Comments on Secretary of State Rule Making

Who is in Charge

A stated objective of the Secretary of State's Rule Making procedures is "to improve election administration in Colorado". The overall effect of the 176 pages of the Election Rules is to concentrate control of Colorado Elections to the Secretary of State (SoS). Diversifying control of elections to County Clerks strengthens election integrity. The Colorado State Legislature recognizes this fact in:

CRS 1-1-110 Powers of county clerk and recorder and deputy
specifies that the County Clerk is the "*chief election official for the* ==*county*==*, the* ==*county*== *clerk and recorder shall be the chief designated election official for all coordinated elections.*"

The 176 pages of Election Rules diminishes the role of the County Clerk as "Chief Election Official" (CEO) and consequently do not "improve election administration in Colorado".

By the same argument, concentrating control of the Voter Registration List with the SCORE system diminishes the role of the County Clerk as CEO. Each Clerk should control the Voter Registration List for their county and be the CEO responsible for its accuracy when certifying election results.

A measure of the extent to which the Secretary of State (SoS) is constraining County Clerks from discharging their obligations as the chief election official is the current rules. They are 176 pages in length and contain the phrase "clerk must" or "election official must" 285 times. Clerks are consumed by the responsibility to conform to these rules and have no time or desire to pursue changes that would improve election integrity and reduce voter skepticism.

In Mesa County, we recently convicted a former Clerk in court for violating SoS rules.

The impact of those facts is that any Clerk in Colorado is constantly challenged to avoid violating the 285 things they must do or risk being indicted for violating one.

The County Clerk's Dilemma: One of legal obligations of the County Clerk is to preserve election records. If an Election Management System (EMS computer) is utilized to process the election (count the votes) then a disk image (a full copy of all the programs available to the EMS) not an Election Project Backup, is required to enable reprocessing a contested election with the same software with which it was originally processed.

The capability to take and restore disk images is mandatory for a Clerk to manage an EMS, is permitted under the current contract with Dominion Voting Systems (DVS), but is not provided by DVS or the SoS, and the current Rules prohibit the Clerk from installing software on the EMS. Our current Clerk, Bobbie Gross, has requested permission to take an image from the SoS and been denied. If permission to take the image were granted, no software is certified and installed to take the image.

Not taking an image of the EMS puts the Clerk in violation of State and Federal law to preserve Election Records. Taking an image puts the Clerk in violation of a SoS rule. Our Clerk cannot avoid legal jeopardy regarding this issue.

C.R.S.1-7-802. Preservation of election records.
The designated election official shall be responsible for the preservation of any election records for a period of at least twenty-five months after the election or until time has expired for which the record would be needed in any contest proceedings, whichever is later. Unused ballots may be destroyed after the time for a challenge to the election has passed. If a federal candidate was on the ballot, the voted ballots and any other required election materials shall be kept for at least twenty-five months after the election.

SoS Rules *1.1.29 "Election project backup" means a set of files that is generated by the voting system software's dedicated backup/export functions and vendor defined procedures after the initial project is created that can be used to restore the voting system to a previous state. This does not include a full or partial hard drive image or clone.*

What the SoS should be doing.

Hardware Diagnostic Test

The SoS Rules require the Clerk to perform a hardware diagnostic test. Has the SoS or DVS collected all the hardware diagnostic routines required to perform a hardware diagnostic test on the installed EMS's and are they being executed prior to each election as required? These routines are requisite to good system management of any computer system to certify that the hardware is operating according to the manufacturer's specifications.

If they are not, this is an excellent effort for the SoS's technical team to provide these routines to each Clerk with an EMS. If so, why were these routines not utilized to recertify the Mesa County EMS hardware that was decertified by the SoS in 2021?

SoS Rules
11.3 The clerk must perform a hardware diagnostic test and a logic and accuracy test.
11.3.1 Hardware Diagnostic Test
> *(a) The designated election official must perform the Hardware Diagnostic Test before the election on each device that the designated election official will use in the election, including spare or back up devices. The test must include the following devices and provide the following information:*
>
> > *(1) All input and output devices;*
> > *(2) Communications ports;*
> > *(3) System printers;*
> > *(4) System modems when applicable;*
> > *(5) System screen displays;*
> > *(6) Boot performance and initializations;*

(7) Display of firmware or software hash value (MD5 or SHA-1) when possible;
(8) Confirmation that screen displays are functioning;
(9) Date, time and calibration of systems, if applicable; and
(10) Scanner calibration, if applicable.

(b) The designated election official must seal each device upon the successful completion of the test and retain documentation of the seal information and all records in accordance with section 1-7-802, C.R.S.

Mandatory EMS System Capabilities

Preserving the state of the EMS The ability to preserve the state of the EMS requires at a minimum the ability to take an image of every system disk on the system periodically while processing an election and the ability to restore that image should that be required. Certified software to do this need not be forensic imaging software, is considered a Commercial off the Shelf (COTS) product, and vendors will certify it only creates the image desired and does not modify or transmit it. Adding that capability to the system allows 30 minute recovery from disk failures, satisfies legal requirements to preserve election records, implements a necessary component of reproducibility (see below), allows detection of permanent hacking, and thwarts active hacking during the original election processing.

This capability is easy to add to the EMS, inexpensive to acquire, and minimal training is required to use it.

It should be added to SoS Rule 11.8.3 below.

The SoS must advocate and approve it for every County Clerk requesting it.

Reproducibility The ability to reprocess an election (***Reproducibility***) using ballot images, ballot definitions, and adjudication results on the same EMS that processed them originally, on other EMSs from the same vendor, and on EMSs offered by any vendor enables ***Reproducibility*** of election results at different times, on different systems, at different locations, and different operators and at costs that are orders of magnitude less than hand recounts or risk limiting audits.

This capability is not expensive to create by EMS vendors that have the software expertise to maintain their software. Adding the 2 capabilities below to SoS Rule 11.8.3 below creates Reproducibility.

1. The EMS must utilize industry standard formats for ballot images, ballot definitions, adjudication results, Cast Vote Records (CVR), and tally results.
2. Have the capability to produce CVRs from already scanned standard format ballot images and ballot definitions and produce standard format tally results from those CVRs.

11.8.3 The Secretary of State will approve a county's application for the purchase, lease, or use of an electromechanical or electronic voting system, device, or related component, certified after January 1, 2016, only if:
(a) The voting system includes, and the county acquires, digital ballot resolution and adjudication capability;
(b) The voting system includes, and the county acquires, central count ballot scanners equipped with automatic document feeders capable of scanning multiple ballots rather than a single ballot at a time;
(c) The voting system integrates all components of the election management system, including the data management application, if any, into a single user interface that is operable or accessible from the same server or workstation;
(d) The voting system is capable of supporting efficient risk-limiting audits, in the manner required by Rule 21.4.12;
(e) The voting system is compatible with dependent systems that are not directly related to the tabulation of votes and ballots, but are nevertheless utilized by designated election officials in conducting elections in Colorado, including:
      (1) Ballot-on-demand systems,
      (2) Election Night Reporting systems,
      (3) Electronic ballot delivery systems,
      (4) Election definition data exported from SCORE, and
      (5) The Secretary of State's RLA Software;
(f) The voting system provider's software and hardware license agreements expressly permit political subdivisions that purchase, lease, or use the system to loan or borrow voting devices and related components to or from one another, without charge, as exigencies and other circumstances warrant, and as approved by the Secretary of State; and
(g) The voting system provider's software and hardware license agreements expressly permit the Secretary of State, or political subdivisions that license the hardware and software applications necessary to program elections and voting devices, to perform those services without charge for other political subdivisions that are licensed to use the voting system.

Third Party audits

There is no justifiable reason for the Secretary of State to preclude 3rd party audits of the election system.

1. The EMS is idle at least 50% of the year. It is not a realtime, 24/7 265 days per year system.
2. It is easily recertified by running a diagnostic script of routines to certify the EMS hardware and restoring a certified copy of the software.
3. If deficiencies are discovered, they should be publicized and corrected not prohibited.
4. If the auditor makes assertions that are false, they are easily refuted.
5. The auditor may be restricted to times the system is available, must take responsibility for physical damage they do to the EMS.
6. Cameras can capture attempts to physically alter the EMS.
7. The County pays for the EMS and the Clerk is the Chief Election Officer responsible for fair and accurate elections. Why is the Secretary of State prohibiting 3rd party audits?

The Secretary of State has issued orders prohibiting "sham" 3rd party auditing of a County EMS. Rule 20.5.2 below precludes any 3rd party auditor. We call our election systems the "Gold Standard" but prevent anyone other than election officials from examining them.

These actions are a far greater factor in increasing voter skepticism about our election procedures than any voter questioning what is going on with our election systems.

20.5.2 Accessing the voting system
(b) Except for voters using a voting system component to vote during an election, a county clerk may not allow any person to access any component, including the hard drive(s) or copies of any part of the hard drive(s) for any component, of a county's voting system unless:
> *(1) That person has passed the background check required by this or any other Rule or law; and (2) That person is performing a task permitted by the county clerk or the Secretary of State that is permitted by statute or rule, and is:*
>> *(A) An employee of the county clerk;*
>> *(B) Appointed as an election judge by the county clerk in accordance with Article 6 of Title 1, C.R.S.;*

Inappropriate and contradictory restrictions on Clerks

Reiterating: The County pays for the EMS and the Clerk is the Chief Election Officer responsible for fair and accurate elections. The Clerk must be in control of their EMS in order to discharge that capacity. Concentrating that control with the Secretary of State diminishes Election Integrity.

In Rule 20.5.3(a) (1) the Secretary of State orders the Clerk to insure *wireless capability* is turned off. Wireless capability is installed on the EMS is turned on or off by software created to control that capability. Rule 20.5.3(d) Precludes the Clerk from installing any software on the EMS to control turning *wireless capability* off. If the software to control *wireless capability* is already installed on the EMS, every election processing program should invoke that software before executing their intended function. This is a far better solution that threatening the Clerk to do it manually or be forced to replace the EMS.

In Rule 20.5.3(a)(2) the Clerk is prevented from restoring the EMS software to a certified state assuming the Clerk has an image of the certified software to restore.

20.5.3
(a) System settings
> *(1) If any component of the voting system is equipped with Wi-Fi capability or a wireless device, the county clerk must ensure that the wireless capability or device is disabled before use in an election.*
> *(2) The county clerk may not alter, or grant permission to anyone else to alter, except during the trusted build process, the pre-boot settings for any voting system component, including altering the boot path.*
...

(d) The county clerk may not install any software on any component of the voting system unless directed to, or approved by, the Department of State.

If the logs referred to in *20.10.2 (b) (5)* below are not backed up by the Election Project Backup, what are the file names of the logs, where are they located in the system, and what is the certified software installed on the system to preserve them, and where are they preserved if the next "trusted build" will begin by erasing them?

20.10.2 (b) The county clerk must maintain the following as election records under section 1- 7-802, C.R.S.:

> *(5) Logs generated by the election management system software of the voting system if those logs are not contained in the election project backup. This does not include logs generated outside of the election management system software;*

Surrender Control of the County's EMS to the Secretary of State or you will have to replace it.

20.12.2(b)(2) Any violation of Rule 20 may result in the prohibition or limitation on the use of, as well as decertification of, a county's voting system or components in accordance with section 1-5-621, C.R.S., and Rule 21.7.3.

Issues not covered in the current rules.

Reproducibility – One of the properties of an EMS is that it can reprocess an election utilizing 5 minutes of operator time and 10 to 30 minutes of EMS computer time. This is orders of magnitude cheaper than paying $75,000 or more for a hand recount.

If any EMS could reprocess an election, i.e. calculate the Cast Vote Records from already scanned and adjudicated ballots, any Election Project Backup could be reprocessed on any other EMS and should in every case recreate a tally that is identical to the originally calculated tally.

The current Dominion System cannot do this. Standardizing formats for ballot images, ballot descriptions, adjudication results, and Election Project Backups combined with minor software changes would enable any EMS to reprocess an Election Project Backup files from any other EMS vendor. This is a election processing verification resource that far outstrips any of the verification methods currently being used. But no efforts have been made by the Secretary of State to pursue this election verification technique.

Voter Registration – Online Registration, Motor Voter, and 3rd party registration drives have enabled thousands of new registered voters that have never been seen by an election office official. A campaign to reregister voters in-person would quickly improve this situation. We have no reluctance to ask people to reregister their automobile tag every year and that is not regarded as an unsustainable inconvenience.

But requiring annual voter in-person registration would "kill democracy". Voting has to be easy and convenient or no one will vote we are told. But understanding what candidates will do if elected and understanding the impact of the issues to be decided is not easy or convenient. The

effort to travel to a precinct voting center is trivial in comparison. But we ignore this obvious fact and voter skepticism continues to increase.

Ballot Control – Vote by Mail destroys all chain-of-custody control of ballots in comparison to in-person precinct voting. Mailing ballots to every registered voter increases the number of ballots cast. Those increasing number of ballots returned are cited as increased voter participation. But there is no way to determine if the additional ballots were cast by additional legal voters or by the same number or fewer former voters casting more than one ballot. But we ignore this obvious fact and voter skepticism continues to increase.

Can the Secretary of State's office site any actions in the last decade where new voting procedures improved election integrity. I cannot. I have been sending emails and registered letters to them for 3 years asking the same questions and getting no response.

Ed Arnos
Gold Standard Project
Working to have every citizen describe our elections as the "Gold Standard"