State of Washington

2016 NASCIO Award Nomination

| Project Title | Washington Information System for Architectural & Archaeological Records Data (WISAARD) |
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| Nomination Category | Improving State Operations |
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| Project Initiation | November 2014 |
| Project Completion | December 2015 |

## I.  EXECUTIVE SUMMARY

The Washington State Department of Archaeology and Historic Preservation is the agency responsible, under both federal and state law, for protecting cultural resources. The department serves as the central repository for all the state's cultural resource information including historic structures, archaeological sites, shipwrecks, cemeteries, and traditional cultural properties.

A review by the department for potential impacts to cultural resources is required for any state or federal regulators releasing project funds, permits, or licenses.  Projects can range from ground disturbing activities to visual intrusions, such as cell towers, and involve a wide range of stakeholders including planners, tribes, consultants, and government agencies.

In the past, the review process was lengthy and inefficient. Reviews required at least one person involved in the permitting process—usually a consultant or government employee—to travel to the department's physical office location in Olympia, Washington to research paper files containing historic cultural resource information.

As part of an effort to accelerate project review timelines and reduce the travel impacts of staff and consultants, the department created a web-based program to integrate all cultural resource documents, images and databases with Geographic Information Systems (GIS) spatial layers. This effort led to the first iteration of the Washington Information System for Architectural & Archaeological Records Data (WISAARD), deployed in 2005.

Development of the current version of WISAARD began in November 2014 and was completed in December 2015. The updated WISAARD delivers a vastly improved user interface, the capacity to draw spatial project areas that are automatically populated with known cultural resources and surveys, an enhanced online historic property inventory structure, and a new digital workflow process.

Cultural resources are now connected to the department's administrative database so that an individual can identify the previous federal or state projects located and/or evaluated on archaeological or historic property. The ability to obtain previous undertakings or surveys in a proposed project area helps the project proponents avoid costs that would otherwise be expended on duplicative survey efforts.

Within the updated WISAARD, nearly a million pages of information now have been linked to spatial points, lines, and polygons within this web mapping application. Project reviews are conducted online more quickly and efficiently.

## II. CONCEPT

The Department of Archaeology and Historic Preservation collects and maintains cultural resource data needed by project consultants, planners, regulators, government agencies, researchers, and project proponents. Federal and state law requires cultural resources to be identified during project planning so that the lead agency or project proponent can avoid, minimize, or mitigate harm to the property. Approximately 10,000 project proposals are submitted to the department annually to determine potential impacts to cultural resources.

Prior to WISAARD, documents were held in file drawers and shelves (often misplaced by other researchers) and locational information was hand drawn on paper US Geological Survey Quadrangle maps. Consultants, planners, regulators, government employees, researchers, and project proponents had to travel to the department office to research paper files.

This outdated process became unsustainable in the early 2000s, in part due to the emergence of the cell tower industry as the Federal Communications Commission required the industry to consider both Section 106 of the National Historic Preservation Act and the National Environmental Policy Act. These regulatory processes involve state historic preservation offices and produced an influx of environmental consultants traveling to Washington's Department of Archaeology and Historic Preservation headquarters.

In concert with the cell tower industry's persistent and increasing demand, the 2001 Nisqually earthquake compounded the pressure on the department. After the quake, the Federal Emergency Management Agency (FEMA) required expedited cultural resource information and immediately hired consultants to conduct research at the Department of Archaeology and Historic Preservation.

Combined, the earthquake response and cell tower industry caused a surge of environmental consultants routinely traveling to the Department of Archaeology and Historic Preservation office from within and outside the state to spend as little as one hour or as much as several days in Olympia researching the paper documents.

Eight or nine consultants per day would arrive to pore through files and make photocopies of the information for their environmental analysis. The increased office traffic exacerbated an already arduous process, and prompted the initiation of the department's online databases of historic site and archaeological information. A statewide archaeological predictive model also was developed to identify risk levels for discovering new archaeological sites in a proposed project area.

Released in 2005, the first iteration of WISAARD linked legacy archaeological and historic site data to GIS spatial layers, reducing the need for consultants to travel to Olympia to conduct

background research; they could simply remain at their home or office with full access to the agency's cultural resource information. To ensure the safety of archaeological sites, the archaeological layers were placed behind a Secure Access Washington (SAW) firewall. Consultants, agency personnel, etc. needing sensitive information were required to meet certain professional standards and apply to the department for a passcode.

In 2014, WISAARD began a significant update to improve the user interface, adding additional functional components, and integrating with the agency's workflow processes. The administrative project database now connects to cultural resource data, and the online historic properties inventory form has been enhanced. Most importantly, the agency created an initial electronic project review submission process.

The enhanced 2015 WISAARD program links spatial information with documents, images, and project information and includes an electronic regulatory submission component with automatically generated user notifications. In all, these deliverables move the agency to a paperless digital environment.

## III. SIGNIFICANCE

The main regulatory processes involving state historic preservation offices—Section 106 of the National Historic Preservation Act and the National Environmental Policy Act—are known to be lengthy and cumbersome. The problem is less with the regulations and more that much of the nation's cultural resource information remains in paper files. Most state historic preservation offices are reliant on paper files because they have not improved their technological capability.
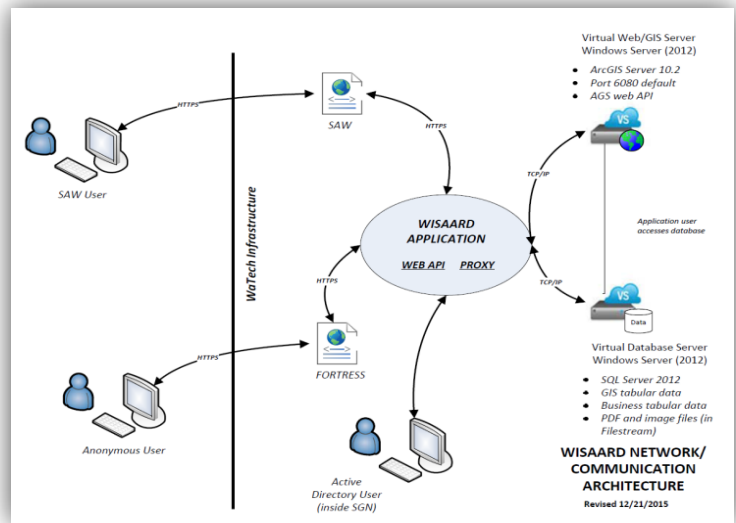
The inability to effectively use digital information and spatial programs can logjam cultural reviews. Congress continually mandates streamlining environmental reviews, but rather than focusing on the technology issues within historic preservation offices, the streamlining efforts often exempt or dilute cultural resource reviews and put cultural resources at risk.

Instead of potentially detrimental legislative changes, the creation of WISAARD addresses the issue of review timeliness. WISAARD has accelerated the environmental review process, while at the same time improving the quality of the reviews and facilitating better communication among stakeholders.

WISAARD makes all cultural resource documents, records, and forms available through a single portal to all consulting parties. The project workflow features allow for the addition of other stakeholders, as necessary throughout the life cycle of the regulatory process, to ensure project flexibility and government transparency. Since all parties involved in an environmental review now can receive information electronically and concurrently via WISAARD, much of the

processing time has been eliminated and all parties can be confident they are reviewing the same data.

All cultural resource information is stored in several enterprise-level repositories composed of Microsoft filestream, Microsoft SQL Server and Environmental Systems Research Institute (Esri) geodatabases and provided to the world wide web via WISAARD on Esri's ArcGIS Server platform; leveraging scripting languages such as Bootstrap, JavaScript, and Python.



*WISAARD network communication architecture.*

WISAARD connects to Washington State's Capitol Campus fiber optic backbone via a 100 MB per second fiber optic connection. That connection terminates into a gigabit switch. The desktop computers operate at 1 GB per second.

The department receives and enters information for approximately 2,000 new archaeological sites per year and hundreds of thousands of historic properties. The agency is currently housing records, documentation, and images for over 30,000 archaeological sites and 700,000 historic structures.

## IV. IMPACT

The WISAARD project integrates and upgrades existing department databases into a single GIS-based web application that incorporates multiple business datasets and spatial layers. The single application now supports a department regulatory and inventory workflow model that meets 21st Century business requirements and expectations.
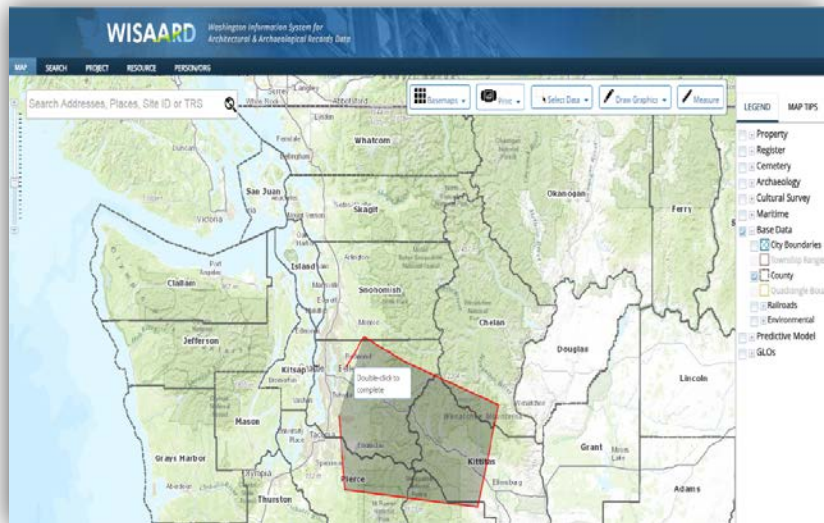
The new WISAARD upgrade workflow component permits agencies and project proponents submitting undertakings to enter their activities, historic property inventory forms, and cultural resource reports directly into the system.

Customers designate a specific department staff member to receive their information. This eliminates the previous "black hole" of the regulatory process, where letters and documents were mailed to the agency and the submitter simply waited 14-30 days for an answer. By having the customer designate a staff recipient, the review period feels more transparent and staff contact information is readily accessible. When a project is accepted for submission by the

staff contact, there is now an automatic notification alert generated to both the staff and customer, another new system feature.

The enhanced system also adds a new functional component for identifying the cultural resources that are within a project area.

Previously, WISAARD lacked draw and search capabilities. Customers now can draw their project area(s) onto the map and WISAARD automatically generates a list of the properties in the area.



*WISAARD's draw tool, used to select all cultural resources within an area of potential affect.*

All archaeological sites, historic structures, cemeteries, archaeological collections, maritime resources, and previous project information are instantly retrieved. The customer has immediate access to information on the individual properties as well as the associated records, documents, and images.
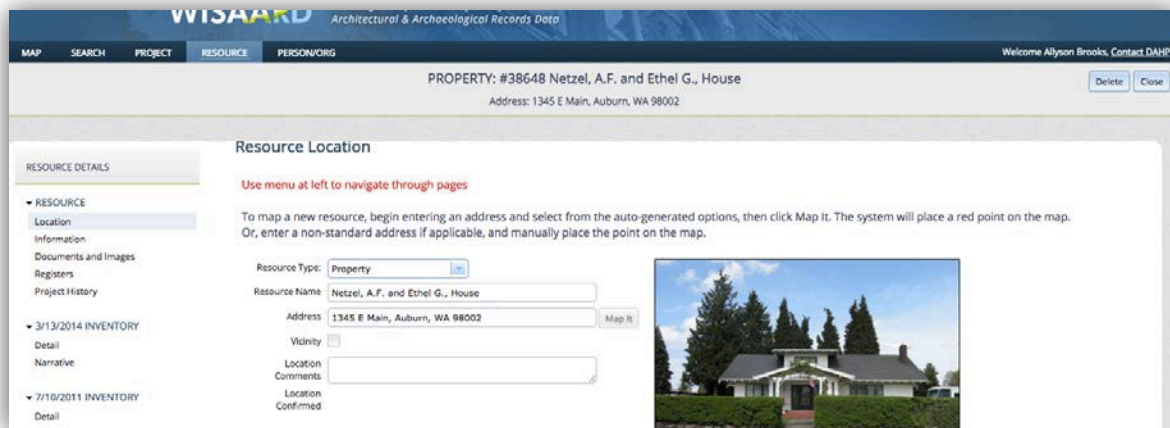
The original scanned Archaeological Site Inventory form, for example, can be accessed directly by clicking on the detail form box from the GIS feature.



*An example of the original scanned Archaeological Site Inventory Form*

The upgraded system maintains the secure portal for all archaeological information to ensure protection from looting or harm. There are now over 1,200 users with access to the secure side of WISAARD using the system for environmental reviews under federal and state laws.

For the purposes of research and tourism, the public side of WISAARD is accessible to all users providing direct access to all the historic building information, maritime heritage site data, National and State Register nomination forms, General Land Office maps from the nineteenth century, and the archaeological site predictive model.

*An example of the online historic property inventory data collected and generated by WISAARD.*

In March 2016, State Historic Preservation Officer, Dr. Allyson Brooks, gave a presentation to Congressional staff and aides on WISAARD's ability to communicate cultural resource data through technology and reduce regulatory timeframes.

The Suquamish Tribe Archaeology and Historic Preservation Program reported that their staff uses WISAARD on a daily basis to assist with review of more than 1,300 permits received by the tribe each year. The Squaxin Tribe relies on WISAARD when reviewing projects because the system is user-friendly, has top-notch map and search features, and allows for quick access to digital copies of records and reports related to cultural resources and surveys.

WISAARD saves the government, stakeholders, project proponents, and the public thousands of dollars due to the elimination of travel costs and the reduction of staff hours.

Project review timelines also are reduced as a result of the digital workflow process. A customer's ability to transmit data to the Department of Archaeology and Historic Preservation through the workflow and historic property inventory portal has reduced the cumbersome process of reporting and delivering information on paper. The ability of staff to retrieve information immediately and assess a project's impact has substantially increased agency timeliness. The National Historic Preservation Act allows state historic preservation agencies 30 days to respond to Section 106 reviews, and Washington's State Environmental Policy Act review process has a 14-day response time. WISAARD has reduced the agency response rate to 4 days.

In addition to making government's regulatory process work better, the Department of Archaeology and Historic Preservation's focus on technology and the deployment of the user-friendly 2015 WISAARD has resulted in stronger relationships with state, federal, and tribal partners. These improved relationships help government operate more efficiently and effectively over the long-term, while ensuring valuable cultural resources are preserved.