

**Cuyahoga County Board of Elections**

**Hearing on the EVEREST Review of Ohio's Voting Systems and  
Secretary of State Brunner's Related Recommendations for Cuyahoga County**

**Comment of**

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The Brennan Center thanks the Cuyahoga County Board of Elections for holding this meeting to discuss the Project EVEREST review of Ohio's voting systems, as well as Secretary of State Brunner's related recommendations. Project EVEREST's Risk Assessment Study of Ohio Voting Systems is a disturbing document, confirming many security and reliability flaws that many experts had previously identified in the current generation of electronic voting systems. These findings deserve serious study, and Ohio must take action to ensure that the security flaws identified in this report do not affect the integrity of its elections.

Regrettably, the recommendations made by Secretary of State Brunner in response to Project EVEREST's findings could cause more problems than they solve. If instituted quickly, without input from experts who have studied these issues for many years, they will almost certainly lead to serious problems in Ohio in the most complex election year of the four-year election cycle, potentially disenfranchising tens of thousands of voters in Cuyahoga County alone.

Fortunately, Cuyahoga County and the state of Ohio can take immediate and relatively simple steps to strengthen the integrity of its elections without risking the chaos and disenfranchisement that are likely to result if Secretary Brunner's recommendations are implemented without adequate study, input from experts, meaningful public education campaigns, and the development of entirely new election procedures.

## I. The Brennan Center's Work on Voting System Security

The Brennan Center is a nonpartisan think tank and advocacy organization that focuses on issues of democracy and justice. We are deeply involved in the effort to ensure fair and accurate voting and voter registration systems and to promote policies that maximize participation in elections.

For the last three years, in collaboration with the nation's leading technologists, election experts, security professionals, and usability and accessibility experts, I have led the Brennan Center's work to make the country's voting systems as secure, reliable and accurate as possible. From 2004 to 2006, I chaired the Brennan Center Task Force on Voting System Security, which conducted the first systematic analysis of voting system security. I am also lead author of the nation's first comprehensive and empirical review of electronic voting systems entitled *The Machinery of Democracy: Voting System Security, Accessibility, Usability and Cost*.<sup>1</sup> In 2007, I co-authored a book on voting system security, *The Machinery of Democracy: Protecting Elections in an Electronic World*,<sup>2</sup> as well as a report of the Brennan Center and the Samuelson Law, Technology and Public Policy Clinic at the University of California, Berkeley on post-election audits entitled *Post Election Audits: Restoring Trust in Elections*.<sup>3</sup>

In all of this work, the Brennan Center has concluded that there are serious security and reliability flaws in the current generation of voting technology – be it direct recording electronic (“DRE”), precinct based optical scan (“PBOS”), or central count optical scan voting systems. We have also concluded that the most troubling vulnerabilities in each of these systems can be substantially remedied. While many more jurisdictions have adopted such procedures in the last two years, most states – including Ohio – have not.

While highlighting the security and reliability vulnerabilities of electronic voting systems, the Brennan Center has consistently noted that the move away from punch-card and lever machines to in-precinct electronic voting systems (be they optical scan or direct recording electronic machines) has had some important benefits. And we have emphasized that before taking dramatic action to address the very serious flaws of the current generation of electronic voting systems, jurisdictions must consider how these actions will affect overall accessibility, usability, and integrity of the election system. Failing to do so risks creating problems that are even greater than those we hope to solve.

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<sup>1</sup> Lawrence Norden *et al.*, THE MACHINERY OF DEMOCRACY: VOTING SYSTEM SECURITY, ACCESSIBILITY, USABILITY AND COST (2006), available at [http://brennancenter.org/stack\\_detail.asp?key=97&subkey=38150&init\\_key=105](http://brennancenter.org/stack_detail.asp?key=97&subkey=38150&init_key=105).

<sup>2</sup> Lawrence Norden & Eric Lazarus, THE MACHINERY OF DEMOCRACY: PROTECTING ELECTIONS IN AN ELECTRONIC WORLD (Academy Chicago 2007).

<sup>3</sup> Lawrence Norden *et al.*, POST ELECTION AUDITS: RESTORING TRUST IN ELECTIONS (2007), available at [http://brennancenter.org/dynamic/subpages/download\\_file\\_50227.pdf](http://brennancenter.org/dynamic/subpages/download_file_50227.pdf).

## II. Project EVEREST Findings

The Brennan Center commends Secretary of State Brunner for initiating Project EVEREST and for taking its findings seriously. This historic and thorough analysis of the electronic voting systems used in Ohio reveals that all systems used in the state have significant security and reliability vulnerabilities which pose a real danger to the integrity of statewide and local elections.

These findings echo findings made by the Brennan Center's Task Force on Voting System Security, as well as those made by the University of California's Top to Bottom Review of that state's voting systems.<sup>4</sup> And they provide Ohio with an opportunity to become a leader for the country in the area of voting integrity.

At the same time, the identification of security flaws in Ohio's voting systems does not, in and of itself, make clear what steps Ohio should take to address those vulnerabilities. We believe that many of the Secretary's recommendations warrant serious study. Others risk unnecessarily disenfranchising voters. None should be implemented unless they are first pilot-tested to be sure that they do not inadvertently create new problems.

## III. Secretary of State Brunner's Recommendations

Secretary of State Brunner makes a number of recommendations to address the Project EVEREST findings. Here, I focus on four recommendations that are the most troubling.

### ***OH-SOS Recommendation: Elimination of DREs and Precinct-based Optical Scan Voting Machines that tabulate votes at polling locations, and moving to Central Counting of Ballots***

Project EVEREST found serious flaws in all three voting system architectures used in Ohio: DRE, PBOS and Central Count Optical Scan voting machines. Secretary Brunner proposes to address this problem by "eliminat[ing] points of entry creating unnecessary voting system risk" by ending the use of in-precinct DRE and PBOS voting machines to count votes and "instead migrating to central counting of ballots."<sup>5</sup>

There are at least two potentially serious problems with this solution. First, the exclusive use of Central Count Optical Scanners to count votes is likely to cause the disenfranchisement of thousands of voters, and in particular low-income and minority voters. Central Count Optical Scanners do not give voters the notice and

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<sup>4</sup> Matt Bishop, Principle Investigator, University of California, Davis, *Overview of Red Team Reports* (2007), [http://www.sos.ca.gov/elections/voting\\_systems/ttbr/red\\_overview.pdf](http://www.sos.ca.gov/elections/voting_systems/ttbr/red_overview.pdf)

<sup>5</sup> Project EVEREST (Evaluation & Validation of Election-Related Equipment, Standards, & Testing), *Risk Assessment Study of Ohio Voting Systems* 76-7 (Dec. 14, 2007), available at <http://www.sos.state.oh.us/sos/info/EVEREST/00-SecretarysEVERESTExecutiveReport.pdf>.

opportunity to correct errors. In-precinct DRE and PBOS voting systems have dramatically decreased the number of uncounted votes, previously caused when voters made errors by inadvertently overvoting in elections.<sup>6</sup> In fact, it has been estimated that this technologically-provided overvote protection helped to save approximately one million votes in the 2004 election.<sup>7</sup> This has disproportionately benefited low-income and minority voters in Ohio who, prior to the move to DREs and PBOS, experienced much higher lost vote rates than other voters.<sup>8</sup>

Second, counting all votes in a central location without the benefit of precinct totals is a recipe for massive error, particularly if there is no post-election audit of the Central Count Optical Scanner (which is not part of the Secretary's recommendations). To put it plainly, a programming error, software glitch or insider attack on the Central Scanner could result in incorrect totals on a massive scale, in a way that is far less likely to occur if votes are first tallied and published at individual precincts.

The recommendation to move exclusively to central count scanning risks disenfranchising tens of thousands of voters in Cuyahoga County. Moreover, without precinct counting or audits, it is also likely to *increase* security and reliability risks in Ohio's elections. Accordingly, I urge you to refrain from adopting this recommendation until you can consult more thoroughly with election integrity and voting rights experts.

### ***OH-SOS Recommendation: Move to Vote By Mail***

Secretary of State Brunner recommends requiring "all Special Elections [...] held in August 2008 to be voted by mail" and that the state "adopt legislation to allow a county to vote on whether it desires to vote by mail for a temporary or permanent period of time."<sup>9</sup>

Absent a massive public education effort, for which there is probably not enough time before the August 2008 Special Elections, a move toward a completely vote-by-mail system carries the same risks already discussed above, namely, disenfranchisement of tens of thousands of voters (particularly elderly, low literacy, low-income, and minority voters) who will not have the benefit of overvote protection, along with increased security and reliability risks of counting all county ballots in a single location.

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<sup>6</sup> Norden *et al.*, *supra* note 1, at 99-100.

<sup>7</sup> Charles Stewart III, *Residual Vote in the 2004 Election*, 5 Election L.J. 158 (2006), available at [http://www.vote.caltech.edu/journals/ELJ-Stewart\\_06.pdf](http://www.vote.caltech.edu/journals/ELJ-Stewart_06.pdf).

<sup>8</sup> Norden *et al.*, *supra* note 1, at 101. Recent research by Norman Robbins, MD, PhD, Research Director for the Greater Cleveland Voter Coalition and Emeritus Professor at Case Western Reserve University School of Medicine confirms that low-income and minority voters in Ohio, like those throughout the nation, have disproportionately benefited from the overvote protection provided by PBOS and DREs.

<sup>9</sup> Project EVEREST, *supra* note 5, at 80.

Additionally, Ohio has no experience delivering a high volume of ballots through the postal service, and has not developed the appropriate security measures to ensure that ballots are not tampered with or replaced. I am extremely concerned about trying this for the first time in a presidential election year, with very little time for planning and development of good procedures. Finally, there is at least some evidence that vote-by-mail could negatively impact low-income and minority turnout while disproportionately benefiting affluent voters.<sup>10</sup>

None of this is meant to argue that Ohio should never move toward a vote-by-mail system. But certainly, such a drastic change should only come after thorough study with comparative assessment of the risks and benefits of vote-by-mail and other voting methods, the development of adequate security procedures at the county and state levels, and a comprehensive public education effort.

***OH-SOS Recommendation: For the March 2008 primary election require counties utilizing DREs to offer paper ballots to voters who do not vote on DREs***

As noted above, if voters are provided paper ballots without in-precinct optical scanners that will notify them of errors, they are far more likely to make errors, and their votes will not be counted accurately. Again, this could impact tens of thousands of voters, and will disproportionately affect low-income and minority voters.

In addition, I am very concerned that without adequate time to develop good procedures and train poll workers, many votes cast on paper ballots in DRE counties will not be handled properly, leaving them vulnerable to being replaced or tampered with, lost, or wrongly treated as provisional ballots.

Providing voters with the choice of voting on paper, without the benefit of a machine that will notify them if they have made errors, does little to solve the security risks associated with using electronic voting systems, while at the same time creating new risks that will have the potential to disenfranchise voters.

***OH-SOS Recommendation: Move to Vote Centers, Eliminating Voting at Individual Polling Places of Less than 5 Precincts***

Secretary of State Brunner recommends eliminating polling places with more than 5 precincts, and developing “Vote Centers” of five to ten precincts in their place.<sup>11</sup> While this would have the benefit of expanding early voting in Ohio, it would also mean the closure of many existing polling places. I am particularly concerned that elderly and low-income voters with limited transportation means could find that this transformation makes it very difficult, if not impossible, to vote.

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<sup>10</sup> Michael Slater & Teresa James, *Vote-by-Mail Doesn't Deliver*, TomPaine.com (June 29, 2007), available at [http://www.tompaine.com/articles/2007/06/29/votebymail\\_doesnt\\_deliver.php](http://www.tompaine.com/articles/2007/06/29/votebymail_doesnt_deliver.php).

<sup>11</sup> Project EVEREST, *supra* note 5, at 78

The Secretary recommends a pilot program in two or three counties in the March primary.<sup>12</sup> This could be a useful initial experiment, but given the dramatic differences between, for instance, Cuyahoga and Jefferson Counties, I hope that many more pilots in a broad number of Ohio counties will be launched and thoroughly analyzed before there is any effort to eliminate precincts. Until there is a thorough analysis of how the closures will affect specific voters' ability to vote, a statewide move to vote centers is premature and could have very serious consequences. Finally, if it is determined that such an action will increase voter turnout without negatively impacting on the ability of low-income and elderly voters to get to the polls, the state must have allocate resources toward a massive public education campaign to make sure that voters understand their previous polling places may have closed.

Once again, attempting to make such extraordinary changes over a short period of time, in a presidential election year is not a good idea.

#### IV. Alternate Steps to Achieving Greater Election Security

I am hopeful that the Cuyahoga Board of Elections accepts Secretary of State Brunner's recommendations as just that – recommendations. More to the point, I hope that they are treated as recommendations that are the *beginning* of a serious conversation about what long-term changes to election administration might be necessary to improve Ohio's elections. I hope that this discussion fully considers the potential benefits and drawbacks of these initial recommendations, and includes the input of independent experts who have studied these complex issues for many years.

In the meantime, there is much that can be done to ensure that the DREs used in Cuyahoga County are as secure, reliable and accurate as possible. There are at least four steps that Cuyahoga County should consider for its upcoming elections:

- **Train poll workers to tell every voter, immediately before she votes, that she should review the voter-verified paper trail and inform the poll worker if the paper trail is illegible, has jammed, or does not reflect the choices that she made.** Cuyahoga County has had serious problems with its voter-verified paper trail. While many of these problems are no doubt due to the poor design of the printers, they have been exacerbated by the fact that voters are not aware of the purpose and importance of the voter-verified paper trail. If voters inform poll workers of problems with the voter-verified paper trail, those problems can be fixed before a significant percentage of votes are affected.
- **Have emergency paper ballots available in case of machine failure.** Poll workers should be trained to provide emergency paper ballots to voters where machine failure or other problems have caused delays at polling places. Poll workers should be trained to give voters appropriate instructions for filling in

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<sup>12</sup> *Id.* at 78.

such ballots, as well as for storing such ballots to ensure that they are counted in the same manner as all other regularly cast votes.

- **Conduct pilot post-election audits of the voter-verified paper trail.** The single most effective way to deter fraud, detect error, and determine whether a voting machine has been compromised is to conduct a random audit, before certification of the election results, comparing a percentage of the voter-verified paper trail to the machine tallies of the vote. Cuyahoga County was a national leader in pioneering a statistically reliable, limited post-election audit in 2006, which could be expanded into a pilot program to conduct such elections for the 2008 elections.
- **Conduct parallel testing of voting machines.** “Parallel testing,” or Election Day testing of DREs has been conducted by the states of California and Washington, as well as Palm Beach County, Florida. Parallel testing involves selecting machines at random and testing them as realistically as possible during the period in which votes are cast. If implemented correctly, parallel testing can act as a deterrent to fraud and help jurisdictions detect software-based attacks, as well as subtle software bugs that may not be discovered during pre-election inspection and other testing.

For the longer term, Cuyahoga County may need to replace its DREs and voter-verified printers with paper ballots and optical scanners. This transformation should not take place in the three months before the March primary. The County will need to ensure that new machine and polling place procedures are in place, training and public education materials are drafted and distributed, and equipment adequately evaluated and tested.

Just as importantly, the County should have the time to solicit competitive bids and negotiate for the best possible contract for the people of Cuyahoga County.

If and when the county does move to optical scan voting machines, we urge you to choose precinct-based optical scan machines, which will provide voters with overvote protections. And regardless of the voting system it uses, the County should conduct post-election audits after every election, comparing a percentage of the voter-verified paper records to the machine totals. Ultimately, this is the best protection against security and reliability flaws that the voting system vendors have not yet resolved.

Thank you for your conscientious attention to the needs of Cuyahoga voters.