

H.B. 6325 Section 10: Support with Suggestions
Government Administration and Elections Committee
Testimony – March 24, 2021

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Prepared Remarks:

Chairs and members of the Committee, my name is Luther Weeks, Executive Director of CTVotersCount and a Computer Scientist. I have extensive experience with Risk Limiting Audits (RLAs).

I support Section 10 of H.B.6325, with suggested changes. I applaud the Secretary of the State for bringing this concept forward, her office, and UConn for the development of the UConn Audit Station,

I support RLAs as an important tool, yet RLAs are not a panacea. RLAs are one of many types of audits, that can contribute to *justified confidence* in elections. Some RLAs and prototypes have been done well, and others no so well.

In the hearing on H.B.6575 Ranking member Mastrofrancesco asked an interesting question which I would like to address. That is, to explain RLAs as you would to forth graders:

That is a good question: Risk Limiting Audits are intended to confirm that elections are correctly counted and totaled or to correct incorrect results. Over a 10-year period, Connecticut has about 20,000 election contests. For instance, if 20 of those contests were incorrectly decided due to error or fraud, rigorous Risk Limiting Audits which examine all 20,000 contests would correct at least 19 of the 20.

Summary Recommendations:

- **Consider doing what CO, VA, RI and perhaps what every other state that has prototyped or implemented RLAs have done:** Convene a team of election officials, and volunteer national experts to help plan a prototype, bring tested software (typically available at no cost) to the table to provide tested statistical calculations and public verifiability. And then report on the results and recommend methods and changes necessary in the law.

Such a group could report to the Task Force such as the Rhode Island RLA Group reported to the RI Board of Elections.

- **Do not limit the prototype to 5 to 10 largely redundant municipal RLAs**
- **Move the prototype(s) to the 1st half of 2022.** That will give sufficient time to plan the prototype(s). It will provide more access to statistical experts and those with experience with RLAs to participate.
- **Move the reporting deadline to Jan 2023** to provide more time to absorb the lessons of the prototype, to consider all the issues necessary to implement actual RLAs, and to detail the changes necessary in the law.

See my detailed testimony for reasoning behind these recommendations.

Thank you

Detailed Comments:

Note: These detailed comments are very similar to those submitted for H.B.6575 with slight improvements, some based on an email exchange with Prof Philip Stark who submitted testimony on that bill.

My Relevant Experience: I have been involved in the technology of Risk Limiting Audits (RLAs) since a meeting on audits at the American Statistical Association in 2009, following that, I was a catalyst in causing the 1st conference on RLAs held in Washington, D.C. in 2010, securing invitations and attendance at that conference for three Connecticut officials. I am a founder and current convener of the State Audit Working Group, which since 2008 has helped create audit laws, commented on various election laws in states and nationally. We are responsible for the Principles and Best Practices for Post-Election Audits¹, recently submitting extensive comments on the VVSG², and H.R1³. Collectively and individually our members have developed the science of RLAs⁴, participated in planning, executing, observing, and reporting on almost every RLA in the United States. Members have contributed to the concept of Evidence Based Elections^{5 6}, which encompasses the requirements for effective RLAs. We have also been involved in the creation of software used in several states for random drawings, collecting, and publicly reporting RLA results. I have closely followed all these developments and science. I personally contributed extensively to the planning of Colorado RLAs, publicly observed the Fairfax, Virginia RLA prototype, and took one of the lead roles in planning, executing, and reporting on the 2019 Rhode Island RLA prototype⁷.

I support the concept of RLAs as an important tool, yet RLAs are not a panacea. RLAs are one of many types of audits, that can contribute to *justified confidence* in elections. Some RLAs and prototypes have been done well, and others no so well. I have seen prototypes that contribute to improving the concept of RLAs and others with little value to the participants or the furthering of the concept.

I applaud the Secretary of the State for bringing this concept forward, her office, and UConn for the initial development and continuing improvement of the UConn Audit Station and procedures associated with it. The Audit Station will make this prototype and subsequent RLAs possible, with greatly reduced cost. In fact, RI rejected a unanimously recommend most efficient RLA method, because of the prohibitive cost of a commercial product to do what the Audit Station can do for Connecticut.

Today, I will comment manly on the bill at hand, how it might be improved, and what its limitations are for understanding the challenges in implementing RLAs to contribute to *justified confidence* in Connecticut elections. I recommend that such a Task Force/Working Group take advantage of some of the expertise, experience, and software available to help develop valuable prototypes and effective laws.

¹ <https://electionaudits.org/principles/>

² Voluntary Voting Systems Guidelines 2.0 recently finalized by the Election Assistance Commission
https://www.eac.gov/sites/default/files/TestingCertification/Voluntary_Voting_System_Guidelines_Version_2_0.pdf

³ House Resolution 1, "For the People Act" recently passed by the U.S. House

⁴ <https://www.stat.berkeley.edu/~stark/Preprints/gentle12.pdf>

⁵ <https://www.barrons.com/articles/elections-should-be-grounded-in-evidence-not-blind-trust-51609769710>

⁶ <https://people.eecs.berkeley.edu/~daw/papers/evidence-spm12.pdf>

⁷ <https://www.commoncause.org/rhode-island/resource/pilot-implementation-study-of-risk-limiting-audit-methods-in-the-state-of-rhode-island/>

Comments and Recommendations on H.B. 6325

Comment: Overall, there are several challenges in implementing RLAs in any state and some specifically for Connecticut. A robust version of the prototype proposed here can answer some of those:

- What software and procedures can be used to demonstrate transparent, publicly verifiable RLAs that meet statistical requirements and those of Evidence Based Elections?
- How will originally hand-counted ballots and write-in ballots be incorporated in the audit? – a logistics and statistical challenge that can be overcome.
- How will ballot chain-of-custody and security be demonstrated? How will any discrepancies be handled?
- Will software and procedures employed accommodate multi-vote races be accounted for in RLAs?
- If the UConn Audit Station is used, why not audit all contests on the ballots?

Unfortunately, perhaps the largest challenge cannot be answered or tested with the prototypes proposed in this bill:

- How will audits crossing municipal boundaries be handled, especially those for statewide or U.S. Congressional races? These are the very audits where procedures and coordination is most challenging, yet providing the greatest efficiencies with RLAs. Many states faced similar, yet smaller challenges based on county election management. RI was spared these challenges because their election management and storage is all centralized in a single location.

Recommendations:

- **Do not limit the prototype to 5 to 10 largely redundant municipal RLAs.** Instead, consider doing a couple of RLAs for the Nov 2021 election for towns with a relatively even balance between the major parties e.g. Stamford or Glastonbury; a couple of highly competitive Aug 2021 primaries e.g. Hartford or Bridgeport; a couple of highly competitive State Senate races from the Nov 2020 election where each encompass several municipalities – simulating procedures that might be employed in auditing statewide contests over 169 municipalities, i.e. not performed at the same location, unless there is a feasible plan for actual RLAs to gather all the ballots from all 169 municipalities at a single location.

One advantage of prototype RLAs is that they do not have to be completed before certification, which is a basic requirement of actual RLAs. It is quite possible to do prototypes at any time prior to the shredding of ballots for a past election or primary.

- Considering the above, **remove the detailed requirements and deadlines for the prototype RLAs from the bill.**

Comment/Recommendation:

Add the following additional text change to the bill:

(7) Two appointed by the Secretary of the State, one of whom shall be admitted to the practice of law in this state and have expertise in the election laws of this state, and the other of whom shall be a statistician with expertise in the science of Risk Limiting Audits;

It is obviously appropriate to have a lawyer with expertise in CT election law. Perhaps not so obvious to non-scientists that all statisticians do not have expertise in all areas of statistics. There are three leading statisticians with such expertise, yet there are others, with the prerequisite knowledge and the ability to obtain additional advice from the leading experts, to solve predictable statistical challenges.

It would also be advisable for the Task Force to have membership or at least access to advice from those who have planned, reported on, and critiqued past RLA prototypes and actual RLAs.

Comment: The time and timing of the Task Force is too tight and particularly challenging for officials and experts.

- Typically, the planning, execution, and reporting on effective prototypes takes many months, with at least a handful of experts and a similar number of election officials. The CO, VA, and RI prototypes took many months with many hours of collective and small group meetings. This Task Force is a different project, yet the Task Force may only have a few experts available to meet the demand to produce a robust and valuable RLA prototype by Nov 2021 and make a report less than two months later. That is much less time that it takes UConn to make the routine official reports⁸ on the current audits which are required after every election and primary.

An example: With ample volunteer and official expert help, RI took much longer, the authorizing law was passed in October 2017, the planning by a working group began in August 2018, the prototype audits were conducted in Jan 2019 and the report/recommendations completed in Aug 2019. The work group consisted of about a dozen volunteer experts from around the country with about a half-dozen employees of the RI Board of elections, let by the Deputy Director of Elections.

- Not only are officials very busy right after Nov elections, but most states will have elections at that time. Typically, the statistical experts, software providers, and others with RLA experience are in high demand at that time, participating in actual RLAs across the country, or in their own state.
- Making recommendations for the long-term use of RLAs and especially, recommending detailed changes in laws and perhaps the CT Constitution⁹ would likely take much longer than a couple of months after a prototype.
- It can take a team months to develop from scratch the software necessary to provide vetted and tested statistical calculations and public verifiability.

⁸ <https://voter.engr.uconn.edu/voter/audits/>

⁹ See my testimony on H.J..58, 2/22/2021

: <https://www.cga.ct.gov/2021/gaedata/tmy/2021HJ-00058-R000222-Weeks.%20Luther.%20Executive%20Director-CTVotersCount-Support%20with%20amendments-TMY.PDF>

Recommendations:

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- Consider doing what CO, VA, RI and perhaps what every other state that has prototyped or implemented RLAs have done: Convene a team of election officials, and volunteer experts to help plan a prototype, bring tested software (typically available at no cost) to the table to provide tested statistical calculations and public verifiability. And then report on the results and recommend methods and changes necessary in the law.

Such a group could report to the Task Force such as the RIRLA Group reported to the RI Board of Elections.