



## **Voting Machine Issues for New York State**

- ❖ Planning for Delays in New York State HAVA Compliance
- ❖ A Single Statewide Voting System for New York State
- ❖ New York State's Voting Machine Certification Process

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## **Planning for Delays in New York State HAVA Compliance**

### ***An Alternative to Full HAVA Implementation by September 2007***

*By Bo Lipari*

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*December 7, 2006*

New York State currently plans to replace all lever machines with new voting systems by the September 2007 primary election. But recent and likely further delays during certification testing call into question whether that target can be realistically achieved.

In a recent modification to the original timeline, the New York State Board of Elections released a schedule revision<sup>1</sup> which calls for new voting machines to be ordered by March 7, 2007. This allows only six months by which time all of the State's 62 counties must have a fully functional new voting system, complete with poll workers and officials trained in totally new processes and procedures. It seems clear that the current time frame is extremely tight and allows no room for further delays, although it might still be possible to implement the simpler precinct optical scanner as the single statewide system. However, the probability is high that more delays are inevitable and with it, the acknowledgment that we may still be voting on lever machines in 2007.

It is time for New York State to discuss alternatives to the current September 2007 target.

### ***Is Full Implementation by 2008 a Good Idea?***

The natural assumption is that if the State does not change voting systems by 2007, then full implementation would simply be delayed one year to 2008. But New York State must consider the risks of the first time use of new voting systems in a Presidential election, where high voter turnout will stress the system to its limits and beyond.

In general, it is a good principle to avoid introducing a new voting system during major election years. The likelihood that insufficient training, machine breakdowns, lack of experience with new procedures and high voter turnout will lead to long lines, frustrated voters, questionable results and subsequent legal challenges is high, and should be avoided at all costs.

Even under the best of circumstances, the 2008 Presidential election would be a bad time to roll out a new system—but given their track record thus far, it is valid to question whether the State Board of Elections' current approach can be relied on for adequate planning and preparedness for a 2008 roll out without stricter oversight.

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<sup>1</sup> <http://www.elections.state.ny.us/NYSBOE/hava/BOETimeline112206.pdf>

## ***An Alternate Plan – Full Implementation by 2009***

Given the dangers of rolling out new systems in a Presidential election year, a sensible alternative is to delay a complete switchover to new voting machines until September 2009—a full two years from the current target date. This plan would call for full implementation using precinct ballot scanners to be in place by 2009. An interim step for 2007 and 2008 would require that accessible ballot marking devices be in place in each polling place to provide fully accessible voting and to meet HAVA accessibility requirements.

There are many benefits to waiting until 2009 to fully replace the State's lever machines:

- Sufficient time allowed for a thorough certification process and security review.
- Allows necessary time for voting machine vendors to achieve compliance with New York State statutory requirements.
- Allows needed time to fully develop plans and procedures for new systems at State and County levels.
- Provides needed time for adequate training of staff, poll workers, and voters in use of new systems.
- Interim implementation of ballot marking devices in each polling place by 2007 meets HAVA accessibility requirements.
- Avoids using an entirely new voting system for the first time in a Presidential election year.

### ***The Department of Justice Lawsuit***

The Department of Justice (DOJ) lawsuit resulted in a Consent Decree calling for New York State to replace lever machines with new voting systems by September 2007. It is clear that in order to implement a two-year plan as outlined in this paper, a change to the stipulations of the Consent Decree must be negotiated. The author leaves this to legal experts, but notes that the original target date for HAVA implementation was 2006, and in accepting the eventual compromise the DOJ acknowledged that the risk of voter disenfranchisement and substantial disruption to smoothly run elections caused by rushed introduction of new voting machines outweighed the necessity to meet the deadline. It would seem that the same logic could apply here.

In any case, it seems likely that further delays are inevitable and that the target date of September 2007 will not be met. No matter what happens, the State will again be in non-compliance, and will need to re-negotiate schedules. We must press for a schedule that allows sufficient time to guarantee a well run election with well tested equipment. New York State must get new voting systems right the first time. A two-year implementation plan helps assure that we do.

# **A Single Statewide Voting System for NYS**

## ***The Benefits of Standardized Voting Equipment***

*By Bo Lipari*

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*December 7, 2006*

The way elections are conducted in the State of New York is about to undergo fundamental change. It is crucial that the State get the choice of voting systems right the first time—for we are choosing how we deliver democracy to the people. Voters must have confidence that their vote has been accurately recorded and counted and that election results can be examined and confirmed. New York State must do everything possible to provide these guarantees.

State Election Law currently calls for each county to choose a voting system from a list to be certified by the New York State Board of Elections<sup>2</sup>. Further, the decision is given to county election commissioners—appointed officials with accountability to no one but local party committees, and who generally lack any technical background to properly evaluate computerized voting systems.

This state of affairs is further complicated by a machine certification process that is running into significant delays and a State Board of Elections which, lacking the technical competence to assess machine vendors and consultants managing the testing, has consistently underestimated the complexity and scale of the task before them.

Continuing down this path could lead to a disastrous patchwork of expensive touch screen DREs rushed into use with inadequate testing, administered by under-trained staff and elderly poll workers. Long lines at the polls, frustrated voters, questionable results and subsequent legal challenges are easy to foresee in the confusion resulting from this mix of systems.

The alternative is to do what has long been called for by many— adopt a single state wide system using paper ballots, precinct based optical scanners, and ballot marking devices.

## ***Advantages of a Single Statewide Voting System***

- Allows development of a single set of robust procedures for acceptance testing, machine maintenance, and election protocols.
- Allows development of a single set of training standards and materials for pollworkers and voters.
- Great cost benefits will result from economies of scale for the statewide purchase of machines, accessories, ballots, etc.

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<sup>2</sup> State of New York Election Law 2006, Section 7-200:

### **§ 7-200. Adoption and use of voting machine or system**

1. The board of elections of the city of New York and other county boards of elections may adopt any kind of voting machine or system approved by the state board of elections, or the use of which has been specifically authorized by law; and thereupon such voting machine or system may be used at any or all elections and shall be used at all general or special elections held by such boards in such city, town or village and in every contested primary election in the city of New York and in every contested primary election outside the city of New York in which there are one thousand or more enrolled voters qualified to vote...

- Would receive full support from the voting public and the media<sup>3</sup>.
- Takes the decision making process out of the hands of technically unsophisticated county election commissioners.
- Increases negotiating power with voting system vendors competing to win the huge New York State voting systems contract.
- Voters moving from county to county benefit from a uniform voting system across the State.

## ***Choosing the Right System***

Much material is available regarding the benefits of a paper ballot/precinct optical scanner/ballot marker system over DRE systems<sup>4</sup>. The far lower costs of purchasing, storage and maintenance, and the long lifespan and low failure rates are tangible benefits that will save the State many millions of dollars in the short and long term. Other benefits, even more important than the economic advantages, are the ability to verify election results independent of the scanner, and high voter confidence in the voting system and the election results.

Touch screen DREs would also be a poor choice in light of the growing evidence of failures and problems using this high-tech equipment in elections. Recently, Cuyahoga County, Ohio<sup>5</sup> has joined Maryland<sup>6</sup>, New Mexico<sup>7</sup>, Miami Dade County<sup>8</sup> and other states and counties currently contemplating abandoning multi-million dollar investments in DREs and replacing them with paper ballots and precinct scanners.

Finally, public and media support for adoption of precinct ballot scanners is overwhelming and growing daily<sup>9</sup>. New York State cannot afford to make the wrong choice—we have an opportunity to get it right the first time.

## ***Legislation and Timeframe***

In the Election Reform and Modernization Act of 2005, the New York State Legislature, unable to agree on a single statewide voting system decided to allow each county to choose its own voting system. This outcome was undoubtedly influenced by vendor lobbyists who had spent millions of dollars ensuring their piece of the huge New York State election equipment pie. It was a poor choice for voters and has contributed to the long delays in HAVA implementation, and it portends a confusing hodgepodge of different systems, procedures, training and support needs.

Adoption of a single state wide voting system of precinct based ballot scanners will require changes to New York State election law. At the time of this writing county Election Commissioners are scheduled to select a new voting system no later than March 7, 2007<sup>10</sup>. Legislation adopting a single statewide voting system will need to be passed by both Assembly and Senate, and signed by the Governor within the first two months of the 2007 session.

<sup>3</sup> <http://www.nyvv.org/reports/EditorialEndorsements.pdf>

<sup>4</sup> <http://www.nyvv.org/resources.shtml>, and [http://www.brennancenter.org/stack\\_detail.asp?key=97&subkey=36941](http://www.brennancenter.org/stack_detail.asp?key=97&subkey=36941), among many others.

<sup>5</sup> <http://www.cleveland.com/plaindealer/stories/index.ssf?/base/isope/1164801852271860.xml&coll=2&thispage=2>

<sup>6</sup> [http://www.votetrustusa.org/index.php?option=com\\_content&task=view&id=1804&Itemid=113](http://www.votetrustusa.org/index.php?option=com_content&task=view&id=1804&Itemid=113)

<sup>7</sup> [http://votetrustusa.org/index.php?option=com\\_content&task=view&id=983&Itemid=113](http://votetrustusa.org/index.php?option=com_content&task=view&id=983&Itemid=113)

<sup>8</sup> <http://www.nyvv.org/reports/MiamiDadeDumpsDREs.pdf>

<sup>9</sup> <http://www.nyvv.org/reports/EditorialEndorsements.pdf>

<sup>10</sup> <http://www.elections.state.ny.us/NYSBOE/hava/BOETimeline112206.pdf>

## **New York State's Voting Machine Certification Process**

### ***Issues, Status and Projections for Voting Machine Testing***

*By Bo Lipari*

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*December 7, 2006*

Adequately tested voting systems are a prerequisite for well run elections and to ensure public confidence in election results. When it is completed, the current process of testing voting systems will culminate in New York State's four Election Commissioners deciding to "certify" those systems which meet the State's regulations. Certification testing is ongoing and is proving to be a mixture of good and bad news.

On the plus side, New York State has a strict set of statutory and regulatory requirements which voting rights advocacy organizations fought hard to adopt and which set high standards for voting machines to meet. On the minus side, the State Board of Elections seems willing to compromise strict compliance with regulation in order to allow voting machines to qualify when they otherwise would not. While the State Board has frequently stated they want to do certification testing right rather than do it fast, the practice to date has been to err on the side of speed rather than rigor.

### ***Subcontractors Performing Certification Testing***

Lacking required technical expertise of their own, the New York State Board of Elections has contracted out the work of machine certification testing to two contractors. The State Board provides nominal oversight, reviewing status reports and monitoring the schedule, but lacks the technical competence to meaningfully evaluate machine vendors and consultants. Unfortunately for New York State voters, the Board of Elections has consistently underestimated the complexity and scale of the task before them.

The principle contractor managing certification testing for the State Board of Elections is CIBER, Inc.<sup>11</sup>, one of three large testing companies which have close ties to the voting machine vendors<sup>12</sup>. CIBER was responsible for the certification of several voting systems that were subsequently de-certified by several states because of defects discovered in the voting equipment and for defective software. CIBER's performance for New York State has thus far been poor, tending to favor machine vendors' very loose interpretation of State requirements. Ciber has submitted inadequate drafts of Master Test and Security Test plans, and seems willing to tolerate poor testing practices in order to allow machines to pass tests they otherwise would not.

New York State regulations call for an independent security review of voting machine source code. The firm NYSTEC<sup>13</sup> was hired to fulfill this role. NYSTEC was hired without any real evaluation by the State Board of Elections or voting rights advocacy organizations. Many, including the author, were concerned that NYSTEC was unqualified to perform the independent analysis as they lacked any relevant experience

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<sup>11</sup> <http://www.ciber.com/services/federal/index.cfm?id=fedgovt-ivv-ivmqt>

<sup>12</sup> See "The Dirty Little Secrets of Voting Machine Companies"

[http://www.votetrustusa.org/index.php?option=com\\_content&task=view&id=595&Itemid=26](http://www.votetrustusa.org/index.php?option=com_content&task=view&id=595&Itemid=26)

<sup>13</sup> <http://www.nystec.com>

with voting systems. But to date NYSTEC has indeed acted independently of CIBER, pushing back on several important security issues. Among other things, NYSTEC criticized CIBER's security test plan, stating that it had significant shortcomings.

## ***Can Current Voting Systems Meet State Requirements?***

New York State's ongoing process of voting machine certification is charting unexplored territory with strict statutory requirements beyond that called for in most other states. The current inability and/or unwillingness of the voting machine vendors to meet State requirements calls into question whether any of the systems currently being tested can be certified unless the State Board of Elections compromises on the regulations. Unfortunately, current indications are that the State Board may be willing to sacrifice full compliance with the letter of New York State law in order to meet the currently targeted September 2007 implementation deadline.

- **New York State's 2005 Voluntary Voting System Guidelines Requirement**

One of the strengths of the State's regulations is the requirement that all systems must meet the Federal 2005 Voluntary Voting System Guidelines (VVSG), the first state to do so. Initial reports indicate that all systems are failing tests which prove compliance with this high bar set by New York State. Voting systems which do fail to meet the 2005 VVSG requirements cannot be certified under State regulations. This raises the distinct possibility that, if the Board of Elections is strict in its interpretation of statute, no systems will pass certification testing, and New York State must delay HAVA implementation beyond the current September 2007 target.

- **New York State's COTS Software Escrow Requirements**

New York State has a statutory requirement that requires that all source code be placed in escrow with the State, including so called "COTS" source code. COTS (**C**ommercial **O**ff **T**he **S**helf) refers to third party software developed by other companies used in the voting machines. One example of COTS software is the operating system, Microsoft Windows XP, used by the Sequoia and Avante DREs currently being tested. But there are other, smaller COTS components which provide a specific, pre-built functionality or service.

Machine vendors and CIBER want to interpret the NY Guidelines in the loosest fashion, claiming that they cannot and should not provide source code for COTS software. But exemptions for COTS software must not be compromised away, especially not in ways that decrease transparency and security.

If the State Board of Elections stands fast on the statutory COTS requirement, it is likely that at least two DRE systems currently undergoing testing will not be certified. But there is danger the Board may negotiate a compromise, using a loose interpretation of the statute which weakens security and transparency protections.

## ***Problems in CIBER's Testing Practices***

Voting machine vendors must at a minimum be held to the same development standards used for commercial software available to consumers. But several practices used by CIBER call into question the rigor of the certification process and how much leeway is being given to voting machine vendors, allowing them to pass tests they would not otherwise survive.

- **Machine vendors have been allowed to submit software changes to products during testing.**  
It was reported at a State Board of Elections meeting in November that machine vendors have continued to submit changes to products during certification testing. This practice makes it virtually impossible to conduct rigorous testing, is contrary to standard software development industry practice and reveals that the vendors have submitted immature products that cannot meet State standards without numerous and ongoing changes.
- **Repeating Failed Tests Until They Pass**  
Early defect reports received from CIBER indicate use of an ill advised procedure—failed unit tests are repeated until there is a single case when the defect does not occur, then the test is marked as passed. This procedure is a dangerous practice that will result in severe machine failures on Election Day.

Many software defects are not 100% repeatable - they may occur 3 times in a row but then not occur again for a time due to changed internal conditions. But because a test passes once after several tries does not mean the defect will not manifest itself in actual operation—it most assuredly will.

## *Looking Forward*

According to the most recent schedule published by the State Board of Elections<sup>14</sup>, voting systems are scheduled to be certified on February 20, 2007. Certification testing is still ongoing, with a significant portion of the work still to be completed. Following is a brief discussion of some of the issues that still lie ahead of us.

- **Possibility of Further Delays**  
The certification schedule was recently delayed when a review found CIBER's test plan inadequate and had significant shortcomings. Delays caused by a rigorous testing process are correct and necessary and should be applauded, not discouraged. There must be a willingness to accept further delays when they result in a more thorough review of systems.  
  
Other reasons for delay, noted above, are the difficulty voting machine vendors are having meeting State requirements during testing.
- **Is the State Board of Elections rushing to complete certification and compromising rigor?**  
One concern of voting rights advocacy organizations is the willingness on the part of some Board of Elections officials and staff to compromise regulatory requirements in order to complete testing on schedule. If too much is conceded, New York State could find itself certifying voting systems which fail to function properly during elections, are difficult to use and maintain, and that must be replaced within a few years.
- **The State Board of Elections is unprepared for the next steps in voting machine adoption.**

<sup>14</sup> <http://www.elections.state.ny.us/NYSBOE/hava/BOETimeline112206.pdf>

The Board has consistently underestimated the complexity and scale of the task of testing, certifying, and deploying new voting systems. Simply put, they are out of their depth both technically, and in their ability to manage a project of this size and importance.

After certification, there is still much that needs to be done that the New York State Board of Elections has not yet even begun to address. Crucial procedures and standards for acceptance testing, software version verification, chain of custody issues, and a host of other items have yet to be even considered. These procedures are crucial to the proper use and roll out of new computerized voting machines across the State, and cannot be simply made up as we go along.

We have a right to expect the best voting machines, testing, standards and procedures. The State Board of Elections, in its past and present approach to implementing HAVA, has consistently shown that it is incapable of providing that guarantee to New York State voters.