

# **Colorado Voter Access and Modernized Elections Commission**

Report to  
Colorado General Assembly's  
House of Representatives and Senate  
State, Veterans and Military Affairs Committees

Regarding:

Needs Assessment of the Current State of Voting and Registration System Technology  
including:  
The Statewide Voter Registration System and  
The Online Voter Registration System

July 15, 2013

## **DRAFT REPORT Version 4.0**

Prepared by the Freeman, Craft, McGregor Group, Inc., with changes requested at the  
Commission's July 11, 2013 meeting.

This draft report does not reflect any official position of the Commission regarding any  
issue. Readers who are interested in the Commission's position on the subject matter  
discussed in this report should refer to the final version, to be filed with the Committees  
on July 15, 2013.

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## **Introduction**

Colorado House Bill 13-1303, the Voter Access and Modernized Elections Act (the Act), was signed into law and went into effect on May 10, 2013. The stated intent of the Act is to remove barriers to the electoral process by making both voting and voter registration more convenient and accessible. The Act allows eligible citizens to register and vote up to, and on, Election Day, expands the use of mail ballot elections and establishes Voter Service and Polling Centers (VSPCs) in each county where electors may register to vote, update their registration information and cast ballots in person. The changes mandated by the Act require the processes involved with election administration and the procedures and systems necessary to support those processes be modified.

The Act created the Colorado Voter Access and Modernized Elections Commission (the Commission) and charged it with evaluating the implementation of the Act. Among the Commission's tasks is the requirement to conduct an independent needs assessment in order to evaluate the current state of voting and registration system technology, including the statewide voter registration and online voter registration systems, and generate a report summarizing the needs resulting from the assessment.

The General Assembly regards the changes mandated by the Act to be of sufficient importance to impose an aggressive time frame for their implementation. This independent needs assessment will identify and prioritize needs according to their criticality for successful conduct of the 2013 and 2014 elections.

## **Executive Summary**

### **Needs for 2013**

A review of the State of Colorado Registration and Election Management System (SCORE) and interviews conducted with Colorado Department of State (CDOS) personnel who manage SCORE and a representative sampling of county personnel who use the system indicate that few changes are needed for SCORE to be ready for the 2013 election. These modifications can be made by CDOS and do not require a major renovation to, or replacement of, the system. More pressing for a successful election in 2013 are the needs for policy decisions, planning, developing business processes, and implementing changes to satisfy those needs. The tasks leading up to implementing these changes; particularly rulemaking, public hearings and evaluating potential solutions are time consuming.

The highest technical risk for the 2013 election is the failure to properly identify and provide the support needed by those counties with limited IT resources. While small

counties will be required to implement VSPCs in a similar fashion to early voting , medium-sized counties may be required to operate more VSPCs than they did early vote locations during previous elections. It is likely that some counties will need technical assistance as they set up VSPCs as required by the Act. Steps should be taken to determine the extent of this risk and to address it. A chart showing the numbers of early voting centers previously used by counties and the number of VSPCs required under the Act is included as an appendix to this report.

#### **Needs for 2014**

The needs associated with the 2014 elections require complex changes to SCORE and carry greater risks than those for 2013. Planned changes include replacing the existing Citrix user interfaces with a new secured web application. It is also likely that the data schema and queries will require modification. Changes of this magnitude are accurately described as “complex” In software engineering, changes like these are just short of guaranteed to introduce errors or unintended consequences, even in the best of development environments. As a consequence, part of the task will be a need for careful inspection and testing with an expectation that further changes or adaptations will need to be made. The impact of the risk cannot be predicated at the current conceptual design level, but the risk itself is real. The connectivity issue referenced later in this report adds to the risk. If the decision is made to implement the SCORE changes for the 2014 Primary election, in order to allow sixty days for adequate user training prior to the election, these changes must be completed no later than April 25, 2014. That deadline is nine months and ten days from the date of this report and a very short time frame to design, develop, and implement the new system. Alternatively, the Primary election could be conducted with the same SCORE processes as are used for the 2013 coordinated election. If the decision is made to implement the SCORE changes after the 2014 Primary election, the changes must be completed no later than September 5, 2014. Both of these time lines have their own combination of risks. In the former, although the project timeline is short, the use of the system in the Primary election allows for the system to be first used in a lower volume election, performance monitored, and adjustments made before the General Election. While the latter allows an additional four months and eleven days for implementation, the system’s first use will be in the larger volume General election. In either case CDOS must execute the changes required for 2014 while maintaining operations on the system used in the 2013 election. The combination of these factors is an additional risk.

The final need involves mitigating the biggest risk to the 2014 election. It requires taking steps to ensure that SCORE connectivity, throughput and processing capability are all adequate to support a substantial, but somewhat unpredictable, increase in sites, users and transactions during the peak load times in the 2014 election cycles. In order to mitigate this risk, it is essential to develop an accurate estimate of these needs.

Most of the needs involving policy decisions, planning, and business process development will have been met in preparation for the 2013 election. At the conclusion of the election cycle these processes should be evaluated and, based on experiences in 2013, it is highly likely that additional modifications will occur prior to the beginning of the 2014 cycle.

## **Scope and Methodology**

The scope of this assessment is strictly limited to identifying the needs that must be met for SCORE and the on-line voter registration system to support changes to the election process mandated by House Bill 13-1303. For the purpose of this assessment, the definition of “needs” is limited to those resources, actions and conditions required for the systems to either meet, or support processes that meet, the requirements of the Act.

The methodology of this assessment includes:

- Engaging a contractor, the Freeman, Craft, McGregor Group, Inc. (FCMG), to assist the Commission in preparing this report.
- Creating the inventory of requirements specified in the Act that are applicable to SCORE and the on-line voter registration system.
- Describing and creating an inventory of the needs within each of the systems.
- Reviewing existing documentation for the system design in SCORE.
- A walk through of SCORE and the online voter registration system’s user interfaces conducted jointly by FCMG, CDOS staff and county staff familiar with the systems’ operations and use.
- Participating in discussions with CDOS staff and a representative selection of County Clerks and Recorders and members of their staff pertaining to needs they have identified and the approaches they recommend implementing in order to meet those needs.
- Identifying those needs not currently met.
- Prioritizing the identified unmet needs as to criticality for 2013, 2014 and beyond 2014.
- Preparing a report of findings.

## **Description of Current Systems**

The most succinct description of the configuration of SCORE prior to the effective date of HB 13-1303 is found in the recent CDOS Request for Proposals for contractors to provide operational support for SCORE. The description in Request for Proposal #DOS-SCORE-0001, April 1, 2013 can be summarized as follows:

The SCORE system was implemented by CDOS to fully comply with the Federal Help America Vote Act (HAVA) in 2002 and was fully implemented in 2008. Specifically, SCORE was designed to:

- Ensure that every eligible voter has the opportunity to vote.
- Protect the voter information of all registered citizens;
- Maintain the integrity of the electoral process;
- Enable county election officials to administer efficient, fair and impartial elections;
- Provide an audit capability; and
- Establish stronger coordination inherent in a centralized system.

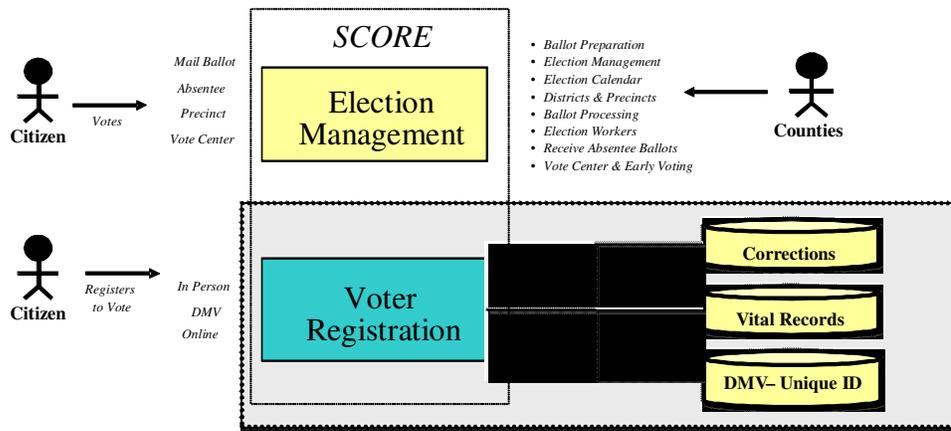
The implementation of SCORE moved Colorado to a centralized structure and elections management system and moved individual counties away from using individual voter registration and election management systems. The system provides the following key functionality for the 64 counties across the state:

- Voter Registration
- Voter Search
- Address Library Management
- Election Setup and Creation
- Ballot Inventory Management
- Absentee Processing
- Early Voting
- Petition Management
- Vote Center Setup
- Poll Worker Management
- Reporting and Balancing

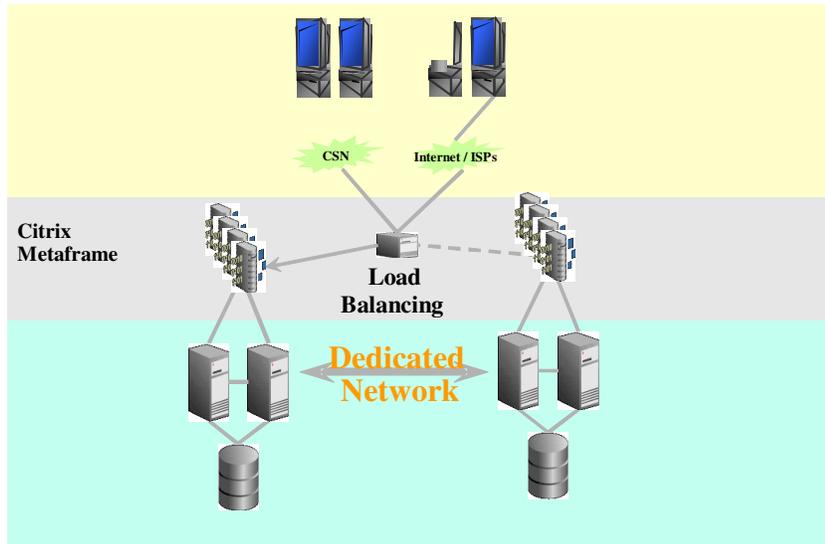
In addition, SCORE is required to validate voter registration records with the following state systems to ensure voters are eligible to vote:

- Colorado Department of Corrections -Colorado Integrated Criminal Justice System – Felony Verification (Corrections)
- Colorado Department of Public Health and Environment - State Registrar of Vital Statistics – Age and Death (Vital Records)
- Colorado Department of Revenue -Unique ID; this vendor integrates with the Social Security Administration. (DMV)

The following illustration is a simplified functional view of the application:



SCORE operates on a centralized network-centric architecture (top-down model) using a Citrix infrastructure to provide functionality for county users. This architecture is heavily dependent upon network connectivity and performance, but reduces the need for application management at the county level. The following is a simplified architectural view.



In addition to the information obtained from the RFP, the following is material to understanding the system and issues addressed in this needs assessment.

As designed, SCORE was not intended to process same day registration and voting although it can currently handle emergency registrations up through Election Day. The voter registration links to the Colorado Department of Corrections (Corrections), Colorado Department of Public Health and Environment (Vital Records) and Colorado

Division of Motor Vehicles (DMV) do not occur in real time or through direct connections. They are data files provided to SCORE on a periodic basis. Corrections' data regarding felons is updated monthly, Vital Records are updated monthly and DMV data is updated nightly. In the business model used prior to the Act, voters were required to register no later than twenty-nine days prior to an election. Once a voter's application was processed and eligibility determined by checking against the most recent data, the voter would be registered to vote if his or her application was complete. The new voter's eligibility, like that of current voters, would be checked again after the next update of records from Corrections and Vital Records. Because updates for Corrections and Vital Records data only occur on a monthly basis, there was a gap in determining voter eligibility prior to the adoption of the Act. If the frequency of updates from these agencies is not increased consistent with the legislative intent for HB13-1303, that gap will remain.

The system's support for early voting and vote centers was designed to operate in an environment in which voter rolls generally closed to new registrations twenty-nine days prior to the election. The determination of an applicant's eligibility to vote was made prior to the election. In that environment, the controlling fact to determine whether a voter was issued a standard or provisional ballot was whether they were found on the voter rolls. Colorado law did provide for emergency registration. With emergency registration, a voter, in specified circumstances, could register to vote and vote a regular ballot even after the conventional voter registration deadline had passed. In the case of emergency registration, eligibility was determined in the same way it would be for all new registrants under the Act. Under HB 13-1303, the controlling fact will change in that the applicant will have to be deemed qualified to register and qualified to vote in order to be issued a ballot. Determining a voter's qualification on Election Day differs from determining whether the voter is already on a list or in a database of previously qualified voters who are registered to vote.

The design of the online voter registration system was also based on the twenty-nine day registration requirement. Under HB 13-1303, the deadline for voter registration and address changes using the online system is the eighth day prior to the election. The Act requires that, if a person attempts to register to vote or make an address change after the deadline, the system immediately informs them that they need to visit a VSPC to complete the process.

The SCORE Overview Document, provided as an appendix to this report, describes each module in SCORE, the functions within each module and provides samples of the screens used by system operators. It provides a more detailed understanding of the structure and capabilities of the existing system.

A new enhancement to SCORE will allow the Runbeck Ballot on Demand printers to be activated by clicking a "Print Ballot" button within SCORE modules. This enhancement

is not included in the Overview Document and is scheduled to be completed in time to be available for use in the 2013 Mock Election. Runbeck is the Uniform Voting System Ballot on Demand printer for the State. This feature is not designed to work with any other ballot on demand system. Counties that have previously used other Ballot on Demand printers will be able to continue to use those systems in the same manner as in the past.

## **Needs for 2013 Election**

Among the needs identified for the 2013 election, three are particularly critical. The time required meeting these needs and the limited number of days remaining until November 5, 2013 makes it urgent that they be addressed immediately. These needs are interdependent and their critical nature is based on not only their own importance in the context of a successful election, but the extent to which fulfilling other needs is dependent upon each of them.

The most critical item for the 2013 election is the need to develop a uniform business process to operate the VSPCs. Technical changes will have to be made to the Citrix modules within SCORE to support the VSPC business process, but these changes cannot be implemented until the business process is finalized. During its June 24, 2013 meeting the Commission was informed that a Business Practice Subcommittee has been formed and is scheduled to meet on July 3, 2013 to review business models. The members of the subcommittee intend to recommend models in very short order and make themselves available to appear before the Commission. During its July 1, 2013 meeting the Commission received a progress report on the Subcommittee. At its July 8, 2013 meeting, the Commission received a high level view diagram of the business process. The document was posted for comments. A more detailed process will be presented at the July 15, 2013 meeting and will then be posted for comment.

The second need is to promulgate rule changes required to implement HB 13-1303. As of June 11, 2013, the Division of Elections (the Division) was still analyzing changes that must be made to six elections rules and drafting proposed changes to those rules. The Division's task includes identifying the items that can be clarified through rulemaking, where possible. After the presentation to the commission on July 8, 2013, of several of the Act's conflicts and ambiguities, CDOS staff noted that many of the bill's conflicts can only be fixed by the legislature.

The third need is to design and implement modifications to the Voter Registration and Early Voting modules in SCORE to support the VSPC business processes and VSPC functions required by the Act. CDOS staff has proposed minor changes and the use of two existing modules in SCORE; however the design cannot be finalized until the uniform business practice is adopted.

Less urgent, but still critical, needs for 2013 include the following:

County users must be trained to follow standardized VSPC operations. During interviews with county representatives, they indicated that regional training sessions would be beneficial. According to CDOS staff, the Mock Election is expected to fulfill most of the training needs. However, during testimony before the Commission on June 24, 2013, a Division official said programming changes required by HB13-1303 will not be in place in time for the Mock Election. A training plan needs to be finalized, a program developed and delivery accomplished.

The adequacy of system throughput for 2013 must be analyzed. Although it is a reasonable expectation that the number of users and transactions resulting from the additional VSPCs will not exceed those encountered in the 2012 Presidential Election and that current system throughput should be adequate, further analysis is needed. After counties designate their VSPC locations and finalize their plans to equip and provide staff for those sites, the estimates for the number of users and transactions should be reexamined. If this reexamination results in a significant increase in the projected number of users and transactions, an analysis should be performed to determine if available throughput is adequate and options available to increase throughput should be explored.

In order to insure that each VSPC is adequately covered by security procedures and is in compliance with applicable standards, an information system security analysis should be performed. CDOS has voluntarily adopted the security standards promulgated by the Colorado Office of Cyber Security. The extents to which these standards are applicable to operating VSPCs and granting VSPCs access to SCORE require policy decisions, appropriate training, developing procedures, and continued monitoring.

In addition to the uniform VSPC business process, other county business processes must be modified or developed to satisfy requirements in the Act. Current processes that may require modification include, but are not limited to, sending confirmation cards to voters, enforcing registration deadlines, reinstating voters to an active status, assigning inactive status, handling cancellations, and producing reports. New processes include, but are not limited to, handling requests for email communications, enforcing the twenty-nine day deadline to change or withdraw affiliation, processing NCOA lists, and providing the location of the nearest VSPC on the voter information card. Policy decisions must be made to determine which processes should be uniform throughout the counties and which may be developed independently by each county.

Under HB 13-1303, the Online Voter Registration web application must direct any voter attempting to register or update their residential address after the eight day deadline for new registrations and residence changes has passed to visit a VSPC. The Act also

requires that the option for a voter to select Permanent Mail-In Voter Status (PMIV) be removed, and that all required questions and the required affirmation are included in the module. Discussions with CDOS staff indicate that implementing these changes is underway

The forms used to register voters at DMV facilities must be modified to include the changes required in Section 14 of the Act. According to CDOS staff, the system that generates this form is neither owned nor controlled by CDOS. A review of the Colorado Legislative Council Staff Fiscal Note for HB13-1303 found no estimate of, or recommended funding for, costs incurred by the Department of Revenue to implement this change.

A process to update records previously marked as “Inactive Failed to Vote” and change them to an active status has to be developed and implemented by August 1, 2013. The CDOS Chief Information Officer presented a report to the Commission on June 24, 2013 regarding plans to implement this change. According to the report, this change requires that the system be shut down for a brief period. It is planned to take place during a regular quarterly update scheduled for the weekend of July 13, 2013 and will become effective on July 15, 2013.

HB 13-1303 also requires making changes to the voter history report generated by SCORE. In the report, “Mail Ballot” and “Voter Service and Polling Center” need to be added and “Early Voting”, “Mail-in Ballot”, and “Polling Place” deleted. This is a relatively simple task that can be accomplished by changing the headers in the reports and use of the data categories “mail ballot” and “polling place” to record voting methods in the 2013 election.

There is a marked need for planning, developing a set of procedures and monitoring the VSPCs to ensure that all of them are compliant with the Federal “Americans with Disabilities Act” (ADA) of 1990. While significant progress has been made over the past several years, there are many voting locations in Colorado that are not currently ADA compliant. The problem remains despite existing requirements that each voting location be surveyed to identify and remedy barriers every year that the site is used as a polling place. With the fewer number of total polling locations required with the use of VSPCs, counties should be able to reduce or eliminate the use of noncompliant polling locations. For sites that require modification to be accessible, federal Help America Vote Act accessibility grant funds are available by applying to the CDOS Accessibility Task Force, which makes funding recommendations to the Secretary of State. Both new and existing facilities and equipment should continue to be evaluated and appropriate caution should be taken to mitigate the risk of non ADA compliant sites.

Procedures must be developed and resources provided to support any emergency relocation of a VSPC and reestablishing its connectivity to SCORE. Ideally, this should

be addressed in Continuity of Operation Plans (COOP) developed by both the State and the individual counties. Steps must be taken to insure that such procedures and adequate resources are in place.

The Act requires the CDOS to negotiate agreements with Vital Records and Corrections to access their databases and obtain records pertaining to deaths and felony convictions “to the extent required to enable the verification of the accuracy of the information provided on voter registration applications”. This need is currently met on a monthly basis, however, part of the Legislative Council Staff Fiscal Note for HB13-1303 states: “The fiscal note assumes that data sharing on vital records and felon records will be conducted as is currently done, except that records will be added to SCORE on a daily basis during the 15 days prior to, and including, election day.” The CDOS has indicated that, based on their interpretation of the Act, and their discussions with Vital Records and Corrections that no changes to the existing schedule are currently anticipated. At the July 1, 2013 meeting, the Commission discussed inviting representatives of Vital Records and Corrections to appear before the commission and discuss the possibility and requirements for providing the data on a daily basis during the 15 days prior to and including Election Day. SCORE is capable of handling this process on a daily basis, but steps must be taken to ensure that Vital Records and Corrections provide daily updates during the fifteen days prior to and on Election Day.

## **Needs for 2014 Elections**

Prior to the 2014 elections, the most critical need is to modify SCORE. These changes fall into two categories; those that provide support for the VSPCs and those that support county business processes outside of the VSPCs.

All of the functions to be performed at VSPCs are currently conducted through SCORE with the Early Vote and Registration modules. Secured web applications to support the operation of the VSPCs must be developed for SCORE to create a more streamlined and integrated process for users. These applications need to have a capacity sufficient to support the sheer number of physical locations, users and transactions necessary to conduct the 2014 elections. These applications should be tailored to suit the needs of the uniform business process being developed by the counties and CDOS. The secure web application must access the critical SCORE functionalities that have been enhanced allowing users to continue to provide services in the VSPCs to:

- Serve all voters in the county.
- Access the statewide voter registration rolls through a secure connection.
- Register new voters.
- Check voter eligibility.

Update existing registration information.

Allow an unaffiliated voter to affiliate with a political party and cast a ballot in a primary election.

Issue and receive mail and provisional ballots.

Issue replacement ballots.

Support printing ballots on demand.

Record ballots cast in person, both on paper and on Direct Recording Equipment (DRE) voting devices, within the VSPC.

SCORE also needs to be modified to support county election offices in functions outside of the VSPCs including:

New functions:

Record voter requests for e-mail communication, or reversal of such requests.

Recognize undeliverable e-mail messages and send the undelivered as well as any future communications through the United State Postal Service.

Protect voter email addresses from unauthorized disclosure.

Maintain a record of all correspondence sent to an elector in the elector's record under subsection 1-1-110(5), C.R.S. Email communications will be part of the county business process and records of that process are to be maintained on SCORE. Although the Act does not require the email communications from the counties to the voter to be integrated into SCORE, the required record keeping would be most efficient if the emails were managed by the county through SCORE. The Business Practices Subgroup should evaluate this as they develop the business process.

Modification to existing functions:

Enforce the multiple voter registration deadlines.

Enforce the twenty-nine day deadline for changes or withdrawals of affiliation.

Enforce the new state residency deadline.

The individual county business processes and the uniform VSPC business process will have to be assessed. The usability and efficiency of these processes during the 2013 election will require reviews in order to identify parts of the business processes that worked and those that still need improvement before the 2014 election.

The adequacy of system throughput for 2014 must be analyzed. The analysis should take into account the number of VSPC locations, plans for equipment and staffing levels, estimated turnout, voting patterns and system loads experienced during the 2013 Election. The system should undergo load testing to ensure that SCORE can handle the number of county users and increased system workload anticipated for the peak periods of the 2014 elections.

At present, matches of SCORE voter records against the National Change of Address (NCOA) dataset are made by a NCOA service contractor. The results of these matches are provided to and processed by counties outside of SCORE. The Act requires modifications to the county process. A workflow diagram of the required process, prepared by the Denver Elections Division, is included as an appendix to this report. The feasibility of fully integrating the NCOA process into SCORE, including providing match data to the counties and generating the required mailings of voter confirmation cards in SCORE should be explored. An additional issue is that the data received from CDOS's current NCOA service contractor does not differentiate between residential addresses, mailing addresses, and temporary address changes. In interviews with County staff their experience is that providing this additional data improves the accuracy of the process. The feasibility of, and options for, acquiring this additional data should be explored.

## **Appendices**

**SCORE Overview Document Courtesy of Colorado Secretary of State**

**Analysis of Requirements Needs and Gaps**

**Chart of Counties Comparing Early Voting Sites to VSPC Requirements**

**NCOA Process Workflow Diagram Courtesy of Denver Elections Division**

**Legislative Council Staff Fiscal Note for HB13-1303**

**Notes from Department of State Chief Information Officer Interview**

**Notes from County Interviews**