

## Dwight Shellman

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**From:** Al Kolwicz [REDACTED]  
**Sent:** Wednesday, November 11, 2015 10:05 AM  
**To:** Wayne Williams  
**Cc:** Lynn Bartels; Suzanne Staiert; Dwight Shellman; Colorado Voter Group  
[REDACTED]  
**Subject:** Pilot Election Review Committee - UVS evaluation criteria  
**Attachments:** Requirements July 13.pdf

We are saddened to conclude that we have failed in our efforts to help the department address the real requirements of Colorado's election system (see attached).

Even if you have identified, and certified as suitable for Colorado use, perfect vote interpretation and counting equipment, you will not have addressed the must (non-negotiable) requirements of the end-to-end election system. Failing to do so is tantamount to leaving the door open to future error and fraud. This will be inconvenient and embarrassing at a minimum, and possible costly and disruptive. Suggesting that the election system is secure and accurate without first meeting the must requirements would be tantamount to fraud.

Once again we appeal to the Department to solve the system issues before locking in spending and equipment for a decade. Sure, you can do something, but it is vital that you do the right thing. You must not lock out solutions to the must requirements by locking in equipment that is not adaptable to the must solutions.

Al Kolwicz  
Colorado Voter Group

July 13, 2013

Al Davidson  
Colorado Department of State

Thank you for the opportunity to comment on your UVS requirements document (see “Invitation for Public Comment, July 9, 2013”).

As we have written previously, see “Kolwicz PPP June 26 Meeting”, much more time than 5 or 6 days, and a formal professional process is required to prepare an adequate statement of requirements.

We can do little in the time you require – other than to recommend from the top of our heads some obvious changes to your document. Please do not interpret the attached suggestions as our comprehensive or professional assessment of the Election System requirements. It is not.

We consider all of the following suggestions to be vital.

We expect from you a written reply indicating whether or not you have adopted each recommendation, and, for each suggestion that you do not accept, your reason for rejection.

We are available to answer any questions you may have.

We again strongly advise you to abandon this ill-conceived, unprofessional effort to ram through this massive change to Colorado’s Election System.

*Al Kolwicz*

**Colorado Voter Group**

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CC: Secretary of State, Scott Gessler  
Deputy Secretary of State, Suzanne Staiert  
Colorado Voter Group

## UVS Requirements

The UVS project is proceeding under the false assumption that the current statutes and Colorado Department of State election rules represent the desired Election System. This is not true. The current statutes and rules are incomplete, ambiguous, outdated, and incoherent and must be repaired before investing millions of dollars for new technology.

The following are some recommended additions/changes to the UVS requirements document.

1. The Election System must include, for each requirement, a tightly drawn standard for determining compliance. Some examples:
  - a. Specifically, what constitutes sufficient evidence that the Election System actually complies with Article VII section 8 of the Colorado Constitution.
  - b. Specifically, what constitutes sufficient evidence that the Election System actually complies with the requirements of 1-1-103(1) ... all eligible electors are permitted to vote, and ... those who are not eligible electors are kept from voting?
  - c. Specifically, what constitutes sufficient evidence that the Election System accurately interprets and counts the votes on every cast ballot?
  - d. Specifically, what constitutes sufficient evidence that the Election System is: Secure, Accurate, Verifiable, Anonymous, and Transparent?
2. The Election System must ensure that the Designated Election Official is the owner and custodian of all digital files and all documents created by and for an election.
3. All Election System documentation (including testing), and specifications must be published, in a searchable form, on a public website.
4. The requirements document is missing a narrowly-drawn Election System overview that bounds the system and identifies and describes all components (internal and external) and interfaces between components – hardware, software, documentation, data, procedures, and personnel.
5. The Election System must be modular and adaptable to innovation and change. It must, within 180 days, be able to implement, test, adopt and deploy changes in the law or rules.
6. To encourage technological innovation, the components of the Election System must be bounded by open interfaces such as: election definition file, eligible elector file, pollbook file (showing which voter was issued which ballot(s) of which ballot style), ballot image file, cast vote record file, and contest results file.
7. The requirements document must include a specification for target costs (procurement, maintenance, and operating) of each election system element.
8. The requirements document must include a specification for target component throughput.
9. The Election System must include a specification of specifically who is accountable for compliance and compliance testing of each requirement.

10. The Election System must include a specification for how challenges to vote interpretation, voter eligibility, chain of custody, audit details, etc. are to be determined by the public and processed.
11. The Election System must produce a verifiable unbroken chain of custody for all election records.
12. The Election System must include a glossary that precisely and unambiguously defines all terms. For example, there must be a precise consistent specification of when a ballot is considered to be “cast”.
13. All terms used in the Election System documentation (on forms, screens, tables, reports, etc.) must use/refer to the corresponding term used in the Colorado Constitution, Statutes, and Rules.
14. The Election System must include specifications for all election processes, personnel, records and files used to prepare for, conduct, report, audit, and archive elections.
15. The Election System must create and maintain a list that identifies and describes all threats including voter intimidation, lost/stolen ballot, etc.
16. The Election System must create and maintain a list that specifies for each threat whether each occurrence is to be: detected in real time, detected periodically, reported in real time, reported periodically, prevented, and recovered.
17. The Election System specification must include the title and description of all election records and files and the official custodian of each.
18. The Election System specification must include a comprehensive Entity Relationship Diagram.
19. Without exception, all digital files and documents created by and for an election must be exportable to digital files in industry-standard-format for import into spreadsheet and/or database tables and/or image files as requested. This includes logs and metadata. Tabular data must be exported in tabular form; a report does not qualify.
20. Without exception, all data created by and for an election must be available to the public using CORA or from a public website.
21. All private voter data must be stored in a separate table for computer files, and a secure-access-only place on paper records and screens.
22. All private voter data must be excluded from public tables, reports or screens.
23. Every paper ballot must include a unique identifier that is printed on a perforated, removable stub.
24. Confidential voter records in the voter file will be designed to keep confidential data confidential, but sufficient data from the confidential record will be included in all tables, exports, and reports so that election reports can be audited and balanced.
25. The Election System must include incident reporting/tracking/resolution/governance mechanisms.

26. The Election System must include a precise specification for governance of the Canvass Board, and detailed specifications of which records are available in what form, and when.
27. The Election System must not collect or create any records that can be used to associate a specific voter and their voting choices.
28. The Election System must provide mechanisms to detect, prevent, report, and prosecute occurrences of suspected voter intimidation.
29. The Election System must provide mechanisms to detect, prevent, report, and prosecute occurrences of suspected vote selling.
30. The Election System must provide mechanisms to detect, prevent, report, and prosecute occurrences of suspected voting-privacy violations.
31. The Election System must provide mechanisms to detect, prevent, report, and prosecute occurrences of suspected voter impersonation.
32. The Election System must provide mechanisms to detect, prevent, report, and prosecute occurrences of suspected erroneously-delivered ballots.
33. The Election System must provide mechanisms to prove that the intended elector received the ballot that was issued to the elector.
34. The Election System must provide for deferred opening of the ballot return envelope until such time as the intended elector can challenge a ballot that was falsely submitted in the intended elector's name.
35. The Election System must provide mechanisms to prove that the ballot released from custody of the intended elector was received by the Designated Election Official.
36. The Election System must provide mechanisms to prove that each cast ballot was marked by the intended elector.
37. The Election System must ensure that no mail ballot is removed from its ballot return envelope until there can be no further challenge to its eligibility.
38. The Election System must provide for publicly-verifiable voting system certification, canvass, recount, audit, test, identity verification, eligibility verification, ballot control, voter intent, poll watching, open records, and records retention.
39. The Election System must provide for the appointment of truly independent (non-conflict of interest) and technically competent public bodies to create election rules and to judge election complaints.
40. The Election System must provide for the appointment of truly independent (non-conflict of interest) public bodies with the technical competence to monitor, report, and enforce government and public compliance with election statutes and rules.
41. The Election System must guarantee that the votes on each ballot are anonymous. This can be achieved by placing voted ballots into a sealed envelope that contains only the ballot style on the outside of the envelope, and by isolating this envelope from the return envelopes and merging and shuffling these sealed envelopes before they are opened.

42. Before a paper ballot is scanned, the Election System must remove and retain, as an election record, the ballot stub.
43. The Election System must record on each anonymous paper ballot, before it is scanned, a unique identifier that will appear in the scanned image.
44. The Election System must have the capability for voters to “opt out” of receiving their ballot by mail.
45. The Election System must provide for install-time customization including what data is created, recorded, and reported. For example, (a) style-only or precinct-style, (b) contest-only or contest by voting-method.)
46. The Election System must specify certification and testing scope, governance and methodology.
47. The Election System logs must include the settings of and all changes to all parameters and switches. For example, the sensitivity settings for vote interpretation and signature verification.
48. The Election system must provide a way for the voter to verify that the votes recorded on a digital device are the votes that the voter intended. A printout by the program recording the electronic ballot is not sufficient – the verification must be independent of the program recording the electronic ballot.
49. The Election System must provide quality management capabilities including measurement and public reporting for each process. For example, for each contest/style: (a) median, average, high, low confidence of vote interpretation accuracy, (b) median, average, high, low confidence of voter identity-verification and voter eligibility-verification accuracy.
50. The Election System must provide for timely and meaningful public input on contests, contestants, electors, ballot design and layout, rules, tests, and structure of and changes to the Election System.