

RLA comments for April 10
Mark Lindeman and RLA advocates

On mismatches and discrepancies in RLAs of statewide contests

Jerome asked for comments on what to do when auditing a statewide contest if mismatches are discovered – and, specifically, whether some counties might thereby be required to pull and record votes from selected ballots even if they did not have to do so in the first round.

“Mismatches” may or may not refer primarily to instances in which it appears that the wrong ballot was retrieved; in the audit process, any such inference would come observing (and recording!) that the audit interpretation of the vote(s) on a ballot do not match the (putatively) corresponding CVR. Presumably the next step would be to determine that this ballot matched the “next” or “previous” CVR. From there, it might be possible to determine conclusively that in fact, the audit team had accidentally retrieved, say, ballot #423 in a batch instead of ballot #424.

In general, *any* discrepancies found during a risk-limiting audit can lead the audit to continue longer than it otherwise would. In a statewide or multi-county contest, this does mean that if discrepancies are found in some counties, other counties might have to retrieve more ballots than previously. (Incidentally, we would require all counties to audit *some* ballots, and it is probably simplest for those audits to include statewide contests regardless of margin.) Fundamentally, this is true because the audit sample of a statewide contest is a statewide sample. If a sample of, say, 200 ballots statewide finds one discrepancy – in one county, of course – we cannot reasonably infer that all the other counties had perfect counts. A straightforward way to hedge against unwelcome surprises is to build some tolerance for a low rate of discrepancies into the original workload. The payoff to a somewhat larger sample in advance is a lesser chance of having to do additional work unexpectedly, as well as more information about *all* the contests that are audited on the selected ballots.

It is logically possible to create a procedure by which retrieval errors can be “cured” and not subsequently treated as discrepancies. Allowing such a procedure would threaten the integrity and credibility of the audit unless the procedure requires strong, publicly verifiable evidence of a retrieval error rather than an actual difference between ballots and CVRs, such as a ballot that has no corresponding CVR or vice versa. We are not sure whether it is better to establish such a procedure – which presumably would give counties adequate incentive to avoid retrieval errors – or simply to treat retrieval errors as one nuisance to be addressed through the built-in error tolerance. We note, again, the importance of recording the audit interpretation of sampled ballots “blind” to the CVRs, lest the audit be compromised by actual or apparent “fishing” for a ballot to match a particular CVR or vice versa.

Concerns about ballot-polling audits in 2017

The March 31 call considered two concerns about ballot-polling audits in 2017. One was the possibility of what might be called “runaway” audits that would require counties to audit hugely burdensome – or perhaps physically impossible – numbers of ballots within a few days. The other was that ballot-polling audits in lieu of comparison audits in non-CVR counties might be insufficiently informative to warrant the effort, and that legacy-style audits of entire batches might be more appropriate.

If there is a statewide contest in 2017, we recommend designing an audit that will achieve a risk limit no higher than 5%, combining ballot-level comparison in counties that can support that method with a ballot-polling sample across the non-CVR counties. Because the ballot-polling work will be distributed across all non-CVR counties (roughly in proportion to votes cast), it is likely to be manageable, especially if the statewide contest is not very close. However, we can imagine scenarios in which a stringent risk limit is very hard to attain even if the audit finds little evidence of discrepancies that would bring the result into question. We believe that the Secretary of State’s office would retain the authority to adjust the risk limit or to grant other waivers it deems necessary and appropriate, bearing in mind both the immediate audit objectives and the longer-term goals.

Concerns were expressed about small ballot-polling samples as well as large ones. Jerome raised the question (in crude paraphrase) whether a small ballot-polling sample in a non-CVR county can even be considered random, given the inability to confirm that the correct ballot has been retrieved. As Ron Rivest stated during the conversation, the possibility of a one-off error in ballot retrieval should not undermine the randomness of the sample *crucially provided that* there is no systematic bias in such possible errors. In particular, it should be impossible for the votes visible on a ballot to influence whether it is selected for the sample.

Several participants seemed to suggest that counting votes in entire batches of ballots might be more informative or useful than inspecting a small random sample of ballots from across batches. We again caution against this approach. From the standpoint of verifying election outcomes, as we have said, batch audits are extremely inefficient (even when corresponding machine totals are available) because one batch cannot be assumed to be representative of the others. A truly random sample of even a few dozen ballots could provide stronger statistical evidence than a hand count of thousands from one or two batches. Apart from the verification goal in 2017, we also believe that although the process of retrieving ballots and recording vote interpretations (without comparing them to CVRs) is conceptually simple, actually doing so is the best way of learning the work flow and suggesting process improvements. Basically, we see legacy audits in 2017 as a waste of time and effort that should be spent working to implement more effective methods.

The big picture: goals for risk-limiting audits in Colorado

Our group has engaged in robust discussion of long-term goals for risk-limiting audits in Colorado. We worry about minimalist implementations that could provide little or no evidence about the accuracy of vote tabulation in most contests: this would be a false economy. We also worry about the possibility of audit “nightmares” that might dim the prospects for the excellent audits we know are possible in Colorado and throughout the nation. We do not always agree on specific recommendations, but I believe we broadly agree on some principles:

- Risk limits should apply as broadly as is practicable – not just to one or two top-of-ticket contests. Note that a speedy statewide transition to CVRs not only facilitates this goal, but vastly simplifies *any* implementation of risk limits.
- Waivers can offer an accountable mechanism for reconciling robust goals with circumstances on the ground, but should not be used routinely.
- Even contests that are not subject to risk limits should be subject to some possibility of auditing. Colorado’s legacy audits, despite their limitations, have provided *some* scrutiny of most Colorado contests: whichever ones appear on the ballots selected for audit. Applying that precedent to ballot-level comparison audits (what we sometimes call opportunistic auditing) yields large benefits. It is also possible to randomly select *contests* to be subject to a risk limit.
- Audits should incorporate the capacity to *target* particular contests and ballots in response to specific concerns. We recommend specifying a procedure whereby political stakeholders, election officials, and the general public can nominate contests and ballots for auditing.

If our own discussions are any indication, it will take time to determine the appropriate scope of risk-limiting audits in 2018 and beyond. We therefore recommend that a public process in preparation for a 2018 rule be started as soon as is practical, and sufficiently in advance of the 2018 legislative session so that any appropriate legislative remedies can be pursued. In particular, we recommend that a mechanism be retained for public contributions to a state-curated repository of comments, much like the representative group page on which this comment appears. This repository could allow a multi-faceted discussion to continue while requiring far less staff support than the regular conference calls have entailed.