CASE STUDY #1

UTAH

Utah Director of Elections Justin Lee outlines the state's process for geo-enabling their elections system, as well as some of the successes and challenges they faced along the way.

THE WHY IN GEO-ENABLING ELECTIONS

Hopes of integrating GIS functionality in the voter registration and election management processes had been of interest to Utah elections officials from the early days of GIS. Utah's journey into GIS-enabled elections began in earnest as we approached the 2010 Census. GIS utilization had been growing in Utah and had become a critical part of the daily operations of some of our sister government agencies. Finding the time and resources to fold GIS capabilities into our elections processes was something we regularly discussed.

Like most states at the time, Utah used its own version of the "*street segment*" approach to address and precinct management. The methodology worked well from a functional perspective, but its pitfalls became all too evident each time political boundaries at any level were altered.

Street segment files were becoming increasingly difficult to maintain, especially with political boundaries being adjusted and not necessarily following streets. Ensuring that voters received the correct ballot was indeed something we hoped to simplify, especially with the census-related changes that would occur.

Facing the huge number of changes that could result from the 2010 Census, the lieutenant governor's (LG) office initiated a project to implement GIS in our elections system to make "redistricting" easier leading up to the 2012 Election.

THE WHO IN GEO-ENABLING ELECTIONS

A project team was put together with professionals from the LG's office, the state's Automated Geographic Reference Center (AGRC), the Dept. of Technology Services (DTS), and, as needed, county elections and GIS staff. Each of these groups regularly sought input

from their peers across the nation to solicit input and suggestions. Being among the very first to try to integrate GIS features in the elections process, there were not many examples of success to draw from. Nonetheless, good ideas and advice were solicited and accepted.

The team worked together for approximately a year to identify specifications, design the desired system changes and interfaces, develop and test those changes, train our user community, and release the finished product to the user base.

IMPROVING THE PROCESS

Prior to the 2012 Election, our election management system (EMS), which we call VISTA, was GIS-enabled. The process is fairly straightforward.

1. Counties' GIS staffs maintain maps (Shapefiles) with all political boundaries accurately specified on the maps. They do the first level of confirmation that boundaries are correctly represented on the maps. As mentioned earlier, there was no state mandate for the integration of GIS within elections. GIS integration into our election management system had been a growing desire for years. The rigors of the redistricting effort that came after the 2010 Census gave us the perfect opportunity to focus on this project.

2. New or updated maps are given to the state's AGRC. Those maps are overlaid on the statewide map layers maintained by AGRC. AGRC staff takes a second look to make sure that boundaries appear accurate. If anomalies are caught, such as a boundary line going through a structure, AGRC will communicate back to county officials.

3. Once AGRC's overlays are complete and accepted, interfaces between our EMS and AGRC's mapping services cross check residences against the new map. Changes to XY coordinates and precincts are transferred to the EMS. The nice thing is some of this is automated.

4. County elections officials review the new data in the EMS to make sure the correct precincts have been updated. Some of this work is manual and some is automated. The larger counties have GIS staff with the ability to do some cross-checking. Most counties, however, check this manually by spot-checking addresses that they know were affected.

CHALLENGES

Utah's election management system has been GIS-enabled since prior to the 2012 Election. Some of the biggest challenges can and do come from a county's ability to provide accurate data and resource availability. It is hard to speak for other states, but county capacity does appear to be a common theme for elections. There is always a lot to get done and not enough people to get it all done.

Larger counties often have fully staffed GIS offices that are experienced. They usually have the resources to work with the elections staff to understand the requirements and assist in developing a process of data exchange that will work in elections.

Smaller counties either don't have the GIS resources or they're too busy to take on additional projects. The officials in smaller counties generally have many responsibilities outside the elections realm. That makes it difficult for them to transition to any new technology.

Initially, the data was less reliable than we had hoped. A few tweaks to the processing were required to clean up the data. But the counties also had to adjust their processes to clean up data on their end. That "clean-up" process didn't take too long, and the data has been increasingly accurate ever since. I don't recall the last time we had an election-related problem due to GIS and addressing that was the result of this process. To me, that's a great success.

ADVICE , SUCCESSES, AND BENEFITS

Here are a couple of concepts that states should at least consider if they want to move toward using GIS in their elections systems.

1. Are all the necessary parties in agreement with the new direction? In the case of Utah, we had to ensure that we could work with our development team, the state's GIS team, AGRC, and the GIS and elections staffs from the counties to be successful.

2. Will your EMS be able to handle GIS address and precinct management?

3. Will the counties likely adopt the new processes or drag their feet? During our transition, several counties came on immediately. That was a great help to us in refining the process. However, other counties were slower to transition, thus forcing us to manage both the old and new processes for a few additional years. Having that mixture of processes can provide some difficulty in maintaining the EMS.

Having open and honest discussions upfront with all of the stakeholders and those responsible to implement the new features can be a great starting place. If a clearly-defined sponsor can rally all of these parties and get a commitment to their cooperation early on, it can make a huge difference.

Thank you to Justin Lee, director of elections for the state of Utah, for sharing this valuable information on how Utah geo-enabled their elections. If you have questions regarding the content and processes found within this case study, please contact Justin at
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