



★ VIRGINIA ★
STATE BOARD
of ELECTIONS



November 2022 Risk- Limiting Audit Report

JANUARY 18, 2023

VIRGINIA DEPARTMENT OF ELECTIONS

EXECUTIVE SUMMARY

Pursuant to [§24.2-671.2](#) of the Code of Virginia, the Virginia Department of Elections is required to coordinate a pre-certification risk-limiting audit of ballot scanner machines in the Commonwealth.¹ The 2022 November General Election Risk-Limiting Audit (RLA) took place in the three weeks following the general election for the United States House of Representatives. During the November 16th meeting of the State Board of Elections (SBE) United States House of Representatives District 9 was randomly chosen by the Chairman of the SBE to be audited. The Virginia Department of Elections (ELECT) announced the successful completion of the audits on December 1, 2022. The results confirmed with over 99% confidence that the machines accurately reported the results of the race.

In addition to facilitating the audit each year, §24.2-671.2 also requires ELECT to submit a report to SBE that details the results of the audit and provides analysis of any detected discrepancies.² The following report gives a comprehensive overview of the history, practice, and process of risk-limiting audits in the Commonwealth to both provide these essential details as well as promote transparency, knowledge, and confidence in Virginia elections and the RLA process.

WHAT IS A RISK-LIMITING AUDIT?

A risk-limiting audit (RLA) means an audit protocol conducted after an election and prior to the certification of the election results with a pre-specified minimum probability of requiring a full hand count of votes cast, if the outcome reported by the voting system differs from the outcome that would be found by a full hand count of the votes in a contested race. While RLAs do not guarantee that every vote was counted correctly, they provide strong statistical evidence that the declared winner of a contest actually received more votes.

RLAs provide a more cost effective and efficient alternative to other forms of post-election audits by reducing the total number of paper ballots needed to confirm election results. In order to conduct an RLA, a voting system must be in place that produces paper ballots. RLAs analyze a random sample of hand counted ballots to confirm election results. If the margin of an election is wide, less votes are audited; if the margin is narrow, more votes will be audited until enough evidence can confirm the results of the contest.³ The ballots sampled must, then, be tallied and meet the preset risk-limit. 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. For example, a 10% risk-limit means that there is as a 90% chance that the audit will correct an incorrect outcome.

There are three types of risk-limiting audits: *ballot comparison*, *batch comparison*, and *ballot polling*.

¹ Code of Virginia., [§24.2-671.2](#)

² *Id.*

³ Risk-Limiting Audits, Postelection Audits, A Summary, <https://www.ncsl.org/research/elections-and-campaigns/risk-limiting-audits.aspx>

Criteria	Ballot Comparison	Batch Comparison	Ballot Polling
Description	Cast vote record (CVR) totals are compared to contest results. Voter selections on randomly-selected individual paper ballots are compared with corresponding CVRs.	Sums of all batch subtotals are compared to contest results. Hand tallies from randomly-selected paper ballot batches are compared with corresponding machine counts.	Voter selections on randomly-selected paper ballots are interpreted manually.
Election Infrastructure	Voting system must export a machine readable CVR for each paper ballot.	Voting system must export machine readable batch tallies for each physical batch of paper ballots.	Does not require matching ballots to tallies.
Number of Ballots to Examine	Fewest ballots	More ballots but organized in batches	Comparable to ballot-level comparison for wide-margin contests, but grows rapidly as margin narrows.
Number of Ballot Containers to Open	Relatively few containers	Relatively few containers	Comparable to ballot-level comparison for wide-margin contests, but grows rapidly as margin narrows.
Workload predictability on reported margins	Number of ballots to sample is completely predictable from reported margin.	Number of batches is predictable. May be susceptible to hand counting errors.	Number to sample depends on “the luck of the draw,” even when the margin is known.
Identification of Misinterpreted Ballots	Always identifiable during audit.	May be possible with sufficient effort.	Not possible
Observability & Verifiability of Public	Easiest to observe ballot interpretation. Verifiability is more difficult than ballot polling.	May be difficult to observe tallies of all batches. Verifiability is more difficult than ballot polling.	Easy for public to observe ballot interpretation.

Table adapted from *Verified Voting*⁴

⁴ Verified Voting, [Risk-Limiting Audit Methods](#)

WHAT RLA METHOD DOES VIRGINIA USE?

In 2018 a Risk-Limiting Audit Pilot took place in Fairfax City, which tested all three methods of conducting a RLA: Batch-Level Comparison Audit, Ballot-Level Comparison Audit, and Ballot Polling Audit. ELECT currently utilizes the ballot polling method to conduct RLAs in the Commonwealth. A ballot polling RLA is similar to an exit poll. In this case, ballots (people) are randomly selected and tabulated (polled).⁵ ELECT has utilized the ballot polling method to conduct the 2021 Risk-Limiting Audit of the 2020 General Election as well as the 2022 Risk-Limiting Audit of the 2021 General Election with great success.

WHY THE BALLOT POLLING METHOD?

ELECT believes, that given software limitations across jurisdictions and compressed timelines and staffing challenges, the ballot polling method is the best option of the three methods as it is both the easiest to uniformly administer pursuant §24.2-103(A) and the most efficient method of RLA to inspire confidence in our voting systems.⁶

Ballot Comparison Method

The ability to produce a cast vote record (CVR) is essential to conducting a ballot comparison audit. It is important to note that not all localities in the Commonwealth have voting machines that can produce a CVR. Pursuant to §24.2-626(A), the local governing body of a county or city is responsible for acquiring SBE-certified voting machines and software to be used in that jurisdiction.⁷ There are four different voting machine vendors that localities may purchase from: Dominion Voting Solutions, Election Systems and Software, Hart InterCivic, and Unisyn Voting Solutions. Each vendor has their own capabilities and software availability, and each fulfills the requirements set out by the Virginia Voting System Certification Standard, allowing for certification by the SBE. Neither the Code of Virginia nor the Virginia Voting System Certification Standard require the purchase of certain pieces of equipment nor the purchase of additional software. For example, each vendor must demonstrate the system is *capable* of producing a cast vote record (CVR). However, the software to produce a CVR is often an additional cost to the local governing body. Due to budget constraints or other factors, the governing body may forgo the software.

Additionally, for the ballot comparison method, localities would need to have polling places with high speed scanners as their voting systems. The ballots would be scanned in batches so that the ballot images and CVRs created could be matched. The high speed voting systems and software would be required by all localities in order to perform a ballot comparison RLA with statewide uniformity. Since a CVR and a high speed scanner would be required and not all localities have the software to produce a CVR, the ballot comparison RLA is not viable option for auditing most races for the sake of uniformity.

⁵ City of Fairfax Post-Election, Risk-Limiting Audit Pilot, 2018, [2018FairfaxPostElectionRLA.pdf \(virginia.gov\)](#)

⁶ Code of Virginia [§24.2-103\(A\)](#).

⁷ Code of Virginia [§24.2-626\(A\)](#).

Batch Comparison Method

While batch comparison could be an option for future RLAs, the process of conducting a batch comparison RLA comes with some challenges. Batch comparison RLAs introduce more human error into the audit and put more of a strain on a locality's resources. In order to create uniformity in a batch comparison RLA in the Commonwealth, the batch would have to be by precinct; the precincts would be randomly chosen by ARLO, the RLA software used by the Commonwealth, which tends to pick the larger precincts when selecting batches. The average amount of ballots cast in a precinct is about 800, and with multiple precincts possibly chosen in one locality, the number of ballots to be hand-counted by one locality could be several thousand. Additional audit review boards may be assigned to one precinct, lessening the burden and review time, but this may introduce even more human error and requires local election boards to recruit and pay more people to participate in audit review boards. Noting the short timeline, discussed later in this report, a batch comparison audit could increase the likelihood of human error, increase strain on locality resources, and increase the chance of a second round of the RLA.

Ballot Polling Method

Ballot polling checks if the outcome of an election is correctly reported rather than assessing if the tabulation was correct. Typically, ballot polling requires the smallest amount of ballots to produce strong evidence that a reported outcome was correct.⁸ Ballot polling requires little preparation and virtually nothing from the voting system itself. Thus far, the ballot polling method has given election officials high confidence that the elections were accurately reported.

Due to the diversity of the certified vendors, the limited time and manpower constraints for local electoral boards, and the interest of creating uniform procedures throughout the Commonwealth of Virginia, ELECT recommended the ballot polling method, and the SBE adopted this recommendation on September 27, 2022 during its monthly meeting when it approved the RLA Manual.⁹

WHAT IS NEW FOR VIRGINIA'S RLA?

In 2022, the Virginia General Assembly repealed the previous RLA statute (§24.2-671.1) and codified a new statute in §24.2-671.2 (*to reference the full text please see appendix.*)¹⁰ Below is a chart highlighting the major differences in the 2 statutes:

⁸ Bravo: Ballot-polling Risk-Limiting Audits to Verify Outcomes, Mark Lindeman, Phillip B.Stark, Vincent S. Yates, Department of Statistics, University of California Berkeley, <https://www.usenix.org/system/files/conference/ewtwote12/ewtwote12-final27.pdf>

⁹ Department of Elections, [Risk-Limiting Audit Manual](#); State Board of Elections, [Meeting Minutes](#) for September 27, 2022

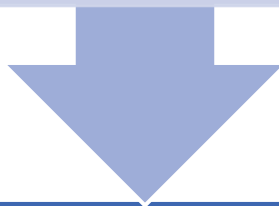
¹⁰ Code of Virginia, 24.2-671.2 [Risk-limiting audits](#),

Previous 2021 RLA statute (§24.2-671.1)

RLA to be conducted annually

Conducted after Certification

Procedures prescribed by
ELECT



Current 2022 RLA Statute (§24.2-671.2)

RLA to be conducted after certain elections

Conducted before Certification

Procedures prescribed by SBE

Local electoral boards may apply for an RLA

Difference in contest must be greater than 1%

ELECT to set date, time, and location of RLA

One member of each party on the electoral board must be present for the entire RLA

Certain contest audited in certain years

RLA Workgroup

In light of the new legislation, a workgroup was required by statute for the purpose of laying the foundation for the November 2022 General Election. This group included ELECT staff members and members from the Virginia election community; the group met twice over the past year, July 19th and August 23rd.¹¹ Members of the public were also invited and in attendance for each meeting.

A main focus of both meetings was the timeline of the RLA. As stated above, the RLA was required to be conducted before certification of the election, a new requirement for general registrars and electoral boards. The workgroup sought to create a balance with realistic expectations, hard deadlines, and public access. During the second meeting, the workgroup agreed that the RLA should take place the week after Thanksgiving and encourage the chosen localities to finish the RLA by a certain time, believing this to be the best option for all interested parties. These suggestions were incorporated into the RLA Manual.¹²

Additionally, a regulation was developed to provide a method of requesting an RLA by a local electoral and the criteria for approval of such an application. 1VAC20-60-80 states, “At the

¹¹ Town Hall, Risk Limiting Audit Workgroup Meeting Minutes, [July 19, 2022](#), [August 23, 2022](#)

¹² Department of Elections, [Risk-Limiting Audit Manual](#)

public canvass meeting following the election, an electoral board may elect to request an audit of a contested race, or multiple races, within its jurisdiction (risk-limiting audit) by a majority vote.”¹³ If the statements made on Form SBE 671.2(D), meet the criteria of 1VAC20-60-80 the SBE will grant the request. The criteria are as follows:¹⁴

“If a question to request a risk-limiting audit achieves a majority vote, an electoral board must complete Form SBE 671.2(D) to request State Board of Elections (SBE) approval of the audit.

3. The SBE will grant a request for a risk-limiting audit within a locality's jurisdiction if:

a. The submitted Form SBE 671.2(D) contains sufficient information for the SBE to determine that the local electoral board members cast a majority vote in favor of the audit request;

b. The submitted Form SBE 671.2(D) contains sufficient information for the SBE to determine which contested races are subject to the requested audit and that those races are in fact within the jurisdiction of the local electoral board;

c. The SBE concludes that the audit is permissible under § 24.2-671.2 of the Code of Virginia and all other relevant provisions of law; and

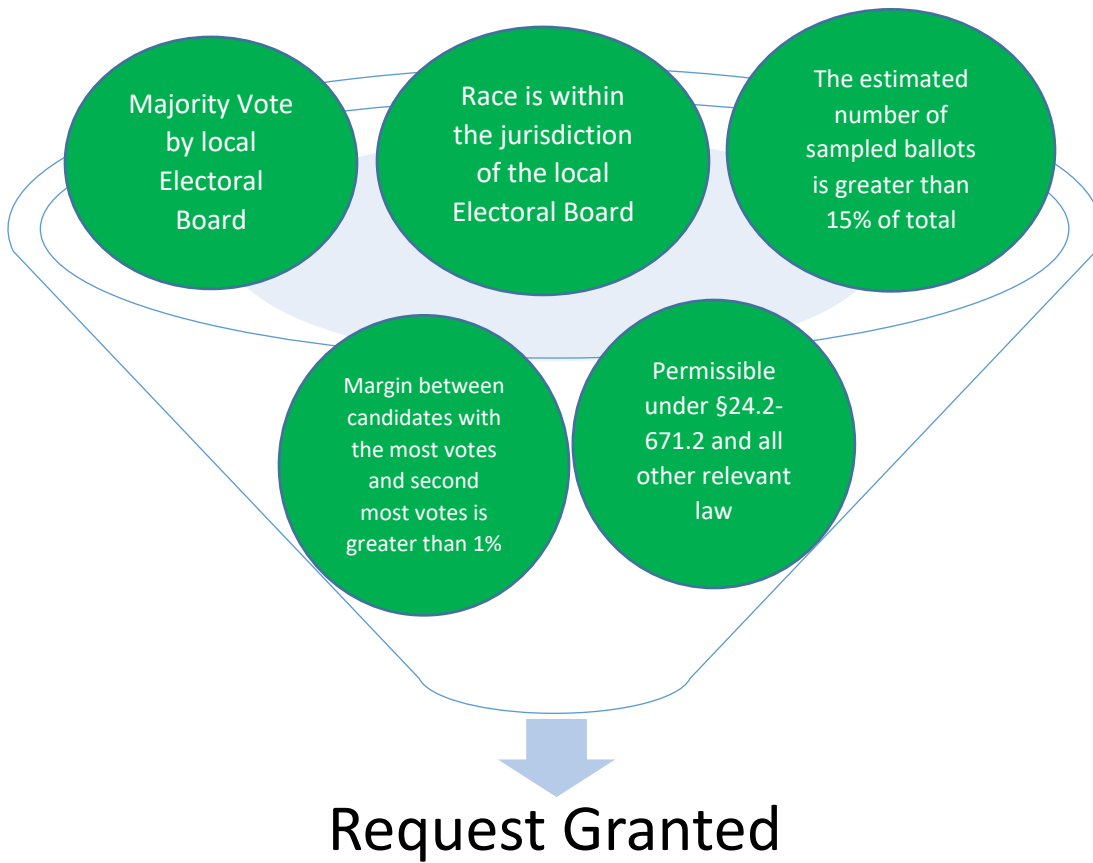
d. The following conditions are met:

(1) The margin of the candidate with the most votes and the second most votes is equal to or greater than 1.0%; and

(2) The number of estimated ballots to be sampled exceeds 15% of the total number of ballots cast.”

¹³ Administrative Code of Virginia, [1VAC20-60-80](#)

¹⁴ *Id.*



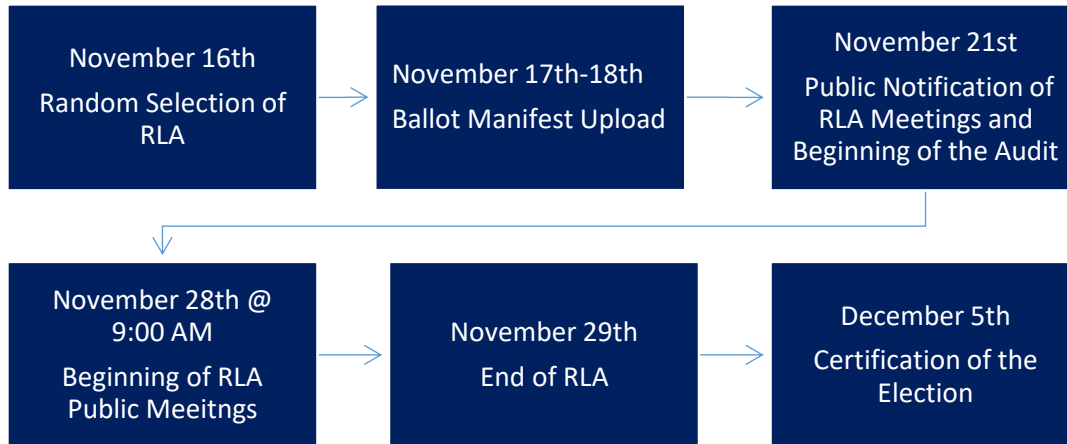
The regulation and accompanying Form SBE 671.2(D) were proposed at the August 16, 2022 SBE meeting and was unanimously approved by the SBE.¹⁵ Both the regulation and the form are available in the appendix of this report.

¹⁵ State Board of Elections, [Meeting Minutes](#) for August 16, 2022

WHAT IS THE RLA PROCESS?

Overview

The following is an illustrated timeline of the November 2022 audit:



Administrative Process

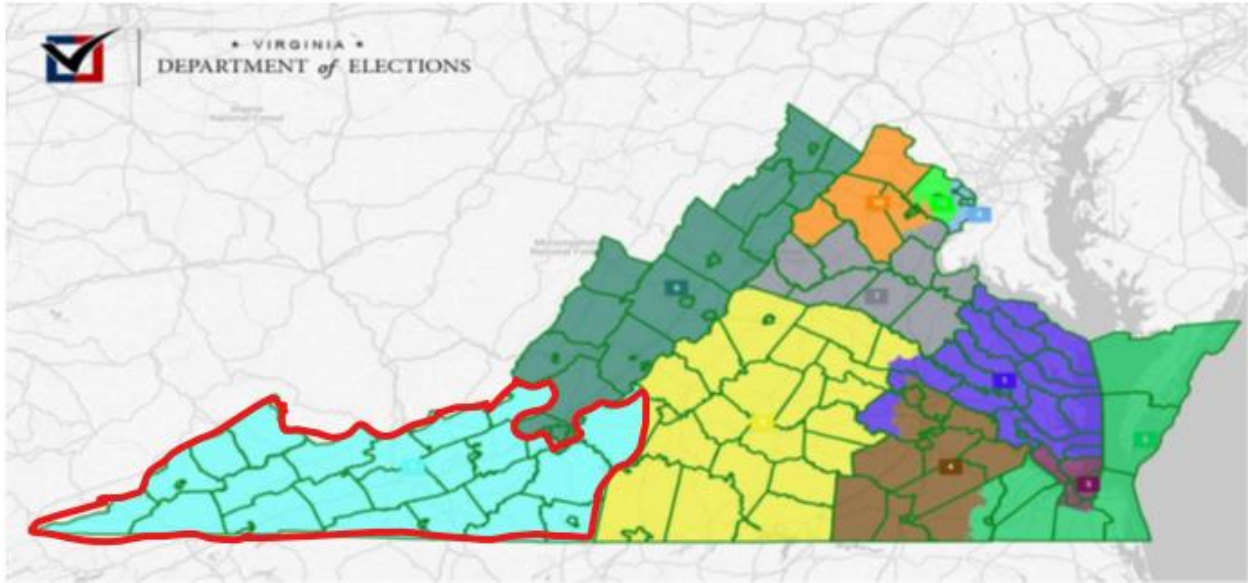
ELECT and localities used ARLO, an open-source audit software supported by VotingWorks, a non-profit, nonpartisan organization, to perform all the statistical calculations and manage the data for the audit.¹⁶ ARLO estimated that a sample size of 60 ballots would be officially required for the U.S. House of Representatives District 9. The sample size is relative to the margin in the election that is being audited; in this case, the margin of victory between the two candidates was well over 40%, leading to less ballots needed to statistically assess the accuracy of the election machines. This RLA was conducted using the *ballot polling method*, as was approved by the SBE in the RLA Manual pursuant to §24.2-671.2(B).¹⁷

On November 16, 2022 at 3:00PM, the SBE held an electronic meeting to randomly select a U.S. House of Representatives race, set the risk-limit, and generate the random seed number. A U.S. House of Representatives race was randomly selected from a bowl of film canisters; each canister had one district inside for a total of eleven canisters. Commissioner Beals mixed the bowl, and Chairman Brink selected the film canister containing U.S. House of Representatives District 9. The SBE voted unanimously to set *risk-limit* for the audit at 10%.¹⁸

¹⁶ VotingWorks, [VotingWorks](#)

¹⁷ Department of Elections, [Risk-Limiting Audit Manual](#)

¹⁸ State Board of Elections, [November 16, 2022 Electronic Meeting](#)



During this same meeting, four members of ELECT staff helped to generate the random seed number.¹⁹ The number was generated by rolling 20 ten-sided dice once each to create the 20 digit number. The random seed number was entered into the audit system software to generate the list of ballots needed to be examined by each locality.

The following steps were taken by ELECT and General Registrars to conduct the audit; for a more detailed overview of the administrative process please refer to the RLA Manual found on ELECT’s website:²⁰



Submit an ELECT 659: Prior to the audit, localities were required to submit an ELECT-659 form. An ELECT-659 is a request to Inspect Sealed Election Materials sent to ELECT for signature authorization to present to the Clerk of the Circuit Courts to access ballots from the 2022 November General Election. A copy of this form is listed in the appendix.

Create a Ballot Manifest: General registrars created a *ballot manifest*. A *ballot manifest* is a two column spreadsheet that includes a list of the “Batch Name” (column A) and the “Number of Ballots” (column B). All types of ballots are included (in person, mail-in, provisional, etc.) in the

¹⁹ *Id.*

²⁰ Department of Elections, [Risk-Limiting Audit Manual](#)

manifest. The ballot manifest creates an inventory of every ballot in a locality, see example below.

Batch Name	Number of Ballots
Pct 101	75
Pct102	112

Upload the Ballot Manifest: Once the ballot manifest was created, localities saved the manifest as a csv file and uploaded the spreadsheet into ARLO. General registrars were automatically enrolled in the open-source software to complete the audit.

Ballot Retrieval Lists: Localities received a list of ballots to review directly from ARLO. The lists included which batches to open and which ballot to audit. For example, see below:

Batch Name	Ballot Number
Pct 101	17
Pct 102	88

The ballot number reflects the numerical order of a specific ballot. In order to locate ballot number 17, a member of the audit board must count, starting at the top of the stack of ballots, each stored ballot until they reach the 17 ballot in the batch.

Ballot Retrieval Process: Localities hosted a public meeting, where ballots were retrieved, tallied and uploaded into ARLO. An Audit Board retrieved each specified ballot and recorded the results for the office on a tally sheet. The Audit Board inputs the results of the tally sheet into the audit software and submits their results.

WHAT WAS THE RESULT OF THE RLA?

The audit confirmed that the original count of the votes accurately reflected the winners in Virginia for U.S. House of Representatives District 9. The risk limit for the audit was met for the race with results falling significantly below 10%. The results indicated that there was a .0000004864% chance that the audit of the U.S House of Representatives District 9 contest was inaccurate, providing election officials with strong evidence and confidence in the reported outcome of the election.²¹

The results were publicly announced at the December 5th, 2022 State Board of Elections Meeting.²²

Applications pursuant to §24.2-671.2(D)

Loudon County Electoral Board submitted a request for an RLA, pursuant to §24.2-671.2(D), for their local school board race as well as for U.S. House of Representatives District 10 using the

²¹ Department of Elections, [Risk Limiting Audits](#)

²² State Board of Elections, December 5, 2022 [Meeting Agenda](#)

batch comparison for the requested RLA. The application for these races was withdrawn after the local electoral board was advised by ELECT that the U.S. House of Representatives District 10 was not wholly contained within the jurisdiction of the electoral board of Loudon County, making it ineligible for an application, and stating the only RLA method approved by the SBE is ballot polling.

Frederick County Electoral Board submitted a request for an RLA, pursuant to §24.2-671.2(D), for the U.S. House of Representatives District 6. This application was withdrawn as ELECT advised the electoral board that the U.S. House of Representatives District 6 is not wholly contained in their jurisdiction and is ineligible for an application.

A copy of the form used by electoral boards to apply for an RLA is available in the appendix.

WHAT WERE THE KEY TAKEAWAYS?

With the passage of new RLA legislation, localities were on a much tighter timeline than any previous RLA. Before, localities had until after certification to complete the RLA; now, they not only must conduct an RLA but also assure that they complete their vote abstracts by the deadline. Additionally, the RLA was conducted during the Thanksgiving holiday, a known holiday for increased travel. Several electoral boards and general registrars had to act quickly to fill electoral board seats for those members who were travelling during the Thanksgiving holiday, especially if they were the sole representative of a party whose presence is required under the new law.

Pursuant to §24.2-671.2, ELECT is required to set the time, date, and location of the RLA for the localities. While ELECT may set the date and time for the start of the RLA, ELECT worked with localities to set their locations as well as dates and times of their public meetings to best suit their needs and meet the deadlines set by ELECT and the law. For example, ELECT worked with localities who could not meet on Monday, November 28th by allowing 2 localities, Montgomery and Wythe County, to hold their RLA public meetings on Tuesday, November 29th due to electoral board members traveling for the holiday. More consideration should be given to the overall timing of the RLA.

As RLAs will continue to be used in the Commonwealth, ELECT should provide more education as to an RLA's purpose and how it fits into our overall goal to have safe, secure, fair, and free elections in the Commonwealth. Understanding how the RLA fits into the election security process will boost the public's confidence in not only the value of RLAs but also the election process as a whole.

Batch Comparison vs. Ballot Polling Debate

Despite the fact that ELECT received no public comment in the two workgroup meetings, composed of members of the general registrar and electoral board communities and ELECT staff, held in July and August of this year regarding the type of method used to conduct RLAs, inquiries were made regarding the method of RLA used in the Commonwealth in the month

leading up to the 2022 General Election. Some constituents raised the idea of changing or adding other methods, such as a batch comparison RLA, for the RLA method.

The manual, approved by the SBE in September of 2022 and vetted through the workgroup, details the ballot polling method only. Given the introduction of a new statutory requirements that introduced a shorter timeline to conduct this year’s RLA as well as several new election laws, such as the introduction of Same Day Registration as well as Absentee by Precinct Level Reporting that registrars had to implement, ELECT recommended that the SBE not expand the method of conducting the RLAs at the November 16 SBE meeting. Further, there was no time to create and train on new standards for conducting a batch comparison RLA or solicit recommendations to the field. Without the time to train and develop new standards, a last minute change to the process on such a short timeline would threaten the validity of the process and the results of the audit.

ELECT conducted a comparative analysis post-election between the batch comparison and ballot comparison audits for two United States House District Races to illustrate the difference between the two methods. ELECT estimated the number of batches/ballots ARLO would require for each type of RLA. ELECT compared United States House District 9, the most recent RLA subject with a margin of ~47%, to United States House District 2, a margin of ~3% in the November 2022 general election. The estimated numbers were also calculated with the risk limit set to 10%, the typical risk limit set by the SBE. The tables below *only* reflect a first round of the audit and do not factor in additional rounds, while not always necessary can add an unknown variable to the auditing process.

Batch Comparison Method Estimate

U.S. House District 9	U.S. House District 2
7 Precinct Batches or ~5,600 total ballots*	70 Precinct Batches or ~56,000 total ballots*

**based on the Commonwealth of Virginia average of 800 ballots per precinct*

Ballot Polling Method Estimate

U.S. House District 9	U.S. House District 2
60 Ballots	12,315 Ballots

Electoral boards conducting RLAs of the General Election have 9.5 business days, from the date of selection to the deadline for the RLA. It should be noted that the timeframe for an audit also encompasses the Thanksgiving holiday, which can create challenges in recruiting audit board members. As a reminder, audit boards are composed of two people, who are responsible for

completing the hand count of the randomly selected ballots. Audit boards can pull and review between 20-50 ballots per hour depending on the method. Multiple audit boards would be needed in order to complete the RLA by the statutory deadline.

The ballot polling method effectively balances the time, effort, and statutory requirements of local election officials. Ballot polling checks if the outcome of an election is correctly reported rather than assessing if the tabulation was correct.²³ Typically, ballot polling requires the smallest amount of ballots to produce strong evidence that a reported outcome was correct as illustrated in the table. Additionally, the Virginia elections community has been trained on the ballot polling method, have a practical understanding of this method, and have successfully performed several RLAs using this method. For these reasons and the other factors considered in this report, ballot polling is recommended as the most practical option for conducting RLAs in the Commonwealth of Virginia.

Increasing the Risk Limit

Requests were also made to reduce the risk limit of the RLA from 10% to 5%. While discussions were had on this topic, the SBE ultimately decided to maintain a risk limit of 10%. Decreasing the risk limit for future audits will result in additional ballots being pulled for each selected race. This will increase the workload of the RLA. It should also be noted that every RLA conducted in the Commonwealth has not only met the current risk-limiting of 10% but has fallen well below it, consistently displaying a risk of inaccuracy that falls well below 1%.

CONCLUSION

The audit of the U.S. House of Representative District 9 confirmed with over 99% confidence that the results were accurately reported. The results reflect the hard work of election administrators and further exemplifies the integrity and validity of the 2022 General Election. RLAs are an important tool in reassuring the public that every vote counts and provide an excellent check on 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.

²³ Bravo: Ballot-polling Risk-Limiting Audits to Verify Outcomes, Mark Lindeman, Phillip B.Stark, Vincent S. Yates, Department of Statistics, University of California Berkeley,
<https://www.usenix.org/system/files/conference/evtwote12/evtwote12-final27.pdf>

Appendix

§ 24.2-671.2. Risk-limiting audits.

A. For the purposes of this section:

"Contested race" means an election for an office where more names appear on the ballot than there are vacancies to be filled or a statewide referendum or proposed constitutional amendment. "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. "Risk-limiting audit" means an audit protocol conducted after an election and prior to the certification of the election results with a pre-specified minimum probability of requiring a full hand count of votes cast if the outcome reported by the voting system differs from the outcome that would be found by a full hand count of the votes in a contested race. A "risk-limiting audit" requires a hand count of randomly sampled printed ballots that continues until there is either strong statistical evidence that the reported outcome is correct or, in the absence of such evidence, a full hand count of all ballots cast in the contested race that determines the outcome.

B. Risk-limiting audits conducted pursuant to this section shall be performed by the local electoral boards and general registrars under the supervision of the Department and in accordance with the procedures prescribed by the State Board, including:

1. Processes for randomly selecting contested races and determining the risk limit.
2. Procedures for preparing for a risk-limiting audit, including guidelines for organizing ballots, selecting venues, and securing appropriate materials by local electoral boards and general registrars.
3. Procedures for ballot custody, accounting, security, and written record retention that ensure that the collection of cast ballots from which samples are drawn is complete and accurate throughout the audit.
4. Procedures for hand counting of the audited ballots.
5. Processes and methods for conducting the risk-limiting audit.
6. Procedures for ensuring transparency and understanding of the process by participants and the public, including guidelines for direct observation by members of the public, representatives of the candidates involved in the risk-limiting audit, and representatives of the political parties.

C. The Department shall provide that the following risk-limiting audits be conducted:

1. In the year of a general election for members of the United States House of Representatives, a risk-limiting audit of at least one randomly selected contested race for such office;

2. In the year of a general election for members of the General Assembly, a risk-limiting audit of at least one randomly selected contested race for such office;

3. In any year in which there is not a general election for a statewide office, a risk-limiting audit of at least one randomly selected contested race for a local office, including constitutional offices, for which certification by the State Board is required under § 24.2-680;and

4. In any year, any other risk-limiting audit of a contested race that is necessary to ensure that each locality participates in a risk-limiting audit of an office within its jurisdiction at least once every five years or that the State Board finds appropriate. Such audits must be approved by at least a two-thirds majority vote of all members of the Board.

D. A local electoral board may request that the State Board approve the conduct of a risk-limiting audit for a contested race within the local electoral board's jurisdiction. The state board shall promulgate regulations for submitting such requests. The State Board shall grant an extension of the local electoral board's certification deadline under § 24.2-671 as necessary to accommodate the conduct of a risk-limiting audit conducted pursuant to this subsection. The Department may count a risk-limiting audit conducted pursuant to this subsection toward the requirement in subdivision C 4.

E. Notwithstanding the provisions of subsections C and D, no contested race shall be selected to receive a risk-limiting audit if the tabulation of the unofficial result for the contested race shows a difference of not more than one percent of the total vote cast for the top two candidates.

F. Upon the tabulation of the unofficial results of an election, the State Board shall determine, in accordance with subsection C, all the contested races for that election that will receive a risk-limiting audit and shall set the risk limit to be applied in such audits. As soon as practicable after selection of the contests to be audited, the Department shall publish a notice of the contested races in accordance with the requirements for public meetings in § 2.2-3707. The Department shall provide support to local electoral boards and general registrars in preparing to hold the risk-limiting audits.

G. The local electoral board and general registrar shall conduct a risk-limiting audit within their jurisdiction at the date, time, and location noticed by the Department. At least one member of the local electoral board representing each party shall participate in the risk-limiting audit and be present for the duration of the risk-limiting audit when ballots are being selected and counted and calculations are being made. All risk-limiting audits shall be conducted in a place and manner that is open to the public. At the conclusion of a risk-limiting audit, all audit materials, including ballots and any records generated during the course of the audit, shall be delivered to the clerk of the circuit court and retained as election materials pursuant to § 24.2-668.

H. The local electoral board in coordination with the general registrar shall promptly report the results of a risk-limiting audit of any contested races subject to § 24.2-680 in their jurisdiction to the Department. The results of any risk-limiting audit for a local contested

race shall also be retained by the local electoral board. At the conclusion of each risk-limiting audit requiring certification by the State Board, the Department shall submit to the State Board a report, which shall include all data generated by the risk-limiting audit and all information required to confirm that the risk-limiting audit was conducted in accordance with the procedures adopted by the State Board. The Department shall publish the results of all risk-limiting audits pursuant to this section on the Department's website.


- I. If a risk-limiting audit of a contested race escalates to a full hand count, the results of the hand count shall be used to certify the election in lieu of the tabulation of the unofficial results obtained prior to the conduct of the risk-limiting audit. A full hand count conducted pursuant to this section shall not be construed as a recount under Chapter 8 (§ 24.2-800 et seq.). Nothing in this section shall be construed to limit the rights of a candidate under Chapter 8.

1VAC20-60-80. Request for a risk-limiting audit for a contested race within a jurisdiction.

Pursuant to § 24.2-671.2 D of the Code of Virginia, a local electoral board shall follow the process in this section to request a risk-limiting audit of a contested race within its jurisdiction:

1. At the public canvass meeting following the election, an electoral board may elect to request an audit of a contested race, or multiple races, within its jurisdiction (risk-limiting audit) by a majority vote.
2. If a question to request a risk-limiting audit achieves a majority vote, an electoral board must complete Form SBE 671.2(D) to request State Board of Elections (SBE) approval of the audit.
3. The SBE will grant a request for a risk-limiting audit within a locality's jurisdiction if:
 - a. The submitted Form SBE 671.2(D) contains sufficient information for the SBE to determine that the local electoral board members cast a majority vote in favor of the audit request;
 - b. The submitted Form SBE 671.2(D) contains sufficient information for the SBE to determine which contested races are subject to the requested audit and that those races are in fact within the jurisdiction of the local electoral board;
 - c. The SBE concludes that the audit is permissible under § 24.2-671.2 of the Code of Virginia and all other relevant provisions of law; and
 - d. The following conditions are met:
 - (1) The margin of the candidate with the most votes and the second most votes is equal to or greater than 1.0%; and
 - (2) The number of estimated ballots to be sampled exceeds 15% of the total number of ballots cast.
4. Upon granting an electoral board's request for a risk-limiting audit, the SBE may grant an extension not to exceed two weeks of the local electoral board's certification deadline pursuant to § 24.2-671 of the Code of Virginia if necessary for the conduct of the audit.

i. ELECT 659-Request to Inspect Sealed Election Materials



★ VIRGINIA ★
DEPARTMENT *of* ELECTIONS

ELECT 659 - Request to Inspect Sealed Election Materials

Election Date: * Election Type: * Date of Request: *

Name of Requester *

Position *


Email Address * Phone Number *

Confirm Email Address *

Locality * Precinct Name * Precinct #: *

Specific Envelope which needs to be inspected:

The Envelope needs to be inspected to determine:

Powered by 

Submit

ii. §24.2-671.2(D) Request for Risk-Limiting Audit



★ VIRGINIA ★
DEPARTMENT of ELECTIONS

**REQUEST FOR RISK-LIMITING
AUDIT**

PURPOSE OF THIS FORM

Under Code of Virginia § 24.2-671.2(D), "A local electoral board may request that the State Board approve the conduct of a risk-limiting audit for a contested race within the local electoral board's jurisdiction." The local electoral board may request an audit of such a race by completing and submitting this form to their Election Services Registrar Liaison prior to the State Board of Elections meeting to choose races to audit.

COMPLETE THE FOLLOWING:

Locality: _____

Date of Public Meeting: _____

Contested Race: _____

Town Name/District Number: _____

Date of RLA: _____

Location of RLA: _____

Preliminary Vote Totals: _____

Candidate A: _____

Candidate B: _____

Candidate C (if applicable): _____

Candidate D (if applicable): _____

On the lines below, please include any other relevant information:

**ELECT reserves the right to ask additional questions on behalf of the SBE, if necessary.*

***Please submit a form for each contested race your locality is requesting to have audited.*

iii. 2022 November General Election RLA: Potential Races

Congressional District 1	Congressional District 2	Congressional District 3	Congressional District 4	Congressional District 5	Congressional District 6
<p>James City, York, Gloucester, New Kent, Westmoreland, King William, Northumberland, Lancaster, Middlesex, Essex, Richmond, Mathews, King & Queen Counties; Cities of Williamsburg and Poquoson</p> <p><i>Partial: Henrico, Chesterfield, and Hanover Counties</i></p>	<p>Accomack, Isle of Wight, Northampton Counties; City of Virginia Beach, Suffolk, and Franklin</p> <p><i>Partial: Southampton County; City of Chesapeake</i></p>	<p>Cities of Norfolk, Hampton, Newport News, Portsmouth</p> <p><i>Partial: City of Chesapeake</i></p>	<p>Prince George, Dinwiddie, Brunswick, Greensville, Sussex, Charles City, Surry Counties; Cities of Richmond, Petersburg, Hopewell, Colonial Heights, and Emporia</p> <p><i>Partial: Chesterfield, Henrico, and Southampton Counties</i></p>	<p>Pittsylvania, Campbell, Louisa, Halifax, Amherst, Mecklenburg, Powhatan, Fluvanna, Goochland, Prince Edward, Buckingham, Nottoway, Appomattox, Nelson, Amelia, Lunenburg, Charlotte, Cumberland Counties; Cities of Lynchburg, Charlottesville, and Danville</p> <p><i>Partial: Albemarle, Bedford, and Hanover Counties</i></p>	<p>Frederick, Rockingham, Augusta, Harrisonburg, Shenandoah, Warren, Botetourt, Page, Rockbridge, Alleghany, Clarke, Bath, Highland Counties; Cities of Roanoke, Harrisonburg, Winchester, Staunton, Salem, Waynesboro, Lexington, Buena Vista, and Covington</p> <p><i>Partial: Roanoke County</i></p>

<p>Congressional District 7</p> <p>Stafford, Spotsylvania, Culpeper, Orange, Caroline, King George, Greene, Madison Counties; City of Fredericksburg</p> <p><i>Partial: Prince William and Albemarle Counties</i></p>	<p>Congressional District 8</p> <p>Arlington County; Cities of Alexandria and Falls Church</p> <p><i>Partial: Fairfax County</i></p>	<p>Congressional District 9</p> <p>Montgomery, Franklin, Washington, Henry, Tazewell, Wise, Pulaski, Smyth, Carroll, Wythe, Russell, Lee, Scott, Buchanan, Patrick, Giles, Floyd, Dickenson, Bland, Craig, Grayson Counties; Cities of Norton, Galax, Martinsville, Bristol, and Radford</p> <p><i>Partial: Bedford and Roanoke Counties</i></p>	<p>Congressional District 10</p> <p>Loudon, Fauquier, Rappahannock Counties; Cities of Manassas and Manassas Park</p> <p><i>Partial: Prince William and Fairfax Counties</i></p>	<p>Congressional District 11</p> <p>City of Fairfax</p> <p><i>Partial: Fairfax County</i></p>
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iv. Glossary of Terms

ARLO- The RLA software supported by VotingWorks and used by the Commonwealth of Virginia for all RLAs conducted.

Ballot-Comparison Audit- Cast vote record (CVR) totals are compared to contest results. Voter selections on randomly-selected individual paper ballots are compared with corresponding CVRs.

Ballot Manifest- a two column spreadsheet created by localities that includes a list of the “Batch Name” (column A) and the “Number of Ballots” (column B). All types of ballots are included (in person, mail-in, provisional, etc.) in the manifest. The ballot manifest creates an inventory of every ballot cast in a locality.

Ballot-Polling Audit- Voter selections on randomly-selected paper ballots are interpreted manually.

Batch Comparison Audit- Sums of all batch subtotals are compared to contest results. Hand tallies from randomly-selected paper ballot batches are compared with corresponding machine counts.

Random Seed Number- A random number sequence that is created and used to generate the ballots selected for auditing.

Risk-Limiting Audit (RLA)- an audit protocol conducted after an election and prior to the certification of the election results with a pre-specified minimum probability of requiring a full hand count of votes cast if the outcome reported by the voting system differs from the outcome that would be found by a full hand count of the votes in a contested race.

The Risk limit- 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.

v. Arlo Results

Contest Name	Sample Size	Risk Limit Met?	P-Value	Audited Votes
U.S. House of Representatives 9 th District	60	Yes	0.0000004864	Taysha Lee DeVaughn: 8 H. Morgan Griffith: 51 Write-In: 1