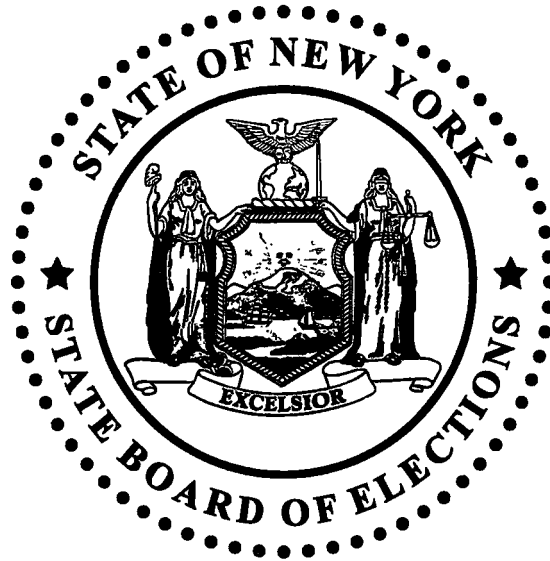


**REPORT IN RESPONSE TO THE OPPORTUNITY PROVIDED FOR
IN A GRANT FROM THE U.S. ELECTION ASSISTANCE COMMISSION**



**Develop and Document Processes and Best Practices for Coordinating
QUALITY AND COST-EFFECTIVE POST-ELECTION AUDITS**

**Robert A. Brehm
Co-Executive Director**

**Todd D. Valentine
Co-Executive Director**

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DEVELOPING QUALITY AND COST-EFFECTIVE POST-ELECTION AUDITS

The New York State Board of Elections (referred to herein as NYSBOE) was awarded a grant from the US Election Assistance Commission (EAC), for the purpose of assessing innovative methodologies for the conduct of post-election audits. While there has been and continues to be debate nationwide among election administrators, statisticians, and other election stakeholders concerning, inter alia, the basis and size of any post-election audit, the issue of the need to validate the accuracy of any voting system is a settled one. It is of critical importance for all election administrators to take every step possible to restore the public's faith in the voting process and most importantly, the voting system on which votes are actually cast. The concept of auditing elections and thus ensuring the voting public's highest level of confidence possible in any election, has swung from one extreme - wherein there existed no paper trail of votes cast and no post-election audit requirements for legacy voting systems - to the other, in which extensive and exhaustive statistical-based and risk-limiting post-election audit options have been proposed and/or adopted. The intent of this research effort and the information it produces is to help ensure that common sense be brought to the all-important post-election audit conversation. The New York State Board of Elections, with the assistance of the grant awarded to us by the US Election Assistance Commission, hopes to achieve that goal in this report.

Post-election audits in New York are not election recounts - audits are intended to confirm a voting system's performance, without regard for the closeness of any single contest on a ballot. Post-election audits should be conducted not only on precinct-based voting systems, but on central count systems, as well. The ensuing report concerns itself not with the merits of the various audit options available to election administrators, but rather with the primary intent of the grant as awarded: the manner in which a post-election audit can be more effectively accomplished.

It is important to note, in the context of ensuring the accuracy of a voting system, that in tandem with requiring post-election audits, election administrators should also require robust, full-measured pre-election logic and accuracy tests. When considered with the actual configuration of ballots within election management systems and the attendant 'proofing' of that work (prior to the production of ballots and the creation of voting system memory cards or other similar election-specific programming devices), a full-

throated pre-election confirmation of end results of ballot configuration and production processes and the implementation of post-election audit requirements will do much to help ensure the highest possible levels of confidence of not only election administrators, but of voters, candidates, and other stakeholders.

Manual post-election audits consist of the hand-counting of ballots cast, comparing the audit results to voting system results tapes/reports. If the voting system being audited is a precinct-based system, election officials should hand-count cast ballots from a pre-determined number of voting systems used in a particular election (for example, a subset of the number of scanners used in any given election), primarily because of the significant time and effort involved in sorting ballots by political subdivision from a voting system that was configured to count ballots from more than a single precinct or political subdivision. Administrators should adopt written procedures which direct the conduct of any audit, and further, should include escalation thresholds which are clearly defined so that unresolved discrepancies in the vote counts can be further evaluated and/or resolved. If the voting system being audited is a central-count system, election officials should hand-count the cast ballots from a pre-determined number of precincts counted by that system, again with escalation provisions. A copy of New York's audit procedure and sample forms for use during an audit appear in Appendix 2 of this report.

The search for options to consider in the development of quality and cost-effective audits revealed an important distinction in the use of the term 'automated' audit:

- Automated Audit - relies solely on the use of independent software to tabulate subsets of ballots (or all ballots, if required or desired), which are then compared to the tabulated results of ballots cast on voting systems.
- Machine-assisted Audit - is similar to the independent process of an automated audit, however a machine-assisted audit is augmented by the additional requirement that within the subsets of ballots audited, a manual comparison of some subset of actual ballots and audited ballot images be made.

For purposes of clarity, the two audit options most election administrators have heard and read about are described herein:

- Risk-limiting Audit - is based on statistical principles which require that subsets of ballots based on margins of victory, be audited and compared to the vote totals (machine counts) for the same subset of ballots on a contest basis, and further

includes a process which assesses evidence that the outcome of a contest is still correct, even when errors have been identified in the hand-counted results. In a risk-limiting audit, as contest results get closer, the sample size grows exponentially. The audit escalates when differences between audit results and voting system results are significant. Risk-limiting audits concern themselves not with the performance of a system, but rather that the winner of the election was actually the winner.

- Statistical-based Audit - begins with a statistical threshold sampling of ballots which will be audited. The results of the audit counts are then compared with vote results tapes/reports produced by the voting system. By way of example, in the State of New York, county election administrators are responsible for conducting elections, and as such they are required to comply with the State's Election Law which provides for a statutory 3% post-election statistical-based audit. (A copy of New York's statute and regulations appear in this report as Appendix 1.) The statute further directs the State Board of Elections to promulgate rules for the conduct of the audit, and for the process to be followed by county boards of elections for the expansion of the audit when discrepancies are encountered.

There are many published reports and white papers which discuss the types of post-election audits election administrators may consider adopting for statutory, regulatory, or procedural purposes. These reports, and those which discuss the merits of automated vs. machine-assisted audits can and should be assessed by administrators prior to making decisions relating to post-election audits. A bibliography identifying a sampling of audit-related reports can be found in Appendix 6.

When considering the implementation of a post-election audit, and regardless of the type of audit a jurisdiction may choose to conduct (manual, automated, or machine-assisted), election administrators should consider the instances which will require an escalation of the audit and incorporate same into written procedures. Uniform escalation processes required to be implemented throughout a state will help ensure that in contests which incorporate more than a single political subdivision, uniform audit rules will apply.

In any audit, discrepancies must be resolved to the satisfaction of the audit team and the rules governing the audit. When discrepancies cannot be resolved, an escalation in

the number of systems or ballots to be audited must be provided for. In New York, such guidelines for escalation have been adopted for use in existing manual audits, and are recommended to jurisdictions, as follows:

- Any one or more discrepancies between the confirming manual counts and the original voting system counts which, when taken together would alter the vote share of any candidate, question or proposal by one tenth of one percent (0.1%) or more of the hand counted votes for respective contests, questions or proposals in the entire sample; or
- If discrepancies of any amount are detected between the confirming manual count and the original voting system count from at least 10% of the systems initially audited, the audit team will manually count the votes recorded on all the ballots from no less than an additional 5% of each type of the same type of voting machine or system which contains any such discrepancy or discrepancies.

Any audit escalations, regardless of the increment scale adopted by a jurisdiction, should be well-documented and include each stage of the audit as performed, any discrepancies and reconciliations, if any. The audit stages currently in place in New York, beyond the initial 3% required by statute, include escalations occurring at 5% and 12%, after which a complete manual audit is required. See Appendix 1 for New York's audit statute and regulation, and Appendix 2 for the accompanying procedure.

As with the topic of types of audits a jurisdiction may require, those same reports referenced in the bibliography in Appendix 6 also discuss the parameters of audits, as well as escalation thresholds. The positions presented in these and other published reports can and should be evaluated by administrators prior to making decisions and drafting procedures relating to the conduct of post-election audits.

In addressing the mandate of the EAC's grant award, the NYSBOE sought to evaluate innovative methodologies which would result in quality and cost-effective post-election audits. New York's own experiences with post-election audits reflect the Election Law's statutory requirement that such an audit be a manual one. The grant's objectives prompted research into options available to automate or otherwise machine-assist the post-election audit process.

Internet searches and conversations with election administrators provided little in the way of solid approaches to improving or expediting the actual post-election audit process, regardless of the audit option adopted by any jurisdiction. The NYSBOE then took steps to issue a Request for Proposal, so that a broader and more consistent effort to identify projects that spoke to the purpose of the EAC grant could be evaluated. A single response was filed with the State's procurement office, and upon the successful evaluation of that response, NYSBOE entered into an agreement with ClearBallot Group of Boston, Massachusetts. For the purposes of this report, it was required of ClearBallot Group to:

- demonstrate the ability to independently interpret ballot configurations;
- accurately recognize and tabulate votes cast;
- provide options for the comparison of tabulated voting system results and tabulated audit results;
- easily accommodate the escalation of an audit; and
- generate a variety of reports that would assist election administrators in comparing and evaluating votes cast.

To help election administrators better understand the process of automating or machine-assisting a post-election audit, we further arranged with the ClearBallot Group to create a DVD which would help readers make better understand the discussions presented in this report. That DVD is provided in Appendix 7.

MANUAL POST-ELECTION AUDIT

New York's Election Law provides for a manual audit of subsets of ballots cast in any given election, thus serving the public interest by enabling election administrators to independently confirm the ability of a voting system to properly interpret and award votes marked on ballots cast by voters.

This report considered concerns that:

- Due to the human element involved in a manual audit, the process is a subjective one. There is a natural temptation for audit teams to want to make audit results match voting system results.
- The manual evaluation of votes cast can be inaccurate and unreliable, as each audit team member may differently interpret marks made on ballots by voters and associated voter intent.
- The manual audit process is a time-consuming one and requires considerable staff resources.
- Costs associated with the conduct of manual audits are difficult to anticipate, and may exceed the financial resources available to election offices.
- Manual audits produce no data beyond the record of votes which audit team members consider cast. Therefore, no information is available to election administrators that could be evaluated and used for improving voter and/or poll worker educational materials.
- The manual audit process challenges the ability of election administrators to create and maintain a more transparent audit process, as it is nearly impossible to schedule manual audits by jurisdiction, and no ability to select or identify a time certain for the completion of such audits.
- Also, by way of compromising the intent of transparency, the stakeholder participation in a manual audit requires numerous 'observers', the end result being that in many, if not most instances, candidates do not have sufficient

advocates to witness a multi-point manual audit when the ballots to be audited involve broad-based contests which were counted on multiple voting systems.

AUTOMATED POST-ELECTION AUDIT

The automated audit of subsets of ballots cast serves the public interest in much the same way that a manual post-election audit does, however an automated approach provides election administrators with more options and better solutions:

- Automated post-election audit systems and processes must be independent of voting system vendor software and hardware, and as such are able to independently confirm the ability of a voting system to properly interpret and award votes marked on ballots cast by voters.
- Automated audit tools make the audit process less subjective, as the manual interpretation of votes cast is completely bypassed. By removing the human factor from this equation, the audit process becomes much more transparent and completely unbiased.
- The actual processing of ballots to be audited when using an automated audit tool involves considerably less time and considerably fewer staff resources, both of which have a direct and positive impact on election offices and their respective budgets.
- The economies of time and staff resources resulting from an automated approach to audits will enable staff to be redeployed to other post-election tasks, ensuring that the time it takes to canvass, audit, and certify election results can be shorter and the tasks associated with those goals can be better managed.
- The economies of time saved via the use of an automated post-election audit tool will, in a more timely way, assure the public and candidates that vote counts are accurate and that winning candidates are indeed the winners of their particular contests.
- An automated audit process helps to ensure the basic intent of a post-election audit and the goals of transparency. The methodology lends itself to the more efficient scheduling of audits, and the inclusion of candidates, attorneys, and others in same. In addition, stakeholders would no longer need to have a cadre of supporters serving as audit monitors.

- The availability of audit results is much more immediate, and the accuracy of those results is much greater and more consistent than those obtained via manual audits.
- In the event that a subset-based audit requires escalation, there is no significant impact, by way of staff resources, budget or time concerns, as any escalation is easily facilitated. The exponential increased speed with which audited ballots can be processed could allow for a broader expansion of the audit without waiting for anomalies in vote counts to trigger a multi-tiered escalation process. An additional benefit when utilizing an automated audit tool is the ability for election administrators to audit all ballots cast in an election, if the jurisdiction's election administrators were either inclined or required by regulation or statute, to do so. Public faith in the accuracy of election results is more efficiently restored through the use of an independent automated audit tool.

BEST PRACTICES FOR PREPARING AND CONDUCTING A POST-ELECTION AUDIT

New York's sixty-two counties have been conducting manual post-election audits since 2009, when voting migrated from lever machines to optical scan voting systems. A number of best practices have resulted from experiences associated with the conduct of these audits, and have been incorporated into statewide procedures, which are presented in Appendix 2. Audits are required to be performed on precinct-based and central count voting systems, however compliance with the latter provision (in those counties which use central count systems) has been lacking. An additional component in New York's newly-upgraded monitoring program of voting system use is to reinforce awareness of the inclusion of all systems in the post-election audit, including central count systems.

The following are best practices and recommendations resulting from audit experiences:

Preliminary Organizational Work

- Prepare all necessary audit tally sheets for each voting system or batch of ballots that may be subject to an audit, reflecting political subdivisions and in a primary election, those political parties reflected on systems/ballots to be audited.
- Evaluate the audit work to be completed and assign an appropriate number of audit teams and supervisors to the task, taking into consideration the number of voting systems/ballots to be audited and the number of corresponding ballot styles constituting those groupings to be audited. Consider utilizing four-person audit teams, with assigned duties as herein described.
- In staffing an audit, consider bipartisan or other staffing measures that will help ensure appropriate checks and balances, as well as transparency. For example, do not permit a poll site inspector to serve on an audit team that will audit the same contests which were on that poll site inspector's Election Day ballot. Be sure the audit team has adequate supervision, in the event assistance is required.
- In addition to providing written procedures for audit team members to follow, which can be also be referred to during the audit, have each member of the team

including any supervisor or manager, sign an Oath of Office (see sample in Appendix 2).

Organizing the Audit Site

It is critical that the decorum of the audit site is conducive to the important work to be conducted in it. An organized and orderly work space, and as quiet an atmosphere as possible will help ensure the audit teams have an appropriate environment in which they can concentrate and accurately log their findings.

- Work stations (tables) should be placed at distances from each other sufficient to allow for an adequate path of travel for audit team members, supervisors and observers. Observers should be able to hear and see the activity of the audit team, but should not be so close to the team as to hover over them or distract them.
- Sufficient and comfortable seating should be provided.
- Audit team members and supervisors should wear name tags.
- Observers should sign in and identify whom they represent. Consider identifying observers with a "Guest Pass" name tag, so that security can be maintained in a crowded and/or active audit site.

Conducting the Audit

It is important that audit team members are not provided with voting system results prior to or during the audit. This will help avoid the opportunity or instance of audit team members' inclination to have audit results match election results.

- The 'read and mark method' has proven to be the most practical method for actually conducting a manual audit. Once ballots have been sorted for audit, an audit team member reads aloud the votes appearing on each ballot to be

audited. A different audit team member should observe the votes being read, to ensure that they have been accurately announced.

- As the votes are read and verified, an audit team member will mark the vote(s) on a tally sheet, with an additional audit team member observing the marks posted to the tally sheet to ensure that they have accurately been recorded.
- Audit team members should complete and sign all documentation required by their jurisdiction before closing an audit session, then re-package and secure ballots and documents as directed.

Security at Audit Sites

Be sure that when rest breaks are taken, support staff is assigned to guard the ballots and audit documents until the audit team returns, or is replaced.

Adequate supplies to ensure a chain of custody for ballots and audit documents are imperative. Be sure to provide audit teams with:

- Numbered, tamper-evident seals for securing containers into which audited ballots will be placed;
- log sheets to identify to whom ballots have been delivered for auditing;
- a copy of the audit procedures and any additional guidance materials provided by election officials, for reference as well as for demonstration to observers who may question some aspect of the audit process;
- binder clips {no paper clips} and security envelopes or pouches for managing and securing batches of ballots to be audited;
- red pens or pencils, highlighters, post-it notes; and
- containers {boxes, bins, etc} of an appropriate size, into which batches of audited and unaudited ballots can be labeled and placed, to keep them separate and secure.

INTRODUCTION TO THE ClearBallot AUTOMATED

POST-ELECTION AUDIT

ClearBallot Group is one of several vendors that have developed software that can assist election administrators in facilitating post-election audits. ClearBallot's automated audit tool has been developed to serve the election process and election administrators as an independent and automated audit system, and does so by combining modern software architecture and commercial, off-the-shelf (COTS) scanners. In our introductory meeting with the developers of the ClearBallot audit tool to discuss the goals of this grant's directives and how their system might address those directives, we learned that ClearBallot Group shares the mutual goals of validating the accurate performance of voting systems and the accurate reporting of those results.

The intended result of any automated or machine-assisted audit of voted ballots is an increased level of confidence resulting from the ability to derive audit vote totals from ballots and/or ballot images that can then be used to validate Election Day vote totals.

A major requirement of any audit tool is the need for absolute independence from the software used for the original tabulation of ballots cast. Via interviews with the audit system developer, and in the subsequent demonstration of the system, we learned that:

- The developer has no access to voting system proprietary election management system software, which is the nexus of all ballot configuration and production tasks;
- The developer uses no proprietary hardware, and has designed their system to use unmodified, commercial off-the-shelf (COTS) scanners;
- Election administrators provide to ClearBallot the same ballot PDFs which will be provided to a print vendor for ballot production;
- ClearBallot independently converts those PDFs into unique ballot definition files, and readies the audit system to scan, read and report on ballots cast by voters from whatever audit groups the election jurisdiction has identified, or indeed for the scanning of all ballots cast in any given election;

- At no point in the post-election audit process is there any interaction between the voting system proprietary software and the audit system's software, thus maintaining the foundation and premise of any automated audit - complete independence;
- The ClearBallot system, through the use of software, generates reports which provide election administrators with data which they can use to identify and/or evaluate anomalies, trends, or other aspects of the voting process. A sampling of the system's reports can be found in Appendix 4;
- The system uses a high volume batch feed scanner in conjunction with a laptop computer to tabulate votes cast. Tabulation is in real time, and is limited only by the processing speed of the computer. A multi-scanner array is possible, each with its own laptop which can be networked for aggregating votes;
- The system is designed to scan and compare data against Election Day results thus providing an automatic gauge of the accuracy of the election using 'match points', as developed by ClearBallot and defined as a single point of comparison that can be computed by both the voting system and the audit software. Match points for the audit system include the number of ballots cast on the voting system compared to the number scanned by the ClearBallot system, along with a comparison of the number of votes cast by candidate for each system. The audit software includes two types of match points:

Ballot points - are computed by multiplying the number of precincts by the number of "counter groups" (e.g. Election Day voters, Absentee, Early, etc.). For example, in a jurisdiction with 100 precincts/districts and 4 counter groups - Election Day, Absentee, Early voters and other - there will be 400 ballot match points. The maximum number of ballots cast by absentee voters in Precinct 1 constitutes one match point. The actual number of ballot points reported by the audit software eliminates ballot points where no ballots were cast.

Vote points - are computed by multiplying the number of candidates/choices in the election by the number of ballot match points. By way of example and staying with the scenario described for ballot points, if the jurisdiction has 100 candidates/choices across all ballot styles, the number of vote points would be 40,000 (i.e. 100 candidates x 400 ballot points). The

number of votes cast for Candidate Jones in the contest for State Senator in Precinct 1 on Election Day constitutes one match point, and just as described above, the actual number of vote points are computed only for actual ballot points.

- The system provides statistical analysis via the comparison of the results output file from the voting system's election management system (EMS) to the results obtained after the scanning of ballots using the ClearBallot software. Analysis could also be performed independent of the system on an administrative level as well, by visually comparing the results reports from the voting system's EMS to those generated by the ClearBallot system;
- The technology has the capability to "electronically scissor out" vote targets for each voting position and to sort ballots by the density of marks made by voters. This functionality refers to the process of extracting a subsection or subsections of a ballot image and displaying the 'scissored' images in a report such as ClearBallot's *Vote Visualization* report (see Appendix 4). This step can be employed to evaluate vote targets or the area around a candidate's name. Hovering over the image's oval in the ClearBallot software application will calculate density and thus assess whether or not the vote will count;
- The system is also capable of providing a list of marginal votes. A sequence of up to 100 of the most marginal votes is displayed in a report, assisting election administrators in determining how those marks and associated ballots were viewed by the system. By hovering over a mark, the system provides the density information of the oval in question; and
- Value-added considerations for election administrators considering the use of automated audit tools include using any software component which can identify 'outside the oval' voter intent.

As mentioned earlier in this report, there is a school of thought among advocates of post-election audits, which maintains that no audit can be considered complete without a manual verification of actual ballots cast. In such a machine-assisted audit, this additional component of an audit process would occur after the automated audit tool has completed the audit tasks required by a jurisdiction's statutes or regulations.

When audit teams maintain the order of ballots as they are scanned during the automated audit, election administrators can match the digital image of any one ballot to that very same physical ballot. In meeting a statutory or regulatory audit requirement for this additional step, the jurisdiction is now conducting a machine-assisted audit. Once the automated audit has been completed pursuant to the jurisdiction's specifications, ballots for this step of the audit may then be randomly selected by audit team members, election administrators, or by any candidate or other stakeholder present at the audit, as the jurisdiction's rules or statutes permit. Ballot images in the audit system are sequentially numbered and labeled, therefore the random selection is made using these unique ballot identifiers. As the audited ballots are required to be maintained in the order in which they were scanned, the audit system will identify exactly where the original ballot which corresponds to the selected ballot image identifier can be found, and a visual comparison can occur. This particular step can be accomplished manually, or the group of audited ballots can be rescanned so that the audit software will stop when the selected ballot has been reached.

In instances when election administrators chose to or may be required to, the tabulation of votes cast from the images of audited ballots may be compared to the tabulation of the images stored by the voting system. The value of this functionality does presume a high level of confidence in the images available from the voting system itself. Election administrators should use future voting system software upgrade or development projects to improve the quality of ballot images captured by the voting system, making them as useful as possible.

PREPARING FOR AND PROCESSING AUTOMATED AUDIT PROJECTS

In the NYSBOE project, and in the application of this tool in an audit, preparations include:

- From the jurisdiction's official ballot PDFs, conversion via the utilization of ClearBallot's software, those same PDFs into unique ballot definition files. Through the use of converter software, the system assimilates the contests and voting options on each PDF, along with political party affiliation, precinct ID, ballot style, and vote target.
- Test the audit system prior to use, to ensure its accuracy. The ClearBallot system can produce its' own logic and accuracy testing data images as a means to confirm the accuracy and readiness of the audit software.
- Create a "target card" {or header card) which contains voter group and sequence group information which tells the system how to categorize the ballots to be audited, and can be subsequently used to help identify a single ballot.
- Download the independently-created ballot definition files to a specifically-designated computer which is connected to the jurisdiction's COTS audit scanner. The audit software resides on a PC/server, to which multiple scanners/workstations can be attached (increasing the ability to conduct multiple audits, or audit significantly large sets or subsets of ballots.
- Scan ballots to be audited, maintaining them in order, not only by the unit to be audited (by scanner, by precinct, by political subdivision, etc.), but also maintaining the order in which the ballots were scanned.

Among the various issues election administrators and staff may encounter in the automated audit environment is an un-scannable ballot. In these instances, ballots in this category should be manually audited, and audit vote results adjusted accordingly. While a process of manual key entry could be developed, and a written procedure to be followed when this instance presents itself could be adopted, the concept of re-

interpreting a voter's choices now becomes a labor-intensive and subjective step in the process, and lends itself to unfavorable audit session scenarios.

There may be instances (albeit infrequently) where blank ballot recognition by the audit system software takes more time than anticipated. This recognition process is the step through which the automated audit software uses the election jurisdiction's official blank ballot PDFs to programmatically identify and map the appropriate contest, candidate, and other data on the ballot, including vote targets and relevant zones of interest (such as the space on each ballot wherein a voter may write-in an alternate choice). This situation can potentially slow down the efficiency of the system, therefore forewarned is forearmed and election administrators should consider this eventuality when creating schedules for the conduct of preparatory tasks required before the audit can occur.

Additionally, ballots to be audited are required to be sorted by precincts - called 'batching' - and are then placed behind target cards, readied for scanning. This preparation is a manual process, and the requisite amount of time to accomplish this task should be allowed for. Clearly this pre-audit preparation time will decrease as staff becomes more familiar with and adept at using an automated audit tool.

For any jurisdiction contemplating the use of automated tools when conducting post-election audits, administrators should be aware of the possibility that some inefficiency might be encountered, relating to any new system or process start-up. This orientation period should be reflected in audit schedules and work plans when first incorporation automation in the post-election audit process. It takes time to understand, learn, and actually implement the various features of an automated audit system, and there is an initial learning curve for staff using the system. Adequate time should be dedicated to hands-on training programs for audit team members and other appropriate staff, before a system is to be used.

FUNCTIONAL TESTING OF AUTOMATED POST-ELECTION AUDIT

Prior to conducting any functional testing of ClearBallot's automated audit system, Voting Equipment Specialists from the New York State Board of Elections (NYSBOE) met with the developers on several occasions, to become more familiar with the basics of the system and to review the impact of changes the developer had made subsequent to our introductory meetings and prior to the commencement of functional testing. Additionally, NYSBOE staff visited the ClearBallot offices and workshops located in Boston, Massachusetts, to better understand and evaluate the audit system in action.

In order to be able to speak to issue of conducting an efficient and cost-effective audit, it was essential that conversations with system developers be frank, and that hands-on demonstrations of the audit system needed to be augmented by the actual deployment of the system in a live-election scenario. To that end, NYSBOE staff scheduled pilot projects in two counties: Saratoga and Schenectady (conducted on October 17 and 18 of 2012), in which an audit was conducted for primary election ballots as cast on both of the voting systems currently certified in New York State. The Schenectady County Board of Elections has selected the Election System and Software (ES & S) DS 200 for use in their county, and the Saratoga County Board of Elections has selected the Dominion Voting System's ImageCast for use by their voters.

To better grasp the operation of the system and the throughput such a system might encounter in a general election, NYSBOE staff revisited Schenectady and Saratoga counties to audit ballots from the 2012 general election, and added an additional visit, to Monroe County to expand the functional overview of the system's use in a larger jurisdiction. (These additional pilot visits were conducted on December 18, 2012 and January 14, 2013).

Aspects of the pilot projects which were considered in the selection process were:

- Adaptability for multiple voting systems (In New York, the two voting systems certified for use are the Election System and Software - referred to herein as ES & S, model DS 200 and the Dominion Voting System's ImageCast model. Version numbers and voting system information can be found in Appendix3).
- Jurisdictions of varying sizes - in New York the jurisdictions having the responsibility to prepare for, conduct, and audit elections are its counties: In

2012 Monroe County, with 827 election districts (precincts), had 489,615 voters on file, with Schenectady at 120 election districts and 100,859 voters and Saratoga at 196 election districts and 163,782 voters.

- Dynamics of ballot complexity: Six constituted political parties are recognized in New York, and New York conducts closed primaries. Further, New York has unique general election ballot requirements, in that candidate names may appear on multiple party lines in any given general election contest.

The ClearBallot automated audit pilot projects conducted for the 2012 Primary Election, as well as the 2012 General Election were extremely successful. No anomalies in vote count comparisons were encountered. The administrators in the host county boards of elections had very positive experiences and provided helpful feedback:

- The audit teams in the pilot project counties experienced significant time savings, which administrators noted would translate into financial savings. Also, the pilot project hosts recognized that by using an audit tool, they would be able to refine the scheduling of audits, and better reflect when ballots cast in specific political subdivisions might be audited. This value was recognized by the pilot project hosts as helpful not only to them as election administrators, but also to candidates and other stakeholders participating in the audit.
- The election administrators acknowledged that they would be able to re-deploy manual audit team staff members to other post-election tasks, thus increasing each board's ability to better serve their voters (more timely collection of voter history, delivery of notifications of name or address changes occurring on election day, more timely notice of provisional ballot status, etc.).
- The election administrators were able to better serve candidates by providing in a non-subjective or arbitrary way an increased assurance that the voting system performed as intended and votes cast were counted as intended.
- The election administrators noted they were able to have in their own right, a higher level of confidence in the outcomes of the elections they had conducted, and in the accurate performance of their voting systems.

By way of feedback for the State Board's staff and the representatives from ClearBallot to consider, the election administrators made several helpful on-site suggestions, and recommended the following modifications to the automated audit tool:

- that the automated audit system be able to provide more granular reporting, including at the election district (precinct) level, which will result in enhanced reporting capabilities and will generate more data to be utilized for comparison and evaluation;
- that the automated audit system software be reviewed by developers such that the time required to map a ballot style which is not readily recognized by the audit software can be reduced; and
- that the various elements in the user interface be streamlined/adjusted, as the reporting application contains vast amounts of data which may result in confusion for the user/audit team, owing to the number of open tabs within a single viewing.

CONCLUSION

The use of an automated audit tool adds significant improvements to the post-election process of confirming voting system accuracy and the validation of vote results. Apart from cost and time savings, the true purpose of a post-election audit is best served via the use of automation. The functionality of the system we reviewed adds much to an election administrator's desire or obligation to evaluate election results from many viewpoints not possible in a manual audit.

This research paper is intended to be an exploration of how the quality of a post-election audit can be improved, and how such a process can be more cost-effective. Election administrators are encouraged to adopt requirements for and a process to implement post-election audits, and then to review this report and others, to identify methodologies and/or tools which best serve a particular election jurisdiction and its' respective statutes and regulations.

Automated audit tools afford new approaches to the concepts of audits, including the ability to audit all ballots cast in an election in a time- and cost-effective **way**, producing extensive data sets that can be evaluated by election officials, candidates, voting system vendors, and other stakeholders.

The New York State Board of Elections has used this grant opportunity to consider the value and feasibility of potential changes to its current audit requirements. Open discussions of such changes and of the evaluation of audit processes and tools will further reinforce for all election administrators, voters, and candidates, the highest degree of confidence in voting system performance and election outcomes.

NOTE: Samples of ballots used in New York State (see Appendix 5), and forms provided in this report have been reduced for ease of publication. If you would like to obtain full-size samples of any of the forms or ballots referenced herein, please contact the Election Operations Unit at the New York State Board of Elections.

ACKNOWLEDGEMENTS

New York State Board of Elections

40 North Pearl Street, Suite 5

Albany, New York 12207

Phone 518-473-5986

Anna E. Sviziero, Director of Election Operations

Joseph C. Burns, Deputy Director of Election Operations

Robert Warren, Voting System Certification Manager

John Ferri, Senior Voting Equipment Specialist

Charles Smith, Voting Equipment Specialist

ClearBallot Group

Larry Moore and Brian Myers

71 Summer Street, Suite 3

Boston, Massachusetts 02110

Phone 617-921-1702

Monroe County Board of Elections

Thomas Ferrarese and Peter Quinn, Commissioners

39 Main Street West

Rochester, New York 14614

Phone 585-753-1550

Saratoga County Board of Elections

William Fruci and Roger Schiera, Commissioners

50 West High Street

Saratoga Springs, New York 12020

Phone 518-885-2249

Schenectady County Board of Elections

Brian Quail and Art Brassard, Commissioners

388 Broadway, Suite E

Schenectady, New York 12305

Phone 518-377-2469

REPORT IN RESPONSE TO THE MISSION AND OPPORTUNITY PROVIDED FOR
IN A GRANT FROM THE U.S. ELECTION ASSISTANCE COMMISSION:

Develop and Document Processes and Best Practices for

Coordinating Quality and Cost-effective

POST-ELECTION AUDITS

**New York State
Board of Elections
Post-Election Audit
Statute and Regulation**

APPENDIX 1

NEW YORK STATE ELECTION LAW, SECTION § 9-211

§ 9-211. Audit of voter verifiable audit records.

1. Within fifteen days after each general or special election, and within seven days after every primary or village election conducted by the board of elections, the board of elections or a bipartisan committee appointed by such board shall manually audit the voter verifiable audit records from three percent of voting machines or systems within the jurisdiction of such board. Voting machines or systems shall be selected for audit through a random, manual process. At least five days prior to the time fixed for such selection process, the board of elections shall send notice by first class mail to each candidate, political party and independent body entitled to have had watchers present at the polls in any election district in such board's jurisdiction. Such notice shall state the time and place fixed for such random selection process. The audit shall be conducted in the same manner, to the extent applicable, as a canvass of paper ballots. Each candidate, political party or independent body entitled to appoint watchers to attend at a polling place shall be entitled to appoint such number of watchers to observe the audit.

2. The manual audit tallies for each voting machine or system shall be compared to the tallies recorded by such voting machine or system, and a report shall be made of such comparison which shall be filed in the office of the state board of elections.

3. The state board of elections shall, in accordance with subdivision four of section 3-100 of this chapter, promulgate regulations establishing a uniform statewide standard to be used by boards of elections to determine when a discrepancy between the manual audit tallies and the voting machine or system tallies shall require a further voter verifiable record audit of additional voting machines or systems or a complete manual audit of all machines or systems within the jurisdiction of a board of elections. Any board of elections shall be empowered to order that any such audit shall be conducted whenever any such discrepancy exists.

4. If a complete audit shall be conducted, the results of such audit shall be used by the canvassing board in making the statement of canvass and determinations of persons elected and propositions rejected or approved. The results of a partial voter verifiable record audit shall not be used in lieu of voting machine or system tallies.

5. Notwithstanding subdivision four of this section, if a voting machine or system is found to have failed to record votes in a manner indicating an operational failure, the board of canvassers shall use the voter verifiable audit records to determine the votes cast on such machine or system, provided such records were not also impaired by the operational failure of the voting machine or system.

SECTION 6210.18 THREE-PERCENT (3%) AUDIT REGULATIONS

Subtitle V of Title 9 of the Official Compilation of Codes, Rules and Regulations of the State of New York is hereby amended by repealing Part 6210.18, and by adding thereto a new Part, to be

Part 6210.18, to read as follows:

Section 6210.18 Three-Percent (3%) Audit

- (a) As required by NYS Election Law Section 9-211, the board of elections or a bipartisan team appointed by such board shall manually count all votes of the voter verifiable paper audit trail (VPAT) from no less than 3% of each type of voting machine or system used within the county.
- (b) The voting machines or systems to be audited to meet the county-wide minimum requirement set forth in Subdivision (a) herein shall be selected by lot through a transparent, random, manual process where all selections of machines or systems used in the county are equally probable. The county boards shall adopt one of the random, manual selection methods prescribed by the State Board of

Elections or such county board may submit for approval by the State Board a proposed alternative random, manual selection method. County Board adoption of the prescribed random, manual selection method shall take place not later than 45 days after the purchase of a voting system and notice by the County Board of the adoption of such random, manual selection method shall be filed with the State Board.

- (1) As required by NYS Election Law Section 9-211, not less than five days prior to the time fixed for the random selection process, the board of elections shall send notice by first class mail to each candidate, political party and independent body entitled to have had watchers present at the polls in any election district in such board's jurisdiction and to the State Board. Such notice shall state the time and place fixed for such random selection process. Such random selection process shall not occur until after election day. Each candidate, political party or independent body entitled to appoint watchers to attend at a polling place shall be entitled to appoint such number of watchers to observe the random selection process and the subsequent audit.
- (2) Such notice shall also announce the date, time, and location that the audit shall commence, information on the number of audit teams which will conduct such audit, and such other information that the County Board deems necessary.
- (3) The county board shall at a single session randomly select from all machines and systems used within the county in the election so that no

further drawings are required if anomalies are encountered during the manual audit. The audit shall commence on the same day as the random, manual selection process.

- (4) Prior to auditing the audit records, the county board shall distribute to those in attendance at the audit session, copies of the list showing the number of machines and systems needed to meet the audit requirement for each contest and any questions or proposals, and the unofficial vote results per voting machine or system selected for audit.
- (c) For each voting machine or system subject to be audited, the manual audit shall consist of a manual tabulation of the voter verifiable paper audit trail records and a comparison of such count, with respect to all candidates and any questions or proposals appearing on the ballot, with the electronic vote tabulation reported for such election district.
- (1) A reconciliation report, on a form prescribed by the State Board of Elections, that reports and compares the manual and electronic vote tabulations for each audited candidate for each contest and any question or proposal from each machine or system subject to the audit by election district, including tallies of overvotes, blank votes, blank ballots, spoiled ballots and rejections recorded on the WPAT, along with any discrepancies, shall be prepared by the board of elections or a bipartisan team appointed by such board and signed by such members of the audit team.

- (2) Any discrepancies between the corresponding audit results and initial electronic vote counts shall be duly noted, along with a description of the actions taken by the county board of elections for resolution of discrepancies. The number and type of any damaged or missing paper records shall be duly noted.
 - (3) If any unresolved discrepancy is detected between the manual count described in Subdivision (c) above and the machine or system electronic count, even an unresolved discrepancy of a single vote, the manual count shall be conducted a second time on such machine or system to confirm the discrepancy.
- (d) The reconciliation report required in Subdivision (c) above shall be transmitted to the County Board commissioners or their designees upon completion of the initial phase of the audit for determination on the expansion of the audit conducted pursuant to Subdivisions (e) through (g) herein.
- (e) The county board shall aggregate the audit results reported pursuant to Subdivision (c) (2) herein that are applicable to any contests, questions or proposals. The aggregated results for each contest, question or proposal shall be used to determine whether further auditing is required as follows:

For any contest, question or proposal, an expanded audit will be required if either or both of the following criteria apply to the aggregated audit results:

- (i) Any one or more discrepancies between the confirming manual counts described in Subdivision (c) (3) herein and the original machine or system electronic counts, which taken together, would alter the vote share of any candidate, question or proposal by one tenth of one percent (0.1%) or more of the hand counted votes for respective contests, questions or proposals in the entire sample; or
 - (ii) If discrepancies of any amount are detected between the confirming manual count described in Subdivision (c) (3) herein and the original machine or system electronic count from at least 10% of the machines or systems initially audited then the board or bipartisan team appointed by such board shall manually count the votes recorded on all the voter verifiable paper audit trail records from no less than an additional 5% of each type of the same type of voting machine or system which contains any such discrepancy or discrepancies.
 - (iii) When determining whether discrepancies warrant expanding the audit, the percentage-based thresholds in this section shall be rounded down by truncating the decimal portion (with a minimum of 1).
- (f) A further expansion of the audit will be required if either or both of the following criteria apply to the audit results:

- (1) For each contest, question or proposal, the county board shall aggregate the results from the initial audit as required in Subdivision (a) above and the expanded 5% audit. If, such aggregated results of unresolved discrepancies satisfy the criteria in Subdivision (e)(1)(i) above, a further expansion of the audit will be required.
 - (2) For each contest, question or proposal, the county board shall take the results of the 5% expanded audit under Subdivision (e) above, and, if such results of unresolved discrepancies satisfy the criteria in Subdivision (e)(1)(ii) above, a further expansion of the audit will be required.
 - (3) When an expanded audit is required for a contest pursuant to this section, each county board or bipartisan team appointed by such board shall manually count all voter verifiable paper audit trail records from no less than an additional 12% of each type of the same type of voting machine or system which contains any such discrepancy or discrepancies.
 - (4) When determining whether discrepancies warrant expanding the audit, all percentage-based thresholds in this section shall be rounded down by truncating the decimal portion (with a minimum of 1).
- (g) A further expansion of the audit will be required if either or both of the following criteria apply to the audit results:
- (1) For each contest, question or proposal, the county board shall aggregate the results from the initial audit as required in Subdivision (a) above and

the expanded audit as required in Subdivision (e) and (f) above. If, such aggregated results of unresolved discrepancies satisfy the criteria in Subdivision (e)(1)(i) above, a further expansion of the audit will be required.

(2) For each contest, question or proposal, the county board shall take the results of the 12% expanded audit under Subdivision (f) above, and, if such results of unresolved discrepancies satisfy the criteria in Subdivision (e)(1)(ii) above, a further expansion of the audit will be required.

(3) When an expanded audit is required for a contest pursuant to this section, each county board shall manually count all voter verifiable paper audit trail records from all the remaining unaudited machines and systems where the contest appeared on the ballot.

(4) When determining whether discrepancies warrant expanding the audit, all percentage-based thresholds in this section shall be rounded down by truncating the decimal portion (with a minimum of 1).

(h) The standards set forth in Subdivisions (a)-(g) above are not intended to describe the only circumstances for a partial or full manual count of the voter verifiable paper audit record, but instead are designed to set a uniform statewide standard under which such hand counts must be performed. The county boards of elections, as well as the courts, retain the authority to order manual counts of those records in whole or in part under such other and additional circumstances

as they deem warranted. In doing so, they should take into consideration: 1) whether the discrepancies were exclusively or predominantly found on one type of voting machine or system; 2) the size of the discrepancies; 3) the number of discrepancies; 4) the percentage of machines or systems with discrepancies; 5) the number and distribution of unusable voter-verified paper audit trail records as described in Section J below; 6) the number of cancellations recorded on the voter-verified paper audit trail records reported pursuant to Subdivision (c)(1) herein; and 7) whether, when projected to a full audit, the discrepancies detected (no matter how small) might alter the outcome of the contest, question or proposal result.

- (i) If the audit officials are unable to reconcile the manual count with the electronic vote tabulation on a voting machine or system, then the board of elections shall conduct such further investigation of the discrepancies as may be necessary for the purpose of determining whether or not to certify the election results, expand the audit, or prohibit that voting machine or system's use in such jurisdiction.

- j) If a complete audit is conducted, the results of such audit shall be used by the canvassing board in making the statement of canvass and determinations of persons elected and propositions approved or rejected. The results of a partial audit shall not be used in lieu of voting machine or system tabulations, unless a voting machine or system is found to have failed to record votes in a manner indicating an operational failure. When such operational failure is found, the

board of county canvassers shall use the voter verifiable audit records to determine the votes cast on such machine or system, provided such records were not also impaired by the operational failure of the voting machine or system. If the voter verified paper audit trail records in any machine or system selected for an audit are found to be unusable for an audit for any reason whatsoever, another machine or system used in the same contest shall be selected at random by the county board to replace the original machine or system in the audit sample. All such selections shall be made randomly in the presence of those observing the audit. The County Board shall inquire in an effort to determine the reason the voter verified paper audit trail records were compromised and unusable and such inquiry shall begin as soon as practicable. The results of the inquiry shall be made public upon completion.

- (k) Any anomaly in the manual audit shall be reported to and be on a form prescribed by the State Board and shall accompany the certified election results.

REPORT IN RESPONSE TO THE MISSION AND OPPORTUNITY PROVIDED FOR
IN A GRANT FROM THE U.S. ELECTION ASSISTANCE COMMISSION:

**Develop and Document Processes and Best Practices for
Coordinating Quality and Cost-effective
POST-ELECTION AUDITS**

**New York State
Board of Elections
Post-Election Audit
Procedure and Sample Forms**

APPENDIX 2

1 . BACKGROUND

1.1.Purpose and contents of this document

The purpose of this document is to provide guidance on preparing for and performing the audit required by the New York State Election Law Section 9-211 and by new proposed regulations in Part 6210.18. Section 2 of this document includes recommendations provided as a result of an analysis of multiple "best practices" and policies and procedures from a number of other states, independent industry experts and Federal guidelines.

In addition to "best practices" recommendations, Section 3 contains State Board of Elections (SBOE) recommended methods for organizing your voting machine inventory prior to selecting systems for an audit. Section 4 contains three SBOE-approved methods for the random selection of voting systems for an audit.

Finally in Section 5, we provide a step by step guide from start to finish, for accomplishing an audit.

1.2.New York State Section 9-211 Audit of voter verifiable audit records.

Section 9-211 of New York State Election Law also contains audit requirements. The text of Section 9-211 is included in Appendix 2 of this document.

1.3.New York State Election Regulations on Post - Election Audits

Section 6210.18 of the proposed NYCRR would establish uniform statewide procedures by which manual hand count audits must be performed of a subset of ballots from each election. The county boards of elections retain the authority to order manual counts of a greater number of records in whole or in part under such other and additional circumstances as they deem warranted. The text of Section 6210.18 is included in Appendix 1 of this document.

1.4.Purpose of the Audit

It is important to understand the purpose of the New York State post-election audit. According to *Best Practices and Principles for Post-Election Audits* (<http://www.electionaudits.org/principles>), a post-election audit routinely checks voting system performance in contests, regardless of how close margins of victory appear to be. The post-election audit is designed to assess how the electronic voting system performed on Election Day using the actual votes cast by voters. ***This verifies the accuracy of the voting system and should not be confused with a canvass which is meant to verify the election results.*** New York State has specific statutory provisions for the canvass and re-canvass of election results.

Post-election auditing helps verify that the complex voting systems, including central-count systems, in use today are accurately encoding and tallying ballots and that the winners of each election contest are called correctly. However, effective post-election auditing can also serve as a tool for:

- Detecting voting system problems that may require further investigation;
- Revealing when escalation of recounts are necessary to verify election outcomes
- Finding common errors voters make in marking ballots that might be avoided in future elections with voter education;
- Identifying human errors in the tally process that can be remedied by new procedures in future elections;
- Deterring fraud;
- Providing statistical data to improve future elections or audits;
- Providing for continuous improvements in the conduct of elections; and
- Promoting public confidence in elections.

2. BEST PRACTICES FOR PREPARING FOR AN AUDIT

Detailed steps for preparing for the selection of which voting systems will be included in an audit are detailed in section 3. Examples of methods for actually conducting a random selection of voting systems that will be included in an audit are explained in section 4. This section provides recommendations for topics that will need to be discussed and planned, to prepare for and organize an audit.

2.1. Preliminary Organizational Work

Audit Documents

- Prepare all possible audit tally sheets for each voting system that may be subject to an audit and for each election district and, in the case of a primary election, for each political party with a contest to be decided at each election.

Staffing

- Seek a balanced mix:
 - Managers
 - Numbers of auditing personnel
 - Number of auditing teams
- A poll worker participating in the manual tally should not be assigned to tally the results from a precinct in which that individual served as a poll worker on Election Day.
- It is recommended that an Oath of Office be required for all Audit Inspectors and any other audit team members. Here is a sample Audit Inspector oath which can be used for this purpose:

OATH OF OFFICE (See Appendix 6)
Swear in Audit Inspector officials as election officials

"I, _____(insert name) the undersigned do solemnly swear (or affirm) that I will support the Constitution of the United States of America and the State of New York; and that I will faithfully discharge the duties of the office of Audit Inspector for the County of _____ according to the best of my ability, that I am a registered voter and resident of such county, that I do not hold any public office, am not a candidate for any office to be voted for by the voters at this election or the spouse, parent or child of such candidate, that I have not been removed or otherwise disqualified as an election worker and am able to speak and read the English language and write it legibly."

Signature: _____ Date: _____

How to prepare ballots for auditing

In reviewing how other states organize their ballots for the audit process we have identified the "read and mark" method as the best method to use when conducting the NYS post election audit. This method is explained below:

READ AND MARK METHOD

In the read and mark method, the bipartisan team of Audit Inspectors sort the ballots secured from the voting system ballot box or other secure container into that machines election districts, and ballot style piles. An Audit Inspector reads aloud the selections made on each ballot from that machine's election district for each contest and/or ballot proposal. Observers must listen to different names read aloud. An audit team member of the opposite political party than the reader will observe the votes as read aloud to ensure that they have accurately been announced.

As the votes are read aloud, an individual of the opposite political party than the reader will mark the vote on a tally sheet. An individual of the opposite political party than the marker will observe the marks posted to the tally sheet to ensure that they have accurately been marked.

Tallying ballot marks during the audit count shall be completed nearly as practical to the provisions contained in NYS Election Law Section 9-116. See Appendix 3.

CHOOSING NUMBER OF AUDIT INSPECTOR TEAMS

- The more observers and sets of eyes on a single ballot, the greater the certainty of the results.
- Evaluate the audit work to be completed and assign a number of audit teams and audit team supervisors to the task, taking into consideration:
 - o Total number of voting systems that may be subject to audit;
 - o Total number of different ballot styles;
 - o Total number of contests for offices, party positions or ballot proposals at the election; and
 - o Potential total number of ballots to be audited.

RULE OF THUMB FOR AUDIT TEAMS

- Aim for at least 2-3 sets of eyes on each ballot to be audited, as well as the recording of each vote.
- Use a 4-person bipartisan team or teams.
- At least two bipartisan team members check the ballot marks and at least two other bipartisan team members mark the vote on the tally sheet and verify the accuracy of those entries.
- All 4 members of the audit team verify and record and check the sums on the audit tally sheets.

ORGANIZING FOR THE COUNT

Organize the Audit Site

It is critical that the decorum of the audit site is conducive to the important work to be conducted in it. An organized and orderly work space, and as quiet an atmosphere as possible will help ensure the audit teams have an appropriate environment in which they can concentrate and accurately log their findings. Observers will be better able to hear the incremental decisions of the audit teams, and the outcome of the audit. Consider the following as you organize your audit site:

- Tables should be placed at distances from each other sufficient to allow for an adequate path of travel for audit team members and supervisors.
- Sufficient and comfortable seating should be provided.
- Audit team members and supervisors should wear name tags.
- Observers should sign in, and identify whom they represent. Consider identifying observers with a "Guest Pass" sticker, so that security can be maintained in a crowded and/or active audit site.
- Observers should be able to hear and see the activity of the audit team, but shall not be so close to the team as to hover over them or distract them.
- Be sure adequate rest breaks are taken, to keep the audit team fresh. When breaks are taken, assign a bi-partisan team to guard the ballots and audit team documents until the audit team returns.

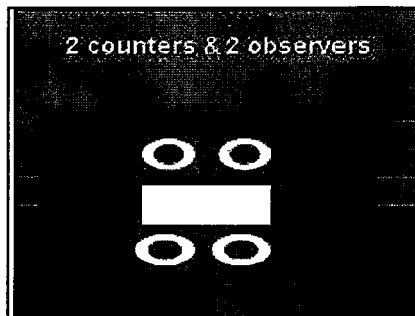
Custom audit supplies:

- Audit tally sheets: documents that have been prepared with specific audit-related information such as machine serial number, audit number drawn, poll site in which the unit was used, election districts (and in primary elections, political parties) served by the voting system, etc. A sample of an audit tally sheet can be found in the Appendix.
- Additional seals for securing containers into which audited ballots will be placed.
- A copy of the audit procedures and any additional guidance materials provided by the county board of elections.
- A copy of the audit notice sent to candidates.

General supplies needed for use in the audit:

- Binder clips, rubber bands or other reliable binding items, for securing manageable packets of ballots to be audited.
- Office supplies such as red pens, red pencils, highlighters, post-it notepads
- Two containers (boxes, bins, etc) of an appropriate size, into which packets of audited and unaudited ballots can be placed, to keep them secure and separate.

Arrange the audit counting site for counting



Sample Room layout for counting

2.2. Ballot Handling Recommendations

- Throughout the audit, ballots may **only** be handled by CBOE commissioners of elections or their sworn designated representatives. No observer or member of the public may handle a ballot, nor any official audit or election-related document.
- The ballot chain of custody forms for the ballots cast from all of the randomly selected voting systems must be inspected to ensure proper completion. If the audit team determines that any of the ballot accounting and reconciliation

chain of custody forms were not properly completed, or that election officials failed to complete the ballot accounting and reconciliation chain of custody forms, the voting system may not be audited, and a replacement machine must be selected. The first extra voting system selected during the random selection process should be used.

- o When such voting system is deferred, it shall be assigned to the recanvass team or other designated bipartisan team for resolution.
- Ballot Marks
 - o Valid votes that have been marked by the voter outside the vote targets or using a marking device that cannot be read by the vote tally system shall not be included in making the determination whether the voting system has met the standard of acceptable performance.
 - See 9-211.4 and Part 6210.18 0)
- Election Officials in Charge of the Audit
 - o Duties of responsible Election Official. The election commissioners or their designated representatives in charge of elections where an audit is to be completed pursuant to statute or regulation must:
 1. Be present or personally represented throughout the audit proceedings;
 2. Be responsible for acquiring sufficient facilities and personnel to ensure timely and lawful auditing of voting systems and their corresponding ballots;
 3. Be responsible for the proper training of all personnel participating in audit proceedings and administer oaths to all audit team members who are not already duly appointed election inspectors;
 4. Maintain actual control over all proceedings and be responsible for the lawful execution of all proceedings in the audit counting site;
 5. Be responsible for assuring the lawful retention and storage of ballots audit records and other pertinent documents; and
 6. Arrange for observation of the audit by providing written notice (Pursuant to NYS Election Law Section 9-211.1 and proposed regulation Part 6210.1B(b)), including a copy of audit procedures with the notice to each candidate, political party or independent body entitled to appoint watchers. Such notice shall also include:
 - a.the date, time and location that the audit shall commence;
 - b.information on the number of audit teams which will conduct such audit; and
 - c.such other information that the County Board deems necessary.

2.3. Security in Audit Counting Sites

Proceedings at the audit counting site may be open to the public. They are under the direction of the election commissioners or their designated personnel in county boards of elections where an audit is to be completed. Only persons employed and authorized by

the CBOE commissioners for the purpose of conducting an audit may touch any ballot card, ballot container, or statement of canvass or other official document.

2.4. Standards of acceptable performance by voting system

A comparison of the aggregated results compiled by the voting system with the postelection review must show that the results of the voting system are consistent with the provisions of Part 6210.18 (e) (1) and, if not, whether further auditing is required. Only votes that have been marked by the voter inside the vote targets or using a manual marking device that can be read by the voting system shall be included in making the determination whether the voting system has met the standard of acceptable performance for any voting system.

2.5. Questionable Votes and Marginal Marks

Voting systems scanners are specifically calibrated to recognize marks made by voters in sensitive marking areas of the ballot. Scanners will easily recognize votes that are marked with a density that is within the calibrated thresholds. In an audit, the human eye may perceive these marks differently than the scanner, however the audit team members and observers alike should understand that the scanners, in accordance with Section 7-201.1e provide each voter with a notification of any mark the system perceives as questionable and provides each voter with the opportunity to remark their ballot or cast it 'as-is'.

The Brennan Center provides additional information on how to address this issue. See a corresponding selection from the Brennan Center Report on Post-Election Audits, in Appendix 11.

3. HOW TO ORGANIZE YOUR VOTING SYSTEMS INVENTORY PRIOR TO SELECTING MACHINES FOR THE AUDIT

Organize inventory

To conduct a drawing by lot, to determine which units shall be audited, several documents must be prepared in advance of the drawing. For illustrative purposes, we will assume an inventory of 50 voting systems or when auditing a central count system, 100 election districts. Samples of the two documents described below are provided in the Appendix. The first document to be prepared is a Drawing by Lot Spreadsheet, used to track the results of your random drawing:

- On a document or spreadsheet with two columns on it, number the first column sequentially, from 1 through 50, which will represent each chip drawn, in order.
- In the second column, post the number drawn from the chip container. For example, on the first draw, chip number 33 is pulled. Enter the number 33 in

- the second column, next to number 1. On the second draw, number 15 is drawn; proceed to enter the number 15 in the second column next to number 2, and so on, until each chip is drawn for every machine in the inventory.
- For central-count systems, number the total Election Districts in the county in sequential, numeric order: i.e. 100 Election Districts
 - In order to do a 3% audit on all of the county's election districts, one must multiply the total number of election districts by 3%
 - $100 \times 3\% = 3$ election districts to be audited throughout the county
 - To determine which election districts to audit, one must follow steps 1 and 2 and apply those steps to election districts instead of machines.
 - Upon completion of the rand.om drawing selection, the CBOE Commissioners or their designees shall sign and date the Drawing by Lot spreadsheet.

The second document to be prepared for use in the drawing by lot is an Inventory Assignment Spreadsheet. Once completed, this document will identify which specific voting systems will be audited, based upon the random drawing.

- On a document or spreadsheet with five (5) columns on it, number the first column sequentially, from 1 through 50.
- In the second column, next to each sequential number, post each voting system's serial number.
- In the third column, list the poll site in which the unit shall be used.
- In the fourth column, list the election districts which will be served by the voting system, and in a primary election, the political party(ies) that constitute those ballots styles. This is especially important if the unit is to be used in a poll site serving more than a single election district.
- Using the Drawing by Lot spreadsheet, post the number drawn first in the fifth column, next to the corresponding inventory number. For example, from the Drawing by Lot spreadsheet described above, the first number drawn was 33. Locate number 33 on your Inventory Assignment Spreadsheet, and post the number 1 in the fifth column. The second number drawn was 15. Locate number 15 on the Inventory Assignment Spreadsheet, and post the number 2 in the fifth column, and so on, until each number drawn in order is posted next to a corresponding voting system serial number.
- Upon completion of the transfer of the drawing selection order from the Drawing by Lot Spreadsheet to the Inventory Assignment Spreadsheet, the CBOE Commissioners or their designees shall sign and date the Inventory Assignment Spreadsheet.

Both documents shall be time stamped, copied, as necessary, and the original of each document is to be secured with other audit documents for archival storage.

4. PREPARING FOR THE AUDIT DRAWING BY LOT

Decide on the method you will use to conduct your Audit Drawing by Lot. Practice using that method or tool, to be sure you can conduct the drawing with confidence.

Familiarize yourself with the official documents to be completed, so that the drawing will be efficient and accurate.

Be sure that your Inventory Assignment and Drawing by Lot spreadsheets are populated with serial numbers and are ready to use in the drawing you are about to conduct (see instructions in Section 3: How to Organize Your Voting Systems Inventory Prior to Selecting Machines for the Audit, and the forms in Appendix 4 and 5).

After notices of the Audit Drawing by Lot have been sent to candidates, and before the audit is conducted, review your process and the tools you intend to use to conduct the audit, to be sure you have the supplies you need and the mechanism you intend to use for the drawing is in proper working order. For example:

- If you intend to use an on-line, random number generator, access the site you intend to select and practice generating numbers that will become the basis of your audit selection process.
- If you intend to use chips of some sort, sequentially number them with an indelible marker, equal to the number of voting systems in your inventory.
- If you intend to use your bingo machine (as used for your ballot drawing purposes), be sure all of the numbered spheres are accounted for, and that the spinning device works properly.

Demonstrating the Drawing Method

Immediately before the Audit Drawing by Lot, arrange for observers to see that the pieces, parts or other components of the method you intend to use, are intact:

- If you intend to use numbered chips of some sort, display the chips in order, so that observers can see that every sequentially-numbered chip is accounted for.
- If you intend to use the bingo machine, display all of the numbered spheres in order, so that observers can see that every sequentially-numbered sphere is accounted for.
- If you intend to use an on-line, random number generator, be sure you access the site on a computer that the observers can see, to ensure transparency in the on-line process.

5. METHODS FOR RANDOM SELECTION FOR AN AUDIT

5.1. Proposed Option One: Individually Numbered Chips

Obtain a sufficient quantity of individually number chips (i.e. bingo balls, Popsicle sticks, poker chips, etc.). Make sure that they have every number in sequence and that no number is duplicated.

Step # 1. At the start of the random selection process, the number of chips shall equal the total number of voting systems to be utilized in the election which may be subject to audit.

Number all the machines that will be part of the audit with a number from 1 to XX, where XX is the last machine that will be part of the audit. Or, when auditing a central count voting system, number the election districts from lowest to highest number. Identify chips with numbers from 1 to XX (with XX representing the highest number of voting systems). Secure a box or other appropriate container with which to conduct the drawing. The container should be smooth and free from flaps that may trap a chip or chips, and thus impede the random selection.

At the beginning of the random drawing selection, allow an opportunity for all of the audit observers to see that the box or container is empty and that you have the requisite number of chips equal in number to the total number of voting systems utilized in the election.

Place the required number of numbered chips into the drawing container and obtain the Drawings by Lot Spreadsheet to track the results of your random drawing. Select chips one at a time from the drawing container and read aloud the number. A drawing clerk of a different political faith than the drawing clerk shall then record the number on the Drawing by Lot Spreadsheet, also reading aloud the number as it is being recorded. Continue in this manner until all of the chips have been selected.

5.2. Proposed Option Two: Electronic Random Number Generator

There are a number of random number generators available on the internet. One that is popular is Random.org which can be found at this URL address: <http://www.random.org/>

Number all the machines that will be part of the audit with a number from 1 to XX, where XX is the last machine that will be part of the audit. Use the True Random Number Generator to select numbers.

6. AUDIT PROCESS CHECKLIST

This checklist is modeled on a sample prepared by the New Hampshire Department of State Election Procedure Manual and has been altered to reflect NY requirements.

Step #1 - Arrange the audit site for counting. The counting area should be segregated from the observer gallery. All counting, however, must occur where it is visible to all legally present observers.

- Step #2 - Identify all those who will be serving as audit team inspectors, audit team supervisors or any other audit team members.
- Step #3 - Administer oaths and obtain signatures on the oath documents for all audit team members. Retain completed and signed oath documents with other audit materials for archive storage.
- Step #4 - Review audit instructions with all audit team members and any observers present.
- Step #5 - At the beginning of the audit, the bipartisan team of Audit Inspectors shall compare and verify the ballot box seal number noted on the chain of custody report with the seal on the ballot box they are to audit. Record this seal number on the Audit Tally Worksheet.
- 5 a) If the seal numbers match, break the seal and continue to Step 6.
- 5 b) If the seal numbers do not match, note the problem under "AUDIT TEAM REMARKS" and summon a supervisor, who will then take custody of all audit materials. The Audit Team Inspectors will move on to the next available machine to be audited, and resume the process at Step 5.
- Step #6 - Open the ballot box(es) in view of the observers, remove all ballots from the container and place the ballots onto the audit table.
- Step #7 - Reveal the empty ballot box.
- Step #8 - Sort the ballots by election district and, in a primary election, by political party.
- Step #9 - Have the audit inspector teams count the ballots, and if necessary for manageability, further sort the ballots into piles of a known size (10, 25, 50 or 100 ballots).
- Step #10 - Wrap each pile with a rubber band, clip it with a large binder clip, or other similar fastener.
- Step #11 - Locate each audit inspector team's prepared audit tally sheets. The sheet(s) should be organized in the same order as the ballot, with sections for each office and question and the name of each candidate listed in the same order as they are listed on the ballot. There should be a space following each name/question for one of the counters to put a hash mark for each vote for that candidate/question.
- Step #12 - The counting process:
- 12 a) Each audit team will count all races and questions in one bound pile of ballots at a time. Note: for the following overview we will assume that 50 ballots are contained in each bound pile of ballots.
- 12 b) A mark must be made on the tally sheet for each vote cast on each ballot. Make a vertical line (hash mark) for the first four votes for any given candidate and then cross a horizontal line over the vertical lines for the fifth vote for that candidate. If the voter wrote in a

- candidate, that vote shall be represented by a hash mark in the field designated on the audit tally sheet for write-in votes for that contest.
- 12 c) If the voter skipped a race or question, that is they did not vote for any candidate or did not make the total number of selections for the contest, or did not mark either yes or no on a ballot proposal, put a hash mark in the "BLANK" line for that office or proposal on the audit tally sheet.
 - 12 d) If the voter overvoted, that is they voted for more candidates than are permitted for that contest, put a hash mark in the "Overvote" line for that office or ballot proposal on the audit tally sheet, EXCEPT THAT;
 - 12 e) In the case of a candidate whose name appears on the ballot more than once for the same office, and the voter marked the ballot more than once for the same candidate for the same office, the audit team shall enter a single hash mark on the audit tally sheet where the first vote appears for the candidate in that contest.
 - 12 f) The audit team will then total the votes for all candidates for each office, write-in, or all the "yes," "no," votes on any ballot proposal(s), blanks and overvotes for each question. The total number of hash marks (votes) for a "vote for one" office must equal the number of ballots in the bound pile (i.e. 50) votes for that office (including the votes for each candidate, write-ins, blanks and overvotes).
 - 12 g) For offices where the voter may vote to fill two positions, the total votes counted should total 100. For offices where the voter may vote to fill three positions the total votes counted should total 150, and so on.
 - 12 h) If the total does not equal 50 the team should check their hash marks for that office/question and correct any errors. The team is done auditing a 50 ballot pile at the point when the office/question totals equal 50.
 - 12 i) As the teams audit, if there is any question regarding how a vote should be recorded, call the audit team supervisors to your table and seek their instructions on how the ballot should be audited.
 - 12 j) If after receiving supervisor instructions, the audit team is still unable to determine whether or not to record the vote in question, the audit team members will then follow the Resolution Procedure found in Step 13.
 - 12 k) If there are many questioned ballots that need to be decided, it is recommended that the audit team hold these ballots aside, complete the remaining ballots in that bound pile and then resolve all questioned ballots within the bundle being audited, at one time. If this is done, however, it is further recommended that all questionable ballots be resolved before the audit team totals are

tallied for each bundle. This ensures that the election officials do not know whether the vote on a particular ballot will affect the outcome of the audit. This process reinforces the neutrality and enhances the legitimacy of the audit process.

Step #13 - Audit Resolution Process:

For any votes which remain uncounated, even after escalation to the audit team supervisors, those supervisors shall consult with the Commissioners, for a final determination. The Commissioners shall affix a note to each such ballot, making clear their determination(s). The supervisors shall return the ballot(s) to the audit team, whereupon the audit team shall abide by the Commissioners' determination without further debate, and reflect such determination in the audit results.

Step #14 - Starting with the first contest on the ballot:

- 14 a) One audit team member (the reader) should read aloud the name of the candidate or th word yes or no for questions which received the vote on the ballot being audited.
- 14 b) Another audit team member of the opposite political faith than the reader shall observe the ballot to ensure that the vote has accurately been announced.
- 14 c) As the votes are read aloud, another audit team member (the marker) of the opposite political faith than the reader shall make a hash mark beside that name on the audit tally sheet, and as he or she tallies a vote, shall announce clearly the name of the person for whom he or she tallies it (or in the case of a write-in, blank, overvote or yes or no vote for a ballot proposal, as the case may be).
- 14 d) Another audit team member of the opposite political faith than the marker shall observe the marks being posted to the audit tally sheet to ensure that they have been accurately marked.

Step #15 - Continue this process until the votes cast on the entire ballot have been marked on the tally sheet. Then proceed to the next ballot. If a voter has not voted for any candidate for a particular office the reader should state "blank" and the marker should mark the "blank" row for that office on the tally sheet.

Step #16 - If the voter voted for two or more candidates for an office where the ballot instructs to vote for one, the reader should read off "overvote" and the marker should mark the "overvote" row on the tally sheet. If the instructions are that a voter should vote for two and the voter voted for three or more follow these same instructions.

Step #17 - When all ballots from the bound pile of ballots (i.e. 50) have been marked on the tally sheet the hash marks should first be totaled for each candidate including the "blank" and "overvote" rows and the write-in row and then for

each office. The total votes for each office/question should equal 50. If they do not, go back through the pile and correct any counting/marking errors.

Step #18 - Upon completion of the audit count for each respective bound pile, each member of the bipartisan audit team of inspectors shall sign and date the audit tally sheet, and bind the pile of ballots with the audit tally sheet on top with a rubber band or clip. They then set that pile aside on the audit table until it can be aggregated into the final reconciliation audit tally report from all of the respective bound piles from the same voting machine.

Step #19 - Continue the audit process with the next pile of ballots.

Step #20 - Upon completion of the audit counting when all of the bound piles contained within the voting machine ballot box for a particular election district, and in the case of a primary election further sorted by party, have been counted, the bipartisan audit team shall tally the piles and aggregate their numbers on a multi-part reconciliation audit tally report. Each member of the bipartisan audit team of inspectors shall sign and date the reconciliation audit tally report and secure all of the bound pile of ballots with one copy of the reconciliation report on top.

Step #21 - The audit team inspectors shall then place all ballots from a single voting machine into a secure container (i.e. banker storage box) labeled with identification information showing the election date and type and the voting machine serial number.

Step #22 - The audit team supervisors should ensure that the audit counting site maintains an orderly and appropriate atmosphere in which audit teams can complete the tallies. The tallying must occur in a manner that provides an opportunity for all legally-present observers to view the audit process. Be mindful however, that when all the audit team inspectors and any other audit team members gather at the audit tallying table and watch the final calculations, everyone conducts themselves in a way that puts no pressure on those making the final calculations, so that the opportunity for disruption and error is diminished. The tallying team should tally the results for all elections. The use of a printing calculator allows the team to check the printed calculator tape as a means of ensuring the accuracy of the tally. The final tallies should be written down on the reconciliation audit tally report, signed and dated by each member of the audit team.

Step #23 - The audit supervisors shall then retrieve the vote tabulation printout produced by the voting system being audited as completed and attested to at the close of polls by the voting system's primary election inspectors and compare the respective tabulation of votes from such tape to the respective election district/contest reconciliation audit tally report

- 23 a) The audit supervisors shall then record in the space provided in the reconciliation audit tally report for the supervisors' official use, the respective machine totals (tape) numbers.
- 23 b) They shall then compare the audit vote totals with the machine totals and note any discrepancies between the totals. If any discrepancies are found, the audit supervisors and the audit inspector team(s) shall attempt to resolve the discrepancy. See proposed Part 6210.18 (c) (2).
- 23 c) If any unresolved discrepancy is detected between the manual count and the machine totals (tape), even an unresolved discrepancy of a single vote, the manual count shall be conducted a second time on such machine or system to confirm the discrepancy.
- 23 d) If such voting system is required to be re-audited, to the extent possible, the re-audit should be conducted by a different audit inspector team.

Step #24 - The audit team members shall then cause the ballot box or other secure ballot container to be sealed and shall record such seal(s) on the chain of custody report.

Step #25 - Upon completion of the initial phase of the audit, the reconciliation audit report shall be submitted to the election commissioners or their designees for determination on whether or not an expansion of the audit is required. The election commissioners or their designees shall date and affix their signatures to the reconciliation audit report on which their determination has been indicated.

Step #26 - Announce the results of the initial phase of the audit.

Step #27 - If an escalation of the audit is required, the audit teams shall next audit the ballots from the next group of voting machines or systems identified in the original random drawing of machines to be audited.

INVENTORY ASSIGNMENT SPREADSHEET

Inventory Assignment Spreadsheet is available for download at the SBOE FTP site.

INVENTORY ASSIGNMENT SPREADSHEET

SEQUENTIALNUMBERING	VOTING SYSTEM SERIAL#	POLLSITE BEING SERVED	EDSERVED(INAPRIMARY, PARTIESSERVED)	NUMBERDRAWN
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				

USE ADDITIONAL PAGES AS NECESSARY TO ACCOMMODATE YOUR INVENTORY

SIGNATURE AND DATE OF COMMISSIONERS OR RESPECTIVE DESIGNEES:

DRAWING BY LOT SPREADSHEET

Drawing by Lot Spreadsheet is available for download at the SBOE FTP site.

DRAWING BY LOT SPREADSHEET

SEQUENTIAL NUMBERING	POST NUMBER DRAWN
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	
17	
18	
19	
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38	
39	
40	

USE ADDITIONAL PAGES, AS NECESSARY, TO ACCOMMODATE YOUR INVENTORY

SIGNATURE AND DATE OF COMMISSIONERS OR RESPECTIVE DESIGNEES:

AUDIT TEAM OATH

Audit team oath is available for download at the SBOE FTP site.

OATH OF OFFICE

Swear in Audit Inspector officials as election officials:

"I, _____ (Insert name) the undersigned do solemnly swear (or affirm) that I will support the Constitution of the United States of America and the State of New York; and that I will faithfully discharge the duties of the office of Audit Inspector for the County of _____ according to the best of my ability, that I am a registered voter and resident of such county, that I do not hold any public office, am not a candidate for any office to be voted for by the voters at this election or the spouse, parent or child of such candidateJ that I have not been removed or otherwise disqualified as an election worker and am able to speak and read the English language and write it legibly.I>

Signature: _____ Date: _ _ _ _ _

Keep original oath on file, and provide a copy to the audit team member.

INDIVIDUAL AUDIT TALLY WORKSHEET

Inventory Assignment Spreadsheet is available for download at the SBOE FTP site.

Individual Audit Tally Worksheet

County BOE Name: _____ Election Date: ____/____/2009 Poll Site Name: _____ Poll Site Location: _____ Machine ID Serial Number: _____ Election Districts Served by Machine: _____ Ballot Styles Served by Machine: _____ Audit Number Drawn: _____ Election District Audited: _____ Ballot Container Seal Number at beginning of Audit: _____ Ballot Container Seal Number Verification: <input type="checkbox"/> Yes <input type="checkbox"/> No Date Hand Count Begun: ____/____/2009 Audit Team Inspectors Name (Print): 1. _____ 2. _____ 3. _____ 4. _____	In a General Election: Total number of paper ballots to be audited: _____ <ul style="list-style-type: none"> • By Election District: <ul style="list-style-type: none"> ○ ED 1: _____ ○ ED 2: _____ Total number of groups by Election District to be audited: _____ <ul style="list-style-type: none"> ○ ED 1: _____ ○ ED 2: _____ Total number of groups to be audited: _____ In a Primary Election: Total number of paper ballots to be audited: _____ <ul style="list-style-type: none"> • By Election District <ul style="list-style-type: none"> ○ ED 1: _____ ○ Ballot Style: <ul style="list-style-type: none"> ▪ Democratic: _____ ▪ Republican: _____ ▪ Independence: _____ ▪ Conservative: _____ ▪ Working Families: _____ Total number of groups in ED 1 to be audited: _____ <ul style="list-style-type: none"> ○ ED 1: _____ <ul style="list-style-type: none"> • By Election District: _____ <ul style="list-style-type: none"> ○ ED 2: _____ ○ Ballot Style: <ul style="list-style-type: none"> ▪ Democratic: _____ ▪ Republican: _____ ▪ Independence: _____ ▪ Conservative: _____ ▪ Working Families: _____ Total number of groups in ED 2 to be audited: _____ <ul style="list-style-type: none"> ○ ED 2: _____ 	Election District _____, Group _____ of _____ <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 50%;">Office</th> <th style="width: 50%;">Mayor (Vote for One)</th> </tr> <tr> <td style="text-align: center; vertical-align: middle;">Democratic A</td> <td style="text-align: center;">1A Jane Brown Tally Remarks</td> </tr> <tr> <td></td> <td style="text-align: center;">Total _____ Votes</td> </tr> <tr> <td style="text-align: center; vertical-align: middle;">Republican B</td> <td style="text-align: center;">1B John Smith Tally Remarks</td> </tr> <tr> <td></td> <td style="text-align: center;">Total _____ Votes</td> </tr> <tr> <td style="text-align: center; vertical-align: middle;">Miscellaneous Write-Ins</td> <td style="text-align: center;">Misc. Write-Ins Tally Remarks</td> </tr> <tr> <td></td> <td style="text-align: center;">Total _____ Votes</td> </tr> <tr> <td style="text-align: center; vertical-align: middle;">Blank</td> <td style="text-align: center;">Blank Tally Remarks</td> </tr> <tr> <td></td> <td style="text-align: center;">Total _____ Votes</td> </tr> <tr> <td style="text-align: center; vertical-align: middle;">Over Vote</td> <td style="text-align: center;">Over Vote Tally Remarks</td> </tr> <tr> <td></td> <td style="text-align: center;">Total _____ Votes</td> </tr> <tr> <td style="text-align: center; vertical-align: middle;">Total Votes</td> <td style="text-align: center;">Total _____ Votes</td> </tr> <tr> <td colspan="2" style="padding: 5px;">Remarks:</td> </tr> </table>	Office	Mayor (Vote for One)	Democratic A	1A Jane Brown Tally Remarks		Total _____ Votes	Republican B	1B John Smith Tally Remarks		Total _____ Votes	Miscellaneous Write-Ins	Misc. Write-Ins Tally Remarks		Total _____ Votes	Blank	Blank Tally Remarks		Total _____ Votes	Over Vote	Over Vote Tally Remarks		Total _____ Votes	Total Votes	Total _____ Votes	Remarks:	
Office	Mayor (Vote for One)																											
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Over Vote	Over Vote Tally Remarks																											
	Total _____ Votes																											
Total Votes	Total _____ Votes																											
Remarks:																												
Date Hand Count Completed: ____/____/2009 Seal Number Affixed at Completion of the Audit: _____ Audit Team Inspectors Name (Signatures): 1. _____ 2. _____ 3. _____ 4. _____																												

RECONCILIATION AUDIT TALLY REPORT WORKSHEET

Inventory Assignment Spreadsheet is available for download at the SBOE FTP site.

Reconciliation Audit Tally Report Worksheet

County BOE Name: _____ Election Date: ____/____/2009 Poll Site Name: _____ Poll Site Location: _____ Machine ID Serial Number: _____ Election Districts Served by Machine: _____ Ballot Styles Served by Machine: _____ Audit Number Drawn: _____ Election District Audited: _____ Ballot Container Seal Number at beginning of Audit: _____ Ballot Container Seal Number Verification: <input type="checkbox"/> Yes <input type="checkbox"/> No	<p style="text-align: center;">Commissioner Certificate</p> We the undersigned Commissioners, having reviewed the Audit Recommendation Summary Report, do here by direct the following: <input type="checkbox"/> The audit results confirm the electronically tabulated results. No further action is required. OR <input type="checkbox"/> The audit results DO NOT confirm the electronically tabulated results, thus requiring the escalation of the audit, to level: <input type="checkbox"/> 5%- 6218.18(f)(1) <input type="checkbox"/> 12%- 6210.18 (f) (3) <input type="checkbox"/> 100%- 6210.18 (g) (4) DATE: ____/____/2009	<p style="text-align: center;">Election District _____</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%; text-align: center;">Office</td> <td style="text-align: center;">Mayor (Vote for One)</td> </tr> <tr> <td style="text-align: center;">Democratic A</td> <td> 1A Jane Brown Total ____ Hand counted Results Total ____ Machine Results Total ____ Differences Total ____ Number unresolved discrepancies </td> </tr> <tr> <td style="text-align: center;">Republican B</td> <td> 1B John Smith Total ____ Hand counted Results Total ____ Machine Results Total ____ Differences Total ____ Number unresolved discrepancies </td> </tr> <tr> <td style="text-align: center;">Miscellaneous Write-Ins</td> <td> Miscellaneous Write-Ins Total ____ Hand counted Results Total ____ Machine Results Total ____ Differences Total ____ Number unresolved discrepancies </td> </tr> <tr> <td style="text-align: center;">Total Votes</td> <td> Total Votes Total ____ Hand counted Results Total ____ Machine Results Total ____ Differences Total ____ Number unresolved discrepancies </td> </tr> </table>	Office	Mayor (Vote for One)	Democratic A	1A Jane Brown Total ____ Hand counted Results Total ____ Machine Results Total ____ Differences Total ____ Number unresolved discrepancies	Republican B	1B John Smith Total ____ Hand counted Results Total ____ Machine Results Total ____ Differences Total ____ Number unresolved discrepancies	Miscellaneous Write-Ins	Miscellaneous Write-Ins Total ____ Hand counted Results Total ____ Machine Results Total ____ Differences Total ____ Number unresolved discrepancies	Total Votes	Total Votes Total ____ Hand counted Results Total ____ Machine Results Total ____ Differences Total ____ Number unresolved discrepancies
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Total Votes	Total Votes Total ____ Hand counted Results Total ____ Machine Results Total ____ Differences Total ____ Number unresolved discrepancies											
<p style="text-align: center;">Audit Team Supervisor Certificate</p> We the undersigned Audit Team Supervisors, having completed the Audit Reconciliation Summary, do hereby recommend the Audit: Initial Audit <input type="checkbox"/> Pass <input type="checkbox"/> Fail (If initial audit failed, 2 nd audit (6210.18(c)(3)) 2 nd Audit <input type="checkbox"/> Pass <input type="checkbox"/> Fail Print Supervisors Names: 1. _____ 2. _____ Seal Number Affixed at Completion of the Audit: _____ Supervisor Signatures: 1. _____ 2. _____ Date: ____/____/2009	(Commissioner Signature – or designee) (Commissioner Signature – or designee)	<p style="text-align: center;">Remarks:</p>										

**COMMISSIONERS' AUDIT RECONCILIATION
CERTIFICATION TEMPLATE**

**THIS IS A PLACEHOLDER- THE REVISED FORM WILL BE PROVIDED
UPON REVIEW AND APPROVAL OF THE PILOT REVIEW COMMITTEE**

The WORD version of this CERTIFICATION is available on the CBOE portal so that you can modify it to meet your needs. It is to be completed for each scanner audited, and on County Board of Elections letterhead, and shall include the following, to be completed, signed and dated by the Commissioners of Elections, and filed with the State Board of Elections. You may put multiple scanner serial numbers on a single form unless you had to escalate an audit, in which case you must file a certificate for each scanner that was audited in the escalation

COMMISSIONERS' AUDIT RECONCILIATION CERTIFICATION

COUNTY _____ DATE _____

Scanner Serial # _ _ _ _ _

We the undersigned Commissioners, having reviewed the Audit Reconciliation Summary Report, do hereby certify the following:

___ The audit results confirm the electronically-tabulated results. No further action is required.

___ The audit results reveal unexplained discrepancies from the tabulated results, thus requiring the escalation of the audit, to level:

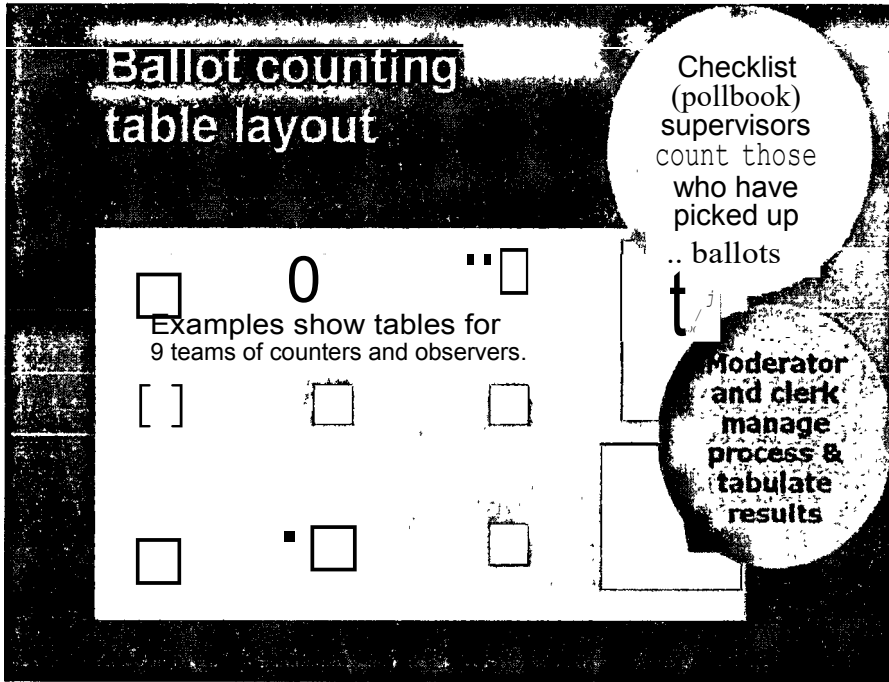
6218.18(f)(1)	___	5%
6210.18 (f) (3)	___	12%
6210.18 (g) (4)	___	100%

Subsequent to the escalation described above, all discrepancies have been resolved.

DATE:

SIGNATURE: _____ SIGNATURE _____

Ballot counting table layout example from NH



BRENNAN CENTER REPORT ON POST-ELECTION AUDITS

THE CHALLENGE OF MATCHING PAPER AND ELECTRONIC RECORDS

Counting paper records presents at least two related problems. The first is that people often miscount. Consequently, there are going to be many instances where the hand count of paper records and the electronic tally do not match, not because there was a problem with the machines, but because the auditors made mistakes counting. There has been very little research evaluating different methods of hand-counting, but we discuss directions such research should take in the "Directions for the Future" section of this paper.

Several jurisdictions partially address the problem of miscounting by having at least two people count the same paper record. For example, San Mateo County, California uses a team of four people to conduct their post-election audit. One person reads and announces the contents of a given paper record, another observes that the paper record has been announced correctly and two people record a running tally of votes for each contest. The recorders announce the end of each ten-vote increment, at which point the team checks for errors in the tally. If the team finds an error, the counting process can be rolled back to the last point of agreement.

Minnesota provides an example of how incremental checking during post-election audits works in practice. Minnesota law requires election judges to count the votes for each race or ballot question by creating piles of voted ballots for each candidate in a race and piles for blank or defective responses. Election judges check the sorted piles of ballots for the particular race or question to ensure that all ballots have been placed in the correct pile. Ballots may be stacked in groups of twenty-five crosswise. After the final count for the race or question is completed, all ballots are returned to a single pile and the process is repeated for the subsequent race or ballot question.

The second, related problem is that auditors are likely to *want* the paper records to match the electronic records. The problems in Cuyahoga County, Ohio in 2004, where audit supervisors rigged the ballot selection so that no discrepancies would be found, exemplify the danger of auditors hoping to find perfect matches and to avoid the difficult questions and additional work that might result if the records do not match.

To counter the understandable temptation to make the paper and electronic records match, we recommend against revealing the unofficial electronic election results to the individuals performing the manual count. The audit teams should not have access to the unofficial results; an audit supervisor or election official can serve as a buffer and inform each team if their audit results match the unofficial electronic results, without revealing the magnitude or direction of any deviation. If the manual count does not match the electronic results, the audit team should conduct additional "blind" recounts of the records of affected races. This practice need not prevent elections officials from freezing and publishing unofficial election results prior to conducting the audits; it merely means

that auditors should not be made aware of the vote tallies on the particular machines they are auditing.

Manual counts may sometimes reveal different voter intent- than machine counts of ballots. Overvotes, marginal marks, hesitation marks, and other stray markings on manually marked ballots could cause optical scan voting machines to misinterpret voter intent that a human reviewer would be able to discern. This may lead to deviations or explained discrepancies when auditing optical scan paper ballots. Fortunately, these discrepancies are easy to recognize and account for, so they should not cause any serious problem; they qualify as an explained discrepancy and need not trigger any kind of recount or additional audit, except in the case of an extremely close race.

To see the entire Brennan Center report referenced here, see <http://electionaudits.org/node/14> - Brennan Center Report on Post-Election Audits

COMMISSIONERS' AUDIT RECONCILIATION CERTIFICATION

To be completed for each scanner audited, and on County Board of Elections letterhead, shall appear the following, to be completed, signed and dated by the Commissioners of Elections, and filed with the State Board of Elections:

COUNTY _____ DATE _____

Scanner Serial# _____

We the undersigned Commissioners, having reviewed the Audit Reconciliation Summary Report, do hereby direct the following:

___ The audit results confirm the electronically-tabulated results. No further action is required.

___ The audit results reveal unexplained discrepancies from the tabulated results, thus requiring the escalation of the audit, to level:

6218.18 (f) (1)	--	5%
6210.18 (f) (3)	--	12%
6210.18 (g) (4)	--	100%

Subsequent to the escalation described above, all discrepancies have been resolved.

DATE:

SIGNATURE: _____ SIGNATURE _____

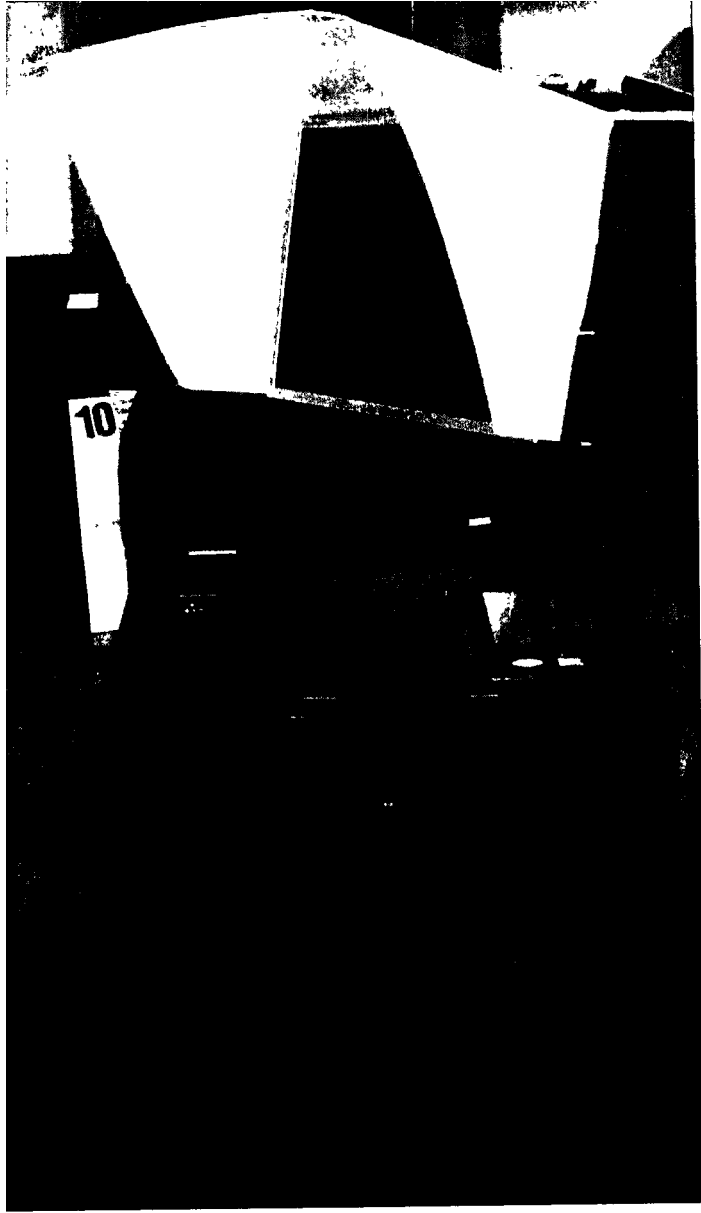
**REPORT IN RESPONSE TO THE MISSION AND OPPORTUNITY PROVIDED FOR
IN A GRANT FROM THE U.S. ELECTION ASSISTANCE COMMISSION:**

**Develop and Document Processes and Best Practices for
Coordinating Quality and Cost-effective
POST-ELECTION AUDITS**

**New York State
Board of Elections**

**Voting System Version
Information**

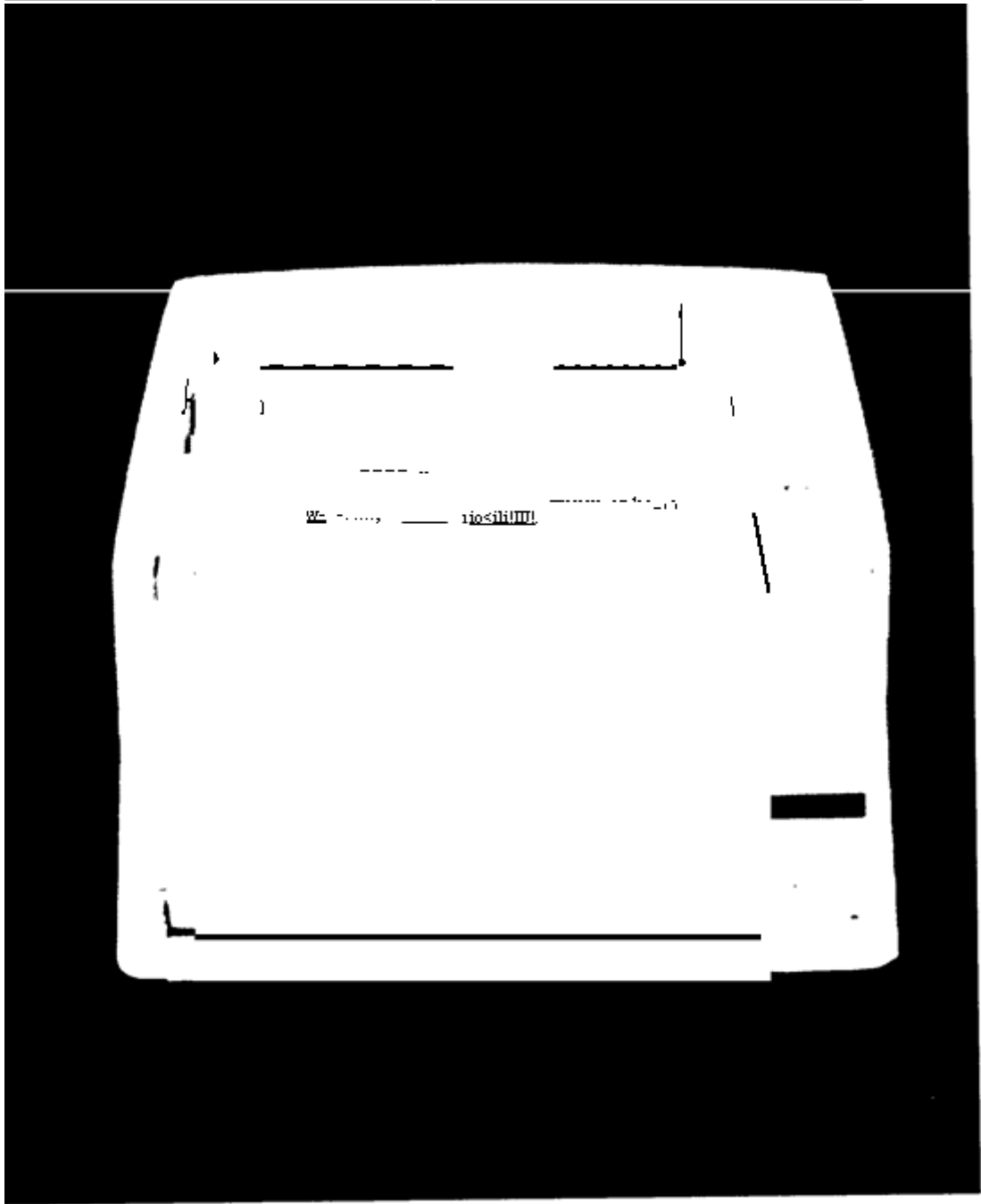
APPENDIX 3



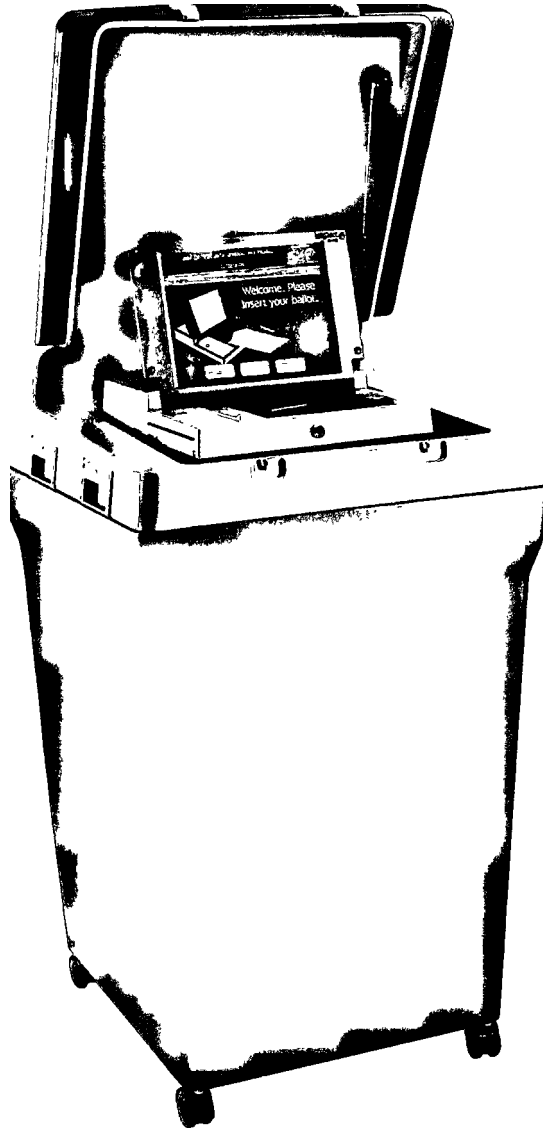
Dominion BMD

ImageCast Scanner Version 4.9.10

ImageCast BMD Version 4.9.6



Dominion Central Count
ICC Version 4.9.14



ES&S DS200

DS200 Scanner Version 2.9.0.0

DS200 Scanner Board Version 2.24.2.0

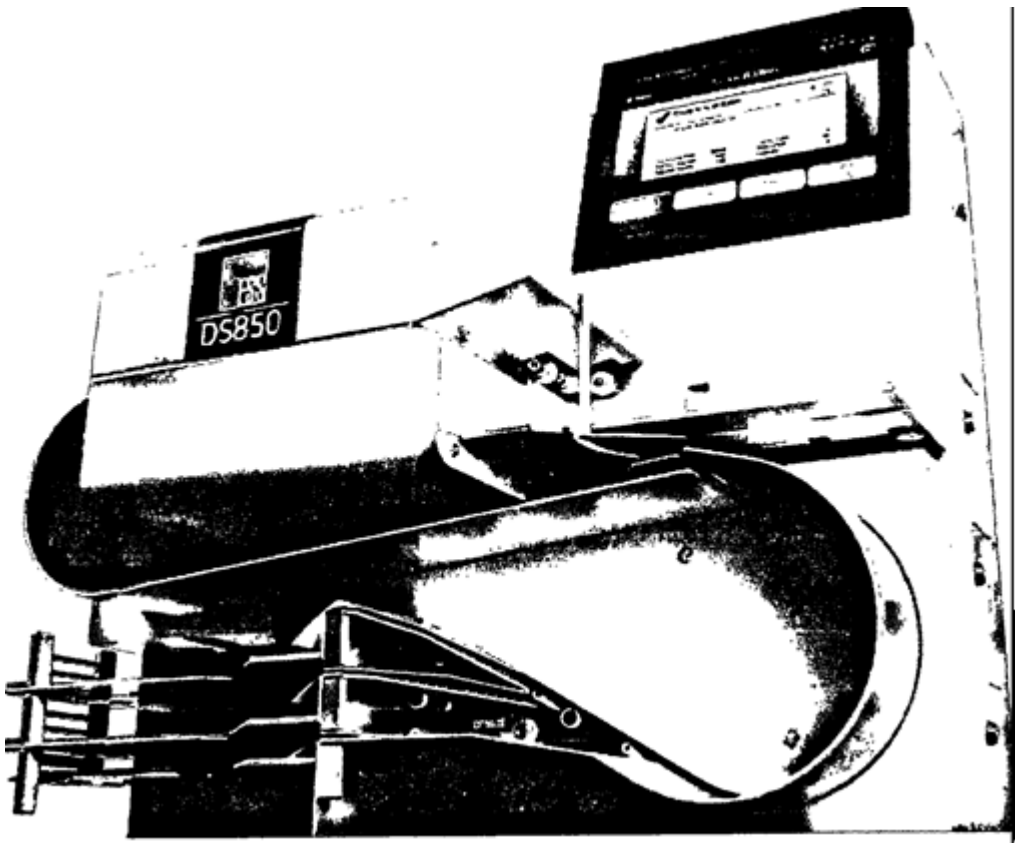
DS200 Power Management Firmware 1.2.8.0



u

ES&S AutoMark

AutoMark VAT Firmware Version 1.8.3.0



ES&S DS850

DS850 Firmware Version 2.4.0.1

REPORT IN RESPONSE TO THE MISSION AND OPPORTUNITY PROVIDED FOR
IN A GRANT FROM THE U.S. ELECTION ASSISTANCE COMMISSION:

Develop and Document Processes and Best Practices for

Coordinating Quality and Cost-effective

POST-ELECTION AUDITS

**New York State
Board of Elections
ClearBallot Sample Reports**

APPENDIX 4

ClearBallot Log-in Screen

This initial log-in screen /report identifies:

- the database in use for a specific election,
- all scanned ballot images,
- tabulated results, and
- other data pertaining to the election being audited

By selecting a database, the user will then have access to a very interactive and robust 'dashboard' through which he or she can navigate that particular database.



Clear Ballot

Election Index

ClearBallot

Database	Images	Ballots	Unread able	%	Not Yet Reviewed	%	Distinct Messages	Boxes	Precincts	Scan Station	Ballot Type	Scan Date	Score Date
ny_saratoga_2012LWII015	738	367	0	0.00%	0	0.00%	1	2	220	1	Dominion	2013-01-14	2013-01-18
ny_saratoga_2012p	14,606	7,280	5	0.07%	0	0.00%	6	23	222	2	Dominion	2012-10-18	2012-10-18
ny_schenectady_2012LI60	1,624	807	1	0.12%	0	0.00%	2	5	120	1	ESS2	2013-01-14	2013-01-17
ny_schenectady_2012LI60_test	1,624	807	1	0.12%	0	0.00%	2	5	120	1	ESS2	2013-01-14	2013-01-17
ny_schenectady_2012L241	760	378	1	0.26%	0	0.00%	2	2	120	1	ESS2	2013-01-14	2013-01-17
ny_schenectady_2012L456	1,588	791	4	0.51%	0	0.00%	4	3	120	1	ESS2	2013-01-14	2013-01-17
ny_schenectady_2012p_ed_only	7,872	3,880	14	0.36%	0	0.00%	9	56	194	3	ESS2	2012-10-17	2013-01-20

ClearBallot Dashboard

The dashboard feature of this system is easy to read and navigate, providing easy access to election data for the user. The numerous options available provide a robust menu of analytical tools for election officials and audit team members to use for any number of reasons including those which serve election purposes beyond the post-election audit itself.

Many of the reports and features available through the dashboard provide even more options to the audit team, and as each is selected, will enable the user to drill through to more data and more opportunities for analysis.

One of the many options available through the dashboard is the ability for audit team members to view individual ballots for interpretation, which is referred to as 'adjudication' within this system. In such instances, for any ballot that was unable to be recognized and tabulated by the system, the image of such a ballot, once selected, will enable the user to manually select that ballot's political subdivision/jurisdiction/ballot style data, thus allowing the ballot to be recognized and tabulated.



Clear Ballot

Tabulator 160 - General Election, Nov 6, 2012, Schenectady County, NV



Clear Ballot

Election Reports		Ballot Reconciliation		Ballot Reconciliation
Statement of Votes Cast	Printable Election	Primary Voting System (PVS)		
Statement of Ballots Cast	Summary	Total Card Cast (Paper & Touch Screen)		807
Comparison of Votes Cast	Discrepancy Summary	- Cards Cast on Touch Screens		0
Comparison of Ballots	Report	= Total PVS Cards Cast on Paper		807
Cast	Ballot Match Point	ClearAudit System		
Marginal Vote	Discrepancies	Total Cards Scanned (Paper)		807
Visualization	Vote MatchPoint	Cards Automatically Tabulated		803
All Write-in Visualization	Discrepancies	= Initial Tabulated Card Discrepancy		+4
	Ballot Discrepancies by Counter Group			
Election Data		Visual Review & Reconciliation		
Primary Voting System	ESS2	Unreadable Ballot Images Needing Review		0
Ballot Dimensions	8.5" x 17.0"	FYI: Determined to be non-ballot	0	
# Ballot Styles	120	Occluded or incomplete image		0
# Contests	14	Multiple overlapping ballots		
# Choices	59	Ballot Reviewed & Tabulated		4
# Parties	11			
# Counter Groups	4	Final Card Discrepancy		0
# Election Districts	2 out of 120			
Ballot Scanning Operations		Discrepancy Analysis		
Scan Date	2013-01-14	Ballot Count		
# Scanners	1	Percentage of Ballot Agreement		100.000%
# Boxes Scanned	5	# Ballot MatchPoint Discrepancies		0
# Pages scanned (ballots and non-ballots)	812	# Ballot MatchPoints		2
# Non-Ballots	5	Maximum Ballot MatchPoint Discrepancy		0
Unreadable Ballots (needing Review)	1			
Unreadable Ballot Rate	0.12%			
# Distinct Causes of Unreadable Ballots	2			

VOTE VISUALIZATION FOR ALL

Sample Report

This report can be used to review marginal votes appearing on audited ballots, and demonstrates for the user what the system recognizes as votes, and displays those images from largest to smallest 'marks'.

The user can access this report to also display, among other types of votes:

- overvotes,
- undervotes,
- write-in votes and
- non-votes,

all of which can be 'drilled' for more or better correlation data with each ballot as it was cast.

Election administrators can then use the lessons learned from this analysis to:

- review voter outreach programs, to reinforce/demonstrate for voters how to properly mark a ballot,
- and review election day worker training materials, to identify/reinforce the ways in which poll site workers can best help voters who are facing error messages when scanning their voted ballots.



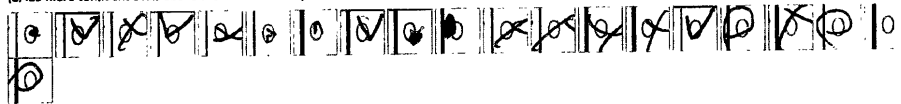
Tabulator 160 - General Election, Nov 6, 2012, Schenectady County, NY
Vote Visualization for All



Election District: All Counter Group: All # Ovals: 20 Change

Least Confident Votes for All

(14 non-displayable remade ovals not shown...)
(8,429 more confident ovals above these not shown...)



All Overvotes for All

(1 non-displayable remade ovals not shown...)
(0 more confident oval not shown...)



Least Confident Undervotes for All

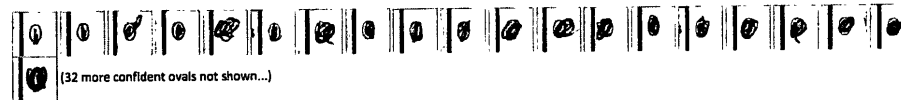
(1 non-displayable remade ovals not shown...)

<input checked="" type="checkbox"/> Democratic 12A Thomas A. Gifford	<input checked="" type="checkbox"/> Democratic 13A John N. Lockwood	<input type="checkbox"/> Write-In (Escribir)	<input type="checkbox"/> Write-In (Escribir)	<input type="checkbox"/> Write-In (Escribir)
<input type="checkbox"/> Write-In (Escribir)	<input type="checkbox"/> Write-In (Escribir)	<input type="checkbox"/> Write-In (Escribir)	<input type="checkbox"/> Write-In (Escribir)	<input type="checkbox"/> Write-In (Escribir)
<input type="checkbox"/> Write-In (Escribir)	<input type="checkbox"/> Write-In (Escribir)	<input type="checkbox"/> Write-In (Escribir)	<input type="checkbox"/> Write-In (Escribir)	<input type="checkbox"/> Write-In (Escribir)
<input type="checkbox"/> Write-In (Escribir)	<input type="checkbox"/> Write-In (Escribir)	<input type="checkbox"/> Write-In (Escribir)	<input type="checkbox"/> Write-In (Escribir)	<input type="checkbox"/> Republican 10B Patrick T. Aragona (4,277)

more confident ovals not shown...

Least Confident Cross-Endorsed "Double Votes" for All

(32 more confident ovals not shown...)



Least Confident Nonvotes for All

(59 non-displayable remade ovals not shown...)

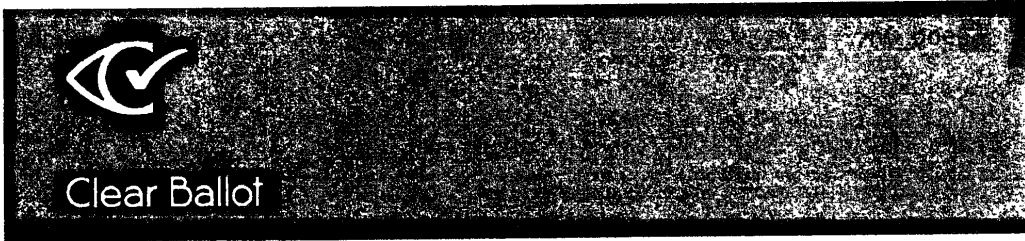
Least Confident Nonvotes for All

(59 non-displayable remade ovals not shown...)

STATEMENT OF BALLOTS CAST BY PRECINCT

Sample Report

This initial report, available through the dashboard, is used by the audit team to ensure that the realm of ballots audited is clear to not only the audit team but any candidates or other stakeholders present. In this way, all participants work from the same starting point, and can synchronize their notes or other preparatory materials, and be better-positioned to make inquiries of the audit team in an orderly manner.



Tabulator 160 - General Election, Nov 6, 2012,
Schenectady County, NY

Statement of Ballots Cast by Precinct



Election District: All Counter Group: All [Change](#)

Ballots

Election District	Audit	NumBoxes
GL-10	443	4
GL-25	364	4

Show 25 entries

1 to 2 of 2

Search:

[First](#) [Previous](#) [Next](#) [FF](#) [Last](#)

COMPARISON OF VOTESCAST

Sample Report

Still within the dashboard's options, the user has multiple report options available for use.

By selecting the COMPARISON OF VOTES CAST report, for example, the user will be able to import a raw data file created from the voting system's programmable memory devices, and be able to compare those results to the tabulated results produced by the audit system.



Clear Ballot

Tabulator 160 - General Election, Nov 6, 2012, Schenectady County, NY Comparison of Votes Cast



Clear Ballot

Election District: All Counter Group: All Change

Show 25 entries

1 to 25 of 41

Search:

First Previous Next FF Last

Choice	Ballots			Votes			Over Votes	Under Votes	Non Votes	Links
	Voting System	Audit	Difference	Voting System	Audit	Difference				
Presidential Electors For President And Vice President										
Barack Obama Joe Biden	807	807	0	454	452	-2	1	3	351	
Mitt Romney Paul Ryan	807	807	0	318	318	0	2	3	484	
Gary Johnson James P. Gray	807	807	0	18	18	0	1	3	785	
Jill Stein Cheri Honkala	807	807	0	11	11	0	1	3	792	
Write-In	807	807	0	2	2	0	0	3	802	
Virgil Goode Jim Clymer	807	807	0	1	1	0	0	3	803	
Peta Lindsay Yari Osorio	807	807	0	0	0	0	0	3	804	
United States Senator										
Kirsten E. Gillibrand	807	807	0	558	558	0	0	23	226	
Wendy Long	807	807	0	206	205	-1	0	23	579	
Chris Edes	807	807	0	9	9	0	0	23	775	
Colla Clark	807	807	0	8	8	0	0	23	776	
John Mangelli	807	807	0	4	4	0	0	23	780	
Write-In	807	807	0	0	0	0	0	23	784	
State Supreme Court Justice										
Mark L. Powers	807	807	0	436	436	0	0	103	268	
Christine M. Clark	807	807	0	404	405	+1	0	121	281	
Joseph M. Sise	807	807	0	363	362	-1	0	114	331	
John M. Silvestri	807	807	0	345	345	0	0	136	326	
Thomas Buchanan	807	807	0	334	334	0	0	128	345	
Jeffrey D. Wait	807	807	0	333	333	0	0	137	337	
Felix J. Catena	807	807	0	298	300	+2	0	128	379	
John T. Ellis	807	807	0	278	278	0	0	140	389	
Write-In	807	807	0	0	0	0	0	143	664	
Representative In Congress										
Paul D. Tonko	807	807	0	482	482	0	1	31	293	
Robert J. Dieterich	807	807	0	291	292	+1	1	31	483	
Write-In	807	807	0	1	1	0	0	31	775	

Show 25 entries

1 to 25 of 41

First Previous Next FF Last

VISUALIZATION

Sample Report

This option provides users with a report of write-in votes appearing on ballots audited.

Images of ballots will appear in order, prioritized from 'most confident' to 'least confident' order, and from those ballots audited, users can actually canvass write-in votes cast (if permitted by the jurisdiction's statutes or regulations).

With this report option, the user is able to track ballots to match same to ballot images, as described elsewhere in this report, and each image can be 'drilled' for even more analysis.



Clear Ballot

Tabulator 160 - General Election, Nov 6, 2012, Schenectady County, NY

Vote Visualization for Presidential Electors for President and Vice President:Write-In,United States Senator:Write-In,State Supreme Court Justice (4th Judicial District):Write-In,State Supreme Court Justice (4th Judicial District):Write-In,State Supreme Court Justice (4th Judicial District):Write-In,State Supreme Court Justice (4th Judicial District):Write-In,Representative in Congress (20th District):Write-In,State Senator (46th District):Write-In,Member of Assembly (111th District):Write-In,State Senator (49th District):Write-In,Member of Assembly (112th District):Write-In,Receiver of Taxes:Write-In,Village Trustee:Write-In,Village Trustee:Write-In,Village Trustee:Write-In,Member of Assembly (110th District):Write-In,Member of Council:Write-In,City Court Judge:Write-In



Clear Ballot

Election District: All Counter Group: All # Ovals: 100 Change

Least Confident Votes for Presidential Electors for President and Vice President:Write-In,United States Senator:Write-In,State Supreme Court Justice (4th Judicial District):Write-In,State Supreme Court Justice (4th Judicial District):Write-In,State Supreme Court Justice (4th Judicial District):Write-In,State Supreme Court Justice (4th Judicial District):Write-In,Representative in Congress (20th District):Write-In,State Senator (46th District):Write-In,Member of Assembly (111th District):Write-In,State Senator (49th District):Write-In,Member of Assembly (112th District):Write-In,Receiver of Taxes:Write-In,Village Trustee:Write-In,Village Trustee:Write-In,Village Trustee:Write-In,Member of Assembly (110th District):Write-In,Member of Council:Write-In,City Court Judge:Write-In

● Independent Business Write-In (Escribir)	● Mike Polombo Write-In (Escribir)	● Lewis Stanley Harris Write-In (Escribir)	● Roffredo the Dog Write-In (Escribir)	● Keith Jewell Write-In (Escribir)
● Keith Jewell Write-In (Escribir)	● RON PAUL Write-In (Escribir)	● [Handwritten initials] Write-In (Escribir)	○ Write-In (Escribir)	

All Overvotes for Presidential Electors for President and Vice President:Write-In,United States Senator:Write-In,State Supreme Court Justice (4th Judicial District):Write-In,State Supreme Court Justice (4th Judicial District):Write-In,State Supreme Court Justice (4th Judicial District):Write-In,State Supreme Court Justice (4th Judicial District):Write-In,Representative in Congress (20th District):Write-In,State Senator (46th District):Write-In,Member of Assembly (111th District):Write-In,State Senator (49th District):Write-In,Member of Assembly (112th District):Write-In,Receiver of Taxes:Write-In,Village Trustee:Write-In,Village Trustee:Write-In,Village Trustee:Write-In,Member of Assembly (110th District):Write-In,Member of Council:Write-In,City Court Judge:Write-In

(None)

Least Confident Undervotes for Presidential Election for President and Vice President/Write-In, United States Senator/Write-In, State Supreme Court Justice (4th Judicial District)/Write-In, State Supreme Court Justice (4th Judicial District)/Write-In, State Supreme Court Justice (4th Judicial District)/Write-In, State Supreme Court Justice (4th Judicial District)/Write-In, Representative in Congress (20th District)/Write-In, State Senator (46th District)/Write-In, Member of Assembly (111th District)/Write-In, State Senator (49th District)/Write-In, Member of Assembly (112th District)/Write-In, Receiver of Taxes/Write-In, Village Trustee/Write-In, Village Trustee/Write-In, Village Trustee/Write-In, Member of Assembly (110th District)/Write-In, Member of Council/Write-In, City Court Judge/Write-In

<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Write-In (Exorbit)	Write-In (Exorbit)	Write-In (Exorbit)	Write-In (Exorbit)	Write-In (Exorbit)
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Write-In (Exorbit)	Write-In (Exorbit)	Write-In (Exorbit)	Write-In (Exorbit)	Write-In (Exorbit)
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Write-In (Exorbit)	Write-In (Exorbit)	Write-In (Exorbit)	Write-In (Exorbit)	Write-In (Exorbit)
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Write-In (Exorbit)	Write-In (Exorbit)	Write-In (Exorbit)	Write-In (Exorbit)	Write-In (Exorbit)

0 Write-In (Escribir)	0 Write-In (Escribir)	0 Write-In (Escribir)	0 Write-In (Escribir)	0 Write-In (Escribir)
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0 Write-In (Escribir)	0 Write-In (Escribir)	0 Write-In (Escribir)	0 Write-In (Escribir)	0 Write-In (Escribir)
0 Write-In (Escribir)	0 Write-In (Escribir)	0 Write-In (Escribir)	0 Write-In (Escribir)	0 Write-In (Escribir)

(994

more confident ovals not shown...

Least Confident Nonvotes for Presidential Electors for President and Vice President:Write-In,United States Senator:Write-In,State Supreme Court Justice (4th Judicial District):Write-In,State Supreme Court Justice (4th Judicial District):Write-In,State Supreme Court Justice (4th Judicial District):Write-In,State Supreme Court Justice (4th Judicial District):Write-In,Representative in Congress (20th District):Write-In,State Senator (46th District):Write-In,Member of Assembly (111th District):Write-In,State Senator (49th District):Write-In,Member of Assembly (112th District):Write-In,Receiver of Taxes:Write-In,Village Trustee:Write-In,Village Trustee:Write-In,Village Trustee:Write-In,Member of Assembly (110th District):Write-In,Member of Council:Write-In,City Court Judge:Write-In

(13 non-displayable remade ovals not shown...)

0 Write-In (Escribir)	0 Write-In (Escribir)	0 Write-In (Escribir)	0 Write-In (Escribir)	0 Write-In (Escribir)
0 Write-In (Escribir)	0 Write-In (Escribir)	0 Write-In (Escribir)	0 Write-In (Escribir)	0 Write-In (Escribir)
0 Write-In (Escribir)	0 Write-In (Escribir)	0 Write-In (Escribir)	0 Write-In (Escribir)	0 Write-In (Escribir)

0 Write-in (Exhibit)	0 Write-in (Exhibit)	0 Write-in (Exhibit)	0 Write-in (Exhibit)	0 Write-in (Exhibit)
0 Write-in (Exhibit)	0 Write-in (Exhibit)	0 Write-in (Exhibit)	0 Write-in (Exhibit)	0 Write-in (Exhibit)
0 Write-in (Exhibit)	0 Write-in (Exhibit)	0 Write-in (Exhibit)	0 Write-in (Exhibit)	0 Write-in (Exhibit)

3.185 more

confidence vote not shown...

REPORT IN RESPONSE TO THE MISSION AND OPPORTUNITY PROVIDED FOR
IN A GRANT FROM THE U.S. ELECTION ASSISTANCE COMMISSION:

Develop and Document Processes and Best Practices for

Coordinating Quality and Cost-effective

POST-ELECTION AUDITS

New York State Board of Elections

Sample Ballots

APPENDIX 5

See Instructions on the Other Side 請參閱背面之說明書	1. Name of Candidate 候選人姓名	2. Precinct 選區	3. Party 政黨	4. Office 職位
	5. Ballot Number 選票號碼	6. Precinct Number 選區號碼	7. Precinct Name 選區名稱	8. Precinct Address 選區地址
See Instructions on the Other Side 請參閱背面之說明書	9. Precinct Name 選區名稱	10. Precinct Address 選區地址	11. Precinct City 選區城市	12. Precinct State 選區州
See Instructions on the Other Side 請參閱背面之說明書	13. Precinct City 選區城市	14. Precinct State 選區州	15. Precinct Zip 選區郵政編碼	16. Precinct County 選區縣
See Instructions on the Other Side 請參閱背面之說明書	17. Precinct County 選區縣	18. Precinct Zip 選區郵政編碼	19. Precinct State 選區州	20. Precinct City 選區城市
See Instructions on the Other Side 請參閱背面之說明書	21. Precinct City 選區城市	22. Precinct State 選區州	23. Precinct Zip 選區郵政編碼	24. Precinct County 選區縣
See Instructions on the Other Side 請參閱背面之說明書	25. Precinct County 選區縣	26. Precinct Zip 選區郵政編碼	27. Precinct State 選區州	28. Precinct City 選區城市
See Instructions on the Other Side 請參閱背面之說明書	29. Precinct City 選區城市	30. Precinct State 選區州	31. Precinct Zip 選區郵政編碼	32. Precinct County 選區縣
See Instructions on the Other Side 請參閱背面之說明書	33. Precinct County 選區縣	34. Precinct Zip 選區郵政編碼	35. Precinct State 選區州	36. Precinct City 選區城市
See Instructions on the Other Side 請參閱背面之說明書	37. Precinct City 選區城市	38. Precinct State 選區州	39. Precinct Zip 選區郵政編碼	40. Precinct County 選區縣
See Instructions on the Other Side 請參閱背面之說明書	41. Precinct County 選區縣	42. Precinct Zip 選區郵政編碼	43. Precinct State 選區州	44. Precinct City 選區城市
See Instructions on the Other Side 請參閱背面之說明書	45. Precinct City 選區城市	46. Precinct State 選區州	47. Precinct Zip 選區郵政編碼	48. Precinct County 選區縣
See Instructions on the Other Side 請參閱背面之說明書	49. Precinct County 選區縣	50. Precinct Zip 選區郵政編碼	51. Precinct State 選區州	52. Precinct City 選區城市
See Instructions on the Other Side 請參閱背面之說明書	53. Precinct City 選區城市	54. Precinct State 選區州	55. Precinct Zip 選區郵政編碼	56. Precinct County 選區縣
See Instructions on the Other Side 請參閱背面之說明書	57. Precinct County 選區縣	58. Precinct Zip 選區郵政編碼	59. Precinct State 選區州	60. Precinct City 選區城市
See Instructions on the Other Side 請參閱背面之說明書	61. Precinct City 選區城市	62. Precinct State 選區州	63. Precinct Zip 選區郵政編碼	64. Precinct County 選區縣
See Instructions on the Other Side 請參閱背面之說明書	65. Precinct County 選區縣	66. Precinct Zip 選區郵政編碼	67. Precinct State 選區州	68. Precinct City 選區城市
See Instructions on the Other Side 請參閱背面之說明書	69. Precinct City 選區城市	70. Precinct State 選區州	71. Precinct Zip 選區郵政編碼	72. Precinct County 選區縣
See Instructions on the Other Side 請參閱背面之說明書	73. Precinct County 選區縣	74. Precinct Zip 選區郵政編碼	75. Precinct State 選區州	76. Precinct City 選區城市
See Instructions on the Other Side 請參閱背面之說明書	77. Precinct City 選區城市	78. Precinct State 選區州	79. Precinct Zip 選區郵政編碼	80. Precinct County 選區縣
See Instructions on the Other Side 請參閱背面之說明書	81. Precinct County 選區縣	82. Precinct Zip 選區郵政編碼	83. Precinct State 選區州	84. Precinct City 選區城市
See Instructions on the Other Side 請參閱背面之說明書	85. Precinct City 選區城市	86. Precinct State 選區州	87. Precinct Zip 選區郵政編碼	88. Precinct County 選區縣
See Instructions on the Other Side 請參閱背面之說明書	89. Precinct County 選區縣	90. Precinct Zip 選區郵政編碼	91. Precinct State 選區州	92. Precinct City 選區城市
See Instructions on the Other Side 請參閱背面之說明書	93. Precinct City 選區城市	94. Precinct State 選區州	95. Precinct Zip 選區郵政編碼	96. Precinct County 選區縣
See Instructions on the Other Side 請參閱背面之說明書	97. Precinct County 選區縣	98. Precinct Zip 選區郵政編碼	99. Precinct State 選區州	100. Precinct City 選區城市

<p>投票說明</p> <p>(1) 僅可採用選舉局提供的書式工具填寫。</p> <p>(2) 本表係第一次在中央選舉區上列候選人，但該候選人之名字已在中央選舉區上列。</p> <p>(3) 本表係第一次在中央選舉區上列候選人，但該候選人之名字已在中央選舉區上列。</p> <p>(4) 本表係第一次在中央選舉區上列候選人，但該候選人之名字已在中央選舉區上列。</p> <p>(5) 本表係第一次在中央選舉區上列候選人，但該候選人之名字已在中央選舉區上列。</p> <p>(6) 本表係第一次在中央選舉區上列候選人，但該候選人之名字已在中央選舉區上列。</p> <p>(7) 本表係第一次在中央選舉區上列候選人，但該候選人之名字已在中央選舉區上列。</p>	<p>INSTRUCCIONES PARA LA ELECCIÓN PRIMARIA</p> <p>(1) Marque solamente con un instrumento de escritura proporcionado por la Junta de Elecciones.</p> <p>(2) Puntó votar por un candidato(a) cuyo nombre aparece en esta página, pero el nombre no está en la lista del nombre del candidato(a).</p> <p>(3) Puntó votar por una persona cuyo nombre no aparece en esta página, escriba o escriban el nombre en el espacio designado "Candidato por Escrito", que aparece debajo de los nombres de los candidatos para la Junta de Elecciones, o tiene el nivel correspondiente con el espacio en cual ha escrito su nombre.</p> <p>(4) Cualquier otra marca, escritura, o escritura hecha en esta página fuera de los nombres de votación o espacios en blanco proporcionados para votar pueden ser anulados por completo.</p> <p>(5) No vote dos veces. Si accidentalmente un extranjero o extranjero se anotó en el espacio de votación por escrito, su papelito será anulada para ese espacio y el resto de su voto.</p> <p>(6) El voto imparte, definitivo, o marcado accidentalmente este papelito, devuélvalo y destrúyalo. No lo lleve consigo porque en la siguiente elección será usado si se requiere. Devuélvalo a la persona que le dio el papelito o a la persona que le dio el papelito.</p> <p>(7) Después de haber marcado el papelito, asegúrese en la máquina de votación y asegure por el voto que su papelito ha sido escaneado exitosamente. Si no aparece el voto, volvélo a introducir en un receptor electoral.</p> <p>John A. Spina President Frankie L. Torres President Joseph Rodriguez President Renee Rivera President</p> <p>John Deo President Renee Rivera President Joseph Rodriguez President Frankie L. Torres President</p> <p>Committee of Election</p>	<p>PRIMARY ELECTION INSTRUCTIONS</p> <p>(1) Mark only with a writing instrument provided by the Board of Elections.</p> <p>(2) To vote for a candidate whose name is printed on this ballot fill in the oval above or next to the name of the candidate.</p> <p>(3) To vote for a person whose name is not printed on this ballot write or stamp his or her name in the space labeled "written" that appears at the bottom of the candidate names for each office and fill in the oval corresponding with the write-in name in which you have written in a name.</p> <p>(4) Any other marks or writing, or any marks made on this ballot outside the voting spaces or their spaces provided for voting will void the entire ballot.</p> <p>(5) Do not overvote. If you marked a greater number of candidates than there are vacancies to be filled, your ballot will be void for that public office or party position.</p> <p>(6) If you vote, or do vote, or wrongly mark this ballot, return it and cancel it out. Do not attempt to correct mistakes on the ballot by re-writing, erasing or cross out. Erasure or cross out may invalidate all or part of your ballot. Prior to returning your ballot, if you realize a mistake in completing the ballot or wish to change your ballot, you may submit and complete a new ballot. You have a right to a replacement ballot upon return of the original ballot.</p> <p>(7) After completing your ballot, insert it into the ballot scanner and wait for the notice that your ballot has been successfully scanned. If no such notice appears, insert the submission of an election inspector.</p> <p>Ballot Stamp Here</p>	<p>OFFICIAL BALLOT</p> <p>FOR THE DEMOCRATIC PRIMARY ELECTION</p> <p>SEPTEMBER 13, 2012</p> <p>CITY OF NEW YORK COUNTY OF KINGS</p> <p>June 2012 Abolished by Council E.D. 3, 18, 24, 34, 47, 49</p>
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OFFICE	MEMBER OF ASSEMBLY 137th District (Vote for any ONE)			MEMBER OF STATE COMMITTEE 157th District (Male) (Vote for any ONE)		MEMBER OF COUNTY COMMITTEE LD 21 ED 19 (Vote for any FOUR different candidates even if in same column)						
	Democrat 1a <input type="radio"/>	Democrat 2a <input type="radio"/>	Democrat 3a <input type="radio"/>	Democrat 4a <input type="radio"/>	Democrat 5a <input type="radio"/>	Democrat 6a <input type="radio"/>	Democrat 7a <input type="radio"/>	Democrat 8a <input type="radio"/>	Democrat 9a <input type="radio"/>	Democrat 10a <input type="radio"/>	Democrat 11a <input type="radio"/>	Democrat 12a <input type="radio"/>
Disenfranchised A *	David F Gantt	Jose A Cruz	John F Lightfoot	David F Gantt	Jose A Cruz	Courtney K Lattimore	Tonya N Dickerson	Jennifer M Schaeffer	India L Washington	Laraya B Austin	Angelena Singletary	Rhumerie G Singletary
WRITE-IN	WRITE-IN			WRITE-IN		WRITE-IN	WRITE-IN	WRITE-IN	WRITE-IN			

MARKING INSTRUCTIONS:
 (1) Mark in BLUE or BLACK pen or pencil.
 (2) To vote for a candidate whose name is printed on this ballot, completely fill in the above the name of the candidate.
 (3) To vote for a person whose name is not printed on this ballot, write the name in the blank WRITE-IN space which appears at the bottom of the column under the title of Office.
 (4) To vote on a proposal located on the reverse side of this ballot, completely fill in the "Yes" or "No" oval contained in the box next to each such proposal.
 (5) Any other mark or writing, or any erasure marks on this ballot outside the voting boxes or blank spaces provided for write-in may void the entire ballot.

STATE OF NEW YORK, COUNTY OF MONROE
 (3) Do not overvote. If you select a greater number of candidates than there are vacancies to be filled, your ballot will be void for that public office or party position.
 (7) If you fold, or deface, or wrongly mark this ballot, ask for instructions on how to obtain a new ballot. Do not attempt to correct mistakes on the ballot by smudging erasures or cross-outs. Smudges or cross-outs may invalidate all or part of your ballot. Prior to submitting your ballot, if you make a mistake in completing the ballot or wish to change your ballot choices, you may obtain and complete a new ballot. You have a right to a replacement ballot upon return of the original ballot.

Ballot ID #: 6
 Town/City of: 21
 E.D. #: 19

OFFICE	GOVERNOR AND LEUTENANT GOVERNOR (NOTE FOR 042)	COMPTROLLER (NOTE FOR 042)	ATTORNEY GENERAL (NOTE FOR 042)		UNITED STATES SENATOR (NOTE FOR 042)	UNITED STATES SENATOR 2 YEAR UNEXPIRED TERM (NOTE FOR 042)	STATE SUPREME COURT JUSTICES OR JUDGES ELECTED (NOTE FOR 042)							
			1	2			3	4	5	6	7	8	9	10
DEMOCRATIC	Richard M. Codey and Robert J. Duffy	Nancy R. Eversitt	DAVE Schwarzenegger	DAVID S. Isgur	Charles E. Schumer	Robert C. Orrison	John C. Strotz	James F. Fitzpatrick	Robert A. M. Long	James M. L. Sullivan	Robert A. M. Long	James M. L. Sullivan	Robert A. M. Long	James M. L. Sullivan
REPUBLICAN	Carl J. Pasolunghi and Thomas J. DiStasio	None	Tom Cotton	None	John McCain	Joseph J. DiStasio	Thomas P. DiStasio	Joseph J. DiStasio	Thomas P. DiStasio	Joseph J. DiStasio	Thomas P. DiStasio	Joseph J. DiStasio	Thomas P. DiStasio	Joseph J. DiStasio
INDEPENDENT	Richard M. Codey and Robert J. Duffy	None	None	None	None	None	None	None	None	None	None	None	None	None
COMMISSIONER	Carl J. Pasolunghi and Thomas J. DiStasio	None	None	None	None	None	None	None	None	None	None	None	None	None
WORKING FAMILIES	Richard M. Codey and Robert J. Duffy	None	None	None	None	None	None	None	None	None	None	None	None	None
GREEN	None	None	None	None	None	None	None	None	None	None	None	None	None	None
NOT A 2 YEAR TERM	None	None	None	None	None	None	None	None	None	None	None	None	None	None
IND	None	None	None	None	None	None	None	None	None	None	None	None	None	None
UNEMPLOYED	None	None	None	None	None	None	None	None	None	None	None	None	None	None
PERIOD	None	None	None	None	None	None	None	None	None	None	None	None	None	None
UNEMPLOYED	None	None	None	None	None	None	None	None	None	None	None	None	None	None
UNEMPLOYED	None	None	None	None	None	None	None	None	None	None	None	None	None	None
UNEMPLOYED	None	None	None	None	None	None	None	None	None	None	None	None	None	None
UNEMPLOYED	None	None	None	None	None	None	None	None	None	None	None	None	None	None

OFFICIAL BALLOT FOR THE GENERAL ELECTION NOVEMBER 2, 2010 County of Albany Albany ED 02

See instructions on the other side.

BALLOT PROPOSITION NUMBER (1) ONE <small>THE PROFESSIONAL BOARD</small>	BALLOT PROPOSITION NUMBER (2) ONE <small>AMENDMENT SUB LISTS FOR SENATE FACILITIES</small>	REFERENDUM NO. 1 INCREASE DMY RES. FEE <small>A REFERENDUM TO INCREASE DMY RES.</small>
YES <input type="checkbox"/> NO <input type="checkbox"/>	YES <input type="checkbox"/> NO <input type="checkbox"/>	YES <input type="checkbox"/> NO <input type="checkbox"/>
Instructions 1. Mark only with a writing instrument provided by the board of elections. 2. To vote for a candidate whose name is printed on this ballot, fill in the oval or square below or next to the name of the candidate. 3. To vote for a person whose name is not printed on this ballot, write or stamp his or her name in the space labeled "write-in" that appears at the bottom of the column or the end of the row for such office and fill in the square or oval corresponding with the write-in space in which the voter has written in a name. 4. To vote on a proposal located on the reverse side of this ballot, fill in the oval or square that corresponds to your "YES" or "NO" vote. 5. Any other mark or writing, or any errors made on this ballot outside the voting squares or blank spaces provided for voting will void this entire ballot.		Instructions 6. Do not overvote. You may vote only for the maximum number of candidates for each office. The maximum number of candidates you may vote for in each office is listed at the top of the column for that office. Casting more votes than the maximum number allowed in any contest, will void your votes for that contest only. 7. If you tear, deface or wrongly mark this ballot, return it to a poll worker and obtain another. Do not attempt to correct mistakes on the ballot by making erasures or cross-outs. Erasures or cross-outs may invalidate all or part of your ballot. Prior to submitting your ballot, if you make a mistake in completing the ballot or wish to change your ballot choices, you may obtain and complete a new ballot. You have a right to a replacement ballot upon the return of the original ballot. 8. After completing your ballot, insert it into the ballot scanner and wait for the notice that your ballot has been successfully scanned. If no such notice appears, seek the assistance of an election inspector.

REPORT IN RESPONSE TO THE MISSION AND OPPORTUNITY PROVIDED FOR
IN A GRANT FROM THE U.S. ELECTION ASSISTANCE COMMISSION:

**Develop and Document Processes and Best Practices for
Coordinating Quality and Cost-effective.**

POST-ELECTION AUDITS

New York State Board of Elections

Bibliography

APPENDIX 6

Bibliography

¹¹ 2013 Florida Statutes. -Automated Audits -101.591 (b) - The Florida Senate.

<http://www.flsenate.gov/Laws/Statutes/2013/101.591>

(accessed August 29, 2013).

"CEIMN issues its report on Minnesota's 2012 Post-Election Audit | CEIMN: Citizens for Election Integrity Minnesota." CEIMN: Citizens for Election Integrity Minnesota.

<http://www.ceimn.org/news/ceimn-issues-its-report-minnesotas-2012-post-election-audit>

(accessed August 29, 2013).

Calandrino, Joseph A., J. Alex Halderman, and Edward W. Felten. "Machine-assisted election auditing." *n Proceedings of the USENIX Workshop on Accurate*

Electronic Voting Technology 1 (2007): 1-9.

<http://dl.acm.org/citation.cfm?id=1323120> (accessed August 28, 2013).

Dopp , Kathy Anne . "Checking Election Outcome Accuracy, Post-Election Audit Sampling Methods." *Independent* 1 (2010): 1-55.

http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1579182

(accessed August 29, 2013).

ElectionAudits.org. "Principles and Best Practices for Post-Election Audits |

ElectionAudits.org. ¹¹ ElectionAudits.org.

<http://electionaudits.org/principles.html> (accessed August 29, 2013).

"Fixed-Cost vs. Fixed-Risk Post-Election Audits in Iowa." *Chance* 23, no. 3 (2013): 13-17.

Jones, Douglas W. "Exploiting the redundancy in election records to conduct useful audits and improve the system design process." *Auditing Elections*.

homepage.cs.uiowa.edu/"jones/voting/cacm2004.shtml

(accessed August 29, 2013).

Kim, Eric, Nicholas Carlini, Andrew Chang, George Yiu, Kai Wang, and David Wagner

"Improved Support for Machine-assisted Ballot-level Audits:" usenix.

<https://www.usenix.org/conference/evtwote13/improved-support-machine-assisted-ballot-level-audits> (accessed August 28, 2013).

"New Report: Wisconsin's Post-Election Voting-Machine Audit Practices | CEIMN:

Citizens for Election Integrity Minnesota." CEIMN: Citizens for Election Integrity Minnesota.

<http://www.ceimn.org/news/new-report-wisconsins-post-election-voting-machine-audit-practices> (accessed August 29, 2013).

Post-election audit standards working group report: evaluation of audit sampling models and options for strengthening California's manual count.

Sacramento, CA: California Secretary of State, 2007.

"Report of the Election Audits Task Force - League of Women Voters."

League of Women Voters | Making Democracy Work

<http://www.lwv.org/content/report-election-audits-task-force>
(accessed August 29, 2013).

Rivest, Ronald L... "On Auditing Elections When Precincts Have Different Sizes -

www.vote.caltech.edu.¹¹ www.vote.caltech.edu.

<http://vote.caltech.edu/content/auditing-elections-when-precincts-have-different-sizes>
(accessed August 29, 2013).

"SOS- Information for Election Administrators." SOM - State of Michigan - Post Election

Audits. http://www.michigan.gov/sos/0,4670,7-127-1633_11976---.00.html

(accessed August 29, 2013).

Stark, Philip B.. "Auditing a collection of races simultaneously." *ArXiv e-prints* 1 (2009):

1-9. <http://arxiv.org/abs/0905.1422> (accessed August 29, 2013).

Stark, Philip B.. "A Sharper Discrepancy Measure For Post-election Audits." *The Annals of*

Applied Statistics 2, no. 3 {2008}: 982-985.