



## How can we Ensure Accurate Election Results via Independent Audits & Election Data Monitoring?

In America a majority of votes are counted electronically. In the absence of routine measures to detect and correct errors, vote counts are susceptible to innocent mistakes, electronic failures, and insider tampering. Limited available U.S. election results and exit poll data indicates likely vote count errors large enough to alter outcomes. This jeopardizes democracy!

### How can we ensure accurate election results?

We need a combination of two measures:

1. routine independent audits of voter verifiable paper record of ballots, and
2. public release and independent mathematical analyses of detailed election data

These would be likely to detect any vote count errors that might seat a wrong candidate.

Independent audits would catch any errors distributed over multiple precincts that would be likely if voting machines were incorrectly programmed. On the other hand, analyzing detailed election data would catch any significant errors concentrated in a small pocket of precincts as well as irregular patterns indicating voting machine malfunctions.

With independent audits and election data monitoring we could:

- alert candidates and election officials in time to recount or investigate prior to conceding.
- alert election officials when particular voting equipment produces high error rates.
- help validate accurate vote counts and remove reasons to dispute the results.

### What makes voting systems audit-able?

It is not enough to require voter verifiable paper records of ballots. The paper record needs to be easy for the voter to verify without unnecessary steps, and it must be practical to count *independently*<sup>1</sup>. Accuracy requires routine *independent* audits by persons other than the voting machine vendor or other insiders within the election system.

### How can we audit vote count accuracy?

To have scientific validity, precincts must be selected for audit through a truly random selection process that gives every machine or precinct an equal chance of being selected.

Voter-verifiable paper records can be counted in a small percentage of randomly selected precincts immediately after polls close, before ballots are removed from the precinct. Audits are likely to detect any errors that are distributed in at least 5% to 15% of precincts.<sup>2</sup> If

<sup>1</sup> Voting systems that use conveniently humanly countable, opti-scan paper ballots are practical to independently audit.

<sup>2</sup> Random audit procedures depend on the number of precincts or voting machines, probability of error, and the desired probability of detecting errors. See the "How Can Independent Paper Audits Detect and Correct Vote Miscounts?" handout for more details at [http://electionarchive.org/ucvAnalysis/US/paper-audits/Paper\\_Audits.pdf](http://electionarchive.org/ucvAnalysis/US/paper-audits/Paper_Audits.pdf)

discrepancies are found, a county-wide count of the voter verifiable paper record could be triggered. Procedures must be designed separately for each state and county.

## **What specific data is needed for monitoring election results?**

To allow independent analysts to investigate and detect irregular vote counts, election officials must collect and publicly release detailed *vote-type, precinct-level* election data including:

1. Election results - a breakdown of vote counts by vote type for every precinct:
  - early
  - early - provisional
  - election day
  - election day - provisional
  - absentee

There may be more than five vote types. Individual counts for each vote type, by precinct, are needed. The number of over-votes (spoiled votes), under-votes, and uncounted provisional ballots must be given or be calculable from the data.

2. Methods and equipment used to count each reported vote count
3. Voter registration data - by precinct for both party and demographic factors
4. Demographic data - by precinct

## **Why is such detailed election data needed?**

Lumping data together keeps major flaws of the election process hidden. Consider the November 2004 election in New Mexico which has a good data reporting system by today's standards. Ten thousand more absentee ballot votes were recorded than were cast, while the pushbutton DRE (electronic ballot) voting machines failed to register votes in the presidential race in up to 19% of ballots cast in some precincts. These under-votes on the DRE voting machines in each precinct, helped to cancel out the phantom extra absentee ballot votes, and thus both problems at first went unreported. Neither the DRE under-votes nor the absentee phantom votes were discovered until the vote type breakout of the data was investigated at the precinct level.

## **Conclusion**

Election officials can conduct accurate elections and detect and correct any errors in vote counts through two simple measures -- routine independent audits of vote counts and public reporting of detailed election results data. Increasing public confidence in the election process would remove reasons to dispute the results

This paper is available.

[http://electionarchive.org/ucvAnalysis/US/election\\_officials/Audits\\_Monitoring.pdf](http://electionarchive.org/ucvAnalysis/US/election_officials/Audits_Monitoring.pdf)

*The mission of the National Election Data Archive is to objectively investigate the accuracy of elections through mathematical methods, including analysis of U.S. election data. We would be happy to work with you to achieve your goals for your state's election integrity.*