June 2023 Risk-Limiting Audit Report

AUGUST 15, 2023
VIRGINIA DEPARTMENT OF ELECTIONS

Executive Summary

Pursuant to §24.2-671.2(D), a local electoral board may request a risk-limiting audit (RLA) of a contested race that is wholly contained within the jurisdiction of the local electoral board.[1] On June 21, 2023, the Loudoun County Electoral Board (LCEB) met and voted unanimously to request a risk-limiting audit of the June 2023 Democratic Primary for House of Delegates District 26 (HD-26 Primary).[2] The request was then submitted to the Virginia Department of Elections (ELECT) for review.

ELECT reviewed the request under the Virginia Administrative Code.[3] Finding the request sufficient, the State Board of Elections (SBE) called an emergency meeting for June 27, 2023, at 1:00 PM at the Washington Building in Richmond, Virginia. At the meeting, the SBE approved the request, set the risk limit to 10%, and granted an extension of the LCEB's certification deadline for the HD-26 Primary to Friday, June 30, 2023.[4]

The LCEB and the General Registrar of Loudoun County held the RLA at the office of the General Registrar beginning at 10:00 AM. Ten (10) precincts were randomly chosen by the RLA software, Arlo, an audit software supported by VotingWorks, a non-profit, nonpartisan organization, to perform the statistical calculations and manage the data for the audit.[5] The RLA successfully met the risk limit in the first round of counting, confirming the accuracy of the results reported by the voting system.[6]

The Batch Comparison Process

The batch comparison method compares randomly selected batches of ballots to the reported results of an election to confirm the outcome of the election was correctly reported. Each batch is hand tallied by an audit review board and later uploaded into Arlo.[7] The batch comparison method was adopted by the SBE during its March 7, 2023 meeting as a method available for local electoral board requests pursuant to §24.2-671.2(D).[8]

State Board of Elections Meeting

On June 27, 2023, the SBE held an emergency meeting to discuss the LCEB's request submitted on the *SBE 671.2(D) Form*, grant an extension for the LCEB's certification of the race to be audited, set the risk limit, and generate the random seed number. The LCEB requested that the RLA be conducted using the batch comparison method, which is a method that was approved by the SBE on March 7, 2023, for use in RLAs.

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[1] *See* Code of Virginia, §24.2-671.2(D).
[2] *See attached* Loudoun County SBE 671.2(D) Form Request for a Risk-Limiting Audit. *See also attached* Map of House of Delegates District 26.
[3] *See* Virginia Admin. Code, 1VAC20-60-80.
[4] *See* Virginia Department of Elections YouTube Channel, June 27, 2023 Emergency State Board of Elections Meeting.
[5] *See attached* Arlo, RLA Report for June 2023 Democratic Primary for House of Delegates District 26. The report states that 17 batches were selected, but 7 of these batches Arlo selected multiple times. This is common for Arlo to choose a batch multiple times, no matter the RLA method selected. In a batch comparison method RLA, it is unnecessary to count a batch multiple times, despite the batch being chosen multiple times.
[6] *Id*.
[7] *See* VotingWorks, Arlo.
[8] *See* Code of Virginia, §24.2-671.2(D). *See* SBE, Meeting Agenda and Minutes for March 7, 2023.

The SBE unanimously approved the LCEB's *SBE 671.2(D) Form* and granted an extension for the LCEB's certification of the race to Friday, June 30, 2023.[9] The SBE unanimously set the risk limit to 10%, as has been the case for every RLA performed in the Commonwealth since RLAs were approved for use under Virginia law.[10] Pursuant to §24.2-671.2(A), "risk limit" means the largest probability that the risk-limiting audit will fail to correct an election outcome that differs from the outcome that would be found by a full manual tabulation of the votes on all ballots cast in the contested race." A 10% risk limit means that there is a 90% chance that the audit will correct an incorrect outcome.

The 20-digit random seed number, for use by Arlo to randomly select a sample of ballots to be audited, was generated at the SBE meeting by a group of ELECT staff representing multiple divisions within the Department; to generate the seed number, ELECT staff took turns rolling twenty,10-sided dice, once per dice. The random seed number generated was 74910486070357544777.[11]

Arlo estimated that a sample size of 10 batches of ballots was required for the HD-26 Primary. The required sample size for an RLA is impacted by the risk limit and the margin in the audited race; in this case, the margin of victory between the two candidates was 35.58%.[12]

Submission of ELECT 659 Form

Prior to the audit, the Loudoun County General Registrar was required to submit an *ELECT-659* form. An *ELECT-659* form is a request to inspect sealed election materials held by the Clerk of the Circuit Court and is required in an RLA to access ballots for auditing. ELECT approved the *ELECT-659* form, provided signature authorization, and returned it to the General Registrar. The General Registrar presented it to the Clerk of the Circuit Court and obtained the necessary ballots from the HD-26 Primary

Creation of Ballot Manifest

The General Registrar then created a ballot manifest, which is an inventory of every ballot in a locality.[13] A ballot manifest is presented in a two-column spreadsheet that includes a list of the "Batch Name" (column A) and the "Number of Ballots" (column B).[14] All types of ballots are included (in-person, mail-in, provisional, etc.) in the manifest.

Create a Candidate Totals by Batch Document

Unlike all other RLAs previously performed in the Commonwealth, the General Registrar was required to provide a *Candidate Totals by Batch Document*. This document provides the number of votes cast for each candidate in an election; Arlo uses this document as part of the batch selection process and compares the number of votes cast to the number of votes tallied during the RLA. The *Candidate Totals by Batch Document* is a spreadsheet, which has 3 or more columns. The first column (column A) lists the batch names as stated in the ballot manifest's column A.[15] The next 2 or more columns are for each of the candidates on the ballot as well as write-ins.[16] For this race, there were no write-ins for the HD-26 Primary, as write-ins are not allowed in primaries.[17]

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[9] *See* Virginia Department of Elections YouTube Channel, June 27, 2023 Emergency State Board of Elections Meeting.
[10] *Id.*
[11] *Id.*
[12] *See* ELECT, Virginia Department of Elections - Election Night Reporting.
[13] *See* Loudoun County Ballot Manifest.
[14] *See* VotingWorks, Ballot Manifest - Arlo (voting.works).
[15] *See* VotingWorks, Candidate Totals by Batch - Arlo (voting.works).
[16] *Id.*
[17] *See* Loudoun County Candidates by Total. *See* Code of Virginia, §24.2-529.

Upload the Ballot Manifest and the Candidate Totals by Batch Document

Once the ballot manifest and the candidate totals by batch document were created, the General Registrar saved the manifest as a csv file and sent the documents to ELECT. Once the documents were reviewed, they were uploaded into Arlo, and the RLA was launched.

Batch Retrieval List and Tally Sheets:

Loudoun County received a list of batches to review directly from Arlo; ten (10) batches were selected for review.[18] The General Registrar was able to download a set of tally sheets corresponding to the batches selected by Arlo that would allow each audit review board to record the counts for each candidate as the ballots were reviewed during the RLA.

Audit Review Board Selection

The audit review boards were made up of officers of election that had served during the June 2023 Primary. These officers were chosen as they were known to be efficient, organized, and well-versed in the election process. Those officers with the most experience and efficiency were given the larger batches to review. For example, one audit review board was given the task of reviewing the central absentee precinct, which has the largest number of boxes to review with 8 boxes in total. Other audit review boards reviewed up to 3 batches based on the size of those batches and how efficiently the audit review board reviewed the batches given to them.

Loudoun County's Setup for the Batch Comparison RLA

Room Organization

The office of the Loudoun County General Registrar has a large training room with a connected smaller training room that was utilized for the RLA. In the center of the large training room were 6 tables, one for each audit review board, with 2 chairs on opposite sides of the tables (one for each member of the audit review board). Along one wall, a set of tables separated a section of the room from the center of the room; this area was designated for members of the public and press to observe the audit reviews without interrupting or interfering with the RLA. To the right of the public observation area, a set of tables lined the wall; this area was for the members of the electoral board to observe the audit review boards and confer with each other during the RLA. To the right of this set of tables, another set of tables was placed along the wall; tech and administrative support as well as the General Registrar and Deputy General Registrar of Loudoun County were stationed at these tables.

In the connecting smaller training room, the batches of ballots required for the RLA were stacked behind a table. A member of the General Registrar's staff and a member of the Clerk of the Circuit Court of Loudoun County's office were stationed at this table to check in and check out batches of ballots to and from the audit review boards.

Audit Review Board Stations

Each audit review board station was provided the same materials for use in their review of the batches of ballots. The items at the table included:

- Taped pieces of paper with the names of each of the candidates, undervotes, overvotes, and ballots needing to be adjudicated further
- A copy of Virginia's Guide to Hand-Counting Ballots[19]
- Pens or other writing utensils

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[18] *See* Arlo, RLA Report for June 2023 Democratic Primary for House of Delegates District 26.
[19] *See* ELECT, Virginia-Guide-to-Handcounting-Ballots---Rev-May-2023.pdf.

- Tally sheets
- Rubber fingerguards

Chain of Custody

One audit review board at a time went into the smaller training room to retrieve their batch of ballots. At the check-in/check-out station, a member of the General Registrar's office and a member of the Clerk of the Circuit Court's office controlled the release of batches to the audit review boards. Both members of the audit review board went to the check-in/check-out station; one member would sign out the assigned batch on the check-in/check-out sheet. Upon completion of the review of the assigned batch, both audit review board members took the completed batch back to the check-in/check-out station, and a member of the audit review board signed the check-in/check-out sheet.

Results of the RLA

The RLA for the HD-26 Democratic Primary successfully confirmed the reported election results with the 10% risk limit being met in the first round of counting.[20] During the auditing of 9,702 ballots from the 10 precincts audited, a total of 5 instances were discovered in which valid votes were incorrectly counted as undervotes by the voting system in the election.[21] Having some instances of incorrectly reported undervotes is to be expected, as the voting systems are set to a certain degree of sensitivity for determining whether a mark on a ballot is a vote. Setting the sensitivity too low would lead to marks (not intended to be votes) incorrectly being counted as votes, and setting the sensitivity too high would lead to more valid votes (that may be marked faintly) being rejected as undervotes, slowing the voting process at polling places. The setting is configured and recommended by the electronic voting system vendor and the designated custodian for the locality.

Lessons Learned

Outside of an initial RLA pilot program conducted in 2018 in Fairfax, this was the first batch comparison method performed in the Commonwealth and the first RLA performed for a primary election. Following are some lessons learned that can be used to improve the RLA process in the future.

Adjudication of Ballots

The RLA's purpose is to check the machines correctly reported the outcome of the election. As part of this procedure, ballots counted by the voting system as undervotes and overvotes must be adjudicated to determine whether the intent of the voter to cast a vote for a candidate can be determined. ELECT has developed standards to determine voter intent in the Virginia Guide to Hand-Counting Ballots ("Guide").[22] These standards are more commonly used to assess ballots that require hand counting and cannot be processed by an electronic voting system.

During the HD-26 primary, 5 undervotes were found during the RLA process.[23] As the audit boards came across the undervotes, they set the ballots aside and review them individually using the Guide. If the audit board was unsure about the voter's intent, the LCEB reviewed the ballot with the Guide and made a determination regarding the voter's intent. Using the Guide, it was determined that 4 out of the 5 undervotes were for the victor of the primary; these votes were reflected in the abstract presented and certified by the SBE.[24] While the RLA Manual ("Manual") does not go into depth about the adjudication

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[20] *See* Arlo, RLA Report for June 2023 Democratic Primary for House of Delegates District 26.
[21] *Id*.
[22] *See* ELECT, Virginia-Guide-to-Handcounting-Ballots---Rev-May-2023.pdf.
[23] *See* Arlo, RLA Report for June 2023 Democratic Primary for House of Delegates District 26.
[24] *Id*. *See* SBE, Meeting Agenda for July 5, 2023.

of the undervotes and overvotes during the RLA process, ELECT will clarify the adjudication of ballots during an RLA in the Manual. Additionally, ELECT will work with Arlo to improve the batch tally sheets used by audit review boards to include spaces to account for undervotes or overvotes.

Authorized Representatives

At the HD-26 Primary, the Loudoun County Republican Party sent one authorized representative to observe the process. The Code of Virginia, §24.2-671.2, is silent regarding authorized representatives and their role in RLAs.[25] Following the process laid out in §24.2-671, the authorized representative was given the same level of access they would receive during the canvass process.[26] The authorized representative was prohibited from speaking to the audit review boards or otherwise disturbing the RLA process. The authorized representative was given access to observe the RLA process within the central area of the room where the audit review boards were sorting and counting the ballots to be audited. Further clarification will be needed regarding the role of authorized representatives during the RLA process.

Batch Sizes and Audit Review Board Workloads

In the batch comparison method, batches of ballots are the size of a precinct. Therefore, all ballots cast at a precinct will be included in the ballot manifest for the RLA, even if those ballots do not have the race that is being audited. Central Absentee Precincts (CAP) typically contain the most ballots, as they encompass all early voting ballots and all precincts within a jurisdiction.

In this RLA, the race selected for audit was not featured on the ballot of every precinct. Since the CAP was selected as a batch for audit, the audit review boards had to first sort the ballots in the CAP to find those that contained the race. CAP contained the largest number of ballots (all the absentee ballots cast via early voting, mail-in, and dropped off on Election Day).[27] The audit review board assigned to the CAP had 8 boxes to sort. The audit review board sorted through several thousand ballots to find the few hundred ballots that contained the race. As other audit review boards began finishing their precincts, the CAP audit review board was still sorting the ballots. The decision was made to allow other audit review boards to help with sorting the ballots from CAP.

In the future, the Manual should address the use of multiple audit review boards for a single precinct, especially if the precinct has a significant number of ballots. Arlo provides tally sheets that can be copied and used by multiple audit review boards. Additionally, Arlo allows for multiple tally sheets to be submitted for a single batch. Local electoral boards should also consider if a potential race for audit appears on every ballot within their jurisdiction; if it does not, they may have to sort ballots when auditing the CAP. Clarification regarding these processes and considerations can be added to the Manual in the future.

RLAs for Primaries

As was noted in the Manual, RLAs for primary races are not recommended by ELECT. The timeline for an RLA is truncated after a primary relative to a general election. In November 2022, the localities of southwest Virginia had 9.5 business days from November 16, the day of the RLA selection, to December 1, the last business day to conduct the RLA.[28] Five (5) business days were built into the process to conduct the RLA and allow time for subsequent rounds of counting.[29]

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[25] *See* Code of Virginia §24.2-671.2.
[26] *See* Code of Virginia §24.2-671.
[27] *See* Loudoun County Ballot Manifest.
[28] *See* ELECT, November 2022 General Election RLA Report.
[29] *Id*.

The request for an RLA of the HD-26 Primary was received 2 days after the election on Thursday, June 22.[30] As this request was unexpected and the SBE was not scheduled to meet until July 5 to certify the election, an emergency meeting of the SBE had to be arranged.[31] The earliest the SBE emergency meeting could be arranged was Tuesday, June 27.[32] This further shortened the timeline, leaving 4 days to create the necessary documents, upload those documents, launch the RLA, conduct the RLA, and leave enough time in case of subsequent rounds of counting if the risk limit was not met in the first round. The RLA must be completed before certification of the audited election.[33] Certification dates for the SBE are set by statute; the SBE does not have the authority to delay certification for the RLA or any other reason unless otherwise specified in the Code of Virginia.[34]

The general registrar and deputy general registrar were aware of the timeline and had previously read the Manual regarding the batch comparison method. They had to coordinate very quickly with the Clerk of Court's office to be able to retrieve the required ballots and have personnel from the Clerk of Court's office assist with the RLA process. The general registrar found that there were only certain dates and times when the Clerk of Court would be able to assist with RLA, causing further scheduling difficulties.

With the number of ballots to process and the number of audit review boards, the RLA was able to be completed in about 3.5 hours. While this was quicker than expected, the number of ballots cast is significantly less than what would be cast during a general election. For the HD-26 Primary, 5,588 ballots were cast.[35] In 2021, during the last general election for the General Assembly, 41,667 ballots were cast in the HD-87 district (the old district similar to the new HD-26 district).[36] While the RLA was able to be performed within a day, it is still not recommended for use in a primary due to the chance that subsequent rounds of counting may be necessary in future RLAs or if Arlo requires a full hand tally of the ballots in the first round of counting; both situations would require more time in an already short timeline.

Locality-wide Races vs. District-based Races

As previously mentioned, the HD-26 Primary had ballot batches containing ballots that did not have the audited race. The necessary separation of these ballots caused a delay in the counting process of the batch comparison RLA. In the future, local electoral boards may consider applying for an RLA of races that are locality-wide such as a Commonwealth's Attorney or Clerk of Court race. This will ensure that all the ballots in the audit will have the race on the ballot, eliminating the need to sort ballots by race on the ballot.

Conclusion

The audit of the June 2023 Democratic Primary for the House of Delegates District 26 confirmed that the results of the election were accurately reported. The accurate results are a credit to the hard work of election administrators, staff, and volunteers and further exemplify the integrity and security of elections in Virginia.

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[30] *See* Loudoun County SBE 671.2(D) Form, June 2023.
[31] *See* Regulatory Town Hall, Emergency State Board of Elections Meeting - June 27, 2023.
[32] *Id*.
[33] *See* Code of Virginia §24.2-671.2.
[34] *See* Code of Virginia §24.2-534. *See also* Code of Virginia §24.2-679.
[35] *See* ELECT, House of Delegates District 26 Results by Precinct.
[36] *See* ELECT, November 2021 General Assembly Results (HD-87).

RLAs are an important tool in reassuring the public that their voices are heard in the democratic process. ELECT remains a leader nationally in the administering of risk-limiting audits and intends to build on this success in the years to come to ensure safe, secure, fair, and free elections in the Commonwealth.