

LWVMD testimony - SB 742 - Election Law - Postelec

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Position: FAV



TESTIMONY TO THE SENATE EDUCATION, HEALTH, AND ENVIRONMENTAL AFFAIRS COMMITTEE

SB 742 - Election Law - Postelection Tabulation Audits - Risk-Limiting Audits

POSITION: Favorable

BY: Nancy Soreng – President

Date: February 23, 2022

The League of Women Voters supports measures that ensure the accurate counting of all votes and that protect the integrity of our elections. We commend Maryland's election administrators for implementing strong systems to protect voting systems from attack and to detect and remedy any errors. Risk-limiting audits can be a useful tool in this effort, and well worth funding.

Sb 742 would replace certain existing requirements for auditing of election systems with a more modern, statistically proven risk-limiting audit (RLA). Colorado and Rhode Island already require risk-limiting audits, and other states have implemented pilot RLA projects in selected jurisdictions.

Risk-limiting audits are more efficient than the current mandate to audit a fixed percentage of ballots. Instead, they only sample as many voter-verified paper ballots as are necessary according to the margin of victory in each contest. At least one statewide contest must be audited this way, plus at least one local contest in each county. Pre-determined guidelines for expanding the audit, to even include a full recount if necessary, preclude the need for arbitrary, case-by-case decisions.

Another advantage of SB 742 is that it would require risk-limiting audits to be completed before the election is certified, rather than up to 120 days after the election. This rapid turnaround will help reassure candidates and voters that ballots were counted correctly.

Finally, SB 742 proposes a transparent process for conducting the audits and posting a report describing the process and results. These measures will help maintain public confidence in the integrity of Maryland's elections.

The League of Women Voters of Maryland urges a favorable report on SB 742.

VV Testimony MD SB 742 (2022) favorable.pdf

Uploaded by: Mark Lindeman

Position: FAV



Maryland Senate Education, Health, and Environmental Affairs Committee
2 West Miller Senate Office Building
House Office Building
Annapolis, MD 21401
via electronic submission

February 22, 2022

**Verified Voting Testimony: SB 742 (Favorable)
Postelection Tabulation Audits—Risk-Limiting Audits**

Dear Chair Pinsky and Members of the Committee:

My name is Mark Lindeman, a director of Verified Voting. Verified Voting's mission is to strengthen democracy for all voters by promoting the responsible use of technology in elections. Since our founding in 2004 by computer scientists, we have acted on the belief that the integrity and strength of our democracy rely on citizens' trust that each vote is counted as cast. As such, we welcome and support SB 742, which would replace Maryland's current manual audits with risk-limiting audits in statewide elections. The legislation would place Maryland on a path to efficient and convincing verification of its vote counts.

As you know, the United States confronts unprecedented security threats to election systems—and to public confidence in election outcomes. Tabulation audits, which manually check election results against a sample of voters' actual ballots, address both kinds of threats. Risk-limiting audits (RLAs) are purpose-built tabulation audits. They are designed to efficiently confirm that one or more election outcomes match what a full hand count of those ballots would reveal, *before results are certified*. By design, RLAs end in one of two ways: either they provide strong evidence that the ballots confirm the reported election outcomes, or if necessary, they lead to a full hand count to determine the correct outcome. Compared to audits of a fixed percentage of ballots—such as Maryland's current manual audit, which can occur months after an election—RLAs often require far less work, depending in part on how close the audited contest(s) are. RLAs provide timely assurance with minimal burden to election officials.

Risk-limiting audits have been widely endorsed by security specialists and election officials. In fact, risk-limiting audits and other robust post-election audits have been recommended by the American Statistical Association, the U.S. Department of Homeland Security, the U.S. Senate Select Committee on Intelligence, the U.S.

Election Assistance Commission, and many other experts as one element of a strong and resilient election infrastructure. Election officials across the country have taken the lead in piloting and implementing RLAs as an election security measure. Both chambers of the Virginia General Assembly have passed a bill requiring risk-limiting audits.

SB 742 takes a wise approach to enacting risk-limiting audits in Maryland. It establishes broad requirements for RLAs, but does not micromanage the details. After the upcoming November election, the bill calls for pilot audits, allowing election officials to refine and even experiment with audit methods. In subsequent statewide elections, the bill requires election officials to audit at least one statewide contest as well as at least one local contest in each county. It requires risk-limiting audits to be conducted by hand, to be observable by the public, to follow regulations to be promulgated by the State Board, and to be completed before results are certified, and for the audit results to be promptly reported. All these requirements will promote public confidence in Maryland elections.

Importantly, SB 742 does not overprescribe specifics such as the audit method to be used. Risk-limiting audits can be conducted using various methods and statistical protocols. New approaches are continually being developed to fit the needs and circumstances of election officials around the country. SB 742 appropriately provides that the audit method should be specified in regulation, not in law.

We applaud you for considering this bill and thank you for hearing and considering our testimony. We look forward to future opportunities to work with Maryland officials to implement risk-limiting audits.

Respectfully,



Mark Lindeman
Director, Verified Voting

SB 742 - Election Law – Postelection Tabulation Au

Uploaded by: Morgan Drayton

Position: FAV

February 23, 2022

Testimony on SB 742
Election Law – Postelection Tabulation Audits – Risk-Limiting Audits
Education, Health, and Environmental Affairs

Position: Favorable

Common Cause Maryland supports Senate Bill 742 which requires the State Board of Elections (SBE), in collaboration with the local boards of elections, to conduct specified risk-limiting audits following each statewide election of a statewide contest and a countywide contest. This legislation is a critical first step needed to ensure that the results of the election reflect the will of Maryland voters.

This legislation should help ensure that if and when our vote counting machines fail, whether due to foreign interference or simple programming errors, that we have an automatic process in place to check on the software counts and correct them if they are wrong.

We know from experience in other states that the will of the voters can be thwarted due to a simple miscount. In November 2016, North Kingstown, RI, a simple programming error led to the wrong result. An incorrect version of the ballot was printed, and the ballot scanner could not properly read the voter's marks. The results were so lopsided that the election officials conducted a recount. And after that, Rhode Island adopted a risk-limiting audit requirement similar to the one being considered in this legislation.

The Rhode Island chapter of Common Cause and other groups released a [report](#) detailing the success of three pilot risk-limiting audits conducting in 2019. It provides a roadmap on how to design and implement effective risk-limiting audits that can be applied here in Maryland. Rhode Island's voting system is similar to Maryland's and provides a good lesson. Recently, Rhode Island election officials have collaborated with computer scientists on new [ways](#) to conduct risk limiting audits even more efficiently.

In Maryland, we mark and cast paper ballots. Paper ballots are a wonderful deterrent to any kind of cyber-attack. Paper ballots can be manually reviewed and recounted, and election results can be determined to ascertain the will of the voters.

However, as is known, hand counting thousands of paper ballots is time consuming. That's where this legislation comes in. If the state establishes that instead election officials may use a risk-limiting audit, the workload is significantly diminished. With a risk limiting audit, election officials need only manually review and tally as many ballots as are needed to provide strong evidence that the machine-generated counts are correct.

Think of the risk-limiting audit as a "smart" audit. Risk-limiting audits determine precisely how much hand counting is necessary to confirm election results to a given level of confidence. The closer the contest, the more ballots must be examined to have strong evidence of the result. Fewer errors can change the outcome. The

higher the desired confidence (say 99 percent versus 90 percent) the more ballots must be examined – because higher confidence requires more evidence.

Election administration and security experts agree that RLAs are the “gold standard” of post-election audits in an era when the integrity of our election systems face unprecedented domestic and international threats. These audits will provide an added layer of election protection to provide confidence that the reported winner is the actual winner.

We urge a favorable report.



Senate Bill 0742 2022.pdf

Uploaded by: Poorvi Vora

Position: FAV

Senate Bill 0742

Election Law – Postelection Tabulation Audits – Risk–Limiting Audits SUPPORT

Education, Health, and Environmental Affairs
February 23, 2022

Poorvi L. Vora
Professor

Department of Computer Science, The George Washington University

I am a Professor of Computer Science at The George Washington University. My research of the last fifteen years has been in the general area of computer security and privacy, with a special emphasis on the integrity of electronic voting systems. My qualifications and complete CV, as well as more details about my work, may be found on my website¹. I have provided written and oral testimony to Committees of the Maryland Legislature on several Bills and have also provided oral and written testimony to the State Board of Elections².

I STRONGLY SUPPORT THIS BILL.

The literature in the field of election security is clear, unequivocal and non-partisan: computerized election systems present multiple opportunities for intentional alteration of election outcomes and are also vulnerable to error. This assessment applies to the optical scan voting systems used in Maryland and includes voting machines that are not on the internet. Experts recommend that, in addition to making every attempt to secure the voting systems used, an independent, public, risk-limiting audit³ of the voter-verified paper ballots should be performed after every election to verify that the election outcome correctly represents the voter-verified evidence⁴. An election should be certified only after it passes the audit.

¹ <http://www.seas.gwu.edu/~poorvi/>

² <https://www2.seas.gwu.edu/~poorvi/MarylandAudits/>

³ The latest version of the Voluntary Voting System Guidelines adopted by the Election Assistance Commission requires voting systems to enable ballot comparison risk-limiting audits (the most efficient RLAs), see <https://www.eac.gov/voting-equipment/voluntary-voting-system-guidelines>; Post-election audits of the election outcome are recommended by the following: a report of the National Academies of Sciences, Engineering, and Medicine, see: “Securing the Vote: Protecting American Democracy”, 2018, <https://doi.org/10.17226/25120>; the Presidential Commission on Election Administration, see: “The American Voting Experience: Report and Recommendations of the Presidential Commission on Election Administration”, January 2014, pg. 66, <https://law.stanford.edu/wp-content/uploads/sites/default/files/publication/466754/doc/slpublic/Amer%20Voting%20Exper-final%20draft%2001-04-14-1.pdf>.

⁴ P.B. Stark and D.A. Wagner, “Evidence Based Elections”, IEEE Security and Privacy, special issue on electronic voting, 2012. www.stat.berkeley.edu/~Estark/Preprints/evidenceVote12.pdf

This Bill has several valuable features: it requires, following each statewide election, a risk-limiting audit of at least one statewide contest and one local contest in each county, performed through the manual examination of randomly-chosen individual paper ballots or batches of paper ballots. It also requires that the audit be completed before certification, that an election outcome found to be incorrect by the audit should be corrected, and that the audit be transparent, both in process and in the prompt and detailed announcement of its results.

Friendly suggestions are as follow:

- **Meeting the risk limit:** It is with some embarrassment that I note that the text in Lines 22-27, Page 4, though exactly one of my suggestions from last year, is open to technical misinterpretation and could be considered incorrect in some models. As you have already defined the risk limit, the rather complicated sentence I previously proposed is not necessary. **Please do not leave the text as it is in the Bill.** A suggestion is as follows:

Lines 22-27, page 4, should read:

"MANUALLY EXAMINE RANDOMLY CHOSEN INDIVIDUAL VOTER-VERIFIABLE PAPER RECORDS OR BATCHES OF VOTER-VERIFIABLE PAPER RECORDS UNTIL THE **RISK LIMIT IS MET** ~~MAXIMUM CHANCE OF A FULL MANUAL COUNT FINDING A DIFFERENT OUTCOME THAN THE OUTCOME DETERMINED BY THE ELECTRONIC COUNT IS NO LARGER THAN THE RISK LIMIT, OR UNTIL THERE HAS BEEN A FULL~~ MANUAL COUNT;

- **Correcting an error in the election outcome before certification:** If the audit ends up requiring a full hand count, and the hand count indicates a different outcome, the election outcome should be changed before certification. The text on Page 5, lines 1-4, mentions altering the official result but does not explicitly refer to the manual count. **The text should make clear that the official result will only be changed if a full manual count indicates that this is needed.**
- **All categories of ballots should be included for the audit:** The Bill should include text requiring that ballots are drawn from a collection that includes all in person, absentee, provisional and early votes, and that the original voted paper ballots should be examined for all voters (in particular, hand-transcribed absentee ballots should not replace voter-verified absentee ballots during the audit). The vote itself (not the bar code) should be read for ballots generated by the Express Vote machines.

- **Risk-Limiting Audits Workgroup:** House Bill 759 from 2021 required the formation of a Risk-Limiting Audits Workgroup to guide the state in its processes. This Bill (and House Bill 745, which is the companion bill) does not have such a requirement. The State is encouraged to seek expert guidance on the design of its audits. In addition, the State should also adopt, with guidance, the design and use of compliance audits that ensure the security of the evidence trail of the paper ballots (and, to the extent possible, the electronic images used in the electronic audit). I believe that Maryland already does have some compliance audits in place, so these could be enhanced if necessary.

I congratulate the committee on a strong bill that serves the interests of Maryland's voters.

Respectfully,

Prof. Poorvi L. Vora
Professor, Department of Computer Science
The George Washington University
Washington, DC

Note: affiliations are included for identification only

Poorvi L. Vora is Professor of Computer Science at The George Washington University and serves on the Board of Directors of Verified Voting. Her research focus has been on end-to-end independently verifiable (E2E) voting systems, and, more recently, on statistical election audits. She was a member of the team that deployed E2E voting system Scantegrity II in the Takoma Park elections of 2009 and 2011. She has worked with the National Institute of Standards and Technology (NIST) on definitions of desired properties of E2E systems, and on information-theoretic models and measures of voting system security properties. She obtained her Ph.D. from North Carolina State University.

Sen Washington Written Testimony SB742.pdf

Uploaded by: Mary Washington

Position: FWA

MARY L. WASHINGTON, PH.D
Legislative District 43
Baltimore City

Education, Health, and
Environmental Affairs Committee

Chair
Joint Committee on Ending
Homelessness

Chair
Joint Committee on Children,
Youth, and Families



THE SENATE OF MARYLAND
ANNAPOLIS, MARYLAND 21401

Annapolis Office
James Senate Office Building
11 Bladen Street, Room 102
Annapolis, Maryland 21401
410-841-3145 · 301-858-3145
800-492-7122 Ext. 3145
Mary.Washington@senate.state.md.us

SB 742 – Election Law – Postelection Tabulation Audits – Risk-Limiting Audits
Testimony of Senator Mary Washington
February 22, 2022

Dear Colleagues,

SB 742 requires the State Board of Elections (SBE), in collaboration with the local boards of elections, to audit the accuracy of the voting system's tabulation of votes by completing a risk-limiting audit (RLA).

SB 742 would require the Board of Elections, in conjunction with local Boards, to immediately conduct a risk-limiting audit of the vote. The audit would involve examining random ballots in at least one statewide contest, and at least one countywide or local contest. RLAs manually examine randomly chosen individual paper ballots or batches of paper ballots until there is sufficiently strong evidence that a full hand count would confirm the electronic tabulation, or until there has been a full hand count.

RLAs are the *gold standard* for ballot auditing, because it uses statistical means to confirm election results and takes full advantage of paper ballots. RLAs are recommended by election experts as the preferred way to verify election outcomes and to confirm that results have not been corrupted by hacking.

RLAs are far superior to our current auditing procedures. Only an RLA can correct a wrong election outcome and ensure that the proper winners are certified. Our current automated software audit cannot correct a wrong election outcome because it relies on recounting potentially inaccurate ballot images rather than actual physical ballots.

SB 742 would require risk-limiting audits to be completed before the election is certified, rather than up to 120 days after the election. This rapid turnaround will help reassure candidates and voters that ballots were counted correctly and give voters greater confidence in the entire electoral process.

Our current manual audit is not completed until months after the election results are certified. Furthermore, our current audit is only used to gauge the performance of the voting system and not to correct any problems with our election results.

Finally, SB 742 ensures a transparent process for conducting the audits and posting a report describing the process and results. These measures will help to further voter's confidence in the integrity of Maryland's elections.

Maintaining the integrity of the vote is one of the most important tasks of the Board of Elections in Maryland. As you know, current election law requires a full audit of the election results after the primary and general elections. This is an important first step in ensuring confidence in the vote. However, we have seen after the 2020 election that the longer it takes to audit the results, the more concerned the general public gets with voter fraud.

SB 742 would improve our election system by shifting the focus from auditing the machines, to auditing the election outcomes. A truly robust post-election audit should check whether the outcome of the election is correct.

RLAs are a simple way to confirm whether voting machines are recording and tallying votes correctly. It is one of the critical measures necessary to secure elections and a key component of a broader cybersecurity defense.

I respectfully request a favorable report on SB 742.

In Partnership,

A handwritten signature in blue ink, appearing to read "Mary Washington". The signature is fluid and cursive, with a large initial "M" and a long, sweeping underline.

Senator Mary Washington
Maryland 43rd District