

Recommendations for Federal Legislation To Ensure the Integrity of our Democracy

These recommendations are the result of discussions with foremost U.S. election integrity experts over a period of several months. They are complex and technical because counting votes is a complex process with many vulnerabilities. Protecting the vote count is not a simple matter. In the interest of brevity, we have included a list of detailed comments below the list of recommendations. A list of experts who can answer questions and provide additional details is on-line at <http://electionarchive.org/ucvInfo/US/ExpertsList.pdf>.

Recommendations

1. *Manual Audits*: Require sufficient manual audits of vote counts to ensure that election outcomes are correct.
2. *Voter Service Reports*: Require states to submit timely reports of detailed election data that can be used to measure voter disenfranchisement and voter service levels.
3. *Auditable Voting Systems*: Provide funds for upgrading voting systems for jurisdictions that have un-auditable voting systems, but fund only “fully-auditable” voting systems where all able-bodied voters can directly record votes on a paper ballot that is voter-verified.
4. *Fund Manual Audits and Voter Service Reports*: Provide funds for conducting sufficiently statistically valid manual audits of machine vote counts and for producing voter service reports in federal elections.
5. *Teeth*: Provide certain and swift penalties whenever an election jurisdiction fails in a transparency, auditing, or reporting obligation.
6. *Public Election Records*: Require election officials to make publicly available in original paper and electronic form all election data and election records that would reveal fraud or errors in elections or are necessary to verify voter service reports and manual audits, prior to certification of results.
7. *Election Monitoring Website*: Create a website containing a publicly accessible database for logging and tabulating voters’ complaints in elections; and for publicly displaying the auditable, audit, and voter service reports from the states.
8. *Submission of Reports*: Require state election officials to submit auditable, audit and voter service reports to the US GAO prior to state certification of election results.
9. *Prohibit Certain Network Connections*: Outlaw Wide Area Network connections to, and wireless capability in, voting equipment and prohibit voting through any network.
10. *Public Right to Observe*: Require jurisdictions to allow citizens to observe all aspects of elections.
11. *Vote Count Audit and Recount Committee*: Create a U.S. Vote Count Audit and Recount Committee whose functions include approving state election audit and recount procedures and policies; and setting standards for state auditable, audit, and voter service reports.
12. *Public Disclosure of Voting System Software*: Require public disclosure of voting equipment as a condition of any further contracting to enable post-election voting machine integrity verification.
13. *Repository for Voting System Disclosure*: Fund a repository for publicly disclosed voting system software or require “OVC Listed”.
14. *Prohibit Practices that Disenfranchise Voters*: See a specific list in “Detailed comments” section.

Definitions:

Auditable Report: In any audit, the data must be committed first. “Auditable report” means a report of detailed machine vote counts and ballots cast for each vote counting device in each precinct, for each election office, for each candidate and ballot contest, for each vote-type including Election Day, early, provisional, absentee, mail-in, military, etc. The auditable report must be released publicly prior to randomly selecting machine counts to audit so that the public can verify the audit. All ballot types must be tracked separately for that jurisdiction, from provisional to absentee to polling place electronic to polling place paper,... for each vote counting device for each race.

Manual: means a “hand-count” - a counting of the votes, wherein the handling of the voter verifiable paper records is done by human hand and the identification of each vote is determined by a visual inspection of said records by a human being.

Sufficiently Statistically Valid: means that enough machine vote counts are manually counted to give a fixed high probability (say 95% or 99%) of detecting at least one corrupt machine count if enough machine counts were corrupt to wrongly alter the outcome of a race.

Scientific: means that the amount of the manual audits are calculated using mathematical principles that will ensure that electronically counted election outcomes are correct, and that the random selection of machine counts is conducted so that each machine count has an equal probability of selection.

Transparent: means that an average non-technical citizen can observe and fully understand the procedures, well enough to determine if they are being done honestly and properly

Verifiable: means that the public can verify for themselves that the information is correct. In an audit, verifiable means the public can verify that manual counts match the machine counts that are used in the tabulation because an auditable report of all machine counts is made public prior to the random selection of machine counts to audit. To verify election outcomes, election records must be publicly available.

Detailed comments:

1. *Manual Audits:* must be sufficiently statistically valid, independent, transparent, verifiable, and scientific. Legislation should require audits to be completed prior to certification of election results. Specify a fixed probability of detecting outcome-altering vote miscount (say 95% or 99%), but do not specify a fixed audit percentage because the amount of machine counts to manually audit in order to detect outcome-altering vote miscount depends on the margin between candidates and other factors. If discrepancies are found between paper and electronic vote counts sufficient to possibly alter an election outcome, an audit must be expanded. See <http://Vote.nist.gov/ElectionIntegrityAudit.pdf> or <http://electionarchive.org/ucvAnalysis/US/paper-audits/FourTierAudit/TieredElectionAudits.pdf> or <http://electionarchive.org/ucvAnalysis/US/paper-audits/ElectionAuditEstimator.pdf>
2. *Voter Service Reports:* must be publicly verifiable. Reports must include the number of registered voters assigned to that polling location, whether polling locations represent one or more precincts (if more, how many), machine allocation, equipment failure and breakdown, under-vote, over-vote, and uncounted ballot rates, absentee and provisional ballot & voter registration handling, and other crucial measures of voter services. Also include reports on whether supplies ran out, and maximum wait time for voting. Reports must be submitted at least one week prior to official certification of election results and at least one month prior to swearing in.

3. *Auditable Voting Systems*: Electronic ballot voting systems are not fully auditable. For information regarding how errors introduced by a post-facto paper record can corrupt manual audits see the Brennan Center report http://brennancenter.org/dynamic/subpages/download_file_36343.pdf Electronic ballot systems may be mis-programmed to introduce errors or omit races on electronically created paper ballot records and voters often do not notice. Fully-auditable systems would require federal funding for precinct-based optical scan systems. For voters with disabilities, so that they can vote privately and independently, economical voter assist devices like vote-PAD, or ballot printing devices like the AutoMARK or Populex, are available. Require that any paper record or paper ballot be sufficiently sturdy in form and marking to support handling for recounts and audits for a minimum of 22 months. In jurisdictions using electronic-ballot equipment, anyone who requests a paper ballot should be given one that can be tallied using the normal tallying process. Only voting systems that protect voter anonymity should be funded. It must not be possible to determine the selections made in a provisional or mail-in ballot unless that ballot is approved for counting.
4. *Funds for Manual Audits and Voter Service Reports*: Fund only independent, transparent, verifiable, sufficient, scientific, sufficiently statistically valid manual audits and verifiable, complete voter service reports.
5. *Teeth*: Consider both civil and criminal penalties, including a reduction in certain federal funds to be appropriated in the coming year; or only provisionally swearing in Congressional Members or not certifying Presidential electors from states that have disenfranchised their voters by failing to audit transparently or by failing to submit the auditable, audit, and voter service reports prior to certifying their own election results and 30 days prior to swearing in date.
6. *Public Election Records*: Rapid access to public records related to elections is vital for citizen oversight of elections and manual audits. All records available in electronic format should be made publicly available on the Internet and copies of paper records made available at reasonable cost. Such records include uncounted ballots, voter registration lists, records of voters who requested, mailed, and returned mail-in or provisional ballots, voters who signed in at the polls on Election Day and during early voting, electronic data files of central tabulation, voting system printouts, error logs, and audit logs, Windows event logs, any reports of problems, certification reports, and contracts of sale for voting systems.
7. *Election Monitoring Website*: The GAO could create an easy-to-use web site that the public could use for research and independent analysis of election integrity and voter disenfranchisement. The auditable, audit and voter service reports from the states should be displayed there for any election at least two weeks prior to any candidates' swearing in date for the same election.
8. *Submission of Reports*: The auditable report required for verifiable election audits must be submitted prior to the date of the random selection of machine counts for the manual audit. The audit report and voter service reports for monitoring vote count accuracy and voter disenfranchisement must be submitted at least 30 days prior to swearing in date.
9. *Prohibit Certain Network Connections*: Do allow secure connections for vote reporting between county central and satellite election reporting locations or between county central and state central.
10. *Public Right to Observe*: The specific right to observe the election process is vital to empower citizens to ensure election fairness and transparency. Citizens should be allowed to observe close-up or by verifiable, transparent, immediately available, close-up video. Citizens should be able to observe the administration of elections, real pre-election voting machine testing (not just demos), the polls, the transfer of ballots to the central office, the tallying and reporting of the votes, manual

audits, recounts, and any post-election testing. All of these should be sufficiently publicly noticed. This requirement should include language that requires jurisdictions to allow genuine observation, not just presence in the room.

11. *Vote Count Audit and Recount Committee*: The Vote Count Audit and Recount Committee should be under either the National Academy of Science, the U.S. EAC or the U.S. GAO. Its members should have at least a Masters degree in fields like statistics, mathematics, computer science, computer based security plus members who are election integrity activists, gaming experts, and non-voting election officials. This committee would ensure that state audit, recount, and other policies and procedures are adequate to ensure accurate election outcomes and avoid voter disenfranchisement. See <http://electionarchive.org/ucvAnalysis/US/paper-audits/VoteCountAudit-UT.pdf>
12. *Public Disclosure of Voting System Software*: Publicly disclose components of the system and their version identifiers, source code for each component including any file needed to build a complete version of the system, object code image for each component of system, checksums of object code image, specifications, documentation, internal and external document formats and sample documents, hardware dependencies, specifications, and requirements; for each commercial off the shelf (COTS) software component, specifications, version numbers, dates of manufacture, requirements and uses, and image; feature checklist, license(s) for the system, reports of non-internal tests, and an attestation that all components and descriptions submitted are accurate and represent the versions identified. The vendor may retain all copyrights, trademark rights, and patent rights needed under Copyright law (17 USC 106) but not trade secret rights. Non-disclosure agreement (NDA) requirements should be allowed only for COTS components.
13. *Repository for Voting System Disclosure*: Fund a repository for publicly disclosed voting system software or require that vendors be “OVC Listed” by the Open Voting Consortium.
14. *Prohibit Practices that Disenfranchise Voters*: For example, Prohibit voting by public networks or by faxing ballots to any office other than the local election office; No onerous paper weight requirements for voter registration forms; Penalties for ballot tampering or vote fraud, and for fraudulently losing registration forms or changing them prior to submission; State issued ID not required, but any reasonable proof of residency for voter identification to vote; Voter sign-in system must be a paper system, not an electronic one subject to crashes or network failures; No one other than the voter or a non-partisan election official (or a postal clerk) may make any marks on a ballot envelope, except for an authorized person who returns a ballot to a polling place may sign it as required by the jurisdiction; Penalties for systematically challenging voters; Consider how voter rolls may be scrubbed for people who moved, died, or are convicted of crimes; Consider how voter registrations are verified against other databases. (Not everyone has a driver’s license or state issued ID card. Sometimes it is unclear what is a middle name or a compound last name; or people use different forms of their names. In some foreign names, the family name is first not last. DMV databases are not always accurate. For guidance on implementing voter registration databases see <http://acm.org/usacm/VRD>); Paper ballots should be available at all polling locations for voters who prefer not to vote using electronic ballots and in case of long lines, power outages, or equipment failures.

This document is available online:

<http://ElectionArchive.org/ucvInfo/US/EI-FederalLegislationProposal.pdf>