January 31, 2019

Senator Harvey S. Peeler, Jr.
President of the Senate
213 Gressette Bldg.
Columbia, SC 29201

Representative James H. Lucas
Speaker of the House
506 Blatt Bldg.
Columbia, SC 29201

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

Dear Sen. Peeler and Rep. Lucas,

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 considered in light of House Bill 3616 and Senate Bill 374.

Recommendation. In light of the pervasive security vulnerabilities of all electronic voting systems, including Ballot Marking Devices (BMDs), Verified Voting Foundation endorses the use of hand-marked paper ballots supplemented with BMDs with assistive features as the best method for recording votes in public elections. While some voters benefit from the use of BMDs, especially voters with disabilities and voters with limited English proficiency, hand-marked paper ballots should be the primary voting method for most voters. Verified Voting endorses the use of hand-marked paper ballots supplemented by accessible BMDs to allow voters to choose the method that best suits their needs while providing as much verifiability as possible.

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 for hand-marked paper ballots and one (or at most two) accessible ballot marking devices. In contrast, polling places that require all voters to use BMDs must provide enough of these machines to accommodate all the voters who need them. For a reasonably-sized precinct, enough machines to handle turnout could easily mean double the number of devices resulting in at least twice as much unnecessary expense. 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 problem historically recurs, including most recently 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 secured 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.

Finally, Verified Voting encourages South Carolina to choose a system that prioritizes security in the tabulation of votes and enhances the ability to implement routine post-election audits. Such a system will strengthen our democracy by confirming that the software reported outcome is correct.

We would be happy to supply additional information and to assist the South Carolina General Assembly's important work in any way we can.

The Verified Voting Foundation is a nonprofit, nonpartisan educational foundation 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.