Kentucky

NSGIC's Geo-Enabled Elections Project
NSGIC partnered with states and subject matter experts to develop Best Practices for integrating GIS in electoral systems. This pilot study helped inform those Best Practices. Learn more on **elections.nsgic.org.**

STATE PROJECT BACKGROUND

The Commonwealth sees the NSGIC Geo-Enabled Elections project as an opportunity to enhance the integrity and efficiency of elections. Additionally, there are identified business processes within State Government that could benefit greatly if voting precinct data was accurate, current, and readily accessible. Kentucky hopes to establish an ongoing relationship between the GIS community and the agencies that are involved in the election process and subsequently, build upon that relationship with an aim of geo-enabling the election process. It is felt that if appropriate best practices are embraced the citizens in Kentucky will have more faith in the election process and taxpayer savings could be realized.

Core Team

Kent Anness, GIS Branch Manager
Office of IT Architecture & Governance
Commonwealth Office of Technology

Kimberly Anness
Office of IT Architecture & Governance
Commonwealth Office of Technology

Jared Dearing, Executive Director
Board of Elections Kentucky

Jennifer Morrell
Former Election Official now Consultant

Veronica Degraffenreid
Director of Elections State Board of Elections North Carolina

Stakeholders

Kentucky State Board of Elections (SBE)
Kentucky Legislative Research Commission (LRC)
Department for Local Government (DLG)
Kentucky Office of Homeland Security (KOHS)
Kentucky League of Cities (KLC)
Kentucky Association of Counties (KACo)
County Boards of Election (CBEs)

Secretary of State (SOS)
Kentucky 911 Services Board
Kentucky Department of Education (KDE)
Department of Revenue‑Property Valuation (DOR-PVA)
Kentucky State Police (KSP)
Alcoholic Beverage Control (ABC)

Champions

Charles Grindle, Chief Information Office, Commonwealth of Kentucky
John Holiday, Executive Director, Kentucky Office of Homeland Security
Rob Guckenberger, Executive Director, Office of IT Architecture Governance, Commonwealth Office of Technology

Pilot Project Goals and Key Outcomes

1. Establish a Kentucky Geographic Information Advisory Council (GIAC) subcommittee to work on Geo-Enabled Elections in Kentucky:
A Geo-Enabled Elections Subcommittee of the GIAC was formed at the March meeting and several stakeholders signed up immediately. Jared Dearing attended the meeting and spoke to the importance of this effort and pledged his support accordingly. The subcommittee has held two meetings thus far and more will be scheduled in the future. A progress report on the effort was given at the July 9th GIAC meeting.

2. Obtain Voting Precincts from the Kentucky Legislative Research Commission (LRC) or the US Census Bureau: The most current version of Kentucky's voting precinct data was obtained from the US Census Bureau in March, 2019. They obtained the data directly from LRC and will get a more current version in October, 2019. We are working to establish a relationship with LRC with an aim of gaining direct access to this information on a more regular basis. LRC has also stated that they are willing to propose legislation in the upcoming session that will provide funding and other resources necessary to maintain the layer on an ongoing basis.

3. Identify statutes or administrative regulations that need amending in order to support Geo-Enabled Elections in Kentucky: The GIAC Geo-Enabled Election Subcommittee has actively worked on changes to KRS 117. This statute deals with how voting precincts are created, updated, and submitted to the appropriate state agencies. The idea is to require digital submission of voting precinct data and to expand the map sources (layers) that can be leveraged during the precinct creation process at the local level. The aim is to have the legislation drafted so that it is ready for the upcoming legislative session.

4. Obtain Parcel Data from the Kentucky Department of Revenue: Local entities have stated that they would like to leverage parcel data during the precinct creation and update process, however KRS 117 does not currently allow for use of that data. Parcel data is seen as the lowest common denominator of all boundaries and many locals understand that access to the data will help them fine tune their precincts. The effort to obtain parcel data has been underway for many years and this pilot project is seen as just another way to underscore the importance of gaining access to this critical layer.

5. Obtain Address Points via Next Gen 911 (NG911) effort from the Kentucky 911 Services Board: We have had multiple discussions with the Kentucky 911 Services Board Executive Director regarding this matter. Kentucky's NG911 Program will require submission of address points in 2021. Gaining access to this data will allow for a more accurate determination of "who votes where" and "what ballot they are given." Indications are that we will be able to utilize the address point layer for election purposes.

6. Work with the State Board of Elections and the Legislative Research Commission to discover what information is filed by the County Boards of Election: This is an ongoing effort that will take some time to complete. We have spoken with a handful of local Boards of Election but need an increased sample in order to gain a better understanding of what they send to Frankfort. Meetings with both of these stakeholders will be held in the coming weeks.

7. Promote transparent data sharing of voting precinct mapping data between stakeholders: Great effort has been put into attaining this goal but there is still work to be done. Some feel that their data must be held closely as they consider it to be "sensitive" information. Establishing a good working relationship with LRC and SBE is crucial as much of the reluctance to share is at/between these two entities.

8. Adopt a short and long-term strategy for geocoding tabular address data:
The Commonwealth recently implemented an enterprise geocoding solution based on the HERE dataset for Kentucky. This service was utilized to geocode the addresses of polling places. This is seen as a good interim solution while we are waiting to gain access to the NextGen911 address point data in 2021.

9. Identify a list of authoritative GIS layers that are needed for Geo-Enabled Elections:
The Geo-Enabled Elections Subcommittee has created a thorough listing of GIS layers that are required for this effort. Kentucky is fortunate to have many of these layers in our clearinghouse at this time. Kentucky's participation in the Census Boundary and Annexation Survey (BAS) program for all Kentucky's cities is seen as an asset.

10. Create a survey to be filled out by Kentucky County Clerks to identify GIS data related to Voting that exists at the Local Level: Due to the variance of GIS technology usage at the local level and the vagueness of the existing Statute on Precinct boundary submission, precinct information submitted to Frankfort varies widely in terms of format and sophistication, from hand-drawn paper maps to GIS data. The group will work to strengthen the existing Statute (KRS 177.055) preferably to a GIS digital submission requirement. In order to gauge the ability for the Counties to provide GIS/digital data to the Commonwealth, the group decided to distribute a survey to the Counties to gauge what data they currently have and the format it is in (digital or paper). The survey has been created and sent out through the Kentucky County Clerk's Association. To date, 41 out of 120 Counties have filled out the survey.

Barriers

Many of the barriers we encountered were related to the acquisition of specific datasets or gaining knowledge about a certain agency workflow or their internal requirements. It is our feeling that many of these barriers will be broken down over time as we work collaboratively to geo-enable the elections process here in the Commonwealth. The efficiencies that can be gained and the potential for improvements in the voting process are great incentives for the stakeholders to cooperate as we move forward.

Lessons Learned and Key Takeaways

Geo-Enabling the elections process requires a cooperative approach as it cannot be accomplished in a vacuum by a single, stand-alone agency. As with all things GIS, everyone else's layers allow you to put your layers in context. Thus, gaining access to voting precinct data is just one piece of the entire puzzle. Getting the right stakeholders around the table, gathering the appropriate authoritative layers, studying the governance surrounding elections, and developing a strategy to implement the necessary changes is crucial. Even more paramount, is having the right champions on board and making sure that they possess the political wherewithal to make it happen.

Unrealized Benefits

One thing that really got our attention was the parallels between the needs of NextGen911 and Geo-Enabled Elections. Our office has been dealing with NextGen911 a lot lately and this point has been driven home over and over again. Coincidentally, the NextGen911 effort in Kentucky is now situated at the Kentucky Office of Homeland Security (KOHS) and they are tasked with securing the elections process here in the Commonwealth. As a result, KOHS has a keen interest in GeoEnabling the elections process and willing to share NextGen911 datasets that will be useful.

Another unanticipated benefit was being able to use the voting precinct data to support an application that is being built for the Kentucky Alcoholic Beverage Control (ABC). This agency issues licenses for the sale of alcohol here in the Commonwealth and they wanted a way to determine if an applicant was in a wet or dry precinct. Using this dataset, we were able to create a service (REST endpoint) that returns the precinct ID, city name, and county name for any lat/long value (geocoded result) that is submitted.

Next Steps

It is the aim here in Kentucky to move this effort forward by holding quarterly meetings of the Geographic Information Advisory Council, Geo-Enabled Subcommittee and working to update the appropriate statutes and regulations that govern the elections process. It will be important to monitor how the improved governance changes impact the elections and to take note of other opportunities for enhancements or fine tuning. Change is always difficult, and keeping the stakeholders engaged and onboard with the changes will be key to a long-term success.

NSGIC

Minnesota

Core Team

Dan Ross, Chief Geographic Information Officer, Minnesota Geospatial Information Office

Brad Neuhauser, GIS Specialist, Office of the Minnesota Secretary of State

David Maeda, Director of Elections, Office of the Minnesota Secretary of State

Alison Slaats, Project Manager, Minnesota Geospatial Information Office

Emily Ruetz, Student Intern, Minnesota Geospatial Information Office

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STATE PROJECT BACKGROUND

The Office of the Minnesota Secretary of State (OSS) serves as the lead organization for managing elections in Minnesota. OSS is partnering with the Minnesota Geospatial Office (MnGeo) to incorporate geospatial data and techniques to improve Minnesota election administration.

Stakeholders

Minnesota Office of the Secretary of State
Minnesota Geospatial Information Office
Minnesota counties
Minnesota cities and townships
Minnesota voters
Individual school districts in Minnesota
Department of Public Safety
Emergency Communication Network NG911 Team

Champions

Dan Ross, Chief Geographic Information Officer, Minnesota Geospatial Information Office
David Maeda, Director of Elections, Office of the Minnesota Secretary of State

Pilot Project Goals and Key Outcomes

1. Improve coordination between OSS & MN Geo: Members of the Core Team met via Skype or in person approximately every two weeks throughout the project. We have developed a mutual understanding of our data and processes.

2. Understand the possibilities of using other geospatial data sets to improve elections data and assess compatibility of address data in SVRS with other geospatial data sets: Based on understanding from Goal 1, the Core Team decided to attempt voter audit using the process described in Amos/McDonald paper as a model. OSS shared elections datasets, including voter addresses and precinct geodata with MnGeo staff. MnGeo staff included a project manager and a student worker. MnGeo staff used the MnGeo statewide geocoding service to geocode the addresses, and then spatially intersected them with precinct geodata to assign a precinct to each election point. The precinct information derived from this process was then compared with the precinct information in the SVRS. The initial results were evaluated, and mismatches were reviewed through an iterative process. Most inaccuracies were found to be problems with the gecoding locator and not the voter records. Inaccuracies caused by the geocoding process were mitigated by using an alternate geocoder. The remaining mismatches are being analyzed further to evaluate whether the cause is an error in the voter record or not. Preliminary results indicate that a very small percentage of the voter records have the potential of being an error.

3. Visualize elections-related data: MnGeo staff were able to share data from analysis results, but did not do more work related to this goal as other goals seemed like a higher priority.

Barriers

• Initially there was a lack of thorough understanding of each organization's data and capabilities. With time and contact, this was overcome. For example, OSS was able to provide addresses for both active and inactive voters, but it became apparent that inactive voters were less useful for analysis because they do not get updated in SVRS.

• The MnGeo cascading geocoder was known to have incomplete address point data in some areas of the State. This work proved to be a barrier because it could not be the only geocoding locator for this project, which was initially anticipated. The barrier was overcome by using another geocoder (Esri World Geocoder), but this geocoder required payment.

Lessons Learned and Key Takeaways

• We were very pleased that each office had gathered data individually that was so easily combined to generate useful voter address/ precinct analysis, essentially fulfilling two of the best practices. OSS already "collects and sustains a statewide voting unit GIS layer" and MnGeo already "implements a statewide geocoding strategy."

• We have learned that the quality of the data used for the geocoding process has a big impact on the results, and that it is good to have access to multiple options. In addition, the analysis of addresses that potentially do not match can be very time-consuming. As we hopefully continue to define and implement data validation processes, these will be important issues to consider.

Unrealized Benefits

• OSS is planning a substantial rewrite of SVRS, and the standards identified by MnGeo could be helpful in making improvements to the addressing components.

• The MnGeo geocoder will be improved in the next few months with the addition of new data inputs from Next Generation 911 work and 2020 Census work. It will be beneficial to MnGeo to be able to re-geocode the voter records after this work and compare the results with the initial benchmark results from this project.

• Counties share their address data with MnGeo for NG911 and Census work. A benefit of this project was that it provides an example of how the same data can be used to support auditing of voter records for OSS. This shows how MnGeo and MNIT Services help coordinate and improve spatial data foundations in Minnesota and help make government better.

Next Steps

• Finish analysis of voter addresses where the precincts don't appear to match.

• Forward any cases which appear as likely precincting errors to counties for evaluation and correction.

• Fully define a data validation process, including resourcing needs, standards for data sharing, timing considerations, ways of finding and filtering for false positives, and how to usefully report out potential issues.

Nebraska

Core Team

Wayne Bena, Deputy Secretary of State Elections | Nebraska Secretary of State

John Watermolen, State GIS Coordinator | Nebraska OCIO

Heather Doxon, State Elections Coordinator | Nebraska Secretary of State

Eric Herbert
GIS Coordinator | Sarpy County

Nikki Lampe
GIS Specialist | Sarpy County

Michelle Andahl
Election Commissioner | Sarpy County

Angie Nelson, Senior Election Coordinator | Sarpy County

Stakeholders

Registered Voters of the State of Nebraska
NE Secretary of State
NE Office of the CIO
NE State GIS Division
NE League of Municipalities
NE County Emergency Management Association
County GIS Office(s) and personnel
Election Systems & Software (Voter Registration software vendor)

Champions

Robert B. Evnen, Nebraska Secretary of State
Ed Toner, Nebraska Chief Information Officer

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STATE PROJECT BACKGROUND

During the 2018 election cycle, there were documented issues of incorrect ballots being issued to a small number of voters. The issues stemmed from end-users incorrectly managing the manual street file in our current Voter Registration software. While those instances were few and ultimately corrected, the State wanted to explore using GIS technology for a solution to those situations and to have the State duly prepared for redistricting as the 2020 census is around the corner. Our involvement with NSGIC and the pilot came at the same time that Sarpy County (Nebraska's 3rd largest, with approximately 113,000 voters) reached out to the Secretary of State's office with a solution. Thus, Sarpy was selected as the pilot county to test the GIS module of our VR software and eventually have it released into production.

Pilot Project Goals and Key Outcomes

1. To kick off an in-state pilot in Sarpy County, using our VR software's testing environment.

2. Create a comprehensive process guide document using Sarpy County's experience, to be used with possible implementation in remaining 92 counties.

3. Complete an analysis of the in-state pilot in Sarpy County and lessons learned.

4. Identify GIS contacts for remaining counties.

5. Obtain political subdivision data from remaining counties along with other entities.

6. Work with the Nebraska Legislative Research office to identify what information is filed in their office.

7. Promote transparent data sharing of voting precinct mapping data between stakeholders.

8. Identify plan for implementing the balance of the pilot project throughout the state.

Accomplishments

The project provided the opportunity to bring together resources from the Secretary of State's office, State GIS, Sarpy county elections and GIS departments to implement a successful GIS interface for elections. The project allowed for the geocoding of address points that benefited elections and that also carried over to other areas such as school funding. Most notably, a couple of long-standing school district assignments were correctly updated due to address information geocoded from the elections side of the project.

Because our state uses a legacy Voter Registration system, this project also helped us accomplish coding and import/export processes that allow the GIS system and the VR system to interface consistently and accurately. The ultimate result of this project was that we have put together a framework that will result in a blueprint to use to implement this solution into other counties in the state.

Barriers

The main barriers we encountered had to do with addressing for apartments and the military in the area of our pilot county. Even more than that were the challenges of trying to interface with a legacy system like our VR software.

Lessons Learned and Key Takeaways

It was – and is – a constant do and redo process, especially when navigating imports into the legacy system, and trying to troubleshoot errors that arise from that import. Also, based on our initial timeline estimates, things were a bit more drawn out than expected; this will help us in gauging future timelines with implementations in other counties.

Unrealized Benefits

Beyond the obvious benefits of more accurate election boundaries, we saw this bleeding over into other county areas such as tax assessments. A couple of our scenarios led to the fixing of school districts that were misidentified. We had a couple instances of voters assigned to the wrong district and paying into the incorrect school district. Because of our pilot, this is now fixed.

Next Steps

We have some specific district challenges. We have offices that vote in a specific district, as well as in what we call an "at large" district. These are not always defined by 'normal' district boundaries. We are working with our vendor at the moment to figure out how to best identify these in our voter registration system so that they translate well into the GIS export/import. Until decisions have been made on these points, we are postponing a move into production.

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NSGIC

Pennsylvania

Core Team

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Veronica Degraffenreid, Director of Elections, State Board of Elections in North Carolina

Toni Goril, Chief, Division of SURE, Pennsylvania Department of State

Kerry TenHuisen, Portfolio Manager, Pennsylvania Department of State

Matthew McAneny, Government Service Intern Pennsylvania Office of Administration

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STATE PROJECT BACKGROUND

The Commonwealth is eager to develop a plan for GIS adoption with key stakeholders to improve and modernize the voting and election administration process for all Pennsylvanians. Recent legislation around geospatial matters in the Commonwealth of Pennsylvania has resulted in greater collaboration amongst the state, county, and local GIS communities. An advantage of this collaboration is an opportunity for the data stewards of election data to share GIS election data in a manner that will allow citizens to participate fully in the election process and be assured their vote will count.

Stakeholders

Pennsylvania Department of State (DOS)
Pennsylvania Office of Administration (OA)
County Boards of Elections (CBEs)
County GIS Officers (CGOs)
Pennsylvania Emergency Management Agency (PEMA)

Pennsylvania Data Center (PADC)
Pennsylvania General Assembly (PAGA)
County Commissioners Association of Pennsylvania (CCAP)
External data users

Champions

Kathy Boockvar, Acting Secretary, Pennsylvania Department of State

Jonathan Marks, Deputy Secretary for Elections and Commissions, Pennsylvania Department of State

John MacMillan, Deputy Secretary for Information Technology/Chief Information Officer, Pennsylvania Office of Administration

Pilot Project Goals and Key Outcomes

1. Establish a workgroup to collaborate and work on Geo-Enabled Elections in Pennsylvania
A work group was established that consisted of GIS and Elections Office staffing; additionally, a pilot group of counties – sort of a "pilot of the pilot" was organized to get initial information out and back, to facilitate the initial understanding of what to ask for, how to ask for it, what might be available, etc. A summer GIS intern was brought on to do a lot of the leg work and research on the GIS side of the house. On the Elections side, a full-time staff person with GIS knowledge and data analytics is in the process of being brought on board. In addition, outreach was conducted with the County GIS Professionals work group to encourage their participation in the project. A similar outreach was conducted with County Elections Officials.

2. Promote stronger relationships between election and GIS professionals in Pennsylvania
Each Pennsylvania county's election director and GIS coordinator received emails from the Pennsylvania Department of State and Pennsylvania Office of Administration, respectively, explaining the project, inquiring about data availability, and encouraging outreach. For some, this was their first "introduction" to the other side of the house. The Department of State has also been engaging in peer-to-peer discussions and introductory knowledge sessions at county election director conferences across the state. Specifically, we have been advocating and explaining the importance of the pilot and GIS applications at the Pennsylvania western election director's meeting in March 2019, the Pennsylvania eastern election director's association meeting in June 2019, and the upcoming annual state election director's conference in August 2019.

3. Obtain voting precincts from the 67 county boards of elections and supporting GIS offices
The availability of election geospatial data from all the counties in Pennsylvania was researched. Only a handful of counties openly share data; most charge for access. Our preferred data exchange method is to consume a service, as this is the easiest lift and leaves the responsibility of data updates to the data owner, which is the county in Pennsylvania. A small subset of counties in Pennsylvania were requested to provide access to

their services, and this information was configured into a statewide map view. Our goal is to continue building out this statewide map until all 67 county data sets have been obtained. Then, we'll look to maintain this statewide layer going forward.

4. Identify and document governance, including data standards, that needs to be in place to maintain a statewide data layer for voting precincts Developed and defined attributes for voting precincts and polling places, on which input was provided; validate we are looking for the right data by determining the significance of each attribute. Developed and documented the required steps to changing a voting precinct boundary with county GIS pros and county election directors. The Department has also documented and standardized their approach to reviewing precinct changes at the county level and are taking steps to incorporate a GIS application into the review and approval process. Historically, the Department's review was only accomplished with paper or PDF maps.

5. Identify a list of GIS layers that are needed for Geo-Enabled Elections
Two mockups of a statewide map – one showing voting precincts, the other showing polling places – were created. Other layers on the map include county, municipal, legislative, and school district boundaries. Researched other layers for potential inclusion – for example, census boundary layers – and determined their relevance to elections.

6. Promote transparent data sharing between both public and election stakeholders
To date, 21 counties have signed a common data sharing agreement promoted by the State Geospatial Coordinating Board, facilitating access to their election data. Education on the need to share data was conducted with the key stakeholders in the process. The Department, with the assistance of the PA Office of Administration, has also been encouraging stronger collaboration between state agencies that utilize election datasets or manage critical infrastructure.

7. Identify both short and long term strategies to implement GIS in elections on an on-going basis in Pennsylvania

Short-term:
Continue to gather Pennsylvania county's geospatial election data and incorporate it into a statewide map; included pertinent legislative boundaries to allow voters to visualize who they are voting for. Integrate statewide map into State Elections website. Also, incorporate best practice GIS RFP language into our soon-to-be-released election and voter registration database procurement.

Long-term:
(1) Move towards having each County in Pennsylvania be a host to their own election data (precincts, boundaries) and implement a means to share that data.

(2) Develop and document an effective, efficient workflow for counties to submit proposed boundary changes, to be visualized on a map, for review and approval to the Pennsylvania Department of State Bureau of Elections.

Barriers

A few of the project's pilot counties were difficult to receive a response from or couldn't adequately answer questions about the availability of their election data. Some of this may just be an educational issue.

Pennsylvania's electoral makeup delayed progress with pilot counties as Pennsylvania has 2 elections each year as well as special elections.

Lessons Learned and Key Takeaways

1. Not all Geo-Enabled Elections data is created the same.
In Pennsylvania, one of the concerns about the quality of the election boundary data is identifying the source data used by each County to create their election boundary files and determine its fitness for use. Counties have a few sources to use to create their voting precinct boundaries; depending on the source, their boundaries may or may not line up with other overlying boundary files (legislative districts, etc.). In a process where a matter of feet may make the difference in who shows up on a ballot, this can be critical.

2. Collaboration is key to getting cooperation.
As a Commonwealth, most government operations originate at the local or County level. Each County has its own set of processes, rules, and guidelines surrounding data formats, data schemas, sharing, etc. By working with the State Geospatial Coordinating Board, who were promoting a common data sharing agreement, along with the Pennsylvania Emergency Management Agency (PEMA), who are working diligently towards getting 911 data spatially enabled, we were able to identify many common areas around County GIS election data. We took advantage of the networking opportunities presented as a component of these projects to promote ours.

3. Your map isn't going to be ready in a day.
Ideally, if all of the data was available from the sources, and if there were an abundance of resources, we would have a statewide precinct boundary map available on short notice. But the variety of different levels of data availability, data sharing ability, and County cooperation make that more difficult. We have the tools to pull it all together; we just need the data to be available, as well as the people to do the pulling.

Unrealized Benefits

Shared opportunities with the Commonwealth's NextGen 911 project.

Next Steps

1. Finalize access to voting precinct boundary data for all 67 counties; put out a request that includes a service schema to obtain as many feature services as possible; work with those counties lacking the ability to share via service to come up with a solution. Do the same for election polling locations. Make statewide maps available to state elections offices to integrate into their websites. Incorporate statewide maps into the Department's online applications and election returns website.

2. Identify best practices for counties to keep their election GIS data up to date.

3. Finalize the documented process work flow for how counties will update their voting precinct boundaries.

4. When the state elections office has more resources available, engage them in developing a GIS work flow for the review and approval of precinct boundary changes.

NSGIC

West Virginia

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Core Team

Tony Simental, State GIS Coordinator, State of West Virginia

Dave Tackett, Chief Information Officer, West Virginia Secretary of State's Office

Brittany Westfall, Elections Director, West Virginia Secretary of State's Office

Sarah Whitt, Mentor, West Virginia GEE Pilot Program

STATE PROJECT BACKGROUND

West Virginia voting districts are designated, in narrative form, by the State Legislature, based on census data. That narrative is then transferred to "two-dimensional" maps by the Joint Committee on Government Organization to County Clerks, as local election officials (LEOs), for use in maintaining voting district assignments in the 'top-down' Statewide Voter Registration System (SVRS). The SVRS addressing architecture could also be described as two-dimensional, as static human review is a key component to placing voters in the appropriate districts. That maintenance is done through a combination of techniques and resources, including referencing paper maps or transferring district information into stand alone GIS systems at the County level utilizing vendors or coordination with local Emergency Management entities. Designation and opportunity for reference tends to be redistricting-only driven and unidirectional, leaving governance and accuracy decentralized.

Stakeholders

West Virginia Secretary of State's Office (WV SOS), as State Chief Election Official
West Virginia Legislature, Joint Committee on Government Organization
West Virginia Legislative Information Services Division
West Virginia County Clerks, as LEOs

WV County Assessors
West Virginia Municipal Clerks and Registrars, as LEOs
WV Municipal League
West Virginia Office of GIS Coordination (WV GIS)
WV GIS Policy Council and Steering Committee
WV Association of Geospatial Professionals

Champions

Tony Simental, State GIS Coordinator, State of West Virginia
Willingness to embrace GEE and include in WV GIS
West Virginia Legislature
Approval of WV SOS funds re-allocation for SVRS upgrade

Pilot Project Goals and Key Outcomes

1. Create a Geo-Enabled Elections Team:
A Geo-Enabled Elections Subcommittee was formed under the West Virginia GIS Policy Council in April of 2019. Development of the mission statement, memorandum of operation, and recruitment of the members of this subcommittee continues.

2. Identify Election Districts: All applicable election districts have been identified, along with the government entity in charge of maintaining those districts.

3. Determine Status of Boundary Maintenance:
WV GEE Survey to the government entities in charge of district maintenance is in draft form. Feedback to be solicited at biennial County Clerks Training Conference, August 2019. Once finalized, goal of the survey is to collect data availability, format, and update frequency.

4. Validation of Address Mapping: WV GIS has been identified as 'parent' entity for address points. Local addressing resources are expected to be identified via the WV GEE Survey.

5. Funding for Office of GIS Coordination:
The WV SOS office has supported additional funding for the overall budget of the Office of GIS Coordination, in the form of a joint request for a new line item appropriation for GEE support.

6. Determine and Secure Resources: WV SOS requested and received approval to re-allocate internal agency funds to facilitate the upgrade of the SVRS. Upgrade will be completed by current SVRS vendor, significantly increasing the speed of implementation.

Accomplishments

• Identified key partners in and opened dialogue between several critical stakeholder entities (WV GIS, WV Tax, WV Legislature, WV SOS, WV Association of Counties).

• Formed Geo-Enabled Elections Subcommittee under the WV GIS Policy Council.

• Revitalization of GIS Policy Council and renewed interest in GIS data sharing.

• Secured funding re-appropriation approval for GIS capable SVRS upgrade.

• Completed draft of WV GEE Survey for distribution to LEOs.

• WV SOS drafted letter of support for additional funding for WV GIS.

• WV GIS was awarded funds to initiate WV GIS Pilot involvement.

Barriers

As is the case with many small governmental operations, the project core WV team members wear several hats and hold several responsibilities. Therefore, progress on advancing the project moved at a hampered pace.

Special session(s) for the West Virginia Legislature on unrelated topic(s) made access to appropriate necessary resources difficult.

Current staffing and institutional knowledge of district maintenance at State level.

Lessons Learned and Key Takeaways

L1. West Virginia has an archaic approach to election district maintenance: Siloed process limits the input of subject matter experts and resources. Evaluation of the current process(es), especially at the State level, is necessary to determine how to move toward centralization.

L2. Recruitment of and delegation to additional resources outside the core team: Geo-Enabled Elections Subcommittee of the GIS Policy Council expansion is key to overcoming the barrier of speed at which the project goals advance.

L3. Timing is everything: Serendipity prevailed during the pilot phase in the form of the revitalization of the WV GIS Policy Council and thus the GEE Subcommittee, along with the advancement of the SVRS upgrade to incorporate GIS data.

T1. Modernization of district maintenance is needed: Modernization will likely require legislative work and memoranda of operations, along with the development of future district auditing processes.

T2. West Virginia has a wealth of GIS expertise and resources: Both public and private resources exist that can aid the GEE mission; some currently provide functional support, some need onboarding.

T3. Widespread support for GEE mission: Several governmental entities expressed an interest in a cooperative approach to GIS data sharing and utilization. The GEE project could well be the quickest win and the model for future projects.

Unrealized Benefits

• Work on this project is likely to aid in the facilitation of the Automatic Voter Registration (AVR) process, between WV SOS and the WV Division of Motor Vehicles. Included in the upgrade to the SVRS will be enhanced automated voter assignment capabilities. AVR is scheduled to deploy in July 2021.

• Work on this project will enhance electronic election results reporting system.

Next Steps

• Core team meet to scope WV GIS Pilot involvement for current fiscal year. Demonstrated capabilities to determine permanent future funding.

• Fully compliment the GEE Subcommittee. Schedule meetings and frequency. Task members with mission directives re: district maintenance modernization.

• Finalize, distribute, and collect WV GEE Survey. Partner public and private GIS expertise with all elements of the district maintenance process.

• Scope SVRS upgrade, to include GIS integration and auditing process(es).

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