



March 12, 2015

Via Email: dwight.shellman@sos.state.co.us

Pilot Election Review Committee (PERC)
Office of the Colorado Secretary of State
1700 Broadway, #200
Denver, CO 80290

Dear Members of the Pilot Election Review Committee:

Thank you for the opportunity to offer input on the criteria that should be used as the Pilot Election Review Committee seeks to evaluate five vendors currently under consideration to provide Colorado's uniform voting system.

Common Cause is a nonpartisan, nonprofit organization that is dedicated to restoring the core values of American democracy, reinventing an open, honest and accountable government that serves the public interest, and empowering ordinary people to make their voices heard in the political process.

Below we outline three criteria that the uniform voting system must fulfill to meet requirements of state election rules, state law or to facilitate compliance with state law.

1) The Voting System Should Facilitate the Conduct of Ballot Level Risk Limiting Audits.

The Colorado uniform voting system must facilitate the performance of a “risk-limiting” audit as is required by Colorado state law (C.R.S. 1-7-515). (In 2009 Colorado passed HB 09-1335 requiring counties to implement this type of audit by 2014; the implementation date was later moved to 2017.)

A “risk-limiting” post-election audit is a manual tally of randomly selected ballots that stops as soon as it is implausible that a full recount would alter the result. A risk-limiting audit provides strong statistical evidence that the outcome is right (or leads to a full hand count, which corrects the outcome if it was wrong). Risk-limiting audits determine precisely how much hand counting is necessary to confirm election results to a given level of confidence. The closer the contest, the more ballots must be examined to have strong evidence – because fewer errors can change the outcome. The higher the desired confidence (say 99 percent versus 90 percent) the more ballots one must examine – because higher confidence requires more evidence.

Counties in California, Colorado and Ohio have piloted risk-limiting audits. Fourteen pilots were conducted in California, one in Ohio, and one in Colorado with grants provided by the U.S.

Election Assistance Commission. Additional pilots were conducted by county officials without EAC grants in California and Colorado. From these efforts we have learned that currently **the most cost effective, efficient, risk limiting audit is a ballot level comparison audit**. This type of audit, when performed correctly, will use the least resources in terms of person hours to conduct the audit and at the same time will inform election officials and the public that the outcome of the election is correct to a high level of confidence.

The Pilot Election Review Committee should ensure that the voting systems under consideration facilitate compliance with Colorado state law by allowing for a risk-limiting ballot level comparison audit.

In particular, any adopted voting system should produce and export a cast vote record for every ballot in a way that the original paper ballot corresponding to any cast vote record can be quickly and unambiguously identified and vice versa. The cast vote record identifies how the voting system interpreted the original ballot. This capability enables efficient ballot level comparison audits, without requiring duplicative processes (e.g. scanning ballots multiple times) or the purchase of additional equipment not included in the proposed voting system. We recommend that the Pilot Election Review Committee consult with Arapahoe County Clerk and Recorder Matt Crane and Dr. Philip Stark, the nation's leading post-election audit expert, to determine if the voting system under consideration can indeed facilitate the conduct of a ballot level comparison risk-limiting audit. Under Clerk Crane's leadership, Arapahoe County conducted two pilots which included the conduct of ballot level comparison risk limiting audits in 2013 and 2014. Dr. Stark, chair of the Statistics Department at the University of California at Berkeley, was present at both pilots. He originally designed the risk limiting audit protocol during his service to the California Secretary of State's Post-Election Audit Standards Working Group.

2) The Voting System Should Support Compliance with Colorado Election Rules Prohibiting Voting Systems From Being Connected to the Internet.

Last year the office of the Secretary of State of Colorado adopted Election Rules 8 CCR 1501-1. The Election Rules include regulations regarding internal controls of the voting system and connectivity which provide necessary and critical security safeguards. From Election Rule 20.5.2:

- (e) The county may not connect or allow a connection of any voting system component to the Internet.
- (f) If any component of the voting system is equipped with Wi-Fi capability or a wireless device, the county must disable the wireless capability or device.
- (g) The county may not connect any component of the voting system to another device by modem.

Connection to the Internet enables corruption, diversion or deletion of, crucial vote information from anywhere in the world – and subsequent tampering can change the outcome of the election.

Even online systems used by the financial industry or the Department of Defense, in spite of massive resources deployed to safeguard those systems, have been breached.

Despite this clear rule, many of the voting systems under consideration propose to use wifi, wireless capability and modems to connect to the Internet. Such exposure of Colorado's voting system to hackers, malware and countless cyber threats unnecessarily risks compromise of the voting system and de-legitimizes Colorado's elections. Systems should be ineligible for consideration unless the vendor can demonstrate functionality without violating the State Election Rules.

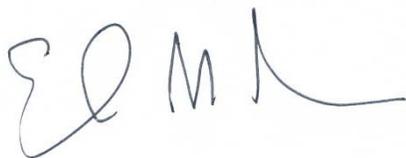
It is important to note that several voting system proposals suggest using a Virtual Private Network (VPN) in order to satisfy Colorado's Election Rules. A VPN is *NOT* independent of the Internet. It is not separate from the Internet. A Virtual Private Network does not shield the user from cyberattack. Any voting system that utilizes a VPN *IS* connected to the Internet and would violate Election Rule 20.5.2 (e).

With the limited exception in law for UOCAVA voters who cannot return their ballots via a more secure system, no system should allow for the transmission of votes over the Internet. It is also important that, at every step of the elections process, the voting system have in place the safeguards Colorado Election Rules require to protect the voting system from cyber threats. Colorado Election Rules on these points are clear and critical.

3) Prior to Purchase the Voting System Should Be Sufficiently Tested.

None of the voting systems under consideration have been piloted in a way that clearly demonstrates their efficiency, reliability and capability to scale. None have been used to engage in a risk limiting ballot level comparison audit of all the contests on the ballot. Prior to outlay of public funds such serious "road tests" should occur. Marketing claims may not hold up in actual large scale testing.

Thank you for your consideration. Please let me know if you have questions or we can provide additional information to support your work.

A handwritten signature in blue ink, appearing to read 'E Nunez', with a long horizontal flourish extending to the right.

Elena Nunez
Executive Director
Colorado Common Cause
1536 Wynkoop St., Suite 300
Denver, CO 80202
(303) 292-2163 w | (720) 339-3273 c
enunez@commoncause.org