

CHAPTER 16: RISK LIMITING AUDITS

OVERVIEW

A risk-limiting audit (“RLA”) is a post-election audit of votes on paper ballot cards and VVPAT records, which has a pre-specified minimum chance of requiring a full hand count if the outcome of a full hand count would differ from the reported tabulation outcome. [Election Rule 25.1.7]. Specifically, a risk limit is the largest statistical probability that the reported outcome does not match the actual outcome (i.e., the wrong candidate was reported as the winner). For example, if the risk limit is 5% and the outcome is wrong, there is at most a 5% statistical probability that the audit will not correct the outcome, and at least a 95% statistical probability that the audit will correct the outcome. The risk limit will be published by the Secretary of State’s office each election no later than 32 days before election day.

IMPORTANT TERMS

- **Audit Board:** a group of electors nominated by each major political party and appointed by the designated election official whose job it is to conduct a risk-limiting audit.
- **Audited Contest:** the contest (statewide or local) selected by the Secretary of State that counties will audit during a RLA.
- **Audit Center:** the pages of the Secretary of State’s website devoted to risk-limiting audits.
- **Ballot Manifest File:** a file created independently of the voting system to track how many ballots are in the election and where they are organized and stored.
- **Cast Vote Record (CVR):** the record produced by a county’s tabulation system, which shows how the voting system interpreted the markings on each ballot scanned.
- **RLA Software:** the software used by the Secretary of State’s office to calculate the ballots to be audited, randomly select the ballots, enter and track the results, and generate reports.

COMPARISON VS. BALLOT POLLING AUDIT

Counties will be required to conduct one of two different types of risk limiting audits: a comparison audit or a ballot polling audit. Counties that use a voting system capable of exporting a cast vote record must conduct a comparison audit while counties that use a voting system incapable of exporting a cast vote record (counties on legacy voting systems) must conduct a ballot polling audit. [Election Rule 25.2.1]. Counties that have upgraded to a new Dominion or Clear Ballot voting system must conduct a comparison audit.

During a comparison audit, the audit board teams will review all contests on each randomly selected ballot and report the voter markings or choices of each contest to the Secretary of State using the RLA software. In contrast, during a ballot polling audit, the audit board will review only the audited contest on each randomly selected ballot card and report the voter marking or choice in that contest to the Secretary of State.

In addition to this difference, counties conducting each type of audit are required to send different information to the Secretary of State before and after the audit:

Comparison Audits

- Upload hashed CVR and ballot manifest files to RLA software [Election Rule 25.2.2(f)]
- Redacted public CVR [Election Rule 25.2.4]

Ballot Polling Audit

- Email cumulative report and hashed ballot manifest file to the Secretary of State [Election Rule 25.2.2(g)]

IMPORTANT DEADLINES

Keep the following deadlines in mind when preparing to conduct a risk-limiting audit:

- No later than 15 days before election day
 - DEO must appoint audit board members to conduct a risk-limiting audit.
- No later than 5:00pm on the Friday after Election Day
 - Secretary of State will select for the risk limit audit at least 1 statewide contest and for each county at least one county wide contest.
- By 11:59pm on the 9th day after election day
 - All counties must finish tabulating all ballots (except provisional ballots). Comparison audit counties will export the CVR file and ballot polling audit counties will export the cumulative report.
 - Counties conducting a comparison audit must create a hash value of the CVR and ballot manifest files and upload them to the RLA software. Counties conducting a ballot polling audit must create a hash value of the CVR and ballot manifest files and email the cumulative report and ballot manifest files together, and e-mail the ballot manifest has value separately, to the Secretary of State at rla@sos.state.co.us.
 - All counties must upload tabulation results to the Election Night Reporting system.
- By the 11:59pm on 10th day after election day
 - Secretary of State will notify each county of, and publish on the audit center, the randomly selected ballot cards that each county must audit in a risk limit audit.
- No later than 5:00pm one business day before the canvass deadline.
 - RLA audit board must complete its reports of all ballot cards randomly selected for audit.
- No later than 5:00pm on the last day to canvass
 - All counties must report the results of the post-election risk-limiting audit to the Secretary of State and email the audit board's certification to rla@sos.state.co.us.

BEST PRACTICES

Ballot Handling

When conducting an RLA it is very important to keep and store ballots in a manner that makes them easy to sort and locate. With this in mind, consider taking the following actions when tabulating and storing ballots:

1. Keep ballot batches small: This will make locating ballots for an RLA much easier. Batches of 25 to 50 ballots are preferable. Consistency with the size of the batches is also important.
2. Keep ballot batches in the same order as scanned: Start by flattening ballots and re-batching before scanning ballots. If you print a number on the ballots, make sure to use black ink so it shows on the scanned image. You can print this number by hand, with a stamp, or by using a scanner that can imprint a number. But make sure to keep these numbers away from target areas and timing marks.
3. Watch for issues after scanning: Ballots might be folded or crumpled during scanning which can interfere with keeping ballots in order. If a batch becomes disorganized you may always delete the batch and re-scan. Remember after scanning that the first ballot will be on the bottom, so flip the batch over before attaching the header sheet.
4. Use header sheets and logs: This helps to verify and track batches. Attach the sheets to the top of a batch and make sure the header includes a batch number, number of ballots, location, etc.
5. Secure ballot batches: Immediately bind and then securely store ballot batches once they have been tabulated. To help with this, use a binding method that won't come loose or damage the ballots such as rubber bands, binder clips, or folders.
6. Train election judges: Create procedures for handling ballots that are clear and easy to follow. Make sure judges understand the importance of keeping ballots ordered and secure. Monitor your judges and reassign as needed if a judge is not following your set procedures.

Actions During an Audit

Take some of the following steps during the audit to help ensure that it is conducted efficiently and accurately.

1. Print the summary page of ballots to be audited to assist in locating the ballots. This will allow the judges to efficiently locate all the ballots before beginning the audit.
2. Use a placeholder sheet to mark where a ballot has been removed so that the ballot can be replaced after it is audited. Use something like an oversized piece of paper as a placeholder and include the batch, location information, and ballot number on the placeholder. Make sure to be consistent when labeling these placeholders and include the same information on

each ballot pulled for the audit. The placeholder and ballot labels are important because the audit board won't have any other way of know what order the audited ballots go in if they accidentally get shuffled. Also, if the county needs to conduct a second audit round, the audit board needs to know if a ballot was pulled from a particular batch.

3. If conducting a comparison audit, when pulling a ballot to be audited make sure that the ballot type in the header of the ballot matches the ballot type on the summary page. If they don't match, you are pulling an incorrect ballot.
4. The audit board should double check the audit results before submitting them. Note that it is now possible for the audit board to audit a ballot again if they think that they made a mistake the first time but clicked on the submit button.
5. Secure and store audited ballots together as was done in previous audits. This is 1 reason placeholders are being used in your original batches.
6. If the audited ballot is a duplicated ballot then pull the original ballot and use that for the audit. Use placeholders to mark where both ballots were pulled from.