

Dwight Shellman

From: Harvie Branscomb [REDACTED]
Sent: Thursday, January 4, 2018 1:37 AM
To: Dwight Shellman
Cc: Harvie Branscomb; [REDACTED]
Subject: Re: [SAWG] State Audit Working Group Recommendations for CO RLA Software

Dwight
[REDACTED]

John, when you get this, please forward to SAWG, thanks.

This contribution is mine but serves in conjunction with others from our group. I'll send a referred-to document separately.

I think the procedural issues I am trying to cover are secondary in immediacy to the software. Here is a quick overview of some of the procedural issues:

Transparency:

The process of the audit should be subject to public notice in each county and public access (within fire requirements and other rational limitations) allowed. Some counties exerted central count type limitations on access (watcher credentials required) in 2017. Ballots to be sampled, if not anonymous can be exempted from audit by considering them as zombies adverse to presumed outcome.

Anonymity issues:

Anonymity is needed for public access to audit paper during sampling and capture. If a ballot sampled is inaccessible due to voter privacy it should be considered a zombie - generating a discrepancy for sample size calculations.

Anonymity is needed to facilitate public access to CVR to allow comparison of totals of CVRs to unofficial results and other public efforts to confirm the audit.

Anonymity ought not be a superficial after-election process of redaction. It ought not be applied only to CVRs. If paper is anonymous it will also defend anonymity of CVR.

Anonymity of paper will also defend anonymity of ballot pictures that are valuable for sharing with public to share audit-like opportunities and possibility of implementing elective audit units. Ballot pictures and paper share the same anonymity issues, typically.

I have written up a commentary of a recent SOS advice to counties about how to perform redaction to achieve anonymity. SOS advised row redaction but this eliminates the opportunity to confirm that any contest unofficial result matches the sum of CVR entries for that contest. Columnar redaction limits the contests for which transparency is effective but retains the opportunity for public confirmation of the audit for the remaining contests.

This method focuses attention on the contests and districts for which election structure causes anonymity problems.

Self identification by the elector should be handled very differently than the systematic involuntary exposure of voter intent identity. Officials need protection in the form of a definition of substantive self-identification, and the remedy (redaction or duplication) ought to be implemented prior to scanning to avoid broadening the exposure of the identity, and infecting the audit with it.

In the upcoming legislative session, clerks and SOS will promote a bill to make the "secrecy sleeve" optional. Part of that bill will probably call for SOS rules to ensure the privacy of the elector's vote. Such rules should require that substantive anonymity be achieved, define substantive self-identification, and require a pre-tabulation remedy for self-identification such as adequate redaction. (FYI, some counties are determining that duplicated ballots are identifiable because of a required notation that links duplicate to original. This requirement for marking during duplication should be revisited with transparency needed for audit in mind.)

For the systematic privacy issues, long term solutions requiring regulatory and statutory implementation exist with redistricting policy, coordination policy, and ballot and CVR design. Shorter term solutions exist in coordination decisions and form of ballot such that anonymity challenged coordinations are placed on a separate card and consequently a separate CVR as well.

Stopgap solutions lie in columnar redaction of CVR and limited withholding of ballot picture and consideration of the corresponding paper as a zombie when included in the audit sample.

Strong recommendation for a pre-election analysis of number of registered voters per planned ballot district style (BallotType). With a prediction of turnout, the extent of redaction needed in an election can be predicted and attributed to particular contests and district borders, style splits, etc. One multiplies the CORA anonymity threshold to account for turnout and measure the number of registered electors per proposed BallotType.

Precinct coding can be configured such that it can be easily removed for the audit - both from the CVR but also from visibility on the paper and picture. Also, precinct coding and reporting could be reduced by statute, precincts expanded and aligned with other typically coordinated district borders.

Tools for redaction:

There is a <\$100 software that batch redacts specific pages of sequential TIFF images and produces TIFF.

Simple tools are needed to count the number of matching rows in a CVR after redaction. These can be programmed or executed manually in a spread sheet.

Slightly more complex tools are needed to locate stray marks that are also substantively self-identifying - initials, printed name and signature outside the write-in line.

Software to perform sophisticated bulk redaction could be problematic, particularly if it is impossible to determine where the redaction took place and whether it was needed.

Other issues:

Better reports obtained from counties about layout of room for audit capture, use of materials and devices such as AuditMark printouts, digital or video cameras and projectors, actual roles of and instructions to Audit Board etc.

Big advantages come from auditing the primary as two or three elections. This really needs physical sorting of ballots by party and separate ballot manifests. Large counties can do this with envelope sorters and the result will be more effective if the return ballot style is visible through the return envelope at the time of sorting. This technique will be found to be valuable for audits and recounts in future.

The multi ballot primary for U electors means many ballots will be available for improper return or in the incorrect envelope. CO and the audit should be prepared for this.

Possible ways to define contests for audit.

The 2018 Primary is a much less complex election as all contest districts are I think precinct bordered. This means far fewer rare BallotTypes will occur than in the 2017. Ideally a narrowest statewide margin contest will be used to drive the sample such that all other statewide contests will obtain desirable opportunistic risk measurements. Likewise the same concept can be used for each countywide scope contest - narrowest margin should drive. What might fall through the cracks of that scenario are legislative districts. We will be able to risk-measure those districts shared by CVR counties at least at the level of sampling coming from the statewide sample. Perhaps that is good enough for the first audit of an election of this type.

I'll stop here. I hope I can participate on some of the meeting tomorrow. Thanks for moving things forward, Dwight.

Harvie Branscomb

[REDACTED]

<http://electionquality.com>

-----Original Message-----

From: John McCarthy [REDACTED]

To: Dwight Shellman <Dwight.Shellman@sos.state.co.us>

Cc: 'state-audit-working-group' [REDACTED]

Sent: Wed, 03 Jan 2018 9:43 PM

Subject: [SAWG] State Audit Working Group Recommendations for CO RLA Software

Dear Dwight,

Attached are a set of recommendations about RLA Software for Colorado summarized from the State Audit Working Group. A number of them overlap and compliment the "Comments re statistics of auditing the 2018 Colorado elections" that Ron Rivest sent to you earlier today.

We hope Harvie Branscomb also will be submitting one or two other sets of comments and recommendations from the State Audit Working Group, but Harvie may not be able to submit those tonight (due to family medical issues).

We look forward to participating in and auditing the discussions tomorrow (Thursday)!

Thanks,

John McCarthy

Verified Voting volunteer

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