

Ohio 2008 Post Election Audit Review – Feb 2009

Background

Ohio Secretary of State Jennifer Brunner published directives that led to the first post election audits in Ohio. Directive 2008-39 specified voluntary pilot audits after the March Primary election and Directive 2008-113 called for all counties to do audits for the Presidential contest after the November General election.

Performing regular post election audits is a vitally important step in measuring and improving election processes in Ohio as well as restoring voter confidence in these processes. Secretary Brunner and all Boards of Elections (BOE's) that carried out these audits are to be commended for their efforts.

Overview

The Audit Review includes

- Summary of observer comments by County
- Findings and Recommendations based on the observer comments and a review of Directive 2008-113

It is important to note that

- The observer effort was limited by time constraints because Directive 2008-113 was not published until after the election (November 14, 2008) which left little time to prepare observer instructions and recruit observers.
- The same time constraint meant that BOE's had to put together audit procedures quickly (and at a time when they were busy with their official canvass and, in some cases, recounts).
- Observer comments for some counties are incomplete for a number of reasons. First, most counties did not have written audit procedures available for observers who did not understand or were unable to follow all activities. Second, observers are sometimes hesitant to interrupt BOE staff that is busy completing the audit. Finally, observers sometimes could not observe the entire audit because of work, family, etc.

Further study might include

- Gather basic audit results from all counties (preferably working with OAEO and/or SoS VRI)
- Gather audit cost data as part of multi state (CA, CT, FL, MN) audit program being coordinated by the Florida Voters Coalition.
- Refine recommendations made in this review. For example
 - Audit tiers and escalation trigger
 - Audit report content
 - Chain of custody validation
 - County audit procedures

A list of the people involved in the audit can be found in the Acknowledgements section.

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County Results

There are many pieces of data that could be gathered after an audit. For this report, this small subset of information is reported

- Dates for Precinct Selection and Counting (these are sometimes approximate because observers were not always able to attend)
- Number of counting teams and the number of people on each team
- For each round of auditing
 - **Precincts:** Number of precincts audited
 - **Ballots to audit:** Number of ballots to audit (for the selected precinct) and the resulting percentage of the total ballots cast (usually these are pre-audit numbers, but sometimes are post-audit numbers)
 - **Precincts that did not match:** Number of audited precincts that did not match the original certified results
 - **“Total discrepancy”** is the count of total votes changed between the original official results and the hand count.
 - **“Candidate overall discrepancy”** is the total change in votes for each candidate. These candidate numbers will not add up to the **“Total discrepancy”** because some mistakes will cancel out. For example, if one candidate gains two votes in one precinct and loses a vote in another precinct, there were three votes corrected, but an overall change of one vote for the candidate.
- Observer comments/recommendations are often preceded by the topic addressed (e.g., Precinct Selection, Counting Procedure).

Every attempt was made to verify the numbers in the table, but data was gathered from many sources and there could be inaccuracies (especially minor ones) and they should be checked against official county reports.

County	Precinct Selection Ballot Counting	Comments/ Recommendations
Belmont	<p>Precinct Selection: 12/2/2008 (not observed) Counting: 12/3/2008-12/3/2008 • 3 counting teams with 2 people each.</p> <p>Round 1 • Precincts: 6 • Ballots to audit: 1,819 (5.6%) • Precincts that did not match: 0 • Total discrepancy: 0 votes • Candidate overall discrepancy: 0</p> <p>Round 2 • Not required</p>	<p>From Observer(s)</p> <ul style="list-style-type: none"> • On-Site Supervisor: William F. Shubat -Director, Kelly A. McCabe -Deputy Director, Franklin Lee (Frankie) Carnes - Chairman (Chairwoman) • Precinct Selection: Precinct selection was not observed. They said they had selected the precincts to audit the previous day by pulling names "from a hat". Obviously it does not seem proper that they selected the precincts when I couldn't observe. On the other hand, they did not know I would be observing and may not have thought that there was anything improper about doing it the day before. • Identifying People On-Site: Mr. Shubat did not wear identification that I could see. • Opening Chain of Custody: Paper ballots kept in cardboard boxes unsealed. Teams checked seals on VVPAT's and verbally said that they matched. People moved in and out of 'vault'. VVPAT seals were observable. No seals observed on the paper ballots. • Counting Procedure: One person read the names "Barack" or "McCain" off the tape while the other person made hash marks on a sheet of paper. One of them made a point of noting that they always use a red pen for this, though I don't know why, as black or blue would be easier to see I would think. Some teams wrote down the machine count totals that were recorded on the tape which they then compared with the totals they counted from the hash marks. Other teams may have made the comparison without writing down the machine count totals. • Counting Procedure: Sometimes the counts matched,

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County	Precinct Selection Ballot Counting	Comments/ Recommendations
		<p>sometimes not. The counting teams sometimes re-counted when there was a mismatch and sometimes looked for what could have caused a miscount. I think there was one occasion when a different team re-counted. They attempted to account for/explain discrepancies before putting away each tape.</p> <ul style="list-style-type: none"> • Counting Procedure: After the re-counting, the Director and the IT lady went into the room with the computers and printed out a tally which I presume was the election results for the precincts that were recounted. The two of them then made comparisons between that and the recounts, and attempted to explain discrepancies. By the time I realized what was going on they were part way through the process and I didn't ask them to re-start or explain in detail what they were doing. I don't know what they reported to the state. I have heard on the news of other counties reporting "no discrepancy" which, after observing this I can't believe. It seems to me it would be better to record the discrepancies and the suspected explanations for the discrepancies. • Able to verify all results: They did not hinder me in any way and Frankie told me I was free to observe everything. I guess I was too green and lacking in assertiveness to record the numbers or figure out how to determine if all the ballots were included. The seals each had a printed number and a hand written number. I asked the relevance of each but didn't quite understand the answer. • Observer Comments: The folks were very friendly and we talked for at least 1/2 hour after it was all over. They seem to feel some pride in how they manage and seemed happy to show off and explain how they do things. They also said they need more election workers and invited me to participate in the next election.
Cuyahoga	<p>Precinct Selection: 12/1/2008 Counting: 12/2/2008-12/TBD/2008</p> <ul style="list-style-type: none"> • 27 counting teams with 2 people each. <p>Round 1</p> <ul style="list-style-type: none"> • Precincts: 67 (5 precincts were discarded because of chain of custody problems) • Ballots to audit: 33,839 (5.0%) • Precincts that did not match: 23 • Total discrepancy: 63 votes • Candidate overall discrepancy: <ul style="list-style-type: none"> ○ McCain: +5 ○ Nader: +1 ○ Obama: -3 ○ Write-in: +3 ○ Over votes: +2 ○ Under votes: -5 <p>Round 2</p>	<p>From Observer(s)</p> <ul style="list-style-type: none"> • On-Site Supervisor: Matt Jaffe, manager ballot dept • Audit Notification: BOE contacted local activists to notify them of the audit dates. • Since there were no members of public present, it is not possible to evaluate how explanations or access would have been. Was told that public would have less access. • Transparency: Duly appointed observers were given good access to view counting and ask questions. • Precincts selected by: Mike DeFranco, compliance administrator. Observer able to examine list of precincts prior to cutting up into slips • Finding Ballots: Election officials could not determine if all ballots were included; ballots from different sources stored in different areas; several hundred man-hours spent sorting and searching. • Opening Chain of Custody: The chain of custody for 5 of the 67 precincts could not be documented. No seals were used, ballots kept on site under D & R locks • The main problem seemed to be gathering all optical scan ballots for a precinct probably because of all the different types (Election Day ballots, early absentee, late absentee,

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	<ul style="list-style-type: none"> • Precincts: 38 • Chain of custody problems: 0 • Ballots to audit: 20,401 (3.0%) • Precincts that did not match: 9 • Total discrepancy: 13 votes • Candidate overall discrepancy: <ul style="list-style-type: none"> ○ McCain: -1 ○ Obama: -3 ○ Write-in: +1 ○ Over votes: +2 	<p>remakes, provisional ballots, etc).</p> <ul style="list-style-type: none"> • Counting Procedure: First count was blind, additional counts were not. Often there was a specific goal as in "we are short 2 Obamas". No independent verification that a precinct determined to match after multiple counts with specific goals did in fact match. • Counting Procedure: Some matched on first count, some didn't match after 6 or more counting attempts by multiple teams or by management teams • Closing Chain of Custody: No seals used. All ballots from all sources were placed in a single box per precinct. • Observer Concerns: Ballots from different sources (polling location, absentee, provisional, remake, etc) were in different locations and were not consistently organized. The majority of precincts did not match on day 1 because all ballots had not been located. The fundamental issue was the organization and storage of ballots more than the organization of the audit itself. Despite extensive efforts by elections officials and hundreds of hours spent searching and organizing during the 2 weeks of the audit, no one can say with certainty that all ballots were located. This raises questions about the integrity of the process and the completeness and accuracy of the results reported. • Observer Comments: Copies of forms were available by public records request after audit completed. • Election Events (from On-Site Supervisor): Some PBOS were out of service during the day. • Process Improvement Suggestions (from On-Site Supervisor): Sort and store by precinct. Use header cards for central scanners that will reject ballots that are misfiled. • Waiver on full hand count granted
Delaware	<p>Precinct Selection: 12/3/2008 (not observed) Counting: 12/3/2008-12/?/2008</p> <ul style="list-style-type: none"> • 3 counting teams with 4 people each. <p>Round 1</p> <ul style="list-style-type: none"> • Precincts: 7 • Ballots to audit: 5,197 (5.6%) • Precincts that did not match: 0 • Total discrepancy: 0 votes • Candidate overall discrepancy: 0 <p>Round 2</p> <ul style="list-style-type: none"> • Not required 	<p>From Observer(s)</p> <ul style="list-style-type: none"> • On-Site Supervisor: Janet L. Brenneman, Director of the Delaware County Board of Elections • Identifying People On-Site: Some county personnel wore identification. I had no trouble identifying people on-site because all were county personnel except for one vendor. • Precincts selected by: One Democrat and one Republican. I was not present when the selection was completed. However, several staff members described the process that was used, and it was consistent with the directive. The pages with the precincts listed were inspected by both Democrat and Republican staffers, to ensure that every precinct was listed. Then they cut the pages into the separate slips of paper that were placed in the bowl. Both Republican and Democrat staff members from each team then drew the slips of paper from the bowl. I did observe the paper slips and the clear bowl in the room. • Opening Chain of Custody: VVPAT seals were observable. No seals observed on the paper ballots. • Counting Procedure: Counting teams made separate stacks and then used hash marks recorded on paper for each of the stacks. Most of the manual counts matched the

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		<p>machine counts. Two precincts needed to be re-counted. Election officials recorded counts on official forms during the day as each precinct recount was concluded. However, I was not present at the end of the audit to observe the final entries on official forms.</p> <ul style="list-style-type: none"> • Counting Procedure: The director shared all audit sheets with me and spent time explaining to me the entire audit process. This was my first audit observation experience so I appreciated the time she spent to explain the process. • DRE Counting: One official copy of the "ballot image report" was printed for one precinct only. The others used the paper roll from the machine. • Blind Counting: The counting teams were aware of the totals that they needed to match, so this was not a "blind" audit. • Election Events (from On-Site Supervisor): There were a "couple" of paper jams and a "couple" of paper rolls installed backwards in the machines, so they did not record. No optical scanners were used at the precincts - only at the BOE office. A "couple" of the machines said "low battery" - so they closed these machines. The director said that all of the vote totals were "okay" despite the low battery message. • Process Improvement Suggestions (from On-Site Supervisor): The Director has confidence in the testing that is done on the machines. The programming is done in teams that include both Democrats and Republicans. The vendor support is good for the machines. The director also recommends streamlining the ID procedures and the provisional ballot procedures. She would like to eliminate paper ballots entirely. (For the record, I strongly disagree with this recommendation.)
Franklin	<p>Precinct Selection: 12/8/2008 (not observed) Counting: 12/15/2008-12/18/2008</p> <ul style="list-style-type: none"> • 4 or 7 teams of 4 people each. <p>Round 1</p> <ul style="list-style-type: none"> • Precincts: 43 • Ballots to audit: 29,362 (5.2%) • Precincts that did not match: not tabulated • Total discrepancy: not tabulated • Candidate overall discrepancy: <ul style="list-style-type: none"> ○ McCain: +2 ○ Obama: +11 <p>Round 2</p> <ul style="list-style-type: none"> • Precincts: 27 • Ballots to audit: 17,159 (3.0%) • Precincts that did not match: TBD • Total discrepancy: not 	<p>From Observer(s)</p> <ul style="list-style-type: none"> • On-Site Supervisor: Todd Wedekind, Absentee Manager • Identifying People On-Site: Besides myself, only County BOE personnel were there. As far as I could see, some wore identification and some did not. Looked like half and half. • Precinct Selection: When we asked when the audit was started, we were given the start date for the counting, but not the precinct selection (so we missed the precinct selection). • Precinct Selection: BOE personnel had previous selected precincts, if they picked precinct A-2, and it was part of a multiple precinct polling location, then they included the other precincts from that location, and counted those votes towards the 5% total. In this way, they counted all VVPAT votes from a voting location • Precinct Selection: Precinct level official results separated by type of ballot (e.g., absentee paper, absentee Ivotronic, Election Day paper, etc) were available before the audit started. • Opening Chain of Custody: observing VVPAT only, they were locked in a room, removed for audit, NOT sealed (no security seals).

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	<p>tabulated</p> <ul style="list-style-type: none"> • Candidate overall discrepancy (for both rounds): <ul style="list-style-type: none"> ○ McCain: +6 ○ Obama: +14 ○ Baldwin: +1 	<ul style="list-style-type: none"> • Opening Chain of Custody: observing paper ballots only, the paper ballots were at all times when not being counted stored in rooms with two locks (a Democratic lock and a Republican lock), and the VVPAT's were kept in a locked warehouse with a guard from the sheriff's office, or so I was told. • Counting Procedure: 6-10 (VVPAT) rolls were singled out because they were unreadable, at least in some part. I would presume that they went back to the machine and ran the "ballot imaging" report for these machines. • Counting Procedure: I observed the counting of VVPAT's only, two discrepancies of one vote were found when they reviewed the tape a second time. I was not there at the end of the day, • Counting Procedure: Not actually hash marks -- they ticked off successive numbers on a tally sheet. I have copies of all tally sheets. In some precincts they found a match first time. The Absentee Manager recorded discrepancies on a spread sheet -- not an "official form" -- I have copies of his spreadsheet. I simultaneously with his count filled out my spreadsheet recording counts and discrepancies. • Counting Procedure: If a set of ballots was recounted, it was always done by a different team. • Counting Procedure: If the DRE paper tape count did not match, a second count was done and (rarely) a third count was needed. One time, a tape was re-inspected to find one missing Nader vote. In the end, all DRE counts matched original results. • Counting Procedure: For paper ballots, the hand count for 20 precincts (11 in Round 1, 9 in Round 2) did not match original results, but were not recounted because the discrepancy was identified (e.g., extra ballot(s) found) • Counting Procedure: For paper ballots, the hand count for 3 precincts (2 in Round 1, 1 in Round 2) did not match original results, but were not recounted because some provisional votes were on the Ivotronic. • Counting Procedure: VVPAT counting was done in one location and absentee ballots at a second location. Combining totals for all ballot types to determine precinct results was done after the counting and was not observed. • Blind Counting: counting teams not intentionally informed of the results they were looking for, but each tape had the total at the bottom (for that machine) so they could easily check. They were not pre-noting that they were looking for X Obama or X McCain votes, but they often noted that they would be looking for one Nader vote (for example) • Blind Counting: Those counting the ballots were blind to the original result and in case of a recount, to the other counts. • Blind Counting: By the third count (VVPAT rolls), the assistant to supervisor Karen S. Cotton (Ms Cotton's official title is Manager of Election Operations), Carla, would tell them what to look for, e.g., "we are one over for Obama, and one Nader is missing." Despite this all too human desire to reconcile the counts, I do feel the count was honest and fair.

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		<ul style="list-style-type: none"> • Counting Transparency: I'm not sure how an observer could ever confirm that the number of votes was counted correctly -- I can confirm that the procedure used insured a correct count with high probability. • Closing Chain of Custody: individual VVPAT's (and individual precincts) were locked in a room with a seal representing the precinct and the machine serial number, but no security seal number (no unique number). When seal was removed, an NEW identical seal was affixed. • Closing Chain of Custody: I observed the counting only of paper ballots. They are kept in bins. There is an enormous room -- vault with two locks (one Republican, one Democrat, both locks must be opened for entry) -- in which the bins are stored. • Process Improvement Suggestions (from On-Site Supervisor): His reply was that their space is inadequate. They are in a building with 4 other tenants. Ballots have to be transported through shared hallways. They do not have good secure rooms for counting. Their two vaults are widely separated. They should have their own building. Also, he remarked that they are understaffed -- the number of paper ballots this year was six times as large as previously, but their staff is no larger. They need more full-time staff. For months the only weekend off was Thanksgiving. Everyone is stretched, everyone is tired. • Observer Concerns: Chain of custody: I didn't really see any reason for additional security, I think if an election was stolen, they would have to remove a tape from one machine, revote the entire machine in order to create a tape with different numbers. Seems too cumbersome. • Observer Comments: Franklin County BOE collectively and individually was extremely helpful, cooperative, courteous, and friendly. As far as I could see, their procedures were meticulous. • Observer Comments: Everyone at the Franklin County BOE was completely open and extremely helpful. • Observer Comments: As far as I could tell, the paper ballot audit was meticulous. Clearly, Franklin Co BOE is proud of its work -- justifiably, I think. • Observer Comments: The entire process was extremely open and transparent, at least for the parts I saw. I was allowed to roam freely among the teams doing the counting of the "ballots" on the rolls, ask questions, write down the totals, and take photos. The Franklin County official was cooperative but she and most of her most outspoken counters expressed the opinion that they were not surprised that the audit did not reveal any discrepancies, because "the machines count accurately." One counter said the audit was a waste of time and two workers exchanged the opinion that going to all paper ballots (optical scanners) would not be as accurate. The environment in the Franklin County warehouse was much less friendly than that of the Knox County re-counting room. No one in the warehouse seemed eager to help me get the numbers from the hand counts written down so that I could check them myself later against the officially reported machine totals. I could have brought a

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		<p>copy of those official machine counts as reported on election night, but if they had handed me a copy it would have been easier for me to check.</p> <p>From group</p> <ul style="list-style-type: none"> We noticed that the precinct selection did not include any polling places with 2 or more precincts. This seemed unlikely since we understand 61 of the 534 polling places have 2 or more precincts. A rough statistical calculation came up with a probability below.002 (or 1 chance in 500) that this would occur. This may have just been a valid (but unlikely) draw, but Franklin County may want to review their process to be sure all polling locations were included and be aware that stirring cards or pieces so they all have an equal chance of being selected is harder to do than it sounds.
Hocking	<p>Precinct Selection: 12/8/2008? Counting: 12/8/2008</p> <ul style="list-style-type: none"> 1 counting teams with 6 people (Board members) <p>Round 1</p> <ul style="list-style-type: none"> Precincts: 3 Ballots to audit: 1,043 (7.9%) Precincts that did not match: 1 Total discrepancy: 68 votes Candidate overall discrepancy: unknown <p>Round 2</p> <ul style="list-style-type: none"> Not done 	<p>From Observer (who had to leave before counting was completed):</p> <ul style="list-style-type: none"> Precinct Selection: Board members, Director, and Deputy Director did the precinct selection and ballot counting. All efforts were made to be in accordance with all procedures. Opening Chain of Custody: Ballots were delivered by two officials and were sealed. Opening Chain of Custody: Ballots seem to be stored in an unlocked room. 68 absentee ballots for precinct Perry 2 were found that were apparently not scanned for the original certified results. <p>From group</p> <ul style="list-style-type: none"> It seems like the 68 vote discrepancy in Perry 2 should have caused a second round audit, but the observer was not available.
Knox	<p>Precinct Selection: 12/11/2008 (not observed) Counting: 12/11/2008</p> <ul style="list-style-type: none"> 4 counting teams with 2 people each <p>Round 1</p> <ul style="list-style-type: none"> Precincts: 3 Ballots to audit: unknown Precincts that did not match: 0 Total discrepancy: 0 votes Candidate overall discrepancy: none <p>Round 2</p> <ul style="list-style-type: none"> Not required 	<p>From Observer</p> <ul style="list-style-type: none"> Precinct Selection: Missed precinct selection, but it was reportedly done following the directive (i.e., selecting slips of paper from a container holding one slip for each precinct). Precinct Selection: Precincts Milford A & B were automatically included in the audit since they were part of a mandatory recount. This was apparently approved by SoS office. A third precinct was selected randomly. Dean Evan (SoS liaison) attended. Observer treated like VIP. The 2008 audit was much more open than 2004 and (Madison county) 2006 recount. Counting Procedure: Hand counts matched original results although a second count was necessary for at least one precinct. Counting Procedure: One DRE tape was unreadable for one ballot, so the "ballot image" for that machine was run and then the hand count matched. Counting Procedure: A second DRE tape had a significant paper jam which lost many votes (BOE staff member estimated 50-60 votes). These "ballots" were "recovered" by using the "ballot imaging" feature on the voting machine that created the roll on election night, but this procedure

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		<p>merely proves consistency within that machine; the recovery procedure did not give the voter the opportunity to review his/her choices. Thus it is even further removed from being a real "ballot." It was not filled out by the voter and was not checked by the voter.</p> <ul style="list-style-type: none"> • Counting Procedure: The Director gathered the counts from DRE's, absentees, early votes, and provisionals. At first the counts did not match, but after lots of work, she discovered her mistake. • Counting Procedure: Although I cannot verify that everything matched perfectly, I have no reason to doubt the good intentions and integrity of the workers doing this audit in Knox County. • Counting Procedure: However, with election workers auditing their own work and the penalty for not getting the hand count to match being more hand counting, and then perhaps a full hand recount of ALL the VVPAT's and paper ballots, there is a very strong incentive to correct discrepancies in any way possible. To get rid of this bias against finding discrepancies, I recommend a class for all election workers on the possible ways machines--of all types used in electronic voting--can be hacked, rigged, or unintentionally caused to record or tally votes wrong. They should all have to read an abbreviated version of the Everest report, and have an independent computer security expert, not associated with the vendors, teach them what to look out for. Having independent auditors, who are paid by the hour or by the day, would also eliminate the incentive to make the results match. • Observer Comments: The entire process was extremely open and transparent, at least for the parts I saw. I was allowed to roam freely among the teams doing the counting of the "ballots" on the rolls, ask questions, write down the totals, and take photos. • On-Site Supervisor Comments: Director said audit was a good idea and necessary for transparency.
Licking	<p>Precinct Selection: 12/2/2008 Counting: 12/16/2008-12/17/2008</p> <ul style="list-style-type: none"> • 3 counting teams with 2 people each <p>Round 1</p> <ul style="list-style-type: none"> • Precincts: 7 • Ballots to audit: 4,538 (5.5%) • Precincts that did not match: 0 • Total discrepancy: 0 votes • Candidate overall discrepancy: none <p>Round 2</p> <ul style="list-style-type: none"> • Not required 	<p>From Observer</p> <ul style="list-style-type: none"> • On-Site Supervisor: Sue Penick, Director BOE • Identifying People On-Site: No ID's. As an observer it was impossible to know who was who without asking. All counting teams were BOE employees. I had to ask who was who and their relationship to the audit. This puts the observer in a bad position. • Precincts selected by: Deputy • Precinct Selection: I received a call on the morning that the audit was supposed to happen telling me that it was postponed. I did not receive a call when it was rescheduled and had to track the time and date down. I was not given a reason as to why it was cancelled. I thought that I should have been notified when the audit date was reset. • Precinct Selection: The random selection seemed to be well organized. Precinct slips were printed on paper and cut in front of me. I was given a copy of the pages. • Precinct Selection: I was close enough to confirm precinct

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		<p>selection results</p> <ul style="list-style-type: none"> • Precinct Selection: I question the value of pulling the precincts and then waiting two weeks to start the audit. • Vendor personnel: Tris Heestand from Premier Computers. Premier programmer was onsite to reprint any computer information if necessary • Able to verify all results: Prior to audit day the ballots had been gone through and page B removed. Ballot boxes were unsealed prior to and after audit. Boxes were stored in closet. At the end of the day I was able to copy the audit sheets signed by the audit teams. • Counting Procedure: Much of the counting was done in low voice and it was hard to hear. In one instance recounting by the same team did resolve the problem. • DRE Counting: The printed copy was removed from the locked canister. Officials read off the votes and hash marks were used to record vote. When all votes had been read off the votes were tallied and the team checked to see if the total matched the total signed by the poll workers. • Counting Transparency: I could confirm, as much as I was sitting there watching and these folks nodded, agreed and wrote down results. I could see the stacks of ten on the table. I could watch the paper being removed from the canister. The teams did not feel obliged to show anything to me as an observer. I asked questions of the Director if I had any. • Closing Chain of Custody: I did not see anything being resealed. Broken locks were taped to canisters on opening. Boxes of paper ballots were unsealed when they came out and appeared to be unsealed upon return to 'vault'. Team members did appear to be checking the seals on canisters • Observer Concerns: Why did they go through all of the ballots and sort the page to be audited without an observer? Why are the boxes of paper ballots not taped and signed at a minimum? Why pull the precincts so much in advance of the audit? My questions revolve around paper and absentee ballots. I could see that the canisters were locked and the signatures were on the tapes. We had to reprint one tape due to printer jams and the numbers were still accurate.
Warren	<p>Precinct Selection: 12/4/2008 Counting: 12/4/2008</p> <ul style="list-style-type: none"> • 2 counting teams with 2 people each <p>Round 1</p> <ul style="list-style-type: none"> • Precincts: 7 • Ballots to audit: 5,423 (5.1%) • Precincts that did not match: 0 • Total discrepancy: 0 votes • Candidate overall discrepancy: none <p>Round 2</p> <ul style="list-style-type: none"> • Not required 	<p>From Observer</p> <ul style="list-style-type: none"> • On-Site Supervisor: Keir Holeman • Precincts selected by: Board Of Election member • Opening Chain of Custody: ballots were counted in the storage room where they are stored. The room cannot be opened without a Democrat and a Republican turning their own key in the separate locks. A secure facility. • Able to verify all results: Precinct ballots were in the original precinct bags and stored in order of precinct number. • Counting Procedure: All precinct ballots that were in the bags were counted. The overvoted Ballots and write-ins had been separated and tabulated separately. When added to the precinct bag total totals matched. Absentee and provisional ballots were counted election night on the ESS

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County	Precinct Selection Ballot Counting	Comments/ Recommendations
		<p>650 machine and were not in precinct order. The sorting of these ballots to find the precincts for the audit took several days. The count for the audit of these ballots was done at the same time as the precinct ballot counting at a separate table using the same stacking method.</p> <ul style="list-style-type: none"> • Closing Chain of Custody: Ballots remained in the secure storage room. • Counting Procedure: I was allowed to watch the separation of the page 1 (presidential) from the absentee and counted provisional ballots for the designated precincts. That was a separate operation from the separation of precinct counted ballots for pg 1. I was also able to watch the separation of the precinct counted ballots. I was a designated "Official Observer" for the Green party. I believe that the rules are not clear on the powers of "other" observers. It appeared that "other" observers would not be able to observe the preparation for counting of the presidential ballots. • Counting Procedure: All over votes had been analyzed for voter intent prior to the certified results. All Write-ins had been analyzed for voter intent prior to the certified results. No Write-ins were found for valid write-in candidates. <p>Observer Comments: While Election Day ballots were segregated by precinct, absentee and accepted provisional ballots were mixed together to be scanned on the ES&S 650. These ballots for the selected audit precincts had to be sorted & separated by precinct before the audit could begin. It may make sense to keep all types of ballots sorted by precinct for future audits (note that Directive 2008-113 was not published until 11/14/2008, so the BOE did not know of the need to segregate ballots by precinct until after the election).</p>

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Findings and Recommendations

Here is a list of Findings (from the audit observation and a review of the directive) and Recommendations based on the Findings. A priority (High/Med/Low) is assigned to each Recommendation.

1. **Finding: Post election audits were done in Ohio.** The importance of this is difficult to overstate. It is absolutely necessary for Ohio election officials to check that their results are accurate. Our election systems are complicated. We have electronic voting machines (with known security risks), memory cards, precinct & central scanners, provisional ballots, complicated rules for determining whether absentee and provisional ballots should be accepted, early voting, absentee ballots, re-made ballots, and Election Management Systems from various vendors that can be complicated to use. Assuming that the final numbers from this process are accurate without verification is not acceptable. Properly conducted audits can also allow BOE's to demonstrate their effectiveness.
2. **Recommendation (High): Conduct post-election audits after all general and primary elections.** Consider small audits (e.g., of poll book reconciliation and vote counts) after smaller elections. Also consider adding more contests for auditing (e.g., statewide, congressional, Ohio legislature).
3. **Finding:** BOE staff members were typically very helpful to audit observers both during and after the audit (one said she was treated like a VIP).
4. **Finding:** Most BOE's did not have written procedures that documented how they were implementing the requirements of Directive 2008-113 (this is not surprising given the limited time available after the Directive was published). This sometimes made it difficult for Observers to follow each step and understand what was going on.
5. **Recommendation (Med): BOE's should document their audit procedures.** Documenting and publishing audit procedures will 1) help BOE staff prepare for execute audits effectively, 2) allow Observers to prepare for and participate in audits. These procedures should be public documents and should include all steps required by the directive (e.g., explain how chain of custody is checked).
6. **Finding:** Duly appointed observers & the public are given specific rights to monitor audit steps and be provided with specific information.
7. **Finding:** There was some confusion about when audits were being held and whether precinct selection is part of the audit. This led to observers missing sessions in some cases and showing up when no audit was taking place in other cases.
8. **Finding:** Some counties separated ballot pages for audited precincts without public notification or observation.
9. **Recommendation (Med): Standardize public notification process.** Some counties did their precinct selection before observers were aware it was happening. One observer called for the audit date and was given the date of the ballot counting, but not the date for precinct selection. Some observers called to ask and were given dates, but not notified when they changed. There should be a way for interested observers to identify and be kept informed of dates for audit activities (and for other BOE activities). Counties can use email, website announcements in a standard section or phone calls. Ballot page separation should be part of the audit or at least observable.
10. **Finding:** Precinct selection seems to have been done randomly and effectively in the counties where we were able to observe this (although this was only a few counties). The directive included specific steps that were followed accurately. Random selection is an important part of an audit or recount.
11. **Finding:** Knox County (and probably all DRE counties) had to open VVPAT rolls for all precincts at the same polling place as a selected precinct in order to find all votes for that precinct.
12. **Recommendation (Low): BOE's that allow voting at any DRE in a multiple precinct polling place should review all VVPAT rolls for the polling place during the audit.**

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13. **Finding:** Franklin County drew polling locations rather than precincts to determine which votes to audit
14. **Recommendation (Med): Determine whether precincts selection should be done by polling location rather than precinct.** Franklin County selected polling locations rather than precincts for their audit. This is more efficient for DRE counties since voters are usually allowed to cast their ballot on machines that belong to any precinct. Because of this, an audit of any precinct requires checking paper audit trails (VVPAT) on all DRE's in the polling location anyway. However, it is a variance from the directive and in some cases could cause an audit to be done mainly on a few large polling locations. There are at least three alternatives that could be considered
- **Select precincts and audit those precincts.** This is what Directive 2008-113 calls for. All precincts have an equal chance of being selected. This random selection is a crucial part of the audit because when a precinct has no chance (or a reduced chance) of being selected, it presents an opportunity for fraud by providing a place to hide miscount where it is less likely to be found. It does create more work for DRE counties, since they must open VVPAT rolls for all precincts that share a polling place with an audited precinct.
 - **Select polling places and audit all precincts in those polling places.** Instead of picking from a list of precincts, a list of polling places is used. When a polling place is selected, all precincts in the polling place are included in the audit. The problem with this approach is that precincts in multiple precinct polling places have less chance of being selected.
 - **Select precincts and audit all precincts in the polling places for selected precincts.** Instead of picking from a list of precincts, a list of polling places is used. When a polling place is selected, all precincts in the polling place are included in the audit. This approach gives precincts in multiple precinct polling location a higher chance of being selected.
15. **Finding:** Cuyahoga County discarded some selected precincts because of chain of custody problems, but apparently no other counties had to do so. Did the other counties check chain of custody records closely or do they do a better job of filling out the security forms?
16. **Recommendation (High): Determine if the audit chain of custody steps are being followed and/or need to be changed.**
17. **Finding:** For most counties (Franklin was an exception), precinct level results from the official certified results were not easily available before the audit.
18. **Recommendation (High): Provide precinct level results before the audit.** For an audit observer (or anyone interested in reviewing the results of an election), it is imperative to have access to precinct level results of the election. For an observer or BOE staff to do an audit effectively the original certified (pre audit) results must be available for download/analysis including at least vote totals for each candidate/position in each precinct. It would be helpful to have these totals broken down by ballot type (e.g., Election Day electronic ballot, Election Day paper ballot, early absentee ballot, provisional ballot, etc). Election Management Systems should be able to provide this. We understand that statewide results will be available in February, but this is too late to help with a recount or audit.
- Also, information should be provided in a standard format (or at least a standard format for each voting system) and be computer readable.
19. **Finding:** Many counties starting counting ballots days after doing their precinct selection.
20. **Recommendation (High): Eliminate the time gap between precinct selection and ballot counting.** The selection of precincts should be immediately followed by hand counting of the ballots. Some counties (usually the small ones) were able to do this. Other counties did not start counting ballots for up to a week. This is understandable for the first audit since gathering ballots of all types (VVPAT rolls, absentee, provisional, Election Day paper, remakes) for audited precincts is a new requirement for counties and they had not planned to do this. However, this should be a requirement for future audit, since it reduces the possibility of unobserved checking of the precincts. For large counties that cannot count all ballots in a single day, it may be inappropriate to select all

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precincts initially. Instead it may be best if they select precincts as counting teams are available to do the counting.

21. **Finding:** Blind counting was apparently the goal at all observed counties. However, some discrepancies caused searches for missing ballots and taken to an extreme this can cause audit staff to focus on resolving the discrepancy rather than getting an accurate count.
22. **Recommendation (Med): Consider adding Directive instructions that limit the time and/or effort expended to resolve discrepancies.**
23. **Finding:** Cuyahoga and Franklin Counties would have had to do full recounts for relatively small discrepancies if they had not been granted waivers.
24. **Recommendation (High): Review audit tiers and escalation trigger.** There are two main purposes for an audit. One is to determine if the apparent outcome is correct. The second is to find problems in the process. The directive specifies audit rounds of 5%, 3%, and 92% (all ballots) and specifies a 2 vote escalation trigger for determining if another round of auditing is required.

For a process review, a 5% audit seems reasonable although it may be too high (and expensive) for large counties.

For verifying the correct outcome of a contest, the 5% round will audit too many votes in most statewide races and not count enough when the race is very close. Some provisions should be made for close (statewide or non-statewide) races.

The 2 vote escalation trigger should be reviewed. It can cause escalations to full hand counts because of small mistakes (which would have occurred in Cuyahoga County except for a waiver that was granted). The trigger should be based on the size of the audit and the margin of victory from the official results.

We have provided some recommendations in this and may be able to provide additional recommendations based on the audit results.

25. **Finding:** Paragraphs A1b,c,d in Directive 2008-113 require BOE's to provide specific information about audited precincts to duly appointed observers and the public. Most counties were unable to provide this information at the audit
26. **Recommendation (Low): Review required information for the audit.** The paragraph A1b, c, d information is important, but could be difficult for counties (especially large ones) to produce on short notice. Other information (e.g., precinct level breakdown by ballot type) might be more important. Observer requests for information should be considered along with the BOE effort in providing the information to determine a reasonable set of information to be made available during the audit.
27. **Finding:** The audit in Montgomery County (not observed by our group) identified a problem with election machines manufactured by Premier Election Solutions and encountered a number of VVPAT rolls that were compromised. The audit in Knox County and apparently the one in Franklin County also found problems with VVPAT rolls.
28. **Recommendation (High): Problems found that could have occurred, but not discovered in other counties should be investigated in all counties.** The problem with Premier voting systems could have occurred in other counties that use Premier. There should be some provision for investigation and possibly extra auditing when similar problems are uncovered.
29. **Recommendation (High): Checking and reporting VVPAT problems should be part of the audit.** It is easy to proceed with counting votes on a VVPAT without checking that signatures are correct. Similarly when some votes are not legible on a VVPAT, audit teams might get the ballot image(s) and not record that this was done. Since the VVPAT ballots are the legal ballots in Ohio, a record of these problems should be made to provide reliable data on how often this happens. Reportedly, 13% of the Premier VVPAT's audited in Montgomery County had problems, yet other counties (including some with Premier) did not report problems.

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30. **Finding:** Results from hand counting were compared against the results from the official canvass. This is necessary to allow the audit to measure the effectiveness of the end result of the election process.

Other Recommendations

31. **Recommendation (High): Audit anomalous precinct.** Significant mistakes sometimes occur (e.g., ballot rotation error or absentee batch processed twice or skipped) that can cause precinct results that are clearly wrong or questionable. There should be a way (as with Cleveland precincts in 2004 that had 30% or 40% totals for third party candidates) for citizens or parties to request that specific precincts be audited.
32. **Recommendation (High): Improve audit reports from counties.** The directive specifies a short list of information to be reported by each BOE to the SoS after the audit. After viewing a few of the county reports, it seems that the information provided is inconsistent. Additional information should be requested and examples may be necessary. We may be able to provide more recommendations at a later time. Some examples to consider include
- Cause of discrepancies. It is important to distinguish between human errors on some absentee ballots vs. problems on counting or tabulating devices since those could have far reaching implications for other precincts and/or other counties.
 - Chain of custody issues encountered
 - VVPAT tapes that were partially or completely compromised, not signed, etc.
 - Actual cost of the audit including time and supplies.

The information should also be made available to the public at the same time it is reported to the SoS.

33. **Recommendation (Med): Review the waivers requested during the audit.** It seems that a number of waivers were granted to the small number of BOE's that we observed. This may be appropriate for the first full audit since unanticipated problems are encountered, but should not be common practice in future audits. There should also be a notification process for the public to be aware of waiver requests and decisions. Perhaps emails could be sent by the SoS office to people registered on the site.
34. **Recommendation (High): Consider letting key citizen "auditors" handle the ballots,** after they are sworn in. Temporary clerks for elections offices are hired for each election, so why not temporary auditors? If necessary, pay these "auditors" a daily wage equivalent to temps. Surely citizen auditors sworn in are as trustworthy as voting machine vendors (not sworn in), who have a high stake in proving their machines reliable, and who routinely control the counting of our ballots. This shift in professional responsibility would eliminate the bias of office workers auditing themselves. Just as we have internal and external audits of businesses, elections need inside and **outside auditing** of our electoral process.

Recommendations for Volunteers

35. **Recommendation (High): Audit Observers should be better trained and organized.** We need to train the observers better to know what to look for and how to fill out the forms provided. We need to be organized so that all the aspects of the audit will be covered. We need to have a large pool of volunteer audit observers at the ready for each election. Pay key people, such as a volunteer coordinator, a trainer, and an overseer for the whole state. For the large pool of volunteers, go to possible interested groups, such as High School aged Boy Scouts, High School civics classes, the League of Women Voters, Democrat and Republican clubs, Citizen Election Groups, and other civic minded groups. Try for a balance between liberals and conservatives and moderates. Find the funds to pay the key leaders.

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References

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