencies (not including public academic institutions) for access to historic property data?



96% of FPOs responded, 96% of SHPOs responded and 63% of THPOs responded.

One SHPO reported paying fees to governmental agencies for access to data, and only a minority of THPOs (21%) and FPOs (21%) reported paying such fees. The practice clearly is not widespread.

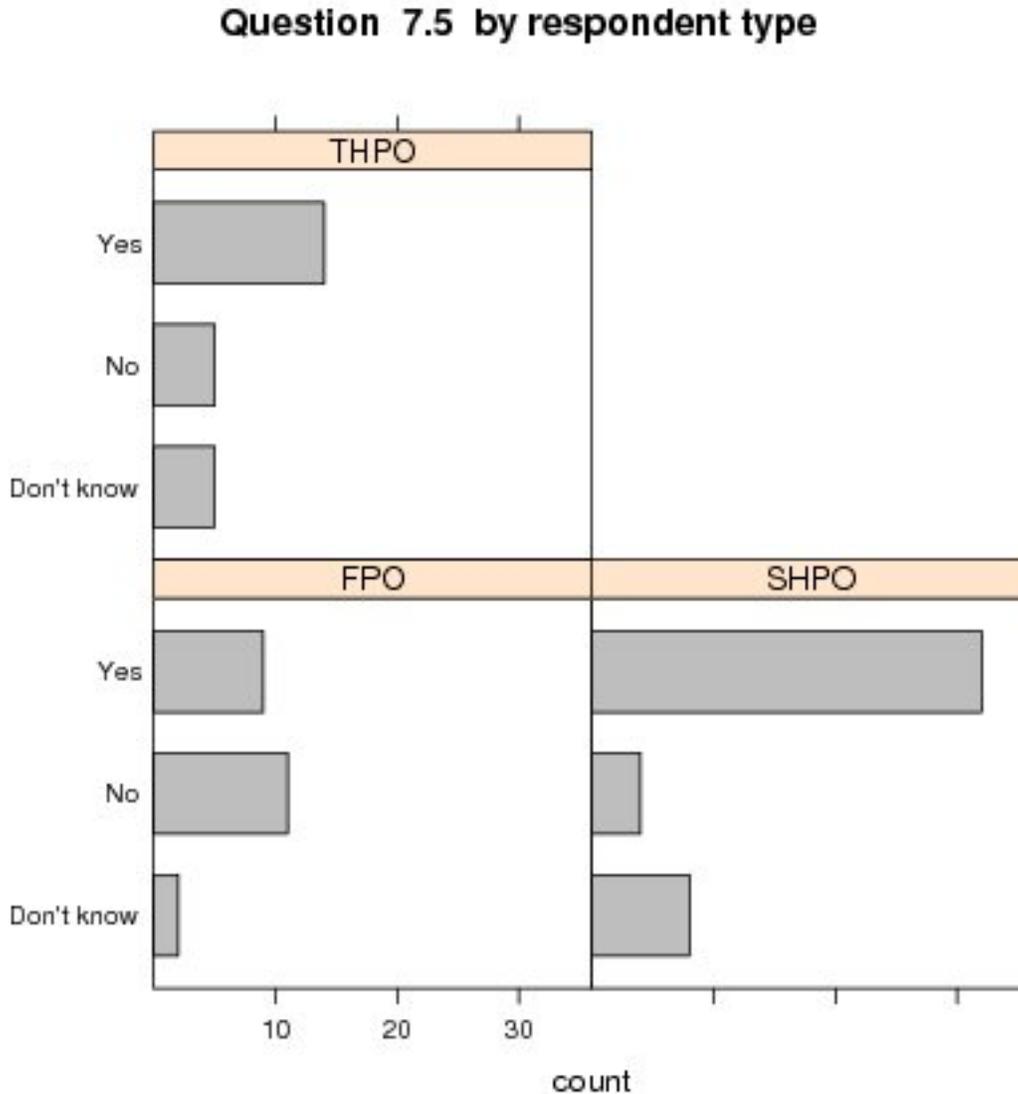
7.4. Does your office currently pay any non-governmental entities (including any academic institutions) for access to historic property data?



96% of FPOs responded, 96% of SHPOs responded and 63% of THPOs responded.

No SHPOs reported paying fees to non-governmental entities for access to data, and only a minority of THPOs (21%) and FPOs (4%) reported paying such fees. The practice clearly is not widespread, and is consistent with the results of question 7.3. However, it does seem that FPOs are more likely to pay such fees to governmental agencies and THPOs to non-governmental entities.

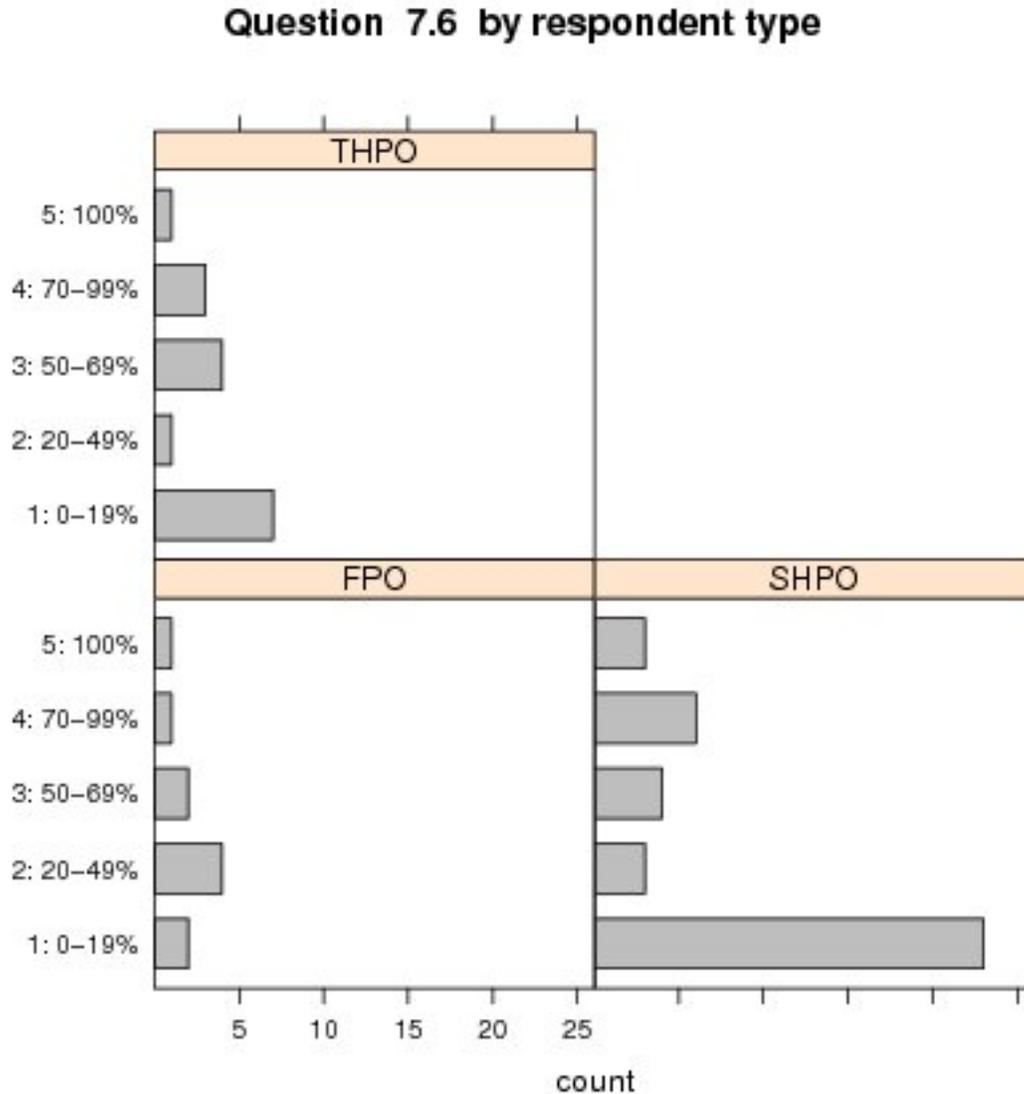
7.5. Does your office still utilize one or more types of forms/formats for the presentation of combined historic-property inventory data?



88% of FPOs responded, 94% of SHPOs responded and 63% of THPOs responded.

The intent of this question is not clear, since no doubt all respondents use “one or more types of forms/formats.” It is probable that many of the respondents interpreted this question to mean “more than one type of form/format.” In any case, the majority of SHPOs (72%) responded “Yes” rather than “No” to this question. Most THPOs (58%) also answered “Yes.” FPOs responded very differently, with only 41% responding “Yes.”

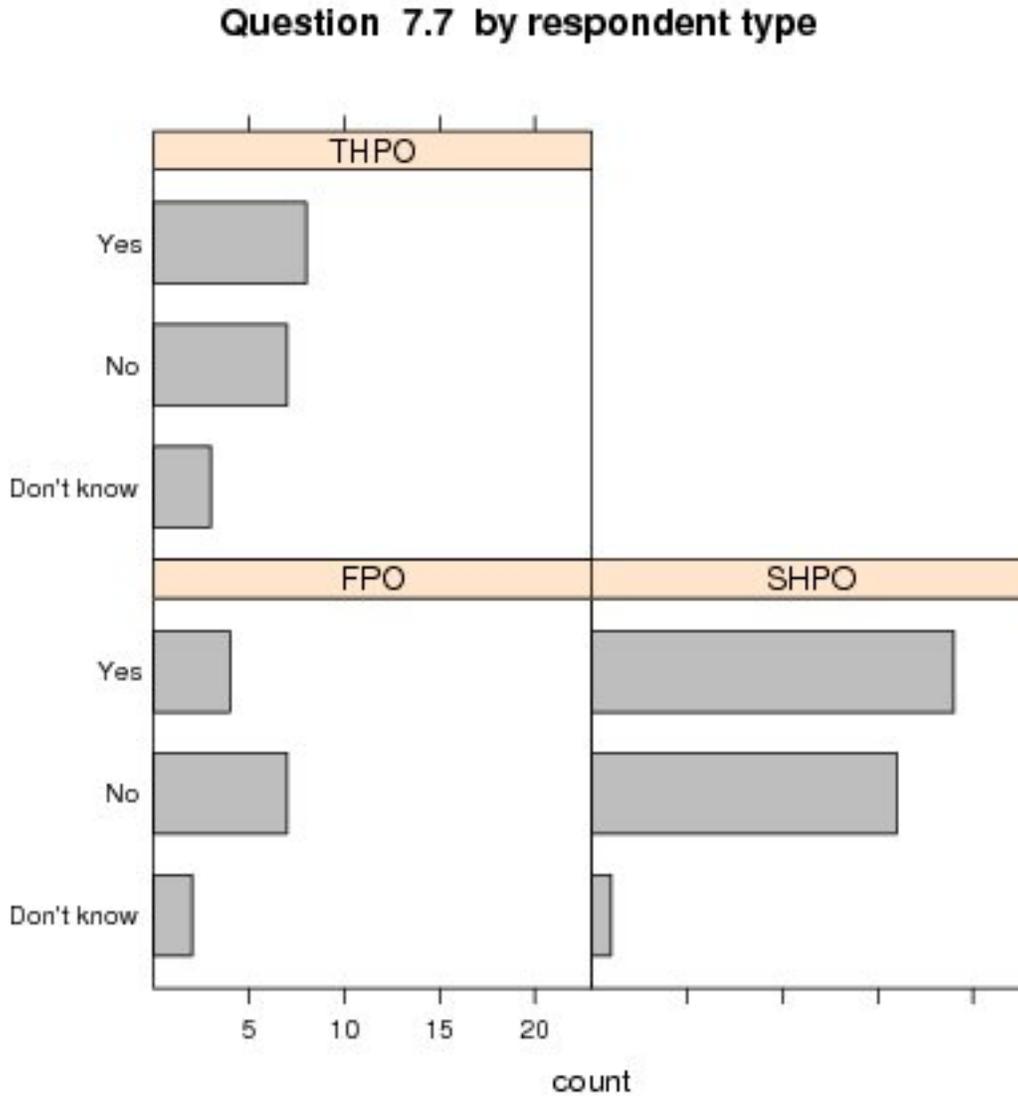
7.6. If the answer to question 5 above is “yes,” are any of your office’s historic-property inventory forms scanned?



20% of FPOs responded, 55% of SHPOs responded and 13% of THPOs responded.

SHPOs reported very low numbers of scanned forms. A minority of SHPO respondents (33%) reported that more than half of their historic properties forms had been scanned. By contrast, 40% of FPOs and 50% of THPOs reported that they had scanned more than half of their forms. This is probably related to the large historic property inventories maintained by many SHPOs. Legacy data held by SHPOs prevent them from achieving a higher percentage.

7.7. If the answer to question 6 above is “less than 100%,” does your office currently have a plan to scan the balance of its historic-property inventory forms?

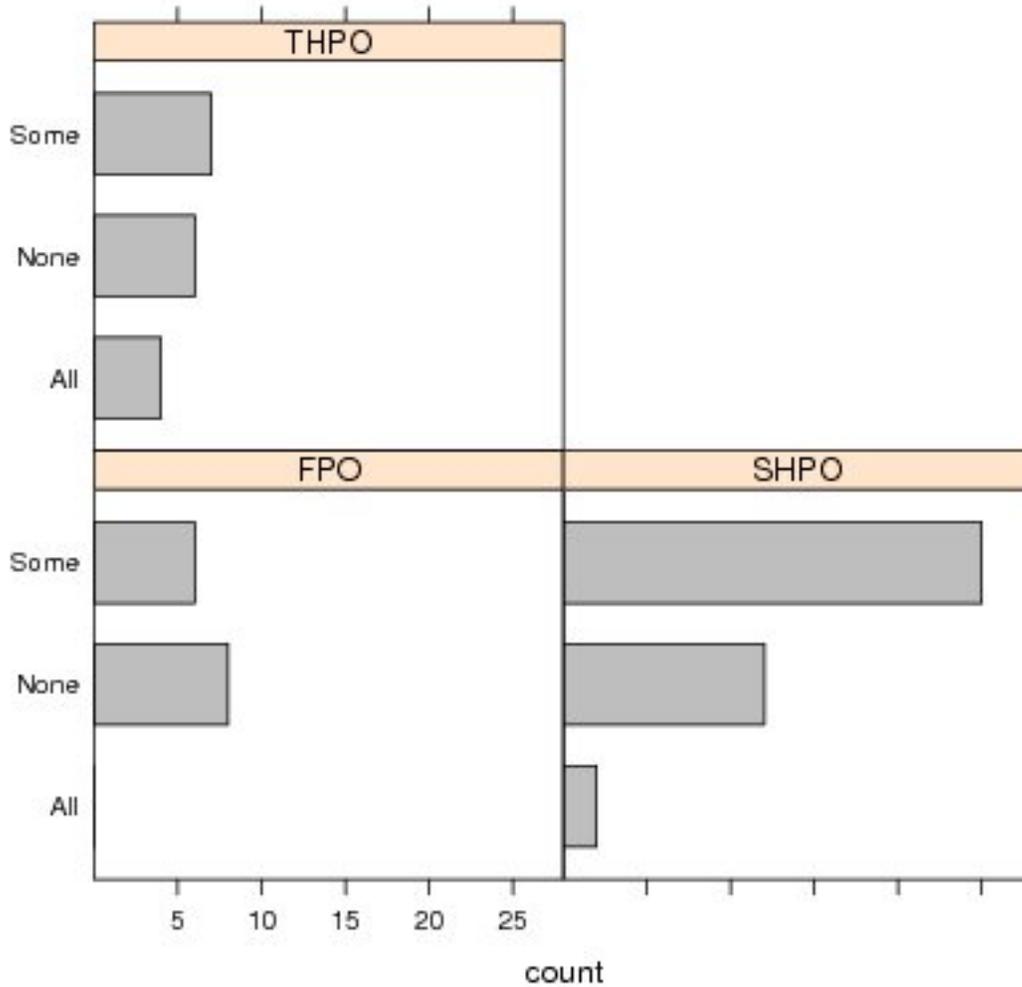


75% of FPOs responded, 81% of SHPOs responded and 53% of THPOs responded.

Most SHPOs (51%) with unscanned historic properties forms have an active plan to complete scanning, while only 40% of THPOs and 21% of FPOs reported having such a plan.

7.9. Do you believe some or all of your office’s already scanned historic-property inventory forms need to be updated?

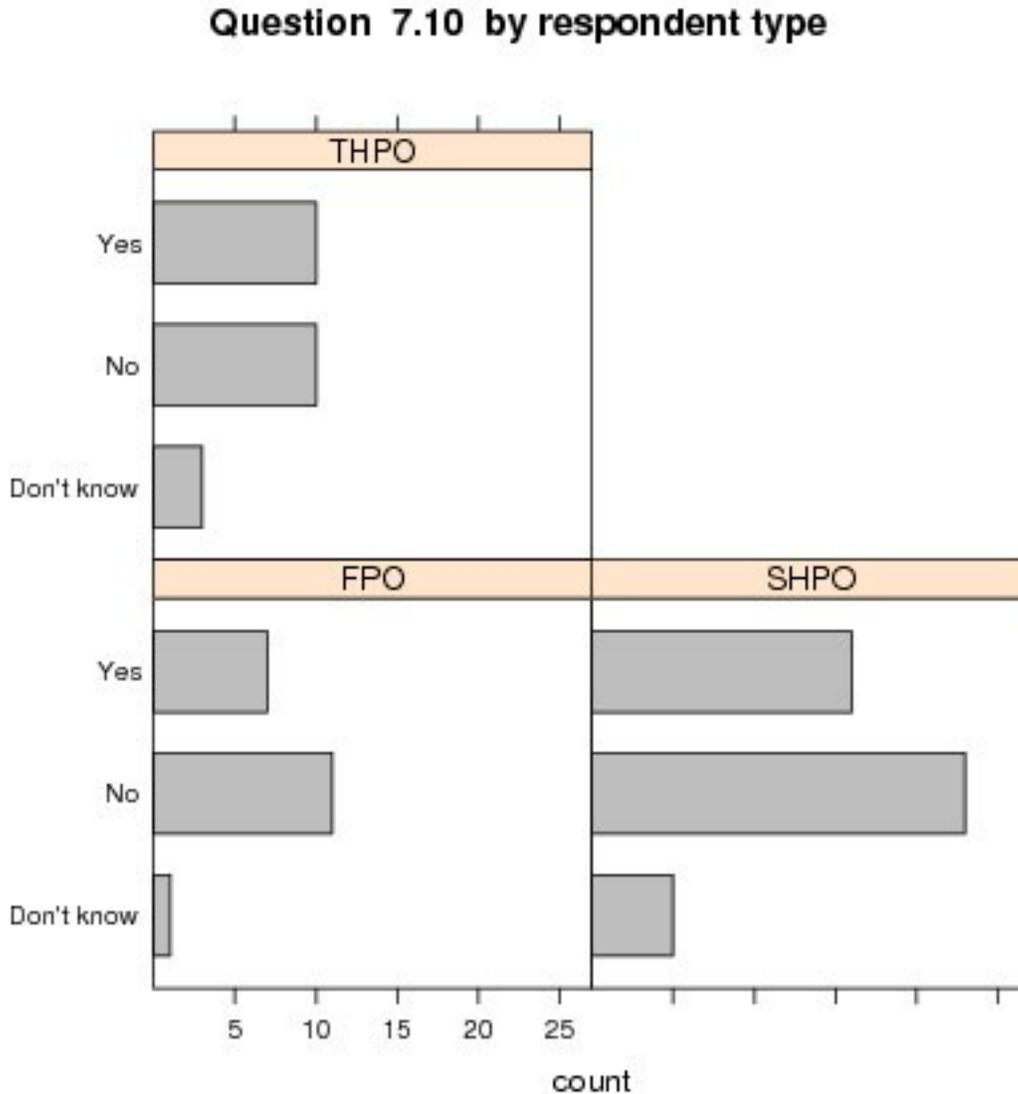
Question 7.9 by respondent type



63% of FPOs responded, 87% of SHPOs responded and 47% of THPOs responded.

The majority of SHPO (69%) and THPO (65%) respondents believe that some or all of their already-scanned historic property forms need to be updated. By contrast, only 43% of FPOs believed that some or all of their scanned forms need to be updated.

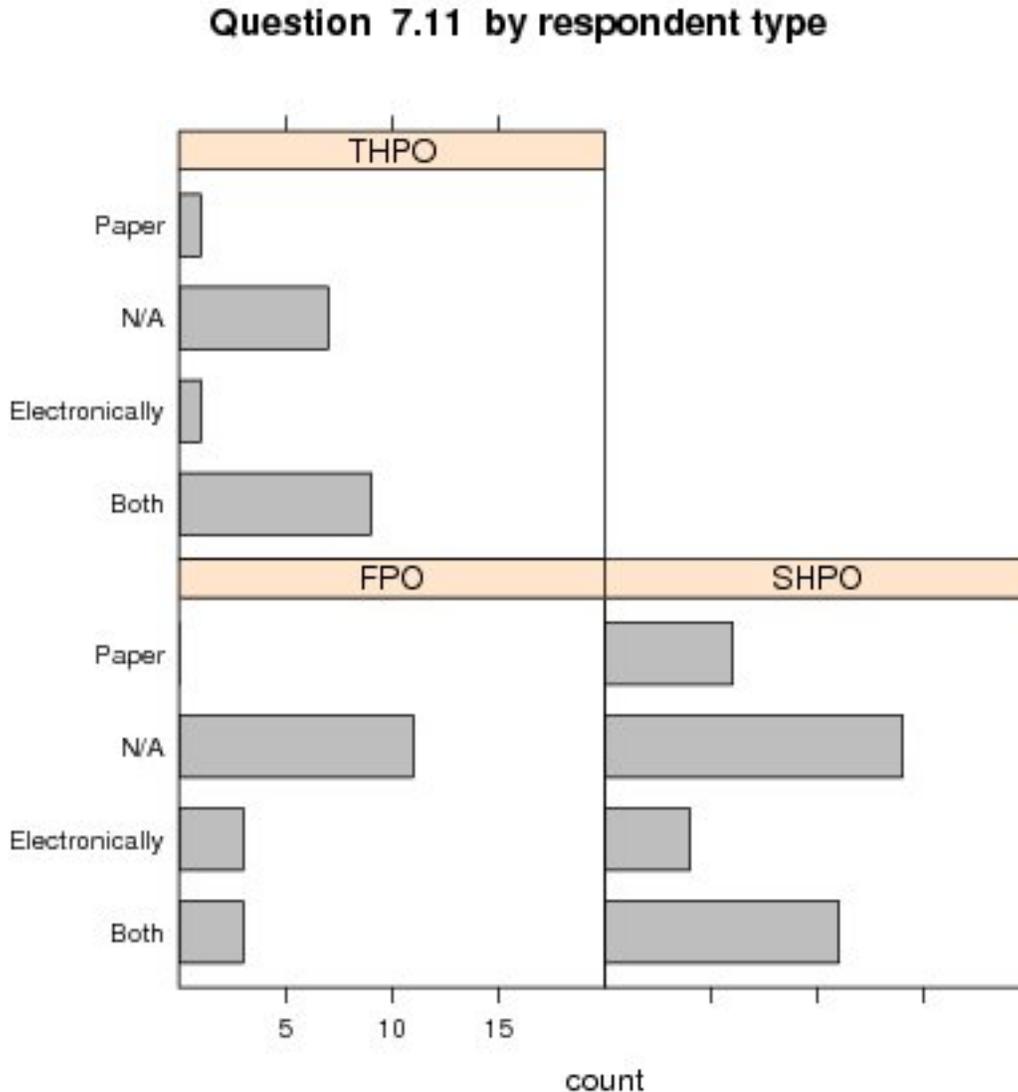
7.10. Does your office currently have a plan for updating any other types of historic-property inventory documents or graphics (e.g. slides, maps, photographs, etc.)?



80% of FPOs responded, 74% of SHPOs responded and 61% of THPOs responded.

Nearly half (43%) of THPO respondents reported having a plan to update other types of historic property inventory documents or graphics, while a minority of SHPOs (36%) and FPOs (37%) reported having such a plan.

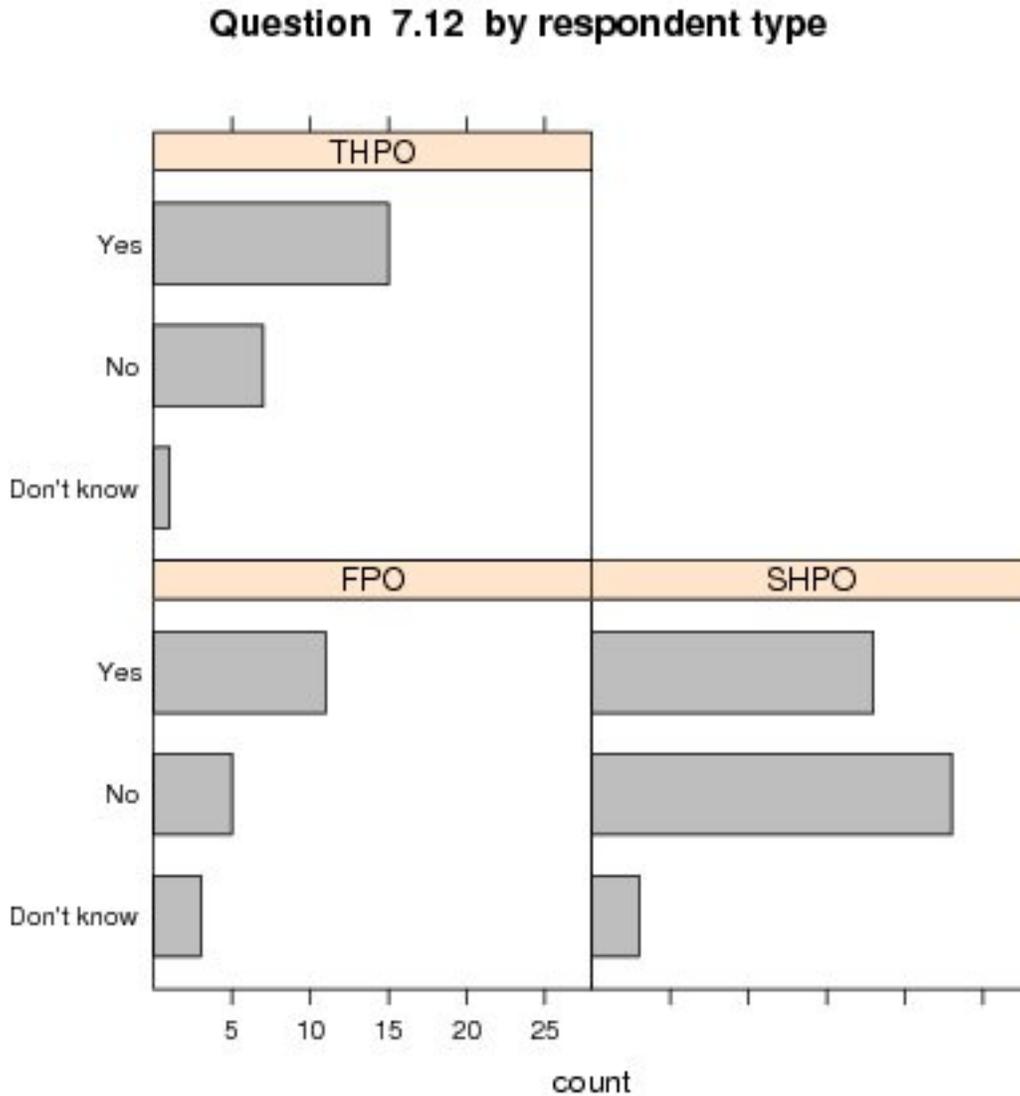
7.11. If your office has a plan to update its historic-property inventory legacy information, how is the update going to be done?



68% of FPOs responded, 78% of SHPOs responded and 48% of THPOs responded.

Of the SHPO respondents with a plan to update historic property inventory legacy information, 17% reported that this update will be done on paper forms only, as opposed to 11% who plan to do the update electronically, and 31% who plan to do the update both electronically and on paper forms. Overall, then, 79% of SHPO respondents plan to retain paper records in their updates. The majority of THPO (88%) and FPO (60%) respondents also plan to retain paper records in their updates. The general trend appears to reflect a strong commitment to retaining paper records in parallel with the development of computerized inventories.

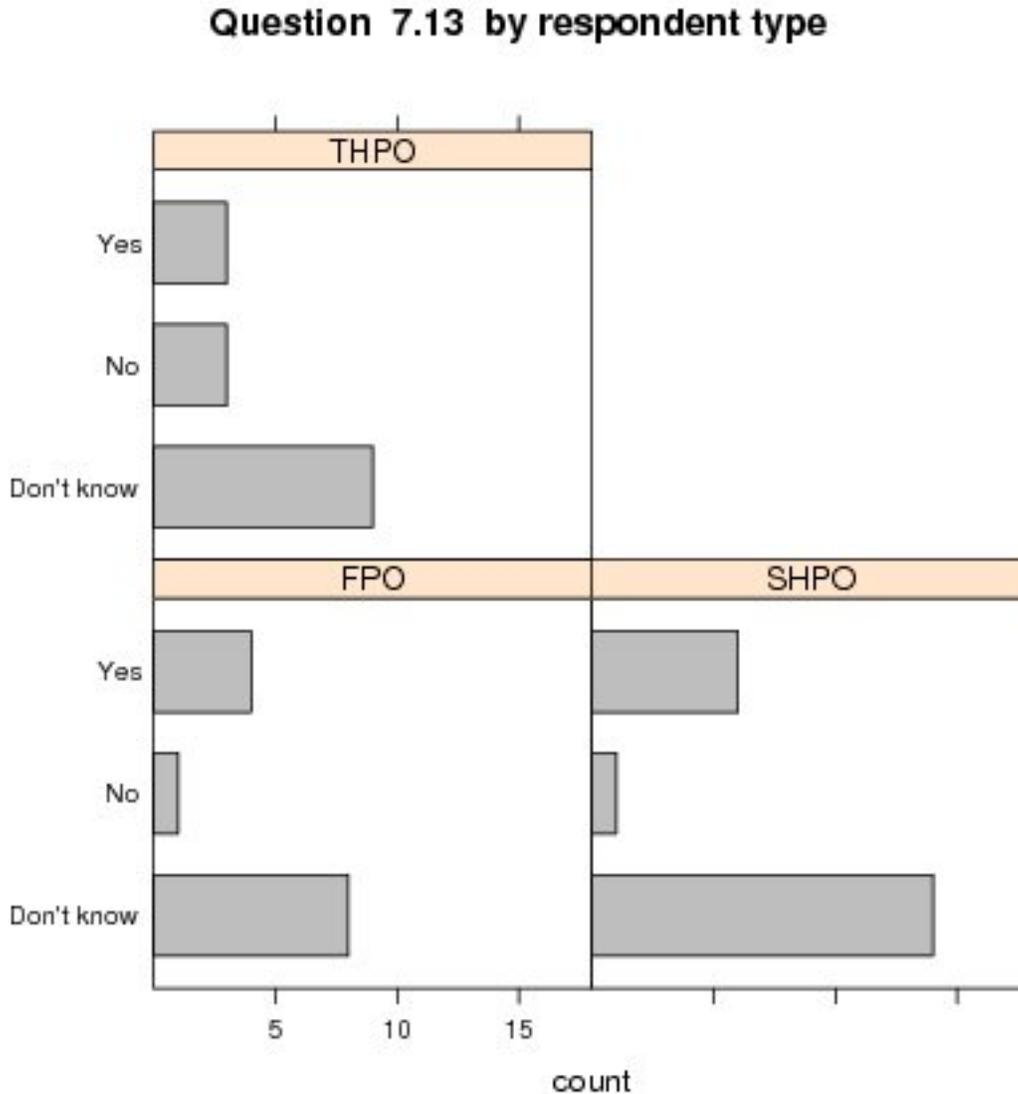
7.12. Do governmental or non-governmental entities other than your office hold, manage, and/or own historic-property legacy data that your office relies on for properties within your office’s jurisdiction?



80% of FPOs responded, 94% of SHPOs responded and 61% of THPOs responded.

There is a clear distinction between SHPOs on the one hand and THPOs and FPOs on the other hand in responses to this question. Only a minority of SHPO respondents (41%) report relying on historic property legacy data held by other entities, while the majority of THPOs (65%) and FPOs (58%) rely on externally held legacy data.

7.13. If the answer to question 12 above is “yes,” do these entities have plans to update and/or convert this legacy data into a readily accessible electronic format?



52% of FPOs responded, 45% of SHPOs responded and 40% of THPOs responded.

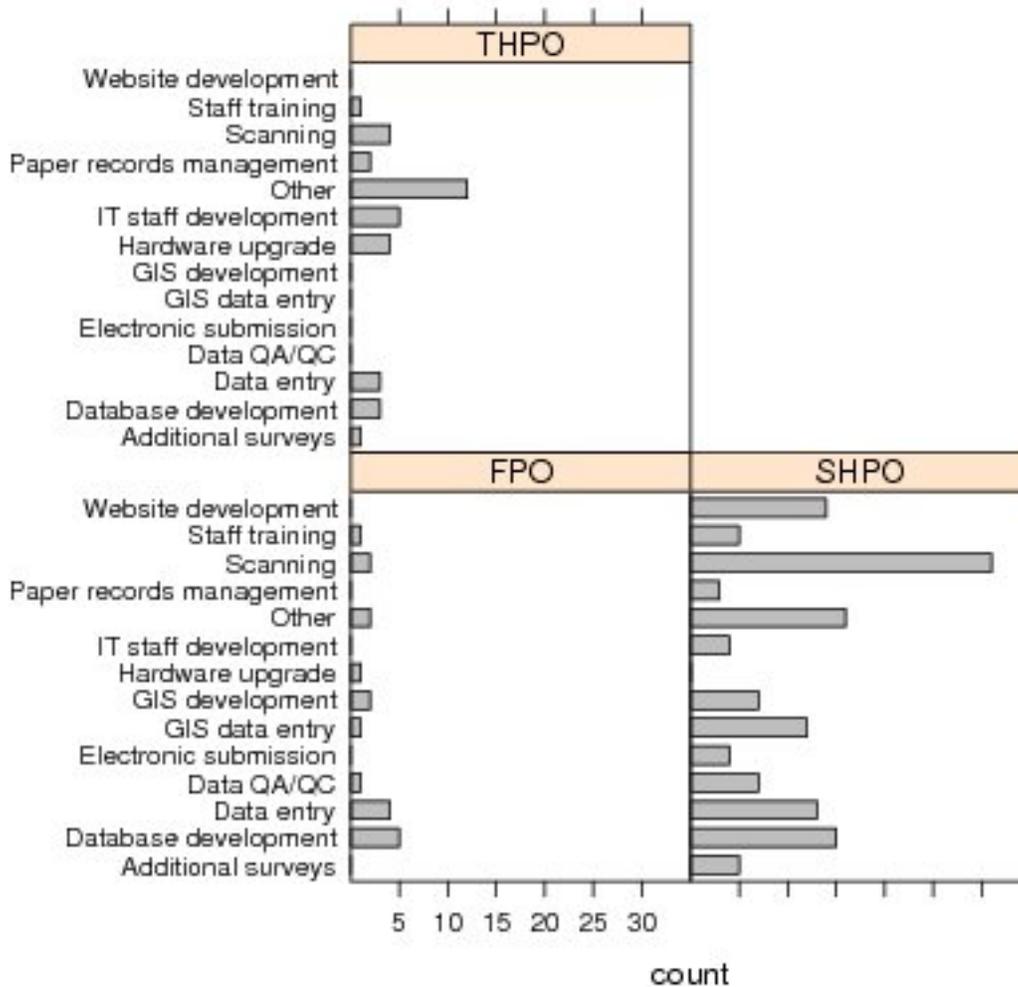
Among respondents that rely on historic property legacy data held by third parties, most respondents of all three types report that they do not know what plans the third parties have for converting legacy data into an electronic format. Of the respondents that did know, most SHPOs (86%) and FPOs (80%) report that these entities do have plans to convert the legacy data into an electronic format. Half of THPOs report the same; however, the question was answered by very few respondents.

NATIONAL HISTORIC PROPERTY INVENTORY INITIATIVE SURVEY
SECTION 8: HISTORIC PROPERTY INVENTORY PRIORITIES,
BUDGETING, AND FUNDING

This question category addresses the levels of funding available to the respondents, by respondent category, and also the general categories of sources of that funding. The questions also attempt to assess the level of priority the respondents place on digitization of historic property data. Although partially successful, the question did not seem to fully illuminate budget priorities, nor did it, on its own, seem to assess needs across respondent types. However, responses do seem to suggest funding disparities and also disparities in technological capabilities across respondents by type.

8.1. What are your office’s five top budget priorities for historic-property inventory data management?

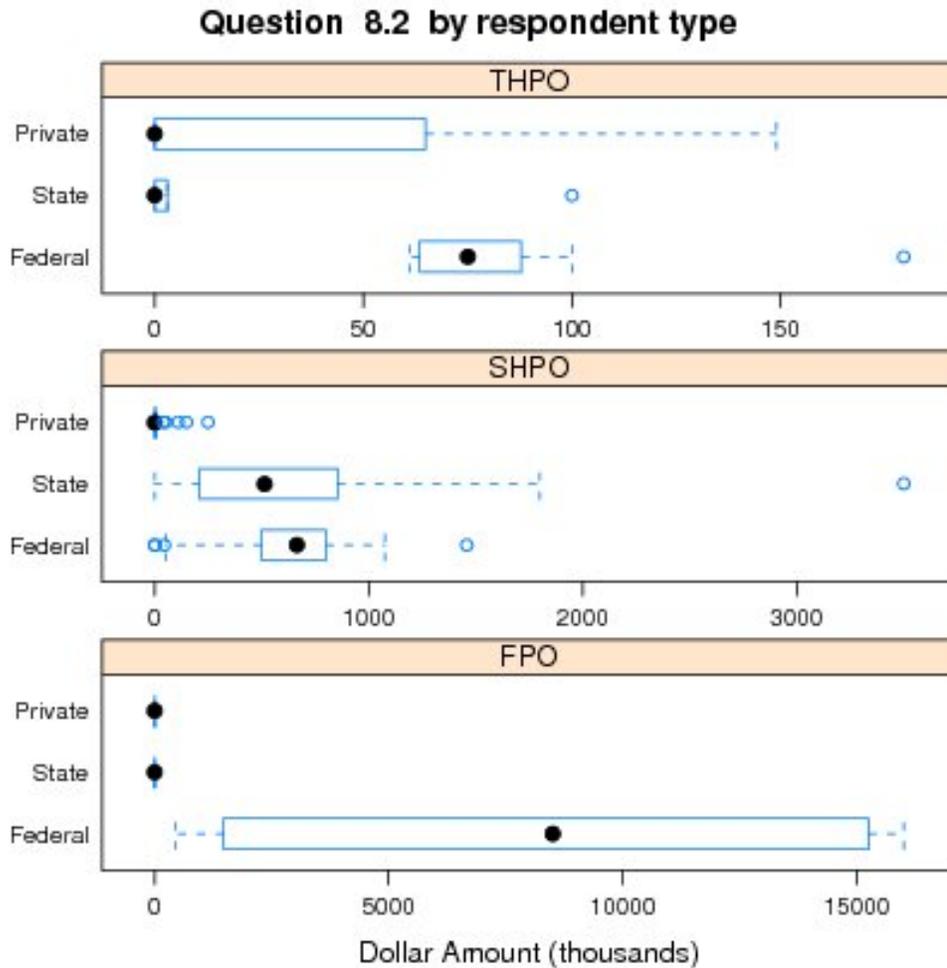
Question 8.1 by respondent type



28% of FPOs responded, 74% of SHPOs responded and 29% of THPOs responded.

Responses to this question indicate that SHPOs are currently concerned to a much greater degree with digitizing data than FPOs and THPOs, suggesting that SHPOs have a user base that desires access to data in a way that is facilitated by digitization. It is particularly noteworthy that THPOs who responded generally indicate that IT hardware and staff development are among their top priorities, whereas SHPOs and FPOs are less concerned with this. This seems to indicate that this kind of equipment, and trained staff required to use it effectively, are more available to SHPOs and FPOs than they are to THPOs.

8.2. What are the approximate \$ levels of Federal, state, and (if applicable) private funding currently available to your agency for any historic preservation related activities that are eligible under Federal, state, and/or tribal law?

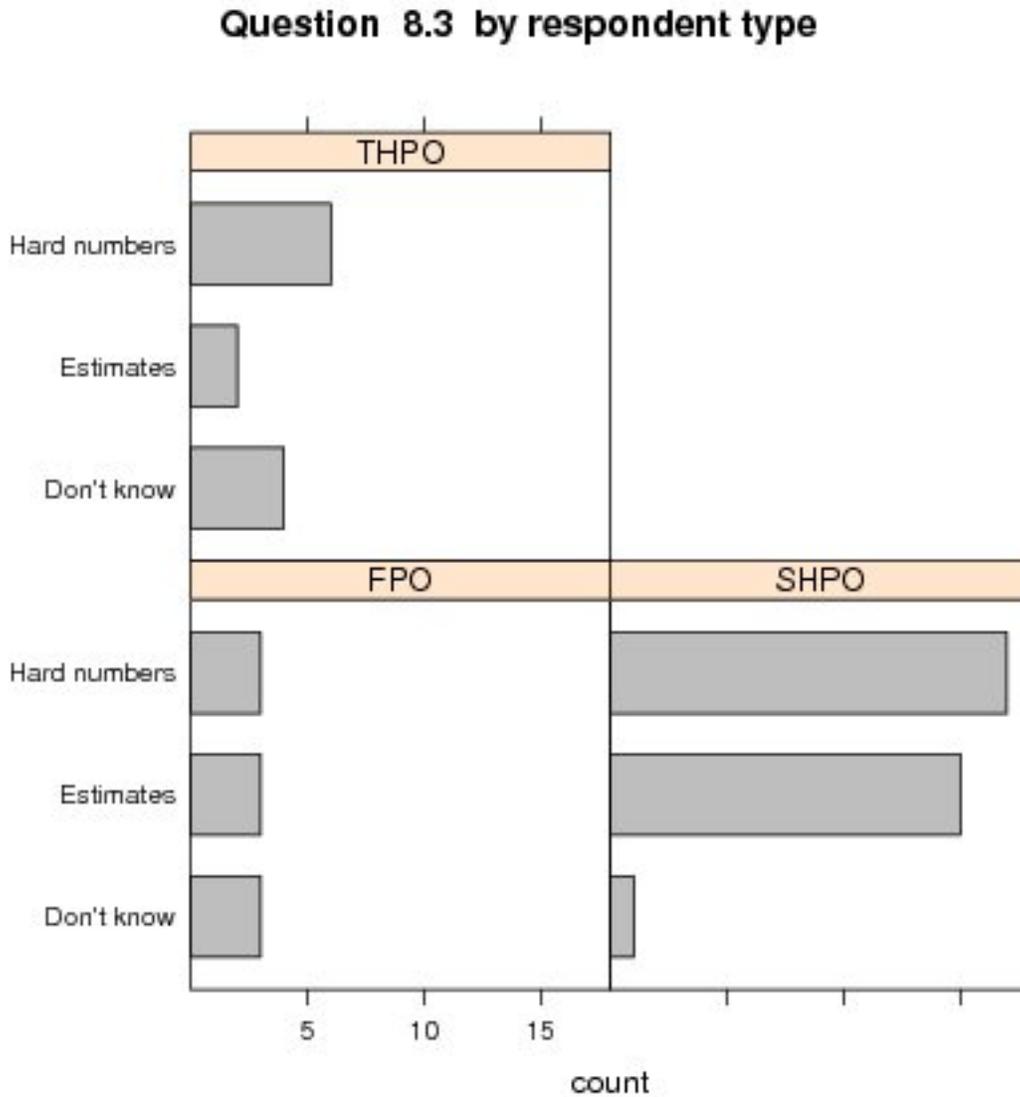


One extreme outlier (\$250,000,000) eliminated from FPOs

20% of FPOs responded, 70% of SHPOs responded and 82% of THPOs responded.

Although comparisons of dollar amounts are not particularly useful, it is noteworthy that SHPOs and THPOs reportedly receive most of their funding from federal sources (FPOs, of course, receive virtually all of their funding from federal sources). THPOs receive little funding, relatively, from state sources, and SHPOs receive little funding from private sources. In general, the responses to this question indicate that FPOs receive by far the most funding, and that THPOs on the whole receive relatively little funding. This question does not address to what extent funding resources are proportionate or adequate to the needs of the respondents, by type or otherwise.

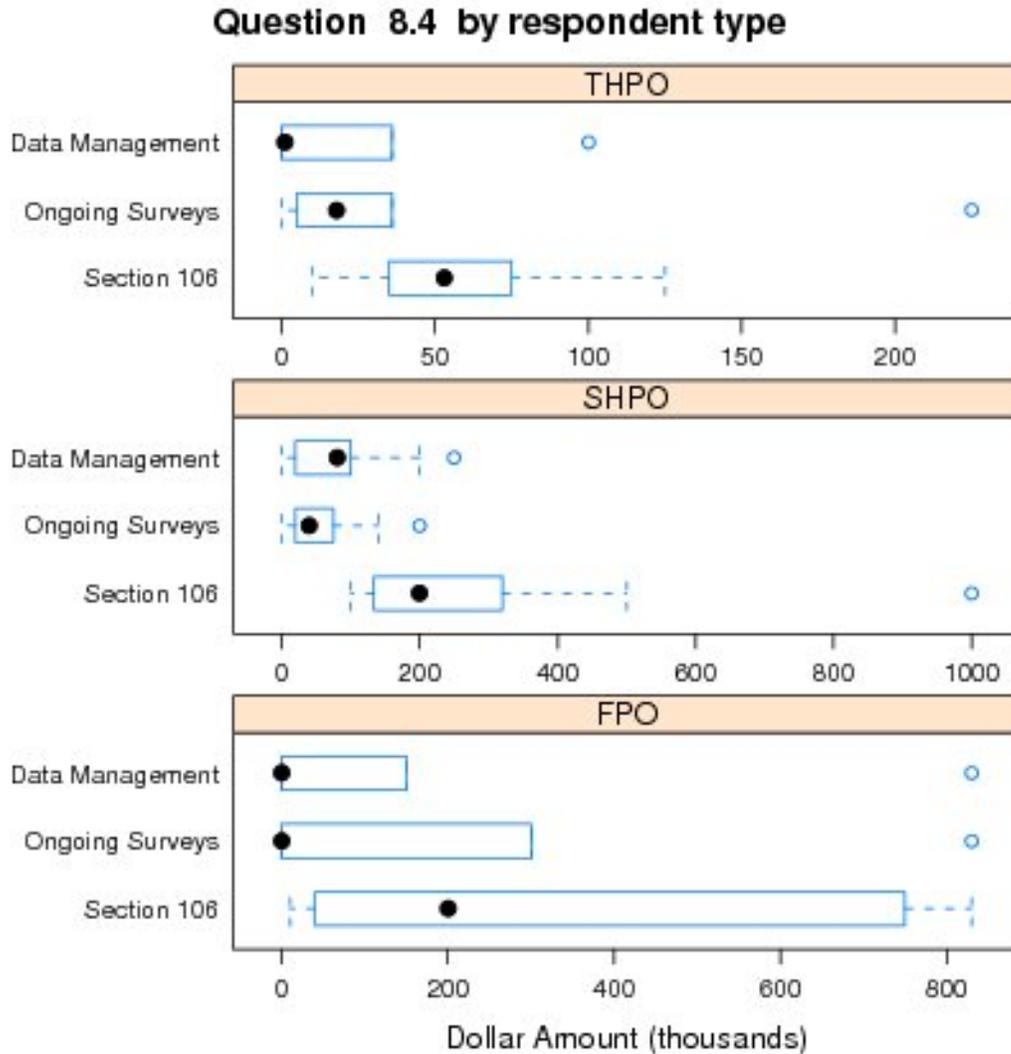
8.3. How did you arrive at these figures?



48% of FPOs responded, 72% of SHPOs responded and 32% of THPOs responded.

Interestingly, many SHPOs and most THPOs relied on hard numbers in their responses to Question 8.2, while most FPOs relied on estimates. This may indicate that the persons completing the survey for THPO and SHPO respondents were more closely involved in the budget process than were persons completing the survey on behalf of FPOs. This result would seem to imply that the numbers given in response to Question 8.2 are most accurate in the case of SHPOs and THPOs, and least accurate in the case of FPOs.

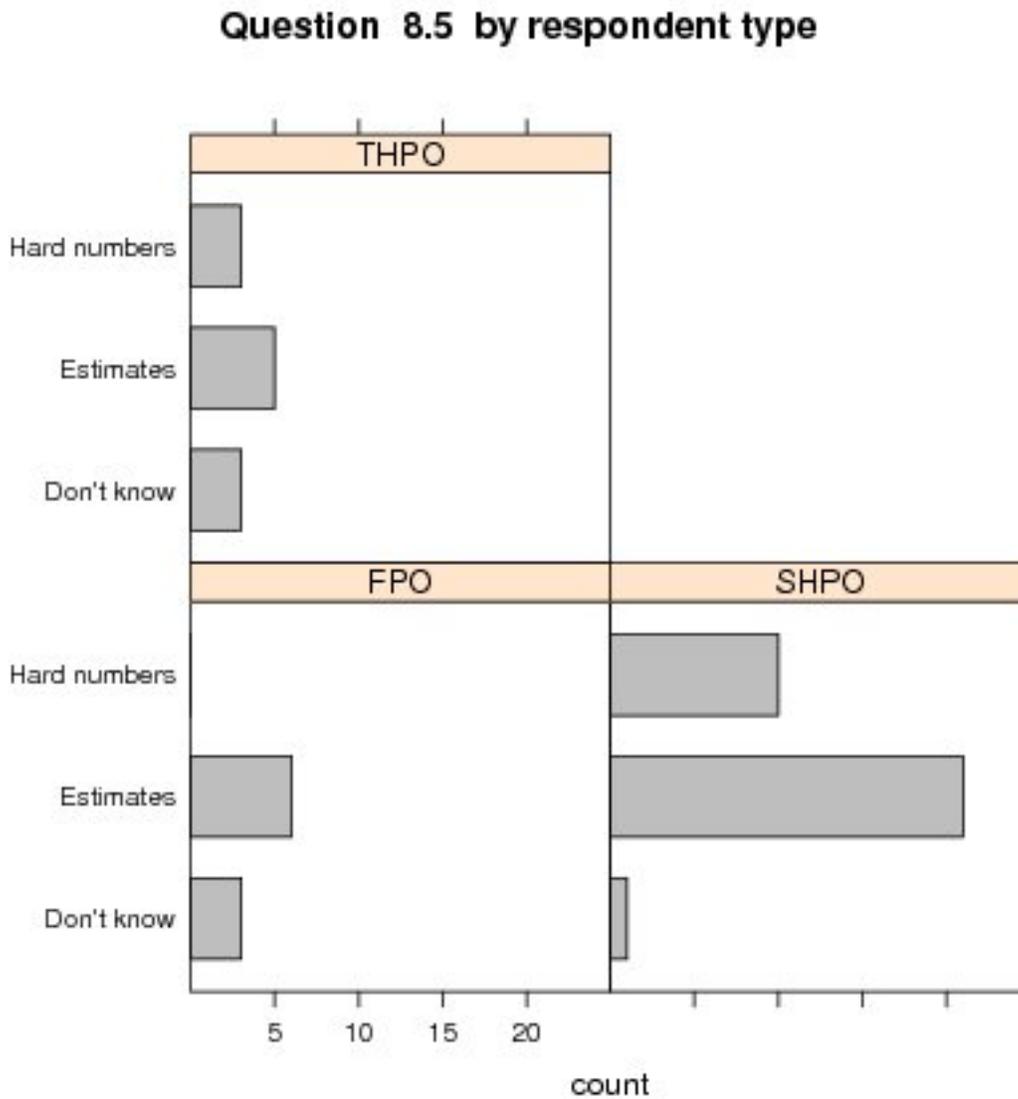
8.4. What is the approximate categorical \$ value of staffing and other resources your office currently dedicates annually for: Section 106 reviews, ongoing historic-property surveys, digital data collection, and management and training activities?



20% of FPOs responded, 55% of SHPOs responded and 16% of THPOs responded.

Clearly, Section 106 reviews consume the lion’s share of respondent resources, although data management seems to be a higher priority for SHPOs than for FPOs, as is also reflected in the responses to Question 8.1. However, for SHPOs and FPOs, all three of these resource allocation categories consume much less than available monies (Question 8.2). For THPOs, however, a much larger percentage of available resources appear to be allocated to these endeavors, and THPOs also dedicate a greater proportion of resources to data management and ongoing surveys.

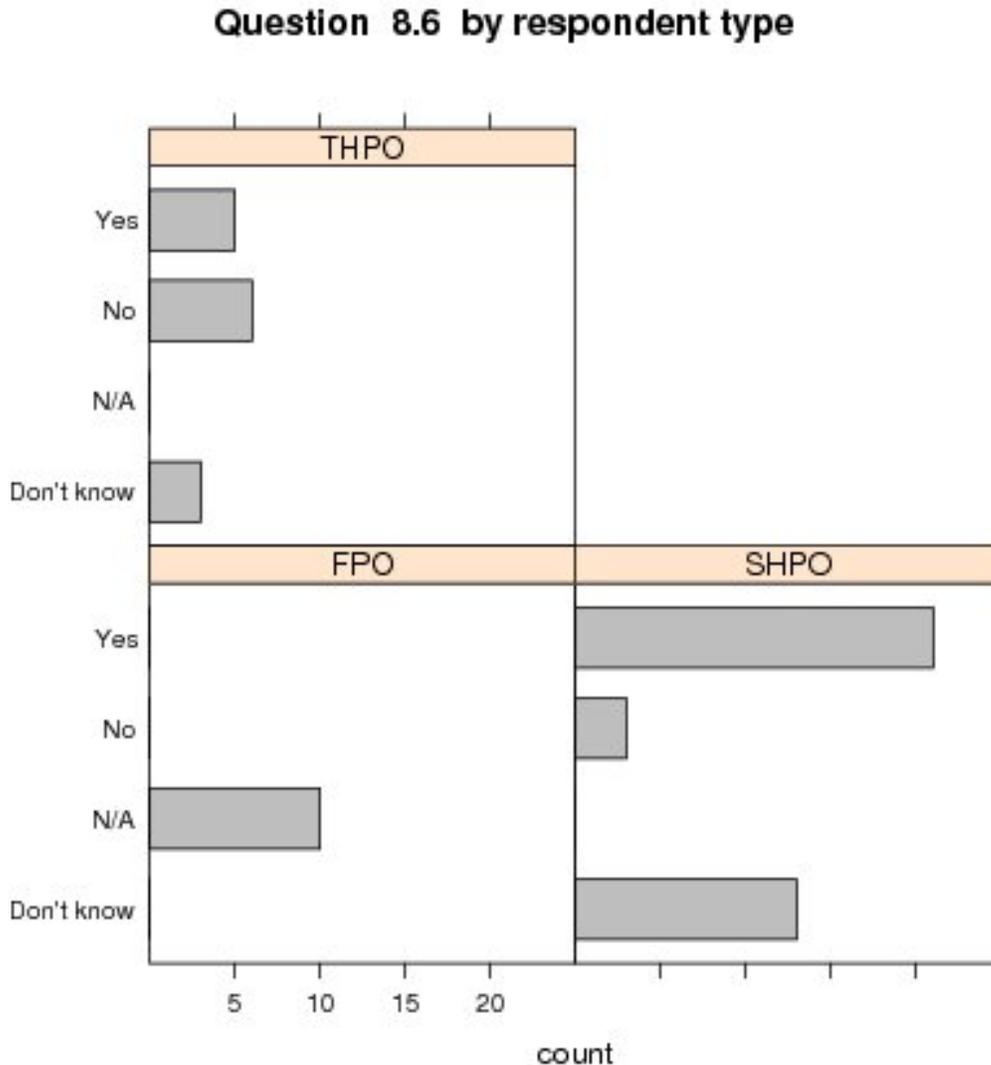
8.5 How did you arrive at these figures?



52% of FPOs responded, 72% of SHPOs responded and 29% of THPOs responded.

Most SHPOs and FPOs relied on estimates in answering Question 8.4, while the majority of THPOs relied on hard numbers. This result would seem to imply that the numbers given in response to Question 8.2 are most accurate in the case of THPOs, and less accurate in the case of SHPOs and FPOs. It also seems to be the case that the numbers given in response to Question 8.4 will generally be less accurate and reliable than the numbers given in response to Question 8.2.

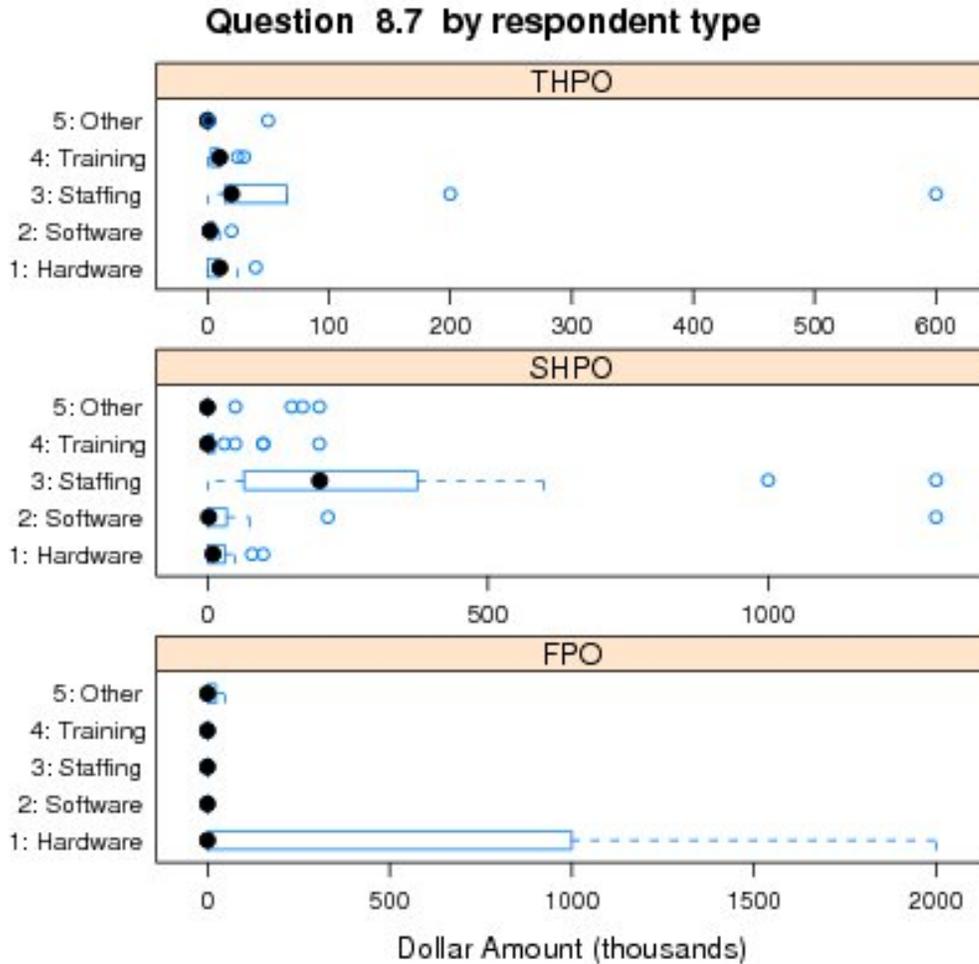
8.6 If you represent a SHPO or a THPO, would your office be able to match additional Federal Historic Preservation Funds \$ (i.e. over and above its annual HPF apportionment) on a 60% Federal/40% non-Federal basis?



40% of FPOs responded, 79% of SHPOs responded and 37% of THPOs responded.

As demonstrated in the responses to Question 8.2, most responding THPOs have no state funding available to them. The responses to this question demonstrate that THPOs are generally less likely to be able to take advantage of a matching fund system of allocation of additional federal funds and would likely derive greater benefit from some other system of allocation. It would be possible for the tribes to match funds with additional grants obtained from other sources such as the National Trust for Historic Places. For those SHPOs who indicate an inability to match additional federal funds, or for those who seem uncertain, an alternate system of allocation would also be of greater benefit.

8.7. Please list, by line item below, the estimated total costs (in 2008 \$) associated with converting the balance of your office's unscanned historic-property inventory legacy data to an appropriate electronic format

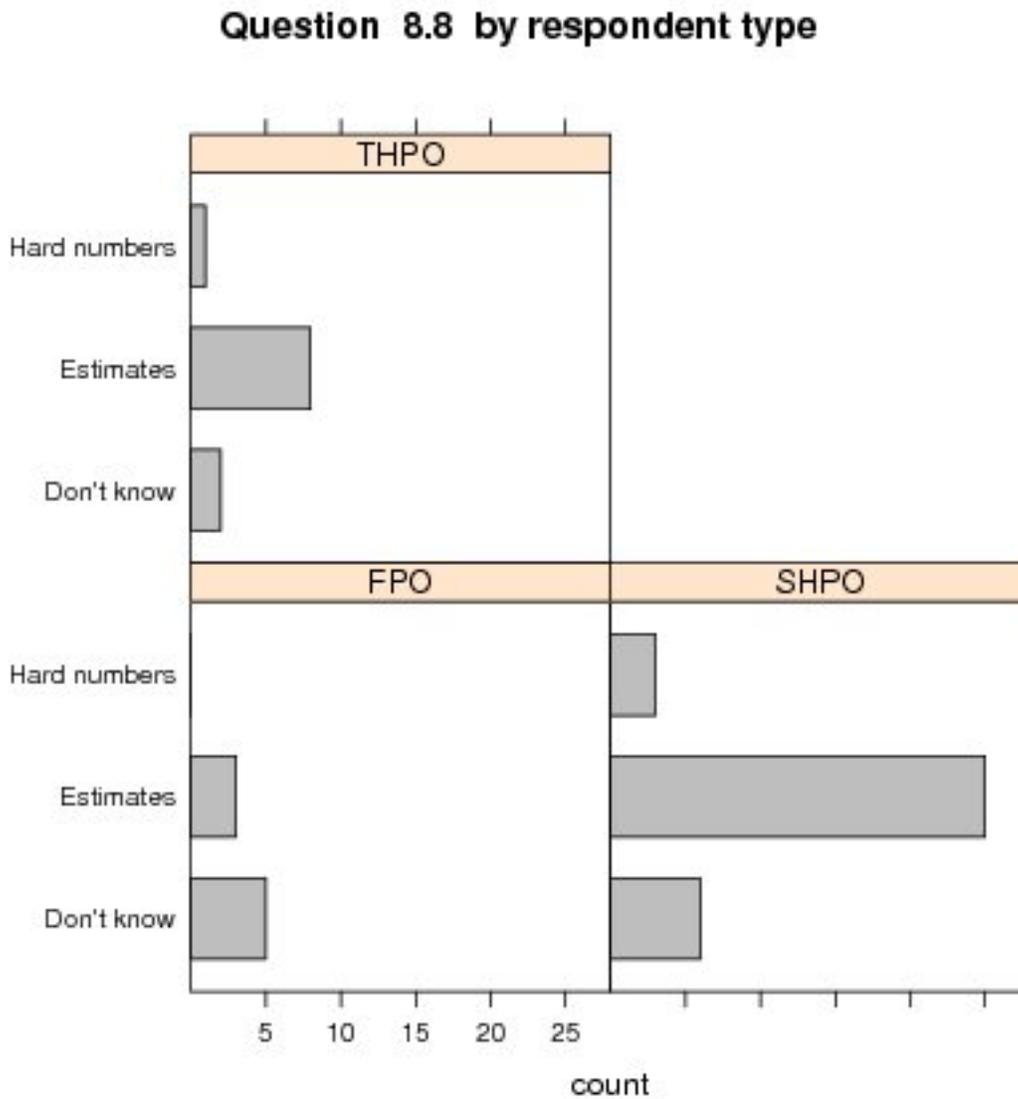


One outlier (software=\$12,500,000) eliminated from FPOs
One outlier (other=\$7,271,000) eliminated from SHPOs

16% of FPOs responded, 57% of SHPOs responded and 24% of THPOs responded.

Taken in tandem with the answers to Question 8.2 (available funding), the responses to this question demonstrate the disparity between the needs of each respondent type, as those needs are related to digitizing historic property data, and the ability of these offices to meet those needs. Figures may reflect the volume of data waiting to be converted to digital format, and may also reflect the level of priority each type of respondent places on digitization of data. As a general pattern, FPOs report that they would need support mainly in the arena of hardware and software purchases. In contrast, both SHPOs and THPOs emphasize the need for additional staffing in order to be able to digitize unscanned legacy data.

8.8 How did you arrive at these figures?



40% of FPOs responded, 72% of SHPOs responded and 29% of THPOs responded.

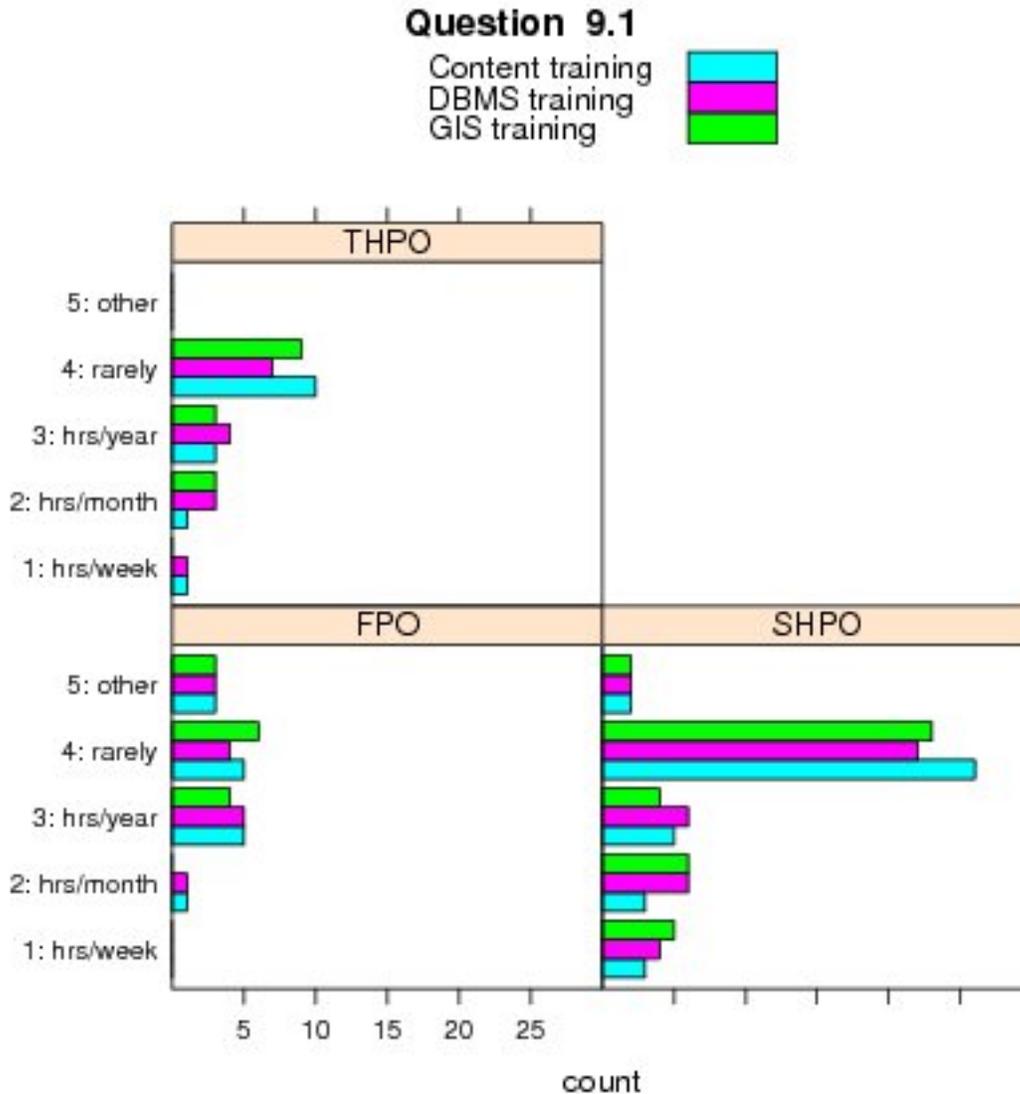
Most respondents of all types relied on estimates in their answers to Question 8.7. This is not surprising given that the question concerns a hypothetical scenario. The numbers given in response to Question 8.7 are likely to be even less accurate and reliable than those given in response to Questions 8.2 and 8.4, but are nevertheless useful in assessing the general level of budgetary commitment required to completely digitize legacy data.

NATIONAL HISTORIC PROPERTY INVENTORY INITIATIVE SURVEY
SECTION 9: AGENCY STAFFING AND SYSTEM MANAGEMENT

This section concerns issues of staffing, training, and support in the development and operation of electronic historic property inventory systems. All respondent types report low training frequency, though DBMS training appear to be most common. Nevertheless, most SHPOs and FPOs, and approximately half of THPOs, report having access to full-time dedicated IT support personnel. Most IT personnel are not trained in cultural resources management across all respondent types, and development is undertaken by a mixture of in-house staff and outsourcing.

Among respondents that have not implemented an electronic historic property management system, most FPO respondents do not consider it to be a priority. This suggests that FPO offices without an existing electronic inventory have no need of such an inventory. THPOs and SHPOs mostly cited lack of resources (time, money, and staff) as the reason they do not yet have an electronic historic property inventory. In addition, SHPOs listed a diverse array of impediments to developing and adopting an electronic solution, including regulatory and security issues, vendor lock-in, and data quality concerns.

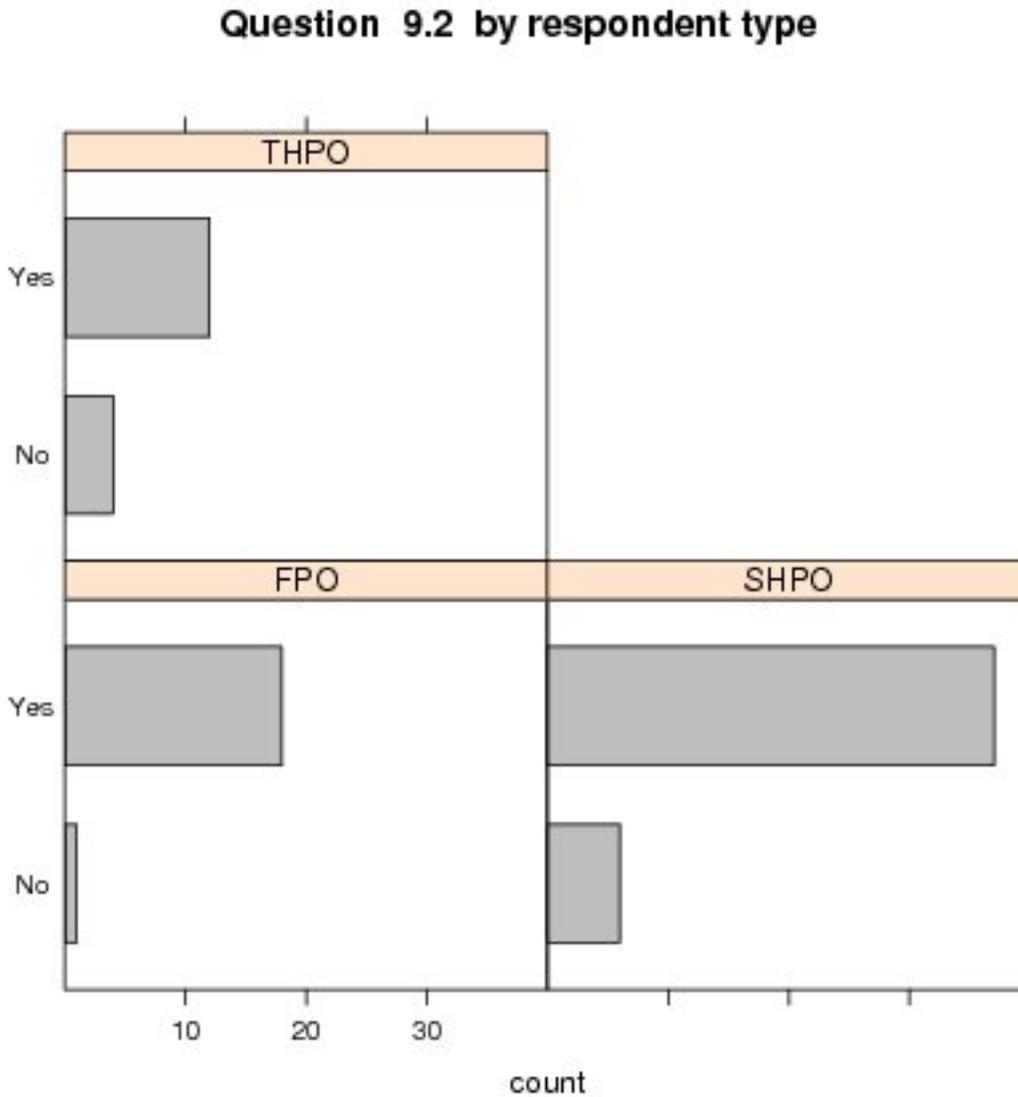
9.1. How much of your office’s staff time is currently dedicated to data-collection/management training?



68% of FPOs responded, 89% of SHPOs responded and 40% of THPOs responded.

SHPO respondents reported low training frequency. Approximately half of all SHPOs report that training is rare in all categories. THPO and FPO respondents also have low training frequencies, comparable to that reported by SHPOs. For all respondent types, the most frequent training is DBMS training, with GIS and content training lagging slightly. In general, FPOs have higher levels of content and DBMS training, while SHPOs and THPOs have higher levels of GIS and DBMS training. Overall, however, this question highlights the generally low levels of training available to the staff of all respondent types.

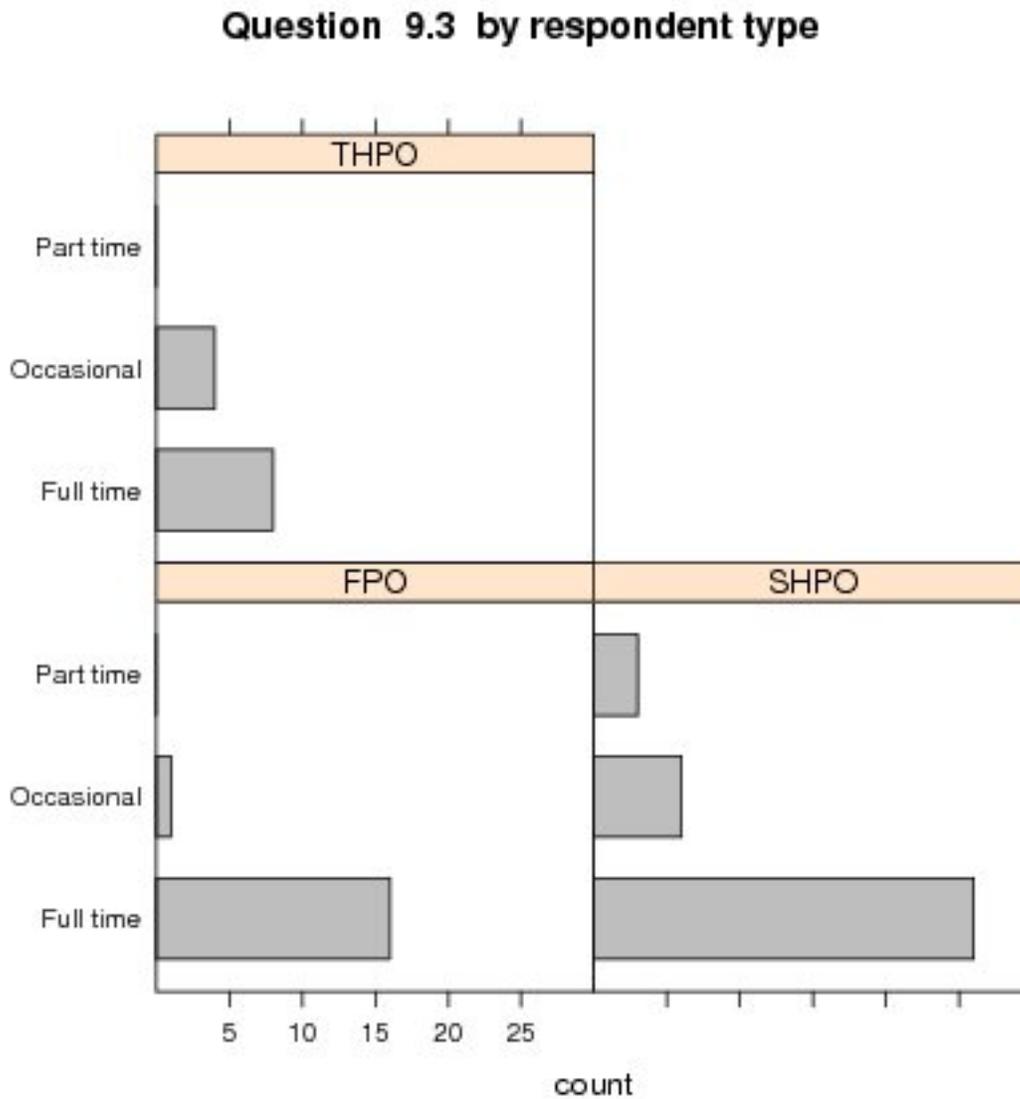
9.2. Does your office have access to dedicated IT/Systems Support professionals?



80% of FPOs responded, 92% of SHPOs responded and 42% of THPOs responded.

The great majority of SHPO and FPO respondents (86% and 90%, respectively) reported having access to dedicated systems support professionals. However, only 75% of THPOs reported having such access. The result highlights the resource challenges faced by THPOs in developing and operating electronic historic property inventories.

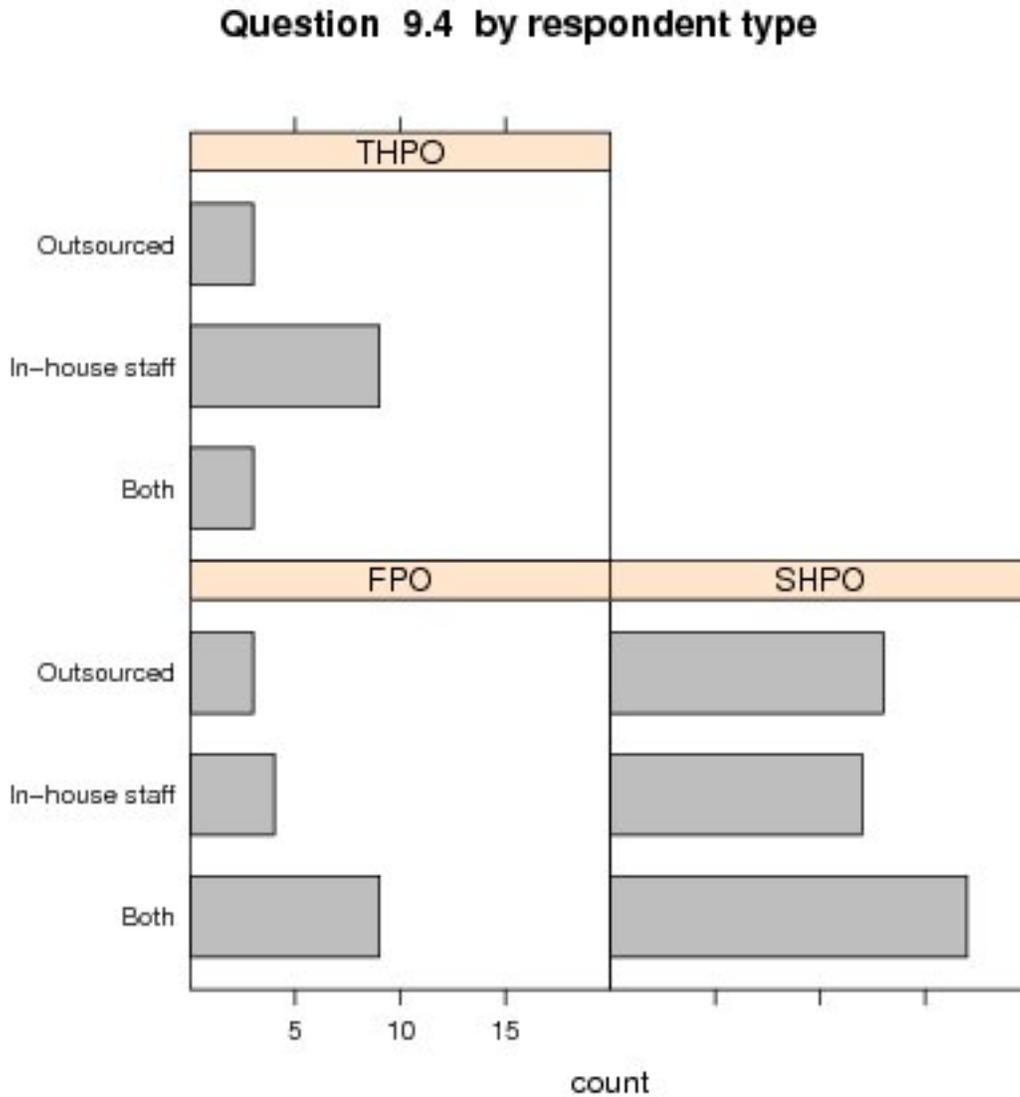
9.3. If the answer to question 2 above is “yes,” are the IT professionals



72% of FPOs responded, 77% of SHPOs responded and 34% of THPOs responded.

Most respondents reporting having access to IT support professionals maintain these professionals as full-time employees. SHPOs and THPOs make more use of part-time or occasional IT personnel (25% and 31%, respectively) than do FPOs (6%).

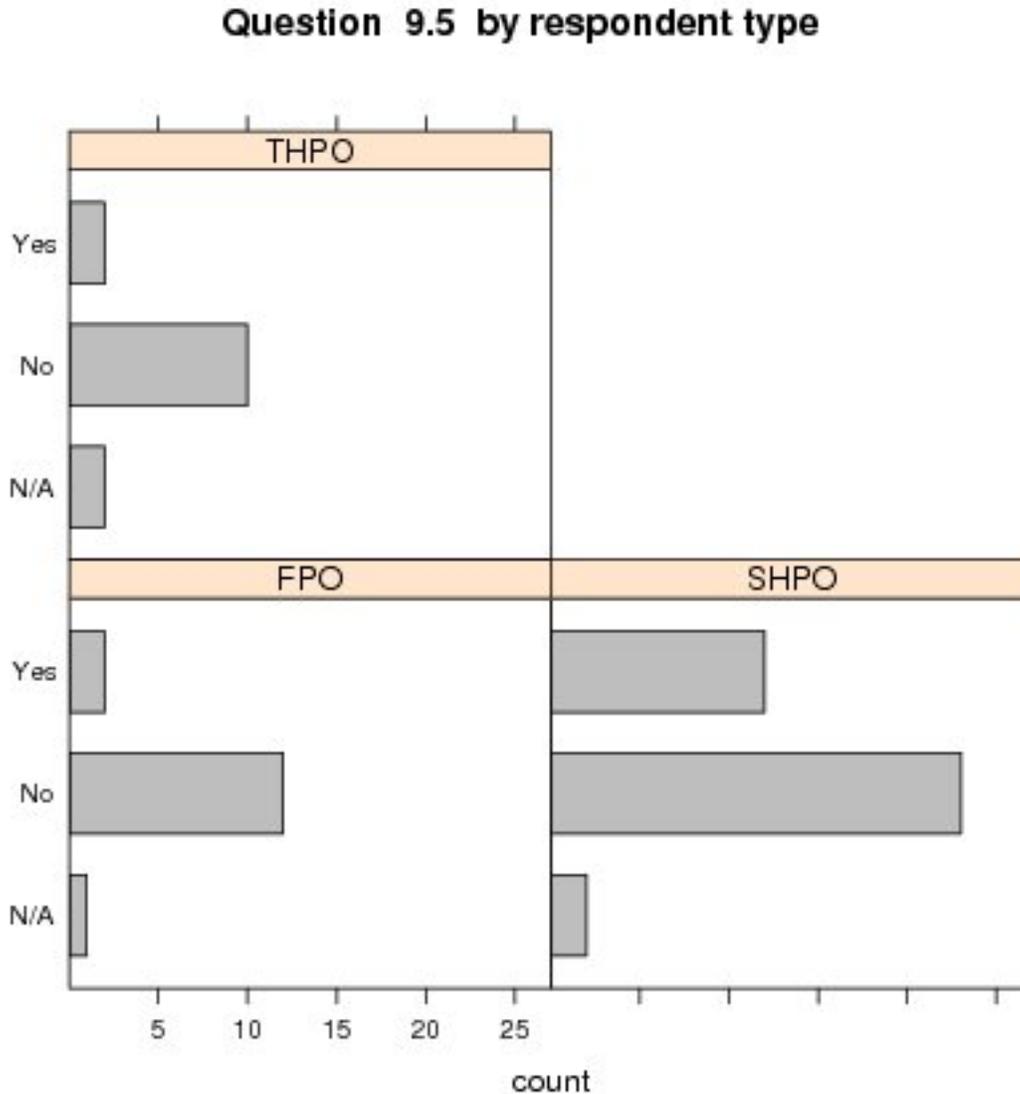
9.4. Is IT development work outsourced or performed by in-house staff, or both?



72% of FPOs responded, 92% of SHPOs responded and 42% of THPOs responded.

Outsourcing of IT development work is much more prevalent among SHPOs (70%) and FPOs (78%) than among THPOs (38%). This result again highlights the more limited funds available to most THPOs, most of which (56%) rely exclusively on in-house staff members.

9.5. If the answer to question 2 is “yes,” is your office’s IT management staff trained in cultural-resource management practices?

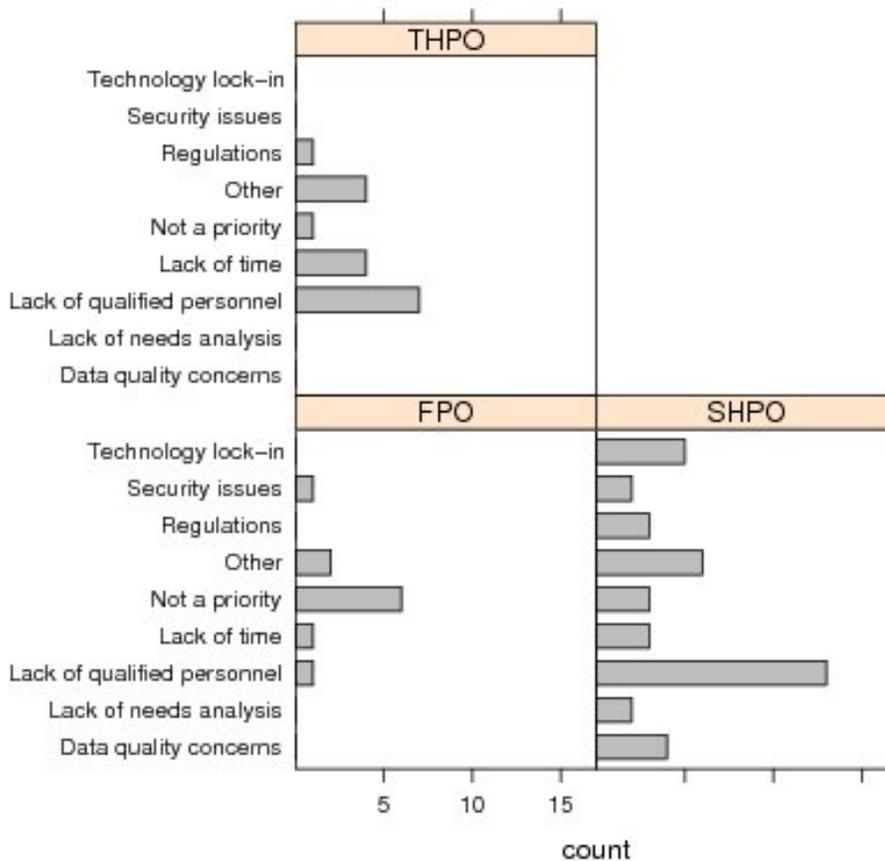


60% of FPOs responded, 81% of SHPOs responded and 36% of THPOs responded.

The majority of respondents of all types that report access to IT support professionals (and that provided a “yes” or “no” answer to this question) do not have IT management staff trained in CRM practices. However, CRM training is much more common among the IT management staff of SHPOs (32%) than it is for IT management personnel of FPOs (13%) and THPOs (14%). This may reflect the use of parent agency support resources by many FPOs, as opposed to the more self-contained staffing practices of most SHPOs and THPOs. Again, fewer than half of THPO (n=14) respondents provided an answer to this question.

9.6. Briefly list factors (if any) other than funding that prevent your office from instituting and supporting a fully computerized historic-property data collection and management system:

Question 9.6 by respondent type



32% of FPOs responded, 51% of SHPOs responded and 24% of THPOs responded.

The most striking result of this question is that the majority of responding FPOs (75%) do not consider the development of a fully computerized historic property data collection and management system to be a priority. This contrasts with the low number of SHPOs (13%) and THPOs (11%) that consider this to be a low priority. The main reason cited by both SHPOs and THPOs was a lack of resources, either time or personnel. SHPOs also listed a large number of reasons, including regulatory or administrative concerns, data quality or security issues, and technology lock-in. One FPO also mentioned technology lock-in as an impediment. Only a small number of THPOs (n=9) and FPOs (n=8) responded to this question, making it somewhat difficult to interpret the results. However, it would seem that THPOs, if provided with adequate resources, would be enthusiastic about adopting a computerized data collection and management system. FPOs would be less interested, and SHPOs, though interested, would face a diverse array of impediments that would slow adoption of such a system.

NATIONAL HISTORIC PROPERTY INVENTORY INITIATIVE SURVEY SECTION 10: HISTORIC PROPERTY INVENTORY DATA ACCESSIBILITY AND SHARING

This section was directed towards two themes: the existence and operation of web-accessible historic property information, and the sharing of historic property information through electronic media. The majority of responses in this section came from SHPOs, with FPOs and THPOs providing a sample too small for statistical analysis.

Questions 10.1 through 10.11 involved web accessible historic property information. Of the 41 SHPOs that responded to the survey, 38 (93% of the total sample) responded to Questions 10.1 through 10.11. Of the 22 FPOs that responded to this survey, 16 (73%) completed Question 10.1, and only one responded that they maintained web-accessible historic property information. No THPOs report maintaining web-accessible historic property information. It would appear that very few FPOs or THPOs maintain historic property databases for public access, and that the development of such systems is in general a low priority for these respondent types.

The majority of responding SHPOs, on the other hand, do maintain some kind of web-based historic property inventory. These inventories varied in terms of their content with NRHP nomination information and some spatial data being the most commonly provided information. Responses to Question 10.5 and 10.6 indicated that SHPOs who already provided some scanned material wished to make more of this information available online. Overall, funding and staffing appeared to be the major impediments to the establishment and development of these systems by SHPOs. Very few of the SHPOs who maintain a database reported charging access fees.

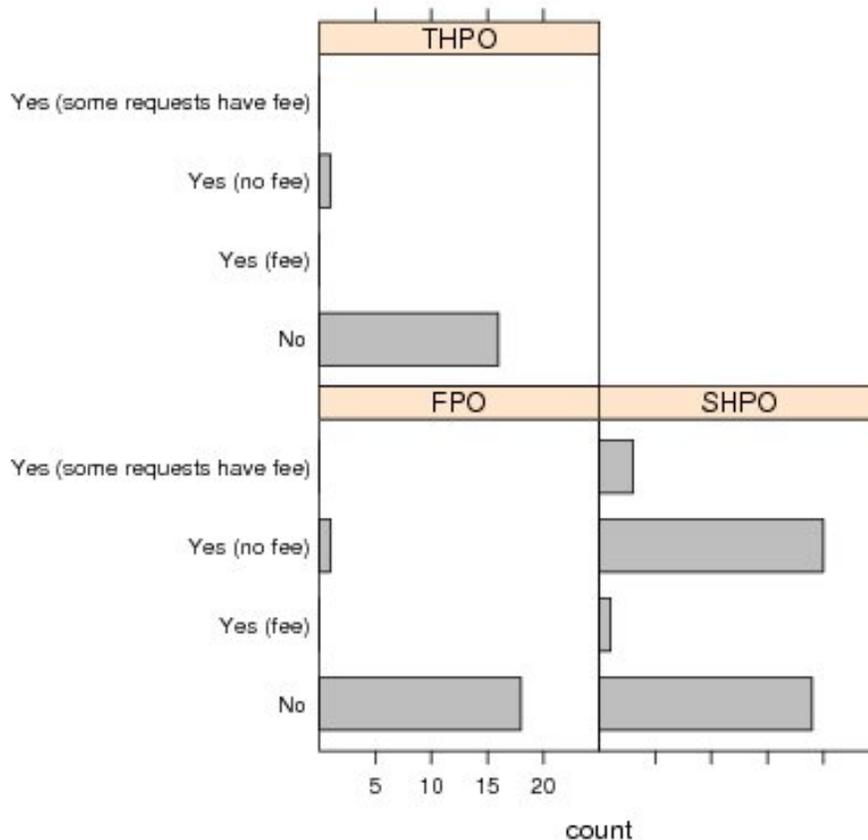
A second issue regarding the establishment of web-accessible historic property information is the protection of restricted information regarding historic properties and archaeological sites. While the majority of SHPOs used combinations of password-protected systems, or restricted access to servers, with availability to the material determined by SHPO staff members, others chose to make only non-sensitive material available online.

The overall trend visible in Questions 10.1 through 10.11 indicates a strong desire on the part of SHPOs to increase the amount of historic property information available through a protected website. For SHPOs who already maintain a website for historic property information, there appears to be a desire to increase both the amount of their overall collection that is made available, and the quantity of information for each site that is accessible. While each SHPO recognizes the need to protect sensitive information, limiting access to this information to professionals and researchers who have a demonstrated need for this information appears to be an established means of protection for many of the systems already in place. Only one FPO (the GSA) who responded to Question 10.1 reports maintaining web-accessible historic property information. The limited responses to this and other questions in this section may be an indication that establishing a public access website for this information is a low priority for most FPOs, who may rely on SHPOs for this service.

The second set of Questions, 10.13 through 10.17, addresses the sharing of historic property information with external entities. The results of the survey indicate that while not every SHPO or FPO maintains a public access website, almost all have the capacity for the transfer of electronic media to other entities, including GIS shapefiles, scanned PDFs, and database information. Most offices also have a need for regular transfer of this information, as other agencies within their jurisdiction collect, maintain, or possess historic property information. Many SHPOs maintain a centralized repository for historic property information, and most SHPOs receive funding from other entities to help maintain such repositories.

10.1. Does your office have a website(s) that makes your office’s historic-property inventory information directly accessible to the public? (If the answer to this question is “no,” please go directly to question 4 of this section.)

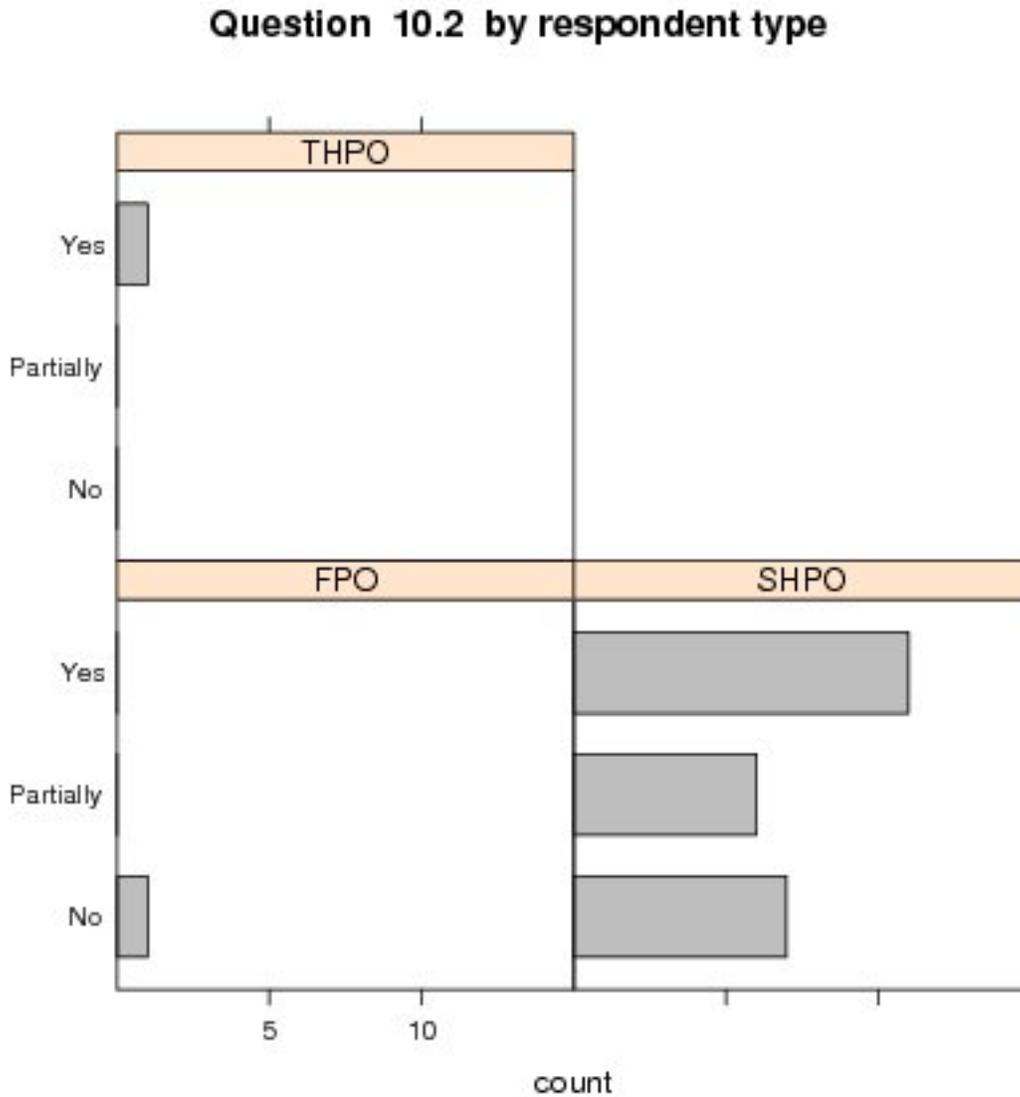
Question 10.1 by respondent type



76% of FPOs responded, 92% of SHPOs responded and 45% of THPOs responded.

Over half of SHPO respondents (56%) provide ‘public’ access to their databases. The majority of these offices do so without a fee (47%), though some of the offices indicated that the databases were password protected to limit access to sensitive cultural information. There may have been some confusion with this question regarding the use of the term ‘public.’ Some of the SHPO offices responded that although the information is accessible to the public, the databases are password-protected and access to some information is restricted as a protective measure. The overwhelming majority of FPO (94%) and THPO (94%) respondents do not maintain a publicly accessible website for their historic property inventories. The lack of publicly accessible databases in some of these cases may be the result of programmatic agreements between FPOs and SHPOs in these states establishing SHPOs as central repositories for statewide cultural resource data. Due to the limited number of affirmative responses to Question 10.1, FPO information for Section 10 will be presented but not included in statistical analysis.

10.2. If the answer to question 1 above is “yes,” is the website hosted by your office?

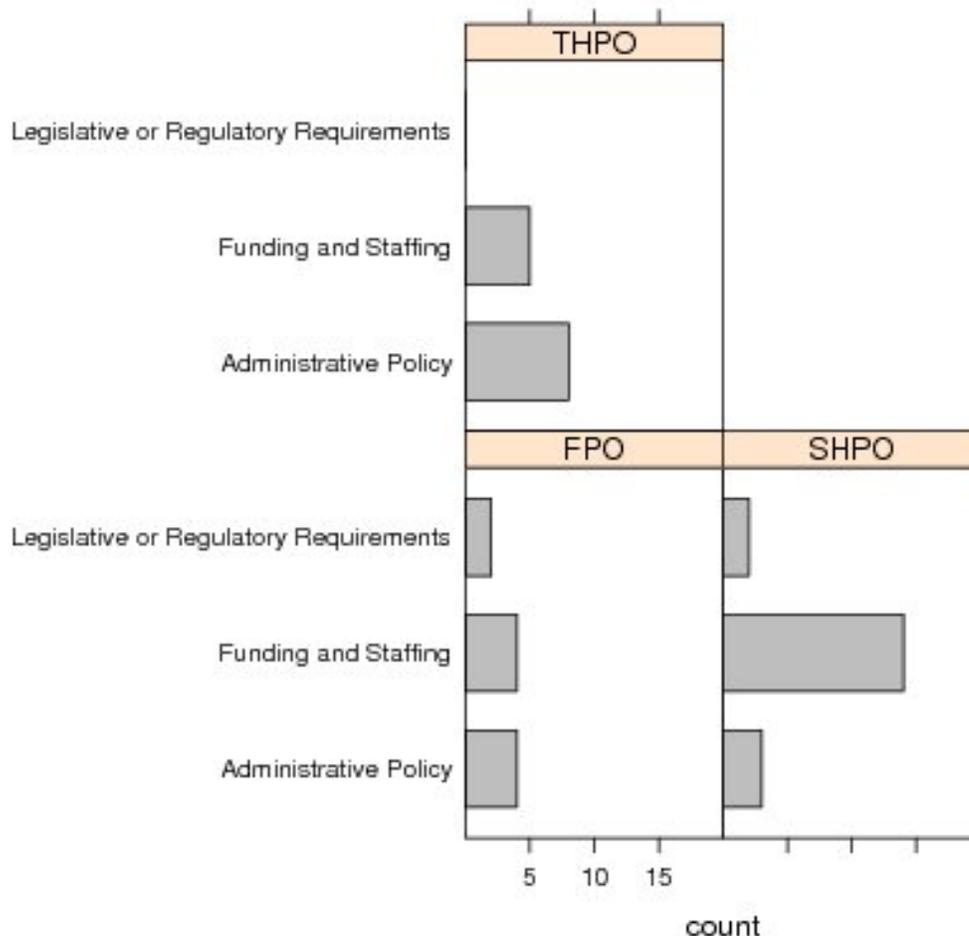


04% of FPOs responded, 51% of SHPOs responded and 03% of THPOs responded.

Of the 22 SHPOs that responded in the affirmative to Question 10.1, the majority (77%) either directly or partially host the website containing historic property inventory information. The SHPOs that do not host the website themselves indicated that other state agencies such as State Archives, State Libraries, or State Universities host and maintain these websites. Some of the respondents indicated that they share the hosting of their website with another state or federal agency. Responses to this question illustrate the difficulty that smaller SHPO offices may have in establishing web-accessible information. With the majority of established systems under the direct control of the SHPOs themselves there are increased demands on office funds and the need for qualified personnel to create and manage such a system.

10.4. If the answer to question 1 above is “no,” what has prevented your office from doing so? (Please check all that apply; then go directly to question 11 below in this section.)

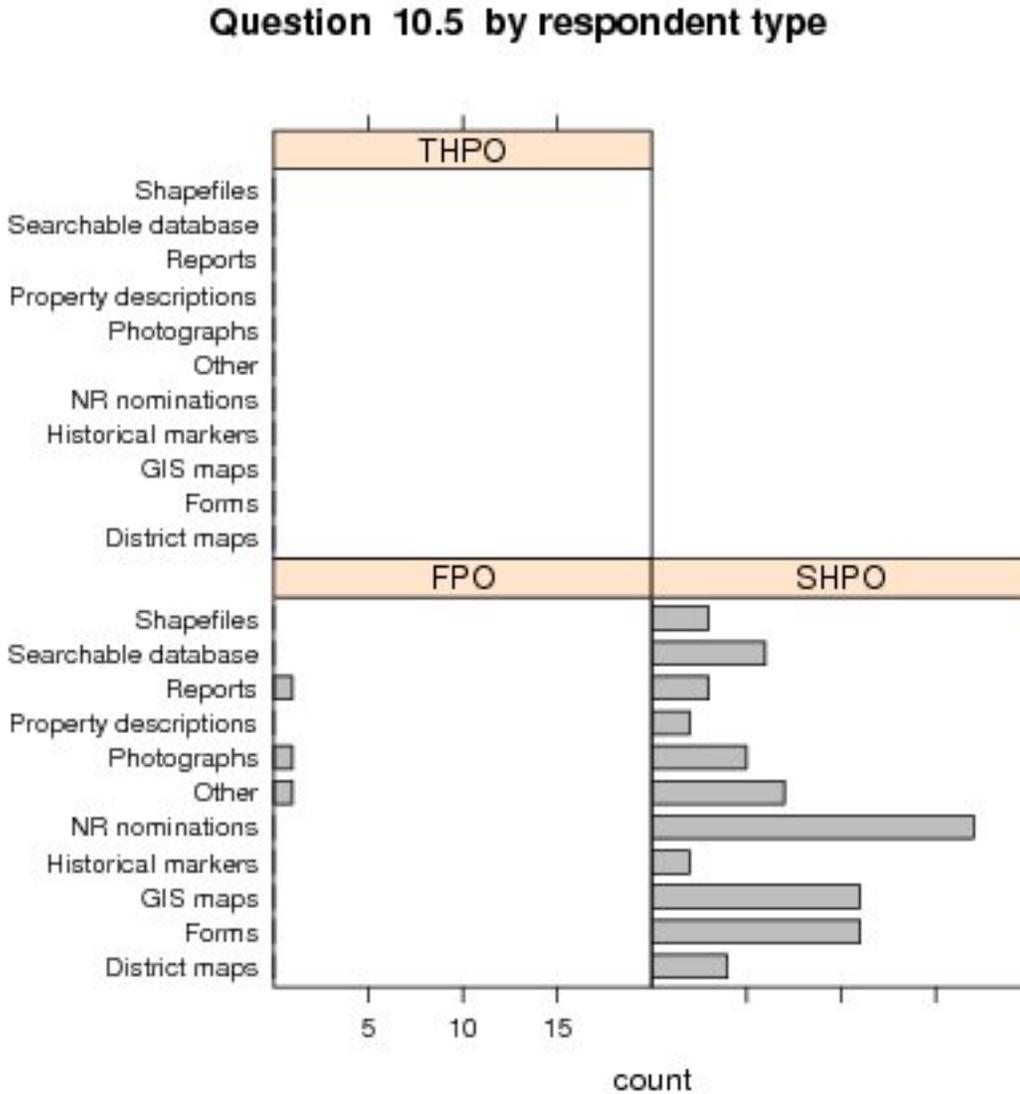
Question 10.4 by respondent type



04% of FPOs responded, 21% of SHPOs responded and 03% of THPOs responded.

Of the SHPOs that do not maintain web-based historic property information, the overwhelming reason given was a lack of funding or staffing. Ten SHPOs responded to Question 10.4, though fewer responded in the negative to Question 10.1. Of the 12 responses to Question 10.4, 74% indicated that a lack of funding or staffing prevented the creation of a public access website. Only 1 out of 22 of the FPOs responded to Question 10.4 with the reason for lacking web-accessible historic property information split between funding and staffing issues (40%), and administrative policy (40%). THPOs were evenly split between lack of funding and administrative policy.

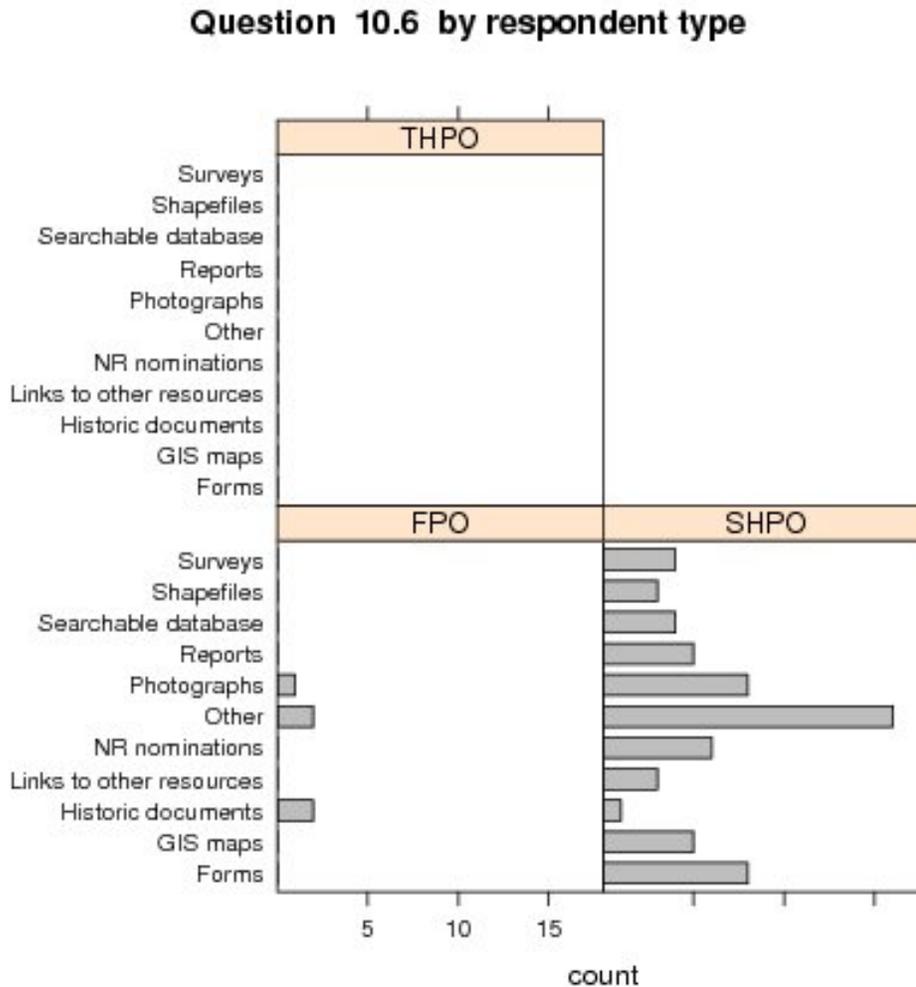
10.5. If your office hosts a publicly accessible historic-property inventory website, in what type of formats is data presented (e.g. inventory forms, data files, reports, National Register nominations, historic district maps, photographs, drawings, shapefiles, etc.)?



04% of FPOs responded, 55% of SHPOs responded and 0% of THPOs responded.

Among the 26 SHPOs who maintain websites for public access to historic property inventory information, a wide variety of data formats are available. Some of these agencies (65%) provide nomination information. Spatial information in the form of GIS maps, shapefiles, and district maps is also made available on more than half of the websites (69%).

10.6. If your office hosts a historic-property inventory website, what types of historic property data not currently available would your office like to make accessible over the internet?

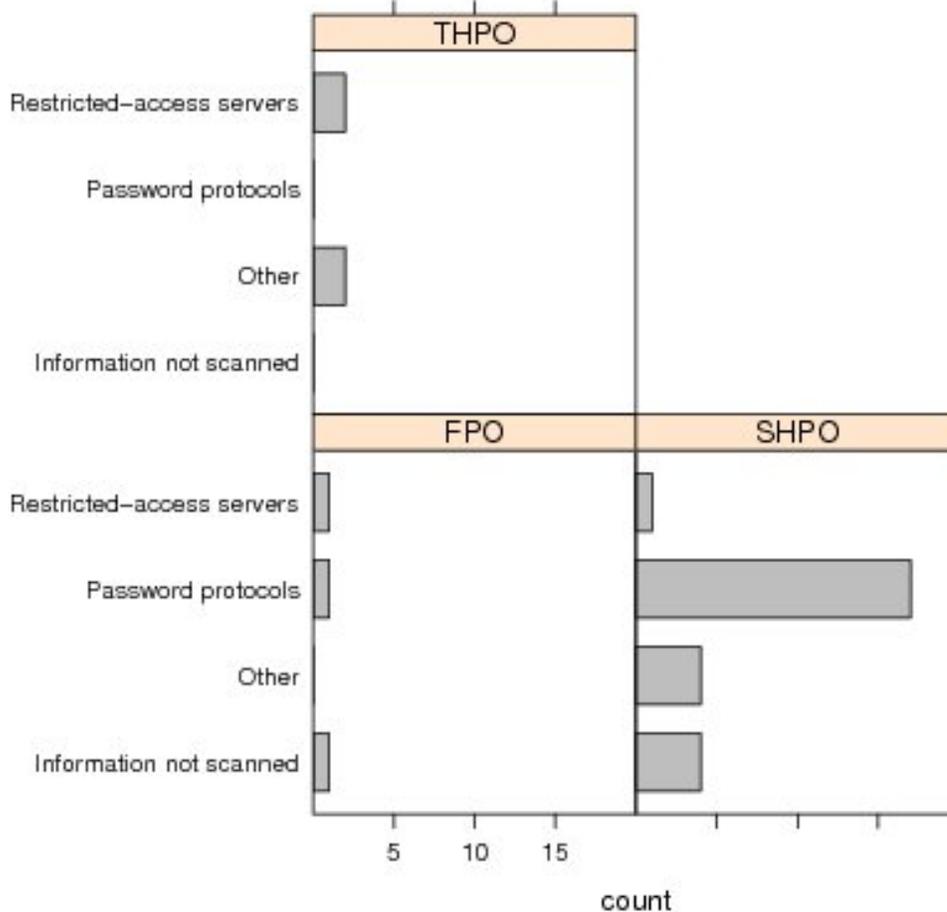


04% of FPOs responded, 47% of SHPOs responded and 0% of THPOs responded.

As a free-form response field, it is difficult to accurately quantify the responses to this question, leading to a great proportion of responses falling within the category of ‘other.’ Most respondents wish to make scanned information such as maps, inventory forms, and photographs available through web access. These are the same types of data that are more commonly offered now (see Question 10.5), and respondents who already provide some of this information expressed a desire to provide more of the same kind of information to the public. GIS shapefiles and other spatial information was also a common response among SHPOs who did not already provide this information. It might be useful in the follow-up interviews to standardize the responses to this question in order to ease the quantification of results.

10.7. What types of website systems and procedures are in place to ensure protection of restricted or limited-access data?

Question 10.7 by respondent type

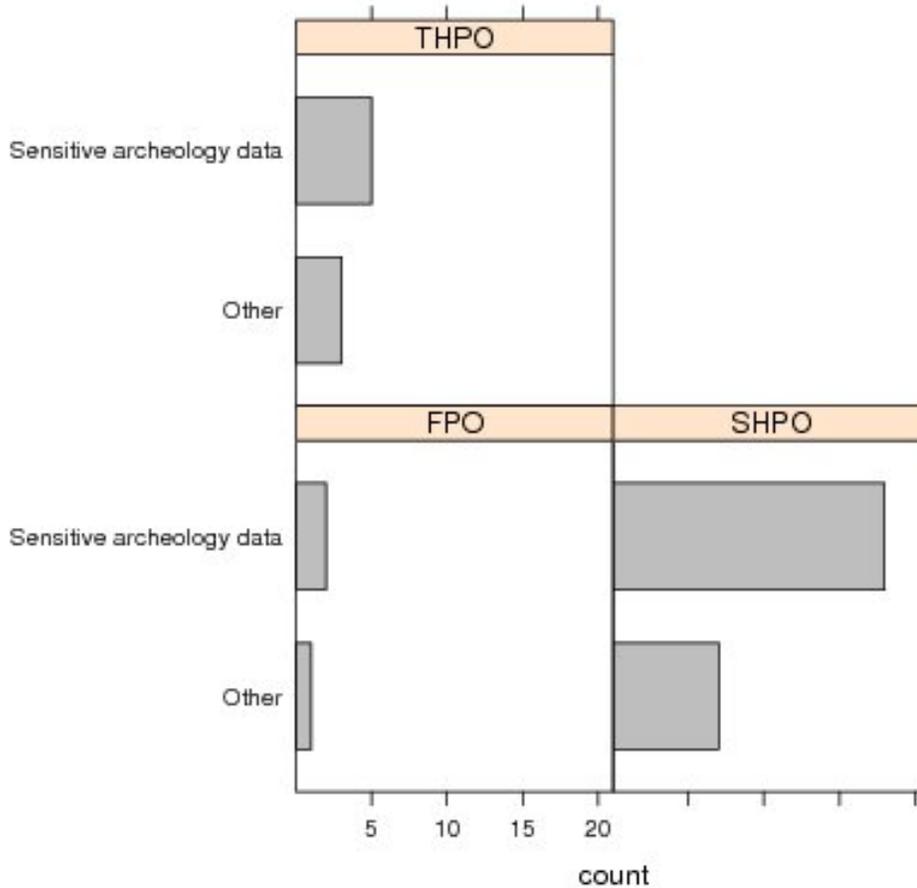


16% of FPOs responded, 58% of SHPOs responded and 11% of THPOs responded.

Of the 27 SHPOs who responded in the affirmative to Question 10.1, 63% use password protocols to limit access to restricted information, while the remaining 37% restricted access to servers, did not scan in protected information, or used an alternative means of protection. Many of the respondents using password protocols indicated that in addition, they limited access to sensitive data by not scanning them. The overall responses indicate that a clarification to this question may be warranted to separate the web-accessible databases that contain restricted or limited-access data from those that do not. Very few FPOs responded but those who did respond use a password-protected protocol. THPOs also responded poorly to this question but based on previous information in this section of questions the “Other” response may be directly associated with tribal council rules and regulations.

10.8. If the access is limited, why?

Question 10.8 by respondent type



16% of FPOs responded, 53% of SHPOs responded and 21% of THPOs responded

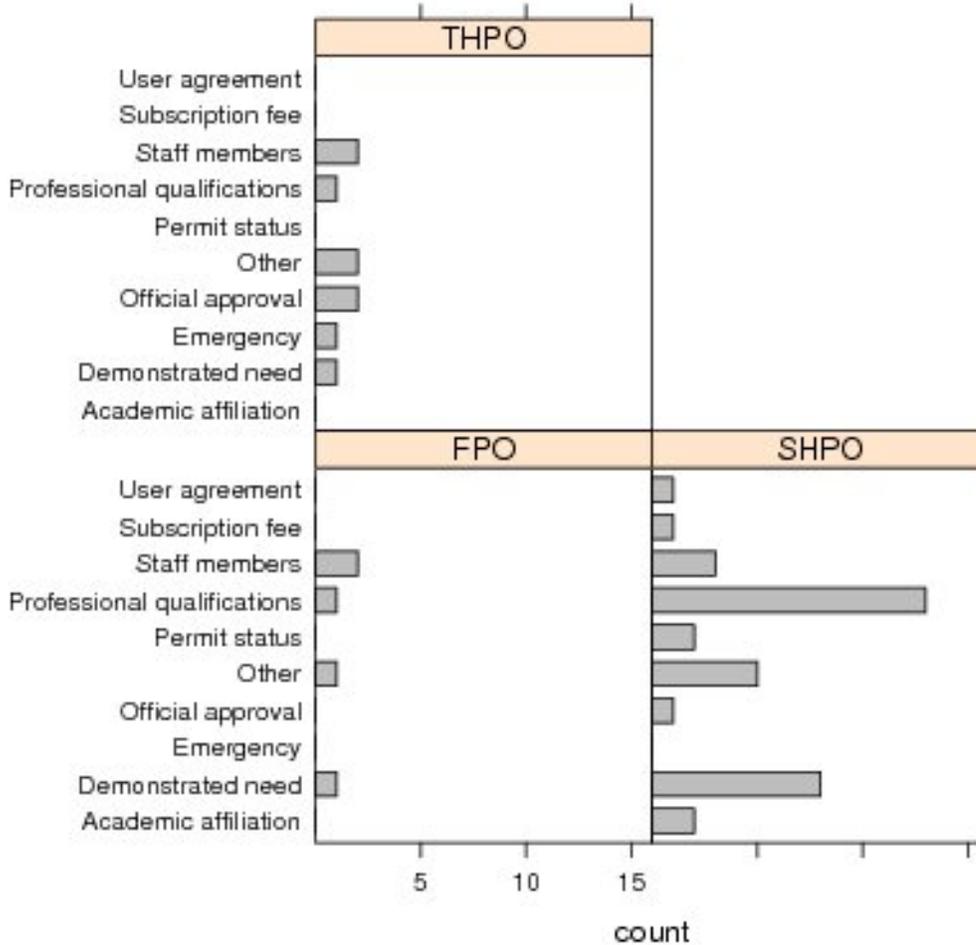
Section 304 of the National Historic Preservation Act allows federal agencies or other public officials to...

...withhold from public disclosure information about the location, character, or ownership of a historic property when disclosure may cause a significant invasion of privacy; risk harm to the historic property; or impede the use of a traditional religious site by practitioners. (36 CFR 800)

With few exceptions, respondents who maintain web-accessible historic property information limit access to sensitive archaeological information. Some respondents indicated certain historic property information such as building floor plans also being restricted. Some SHPOs also mentioned the importance of for-fee searches to recover costs. The majority of THPO respondents made reference to the sensitivity of TCP information as a major factor in limiting access.

10.9. What criteria are used to decide who will have access?

Question 10.9 by respondent type

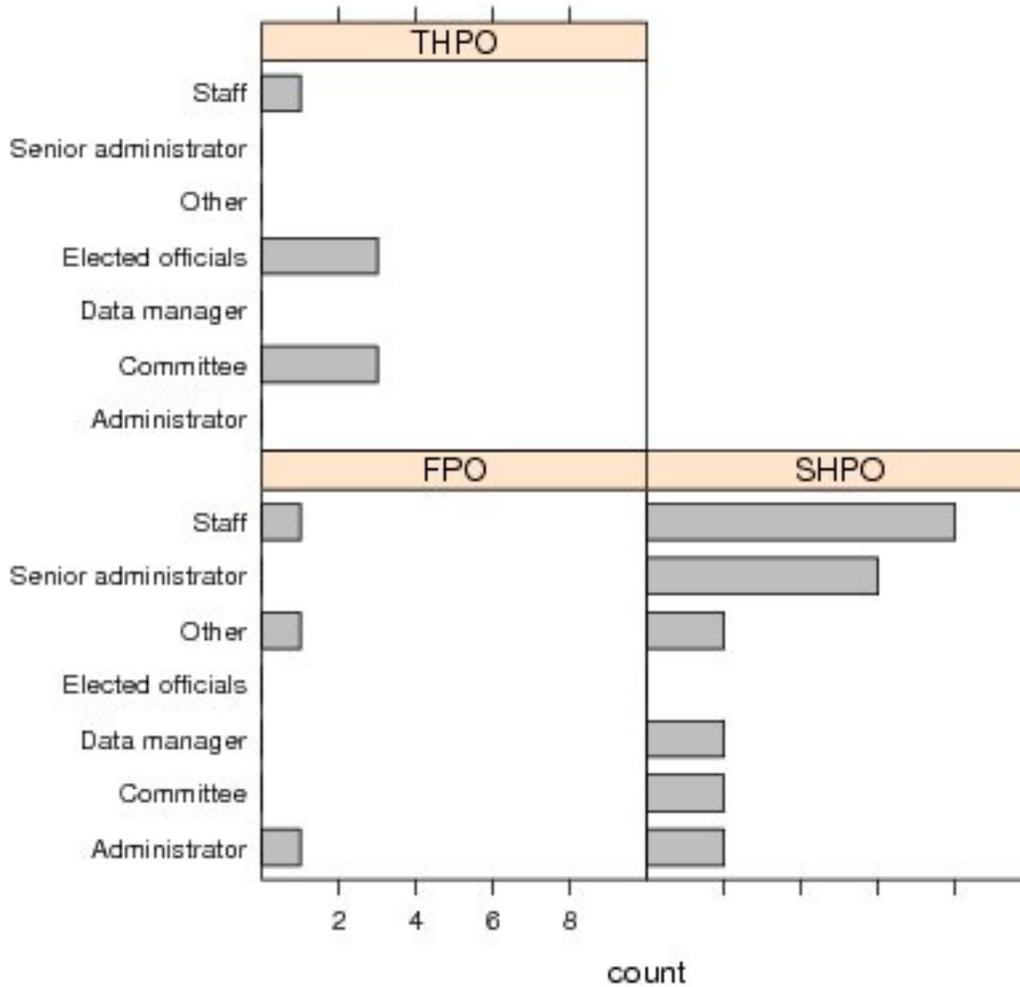


12% of FPOs responded, 45% of SHPOs responded and 13% of THPOs responded.

Of the SHPOs who maintain web-accessible historic property inventory information, 62% indicated that access to sensitive material was based on the professional qualifications of the applicants. Other qualifications were considered when allowing access including academic affiliation, permit status, or a demonstrated need to access the data. SHPOs were allowed multiple responses to this field, and indicated that a variety of factors were considered when determining access to sensitive materials, but that for the most part the information was restricted to qualified professionals, or those demonstrating a specific need to access protected material. THPOs respondents reported more limited access criteria, with access being granted to non-staff only with “official approval” and in conditions of “demonstrated need” and “emergency.”

10.10. Who makes the decision to limit access?

Question 10.10 by respondent type

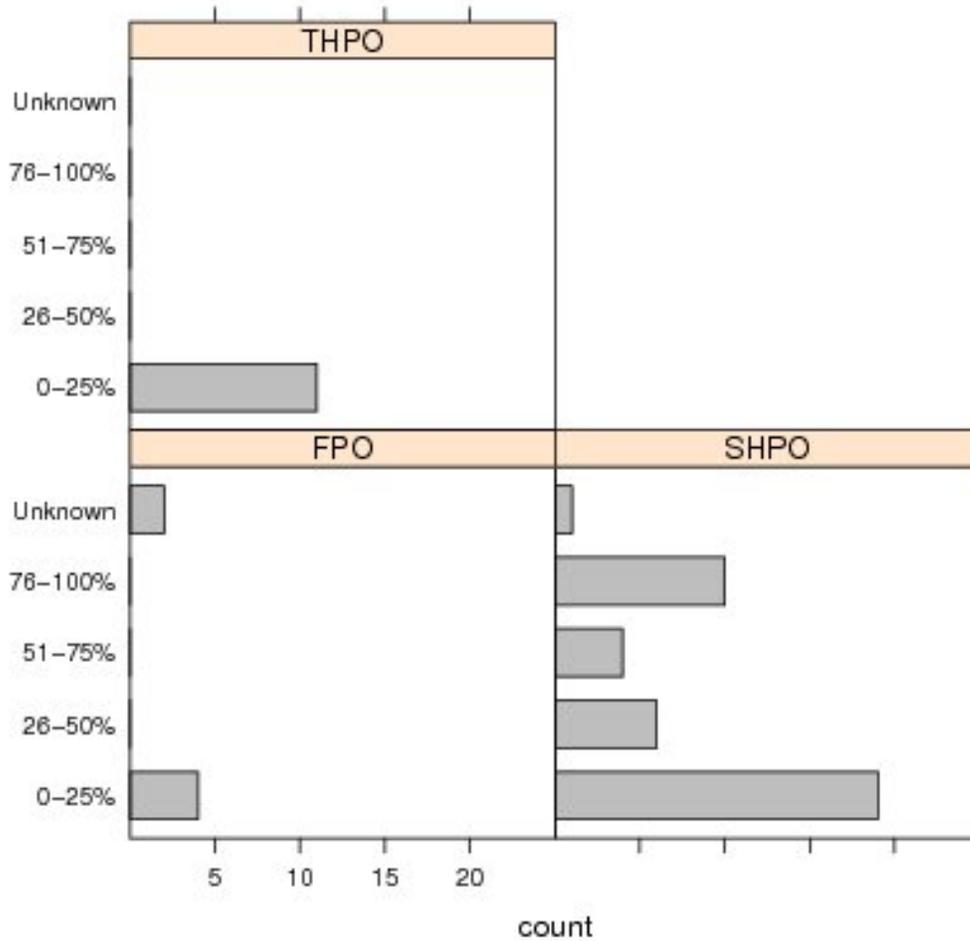


12% of FPOs responded, 47% of SHPOs responded and 19% of THPOs responded.

A great deal of variation in the responses to this question indicates that while access is for the most part granted by SHPOs based on the qualifications of the applicant, the decision to allow access is controlled by different staff members in many SHPOs. Of the 19 SHPO respondents to Question 10.10, 32% indicated that the decision was made by a senior administrator, while another 42% indicated that other staff members could allow access to restricted data. This may be related to the size of SHPO offices, where smaller offices may lack Data Managers, or Senior Administrators. In the case of most THPO respondents, decisions concerning data access were made by “elected officials.” In almost all cases this referred to the tribal council.

10.11. What is the estimated total percentage of your office’s historic-property data currently accessible via a website?

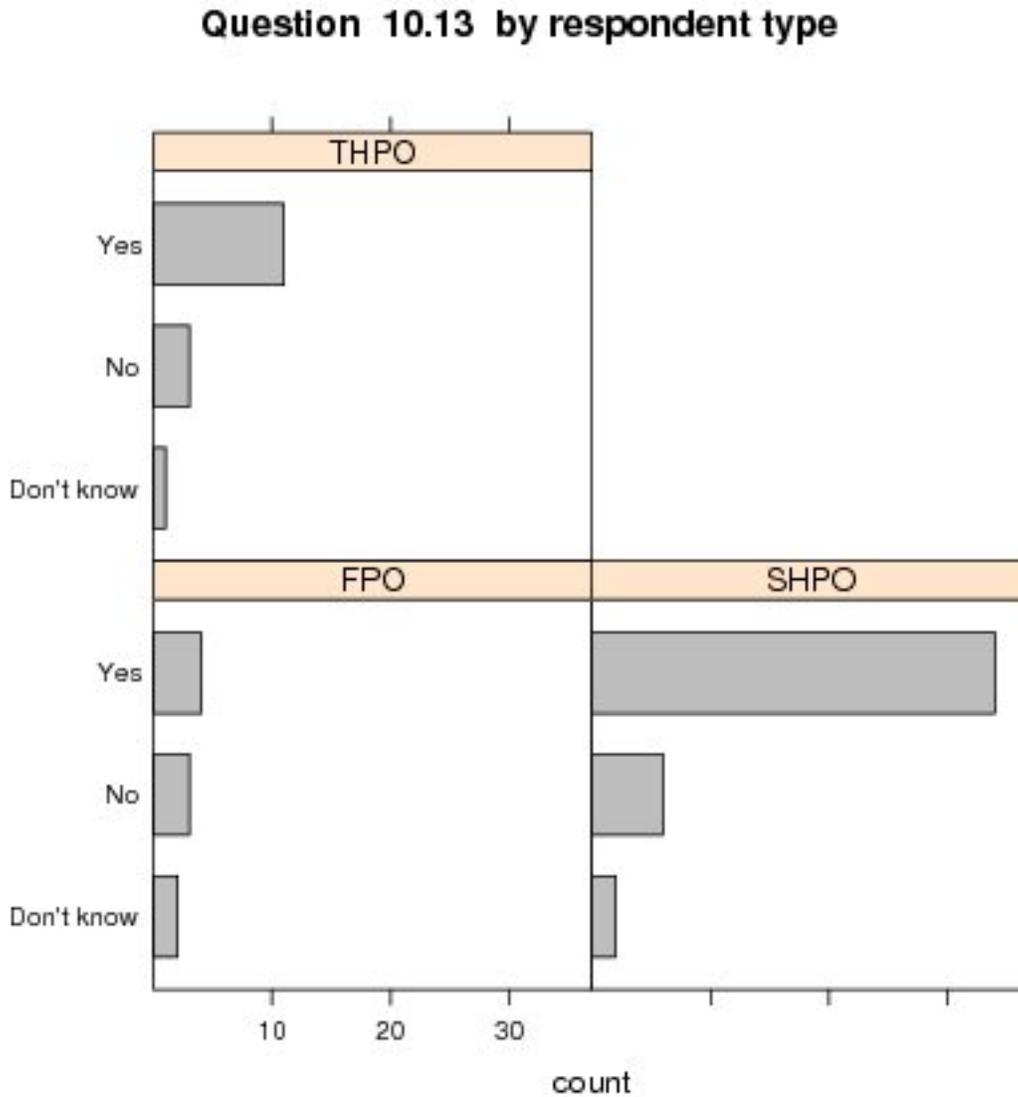
Question 10.11 by respondent type



24% of FPOs responded, 85% of SHPOs responded and 29% of THPOs responded.

There were 35 SHPO respondents to Question 10.11, implying that 13 SHPOs that do not maintain web-accessible historic property data included themselves in the 0-25% category. Removing 13 of the 35 SHPOs who responded in the 0-25% category leaves us with the 22 SHPOs who maintain web-accessible information, a large percentage (41%) of which have 76-100% of their historic property data available online. This question did not specify whether this percentage was intended to mean the percentage of the total historic properties that were accessible online, or the percentage of information on each individual property that was accessible. Based on respondent comments, it appears there may have been some confusion concerning this distinction. Only half of the THPOs responded to this question and it is clear that the tribes do not offer public web access to their historic property data.

10.13. Is your office capable of sharing with other entities by electronic means?

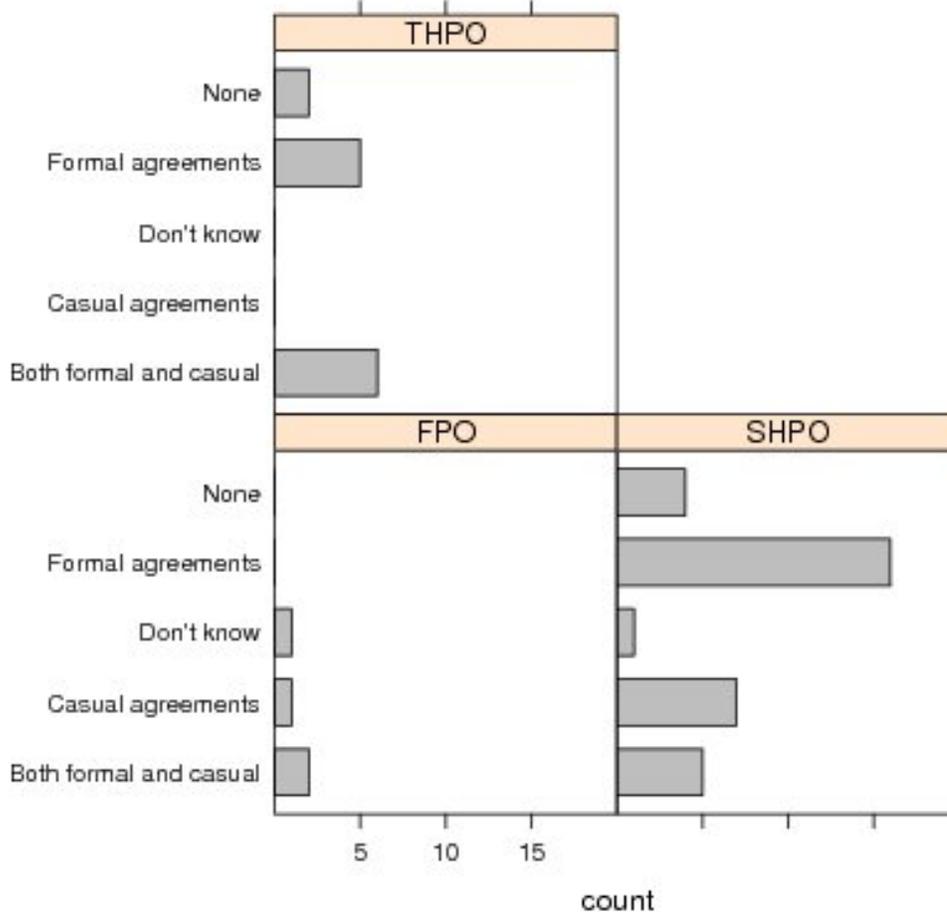


46% of FPOs responded, 89% of SHPOs responded and 40% of THPOs responded.

Out of 69 respondents to Question 10.13, the overwhelming majority (71%) indicated that they had the capacity for sharing electronic data. Only six SHPOs (14%) indicated that they were not capable of electronic file sharing with other entities. A total of 29 SHPOs indicated that they were capable of sending electronic information to other entities. This answer is not surprising considering the number of agencies involved in the collection, review, and possession of historic property information, and the inter-reliance of these entities on one another for the protection of these resources. In fact, it is somewhat surprising that any respondents reported that they lacked this capability. There may have been some confusion about what exactly was meant by “sharing.”

10.14. If the answer to question 13 above is “yes,” what administrative procedures, if any, govern such transfers?

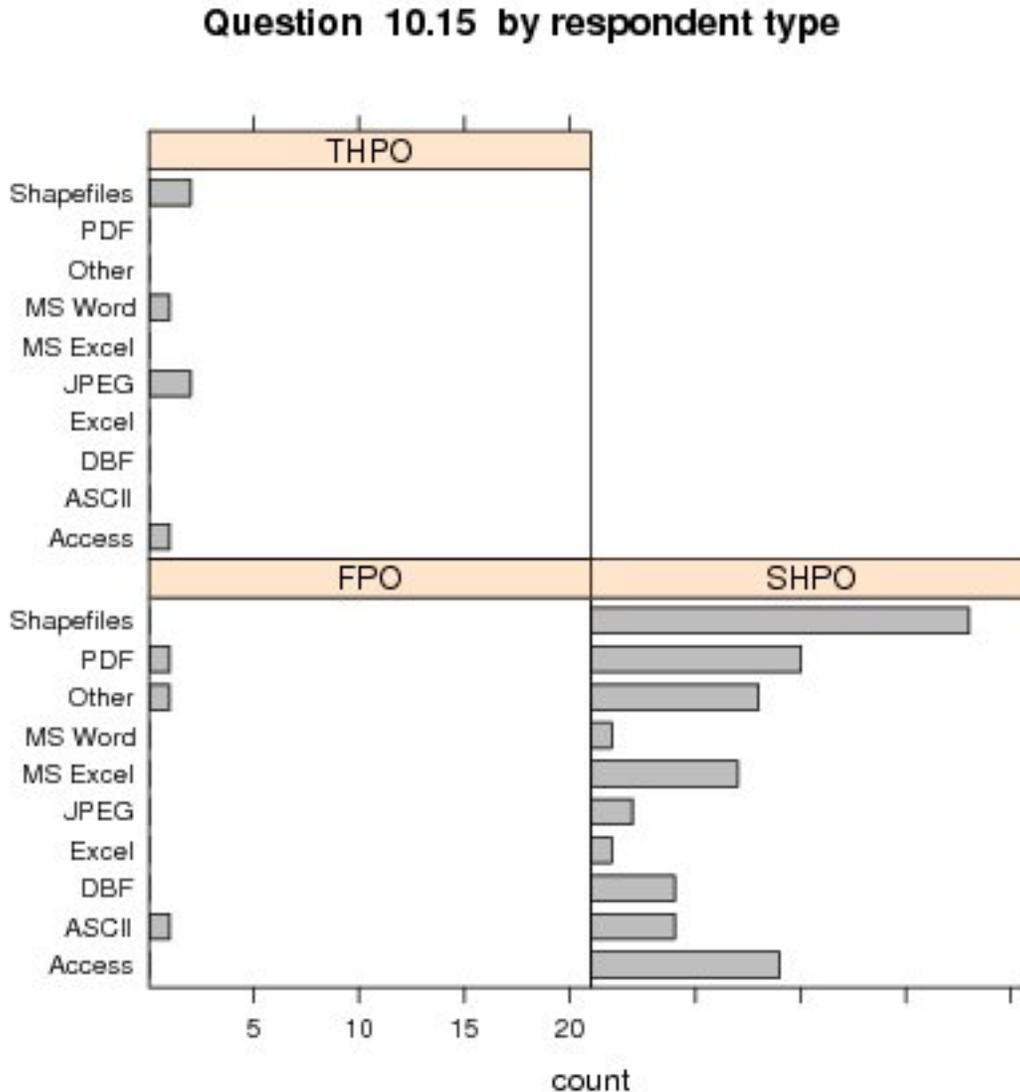
Question 10.14 by respondent type



08% of FPOs responded, 68% of SHPOs responded and 24% of THPOs responded.

Of the 28 SHPOs who answered in the affirmative to Question 10.14, 84% indicated that some form of agreement, whether formal or informal, governed the transfer of information between entities. Formal agreements for the transfer of information were the most common at 65%, with casual agreements making up 38% of the sample. 16% of respondents indicated that they had both formal and casual agreements based on the types of information being transferred. Many agencies establish independent programmatic agreements with SHPOs regarding the handling of historic property information, and there is likely to be a great deal of diversity in these arrangements, which is not accurately represented in this survey question. Essentially all THPOs report requiring formal agreements for data sharing. The one exception noted that a protocol was not yet in place, but would be soon.

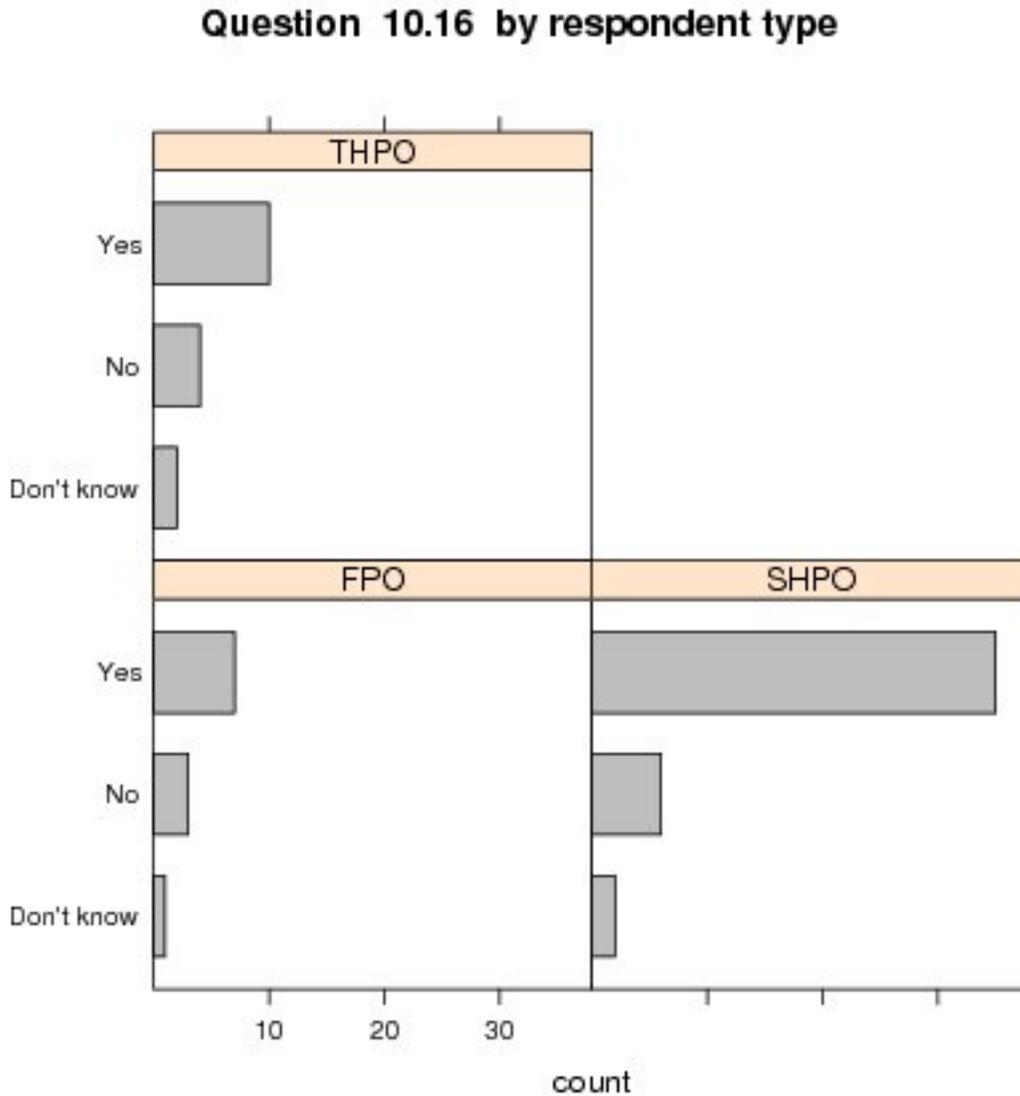
10.15. If the answer to question 13 is “yes,” what is the electronic export/import format(s) used by your office?



08% of FPOs responded, 60% of SHPOs responded and 08% of THPOs responded.

The respondents indicated that a variety of formats were transferred between entities. 60% indicated that GIS shapefiles were exchanged between offices, with PDFs (33%) and MS Access information (30%) being the next most frequent responses; 63% of the responses included some kind of database information (Access, DBF, or MS Excel). The majority of responses indicated that a variety of formats were commonly exchanged depending on the source of the data with no specific preference. The limited number of MS Word documents is likely due to a desire to limit alterations to transferred historic property information. There was only one THPO and one FPO respondent to this question.

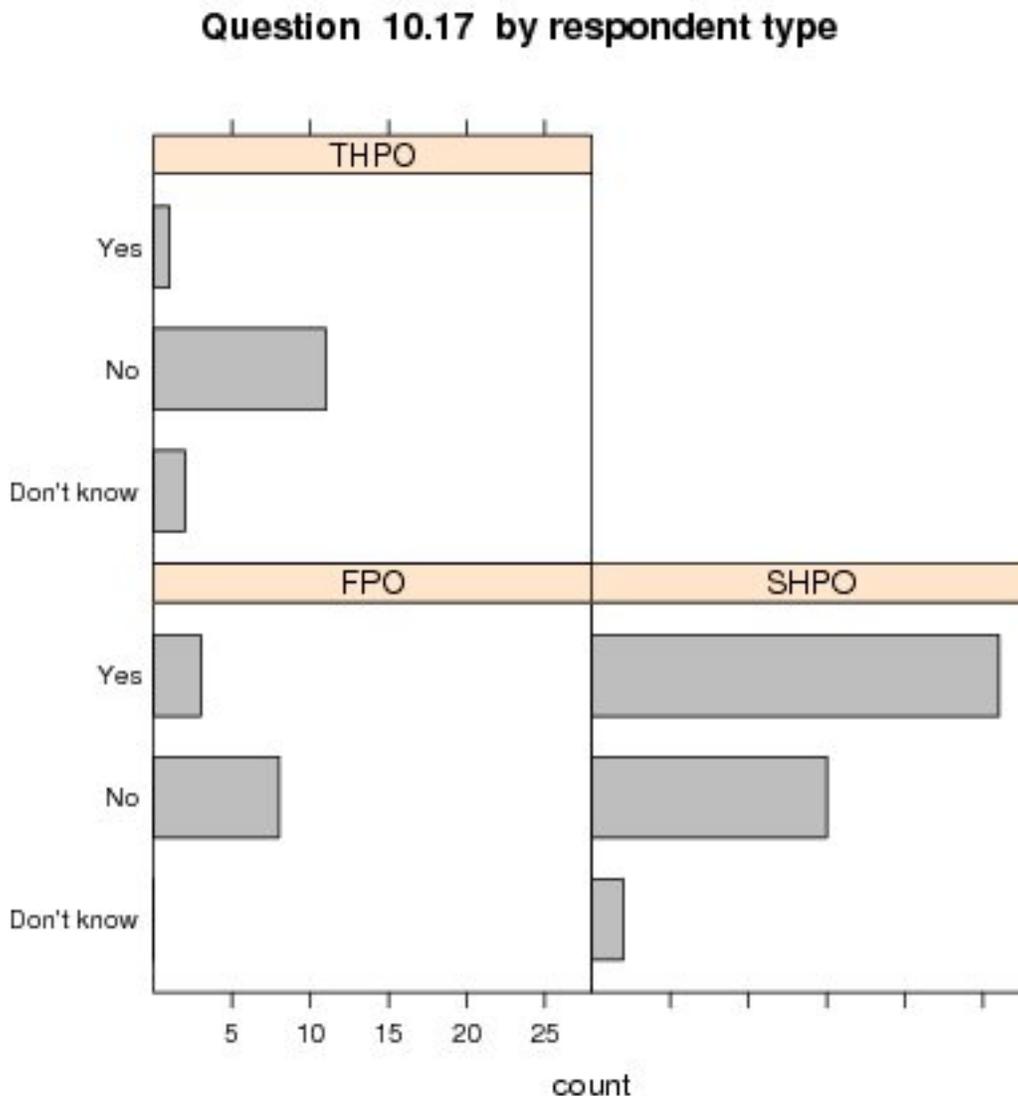
10.16. Do other entities or agencies regularly collect, maintain, or possess information (electronic or paper-based) regarding historic properties located in your office’s jurisdiction?



44% of FPOs responded, 92% of SHPOs responded and 42% of THPOs responded.

The majority of respondents of all types report that other entities regularly collect or possess historic property data from their jurisdictions.

10.17. Do other agencies regularly contribute funding and/or collection of data to support centralized and shared historic-property inventory data?



44% of FPOs responded, 92% of SHPOs responded and 37% of THPOs responded.

The majority of SHPO respondents report that they receive funding or data from other entities to support a centralized and shared historic property inventory. By contrast, no THPOs report receiving support of this kind. Positive responses from FPOs primarily concerned agreements with other federal agencies, though the BLM pointed out the importance of SHPO staff time and computer support.

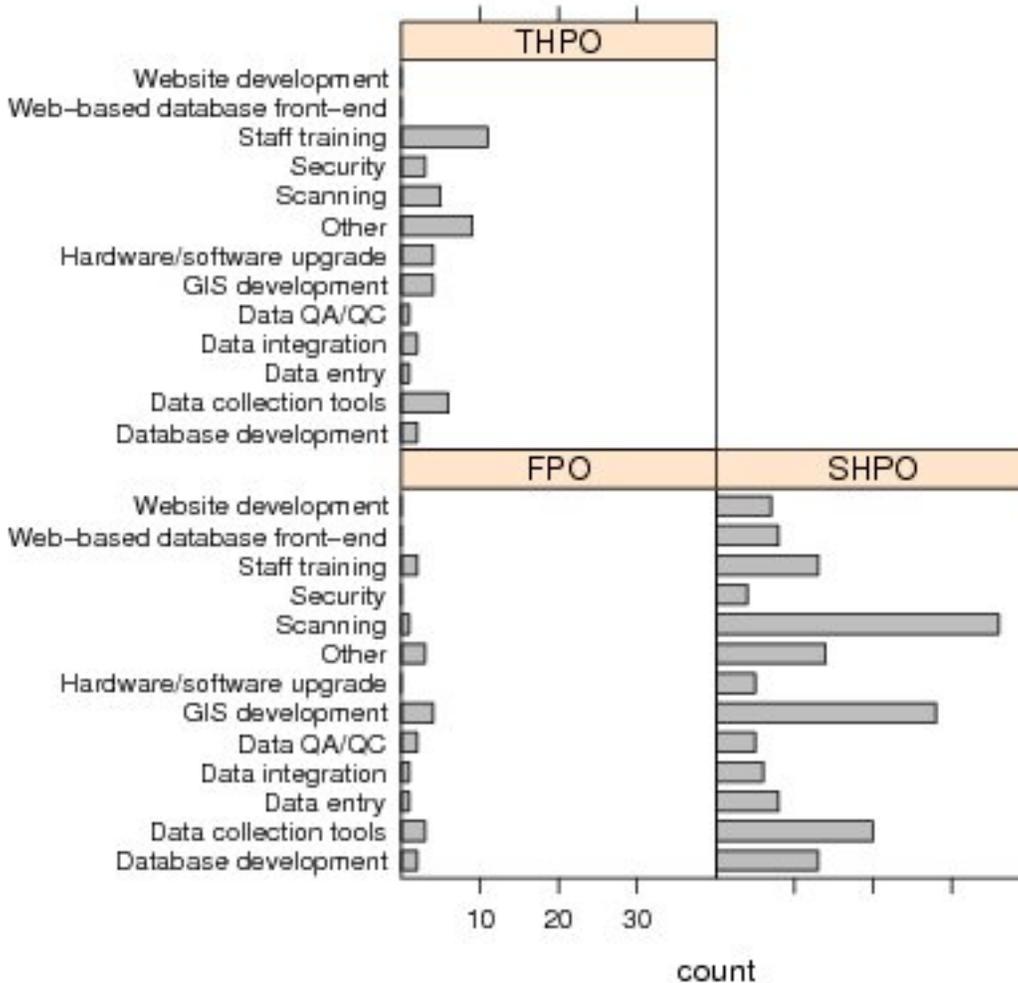
**NATIONAL HISTORIC PROPERTY INVENTORY INITIATIVE SURVEY
SECTION 11: FUTURE HISTORIC PROPERTY INVENTORY SYSTEMS
DEVELOPMENT**

The section is intended to elicit information about the planning priorities of respondents with respect to historic property inventory development. Responses indicate that there is a great deal of diversity regarding the priorities and planning direction of respondents. While there appears to be some agreement among SHPOs on the importance of making scanned documentation and spatial data available between offices, the resources of each office appear to be focused in a variety of areas, likely each addressing the specific deficiencies felt by each office.

Few FPOs responded to questions in Section 11, but those that did seemed to express a greater desire to improve the internal management of information rather than the accessibility of information to other entities or outside users. Overall, there appeared to be few resources allocated for the development of web-accessible information, or internal database management, with the majority of FPOs focused on improving the quality and quantity of processed information. This trend may be indicative of strained budgets and limited staffing for those areas as indicated in Section 10.

11.1. What are your office’s top five priorities with respect to improving historic-property inventory collection and management technical capabilities over the next five years (e.g. remote data entry, GIS server technology, imaging processes, security, staff training, scanning survey forms or other legacy data, etc.)?

Question 11.1 by respondent type



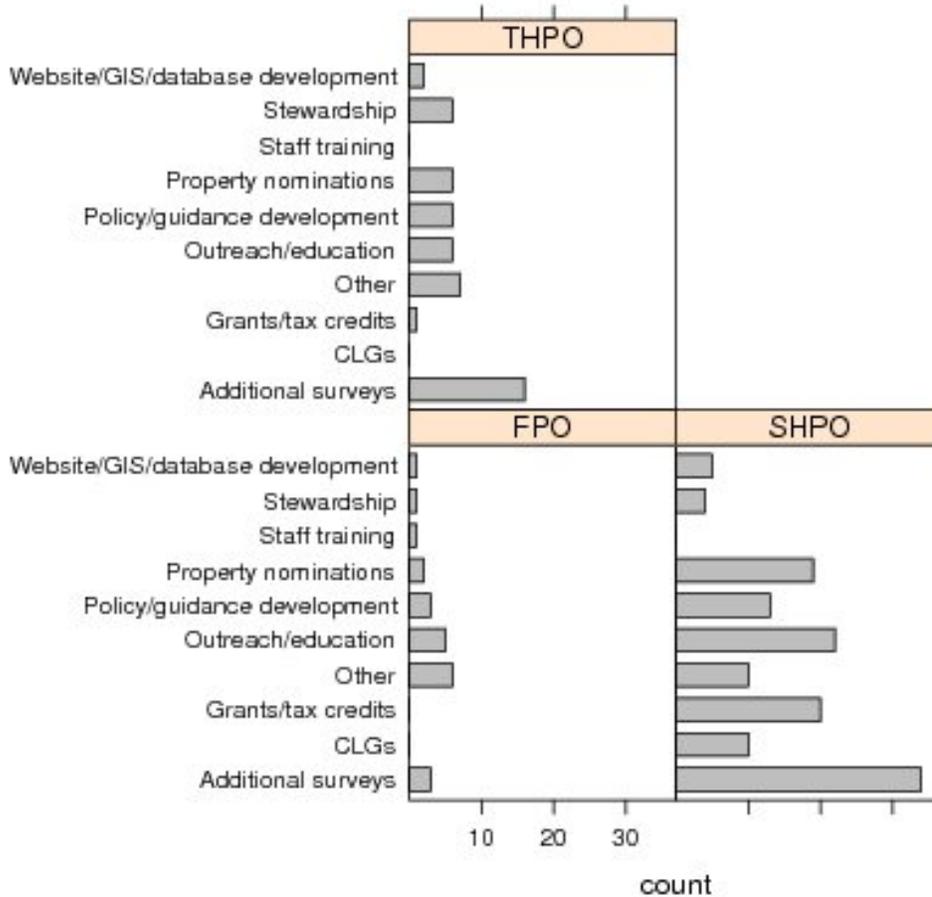
28% of FPOs responded, 87% of SHPOs responded and 37% of THPOs responded.

Of the 41 SHPOs who responded to Question 11.1, most (88%) cited improvements or increases in scanning within the top five desired improvements with regard to historic property and collection management. The second most common response (68%) placed GIS development in the top five. Other responses to this question varied, with website development considered a priority by only a small number (17%) of SHPO respondents. Also cited as priorities were data collection tools (49%), database development (32%), and staff

training (32%). The overall trend indicated by these responses is that spatial information and scanned historic property information, already provided by many SHPOs (see Section 10), are areas that most SHPOs see as crucial for the management and dissemination of historic property information and as ongoing priorities. Only seven FPOs responded to Question 11.1, with the few responses scattered between various improvements to data management. Fourteen THPOs responded to this question, and staff training was the most frequently cited priority (79%). Their priorities were otherwise similar to those of SHPO respondents, and included scanning (36%), GIS development (29%), data integration (14%), and data collection tools (43%).

11.2. What are your office’s top five preservation work-program priorities over the next five years (e.g. more archaeological surveys, more architectural surveys, more National Register nominations, increasing state/tribal register listings, more CLGs, more restoration grant and/or historic tax credit programs, programs, etc.)?

Question 11.2 by respondent type

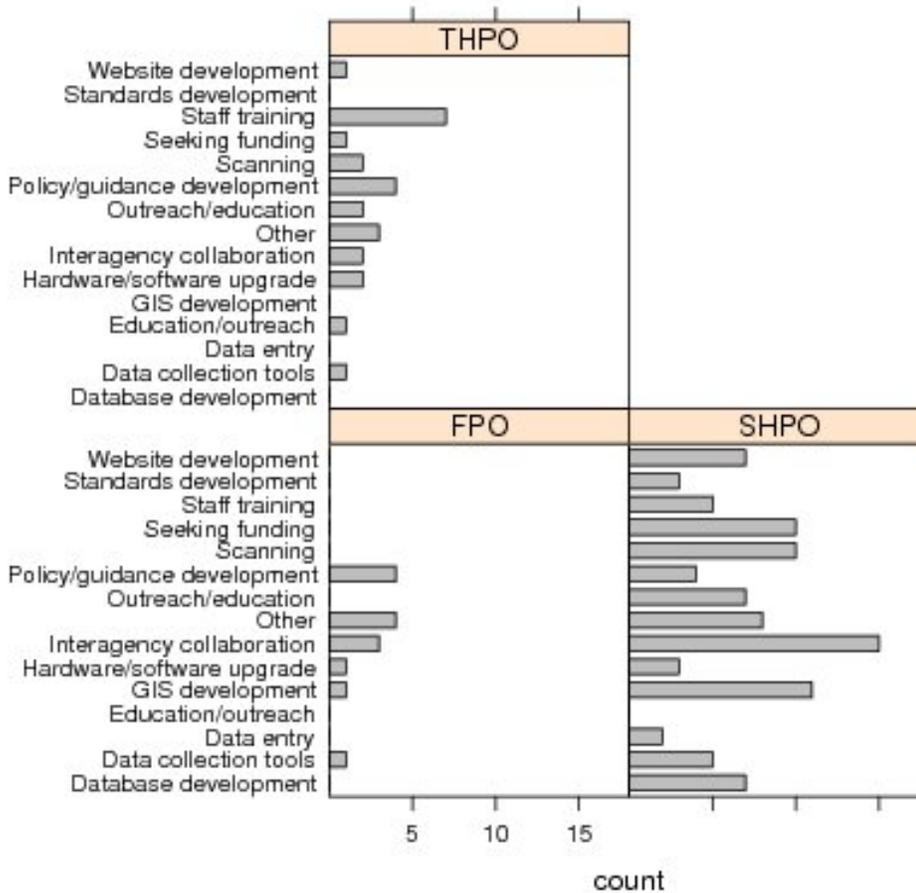


32% of FPOs responded, 74% of SHPOs responded and 37% of THPOs responded.

Of the 35 SHPOs who responded to Question 11.2, 97% placed additional surveys, either architectural or archaeological, within the top five priorities over the next five years. Other common responses included property nominations (54%), outreach or educational programs (63%), and grants or tax credits (57%). Similar to the responses to Question 11.1, website development appears to be a low priority for responding SHPOs. THPOs, like SHPOs, expressed a strong commitment to additional surveys, with an additional strong interest in policy/guidance development, and with a similarly low priority accorded to website development. The limited number of FPOs who responded to Question 11.2 cited policy/guidance development and outreach programs as high priorities.

11.3. What measures are your office proactively engaged in that promote the growth and development of electronic historic-property inventory collection and management systems?

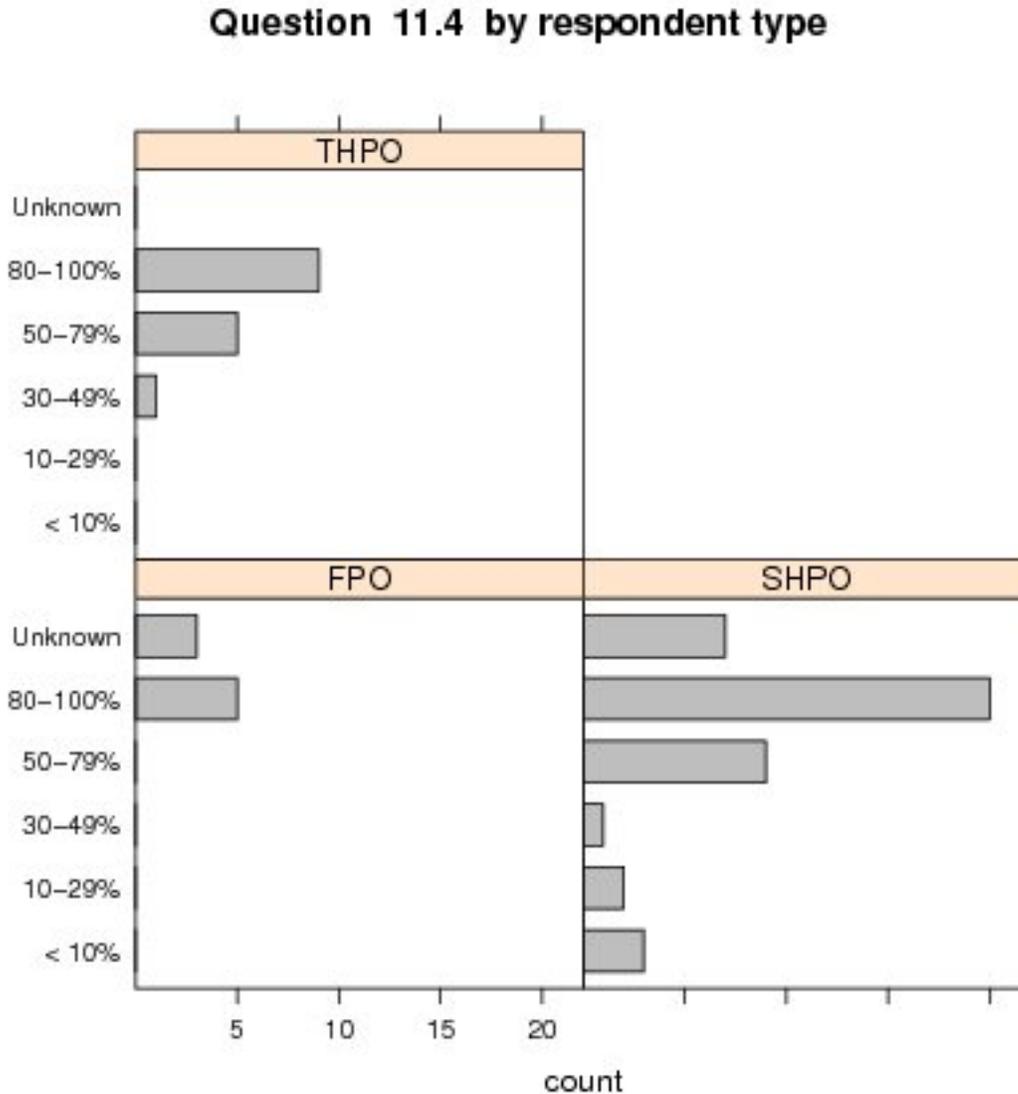
Question 11.3 by respondent type



24% of FPOs responded, 72% of SHPOs responded and 26% of THPOs responded.

Responses from the 34 SHPOs who answered Question 11.3 varied, with no single response being cited by a majority of the respondents. Interagency collaboration (44%), scanning (29%), and GIS development (32%) were the most common responses to Question 11.3, but no single answer dominated. This may be an indication that there is no single deficiency limiting the development and improvement of historic property information collection and management systems, but that development of these systems may require assistance in a variety of areas. Only 6 FPOs responded to Question 11.3, with responses ranging from GIS development, increased use and guidelines for electronic media, and policy issues regarding property management. Although only 10 THPOs responded to this question, they cited staff training (70%) and policy/guidance development (40%) as activities in which they were engaged.

11.4. Approximately what percentage of unsurveyed areas in your office’s jurisdiction can be classified as rural (i.e. per-square-mile population <500)?



32% of FPOs responded, 89% of SHPOs responded and 40% of THPOs responded.

Most of the SHPO, THPO, and FPO respondents indicated that the majority of the unsurveyed area within their jurisdiction areas is rural. Only eight FPOs responded to this question. The three that gave a concrete answer (i.e., not “unknown”) were, unsurprisingly, major land management agencies including the BLM and the U.S. Forest Service. This group cannot be considered representative of FPOs as a whole.

SUMMARY OF FINDINGS

The following conclusion is based on statistics gathered from answers directly associated with the NHPII survey. SWCA will base follow-up questions and future visits to SHPOs, FPOs, and THPOs based on these conclusions and recommendations.

Section 4 was designed to collect information on the respondent organization, as well as on the person completing the survey. A number of questions in this section were respondent-specific. Aggregate analysis of the responses to these questions would be meaningless, and they are not included in this analysis. These excluded questions are: 4.1, 4.3, 4.5, 4.7, and 4.8.

Overall THPOs were under represented in the NHPII survey, with more SHPO responses and FPOs second in answering the survey. A review of individual responses pointed to the fact that the person filling out the survey was the most knowledgeable unless the agency had two separate databases that contained architectural properties and archaeological sites.

Section 5--All SHPO and THPO respondents reported that their office maintains an electronic historic properties inventory system. However, fewer than half of the FPO respondents responded positively to this question. This means that only nine FPOs responded to the majority of the survey. FPOs, therefore, are the most poorly represented group for the purposes of most of this analysis.

SHPOs report having very broad-based historic property inventories including a wide range of property types. THPOs tend to have more focused inventories with an emphasis on archaeological sites and TCPs, while FPOs tend to be more focused on historic architectural resources. Understandably, SHPOs are more likely to use multiple forms for different property types while THPOs and especially FPOs are more likely to use a single form.

SHPOs and THPOs generally report that only a small percentage of historic and archaeological resources within their jurisdiction have been inventoried. FPOs display a bimodal distribution, with one group reporting low inventory rates, comparable to the SHPOs and THPOs, and the other reporting very high inventory rates. This may reflect a distinction between FPO offices with large and heterogeneous versus small and homogeneous jurisdictions.

Most SHPO historic property inventories are dominated by historic buildings. THPO inventories, on the other hand, tend to be dominated by archaeological sites, TCPs, and individual objects. FPOs seem to have relatively diverse inventories, with few being dominated by single property type. Nevertheless, a general emphasis on historic architectural resources is evident.

Section 6-- Overall, each of the respondent types (SHPOs, THPOs, and FPOs) are using digital collection methods, such as GPS and field laptops, to collect geographic and non-geographic information in the field. A diversity of information, including surveys, reviews, reports, photographs, historical documents, and forms are all being maintained in the inventories. A range of digital formats for keeping graphical data are also being used, such as JPEG, PDF, or TIFFs. Some SHPOs and THPOs are even offering their scanned historic

property inventory forms in a searchable format. A majority of the respondents also had access to some level of GIS support, although the proficiency varied.

SHPOs and THPOs tended to keep their databases separated by purpose, including archeological data. Maintenance of the archeological data within the inventories was done directly by SHPOs and THPOs, but not by FPOs. When data was not maintained in-house, state agencies/organizations dominated in providing access to this information for all three respondent types. Archeological information was accessible to internal staff for SHPOs and THPOs, but not for FPOs. This may be due to the diversity of a FPO agency/department and the need to keep data confidential outside of the direct users. SHPOs and THPOs however varied greatly in providing access to their archeological information to other governmental entities. SHPOs typically provided access to their inventory where THPOs and FPOs did not. The policies for data sharing can provide an indication of different mandates and diversity of users within a state. All respondent types collaborated with other agencies on data recording, management, and dissemination of property inventories. However, only SHPOs and FPOs favored collaboration on data management policies.

No database management system dominated among the respondent types. MS Office Access, Oracle, and MS SQL Server were among the top systems used. FPO databases tended to be enterprise level systems, where THPOs used more desktop database systems (MS Office Access, MS Office Excel.) SHPOs were divided among desktop (MS Office Access) and enterprise systems (Oracle, MySQL, MS SQL Server, etc.).

Section 7-- Few respondents of any type reported charging fees to outside users for the use of their historic property data. The practice, though rare, was most common among SHPOs. Among respondents that do charge fees, only SHPOs reported making available a layer of free, publicly available information. Similarly, very few respondents reported that they pay fees to other institutions or entities for access to historic property data.

All respondent types reported that few of their paper forms had been scanned. SHPOs on average reported the lowest percentage of forms scanned. This may be related to the very large jurisdictions and inventory holdings of many SHPOs compared to THPOs and to most FPOs.

Questions 7.7 through 7.13 address not only legacy data but whether there is a plan in place to update older data. There is only a slight difference in the percentage of SHPOs that have a plan to scan current and legacy data compared to THPOs. Few FPOs, however, have such a plan in place. In addition SHPOs and THPOs indicated that a significant proportion of their legacy data that is currently scanned will need to be updated. This may be due to changes in survey protocols since the time at which the legacy data was originally recorded. THPOs were the most likely to report having a plan in place to update their data with SHPOs and FPOs trailing significantly.

Most respondents plan to keep some form of paper record when updating their legacy data, and only half of the SPHO respondents plan to input updated legacy data into their database. Overall, 79% of SHPO respondents plan to retain paper records in their updates, as do the majority of THPO (88%) and FPO (60%) respondents. The general trend appears to reflect a

strong commitment to retaining paper records in parallel with the development of computerized inventories.

Section 8-- This question category addresses the levels of funding available to the respondents, by respondent category, and also the general categories of sources of that funding. The questions also attempt to assess the level of priority the respondents place on digitization of historic property data. Although partially successful, the question did not seem to fully illuminate budget priorities, nor did it, on its own, seem to assess needs across respondent types. However, responses do seem to suggest funding disparities and also disparities in technological capabilities across respondents by type.

Section 9-- All respondent types report low training frequency, though DBMS training appear to be most common. Nevertheless, most SHPOs and FPOs, and approximately half of THPOs, report having access to full-time dedicated IT support personnel. Most IT personnel are not trained in cultural resources management across all respondent types, and development is undertaken by a mixture of in-house staff and outsourcing.

Among respondents that have not implemented an electronic historic property management system, most FPO respondents do not consider it to be a priority. This suggests that FPO offices without an existing electronic inventory have no need of such an inventory. THPOs and SHPOs mostly cited lack of resources (time, money, and staff) as the reason they do not yet have an electronic historic property inventory. In addition, SHPOs listed a diverse array of impediments to developing and adopting an electronic solution, including regulatory and security issues, vendor lock-in, and data quality concerns.

Section 10-- Questions 10.1 through 10.11 involved web accessible historic property information. Of the 41 SHPOs that responded to the survey, 38 (93% of the total sample) responded to Questions 10.1 through 10.11. Of the 22 FPOs that responded to this survey, 16 (73%) completed Question 10.1, and only one responded that they maintained web-accessible historic property information. No THPOs report maintaining web-accessible historic property information. It would appear that very few FPOs or THPOs maintain historic property databases for public access, and that the development of such systems is in general a low priority for these respondent types.

The majority of responding SHPOs, on the other hand, do maintain some kind of web-based historic property inventory. These inventories varied in terms of their content with NRHP nomination information and some spatial data being the most commonly provided information. Responses to Question 10.5 and 10.6 indicated that SHPOs who already provided some scanned material wished to make more of this information available online. Overall, funding and staffing appeared to be the major impediments to the establishment and development of these systems by SHPOs. Very few of the SHPOs who maintain a database reported charging access fees.

A second issue regarding the establishment of web-accessible historic property information is the protection of restricted information regarding historic properties and archaeological sites. While the majority of SHPOs used combinations of password-protected systems, or restricted

access to servers, with availability to the material determined by SHPO staff members, others chose to make only non-sensitive material available online.

The overall trend visible in Questions 10.1 through 10.11 indicates a strong desire on the part of SHPOs to increase the amount of historic property information available through a protected website. For SHPOs who already maintain a website for historic property information, there appears to be a desire to increase both the amount of their overall collection that is made available, and the quantity of information for each site that is accessible. While each SHPO recognizes the need to protect sensitive information, limiting access to this information to professionals and researchers who have a demonstrated need for this information appears to be an established means of protection for many of the systems already in place. Only one FPO (the GSA) who responded to Question 10.1 reports maintaining web-accessible historic property information. The limited responses to this and other questions in this section may be an indication that establishing a public access website for this information is a low priority for most FPOs, who may rely on SHPOs for this service.

The second set of Questions, 10.13 through 10.17, addresses the sharing of historic property information with external entities. The results of the survey indicate that while not every SHPO or FPO maintains a public access website, almost all have the capacity for the transfer of electronic media to other entities, including GIS shapefiles, scanned PDFs, and database information. Most offices also have a need for regular transfer of this information, as other agencies within their jurisdiction collect, maintain, or possess historic property information. Many SHPOs maintain a centralized repository for historic property information, and most SHPOs receive funding from other entities to help maintain such repositories.

Section 11--Responses indicate that there is a great deal of diversity regarding the priorities and planning direction of respondents. While there appears to be some agreement among SHPOs on the importance of making scanned documentation and spatial data available between offices, the resources of each office appear to be focused in a variety of areas, likely each addressing the specific deficiencies felt by each office.

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RECOMMENDATIONS

In the final analysis, FPOs were the most under represented in the group. There were only nine FPO responses on the use of a database. Most FPOs do not have a database in which historic properties information is stored. THPOs followed with only 14 responses. In addition to the SHPOs, future field visits and follow-up will focus closely on increase participation

from THPOs and FPOs. THPOs will be contacted individually at their location, while we will focus on field offices or regional locations for the FPOs.

One of the more glaring problems is that most organizations keep their archaeological sites separate from architectural sites; in essence maintaining two databases that might not run the same software package. In the next phase, we should look hard at whether this two-database system is really a “best practice” or whether the separation has more to do with differences in data types and a lack of real database programming capability or a good policy decision. In order to create a more user friendly system to share information and encourage collaboration between agencies, “best practices” would include one database per agency with different levels or layers of security to allow authorized users access to sensitive and non-sensitive information. Some SHPOs currently use systems as describe above. Training therefore could be kept to minimum and all types of significant sites could be linked together through a web-based interface. Internal access credentials could be monitored and password-protected information could be disseminated to the historic preservation community based on credentials that are predefined to satisfy state and federal laws. In essence a majority of states facilitate two databases and the two databases often are not located within the same facility with some archaeology being stored at a state university or the state office of archaeology. Several SHPOs currently use database system including Colorado, Wyoming, Michigan, Indiana, and California to name a few.

Funding levels by each SHPO, THPO, and FPO differs greatly. In general a match grant funding system would be difficult for THPOs and most SHPOs. Several SHPOs have acquired grants from outside agencies to upgrade their current databases. SHPOs have received funding from FHWA, BLM, U.S. Forest Service, and their respective department of transportation through ICTEA and SFTEA grants (Indiana and California). California has received grants from CalTrans to upgrade database systems and include specific Section 106 reviews previously performed within the state of California. FPOs varied the most with the GSA receiving more funding than all other FPOs combined. Funding was an area that the DOD was very creative regarding unique solutions to unique problems. The DOD has tied many historic preservation database funding problems to programs that they use for internal accounting and military purposes such as Real Property Inventory and GIS or spatial information already available to them. Many FPOs pay a user fee to access SHPO information but some have cooperating agreements that have eliminated the user fee. As stated above some SHPOs receive money directly from the BLM, FHWA, and so forth to upgrade data systems. This usually eliminates the need for a user fee and enhances overall access to FPOs in need of information.

SHPOs have a greater desire to digitize material which suggests that their user base desires such a media to search for sites and documents. THPOs would need more assistance in training staff to use digitizing equipment. However, very few THPOs reported having actual photographs in their database. This may be because MS Office Access was the system most widely used by respondents. Although several use high end systems such as SQL or an Oracle enterprise database product, the limitations of Access regarding file size probably prohibit organizations from posting photographs in their database. The HPS currently has several databases in use from MS Office Access (NHL) to a very sophisticated SQL enterprise system (LCS). The current system used by NRHP is being upgraded but currently there is little ability

to share between NPS systems. FPOs that have been able to attach Real Property Accountability information to their database seem to have a better understanding of their architectural properties but since there is no dollar value given to archaeological sites, there is no available program on which to piggy back database creation on. This may be an approach to take with FPOs since the information is readily available.

Since most respondents were interested in direct field data entry and very few truly institute this practice, this is a concept that may be looked at during the follow-up questioning. Questions involving laptop computers for field entry were somewhat misinterpreted by most respondents. A closer examination of individual responses led to the conclusion that the use of laptops in the field was misinterpreted and desktops were used more commonly in an office setting to transcribe paper field forms. An overwhelming percentage of respondents do not have the capability to enter data remotely from the field. FPOs did respond with the ability to enter data remotely but this was dominated by the use of GPS hand-held units used by BLM and U.S. Forest Service employees. In general, all respondents are interested in direct field data entry. This may also work for consultants too. Over 85% of respondents claimed the majority of work produced by private consultants was accurate.

Very few organizations keep track of whether a property was involved in a Section 106 review or documented in a conventional survey. There should be a follow-up question that is more specific to what the NPS is looking for. All THPOs reported the need for additional funding with concerns to Section 106 reviews and documentation. Most SHPOs believed a higher portion of their budget was used for Section 106 reviews than anticipated. This also points out the probability of gray literature being present in various offices that contain Section 106 reviews.

Most SHPO and THPO respondents have access to GIS in the office while FPOs have less access to GIS. Significantly, however, even more SHPO respondents (37%) indicate that additional data development (scanning, quality control, integrating legacy data, GIS development, etc.) will be required. Another interesting observation is the use of websites. No THPOs currently host a website and only 22 SHPOs offer some type of web-based system for end users. The most striking point is that the more developed the database, the more layers of information that are offered by the agency. It was also apparent that security issues had been thought through in most cases and this limited some of the information to certain users. This is clearly an area in which grant programs could be of real assistance.

THPOs were concerned about IT and software issues, coupled with staff development. Overall, training was an issue with all three types of respondents. Training can be one way of increasing database management and solving many inventory problems. There must be clear inventory standards within THPOs in order to offer a database system that would be useful. IT problems also exist amongst most groups with IT professional having little CRM experience, while CRM professionals have some IT training. This again leads to the idea that SHPOs and THPOs are database managers by default and not by policy or by guidance that has been issued. On the positive side it appears that THPOs are interested in using a fully computerized system if they had adequate equipment, and training.

Ultimately, despite all the information that makes it clear that SHPOs, more so than THPOs, and FPOs recognize the need for good databases and sharing of said databases, and despite the fact that other agencies clearly rely on them, in the end it just isn't many SHPOs' main priority. It is worth noting that there is nothing in the NHPA that requires SHPOs to be everybody's data manager. They have assumed this role by default, not by plan or mandate. Most have done more than you would expect. But, from a policy perspective, it is worth calling out that a policy worth considering would be to give them the mandate AND the funding.

FOLLOW-UP QUESTIONS

What type of data sharing agreements do you currently have with other SHPOs, THPOs, and FPOs? If yes with what agencies do you share information (be specific)?

Does your office track Section 106 reviews differently within your database? Or do you have the ability to identify Section 106 reviewed properties within your database?

Does your agency receive additional funding from outside sources to upgrade or use a database system?

How much funding is needed to completely scan your inventory in a word searchable format?

Is your legacy data Section 106 related? What is your plan for converting legacy?

What type of direct field data entry device would you feel more comfortable using?

Does your agency have data management protocols for oral histories?

How much money would your office need to perform adequate training of one or more current cultural resource employee to enhance IT training, and database skills?

If your office has separate database's for architectural and archaeology sites are the two systems compatible?

What is the approximate categorical \$ value of staffing and other resources your office currently dedicates annually for: Section 106 reviews, ongoing historic-property surveys, digital data collection, and management and training activities?

If your office hosts a historic-property inventory website, what types of historic property data not currently available would your office like to make accessible over the internet?