Alaska Division of Elections
Ballot Tabulation System and Election Program Security Measures

Alaska's ballot tabulation system has a paper trail of every ballot cast. Each precinct receives paper ballots that are either hand-counted when the polls close or counted using an optical scan unit. In addition, as part of the division's compliance with the Help America Vote Act (HAVA), each precinct has a touch screen voting unit equipped with a voter-verifiable paper trail that allows the voter to verify the printed version of the ballot prior to casting the ballot. Alaska law considers the "printed" version to be the official ballot. Alaska's touch screen voting units are intended for use by Alaska's disabled voters. Touch screens are only used in elections where there is a federal race on the ballot. 99% of all voters in Alaska cast a paper ballot. The touch screen voting units are used by approximately 1% of the voters.

The Alaska Division of Elections is dedicated to the security and accuracy of our election process. The Division recognizes that any election system is susceptible to fraud if security measures are not in place. Alaska has extensive procedures, including multiple layers of security that includes a combination of people, processes, and technologies that help us conduct secure, trustworthy, and accurate elections.

The ballot tabulation system used in Alaska to produce and count ballots is federally certified and is thoroughly tested prior to each election. It is a stand-alone system that is not connected to the internet or to a network. Prior to implementing, the division performed a HASH code verification on the software used in the ballot tabulation system computers to verify the software on Alaska's computers match the certified software that is in the National Software Reference Library (NSRL) maintained by the National Institute of Science and Technology (NIST). The HASH verification is an extra security measure implemented in Alaska to ensure the software used in Alaska's ballot tabulation system has not been tampered with and that it is the same software that received federal certification.

Once the authorized, designated division staff person sets up the election database using the certified, verified software, the images of the ballot are sent to an in-state ballot printer. The stubs of all ballots printed in the state are sequentially numbered and the division maintains a record of the ballot stub numbers sent to each voting location.

After sending the ballot images and listing of the stub numbers to the printer, the division begins to download the election parameters onto the individual memory cards used in the optical scan and touch screen voting units. Once the memory cards are prepared, two different logic and accuracy tests are performed, by two different bi-partisan boards, to ensure the cards are accurately counting ballots. At no time during the programming or testing of the optical scan or touch screen memory cards is the unit connected to the internet or a network. In addition to testing the memory cards, the division conducts a functionality test on each piece of equipment to ensure the equipment is in proper working order.

The final test is completed on election morning by the bipartisan precinct election board. The precinct election board prints and signs a "zero" totals report on the optical scan and touch screen machines before opening the polls to verify that no ballots and/or results have been placed in the machine. The zero totals report is secured inside the unit.

Once the polls have closed, the election board prints and signs two copies of the election results report on each machine before uploading the results via modem or calling the results in to the appropriate Division of Elections regional office. The election results report shows how many votes were cast for each candidate and ballot measure. In addition, the election board completes a ballot statement that provides a detail of how their ballots were used, including how many people voted, how many signed the register and how many ballots were used.

After the election, all materials are returned to the State Ballot Review Board (SRB) for inspection. The SRB conducts a thorough audit of the materials to ensure that the number of ballots cast, counted and indicated on the election results produced by the state's ballot tabulation system equals the number of actual voters and that the results are accurate.

Prior to certifying the election, the division is required by law to conduct a verification of machine counts by hand-counting ballots from a random sampling of precincts. In fact, through this verification, 5% of the ballots cast in each of the 40 house districts throughout Alaska are hand-counted after the election by the SRB to verify the election results are accurate. If we find a discrepancy of more than 1% in the hand-count verification, we are required to hand-count all of the ballots cast in the district. To date, there has never been a discrepancy of 1% or greater during the years that this requirement has been in place. In fact, the few minor discrepancies that have been found were related to "marginally" marked ballots – meaning the voter did not completely fill in the oval for his/her selection, as instructed, and the optical scan unit could not detect the mark.

In an effort to ensure the state's ballot tabulation system is secure, the Lt. Governor and the Division of Elections commissioned the University of Alaska, Anchorage to conduct a study in 2007, 2008 and 2011 to examine the security and processes of the state's election system. As part of the review, UAA examined not only the voting technology but also the policies and procedures used by the Division of Elections that add to the security of the system. The university found that Alaska's system is among the most secure in the country. Although the overall system was found to be secure, the university provided several recommendations to further improve security. The Division of Elections has since implemented all recommendations provided by the university. The most notable recommendation implemented by the division was the upgrade, in 2011, of the GEMS ballot tabulation system's software to Assure 1.2. The Assure 1.2 software upgrade includes significant improvements to overall system security and addressed known vulnerabilities in the previous version of the software.

The testing, security and verification processes used by the Division of Elections during each election and reviewed by the University of Alaska, Anchorage, along with the upgrade of the ballot tabulation system software, ensures that Alaska's ballot tabulation system is secure and our election results are accurate.