House Bill 1278
Election Law – Postelection Tabulation Audit
SUPPORT WITH AMENDMENTS

Ways and Means
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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. As some of you might recall, I testified at a joint hearing of this committee and the Senate Education, Health and Environmental Affairs Committee in September last year. I have also testified several times to the State Board of Elections on the topic of election audits.

I strongly support many features of this Bill: it requires that some of the voter-verified paper ballots be manually examined; it includes the examination of absentee, provisional and early votes, and it includes quite a bit of public information and reporting. I fear, however, that the goal of an audit⸻independent, public verification of the election outcome⸻will not be met. **Hence, I support it with amendments.**

First, this Bill does not require that an audit be held before certification. The key purpose of an audit is to detect if the election outcome is incorrect, and, if so, to manually examine and count the paper ballots to determine who the true winner is. Holding an audit after certification does not serve this purpose, though it could help identify some problems in process and technology.

I recommend that a manual audit be carried out before certification.

Second, this Bill is not clear about the specifics of choosing ballots. For example, it does not appear to require the examination of a sufficiently large number of randomly-chosen ballots. It only requires the choice of one randomly-chosen precinct per county, but this could be a small precinct. While it requires that 2% of the precincts be audited, covering at least 1% of absentee, provisional and early votes, it does not say the precincts have to be randomly chosen or that at least 1% of all votes need to be examined. It also does not require that the audit should be based off voter-verified evidence, including the original voted paper ballots for in person and absentee voters, and the vote itself (not the bar code) for Express Vote ballots generated for voters with disabilities.

An audit is meaningless if the ballots that will be examined are chosen ahead of time, and if not enough voter-verified ballots are examined!

I recommend that the current Bill be amended to additionally require that the manual audit examine at least 2% of all votes, that the precincts are randomly chosen in a public ceremony, and that original voter-verified evidence be examined for absentee ballots and ballots completed with a tool such as Express Vote ballots.

Third, best practices require a risk-limiting audit. The risk of an audit is the probability of missing the fact that the election outcome is wrong. It is generally recommended that the risk be limited to 5-10%. Smaller margins require a larger number of ballots. Conversely, larger margins require fewer ballots. In

fact, for the typical Presidential or Senate race in Maryland, a risk-limiting audit with a risk of 5% would require the examination of fewer votes than prescribed by this Bill.

As this Bill does not require a risk-limiting audit, it should, at the very least, require a risk-measuring audit. I recommend that the audit report be required to include information on the measured risk of the audit.

Fourth, a risk-limiting audit requires that, if the manual audit points to an incorrect election outcome, it be expanded till the correct outcome is determined. Even if the Administrators are concerned that they cannot carry out a risk-limiting audit for a low risk level, such as 5-10%, there has to be some risk level that is too large to be acceptable.

I recommend that the State set a maximum acceptable risk level beyond which the manual audit has to be expanded till the correct outcome is determined.