

**AAUW Kingston Branch • Citizens for Voting Integrity • E-Voter Education Project
New York Citizens for Clean Elections • Task Force on Election Integrity**

Legislative Memorandum

Keep Lever Voting Machines

Contact: Teresa Hommel
Chairwoman, Task Force on Election Integrity
October 22, 2009

We urge the New York State Legislature to take action to enable our state to keep the lever voting machines, and to give our State Board of Elections direction and support for this purpose.

The replacement of our levers by voter-marked paper ballots and precinct-based optical scanners would be unwise at this time. This is partly a result of new economic constraints that were unforeseeable in 2005 when the decision was made to replace the levers.

In addition, much new information, detailed in this memorandum, gives urgency to the need for immediate legislative response.

Statewide support for keeping our levers is growing rapidly as the costs and vulnerabilities of paper ballots and optical scanners are becoming known. We urge our State Assemblymembers and State Senators to make every effort to enable us to keep our levers, allocate our scarce resources to more essential uses, and protect our electoral system from the risks of improperly-used computerized equipment and unsecured paper ballots.

Respectfully,

Teresa Hommel, Task Force on Election Integrity, Community Church of New York
<http://www.wheresthepaper.org/ny.html#KeepLevers>

Susan Holland and Ruth Wahtera, AAUW, Kingston Branch

Allegra Dengler, Citizens for Voting Integrity

Howard Stanislevic, E-Voter Education Project

Irene Miller, New York Citizens for Clean Elections

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1. Objective—Keep Our Lever Voting Machines!

We urge the New York State Legislature to pass legislation in 2009 to require counties to permanently retain and use the lever voting machines (levers) and continue to provide at each poll site one or more accessible ballot-marking devices (BMDs) to enable voters with disabilities to exercise a private and independent vote.

Alternatively, we urge the New York State Legislature to pass legislation in 2009 to enable each county to choose either to retain their levers to be used with accessible BMDs as described above, or to implement voting systems consisting of voter-marked paper ballots and precinct-based optical scanners (PBOS) along with accessible BMDs. Counties choosing PBOS must be required to:

- perform hand-count audits of a sufficient number of their scanners or Election Districts to achieve 99% statistical confidence that the correct winner(s) of each contest, and the correct vote share of each political party, have been accurately determined.¹
- establish and implement procedures to either (1) perform all hand-count audits immediately upon close of polls before voted ballots and other election-day materials leave public view, or (2) maintain voted ballots and other election-day materials in public view from close of polls until completion of all hand-count audits in order to enable meaningful observation and prevent tampering, opportunity, and suspicion.

2. New information and economic constraints require immediate state action.

2.a. The costs of replacing levers will be significantly higher than previously known.

The first published study of lever replacement costs, completed in May, 2009, by private citizens using public documents alone, shows that first year replacement costs for New York City exceed federal funds for this purpose by as much as \$22 million. Annual costs of using PBOS exceed the cost of using levers by as much as \$16 million.² The report states that these cost amounts should be considered lower than realistic because many costs could not be found in public documents. See section 5.

2.b. The 2009 "pilot program" shows we are not ready to use paper ballots and scanners.

Our State Board of Elections is planning a pilot program that consists of using uncertified scanners in this year's Primary and General elections for more than 1,400,000 voters—without proper ballot security and scanner verification. If we lack resources or political will to use PBOS properly in a pilot, it is unlikely that we will use it properly later. See sections 6 and 9.

2.c. Support for keeping levers is escalating rapidly as officials, voters, and organizations realize the costs and dangers. See section 8.

¹ For more info on audits: Howard Stanislevic, hscomms@verizon.net , 718-746-0449

² Lever Replacement Costs, NYC, http://www.votersunite.org/info/LeverToOpScanCost_NYC.pdf

3. New York now complies with federal mandates and need not replace our levers.³

3.a. New York offers accessible equipment in every poll site. The Help America Vote Act of 2002 (HAVA) requires one accessible voting device in each poll site. Our counties have satisfied this requirement by purchasing and using accessible Ballot Marking Devices.

3.b. Lever machines have a “manual audit capacity.” HAVA requires voting systems to have a “manual audit capacity”⁴ but the term has never been defined in law. HAVA says that voting systems consist of machines, the people who run them, and the procedures used.

For some lever systems, the manual audit consists of poll workers copying tallies from the face of the machine onto a Return of Canvass form on election night, and the recanvass a few days later when the face of the machine is compared to the Return of Canvass. For other lever systems, the machine creates a pressure-imprinted form on election night, and the rest of the procedure is the same. This is how levers satisfy HAVA’s requirement for manual audit capacity.

PBOS systems work differently and their audit is different. Voters directly mark their ballots, creating a first-hand authentic record of their intent. An audit consists of hand-counting the same votes that the scanner counted, and comparing the results.

However, current state law, as well as the State Board of Elections’ plan for pilot use of scanners this year, make clear that *meaningful* scanner audits may never occur in our state. This is because the voters’ authentic record of their intent loses authenticity at the close of polls when the paper ballots leave public view. New York has no plan for either election-night hand-count audits or continuous public observation of scanned ballots from close of polls until completion of hand-count audits many days later.

A suggestion has been made to audit scanners by counting votes on electronic ballot images created by the scanners, rather than counting votes on the original marked paper ballots. This idea suffers from the problem that such images are not voter-verified. Also, they are created by the same software that creates the scanner’s tallies, and thus the audit would not be independent of the software it purports to verify. A third problem is that ballot images on a little memory card or memory stick cannot be publicly observed, and the card or stick itself loses authenticity when it leaves public observation. Tampering by modifying ballot images would be easier than modifying paper ballots, and the entire ballot box can fit in someone’s pocket.

Meaningful audits are problematic in all states for many reasons, including lack of public observation of the “chain of custody” of ballots and other election-day materials. In this light, the intent of HAVA’s requirement for “manual audit capacity” is at best unclear. New York would be wise to avoid computerized election technology because proper use of it relies entirely upon performance of meaningful audits, which may not be possible in our political context.

While some have argued that lever audits have the same flaw as PBOS audits, in that both levers and paper ballots will leave public view after an election, the superiority of levers is not theoretical but based on practical, historical comparison. See section 4.c.

³ For more info on legal issues: Andrea Novick, Esq., anovick@fnklaw.com, 845-876-2359

⁴ HAVA does not require that any system or vote tallies actually be audited.

Levers are the only machines for which it is feasible to meaningfully audit the machines themselves to confirm their performance during an election. This is because their mechanical rods and gears are easily visible and do not have the software capability to modify their own setup. A mechanical audit of a lever machine consists of visual inspection and simple mechanical tests. A mechanical audit is appropriate for levers because they are mechanical devices, in the same way that a software-independent audit using continuously-observed paper ballots is appropriate for scanners because scanners are software-driven devices.

3.c. New York need not spend the HAVA funds we accepted for lever replacement; we can rescind ERMA and return the money. New York State agreed in federal court to replace our levers in compliance with our state law, the Election Reform and Modernization Act of 2005 (ERMA). Rescinding ERMA would be a step toward renegotiating the agreement.

If New York does not replace our levers, we would have to return the approximately \$57 million in HAVA Title I Section 102 funds that we accepted for this purpose. Returning this money would be another part of renegotiating our agreement. It would also save us hundreds of millions of dollars within the next few years (see section 5 for financial impact).

4. Levers serve the public good.⁵

4.a. Levers keep elections out of the hands of private companies. New York is one of the last states with election administration that is still independent of private corporations. Keeping levers keeps us independent.

Election administration in nearly every other state, once reliant on local officials accountable to the public, is now almost entirely dependent on private corporations that are not accountable. In those states, local officials are unable to administer elections without the equipment, services, and trade-secret software of a small number of vendors; if vendors withdrew their support, the election structure would collapse.⁶

Dependence on vendors has made elections in those states vulnerable to corporate decisions that may be contrary to the public interest, as well as corporate profiteering and claims of trade-secrecy for information that is essential to public oversight of elections.

4.b. Levers are secure and accurate. Levers are more secure and accurate than computers because they are single-purpose mechanical devices, and their proper setup can be confirmed simply and quickly by visual inspection and easy-to-perform mechanical tests. No computer is as secure as a mechanical machine, and in fact very few computers are secure.⁷

In contrast to levers, confirmation of proper setup of scanners is difficult, costly, and cannot ensure proper function on election day. This is why Boards of Elections must perform expensive,

⁵ For a longer discussion, see “Why Keep Lever Voting Machines”
<http://www.WheresThePaper.org/WhyKeepLeverVotingMachines.htm>

⁶ Ellen Theisen, VotersUnite.Org: "Vendors are Undermining the Structure of U.S. Elections"
<http://www.votersunite.org/info/ReclaimElections.pdf>

⁷ FBI 2005 Computer Crime Survey http://www.WheresThePaper.org/FBI_ComputerCrimeSurveyPR.pdf and "You Go to Elections with the Voting System You Have: Stop-Gap Mitigations for Deployed Voting Systems," <http://www.WheresThePaper.org/YouGoToElectionsStopGapMitigations.pdf>

time-consuming post-election hand-count audits in order to confirm secure and accurate computer function on election day.⁸

Some New Yorkers believe that scanner certification guarantees proper function during elections. Unfortunately, certification testing only shows whether a particular scanner is capable of working under tested conditions. Many variables are not tested, especially ballot programming and unusual vote combinations that can trigger previously-undetected errors.

4.c. Historical comparison of voting technologies shows that levers are the most secure. In over 100 years of use, a culture of fraud has never developed around the levers. They are “tamper-resistant” because they are too cumbersome to tamper with, and problems are too easily visible. In contrast, the FBI Computer Crime Survey of 2005 showed that computer technology cannot be secured even by organizations with great expertise in computer security.⁷ Paper ballots have historically been subject to widespread tampering.⁹

4.d. Levers are manageable. Levers are easy to manage for voters, poll workers, election administrators, and maintenance technicians. Problems with levers are easily detected, diagnosed, and corrected.

In contrast, problems with scanners are mysterious, requiring Boards of Elections to rely on vendors who often say that they don’t know why the problems occurred.¹⁰

5. Levers are affordable. Scanners are not.

Our state, like the rest of our nation, is facing economic crisis. It would be irresponsible to replace our levers now with equipment that will drain resources from essential services that New Yorker's lives depend upon—especially since doing so is unnecessary and can be avoided.

It is a red flag that no governmental body has yet produced a financial projection of the initial costs of replacing levers and the continuing cost of running PBOS elections. We have two warnings of the magnitude of higher costs we will face:

- A cost study for New York City, completed in May, 2009, from public documents alone by individual citizens, shows that first year replacement costs exceed HAVA funds for this purpose by as much as \$22 million. Annual costs of using PBOS exceed the cost of using levers by as much as \$16 million.¹¹ The report states that these cost amounts should be considered lower than realistic, because many costs could not be found in public documents.

⁸ Full discussion of problems: “Back to Basics” <http://www.WheresThePaper.org/BackToBasics.pdf>

⁹ Deliver the Vote, 2005, by Tracy Campbell, Carroll and Graf Publishers. Also, Election Administration in the United States, 1934, by Joseph P. Harris, Ph.D., at http://vote.nist.gov/election_admin.htm

¹⁰ "Ballot-Scanner Voting System Failures in the News - A Partial List," May 22, 2009. Describes 186 occurrences of malfunction including 80 incorrect tallies, 35 EMS miscounts, 22 memory card failures, 5 mark-detection failures, 13 instances of misprinted ballots, and 31 miscellaneous operational failures. Readers are cautioned to remember that although scanners have many failures, they are superior to touchscreen-style voting machines (called DREs) which have more failings and 3 times more failures. <http://www.votersunite.org/info/OpScansIntheNews.pdf>

¹¹ Lever Replacement Costs, NYC, http://www.votersunite.org/info/LeverToOpScanCost_NYC.pdf

5.a. Levers are affordable. Lever parts and maintenance are easily available.¹² Most parts are standard hardware store items, while a few have always been made-to-order in machine shops. Levers can be kept in nearly-new¹³ condition for another hundred years at minimal cost: one county recently renovated their levers to nearly-new condition for an average cost of \$426 each. Full inspection and maintenance of this kind is recommended every 4 years.

5.b. Scanners are not affordable. State and county election offices nationwide are struggling to deal with the spiraling costs of computerized elections in the midst of our economic crisis.¹⁴ The costs they face were not foreseeable when their jurisdictions rushed to buy computerized equipment. But New York can learn from their experience and avoid their mistakes by keeping our levers accompanied by accessible BMDs.

For example, after expiration of the 5-year warranty required by New York law, maintenance costs will increase annually as delicate electronic components need replacement. The scanners themselves will need replacement within the decade or shortly thereafter—computers do not age well, especially if they have to be moved from storage to poll site and back repeatedly. Verification of the scanners' proper function on election day requires hand-counts that will increase the cost of elections. Printing costs for paper ballots will be an additional expense.

6. New York's law is not ready for elections with paper ballots and scanners.

6.a. Paper ballots must be secured by observation. History tells us that paper ballots can be secured only by continuous public observation, and our law must be updated for this. Whether hand-count audits take place at close of polls on election night, or after proper observation for many days, both solutions require additional county resources, as well as additional party resources to recruit sufficient observers. If our state lacks the resources and political will to mandate one of these solutions, we should not proceed to replace our levers with paper ballots.

The tamper-resistant nature of levers has enabled us to conduct secure lever elections with minimal security procedures. But paper ballots and computers invite tampering, innocent errors, and suspicion. If we do not mandate the security that paper ballots need, our voters and candidates will not have full confidence in our election results, and our county election administrators will suffer the unfair burden of suspicions and potential allegations of irregularities but will not be able to call upon observers to attest to proper continuous security.

6.b. A statistically-significant number of scanners or Election Districts must be verified by hand-counts to confirm correct outcomes and party vote-shares. Our law must be updated for this, because now it requires only 3% of scanners to be verified by hand-counts, and 3% will not reveal many errors made by the scanners and the ballot programming.¹

7. Arguments in favor of PBOS twist facts and reasons.

¹² International Election Solutions services the Shoup machines used in New York City and Albany. http://www.WheresThePaper.org/Shoup_IntlElectionSolutionsMar18_09.pdf
Voting Machine Service Center, Inc. services the AVM machines used in most other counties. http://www.WheresThePaper.org/VotingMachineServiceCenterletterJan23_09.pdf

¹³ Nearly-new means that the insides are like-new but dents in the external housing would still be visible.

¹⁴ Electionline, Feb. 19, 2009
<http://www.WheresThePaper.org/Electionline090220StateCityElecOfficesEconomicCrisis.htm>

7.a. Rebuttal to “We need a paper record of every vote.” In fact paper records are needed to perform “software-independent” verification of software-created results. Scanners use two kinds of software, both of which need verification. First is their basic programming which has failed to pass its certification tests in over three years of testing by our State Board of Elections. Second is their ballot programming which changes with each election, is difficult to create correctly, is prohibitively expensive and time-consuming to test fully, and is typically used without being adequately tested. This is why we need to perform hand-counts of the votes processed by a statistically-significant number of scanners or Election Districts after each election.

In contrast, levers don’t use software and don’t need software-independent verification methods. Lever programming is mechanical, and is verifiable by visual inspection and mechanical tests.

Concerns that levers do not meet computer standards should be replaced by concerns that computers don’t meet mechanical standards—simplicity, observability, speed and ease of visual and mechanical verification of ballot programming, and ease of detection and repair of problems.

7.b. Rebuttal to “We’ll have the paper ballots to recount if we need them.” First, how will we know if we need a recount? Second, “if we need them” won’t give anyone standing or a cause of action to get a court order to count the votes on paper ballots. Third, if the ballots have been out of public view since the end of the election day, their value is diminished.

7.c. Rebuttal to “We’ll have the ballot images to recount if we need them.” Ballot images are computer-generated and not voter-verified. They would be easier to tamper with than paper ballots. An entire ballot box fits on a memory card the size of a quarter. If you have ever watched a photo retoucher remove a blemish from someone’s chin in a portrait, you can understand that votes can be moved around on a ballot image more simply because it’s only black and white – no need to blend skin tones. “If we need them” would still be a problem, as in section 7.b. Elections should be simple, understandable, and observable, but paper ballots, ballot images, and scanners turn elections and election security into an unnecessarily complex “Rube Goldberg” task.

7.d. Rebuttal to “Some localities don't maintain or secure their levers. (Alternative form: I heard about or encountered a broken lever machine.)” Use of computers will not solve faulty administrative practices or lack of maintenance, but those poor practices applied to the use of computers could lead to broken computers, erroneous software, corrupt ballot programming, or tampering that could have wide effects and easily remain unnoticed.

7.e. We urge you to review three documents for more arguments and rebuttals.

- a. “FAQ: Why Keep Levers” http://www.WheresThePaper.org/FAQ_WhyKeepLevers.pdf
- b. “Back to Basics” <http://www.WheresThePaper.org/BackToBasics.pdf>
- c. “League of Women Voters standards were adopted for electronic systems, and never were intended to apply to non-electronic systems such as lever machines”
http://www.WheresThePaper.org/rebut_NYVV_LWVNYS_Feb12_09.htm

8. Support for keeping levers is escalating rapidly as officials, voters, and organizations realize the costs and dangers.¹⁵

15 counties have passed resolutions to keep levers: Chenango, Columbia, Delaware, Dutchess, Essex, Fulton, Greene, Herkimer, Rensselaer, Schuyler, Sullivan, Tioga, Ulster, Warren, and Washington. A resolution to keep levers was passed by the Intercounty Legislative Committee of the Adirondacks (Clinton, Essex, Fulton, Hamilton, Herkimer, Lewis, St. Lawrence, Saratoga, Warren, and Washington counties). The Association of Towns' 2009 Legislative Program supports keeping levers. District Council 37, AFSCME, released a statement of support. Thousands of individual New Yorkers have signed petitions to keep levers. The Westchester County Board of Legislators sent a letter to Governor Paterson and state legislative leadership urging continued use of levers.

9. New York is planning to use new uncertified scanners in the 2009 Primary and General Elections for over 1,400,000 voters--with no effective security or verification.¹⁶

New York is the first state to independently and professionally test the computerized election equipment submitted to us for certification; we must thank our State Board of Elections for this. However, after more than 3 years the scanners have failed to pass their tests, and now we will use them anyway in this pilot.¹⁷

The pilot will take place in this year's primary and general elections for more than 1,400,000 voters. Only 3% of scanners will be selected for hand-count verification, and the hand-count will take place after voted ballots have been out of public view for many days. This plan violates the interests of voters, candidates, and political parties.

This pilot is a wake-up call: the legislature cannot rely on our State Board of Elections to stand alone against pressures from the U.S. Department of Justice and the Federal Court as well as uninformed public opinion that assumes that the new scanners will work as reliably, conveniently, manageably, and inexpensively as our levers.

Despite the use of uncertified scanners, the pilot plan does not require 100% hand-count verification of scanner tallies on election night, nor continuous observation of the "chain of custody" of the ballots or other election-day materials until later hand-count verification procedures, nor a statistically-significant number of hand-counts.

The pilot program has been widely criticized.^{17, 18, 18} The pilot program's lack of proper security and verification procedures is an urgent reminder that security for paper ballots and verification for scanners are burdensome, time-consuming and expensive. Our county Boards of Elections may not have sufficient resources to secure paper ballots and verify computer function in this

¹⁵ All items in this section are available at www.WheresThePaper.org/ny.html#CountyResolutions or <http://nylevers.wordpress.com/>

¹⁶ Stanislevic, "New York Rolls Out Uncertified Voting Systems for 2009 Elections" has links to all documents on the New York State Board of Elections web site. <http://e-voter.blogspot.com/2009/05/new-york-rolls-out-uncertified-voting.html>

¹⁷ Ellen Theisen, VotersUnite.Org: "New York's New Plan for Deploying Optical Scanners Is Dependent on Historically Undependable Vendors and Proper Functioning of Their Historically Defective Equipment" <http://www.votersunite.org/info/NYSBOE-June4Plan.pdf>

¹⁸ "Comments on the NY State Board of Elections Proposed 2009 Pilot Plan" by Bo Lipari <http://www.WheresThePaper.org/LipariCEMACPilotComments.pdf>

year's pilot, but they will have fewer resources next year as our economic downturn continues; their resource deficiency will be more severe if the use of paper ballots and scanners replaces our affordable and easily-secured lever machines.

10. Conclusion

State legislative action now to retain our levers can help our state both economically and in support of manageable elections.

New York is continuing to lose jobs and our economic base. It would be irresponsible to replace our levers now with equipment that will drain resources from essential services that New Yorker's lives depend upon.

Use of paper ballots and scanners in our elections would introduce new vulnerabilities to both innocent and malicious errors that would be potentially uncontrollable. At best, errors would be difficult and expensive to detect--due to the need to maintain public observation of voted ballots and to conduct sufficient hand-counts. Detected errors would be difficult and expensive to correct if correction were even possible.

To keep our democracy vital, we must use equipment that our Boards of Elections can understand and manage at least as well as our levers; that people without computer science degrees can understand; that don't require software-independent verification of software function; that have a history of minimal errors, problems, and tampering; and that keep our elections under the control of public servants rather than forcing our Boards of Elections into dependence on private corporations.

"Using computers" and "being modern" may be tempting, but citizen understanding, oversight, and control of governmental processes, including elections, are the basis of democracy. Government behind closed doors is easily corrupted. Computers are closed doors that can't be opened.

The people of New York need our State Senate and Assembly to act now to enable our counties to retain and use our time-proven lever voting machines.

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