

Trust but Verify:

**Toward Increasing Voter Confidence
in Election Results**

At the December TACIR meeting, Commissioners voted to study elections and voting methods in Tennessee

Goals of the comprehensive study:

- **Increasing public confidence in election methods and results**
 - Safeguarding voting machines
 - Verifying voter eligibility
 - Making use of other states' experience
- **Managing the cost of elections**
- **Ensuring access for all eligible voters to the polls**

TACIR Study

The TACIR report will examine

- Ways to increase access while maintaining security
- Ways to allow a voter to verify that their vote is counted accurately while maintaining privacy
- Ways to increase confidence in election results through periodic auditing (or other appropriate measures)
- Ways to promote transparency in every phase of the election process
- Ways to manage the cost of elections while maintaining accuracy.

The first phase of the study focuses on voting technology, paper trails, and related issues.

What Has TACIR Done?

- Reviewed all election-related bills
- Concentrated on Voter Verified Paper Audit Trail (VVPAT) bills
- Notified election coordinators of our study
- Interviewed all members of the Joint Study Committee on the Voter Confidence Act of 2006, as well as other legislators
- Interviewed Brook Thompson
- Conducted an extensive review of the literature on election technology and voting methods
- Reviewed VVPAT developments in other states and in the federal Election Assistance Commission
- Reviewed Congressional action on VVPAT
- Prepared a draft report
- Presenting findings today

Help America Vote Act of 2002

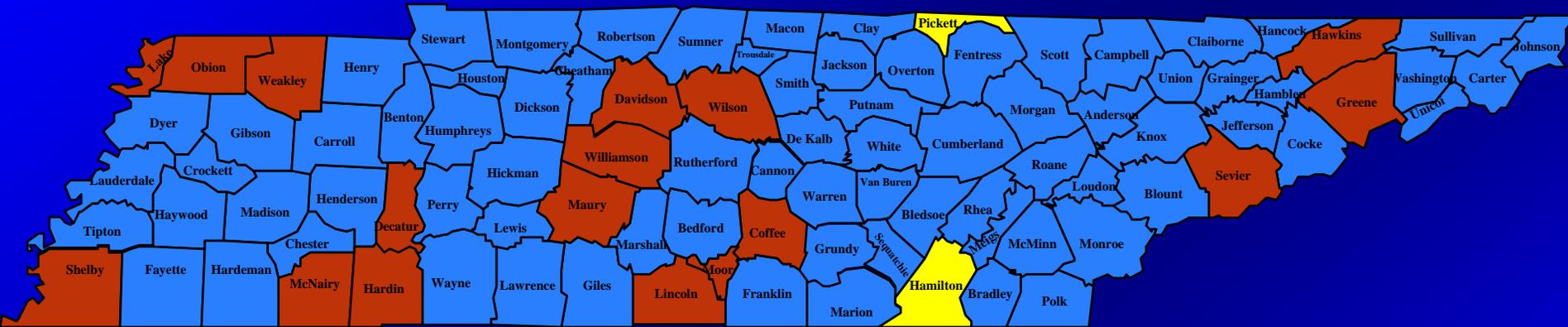
States accepting federal funds through the Help America Vote Act (HAVA) to update voting technology had to meet several requirements.

- Implement a system that notifies voters if they “over vote” and gives them the opportunity to correct their ballots or educate voters on over voting and how to correct their ballots.
- Utilize a voting system that produces a permanent paper record with a manual audit capability.
- Provide disability access equal to the level of access privacy and independence available to other voters.
- Define uniform standards for what constitutes a vote on each type of voting equipment used in the state.

Current Related Federal Legislation

- Voter Confidence and Increased Accessibility Act of 2007 (Holt/Nelson, aka “The Holt Bill”)
 - voter verified paper ballot
 - paper quality and ballot standards that cannot be met by existing DREs
 - only optical scan machines now comply
 - widely expected to pass in the House, where it has 200 cosponsors
 - prospects are not as sure in the Senate, where it has none
- Vote by Mail Grant Program (Davis/Wyden)
 - Fund the switch to Vote by Mail as long as the program meets Oregon’s standards
 - Grants can go to states, groups of counties, or individual counties

How Tennesseans Vote



-  Optical Scan Machines plus Touch Screen DRE's for Handicapped and Disabled Access (Hamilton County uses the Diebold Accuvote and Pickett County uses ES&S)
-  Touch Screen DRE's (ES&S Ivotronic in all but Shelby County, which uses Diebold Accuvote)
-  Push Button DRE's (Hart Eslate and Microvote Infinity – Bedford, Carter, Franklin, Hamblen, Marshall and Warren Counties still use the Microvote 464 for most voting, with the Infinity for disabled voter access)

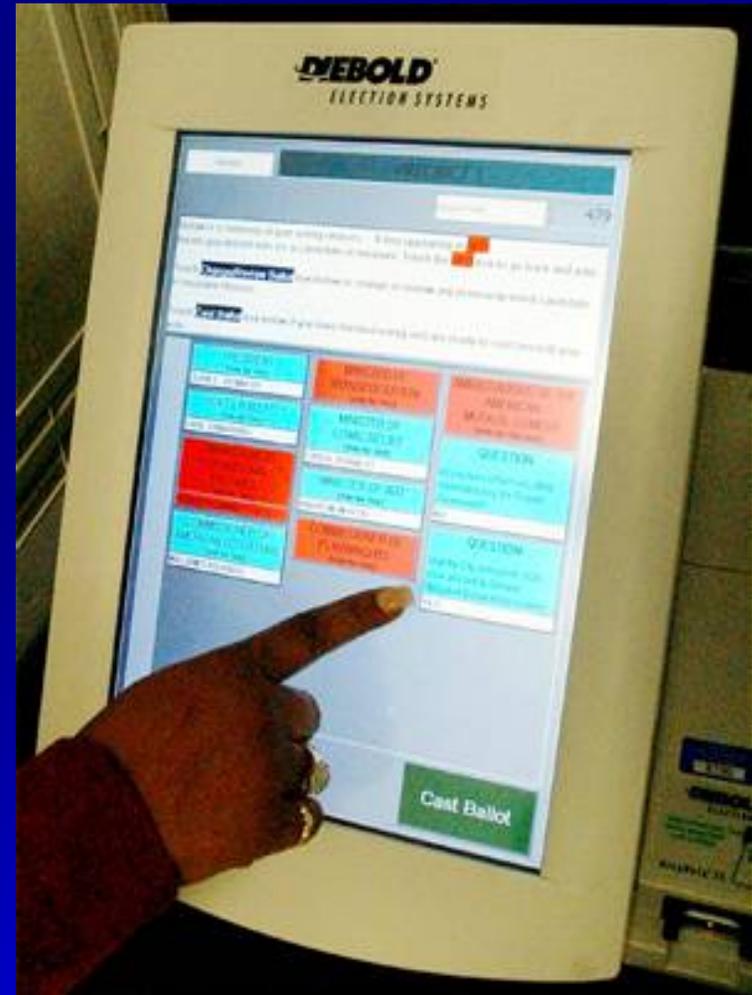
Source: Tennessee Division of Elections

Electronic Voting Brings a New Set of Problems

In 2006, computer voting problems were reported in 32 states,* including complaints of

- lost votes,
- votes credited to the wrong candidate,
- voting machines fail to work,
- paper jams,
- misprinted barcodes on absentee ballots,
- blank or poorly calibrated touch screens,
- missing or stolen access cards, and
- various programming problems.

*This list was compiled by the Election Reform Information Project at the University of Richmond, and may not include problems that were not reported or that their research otherwise missed.



Concerns with Paperless DRE Systems

- Voters cannot verify that their votes are recorded correctly.
- Votes cannot be counted in a publicly viewable fashion.
- Independent recounts are impossible.
- Programming code is proprietary and unavailable for public review.
- Federal voting machine testing methods are proprietary and results are unavailable for public review.
- Design and programming errors have been found that could affect election outcomes.

Paper Trail Options

- Optical Scan Systems
 - Advantages
 - Easy to understand
 - Ballots are separate and readable for verification, recounts and audits
 - Under-vote and over-vote protection
 - Equipment available to meet HAVA's disability requirements
 - Many people can vote at once
 - Disadvantages
 - Source code is still an issue as counts are electronic
 - Requires replacement of existing DREs (93 Tennessee counties)
 - Requires pre-printing of ballots, though "ballot on demand" systems make this less of a problem

Paper Trail Options (cont.)

- DRE with VVPAT
 - Advantages
 - Makes use of DRE machines already in place (93 Tennessee counties)
 - Does not require pre-printing of ballots
 - Under-vote and over-vote protection available
 - Disadvantages
 - Recounts and audits are difficult, expensive, and time-consuming
 - May be subject to malicious or negligent programming problems in both the vote-casting and counting stages
 - Voters report difficulty and confusion in reviewing and correcting ballots
 - Long ballots make for long lines at the polls

Paper Trail Options (cont.)

- Vote by Mail

- Uses either hand-counted paper ballots or optical scan ballots counted on a central tabulator. In addition to those below, the advantages and disadvantages of centrally-tabulated optical scan ballots usually apply.

- Advantages

- Oregon reports that vote by mail saves money
 - Turnout is increased
 - Voters have time to study the ballot and think about their votes
 - Provides an automatic mechanism for keeping voter rolls updated

- Disadvantages

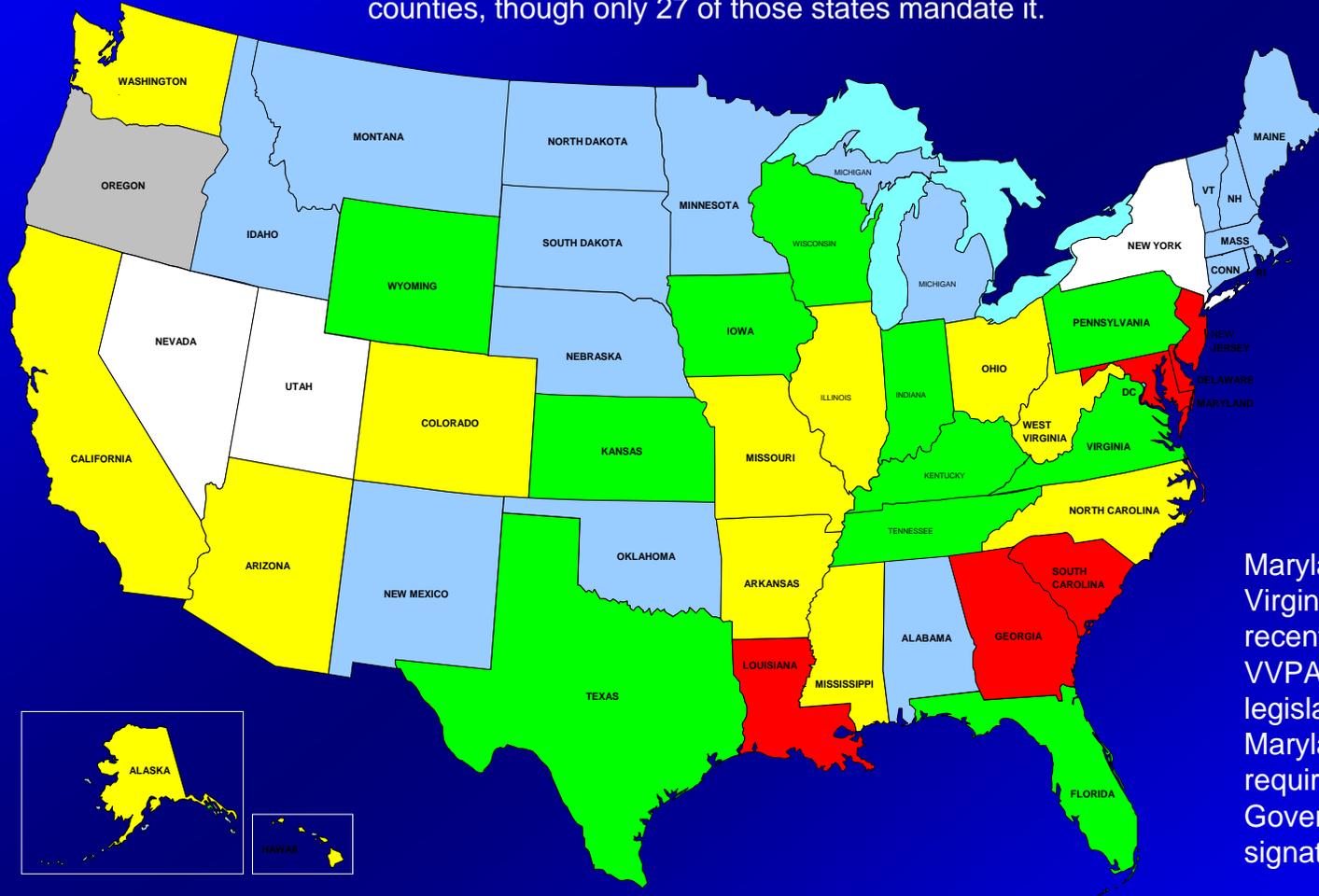
- More opportunity to coerce voters or buy votes
 - The fiscal note on Tennessee's Vote by Mail bill (HB0485/SB0642) suggests that this would cost about \$1.5M per election statewide
 - Some voters miss the experience of voting at a local polling place

Paper Trail Options (cont.)

- Punch Card Systems
 - Punch card systems are considered HAVA-compliant as long as they include voter education on over-voting and how to correct the ballot and HAVA-compliant provisions are made for disabled voters. The disadvantages of these systems are widely known, however, and only one county in Idaho will use punch cards in 2008.
- Centrally-tabulated Optical Scan
 - Centrally-tabulated optical scan systems are considered HAVA-compliant as long as they include voter education on over-voting and how to correct the ballot and HAVA-compliant provisions are made for disabled voters.
 - The advantages and disadvantages are the same as precinct-level optical scan, except for voter notification of ballot problems. Counties can save money with central tabulators, as fewer must be purchased.

Electronic Voting Systems in the United States, 2006

The 17 states (plus Washington, DC) in red and green have at least some counties with no paper trail. The other 33 states do have a paper trail in all counties, though only 27 of those states mandate it.



Maryland and Virginia have recently passed VVPAT legislation, Maryland's still requires the Governor's signature.

11+DC Optical Scan and DRE
6 DRE

16 Optical Scan
13 Optical Scan and DRE with VVPAT
3 DRE with VVPAT
1 Vote by mail

Staff Recommendations for Election System Improvements

- Implement voter-verified paper audit trails statewide within a reasonable time frame.
- Adopt VVPAT that can be counted by hand, as well as by machine.
- Adopt a standard for VVPAT that matches that in the federal “Holt Bill.”
- Strengthen security and pre-test requirements and make them consistent for all voting systems.

Staff Recommendations for Election System Improvements (cont.)

- Consider election day parallel voting machine tests.
- Strengthen post-election audit requirements to ensure that a minimum of machines are tested by comparing hand counts to machine totals.
- Require voting machine vendors to escrow all of their proprietary software so that it can be reviewed by experts if needed.
- Consider making early voting and voting by mail more accessible.
- Consider a Vote by Mail pilot program.

For Future TACIR Study: Other Election/Voting Issues

- Voter identification requirements
- Voter database maintenance, including the removal of ineligible voters
- Absentee and overseas ballots
- Post-election audits
- Recounts/Intent of the Voter
- Appropriate distribution of voting machines
- Ballot design
- Recruitment and training of poll workers

Short movies demonstrating the use of each type of voting machine used in Tennessee can be found at the following websites

Microvote Infinity:

http://www.state.tn.us/sos/election/voting_systems/votetraining.wmv

Hart Eslate:

http://www.state.tn.us/sos/election/voting_systems/hart.htm#

ESS Ivotronic:

http://pointers.audiovideoweb.com/stcasx/ca25win25217/ESS_IVO.wmv/play.aspx

Diebold Accuvote (touchscreen then optical scan):

http://www.diebold.com/dieboldes/demos_tsx.asp

http://www.diebold.com/dieboldes/demos_os.asp

Recent TACIR Publications

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Fiscal Federalism: The Looming Federal Fiscal Crisis and Its Effect on Tennessee (March 2007)

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Local Government Property Tax Revisited *Good News and Bad News* (July 2006)

Improving the Achievement of Tennessee Students: Analysis of the National Assessment of Educational Progress, RAND Technical Report (May 2006)

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