



January 4, 2019

Hon. Barry A. Fleming (via email Barry.fleming@house.ga.gov)
Co-chair SAFE Commission
401-H Coverdell Legislative Office Bldg
18 Capitol Square SW
Atlanta, GA 30334

Hon. Robyn Crittenden (via email soscontact@sos.ga.gov)
Georgia Secretary of State
Co-Chair SAFE Commission
214 State Capitol
Atlanta, Georgia 30334

RE: Verified Voting's Statement on Hand-Marked Paper Ballots as Primary Voting Method

Dear Co-Chairs Fleming and Crittenden,

Verified Voting submits the following statement endorsing hand-marked paper ballots that are scanned as the primary voting method for voters. Verified Voting respectfully requests that this statement be shared with the entire SAFE commission in advance of the next meeting scheduled for January 10, 2019.

Recommendation. In light of the pervasive security vulnerabilities of all electronic voting systems, including Ballot Marking Devices (BMDs), as well as the considerable cost of BMDs, Verified Voting Foundation endorses the use of hand-marked paper ballots as the best primary method for recording votes in public elections. BMDs do play an important role for some voters, including voters with disabilities, that prevent them from hand-marking paper ballots. However, the primary voting method for most voters should be hand-marked paper ballots.

Rationale. Hand-marked paper ballots offer better voter verification than can be achieved with a computerized interface. A paper ballot that is indelibly marked by hand and physically secured from the moment of casting is the most reliable record of voter intent. A hand-marked paper ballot is the only kind of record not vulnerable to software errors, configuration errors, or hacking. With hand-marked paper ballots, voters are responsible only for their own errors, while with a BMD, voters are responsible for catching and correcting errors or alterations made by the BMD. Consequently, well-designed hand-marked paper ballots combined with a risk-limiting post-election tabulation audit provide the gold standard for ensuring that reported election results accurately reflect the will of the people.

The 2018 National Academies of Science, Engineering and Medicine Consensus Report *Securing the Vote: Protecting American Democracy*, which represents the nation's best scientific

understanding of election security and integrity, states: “By hand marking a paper ballot, a voter is, in essence, attending to the marks made on his or her ballot. A BMD-produced ballot need not be reviewed at all by the voter. Furthermore, it may be difficult to review a long or complex BMD-produced ballot.” Research published since the National Academies completed their work broadly supports the idea that voter verification of BMD ballots is sporadic and unreliable, Verified Voting suggests that more investigation of these issues is clearly required including the usability and effectiveness of voter verification with BMDs.

Hand-marked paper ballots have other advantages over BMDs. First, hand-marked paper ballots are significantly less expensive than BMDs. Most paper ballots, whether hand-marked or machine-marked, are tabulated by scanners, and typically a polling place will require only a single scanner. In contrast, polling places that require all voters to use BMDs must provide enough of these expensive machines to accommodate all the voters who need them. Second, an inadequate number of BMDs, either because too few were allocated, or because some fail to work, can easily generate long lines, disenfranchising voters who are unable to wait. This situation occurred in the November 2018 mid-term elections when high voter turnout overwhelmed available DREs at some polling places. If, however, a scanner breaks down, voters can deposit their hand-marked paper ballots in a ballot box for later scanning. No additional wait time is required. A voting system that incorporates hand-marked paper ballots for most voters is scalable and can easily handle a spike in voter turnout on election day.

We would be happy to supply additional information and to assist the SAFE Commission’s important work in any way we can.

Respectfully submitted,



Marian K. Schneider, President
Verified Voting
cc: safecommission@sos.ga.gov

Verified Voting is a nonprofit, nonpartisan organization dedicated to the accuracy, integrity, and verifiability of elections. Verified Voting’s Board of Directors and Advisory Board are comprised of leading scientists in the fields of computer science, cybersecurity, voting system design, statistics and election auditing, as well as experts in election administration. The policy positions of the organization are based on scientific evidence and understood best practices in election administration.