

Testimony re SB 944, Risk Limited Audit legislation

Hearing on April 10, 2019

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Though educated as a physicist, my profession as a computer scientist has led me to track the challenges and dangers in our system of electronic vote recording and tabulation. As a matter of principle, our votes must be cast in private and counted in public. Because a computer's CPU is anything but public, trustworthy auditing is mandatory for trustworthy elections. The risk-limiting audit (RLA) brings a new level of statistical significance and confidence to the auditing process.

By and large, SB 944 is well-written and is generally an improvement upon existing language where that is modified. There are a few places where I believe some changes may be respectfully suggested:

1. The process by which ballots or precincts are selected for audit is an absolutely critical step that is outside the bounds of the RLA algorithm itself. If I wanted to rig an election that will be audited, I clearly need to leave some part of the ballot repository intact and then ensure that the audit will only look at that part. These selections must be truly random, and this should be explicitly stated. The failure to address this is a deficiency that is not new to with SSB 944; it was there in the prior code, and this is an excellent opportunity to correct the problem. . There are transparent methods for generating random numbers, and I urge SB 944 to state that (a) such a method must be used, (b) that method must be made public, and (c) the application of that method during the auditing process must be open to public scrutiny.

For example, in Section 2. (4) (a) , where it is specified that members of the public must be permitted to observe and verify audit results, the **process of random selection** should be explicitly included.

2. As a relatively minor concern, I am a bit discomforted by the use of the term "hand counted" to distinguish the previous methodology from the new RLA processes. It seems to imply that an RLA is **not** hand counted, which certainly should not be the case! I'm not sure what the vest alternative might be, to refer to the previous method. Perhaps "**percentage-based audit**," which is accurate if a bit unwieldy. In any case, whatever term is used should defined at the outset with other definitions.

I do thank you for your consideration.