



Risk Limiting Audit Directive

Directive 1 of 2022

Date: September 30, 2022

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The following Directive is issued September 30, 2022, by the Secretary of the Commonwealth pursuant to authority contained at Sections 201 and 1105-A(a) of the Pennsylvania Election Code, 25 P.S. §§ 2621, 3031.5.

Background

The Secretary of the Commonwealth has duties under Article II of the Election Code, section 201, and Article XI-A of the Election Code, sections 1101-A – 1122-A, to ensure that voting systems comply with federal and state laws regarding accuracy and reliability. In addition, section 201(e) of the Election Code, 25 P.S. § 2621(e), authorizes the Secretary to direct county boards of elections to provide reports on matters specified by the Secretary.

One statutory mechanism for verifying the accuracy and reliability of voting systems in a particular election is through conducting a post-election, pre-certification recount of a random sampling of ballots equal to 2% of the total ballots cast or 2,000 ballots, whichever is less. Though this fixed statistical sample is effective at identifying some voting system and human errors within a specific county, it is not adaptable to the facts of a specific election and is not flexible enough to conduct a statewide post-election audit.

In January 2019, the Department of State convened a Pennsylvania post-election audit workgroup to study models of post-election audits. The workgroup consists of six county election directors, the Secretary of the Commonwealth and three of her staff members, and three experts on voting systems and post-election audits. In its final report, the workgroup recommended that the Commonwealth regularly conduct a specific type of ballot audit, known as a Risk Limiting Audit (RLA), at the post-election, pre-certification stage of the election process. Unlike the fixed statistical sample, an RLA provides a statistically sound method for confirming, with a high degree of confidence, that the outcome of the audited election(s) is correct.

These post-election risk limiting audits will supplement, but not replace, the fixed statistical sample required by the Election Code. Counties must continue to conduct the 2% statistical sample. Though the 2% statistical sample and the post-election risk limiting audit are two separate processes, the board of elections may utilize the same group of randomly selected ballots to support both the statistical sample and the post-election audit.

Directive

After each regularly scheduled primary and November election occurring after the date of this directive, the county boards of elections shall participate in a statewide post-election ballot audit involving a review of a random sample of votes cast in one or more randomly selected races, facilitated by the Pennsylvania Department of State. The post-election audit must be completed during the official

canvass before a county board of elections finalizes the certification of official election returns and no later than the third Monday after the primary or November election.

Summary of High-level Post-election Audit Steps

1. Identify auditors
2. Create a Ballot Manifest
3. Create a Contest Totals by Batch file
4. Ballot retrieval & tally
5. Reporting tallies

Step 1 - Identify Auditors

The county board of elections must identify bipartisan teams of auditors (canvassers) for the purpose of completing the post-election audit. These auditor teams can include members of the public, elections office staff and precinct election officials. All auditors must take the same oath of office taken by members of the canvassing board. The department recommends using three-person auditing teams, but in no event can a ballot be reviewed by fewer than two auditors.

Step 2 - Create a Ballot Manifest

A Ballot Manifest is a detailed description or accounting of how the county's ballots are stored. It is a necessary step to ensure that a county can identify where specific batches of ballots are stored and how many ballots are in each batch. Creating a Ballot Manifest is simple. Open a spreadsheet program and create a simple spreadsheet with two columns. The first column, titled "Batch Name," is for your container/batch name, and the second column, titled "Number of Ballots," is where you indicate the number of ballots in each container. Enter the data for your county or jurisdiction. When you're finished, ensure the total number of ballots matches your number of ballots cast. Then, save the file as a .csv file. The county board of elections will submit the Ballot Manifest to the Department of State in the manner prescribed by the Secretary of the Commonwealth. An example of a ballot manifest is provided in Figure 1, below.

	A	B
1	Batch Name	Number of Ballots
2	Precinct 1	243
3	AV Batch 202	471
4	Box 38	154
5	Container 4	577
6	Provisional 2	17
7	Early Voting Site 5, 101420	654

Figure 1: Ballot Manifest

Step 3 - Create a Contest Totals by Batch file

A batch comparison audit is a type of RLA in which the auditing board manually examines every ballot in the randomly selected batches of ballots and compares the vote totals to the machine count. To conduct a batch comparison RLA, a Contest Totals by Batch file is necessary. The Contest Totals by Batch file (also known as Candidate Totals by Batch) outlines each batch of ballots and how many votes were cast for each contest (or candidate) in a particular batch. Using a spreadsheet program, a county official will create a simple spreadsheet. Column A shall be labeled as 'Batch Name' which is the name of the batch, which must coincide with the batch name in the Ballot Manifest. Additional columns, beginning with 'B' and continuing through the alphabet as necessary, will resemble the target contest candidates or ballot measures in the event of a referenda. The file will then be saved as a .csv file. The county board of elections will submit the Contest Totals by Batch file in the manner prescribed by the Secretary of the Commonwealth. An example of a Contest Totals by Batch file is provided in Figure 2, below.

	A	B	C	D
1	Batch Name	Jane Doe	Bob Jones	Write-in
2	1	45	125	0
3	2	3	3	0
4	3	778	1944	0
5	4	395	435	0
6	5	321	889	1
7	6	45	133	4
8	7	650	232	1
9	8	127	228	2
10	9	543	432	0
11	10	129	87	2
12				

Figure 2: Contest Totals by Batch

Step 4 – Ballot Retrieval and Tally

The county board of elections will retrieve the randomly selected batches and convene the meeting of the auditing board for the purpose of manually examining the ballots, tallying the votes and recording the vote totals on tally sheets. The board of elections must ensure all members of the audit board are duly sworn.

Step 5 - Reporting Tallies

The county board of elections will report the results of the post-election audit in the manner prescribed by the Secretary of the Commonwealth.¹ The audit results must be transmitted to the Department of State concurrent with the county's certification of official election returns. In addition to reporting the results of the audit, the county must note any anomalies or errors found during the audit process.

Implementation

These new requirements regarding Post-Election Risk-Limiting Audits will apply to the Nov. 8, 2022, general election and any subsequent election. The Department will update this Directive as necessary.

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Version History:

Version	Date	Description	Author
1.0	M.DD.2022	Initial document release	Bureau of Elections - Division of Election Security and Technology

¹ The Department of State will provide counties with access to a post-election audit software tool or database for the purpose of uploading ballot manifests and reporting audit results.