



OFFICE OF THE
STATE AUDITOR

September 19, 2017

Spencer J. Cox, Lieutenant Governor
State of Utah
350 State Street, Suite 220
Salt Lake City, UT 84114

Dear Lieutenant Governor Cox:

Pursuant to your authority as the chief election officer of the state,¹ this letter addresses the Office of the State Auditor's observations of election operations preceding the recently completed primary election held on Tuesday, August 15, 2017. Specifically, we reviewed (1) queries run by county officials in the Voter Information and State Tracking Application (VISTA), and (2) various VISTA security controls.² We also offer recommendations based on our observations.

1. Limited Understanding Of Key VISTA Functions Resulted In Various Errors In The Recent Election

Our observations related to VISTA included the following activities:

- Review of online VISTA training materials and video tutorials
- Walk-throughs and discussions with the Office of the Lieutenant Governor's State Elections Office (SEO) staff
- Walk-throughs and discussions with several county clerks and their staff
- Review of VISTA data queries (extract reports or extracts) and instructions sent to printers of the ballots (printers)

Our findings and conclusions pertaining to these observations are detailed below.

Ability To Specify Party Affiliation And Requested Ballot Provides Flexibility But Increases Complexity

VISTA stores a registered voter's specification of both (1) the voter's party affiliation and (2) the party ballot requested (requested ballot), which may be different than the voter's party

¹ Utah Code § 67-1a-2(1)(c).

² The Office of the Lieutenant Governor is statutorily required to "develop a statewide voter registration database" and "establish and implement a procedure to maintain the accuracy of the statewide voter registration database . . ." Utah Code §§ 67-1a-2(1)(a)(i); 67-1a-2(2)(a).

affiliation. For example, an unaffiliated voter may request to receive a Democratic primary ballot, whenever available. However, VISTA does not automatically remove the requested ballot specification upon a change of a voter's affiliation status. Rather, each county clerk must implement that office's unique process regarding the requested ballot specification, such as manually resetting that specification upon a change in affiliation. This manual process is subject to error and uncertainty. Election officials are appropriately cautious regarding assuming a voter's requested ballot specification.

While an unaffiliated voter may not request a ballot for a closed primary, VISTA allows election officials to make that inconsistent specification. Certain programming logic appears to mitigate issues associated with this inconsistent specification.

Certain Counties Did Not Understand That The Partisan Primary Checkbox Existed Nor Its Importance In The Recent Election

Prior to the recent election, the SEO activated the Partisan Primary checkbox in VISTA. This change applied to all counties regardless of whether they were running a partisan primary. However, the SEO sent out emails on July 5, 2017, alerting county clerks of "an issue with extract reports in VISTA" and that, while counties in the Third Congressional District (CD3) "need the primary to be set to partisan," counties outside CD3 "who are running normal municipal primaries do not want it to be set that way." Furthermore, the SEO informed county clerks that they were working to find a solution. Later that day, the SEO decided that the best option would be to selectively activate this checkbox for counties running the CD3 primary. The SEO asked that counties encountering problems alert the SEO to those problems.

Despite these emails, it appears that at least two of the seven counties running the CD3 primary were unaware of the need to activate this checkbox until after some VISTA extracts were performed and ballots sent to some voters. Since this checkbox may only be activated and deactivated by the SEO, each county clerk would have been required to notify the SEO *prior* to the execution of any VISTA extracts involving the partisan primary to ensure the proper VISTA configuration. Officials from these two counties acknowledged awareness of some sort of "a switch that needed to be flipped" (i.e., this checkbox) only after encountering problems with their initial VISTA extracts. Also, another county not running the CD3 primary did not express any understanding of this feature's existence. Only one of the three sampled³ counties acknowledged a prior knowledge of this checkbox, which they stated was based upon previous experience rather than any formal communication with the SEO.

It appears that certain county clerks were not adequately aware of the necessity of requesting that the SEO activate the Partisan Primary checkbox prior to performing VISTA extracts in the period leading up to the partisan primary election. This lack of awareness resulted in certain ballot errors noted below.

³ As stated in our original letter, we observed the ballot counting process for three counties running the CD3 primary election.

Improper Report Type Drop-down Menu Selection Made Due To Inadequate Understanding

Various counties noted that it is no longer their practice to send all available primary ballots, along with an affiliation form, to unaffiliated voters. Rather, their current practice is to send only the requested ballot to unaffiliated voters, whenever available. VISTA's flexibility supports either practice but VISTA'S default behavior is to support the former practice rather than the more recent practice. This default behavior produced unexpected results in the extract reports for certain county clerks.

According to the SEO, the recent primary election required a special "work around" in VISTA because it involved both a municipal election and a partisan primary election. The "work around" required activation of the Partisan Primary checkbox in VISTA to enable the Report Type drop-down menu, which is otherwise hidden from user view.

This drop-down menu contains three options: All Ballots, Requested Ballots, and All Labels. Only the first two are relevant to our observations. Figure 1 shows how these two options generate different results for unaffiliated voters.

As demonstrated in Figure 1, if an unaffiliated voter did not specify a requested ballot for the recent Republican Party primary, the selection of the "All Ballots" option would result in the VISTA extract indicating that a Republican primary ballot should be sent to that voter. However, if the "Requested Ballots" option were selected, that voter would not receive a Republican primary ballot because an unaffiliated voter may not cast a ballot in a closed primary.

Figure 1. VISTA Report Type Logic For The Recent Election⁴

Registered Voter	Party Affiliation	Ballot Requested ⁵	Available Primary Ballots	All Ballots Report Type Option	Requested Ballots Report Type Option
Voter 1	Unaffiliated		R	R+	
Voter 2	Unaffiliated	Democratic	R	R+	
Voter 3	Unaffiliated	Libertarian	R	R+	
Voter 4	Republican		R	R	R
Voter 5	Republican	Democratic	R		
Voter 6	Democratic		R		
Voter 7	Libertarian		R		
Voter 8	Constitution		R		
Voter 9	Independent American		R		
Voter 10	United Utah		R		

⁴ Note: This is just an example based on recent election where the only partisan primary was a Republican primary.

⁵ Voters may affiliate with any political party registered in Utah or with no party at all (i.e., "Unaffiliated").

However, unaffiliated voters must first affiliate with the Republican Party prior to casting a Republican ballot.

Despite the apparent important distinction between the “All Ballots” and the “Requested Ballots” options, only one county we sampled demonstrated a clear understanding of the functionality of the Partisan Primary checkbox and the Report Type options. Additionally, we note the “All Ballots” option is the default option in the Report Type drop-down menu. Consequently, if no change is made to this menu selection, a VISTA extract would indicate that unaffiliated voters should receive a Republican primary ballot, which is contrary to the general expectations of the counties we observed. In addition, it appears that if the Partisan Primary checkbox is not activated in the first place—and thus no Report Type drop-down menu is available to the county to modify—then the resulting VISTA extract would indicate that unaffiliated voters should receive a Republican primary ballot, likewise contrary to general expectation.

Inadequate Understanding Of “Plus Sign” Designation

As shown in Figure 1, the “All Ballots” option results in a “plus sign” designation for certain voters depending on their affiliation status and requested ballot designation. Thus, if the “All Ballots” option was selected when querying VISTA for the recent election, unaffiliated voters would have been assigned an “R+” designation in the Party_Ballot field of the VISTA extract. On the other hand, if the “Requested Ballots” option was selected for the recent election during the query process, unaffiliated voters would not have been designated to receive a Republican Primary ballot. Regardless of affiliation status, a voter should receive a ballot for any municipal primaries, where applicable.

According to VISTA training materials, “[t]he plus sign means that an affiliation form must be sent” to the unaffiliated voter. However, from our observations, sending affiliation forms with ballots is no longer standard practice for our sampled counties. As a result, the “plus sign” in the VISTA extract seems to have lost its relevance.

However, various state and county election officials lacked a general understanding—at least initially—as to the meaning and function of the “plus sign” designation. In addition, this designation may no longer provide meaningful instruction for the printers of the observed counties.

VISTA Lacks An Audit Log

VISTA has no ability to generate an “audit trail” or “query history” to track each VISTA query’s specific parameters. An audit trail could simplify a comparison of queries to the resulting report. Our observations were based on the memories of election officials, the instructions to the printers, the extracted data, and assumptions of which VISTA options were most likely to result in those extract results.

2. Some Voters Received Improper Ballots

Two Counties Mistakenly Sent Republican Primary Ballots To Unaffiliated Voters

Two counties incorrectly sent Republican primary ballots to unaffiliated voters due to multiple issues. Improper VISTA configurations (specifically the disabled checkbox and the missing Report Type menu) produced unintended extract results because the clerks were unable to select the proper report type. Also, a limited understanding of the extracted data, specifically the “plus sign” designation, impaired the ability of these counties to detect problems within the VISTA extracts. To complicate matters, both counties also sent incorrect instructions to their printers.

In one county, Republican primary ballots were sent to unaffiliated voters within CD3. This county demonstrated the steps designed to ensure that the Republican primary would not be counted for ballots returned by unaffiliated voters. Those steps appeared to have been sufficient to avoid counting the CD3 primary for these ballots.

In another county, Republican primary ballots were sent to unaffiliated voters living in unincorporated areas within CD3, as well as unaffiliated voters living in municipalities within six precincts. While county election officials clearly detected the first error, we question to what extent they detected the second error. County election officials claimed to have taken steps to ensure that the Republican primary was not counted for ballots returned by unaffiliated voters but those steps were insufficient and resulted in ballots of multiple unaffiliated voters being counted for the CD3 primary. However, it appears that these errors did not affect the final outcome of the CD3 primary. For this county, the second error appears to have resulted from a miscommunication between the county clerk and the county’s printer.

We believe these errors could have been mitigated by process and system improvements at the state and county level.

A Newly Affiliated Republican Voter Did Not Receive A Republican Primary Ballot

One voter in one county reported not having received the anticipated Republican primary ballot, although this voter did receive and submit a municipal ballot. Investigation into this voter’s registration history revealed that this voter was previously unaffiliated and requested a Democratic Party ballot for the 2016 presidential primary. However, prior to the CD3 primary, this voter affiliated with the Republican Party with the expectation of receiving a Republican primary ballot.

Because VISTA did not automatically reset the requested ballot specification upon a change of this voter’s affiliation status, nor did the county manually override the previous ballot request specification, this voter’s previous ballot request remained in effect despite this voter’s change in party affiliation. Since a Republican voter with a Democratic Party ballot request would not receive a Republican primary ballot under either the “All Ballots” or the “Requested Ballots” option in a VISTA query (see Figure 1, Voter 5), this voter did not receive the Republican

primary ballot. And since this voter mistakenly believed a distinct Republican primary ballot would be sent separate from the municipal ballot, this voter cast the municipal ballot, which precluded this voter from submitting any future ballot containing the Republican primary.

We believe this error could have been mitigated by process and system improvements at the state and county⁶ level.

Voters In Unincorporated Areas In One County Incorrectly Received Municipal Ballots

One county mistakenly sent municipal ballots to voters in unincorporated areas. In one precinct, all voters received a municipal ballot because the county mistakenly sent incorrect instructions to its printer. However, the county caught its mistake and did not count the municipal votes cast for ballots received from voters living in unincorporated areas of this precinct.

In the second case, two voters living in the same household within an unincorporated precinct mistakenly received municipal ballots due to a data entry error where those voters were assigned to the incorrect precinct. As a result, these voters—both of whom are affiliated with the Republican Party—received and cast ballots. We are unable to determine whether these ballots contained only the CD3 primary or whether they also improperly contained the municipal primary. Lacking other information, our assumption is that their ballots included both. However, regardless of whether their municipal ballots were improperly counted, the margins of victory in this particular municipal election⁷ were such that this primary's outcome would *not* have been affected by this error. Upon being made aware of the error, the county clerk corrected the error in VISTA but appears to have failed to take other corrective action regarding the previously sent ballots.

3. Some Voters Experienced Delays In Receiving Ballots

Voters in one county affiliated with the Democratic, Libertarian, Independent American, and Constitution parties did not receive their municipal ballots in the first mailing. To remedy this mistake, the county ran a second VISTA query for these voters and municipal ballots were sent out late but still with sufficient time to complete and submit the ballots by the election deadline.

County officials do not recall exactly how they ran the initial VISTA query, but claim to have included all political parties in the query process. Although it is impossible, based on available information, to determine which VISTA search parameters resulted in the faulty extract data, it appears that the only logical explanation for the error is that the county failed to properly select *all* political parties in the initial VISTA query.

⁶ The particular county mentioned above recently enacted procedures to address this very scenario.

⁷ This particular municipality had especially close municipal election results.

4. VISTA Controls Could Be Strengthened

To assess access controls associated with VISTA, we performed walk-throughs with state and county election officials and reviewed the following processes and information:

- Provisioning and de-provisioning (i.e., addition and removal) of VISTA users
- VISTA authentication controls and password requirements
- VISTA audit trail functionality
- A list of all state employee VISTA users and all VISTA users in three sampled counties
- A list of all employees hired since July 1, 2016, in state government and for three sampled counties
- A list of all employees terminated since July 1, 2016, in state government and for three sampled counties
- VISTA training materials and video tutorials

Our findings and conclusions pertaining to these observations are detailed below.

VISTA Cannot Generate User Listings

VISTA has no ability to generate user listing reports. Therefore, in order to complete our review we recorded each sampled jurisdiction's user list menu and each user's list of user rights and roles. A comprehensive report including names, job titles, user rights, and specific roles would help facilitate a more effective VISTA access controls review. In addition, each jurisdiction's employee IDs are not linked to particular VISTA users, which makes it difficult to cross-check identities of users against employment records.

Election Officials Demonstrated A Lack Of Understanding Regarding Specific User Rights

Conversations with SEO and county staff revealed a lack of understanding regarding the specific meaning of VISTA user rights. The SEO does not maintain a comprehensive guide as to the functionality of specific user rights in VISTA, which might assist the counties in properly assigning those rights to their VISTA users.

One County Failed To De-provision Access For A Retired Election Official

In one county, our review of VISTA user listings revealed one individual with active VISTA login credentials who had retired over a year prior. Discussions with the county revealed that this individual still engaged in some election operations but that he never had used the account, even as an employee. Rather, if this retired employee, or other poll workers, needed access to VISTA, they generally used a shared login. However, a unique login for each user would improve the ability to monitor usage and customize access to each user's duties.

Upon notification of our concern with a retired employee's active VISTA credentials, the county communicated its intent to remove that particular account.

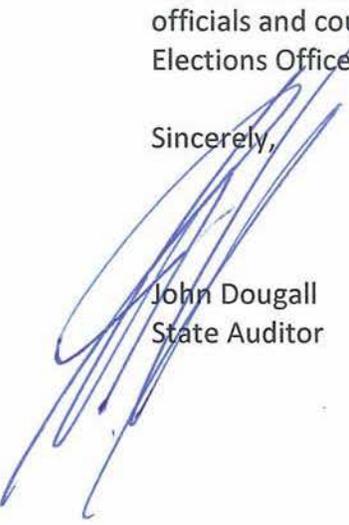
5. Recommendations

We recommend that steps be taken to:

- Continue to strengthen the integrity of the vote process
- Ensure that the correct ballots are sent to the proper voters in a timely fashion to reduce concerns and unnecessary corrective actions during the ballot counting process
- Consider, based on this unique circumstance, process and system improvements in case election officials hold another special congressional election
- Ensure greater understanding of the VISTA system, including its limitations, work arounds, and extract results
- Require and track election officials' participation in VISTA and other SEO-led training
- Set VISTA default behavior to its most common usage
- Consider implementing a uniform, statewide process for handling requested ballots
- Fix election processes and VISTA system logic associated with the requested ballot specification, particularly with regard to changes in party affiliation
- Implement audit logging of VISTA queries
- Strengthen VISTA access controls, including ensuring unique access for each VISTA user

Overall, we observed county officials executing a considerably complex election in a professional and careful manner, with each county demonstrating concern for the integrity of the electoral process. We appreciate and acknowledge the cooperation and efforts of election officials and county clerks in addition to the members of the Lieutenant Governor's State Elections Office.

Sincerely,



John Dougall
State Auditor