



**2009 NASCIO Recognition Award Nomination**

**The State of Tennessee**

**Voter Information Lookup Project**

**Category:**

**Digital Government: Government to Citizen**

## **Executive Summary**

In 2002, President Bush signed into law the Help America Vote Act (HAVA). The intent of HAVA is to leverage technology and develop a multipurpose approach to improve the electoral process throughout the nation. Over the past seven years, Tennessee has implemented many of the required changes set out by HAVA resulting in statewide standards and practices that have improved elections in the State. A recent accomplishment is the development of a Voter Information Lookup system.

The Secretary of State, Division of Elections, working in conjunction with the Department of Finance and Administration, Office for Information Resources, identified the goal of creating a statewide voter registration database that would be accessible by the general public via the internet. This initiative supports the public policy goals of the State Election Commission, Secretary of State, and Tennessee County Election Commissions. The Division of Elections also included the objective to modify the Voter Information database to allow the public, government officials, and other HAVA stakeholders to view digital maps of statewide polling places, to improve voter accessibility and minimize potential problems with voters showing up at an incorrect location on the day of an election. The ability to integrate geographic information systems and data created through the Tennessee Base Mapping Program (TNBMP), a multi-year effort to develop digital base map data in support of State and local government, was an essential part of the project's success.

The Voter Information Lookup application exemplifies the use of best practices by utilizing existing data and digital maps from two individual state agencies in lieu of recreating the data, maps and information systems. The Division of Elections was able to tap into the TNBMP digital base map data repository created and managed by the Office for Information Resources, GIS Services Group (OIR-GIS). The vision for the TNBMP data repository, branded as the "Tennessee Map" (TNMap) is to integrate geospatial data and technology to support the business applications of State agencies.

In addition to meeting the objectives of HAVA and the Secretary of State, this project helped support the underlying IT strategic plan of OIR-GIS Services to build and maintain GIS data once and then find multiple uses for the same data. This GIS shared approach provided the Secretary of State with a very cost effective solution for the development of the Voter Information Lookup.

## **Description of the Business Problem and Solution**

### *The Problem – Voter Registration Identification and Precinct Location*

The Secretary of State, Division of Elections is responsible for developing and maintaining a statewide voter registration database. Serving as the state steward for local election information, the Division of Elections built a statewide mainframe election database using DB2 in 2001. The Division of Elections provides local election officials with the ability to update this statewide database of registered voters. The problem was that this database was not accessible to the general public. Without an on-line tool to access this database, registered voters would have to call the county or State election officials to confirm their registration and attempt to get directions to the appropriate polling location. This resulted in many time consuming phone calls into State and local election officials and an inefficient approach to managing State assets and information technology.

In order to make this database more transparent and improve voter accessibility, Tennessee State and local government officials decided to create a web-based application for the Tennessee voting population to use to verify their registration status and to provide additional voting information including the precinct polling place location and the ability to view a map of each facility.

### *The Solution – Web based Geographic Information Systems*

The solution was to leverage OIR-GIS staff, geographic information systems and the Tennessee Base Mapping Program to web-enable the statewide voter registration database. One of the first objectives in creating the Voter Information Lookup application was for the Division of Elections to solicit the polling place address information from each of the 95 county election commissions. Over a six month period data was collected and managed within an Excel spreadsheet. This data was provided to OIR-GIS and geocoded using the desktop Arc/Info software developed by Environmental Systems Research Institute (ESRI). The geocoded results of the polling places were then published as a web map service through ESRI's ArcIMS software.

During the data collection phase of the polling place addresses, development of the on-line interface was underway. Using the ASP.NET environment, OIR-GIS developed the web-based solution to access the statewide voter database. The Division of Elections extracted the mainframe DB2 data into an Access database and provided this to OIR-GIS. OIR-GIS was then able to import the data into SQL/Server which served as the relational database for the enterprise GIS environment and the Voter Information Lookup application. The total development time to build the application took 30 hours and was completed in August 2008. This provided the Division of Elections with an opportunity to test the application during the State primary election and work through any corrections in time for the Presidential election in November.

The application (<http://tnmap.state.tn.us/voterlookup/>) requires users to enter their home county, first and last name, the year of their birth, and the last four digits of their social security number. The results provide both personal and voting information. The voting information includes the voter's registration status, polling location name, address, precinct, state house and senate districts, US Congressional District, and county commission district. The GIS interface is built into the polling place address and provides a link to view a map of the polling location. Each map is customized based on the voter's geocoded polling place location developed by OIR-GIS and provided initially through the local election officials and the Division of Elections. Additional map detail includes a comprehensive street level view and includes other GIS data layers that are part of the State's enterprise GIS database. The application also includes information on how to submit corrections to the voting information and a link to the local county election office in order to streamline any required updates.

Maintenance of the Voter Information Lookup application is managed by the Division of Elections and OIR-GIS. The voter information and poll location data is updated continuously during a 30 day period before and after a statewide election. The ability to provide an accurate and up to date list of eligible voters and poll locations during this timeframe is critical for the timeliness and overall success of the application. The voter information and poll location data is updated on a monthly cycle during non-peak times and provides assistance to counties that have local elections throughout the year.

### **Significance to the improvement of the operation of government**

The ability of voters to access information critical to their participation in the electoral process was completely transformed. Prior to an election, registered voters needed access to voter precinct information to determine where to go to vote – including the location of early voting sites. In the past, these registered voters would have to try and find the right government office to call to ask about the name and location of their voting precinct. Frequently, they would ask for directions to their voting location, consuming even more of the government official's time. With the implementation of the Voter Information Lookup initiative, citizens can go to one web site and not only find the address of their voting precinct but also view a map of the location, eliminating or reducing the number of phone calls to election officials.

Overall, the Voter Information Lookup application represents a paradigm shift for government officials. It transformed the function and workflow of State and local election administrators from being overwhelmed with telephone calls regarding voting status and location information to conducting the routine business of operating an election office.

The improvements in the operation of government can also be measured in the amount of web traffic that the Voter Information Lookup web site has experienced. Following the rollout of the application in August 2008, OIR-GIS began tracking both the number of hits to the web site and the number of unique visitors based on IP addresses. Table 1 reflects these statistics from the beginning of October through the day prior to the Presidential election.

# of Web Site Hits		# of Unique Visitors	
October 2008	Nov. 1-4 2008	October 2008	Nov. 1-4 2008
397,583	186,896	77,930	32,475

### **Benefits of the Project**

One of the primary benefits of the project was the ability to develop a solution with minimal cost to both the Secretary of State and the local election officials. Using the GIS shared environment developed by OIR-GIS, the Division of Elections did not have to procure dedicated hardware and software associated with implementing the solution. Instead, the Division of Elections, through the HAVA grant money, was able to cover the initial development costs (approximately \$3,000) and the annual application hosting fee of \$9,000. Through the annual hosting fee, the Division of Elections has access to the entire set of GIS infrastructure and statewide GIS data layers associated with the TNMap.

The cost avoidance of using this approach is significant. Without the GIS shared environment and the OIR-GIS staff to develop the application, the Secretary of State would have spent approximately \$510,000 on dedicated infrastructure (hardware and GIS software), and GIS data, not to mention any contract staff or other non OIR-GIS staff time dedicated to developing the database and user interface. See Table 2.

Hardware	Software	GIS Data
Web Server - \$15K	ESRI ArcIMS - \$16K	\$400K
App Server - \$15K	SQL/Server - \$50K	
DB Server - \$15K	MS 2003 Enterprise - \$2,500	

Ultimately, there were several winners on this project.

1. The registered voters in Tennessee have a service that allows them to confirm their registration, locate their polling place, determine who their elected officials are, determine the location of early voting sites and the dates and hours of operation of the election day polling location.

2. The county election officials have a means for individuals to determine if they are actively registered to vote in their county of residence or if their residence address needs to be updated.
3. The Division of Elections was able to provide a cost effective solution for online access of voter precinct location and information.
4. OIR-GIS benefited from this application by securing an additional consumer of the TNMap GIS data repository and being able to leverage the TNBMP data to support the business operations of the Secretary of State and local election officials.
5. Multiple levels of government benefited by the reduction of calls to the local county government offices, County Election Commissions and the Secretary of State, Division of Elections.

Overall, the Voter Information Lookup application was a success. The State of Tennessee was able to implement a solution that met the needs of multiple stakeholders using State standards and existing resources. The State's previous investment in GIS and the TNBMP was a critical part in making this a cost effective and an efficient implementation.

Future developments of the Voter Information Lookup application will include the ability to view pre-election ballots and to automate data transfer between the Division of Elections and OIR-GIS.