

Preserving a Piece of History, ArcIMS Helps Defend Historic Resources

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Abstract:

The struggle between development and historic preservation has long been an issue for communities interested in preserving their cultural history while encouraging sustainable development. This prompted the Washtenaw County Historic District Commission to implement a planning tool that will help planners and preservationists better assess historical and cultural resources unique to their community. The HDC scanned 10,000 documents to create a baseline inventory of historic resources in Washtenaw County. The GIS program mapped these resources and developed an ArcIMS website that allows users to map, query, and view the original documents, and research state, local, and national registry nominations.

Background:

One of the key issues facing Washtenaw County is responsible planning for land use to prevent continued sprawl. Although all of the local units of government have approved master plans for land use and attempt to restrict growth, they often face opposition by developers. Between 1987 and 1997, over 24,000 acres of farmland have been lost in the county. (USDA Census of Agriculture) The vanishing rural landscapes have impacted Washtenaw County's historical resources as historic barns and farmsteads are demolished to make way for development. In early 2001 as the County Planning department began the process of updating the County Comprehensive Plan the idea of using National Registry and Historic District designations as a land use tool began to emerge. The Planning department worked with the County Historic District Commission to look at ways to more proactively inventory and track the County's historic resources. To accomplish this goal the Historic District Commission (HDC) applied for State funding from the Michigan State Historic Preservation Office (SHPO) to scan and digitize ten historic inventories that were being stored at the county and Eastern Michigan University in Paper form. In addition, the HDC proposed using the County's existing infrastructure to map and disseminate the digitized surveys using an ArcIMS based website. Once created the ArcIMS website could be used by county and local unit planners during the zoning and master plan review process, by preservationists researching historic resources, and by members of the public interested in the cultural history of the County. In addition, the historic resource inventory could be incorporated into the County Comprehensive Plan and developed into a countywide preservation plan.

Infrastructure:

One advantage for the Historic District Commission was the existence of ArcIMS infrastructure in the County. The County GIS program had launched their first ArcIMS website in January 2001 and had been testing and improving the IMS architecture throughout 2001 and 2002. That website, which serves up property maps and assessing information to the local units within the county, was built using ArcIMS 3.1, Oracle, and ArcSDE using a combination of the standard

ESRI HTML viewer and customized Java Scripting. (Figure 1) The infrastructure had enough capacity to host many more applications. (Figure 2)



Figure 1

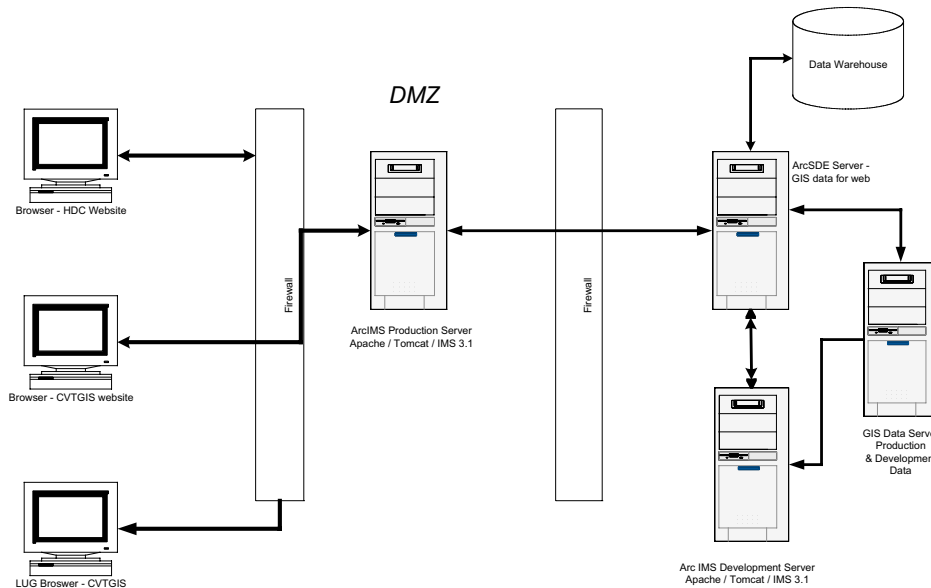


Figure 2

Process:

Once the funding was in place, the first step was to develop a process for scanning and capturing the data from the paper survey documents. The County GIS program and Information and Technology Department (ITS) looked at a number of technologies to automatically capture the survey data but due to the varied layouts of the original forms they decided to utilize interns to scan and then manually enter the survey information into an Oracle database. ITS worked closely with the HDC staff to develop an easy-to-use MS Access front end application that

would automatically detect new scanned images in the working directory and prompt the user to enter the appropriate data using a series of preset forms.



While the historic preservation interns were scanning and entering survey data, the HDC worked with Michigan consulting firm InfoGeographic Inc. and PixEarth Inc. to develop the *HistWeb* ArcIMS application.

The HDC and GIS technical team, in conjunction with IGI, developed a set of application specifications that outlined the capabilities *HistWeb* would include:

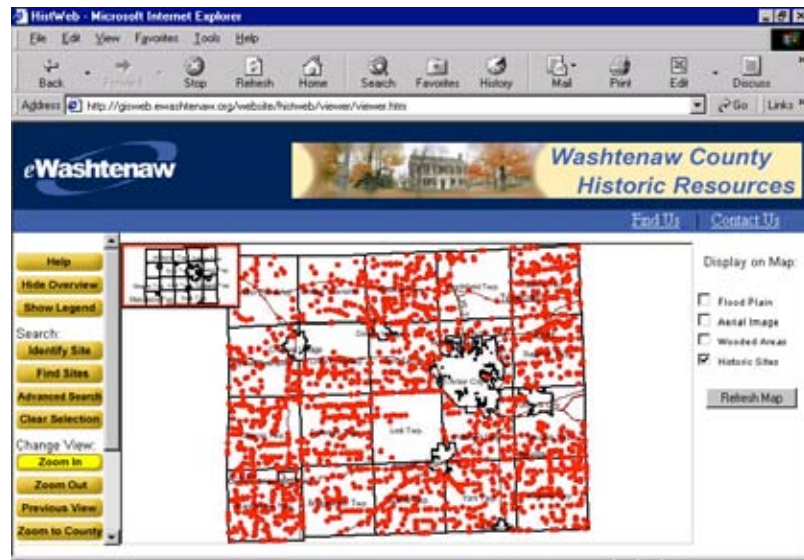
- Ability to pick a township, and a map of the roads, parcels and dots representing the historic structure will show on the screen with a saved scale and symbology. The structures will be color coded by a specific field in the SDE layer, and a legend will appear, listing what the colors represent.
- Users have the ability to turn layers on/off, zoom in/out, pan the map, and print the map.
- Users can click "identify" on the dot and get the database info in a pop-up window within that window user will be able to click on a link to an image of the original survey document.
- Users can choose to query the layer to map any number of features (roof type, architecture, etc.) - using stored queries.
- Users can print maps in size 8"x11", 8"x14" and 11"x17".

In addition, PixEarth would develop a contact database that would allow users to submit additional information about historic properties or specific surveys via the website.

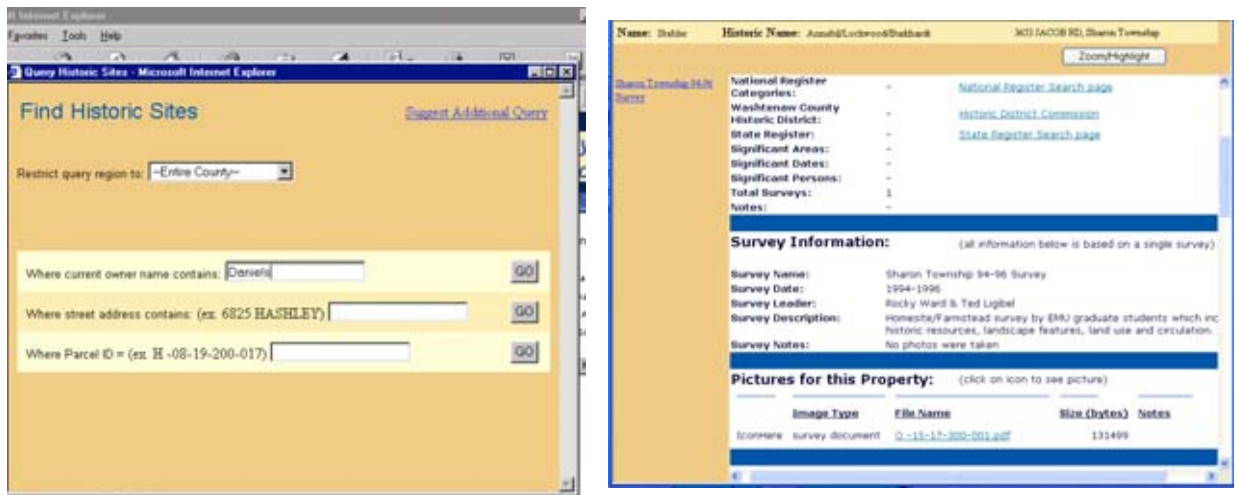
The technical team and IGI decided to build off the existing IMS website (Figure 1) adding a new GUI, the ability to view the scanned documents as either PDF or JPG files, and the new query capabilities. The *HistWeb* application was built using a combination of JSP and Java Servlets and incorporates the County SDE database, Historic Resource database, and the county data warehouse. The application took approximately 6-9 months to develop and implement.

***HistWeb* Capabilities:**

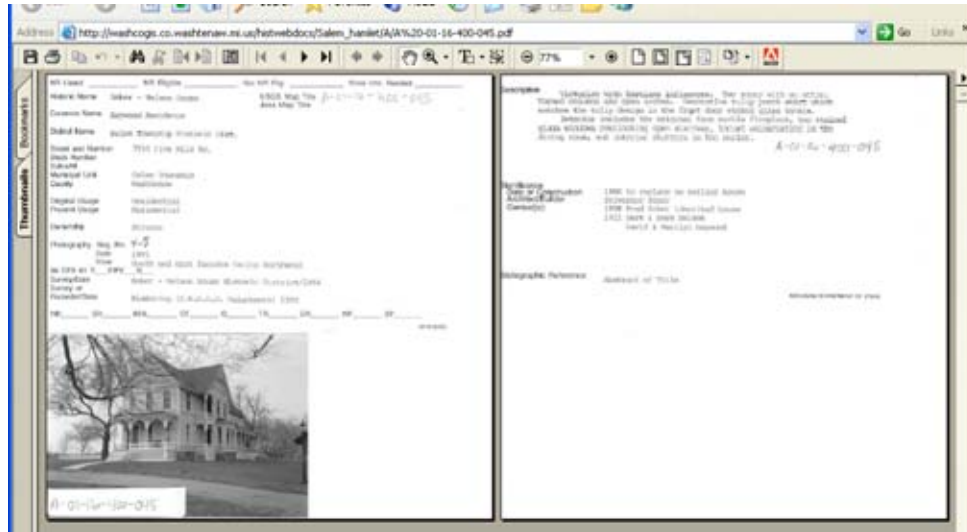
The *HistWeb* application launches with a county map containing dots that represent historic resources. These resources could be residential or commercial buildings, bridges, barns, or sites of historic significance.



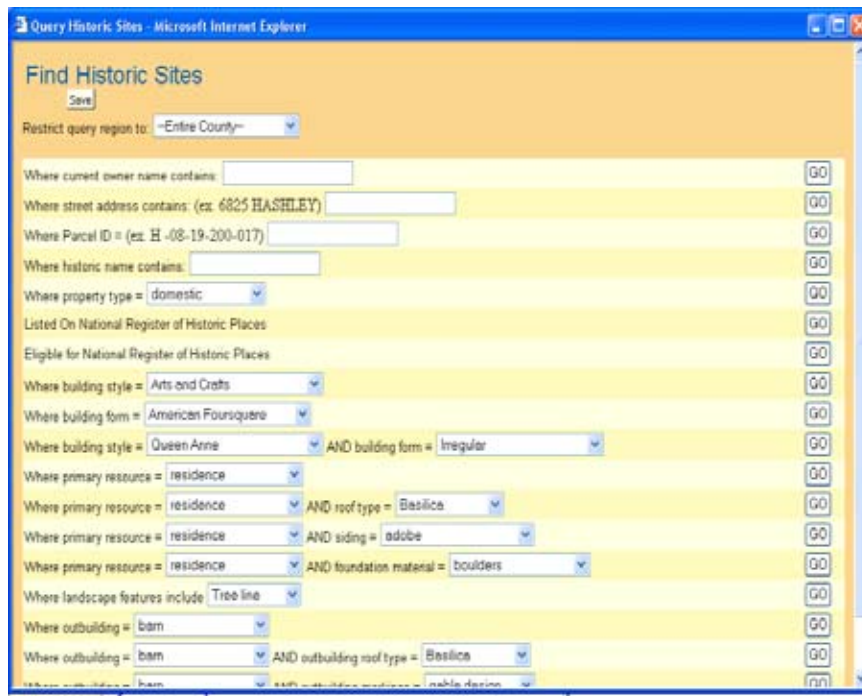
Users can zoom into a specific area of the map or use the find tool to search for a property based on address, parcel ID number, or owner name.



Once users find the property they are interested in they can view the property data sheet, image of the scanned survey, or zoom to a map of the property.



Users can also use the advanced query functions to search for properties based on structure type, architecture type, national registry status, or any number of other attributes.



The user can submit comments to the HDC staff from any of the query or results screen and all of the query results and maps can be printed either letter, legal, or tabloid size.

The final application launched April 30, 2003 and has been met with great enthusiasm by both the public and county staff. The information from the website is now being used by many of the townships and cities in Washtenaw County for zoning and site plan reviews. In addition the County Historic District Commission has received numerous e-mails from citizens interested in submitting their home or farmstead for historic designation and inclusion on the website. This

project was Phase I in a three-phase process to create a comprehensive inventory of the County's historic resources. For Phase II, the HDC will be applying to SHPO for additional funding to field check the existing database information and to scan additional surveys. Phase III involves using the County GIS Program Trimble GeoExplorer XT and ArcPad to complete additional historic inventories.

Washtenaw County *HistWeb* is free and available to the public.
Check it out at <http://www.histweb.ewashtenaw.org>

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