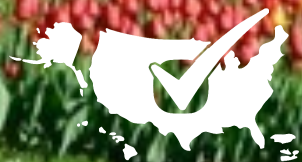


Election Director Report



NSGIC
GEO-ENABLED ELECTIONS

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Geo-Enabled Elections Now

(COVER)
State Capitol Building
Madison, Wisconsin

The time has never been better for Geo-Enabled Elections - a concept grounded in the integration of geographic information systems technology with election data management systems.

All the needed components are there: money, resources, relationships, thirst, need, and the big magnifying glasses of mainstream and new media that amplify errors in our current electoral system quickly and broadly.

It is an exciting time for elections in the United States. Our electorate is engaged and has great expectations. The role of the election administrator continues to be to get the right ballot to the right voter. Administrators know there are unresolved issues with electoral systems and the data that determines who votes where and on which ballot. At best, there is room for improvement toward accuracy and meeting public expectations. At worst, officials may harbor fears that deficits in their systems and data will adversely impact election outcomes, public trust, and even their jobs.

The Geo-Enabled Elections project was created by the National States Geographic Information Council (NSGIC) to strengthen the accuracy and reliability of America's electoral system and to increase voters' confidence that their voice is being heard in each election.

Dan Ross, NSGIC President and Chief Geospatial Information Officer (GIO) for the state of Minnesota had this to say: "During the project's first year, we've been encouraged to learn that while most voter data across the country is still kept in 'address list'-style tables, many state election directors are interested in the benefits that a transition to a GIS-based approach can bring. Additionally, since most state governments have a GIO or equivalent on staff, the prospects for strengthening elections through the integration of GIS into electoral systems are very good."

Through informal interviews, NSGIC listened to state election directors (EDs) describe the state of the practice and their aspirations for improvement.



Main Takeaways and Highlights

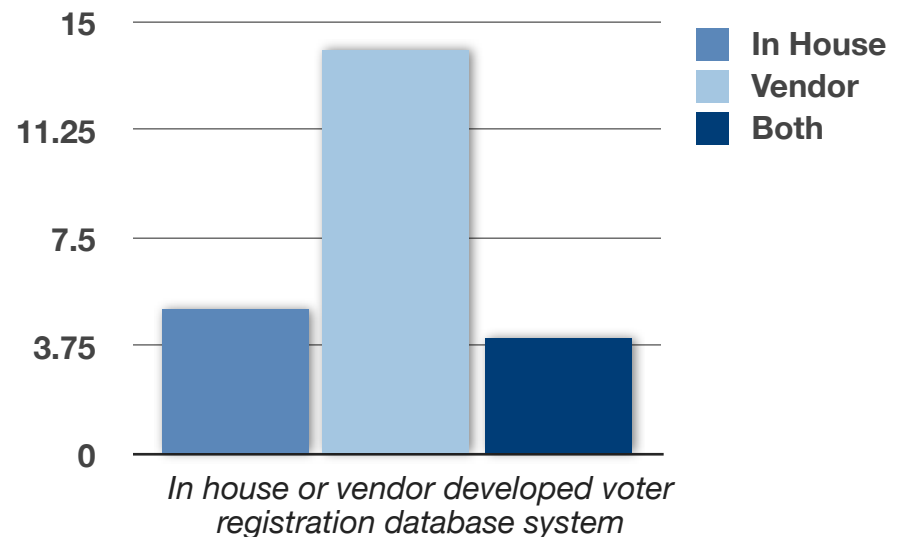
The interviews contained four sections: general, voter address management, precinct boundary and other data management, and transitioning to GIS. Below are the main takeaways and highlights from these sections.

General:

1

Most states utilize a vendor-based voter registration system where data entry is provided by local governments and is accessible at the state level.

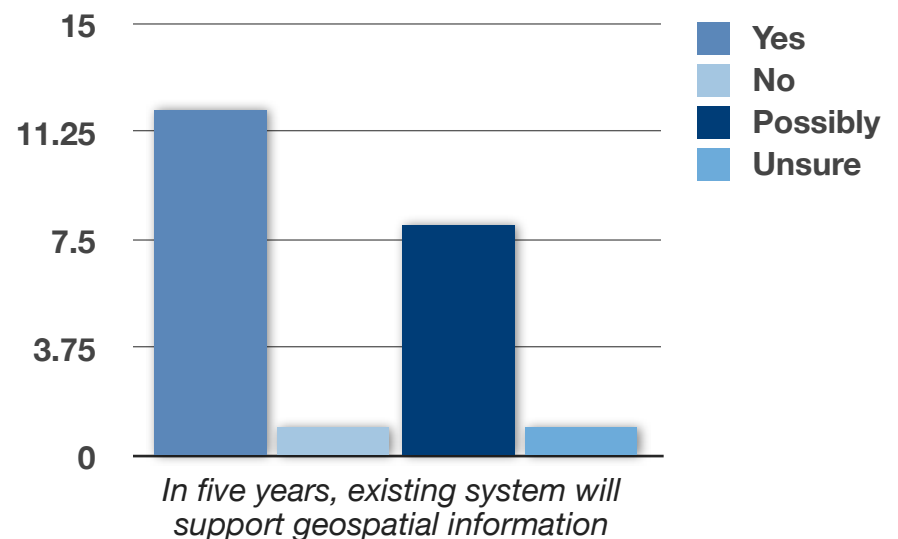
Often referred to as a 'hub and spoke' model, this centralized architecture allows states to host, or connect to and query, data from local government systems directly. Although in the minority, states with custom solutions developed in-house report positively; only one state anticipates moving to a vendor solution.



2

The use of integrated or supporting geospatial technology is mostly absent from state voter registration systems. However, most respondents

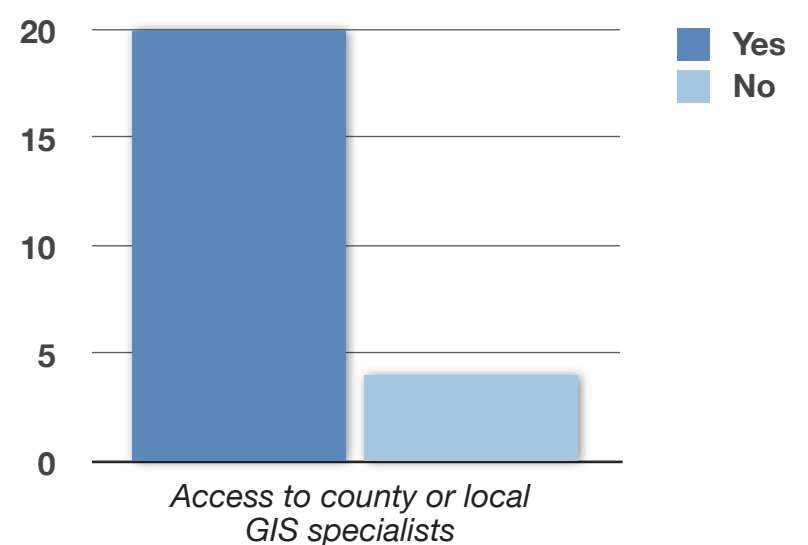
see their systems supporting geospatial information/objects within the next five years. The biggest concern to the success of geospatial support is budget and overall commitment across all stakeholders.



3

Most states report a good and open line of communication to GIS specialists, either through their state (GIO or in-house specialists) or local

government contacts. Not every local government has GIS resources, especially in rural areas. As GIS becomes more ubiquitous, state and local government resources, training opportunities, and general knowledge are becoming more readily available.





State Capitol Building
Albany, New York

Voter Address Management:

1

Addresses and voter registration records in most state voter registration systems are updated by local governments. Improvements in the the quality, completeness, and standardization of addresses in voter registration systems is needed and, therefore, will have to involve outreach to and work by local governments.

2

Most states rely largely on the USPS address standard and related commercial products for address cleansing, formatting, and other validation. This is problematic. At best, the standard results in additional work for election office staff to ensure addresses -- especially those in rural areas where there is no street delivery-style mail service -- are assigned to the correct election geography. At worst, the standard can create errors in election geography assignment.

3

The interviews show some confusion between address validation (is the address legitimate) and address standardization (forcing the address into an expected/required data structure).

State and local government election offices make heavy use of street and address range files, developed internally or acquired in partnership with agencies such as 9-1-1 centers that have similar needs for local address reference data. This is a good base. However, transitioning to relying on the mapping of individual address locations holds the promise for the highest level of accuracy and more reliable assignment of voters to the correct ballot. Ideally, addresses for locations are logical, consistently communicated, and locally unique. When addresses are mapped to create GIS data, the latitude and longitude points that are recorded are for a location on the residential structure. When this level of data is not available, assuring correct placement requires careful and time-consuming research. In rural areas, address assignment systems can be less well developed and the consistent use of addresses for general reference can be very relaxed.

4

5

A minority of the EDs interviewed reported routinely auditing voter address agreement with election geography assignments. The audit methods performed are variable but all seek to ensure that voters are assigned to the right precinct enabling them to receive the correct ballot. Election offices would benefit from the development and implementation of best practice recommendations in this area, both to ensure greater consistency, but also to help make the case for this practice when budgets are tight.





State Capitol Building
Austin, Texas

Precinct Boundary and Other Data Management

1

Precinct and jurisdictional boundaries are largely determined and managed locally. Most of the EDs interviewed reported they have access to these locally drawn boundaries; two reported they manage a statewide precinct boundary dataset.

2

There are state and local requirements that govern precinct and other boundary formation and changes. These include statewide blackout periods before and during elections when no changes can be made.

3

The number of different voting districts varies greatly from state to state and from county to county. Alignment of the different districts with each other as well as with address points will be a critical function of GIS for each county/state. Statewide standards for all counties to follow will facilitate statewide reporting and analysis.

Transitioning to GIS

1

Four. During the interviews, EDs were asked, “Where is your state election office currently with geo-enabled elections.” With ten being full GIS integration and one being no GIS integration, states averaged four on the geo-enabled elections scale.

Geo-enabled elections was defined for each ED as the integration of geographic information systems (GIS) with election data management systems. The main takeaway from this section of the interview is there are few fully GIS integrated state election offices in the United States; however, there is a thirst within the states to try new things, change processes and practices to gain efficiencies, and be innovative to improve their election data management workflow.

2

EDs know what GIS is and understand the positive impact it can have, especially in the area of election data accuracy and integrity. GIS brings efficiency to election data management and associated processes. Geospatial data is needed in applications for finding a polling place and identifying your candidates for public office. EDs are aware maps have always been a key component to managing and participating in an election; digital mapping should now be fully embraced.





Project Introduction

In the United States, elections are decentralized, with no two states administering elections the same way. This variation between how states administer elections is seen both positively and negatively depending on who is reviewing and when the review is happening.

Local control is seen as providing the flexibility in the system for experimentation and innovation, but also may result in a looser adherence to requirements. The role of the election official, from the early years of this nation, was important. The role has become even more important since the National Voter Registration Act (NVRA) of 1993 and the Help America Vote Act (HAVA) of 2002. Both of these acts required the states to adopt additional responsibilities. Regardless of the changes in process and technology, the primary responsibility of the election official is properly storing voter information and ensuring a voter receives the correct ballot.

Until most recently, the conventional approach for updating and maintaining voter precinct assignments for elections was through the use of a voter address list lookup table. The Help America Vote Act (HAVA) of 2002 required and provided one-time funding toward a process to create state-level voter databases, including addresses and precinct assignments. The address list approach typically consists of a statewide table with one record for each portion of a street name in a community assigned to a specific voting precinct. Address ranges are kept for each record to define a valid range of addresses, and are used to define where precincts begin and end along a single street.

The address list tables were difficult to build and maintain, and did not align well with other ongoing data needs of either local or state government. Another significant drawback to the address list approach is that it is not visual, and therefore it is difficult to find errors and omissions.

With HAVA implementation support, states had sufficient funding to create the address tables. Unfortunately, the updating and maintenance was not funded. Moving forward, each state had to determine methods and processes for updating and maintaining their election data. Election data is spatial in nature, and there is a distinct and important role for geographic approaches to elections-related location information. In fact, voters receiving the correct ballot depends on this.

In the fall of 2017, the National States Geographic Information Council (NSGIC) launched an effort to identify best practices for the use of GIS in supporting electoral systems management and citizen engagement.

At the onset of this project, GIS technology, in most cases, was relatively new to state elections implementations. This NSGIC project brings together GIS leaders in state government, local elections officials and state elections offices, national GIS and elections organizations, and federal partners to identify opportunities to integrate GIS into elections systems across the country. The GIS model is expected to significantly enhance accuracy, transparency, and efficiency of representative government.





The Geo-Enabled Elections Project

The Geo-Enabled Elections project was created by the National States Geographic Information Council (NSGIC) to strengthen the accuracy and reliability of America's electoral system and to increase voters' confidence that their voice is being heard in each election.

The project's goal is to assist states and other election authorities in implementing GIS technology in elections to ensure voters are placed in the right voting district, receive the right ballot, and vote in the right electoral contests. Too many occurrences have received attention recently where errors in voter placement have undermined the reliability of election results, and as a result may have hurt voter confidence.

GIS technology can aid in the process of ensuring that each voter is placed in the right exact location and therefore is placed into the right voting district. Instead of relying on unwieldy voter lists and verbal definitions of voting districts, GIS technology allows election officials to view voters as pinpoints on a map, and voting district boundaries as geometrical shapes that surround those pinpoints. The verification that voters have, in fact, been placed into the right voting district becomes much easier, as does quality control – both as part of a periodic review and after major changes, such as the modification of voting district boundaries.

Many states already use GIS technology for other matters, such as emergency response systems, land use, and utility management, and often have a geographic information officer (GIO) on staff. Part of this project's mission is to promote a stronger dialogue between geographic information officers and election directors in state government.

What is GIS?

Geography and geographic information systems (GIS) play a primary role in elections.

A geographic information system (GIS) is a digital framework for collecting, managing, visualizing, and analyzing data as a series of digital map layers. While humans are most comfortable using addresses to communicate location, computing worlds prefer geographic coordinates, and a GIS can transcend these competing preferences.

In the context of elections management, a GIS can be called upon to find and store locations of voters, polling places, and the boundaries of precincts, elected districts, and various local government jurisdictions. Additionally, other supporting information such as demographics and aerial photography can be easily integrated to analyze elections, maximize data quality, and meet other needs.

Lastly, a GIS can provide 'smart map' capabilities that provide public stakeholders with efficient answers to location-specific question such as 'who are my elected officials' and 'where are ballot drop-off locations nearest my home or work,' as it provides not only a visual depiction of our world, but it also provides an environment for storing important, pertinent, and relevant information.





State Capitol Building
Santa Fe, New Mexico

The Survey

Mission

The ED interviews took place between August and November of 2018 with the purpose of determining a baseline level of GIS integration with election data management systems in a state from the perspective of a state ED.

In contrast, in July of 2018, a report was released by NSGIC sharing this same subject matter from the perspective of the geographic information officer (GIO) or GIO-equivalent.

This baseline information is vital in developing a set of best practices and guidance for the proper and successful integration of GIS into electoral systems.

Participants

All 50 states, American Samoa, the Commonwealth of the Northern Mariana Islands, the District of Columbia, Guam, Puerto Rico, and

the U.S. Virgin Islands are represented by a state official whose primary responsibility is the administration of elections within the state. These individuals were the target for the Geo-Enabled Elections project interviews, and the data collected provides the substance for this report.

NSGIC gratefully acknowledges the election directors who responded to our request for interviews. Without their responses to email and the subsequent phone interviews, this report would not be possible.

Methodology

On August 21, 2018, the Geo-Enabled Elections project began an outreach campaign to connect with EDs from all 50 states, American Samoa, the Commonwealth of the Northern Mariana Islands, the District of Columbia, Guam, Puerto Rico, and the US Virgin Islands. EDs are state officials whose primary responsibility is the administration of elections within the state.



An email was sent to all EDs requesting a thirty minute interview between late August and the first week of October, where a series of questions would be asked focusing on the state's current use of GIS in election data management.

EDs were informed the interview would not be recorded, they were encouraged to invite all necessary personnel to the interview, and they were notified all responses would remain anonymous and findings communicated in the report would maintain anonymity.

Although the bulk of the interviews took place between late August and September, the project team found it necessary to extend the interview period through early November to provide ample opportunity, given the impending 2018 midterm elections, for EDs to participate.

In an effort to receive maximum participation and data for the project, the project team emailed EDs who did not respond to initial requests a total of three separate times. Nearly 42% of all EDs responded to our requests.

Once an ED confirmed participation, a thirty-minute interview was scheduled. Interview durations did fluctuate with many concluding in the thirty-minute allocated time slot; however, a handful of interviews exceeded the thirty-minute duration. If an interview exceeded the thirty-minute allocated timeslot, and the ED was not able to finish the interview at that time, the interviewer provided two options for the successful completion of the interview: set up another call or send the remaining questions to the ED in PDF form by email. In all instances of interviews exceeding the thirty-minute allocated time slot, all EDs preferred the interviewer to send the remaining questions in PDF form by email. In this case, not all EDs submitted final responses to the interviewer.

During the interview, the interviewer asked the ED, and occasionally their staff or other personnel, a series of twenty-six questions divided into the following categories: general, address management, precinct boundary and other data management, and transitioning to

GIS. If an ED requested the questions ahead of time, questions were provided in PDF form.

The interviewer was also the transcriber. Detailed notes were recorded during the interview capturing the information and stories the ED shared. The interviewer reviewed and consolidated the notes following each interview.

Once a first draft of the notes was created by the interviewer, the draft was sent to the ED for review to ensure the accuracy of the information. The project team felt this was essential to ensure the accuracy of the information shared in the report. The majority of EDs reviewed their interview drafts, providing additional information and updates; however, many chose not to participate in this activity.

Two states provided their responses to the questions by email rather than in the interview.





State Capitol Building
Denver, Colorado

Complications

Relationships

The most important component of the Geo-Enabled Elections project is the building of relationships between all project audiences, including the geographic information officer and the ED.

It is the project team’s belief that a greater number of EDs may have been reached if a closer relationship existed between the NSGIC organization, its members, and each ED.

To ensure an increased response rate to future surveys and interviews, NSGIC representatives will continue to nurture relationships with counterparts at the National Association of State Election Directors (NASED), as well as individual EDs and their staffs.

Timing

The timing of the interviews, conducted between late August and early November, proved to be a challenge for some EDs as the midterm elections were imminent, happening in early November. However, many EDs communicated that they are busy year-round, so regardless of the timing, involvement and participation in activities and events is continually challenging.

Applicability

The project team was pleased with the nearly 42% response rate for the ED interviews. Although it was unusual to receive a communication explaining a decision not to participate, the principle reason provided was the belief that the project is not applicable to their work.

The project team perceived this as a misunderstanding of the purpose of the interview. Regardless of state structure, bottom up or top down, the purpose of the interview was to ask a series of questions and determine the level of GIS integration within election systems for that state. The interviews and project in general apply to all states.

Anonymity

The project team believes some non-participating states may have had anonymity concerns, despite assurances that state responses would be handled in a private manner and results would be presented in summary form only.





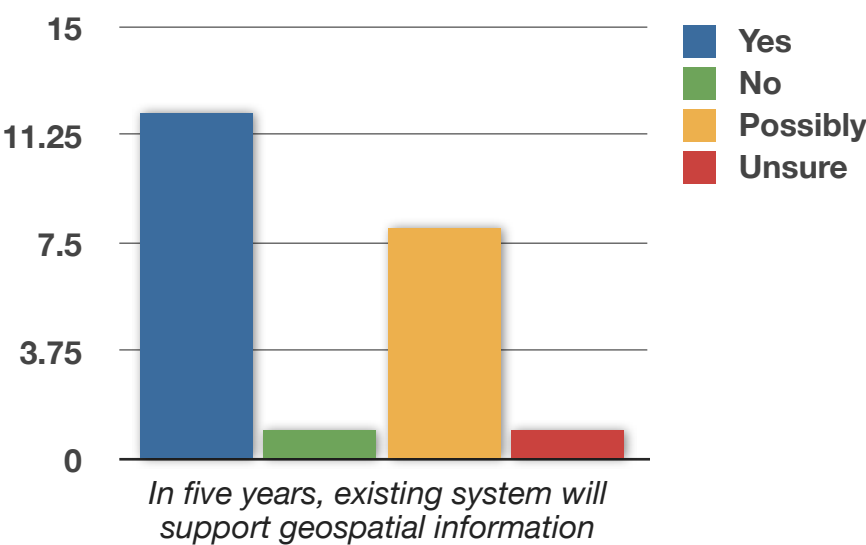
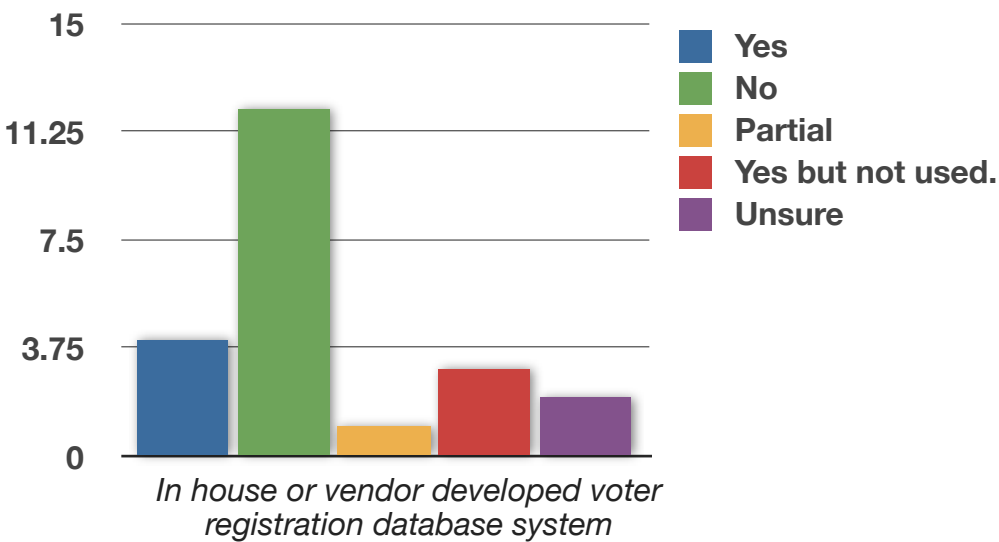
State Capitol Building
Sacramento, California

The Results

General

Fourteen out of twenty-three states reported using a voter registration system that was developed by and is currently maintained by a vendor. The remaining nine states use systems that were either developed in house, or started as a vendor developed solution but are now being maintained in house. There is little interest in moving away from their current systems in the next five years. Vendor-supported states plan to stay with their vendor, while states that are developing systems in house are generally positive about their experience and want to continue this path.

All but one state maintains their voter registration system database at the central state level. All states plan to maintain or migrate their system to the state level over the next five years. Although these systems are maintained at the state level, the overall architecture relies on local governments providing the data entry. This is described as a ‘hub and spoke’ model.



Few systems currently support geospatial data types. For those few that do, they are either unused or underused at this time. There is overwhelming agreement that their systems will want to support geographic data types in the next five years. However, there is some concern regarding the level of commitment and budget to make this happen. Some states report that their vendor will be adding GIS support, and in-house developed solutions generally have developer interest in pursuing GIS integration.

Most states expressed a good relationship with their local GIS specialists, either directly or indirectly through their state GIO. Several states reported that although they have a connection with their local GIS contacts, some rural counties did not have GIS staff or resources. Most states also stated they have the capability to manage GIS files, or have good connections with state and local GIS specialists who can. Many states reported that EDs (or staff) had working knowledge or a background in GIS.

One state even mentioned state training plans that were in place for learning GIS.

Voter Address Management

As noted earlier in this report, in the United States, election management is highly decentralized. Responsibility for maintaining voter registration information, including voter addresses belongs to local government. All state EDs interviewed reported that their states maintain a state-level voter registration system that is updated by local government election officials.

How often do you receive address updates?

Eighteen of the state EDs report that addresses are updated as local governments enter updates to the shared voter registration system; reported frequencies ranged from ‘continuously’ or ‘daily,’

to monthly, to ‘as they are added.’ However, it is likely that in any given state, update frequency by individual units of local government varies, with more rural counties reporting less frequently and more developed counties more frequently. EDs for two states reported that in their state, they pull updates as needed from local government; one ED reported monthly updates and a second reported irregular updates. Reinforcing the importance of geography to elections, one state reported that faulty precinct data creates problems with entering new addresses.

How do you receive address updates?

Eighteen of the EDs interviewed reported that addresses in their voter registration systems are updated (‘pushed up to’) by local government election officials; one of these states also supplements local government information with address updates from their department of motor vehicles. Two states report having to ‘pull up’ the data from individual county systems. Two other EDs reported their respective agencies obtain address updates

on an irregular schedule from the local government emergency management systems or the GIS; whether those address records were maintained in sync with address records used for elections was not specified.

How often do you update your registered voter address data?

Most (fourteen) EDs interviewed reported daily updates of registered voters or their addresses. The eight remaining states are evenly split between making updates as needed and not providing this information. When reported, sources for voter registration and voter address updates include paper forms, online updates by voters, changes of address from state departments of motor vehicles, the US Postal Service’s National Change of Address (NCOA) service, the state department of corrections, and state data on deaths.



State Capitol Building
Lincoln, Nebraska



What address standardization system do you currently use?

The interviews show confusion between address validation and address standardization. Validation concerns verifying the existence of the address. Standardization concerns the structure of how the address is stored in a database. Standardizing addresses typically involves parsing an address into its component parts (e.g., house #, street name, street suffix, etc.) while also standardizing how the components are stored. For example, all components are capitalized and spelled out in full. Thus, “St.” is stored as “STREET.” Similarly, all street types are standardized to a fully spelled out version. Thus CIR, CIRC, CIRCL, CIRCLE, and CRCL are all stored as CIRCLE. Given that some addresses may have as many as 7 component parts (“1500 E Main St North Extension, #1”), this process quickly becomes complex. It will also not likely be accommodated by existing election systems.



Nine states report using the US Postal Service standard, either directly or through services from three vendors: SmartyStreets, Melissa Data, or NetZip. Service descriptions on the websites for these three vendors all reference use of the US Postal Service address standard. Address standardization in three states is built into their vendor-specific voter registration systems; we do not have information on the scope of that standardization. Four EDs reported relying on in-house resources for address standardization. Five EDs interviewed reported either not standardizing addresses or how they do was unknown.

As noted in the earlier “State Representatives Baseline Survey Report,” the focus of the US Postal Service’s (USPS) Address Standard is mail delivery; it is not a general purpose

standard for civic addresses. The two closely related national civic address location standards are the Federal Geographic Data Committee (FGDC) Address Standard and the Civic Local Data Exchange Format (CLDXF).

It is difficult to transfer the addresses from a database following the USPS standard to one following the CLDXF and FGDC standards. This is because the USPS standard does not parse street names in the same way as the CLDXF and FGDC standards. Thus it is often unclear where to put some components of an address standardized to the USPS standard. Additionally, the USPS has standard abbreviations for directionals and street types, versus fully spelled

out words. However, their list of abbreviations is incomplete so there may be uncertainty on whether or how to abbreviate some street types. The USPS also allows abbreviations of some components of place names which causes further mismatches. Finally, mail carrier routes translate to zip codes and those can’t be

mapped as areas in any reasonable fashion, whereas municipal jurisdictions are legally defined as areas. But the real problem with zip codes is that the postal community name associated with a zip code is often not the same as the local government jurisdiction. Furthermore, even when the postal community name is the same for a set of addresses, it is possible that some of those addresses may actually be geographically in a different municipal jurisdiction. For example, a carrier route may contain addresses along a street that crosses the boundary between two municipal jurisdictions. Because the post office for that route is in one of the two jurisdictions, all the addresses on that carrier route will have the same postal community name even though they are in two different municipal jurisdictions.

Do you have access to a master address repository or other authoritative list of addresses compiled within your jurisdiction?

Ten of the EDs interviewed reported having access to a master address repository, with seven of them identifying their voter registration system and three some other resource. Seven EDs reported not having access to such a repository. Five other states each use one of the following: “e911 file,” combination of the US Postal Service and e911, a VRS street and address range file, “NetZip” (commercial API subscription service), or an unidentified street file.

Do you audit voter address to district assignment accuracy? If so, how?

Six states reported that audits of voter to voting district address assignment accuracy was routine. Three reported doing ‘ad hoc’ audits. Eight of the EDs reported they do not do any auditing and six said audits were performed at the county level.

Where audits are being performed, their scope varies. Some audits simply check that both state and local government versions of voting districts matched. A few are using GIS tools to check whether voter addresses map to the voting districts to which that address is assigned. One state checked to make sure that each voter address matched to a census block and that the block was consistent with the voting district assignment. For states where audits are performed at the county level, the responses to this interview question did not include information on how those audits were performed.

The most effective audit is checking that the mapped location of each voter’s address falls into the voting district to which it has been assigned. However, that requires not only mapping address locations but also current mapping of election precincts in GIS format. As reported in the earlier “State Representatives Baseline Survey Report,” only about half the states have mapped their precincts in a GIS database. However, even if this audit cannot be conducted at the state level, it could be

conducted by local governments, many of which have mapped their precinct boundaries. Even if they cannot conduct this audit themselves, state election offices could promote it as a best practice.

Do you have access to geocodes/address points (like an e911 file) from a governmental source for all addresses in your jurisdiction?

Eighteen of the EDs interviewed said they did not have access to statewide address points. Four said they did.

Precinct Boundary and Other Data Management

The availability and management of key election datasets varies throughout the nation. It is evident from the ED interviews that local governments (e.g. counties, cities, or other local entities) often play an integral role in data management, notification, and workflow process.

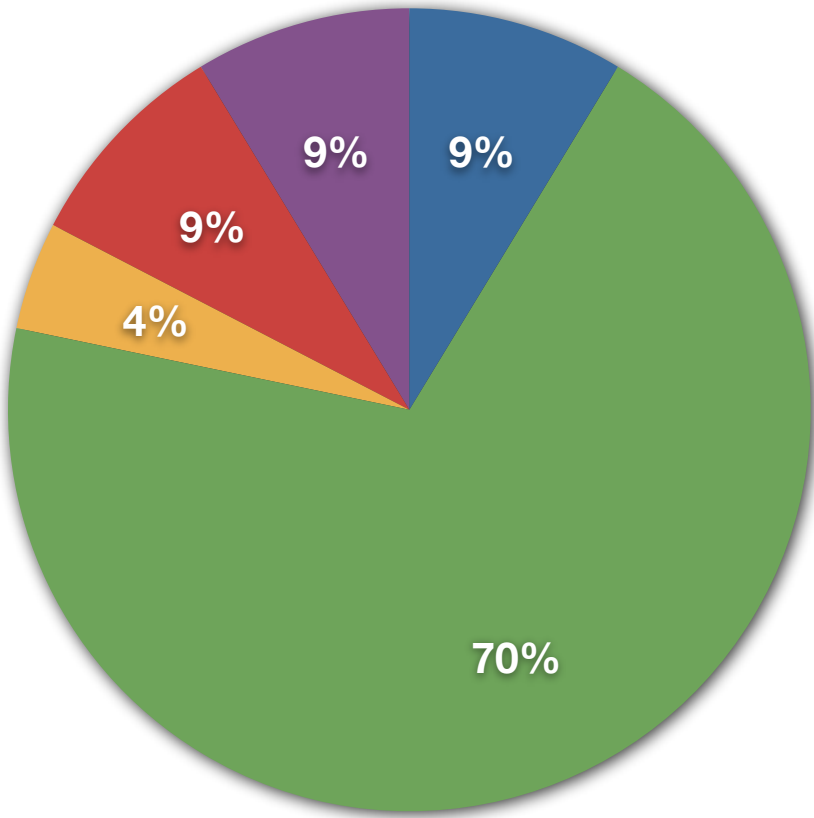
Summaries of the responses provided by the ED(s) for precinct and other related election datasets follow.

State Capitol Building
Salt Lake City, Utah



If a jurisdictional boundary changes, how are you notified?

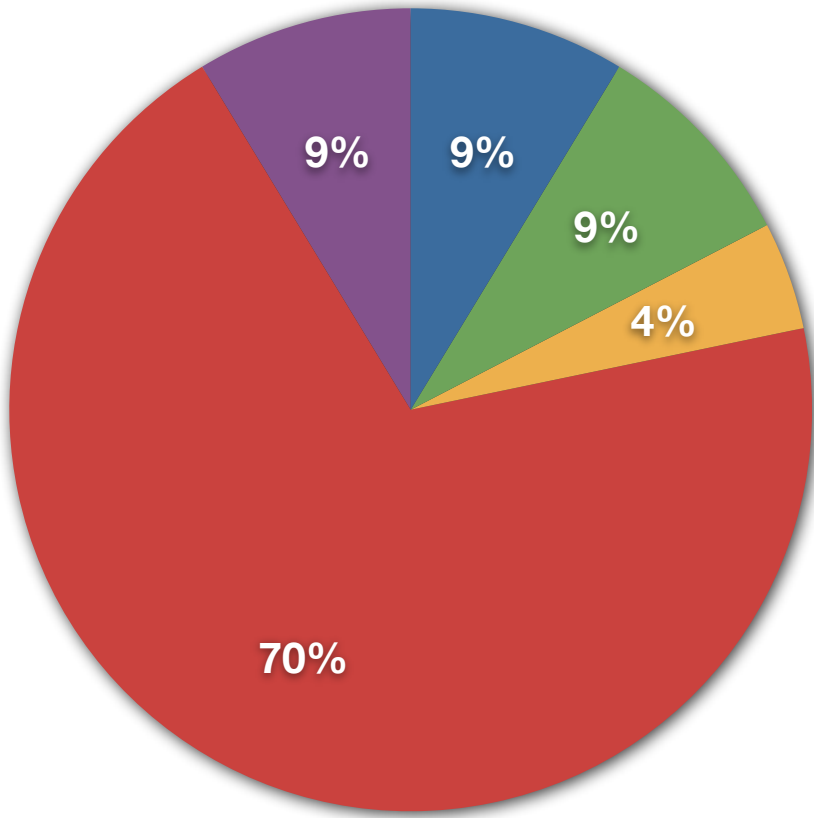
Of the twenty-three responses received, sixteen EDs indicated the local government manages notifications, and was by far the most frequent response. It can be inferred that the majority of the jurisdictional boundaries are owned by or managed by local forms of government as operations such as boundary alterations or notifications is a direct function of the entity managing the data. Furthermore, over two-thirds of the answers support the assertion that the jurisdictional boundary is owned and/or stewarded by local government entities. The other responses were not as telling. The remaining notification methods each received two responses. These methods varied from intermittent notification through either a special project or circumstance to the state conducts precinct changes to no notification provided to the state. Only one respondent indicated the question was not applicable as no jurisdictional boundary changes are made.



- Intermittent Notification - Special Project or Circumstances
- Local Government Manages Notifications
- N/A - No Jurisdictional Changes Made
- No Notification Provided to State
- State Conducts Precinct Changes

When can local election officials update precinct boundaries?

Of the twenty-three responses received, sixteen EDs or two thirds of the respondents indicated precinct boundaries can be updated anytime except during blackout or other specified periods. These responses indicate that updates are possible anytime but are typically restricted to during a designated temporal period right before and during an election. Although a significant practice is to limit the time frame during which updates are made to these boundaries, other update practices exist. The significance of these other update practices is variable. It accounts for about a third of the participants where one or two responses each were received indicating the local government initiates the changes or updates are made through legislation or an active session of a governing body (e.g. board). A similar response rate of two was received indicating updates are never made or the ED was uncertain on the update frequency.



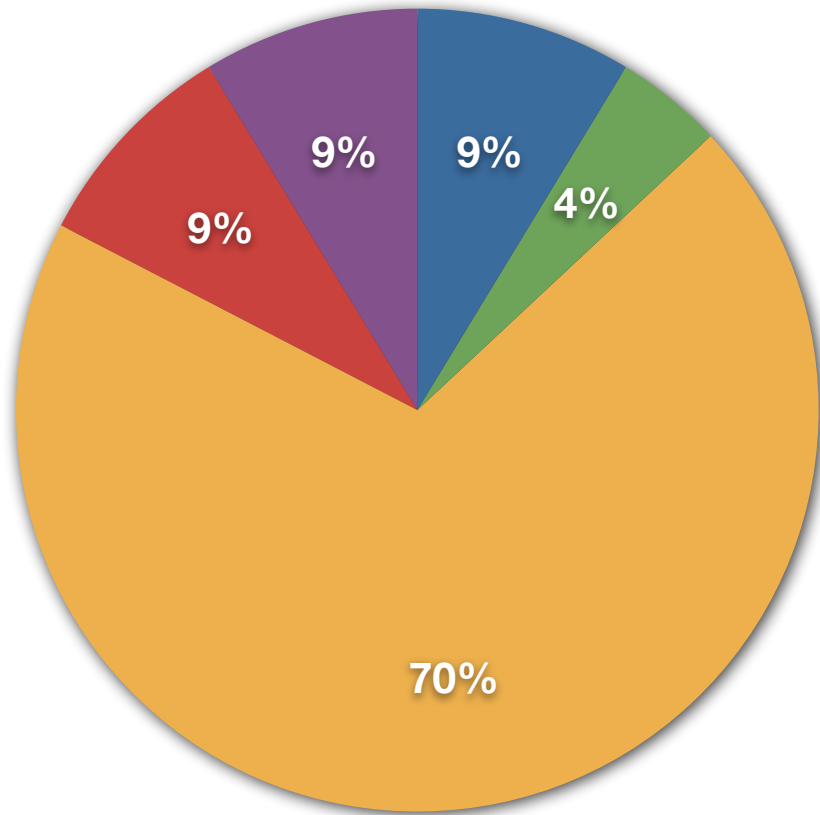
- Never
- Uncertain
- During Legislative or Other Governing Body Sessions
- Anytime Except Blackout or Other Specified Period
- Local Government Initiates Changes



How do you now incorporate a jurisdictional boundary change into your election administration tasks?

Of the twenty-three responses received, sixteen EDs indicated the local government manages and incorporates jurisdictional boundary changes into the election administration tasks. This management practice was the most frequent response, and may indicate that the local government owns or stewards the jurisdictional boundary. The update frequency and specific processes were often not stated or remain indeterminable as responsibility remains with the local government entity.

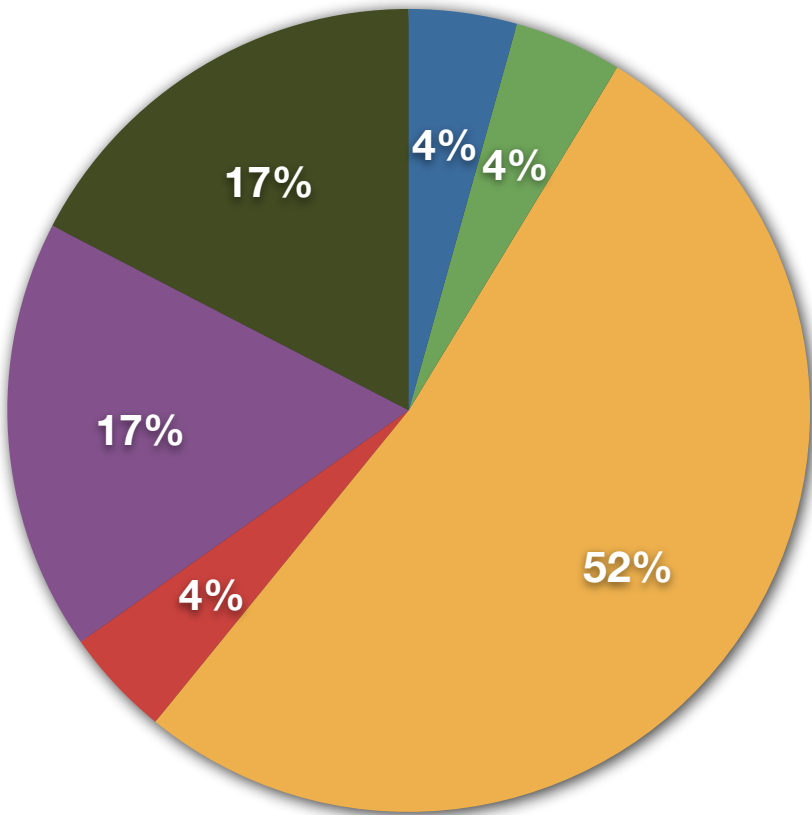
Two responses indicated incorporation is based on a specific as-needed request or a predetermined update schedule. The detailed update process is variable and requires to be assessed in further detail. Two responses were received indicating the state government initiates the changes and another two responses expressed uncertainty on this practice. An additional one response was received indicating updates are made through a governing body.



- As Needed or During a Specific Interval
- Governing Body Manages
- Local Government Manages
- State Manages
- Uncertain

Are precinct and other boundaries changed between decennial censuses?

Of the twenty-three responses received, twenty-one EDs indicated the precinct boundaries change between the decennial censuses. Of these twenty-one responses, four EDs have only precincts updated and no other updates to boundary data. Along these same lines, out of the twenty-three responses, an additional four other EDs have precincts and other boundaries managed by local government and one has infrequent updates. Of the responses received, only one respondent was uncertain and there was one instance of where no updates are made to precinct and other boundaries.



- No
- Yes
- Yes, Local Manages
- Uncertain
- Yes, Infrequent
- Yes, Precincts Only

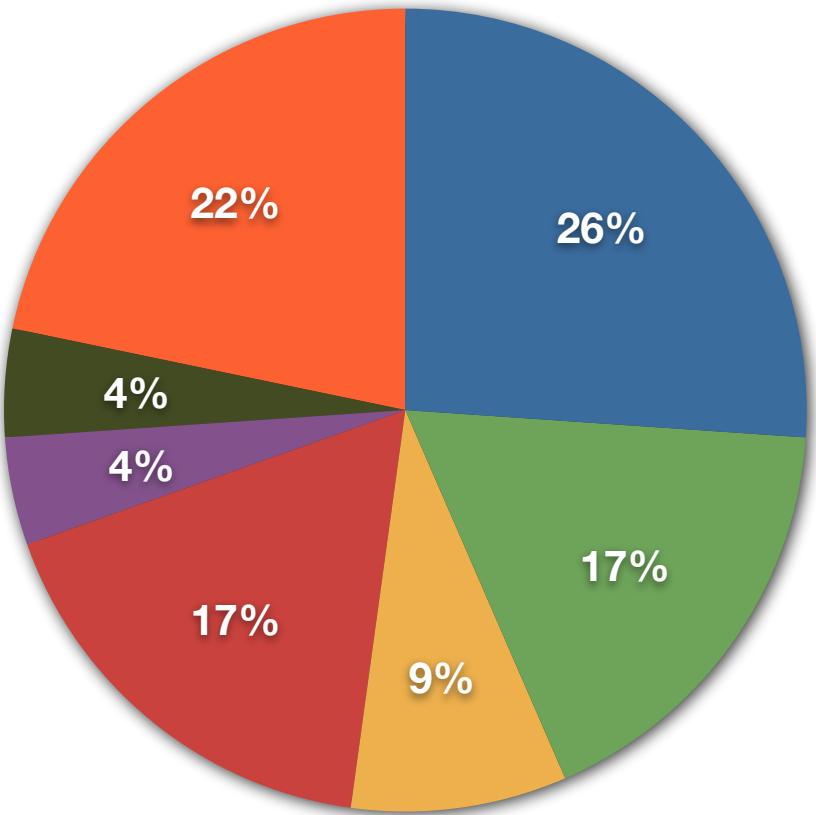


How many different types of voting districts do you need to maintain in order to assign voters to the correct ballot? (i.e. school districts, municipal districts, county districts, state legislative districts, etc.)

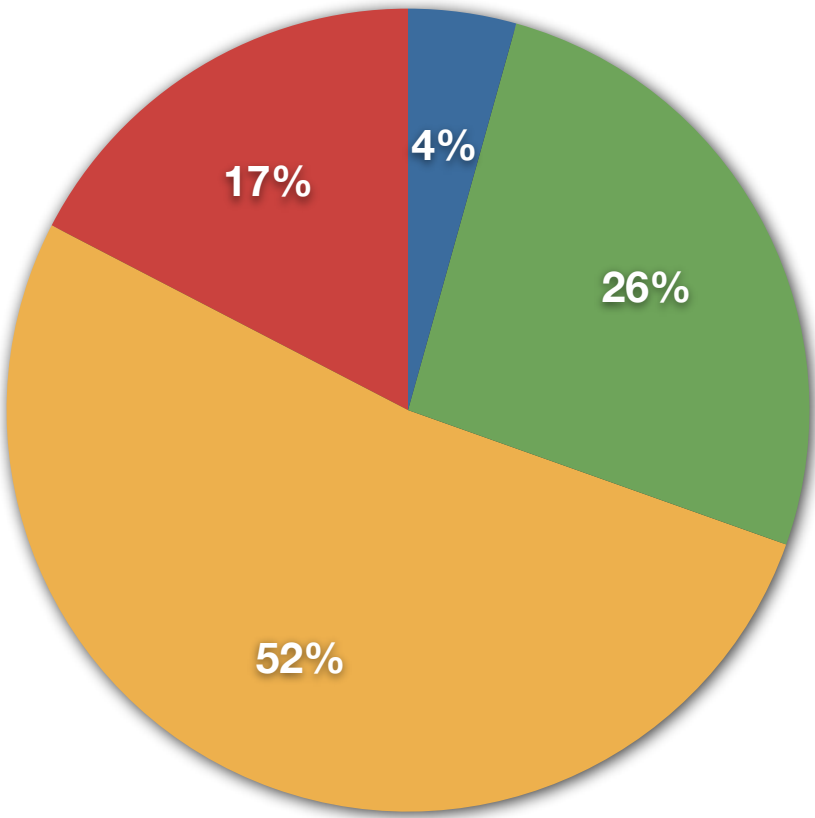
Of the twenty-three responses received, six EDs indicated there were less than ten different types of voting districts that need to be maintained in order to assign voters to the correct ballot. The majority of EDs have to maintain from ten to over one-thousand voting districts. Only five EDs chose either an unspecified number or variable as an answer. Responses illustrate that there exists a high degree of variability in the quantity of data being maintained. Maintenance of hundreds to thousands of districts is a massive data management endeavor that may require future assessment, development of best practices or data governance procedures to address ED needs.

Do you have access to GIS maps and shapefiles for each of your voting districts from a government source?

Of the twenty-three responses received, sixteen EDs indicated there was either full or partial access to GIS maps and shapefiles for each of the voting districts from a government source. Almost 30% of the respondents have no access to data, and one ED indicated that access was inconsequential as data is locally managed.



- <10
- >10 and <100
- >100 and <1000
- >1000
- Local Manages
- Uncertain
- Unspecified - Variable and/or Several

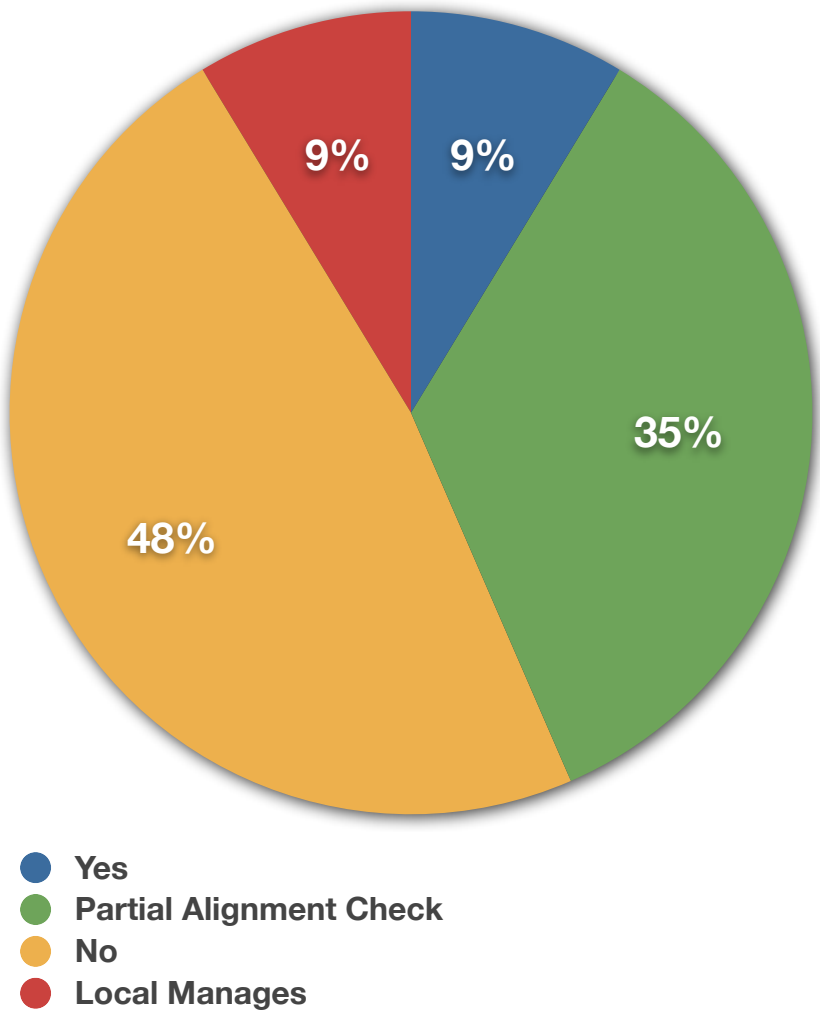


- N/A, Local Manages
- No
- Yes
- Yes, Partial Access



If you have access to precinct/voting district shapefiles, and have access to geocodes/ address points, have you checked their alignment with each other? (verifying that all address points are in the correct precinct)

Of the twenty-three responses received, ten EDs indicated there was either full or partial checking of alignment between district boundaries and address points. Most (eight of the ten) were partial alignment checks. Another eleven EDs had not conducted a comparison against reference address data. Only two EDs indicated that quality checks were inconsequential as data is locally managed. This response rate indicates that there may be a need for future assessment, development of best practices, development of tools, or data governance procedures to address ED needs.





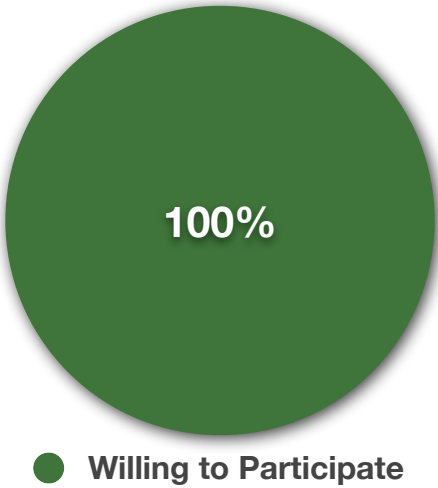
Transitioning to GIS

The final section of the ED interview focuses on the idea of transitioning to the use of geographic information systems for managing election data and integrating GIS within a state’s election data management system and processes. The questions center on the current state of GIS integration in the state and the ability and willingness of a state to make changes in their management and processes surrounding election data.

State EDs were asked, on a scale of one to ten, “Where is your state election office currently with geo-enabled elections.” Ten is full GIS integration and one is no GIS integration. States averaged four on the geo-enabled elections scale. This response rate indicates a need for the Geo-Enabled Elections project, the Best Practices Guidance that will be created in late 2019, and the continuation of this work to strengthen the relationship between GLOs and EDs to foster the creation of a geospatial plan for elections.

The next two questions in this section centered on a state’s openness to change, their willingness and ability to innovate, and their adoption of new processes to encourage efficiency. Of the twenty-three respondents, all are open to change, willing to innovate, and see value in adopting new processes to gain efficiencies. Of the respondents, one ED did share having enough resources and capacity to make these things happen would be needed. There is a thirst within the states to try new things, change processes and practices to gain efficiencies, and be innovative to improve their election data management workflow.

The final question in this section asked a state’s willingness to participate in a pilot project or serve as a case study for the Geo-Enabled Elections project. Of the twenty-three respondents, all were interested in participating in one of these programs for the project.



● Willing to Participate





Next Steps

The Geo-Enabled Elections project is a two-year project with the primary focus of creating best practices for geo-enabling elections at the state level with certainty that many of the best practices can be implemented at the county and city level, as well.

In year one, the project focused on establishing a steering group, recruiting election subject matter experts to serve as a circle of advisors, creation of the “State Representatives Baseline Survey Report,” and building project awareness and support by participating and presenting at conferences and meetings.

Now in year two, the team’s primary focus is on the establishment and implementation of a successful pilot program. The first of five pilot projects will launch at the NSGIC MidYear Meeting in March 2019.

Also in March, the project team will release the first of six case studies where election directors and their teams share lessons learned and recommendations for successful integration of GIS with elections.

For More Information

Visit the [Geo-Enabled Elections website](#) to learn more.

Questions regarding the project, please contact Jamie Chesser, NSGIC geospatial programs manager and Geo-Enabled Elections project manager, at jamie.chesser@nsgic.org.

To learn more about NSGIC and its advocacy and geospatial advancement work, visit the [NSGIC website](#).

