



Election Integrity Recount 2016

Ensuring Every Vote Counts

What Did the Recount Teach Us About Wisconsin Elections?

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Following the November 2016 General Election, Green Party Presidential candidate Jill Stein requested a recount in Wisconsin, for reasons laid out in the following report. The 2016 election in Wisconsin was remarkable for a number of reasons: the lowest voter turnout in decades, draconian new voter ID laws, and unusual and unexpected results in the Presidential contest, to name a few.

Within days of Jill Stein’s decision to ask for recounts in three states, millions of dollars were raised (in small contributions averaging just \$50) and hundreds of volunteers mobilized. The Wisconsin Recount Effort uncovered alarming election and recount practices. We call it an “effort”, because the state and counties did not in fact conduct a proper and reliable recount.

Because the recount did not change the winner of Wisconsin’s electoral vote, state officials maintain that the election processes were satisfactory. Nothing could be further from the truth. The following report documents the many inadequacies and oversights generally accepted as routine by our election administrators.

The Recount 2016 team is pleased to provide this revealing information to inspire and inform activists and policymakers. Our hope is that by 2020, voters in Wisconsin will have renewed confidence in their voting systems and can be certain that their votes are accurately tabulated.

Recount 2016 Team

Why recount Wisconsin's presidential election?

Wisconsin voters and election officials are justifiably proud of many features of their election system. Among Wisconsin's strengths: Voter registration and turnout is traditionally high. The municipal clerks who handle most elections-administration responsibilities are not elected as representatives of any political party, but are either appointed or elected in nonpartisan elections. The large majority of voters use paper ballots and their votes are counted by what are known as 'opscan' voting machines.

Like many states, Wisconsin requires election officials to use computers to count the votes.

But there are weaknesses in the election system. Wisconsin lags many other states in verifying the accuracy of election results. While Wisconsin localities count their votes with commercial, vote-tabulating computers, they certify election results as final without verifying the results' accuracy. Many other states require checking the output of at least a few machines before results are certified, that is, declared final.

Unlike many states, Wisconsin does not require officials to check the computers' accuracy before declaring the output to be final election results.

This lack of verification is particularly damaging when there is heightened awareness of the risks of computer technology, and when election results are both close and unexpected. It may even act as a form of voter suppression, as awareness of the realistic risks erodes voters' confidence that their votes, if cast, will be counted accurately.

Concern about the security and accuracy of our election results is no longer confined to the most suspicious voters. University of Michigan researchers Michael Trautgott and Frederick Conrad wrote in 2012 that "Only 57 percent of a sample of registered voters were 'very confident' that their own ballot would be counted accurately." Sixty percent of respondents in 2006 were 'very' or 'somewhat worried' that officials in other parts of the country would try to manipulate vote counts. Twenty-five percent expressed concern their own election officials might.¹

Confidence in computer security continued to decline. A string of high-profile computer crimes demonstrated the vulnerability of huge corporations (Anthem, Yahoo) and government agencies (the U.S. Office of Personnel Management). It demonstrated that threats come from outsiders (Sony) and corrupt insiders (Volkswagen).

¹ Michael Trautgott and Frederick Conrad, "Confidence in the Electoral System: Why We Do Auditing," in *Confirming Elections: Creating Confidence and Integrity through Election Auditing*, 2012, R. Michael Alvarez, Lonna Rae Atkeson, and Thad Hall, Palgrave McMillan

Concerns began to center on election security. In September 2016, 56% of eligible voters told surveyors they were “concerned” or “very concerned” that November’s election could be affected by hacking or cyber-attacks.”² In October, Secretary Jeh Johnson of the US Department of Homeland Security warned “These challenges aren’t just in the future -- they are here today. In recent months, malicious cyber-actors have been scanning a large number of state systems, which could be a preamble to attempted intrusions. In a few cases, we have determined that malicious actors gained access to state voting-related systems.”³

On top of this growing distrust, Wisconsin’s voting machines delivered a surprising verdict on the evening of November 8. A week earlier, Wisconsin’s voters told pollsters they would give the Democratic presidential candidate a six-point victory. On Election Day, they told exit pollsters they had given her a victory margin of almost five points.

Lack of any other accuracy checks; growing concern about hacking; and a close, unexpected result made a recount necessary.

But on Election Night, the voting machines told voters that they had given the victory to the Republican candidate, by a squeaky 0.75% margin. This margin was so close that, had it occurred before Wisconsin’s recount law was changed in 2015, a losing candidate would have been able to receive a recount for only \$5 per ward (less than \$18,000 for the entire state).

Three conditions came together in Wisconsin, Pennsylvania, and Michigan:

- 1) Elections practices that include no routine prudent verification;
- 2) Widespread concern about possible manipulation from the voter on the street to the highest levels of the US government; and
- 3) Close unexpected election results.

These three conditions made it necessary to seek verification of the results in those states. During Thanksgiving week, 160,000 Americans raised their hands, with their wallets, and donated \$7.5 million to fund recounts in these three states.

² https://www.carbonblack.com/wp-content/uploads/2016/09/Carbon_Black_Democracy_at_Risk_September_2016.pdf

³ Press release from US Department of Homeland Security, October 1, 2016 <https://www.dhs.gov/news/2016/10/01/statement-secretary-johnson-about-election-systems-cybersecurity>, accessed January 28, 2017

Did Wisconsin's recount confirm the outcome in the President's race?

Most of Wisconsin's larger counties did not confirm their computers' accuracy, even in the recount.

Did Donald Trump actually carry Wisconsin, or was the election miscounted? Unfortunately, no one will ever know.

Wisconsin did recount more than the two other states where we sought verification. The 51 counties that hand-counted ballots successfully confirmed the outcome in their counties. These counties account for 52.8% of the ballots cast.

Unfortunately, a valid recount of only 51 of the state's 72 counties could still miss an outcome-altering miscount. If the miscount occurred in a large county where the computers' accuracy was not verified, outcomes can change. And most of Wisconsin's largest counties were among the 21 counties that did not confirm the computer-tabulated outcome with a hand count.

Just as particularly strong voter turnout in one party's stronghold can determine the outcome of a close statewide race, tampering with voting machines in only one large county could do the same. **Milwaukee** provides 15% of the votes statewide and **Waukesha** provides 8%. Both counties reliably produce lopsided election results for one party. Any successful effort to shape the results in either county could alter the statewide outcome without producing a suspicious local result. That effort could be a legal *Get Out The Vote (GOTV)* effort, or it could be illegal election machine tampering.

And it is possible to tamper with only one county's voting machines without disturbing any others'. To understand why, it's helpful to understand how and by whom voting machines are programmed. Like cell phones, voting machines come equipped with some built-in programming. This programming cannot legally be altered by the owner—in this case, state and local officials. Only the manufacturers have control of this software.

However, just as cell phones need to be set up for each user with a unique phone number and set of preferences, voting machines need to be set up for the unique set of races and candidates in each election. Therefore, some reprogramming occurs between every election, even when no software patches or system updates are made.

Experts have concluded that, after malfunction and human error, systems like Wisconsin's are more vulnerable to a corrupt insider than to foreign hackers.

Wisconsin's voting machines are owned by individual municipalities (cities, villages, and towns). But most municipalities rely on the county to manage the setup of the voting machines for each election. County officials have three options:

- 1) Contract with the voting-machine vendor to provide the voting-machine set-up tasks;
- 2) Contract with independent voting-machine service companies authorized by the manufacturers;
- 3) Do it themselves using set-up software provided by the vendor.

When the election set-up instructions are completed, copies of that software are provided to each municipal clerk, typically on a USB drive (also known as a flash drive, thumb drive, or memory stick), to load into each voting machine.

Election security professionals have identified several vulnerabilities in this system.⁴ The highest risk for decentralized systems like that in Wisconsin is that a single corrupt insider or someone with unauthorized access might insert malicious vote-counting instructions into the set-up computer. These instructions could then be spread to any voting machine in the county. These instructions or code would not operate during pre-election voting-machine tests, but would change vote totals only on Election Day or in any later computer recount. If this programmer obtained access through the county or the company servicing the elections technology, he or she would need no Internet access.

Remote tampering is also possible, despite reassurances from officials including FBI Director James Comey, who testified before the House Judiciary Committee on September 28, 2016, that "these things are not connected to the Internet." In fact, Wisconsin elections officials would not know if their voting machines were connected. Although local officials are instructed not to leave electronic communications turned on, for either the voting machines or the set-up computer, they do not have complete control. Older voting machines in Wisconsin are not supposed to have wireless communications capability. But because voting machines are manufactured for a national market, many machines have internal ports in which wireless communications cards can be inserted for those states that allow them. Wisconsin elections officials do not inspect the voting machines for unauthorized installation of

⁴ A good introductory overview of election-hacking threats and countermeasures is *The Machinery of Democracy: Protecting Elections in An Electronic World*, by Lawrence D. Norden and Eric Lazarus, published by the Brennan Center for Justice in 2007.

communications cards. Therefore they would not know if a voting machine had been compromised in this way.

Further, in the past few years, Wisconsin has allowed wireless communications on newer models of voting machines. Recount observers noticed and confirmed that **Milwaukee** and **Waukesha Counties**, at least, currently use voting machines and set-up computers equipped with wireless communications capability. In **Dane County**, elections technology with wireless communications capability was used for the first time in the February 2017 election.

Running ballots back through computers programmed by the same people who programmed them for the election does not confirm original results.

Therefore, a valid recount would verify computer-tabulated results by manual methods—human eyes looking at paper ballots. Yet this was not done. In a race determined by fewer than 23,000 votes, **Milwaukee County** (more than 440,000 presidential votes), **Waukesha County** (more than 237,000); **Brown County** (more than 129,000), and **Racine County** (more than 94,000) did not verify the accuracy of their computer-tabulated results.⁵

Dane County Circuit Judge Valerie Bailey-Rihn, when asked to order recounts by hand, declined to do so, finding no basis in Wisconsin law for a judge to choose the manner of a recount. Nevertheless in her December 1, 2016 decision, she observed that it is ‘undisputed’ that “there is a substantial probability that recounting the ballots by hand will produce a more correct result,’ and that “a hand recount is the gold standard. It’s the best we can do.”

The Wisconsin Elections Commission (WEC), too, acknowledged the limited value of a second computerized count at its December 2016 meeting. Biennial voting-machine audits of a sample of voting machines, mandated by s.7.08(6), Wis. Stats., are always done by hand count. These audits had been scheduled for December 2016. But the audits were suspended for the recount. At that time, municipalities had checked the accuracy of only 9 of the 116 machines selected for audit. The question before the Commission at their December meeting was whether the audits should resume for the remaining 107 machines. While expressing their faith in the unfailing accuracy of every vote-tabulating computer, the Commission concluded that the recount confirmed the accuracy for only the 75 machines where the recount had been done by hand. Where the recount had been performed by the remaining 32 computers they ordered the hand-counted audits to be done.

⁵ Other counties that recounted by computer were Outagamie, Rock, Sheboygan, Walworth, St. Croix, Chippewa, Grant, Dunn, Oneida, Shawano, Vilas, Kewaunee, Lafayette, Rusk, Buffalo, Forest, and Pepin.

Did the recount confirm that Wisconsin's votes are counted accurately?

It did not. In fact, it confirmed that miscounts are common, widespread, and generally accepted as normal by election officials. The recount revealed that a small proportion of our votes are routinely sacrificed to known limitations of elections technology, to predictable human error, and to election officials' convenience. It showed that easily detected errors are present in non-recounted election results because basic safeguards that could catch even obvious errors are not practiced.

For a quick point of reference, compare ATMs and voting machines. Both machines process transactions--you deposit an envelope into an ATM, and a ballot into a voting machine. You depend on the ATM to credit the correct account with your dollars, and you depend on the voting machine to credit the right candidate with your vote. Imagine the professional staff and the safeguards the bank has in place to ensure that the ATMs reliably work correctly--all the way from original software design, through operation and maintenance, to daily audits of the receipts and transactions.

Election officials cannot be expected to produce flawless results, but should be expected to correct predictable or obvious errors.

It is not an insult to dedicated hard-working election officials to acknowledge that they do not have the resources to manage our voting machines as well as banks manage their ATMs. Our polling places are managed by temporary workers who receive only brief training and less than a week's on-the-job experience each year. They carry out complex procedures with frequently changing requirements under light supervision. Even county and municipal clerks do not work full time on elections, and professional-level education in administration or management is not required.

Despite those challenges, elections workers have no routine opportunity to check their work or to receive feedback. **Germanatown** Municipal Clerk Barbara Goekner, a 25-year veteran of local elections administration, told the WEC in December that the 2016 recount provided her with new insights and a "tremendous learning opportunity" because municipal clerks "never have an opportunity to check how our (poll workers) are doing." Four years earlier, **Manitowoc County** Clerk Jamie Aulik testified before the legislature that "recounts are the only opportunity most elections workers ever get to check their work."

Expectations of flawless performance are unrealistic. But voters are not expecting too much when we assume Wisconsin's election officials reliably practice basic accuracy-checking safeguards. Yet even basic quality-assurance measures, such as making sure the total number of votes is consistent with the number of ballots, are not a routine part of Wisconsin's system for recording, reporting, or canvassing election results.

So, when these workers' performance is subject to the once-in-a-career review that was provided by this recount, we can expect flaws to come to light. And many did.

Miscounted or misreported vote totals

Before the recount, every county board of canvass had certified election results as "correct and true." Yet when those same boards of canvass examined the results carefully in the recount, they reported different totals in 64% of all precincts. A ward-by-ward comparison of pre- and post-recount totals reveals that county boards of canvass changed a minimum of 17,681 votes in the totals they reported to the state's "Canvass Reporting System," (CRS), either subtracting from or adding to the totals they had previously reported as each precinct's final results.⁶

Some precincts' certified totals were changed more than others. In a few precincts, vote totals were altered by more than 20%. In 646 of the state's 3,500 precincts vote totals were changed by more than 1%—four times the margin currently in Wisconsin law that would allow a candidate to seek a free recount.

While it is true that these changes did not alter the outcome, identifying winners is only one function of elections. It is for these other functions that Wisconsin voters deserve higher standards than: "We tolerate any mistakes that don't change the outcome."

First, election officials' job is to allow voters' voices to be heard clearly. Without fully counted votes, we cannot know where each candidate was weak or strong. We cannot know how many voters were so dissatisfied that they cast a write-in vote. Any but the most trivial uncorrected tabulating errors garble and mask the voters' voice.

Before the recount, every county had signed a statement declaring the results to be "correct and true." In the recount, those same counties changed their reported totals by 17,681 votes.

Our vote is our voice. It must not be garbled or masked by errors in counting or reporting.

⁶ This number is a minimum because counties reported recount results only at a ward, or 'reporting unit' level. In any reporting unit that found one vote to have been mistakenly counted for one candidate, and another vote mistakenly withheld from that same candidate, the county would have reported no change in that candidate's total, even though two miscounted votes had been discovered.

When election officials decide to overlook a suspicious 24% anomaly in one election, they make it harder for themselves to respond sensibly to the next suspicious result.

The statute obligates election officials to produce results that are at least 99.75% accurate.

Election officials are aware that a certain percentage of ballots will be marked in ways that humans--but not machines--will be able to discern valid votes.

Second, when we tolerate any standard less than “the closest we can come to 100% accuracy,” we will need to say how much error is too much. In politics, that will inevitably lead to controversy. If we tolerate, without correction, a 2% variation in this race, will the candidates agree to tolerate a 4% variation in the next one? When **Marinette County** demonstrated a willingness to tolerate a 23.9% miscount of the **City of Marinette’s** early ballots in 2016, will the beneficiary of any future similar miscounts be able to insist that those results also be certified without verification?

The current Wisconsin recount law provides evidence the legislature intended to tolerate only a very small margin for error. Currently, the losing candidate is entitled to a free recount when the margin of victory is less than 0.25% of the total votes. This indicates that the legislature accepted one-quarter of one percent as the maximum variation that might be caused by random error. The statute, therefore, obligates election officials to produce election results that are at least 99.75% accurate—without a recount.

Finally, routine tolerance of imprecision allows avoidable errors to go undetected and uncorrected, and to grow into larger problems. Every time we tolerate a 5% miscount, or 10%, or 23.9%, by telling ourselves that it didn’t change the outcome, we tell poll workers and canvass officials that it’s okay to be at least that imprecise, and we tell would-be election thieves how far they can do without triggering any sort of accuracy check or investigation.

Sources of miscounts included the limitations of the voting machines, imprecise counting of write-in votes, and reporting errors.

1. Voting machines, particularly older models, were noted to be unable to read voter intent marked in predictable but idiosyncratic ways. Newer voting machines are highly sensitive and can read many different colors of ink, but some voters still circle the candidates’ names, or write in the names of even those candidates whose names appear on the ballot, in a way that is missed by the voting machines.

Under Wisconsin law, these are valid votes and should be counted, but election officials tolerate the loss of this small percentage of votes in every election, believing that if the results are close enough for this small number of votes to make a difference in the outcome, a recount will discover them.

When miscounts are noted, causes are often just guessed at, rather than being thoroughly investigated.

However, the recount demonstrated that machines are capable of missing a larger proportion of valid votes. For example, the recount revealed that the City of Marinette's voting machines failed to detect presidential votes on 304 ballots. Worse, the county clerk and board of canvassers certified the election results as 'correct and true' despite being able to see evidence of this serious miscount. Poll tapes from the city's three polling places clearly indicated that the machines had been unable to detect votes on 23.9% of the ballots processed through those machines.

The problem has not been definitively investigated, but canvass officials attributed it to several causes. The city's older voting machines were known to be unable to detect votes marked in certain types of ink. When voters come to the polls, they can be provided with appropriate marking pens. However, in this election a significant proportion of voters used absentee ballots, so that election officials had less control over how the ballots were marked. Despite knowing that this combination of older machines and absentee ballots would cause miscounts, poll workers were ineffectively trained to inspect the marked ballots for the wrong type of ink.

It is important to note that although these vote-counting errors were noticed in only the presidential race, the machines' inability to read validly marked votes affected every race on the ballot. This inability does not reflect well on the Wisconsin election system's commitment to accuracy. Even in a case as serious as the City of Marinette's miscount, recount minutes contained no indication that officials made any effort to correct the results in any other race on the ballot, once the error rate in the presidential count was noted.

2. Imprecise and incomplete counting of write-in votes also impairs the accuracy of Wisconsin's election results. On November 8, it can be estimated that at least 1.3% of Wisconsin voters chose to write in a vote for someone other than a candidate named on the ballot.⁷ The recount changed write-in vote totals in slightly more than half of all precincts.

There are two types of write-in votes. First, under Wisconsin law, candidates may register as write-in candidates. Local election officials are required to count and report the votes separately for each registered write-in candidate.

⁷ This must be an estimate, because not all counties report the aggregate number of write-in votes.

Second, voters are allowed to write in any other name. Election officials are allowed but not required to count and report these in the aggregate—that is, without regard to the individuals who received the votes. Instead of reporting, for example, 2 votes for Bernie Sanders and 1 vote for Aaron Rodgers, the state’s election-results reporting system allows a county to report 3 ‘scattering’ votes. Only 48 of Wisconsin’s 72 counties reported the number of unregistered write-in votes in both the originally certified results and the recount.

In this election, the most notable registered write-in was Evan McMullin, whose explicit strategy was to deny a majority of the electoral vote to either of the two major party candidates and to throw the selection of president to the House of Representatives. Election officials’ belief that McMullin had no chance of winning the presidency should have had no effect on the accuracy with which they counted his votes and reported the totals to the public.

Unreliable counting of write-in votes had disenfranchised almost 1 in every 6 of Evan McMullin’s voters.

The recount made significant changes in the reported totals for both kinds of write-in votes. Previously certified election results were discovered to have missed 1,857 of McMullin’s votes, disenfranchising 15.7% of his voters. The recount determined that all registered write-in candidates had received 12,386 votes, changing previously certified vote totals by 2,886 votes (either incorrectly counted or not counted) statewide. Reported statewide totals for unregistered write-ins changed by an astounding 9,724 votes.

The gross miscount of votes for registered write-in candidates—votes that by law are to be counted—reveals one of several reasons for counting all write-in votes of both types, at least in the aggregate. Counting all the write-in votes, individually for registered write-in candidates and in the aggregate for others, would have promoted accurate counting of those votes that election officials are required to count and report.

Election officials who do not know how many write-in votes were cast cannot perform even the most basic accuracy check.

In addition, basic accuracy checks cannot be performed without knowing the total number of votes cast in each race. One of the most important and simplest accuracy tests is to examine what is known as the ‘undervote’ rate. This is the rate at which voters appear to have cast a ballot without voting in an important race. Typically, fewer than one percent of voters cast a ballot without voting in the race at the top of the ballot. A high undervote rate indicates the possibility of one of the most likely types of machine miscounts, or of human errors such as typos and transpositions. The Wisconsin Elections Commission (WEC) recommends that county boards of can-

vass check the undervote rate in each election.⁸ However, undervote rate cannot be calculated without knowing the total number of votes cast, including write-ins. Therefore, local election officials who do not record the aggregate number of unregistered write-in votes cannot perform this accuracy check.

Prudent election administrators collect and report the total votes cast in each race without insisting that they be required to do so by law. In other areas of public administration, basic accuracy checks of that type are assumed to be a routine management responsibility, and are not mandated by law.

When election officials choose not to report how many voters cast protest votes for unregistered write-in candidates, election results do not express the voice of the people

Finally, and most importantly, election administrators should be protecting the voters' voice, not silencing it. In this election, the most common reason for writing in the name of an unregistered candidate was to send a message of displeasure with the choices presented. These voters could have, as many did, simply stayed home from the polls or left the Presidential race blank while voting in other races. But they chose instead to come to the polls to use their voting-booth voice to record the clearest message they could—by writing in a candidate not on the ballot. Even if election officials are uninterested in the number of voters who chose to do this, political scientists, consultants, and pollsters are eager to study complete election results to discern what they can about voter behavior. When local election officials fail to record how many such votes were cast, these voters' voice is silenced.

Fortunately, the majority of Wisconsin's counties, with approximately 80% of the voters in the state, counted and reported the number unregistered write-in votes in their November election results. Fifteen counties, with approximately 14.5% of the state's voters⁹, reported no unregistered write-in votes in either the originally certified election results or the recount. If voters cast write-in votes in these 15 counties at the same rate (approximately 1%) as voters in counties that did report total write-in votes, it is likely that local election officials simply disregarded 4,246 votes.

3. Errors in reporting election results included the largest single error detected during the recount. When the **Milwaukee County** Elections Commission reported county-certified election results to the WEC in mid-November, they neglected to

⁸ *Procedures for County Boards of Canvassers*, June 2012, page 2.

⁹ Burnett, Chippewa, Dodge, Dunn, Florence, Kewaunee, Marinette, Menominee, Outagamie, Pepin, Price, Racine, Sauk, Shawano, and Wood Counties reported no votes for unregistered write-in candidates in either their originally certified election results or the recount.

include 246 votes for one candidate, cast in **City of Milwaukee's** 34th ward. This appears to have been a data-entry error, but it was not noticed by either the County or the state Commission until the recount, despite creating the appearance of an incredible 40.25% undervote rate in that precinct. In **Menominee County**, only the two major party candidates' totals, plus seven votes for Jill Stein, were originally reported to the Commission. This county did not disregard merely the write-in votes; its originally certified totals failed to include votes for candidates whose names appeared on the ballot.

An even more dramatic miscount was noticed after county certification but before the recount when a citizen volunteer noticed a literally unbelievable 52.9 percent undervote rate in **Oneida County's** certified results for the **Town of Hazelhurst**. County election officials corrected this error—a typo that had eliminated 440 votes—before the recount, but the fact remains that neither county nor state officials noticed it before a citizen volunteer pointed it out to them.

Election officials' ability to ensure that early ballots are reliably processed and cast appears to have not yet caught up with the volume they are now expected to handle.

4. Failure to process absentee ballots would have deprived many voters of their franchise in this election, had it not been for the recount. For reasons unexplained in the counties' recount minutes, poll workers and municipal canvasses failed to process many absentee ballots. These ballots were left in their envelopes while both the municipal and county canvasses certified election results as complete and accurate. Several counties discovered batches of 10 or more unprocessed absentee ballots. For example, the **Dane County** recount discovered 66 ballots in seven precincts in **Madison, Fitchburg, and Monona** that were left in the envelopes on Election Day and not processed until the recount. In most Wisconsin elections, which are neither recounted nor audited, these votes would never have been discovered and the voters completely disenfranchised.

In addition, standards for accepting or rejecting absentee ballots were inconsistently applied. A correctly submitted absentee ballot is in an envelope containing the name, signature, and address of both the voter and a witness. Both the envelope and the ballot inside it are to be initialed by a municipal election official. Any of these items may be missing or incorrect, and errors can be committed by the voter, the witness, or the election official. All across the state, election officials appear to have struggled with the question of whether to accept or reject absentee ballots.

Recount results and county minutes reveal that absentee ballots rejected on Election Day were accepted in the recount,

and vice-versa. Errors that would disqualify an absentee ballot in one jurisdiction wouldn't disqualify it in the next. Some jurisdictions would allow ballots if the error had been made by an election official, while others would reject those ballots. This raises consistency and fairness questions. When election officials make a decision to accept or reject a ballot envelope, they can see whose ballot it is, and what neighborhood the voter lives in. If the criteria and standards by which they make that decision are variable, they have the leeway to treat some ballots more leniently than others.

Election administration practices that put future elections at risk

Warranty seals had been missing through several elections. The problem was not noticed through any routine inspection, but by an alert volunteer recount observer.

Easily noticed errors in the originally certified results indicate an absence of basic reasonability tests.

Additional errors may not have caused any votes to be miscounted in this election, but they indicate practices that put future elections at risk of miscount or tampering.

Poor voting-machine security. In **St. Croix County**, recount observers noticed that adhesive seals placed over screw heads on the voting machines' access panels were broken. The intent of these seals is to make it impossible for anyone to obtain unauthorized access to the machine's inner workings without leaving evidence. If the warranty seals are missing or broken, no one can know whether the machine has been tampered with, so the seals clearly state "Removal voids warranty."

The seals are more permanent than the temporary security seals that are removed and replaced every time new software is loaded before each election. The warranty seals are to be broken only when an authorized representative services the machine, and should be replaced each time to protect the machine from undetected, unauthorized access.

However, in **St. Croix County**, a statement obtained from the service technician stated that he had serviced four voting machines in the 12 months preceding November's election, leaving the seals broken and not replaced each time. Through four elections over the course of a year, these machines remained vulnerable to tampering. The fact that these missing warranty seals were not detected and corrected until a recount observer noticed them demonstrates the unreliability of current local voting-machine inspection and security practices.

No effort to detect or correct errors. Finally, the recount process revealed limitations in Wisconsin election officials' ability to monitor accuracy and quality in election processes, in a way that any effective manager should routinely do.

Few public administrators, outside of election administrators, operate without some routine way to notice when their work product is flawed. Election officials, however, are alone in their insistence that computer output must be accepted as final without any sort of routine accuracy check. Most voters assume that certifying election results includes checking their accuracy, but no Wisconsin county canvass performs

Wisconsin's poll workers do a good job of checking that the number of ballots equals the number of voters, but no one checks the accuracy of the vote totals before election results are declared final.

even spot checks on voting-machine accuracy before declaring election results final. And, as the recount demonstrated, even obvious errors can be certified as correct without municipal, county, or state election officials taking action to correct the error.

Outside elections, auditors and most managers employ 'reasonableness tests', using basic logic and common sense to allow managers to detect problems without conducting a full review or even leaving their desks. For example, a warehouse manager would examine a computer-generated inventory report and reject the report if it indicated more cases of product than the warehouse could hold.

In Wisconsin elections, poll workers reliably perform one reasonableness test on Election Night when they compare the number of ballots the voting machine processed to the number of voters recorded as having cast ballots.

The Wisconsin Elections Commission (WEC) also recommends that county canvasses compare the total number of votes to the number of ballots. More votes than ballots indicates an obvious counting error. Significantly more ballots than votes (the undervote rate) may indicate a problem, particularly in the race at the top of the ballot, because few voters bother to cast a ballot if they don't intend to vote. The most common human programming errors and machine malfunctions that impair voting machines' accuracy reveal themselves in a high undervote rate. Therefore, the undervote rate is a valuable reasonableness check--anything in excess of one or two percent indicates a need to check the accuracy of the election results.

The county-certified election results reported to the WEC shortly before Thanksgiving 2016 contained suspiciously high undervote rates in several jurisdictions, and at least one (the **City of Eau Claire's** Ward 34) indicated more votes than voters. Yet none were questioned or would have been except for the recount. Errors this obvious can, and should, be detected with very little work without accessing any records.

Insufficient post-election audits. Beyond noticing and correcting glaring errors, most states now conduct some sort of routine audit to ensure correct election results, even in the absence of any signs of trouble. Wisconsin election practices, which are average or above in other areas, now lag most other states in routine post-election audits.

Wisconsin law requires the state elections agency to order an unspecified number of voting-machine audits after November elections in even-numbered years. However, this statute has been implemented in a way that provides no protection against miscounts being certified as final election results. The state elections agency orders audits of only about 100 voting machines statewide, not enough to provide valid confirmation of the outcome in any but the most dramatic landslide races. In the event any municipal clerk finds an error in one of these audits, the procedures contain no requirement to expand the audit to other machines or to investigate the cause of the miscount. Finally, the audits are not completed until after election results have already been certified. The state elections agency does not release results until after the winners identified by the voting machines have already been sworn into office.

Voting machine software escrow access. One key element to detecting error or intrusion in voting machines is to look at the computer programming. Unfortunately, because voting machine technology is owned by for-profit corporations, it is not always easy to examine the software that tabulates our votes. The Stein campaign has made the formal request to obtain inspection of the software source code, and efforts to obtain meaningful access are ongoing.

Conclusions

Changes must be made to protect future elections.

To ensure that Wisconsin's future elections accurately and reliably reflect the will of the people, changes need to be made.

First, Wisconsin needs laws prohibiting direct-recording electronic voting machines (touch-screen tabulators.) Municipalities should be mandated to use elections systems that preserve voter-marked paper ballots—either hand counts or the machines known as op-scans.

Second, state law should mandate that no election results are certified final before either a municipal or county canvass has verified that the identified outcome is accurate. Audit requirements must include expansion of the audit sample if irregularities are discovered, and after any election in which miscounts have been detected, meaningful investigation of the causes of the miscount.

Third, state law should be amended to include automatic, state-funded recounts in all close elections. All recounts, whether state or candidate funded, must be done by manual methods, rather than electronic tabulators.

Appendix: What can Wisconsin voters and election officials do?

State election officials have limited authority to order improvements, but local officials have authority to innovate and improve on their own initiative.

When the question is how to improve management of our elections, a highly decentralized system like Wisconsin's has strengths and weaknesses. A weakness is that there may be no centralized way to correct statewide issues. In many states, a secretary of state can order new election-management practices throughout the state and then exercise oversight to ensure compliance. But even before the 2015 abolition of the Government Accountability Board, Wisconsin's state elections agency had relatively limited authority over county or municipal clerks' administrative practices. No state official or agency, including the Wisconsin Elections Commission (WEC), has authority to order, for example, effective county-canvass procedures or to exercise oversight of compliance with existing statutory requirements such as pre-election voting machine tests or counting votes for registered write-in candidates.

On the other hand, a decentralized system provides citizens with more influence over local officials than they have in a state-administered system.

Citizen observation of election processes

Citizen observation may be the simplest path to improvement. While a long way from a complete solution, this would improve transparency. The mere presence of observers encourages elections officials to be more thorough and careful in their work. Wisconsin citizens have better-than-average observation opportunities, including:

- 1. Pre-election voting machine tests** are performed in every municipality within 10 days before every election. Citizens can attend these tests, required of municipal clerks by §5.84, Wis. Stats. At these tests, citizens can make sure municipal clerks are adequately testing the machines' ability to read votes marked in the ways that voters commonly mark them; checking the machines for the appropriate security seals and warranty labels; and counting both ballots and votes correctly. Pre-election testing cannot detect deliberate manipulation of the voting machines, but if done properly can detect unsecured machines, accidental mis-programming, and poor machine function. Particularly in light of the discovery of broken warranty seals in **St. Croix County**, citizens can attend these pre-election tests to make sure local officials in their area are being alert for similar problems.

Citizens can attend municipal and county canvass meetings to observe whether local election officials are being alert for miscounted votes and taking action to correct any miscounts they notice.

2. Poll closing tasks are open to citizen observation under Wisconsin law. Even better, conscientious citizens can serve as poll workers and perform those tasks. It is at poll-closing that observers and poll workers can note whether absentee ballots were all counted, care was taken to record the total number of write-in votes, unused ballots properly accounted for, and proper records created and sealed, among other tasks critical to security and accurate election results. Particularly in light of the many jurisdictions in which the recount found uncounted absentee ballots, citizens can make use of the opportunity to observe poll-closing to make sure poll workers have appropriately processed all absentee ballots.

3. Municipal and county canvass meetings are the public meetings in which local election officials are to review election records to make sure election results are accurate. The task of the county canvass, in particular, is to ensure that election results are correct. In small municipalities, canvass tasks can be carried out at poll closing, but municipal canvass meetings typically take place within seven days following the election. The schedule for county canvass meetings varies, but is almost always underway in the calendar week following the election.

Observers at canvass meetings can ensure that election officials are taking basic prudent steps to detect errors. For example, they can determine whether county canvassers take appropriate action to notice and resolve any anomalies or whether they merely explain them away by guessing at their causes. Voters who are affiliated with either the Democratic or Republican parties can work through their parties to encourage that party's county-canvass representative to promote responsible accuracy-checking during the canvass. Between elections, citizens can work with their local officials to make sure canvass procedures and standards are in writing and that they include reasonability tests, and procedures that prevent certification without verification when obvious errors are noted.

4. Citizen reviews may be the most effective direct action to inspire improvement by local election officials. Responsible clerks may not be alert for errors because they know no one will detect any errors that they don't. However, if clerks realize that citizens are checking preliminary results for anomalies, that knowledge alone will motivate them to be more alert. Citizens can review ward-level election results that are promptly released after every election, even before the municipal canvasses are complete. Citizens could be looking for high undervote rates or single municipalities where voter conduct seems to have differed markedly from either past elections or surround-

ing jurisdictions. Any findings should be quickly and publicly communicated to the municipal and county canvassers, so that they have an opportunity to investigate and correct any errors before certification, and to local media to ensure the issue is not dismissed without investigation.

Better official reviews and audits

Unfortunately, Wisconsin's citizens have fewer opportunities to observe officials conducting election reviews and audits. Wisconsin's election-audit requirements are weak compared to many other states, and local election administrators rarely perform more than the minimum legally required of them.

Fortunately, however, citizens and election officials have useful resources to draw upon from outside the borders of this state. Several other states are ahead of Wisconsin in developing and adopting practical election audits, and national authorities including the [2014 Presidential Commission on Election Administration](#)¹⁰ have provided valuable guidance for any local elections officials who want to ensure accurate election results and high-quality procedures. And once several Wisconsin municipalities and counties have stepped into leadership in the area of election auditing, legislation could be developed to bring Wisconsin's election laws up to date.

No canvass should ever again certify election results that are not credible on their face.

Reasonability testing. Wisconsin election officials--municipal, county, and state--should immediately begin routinely to perform simple reasonability tests before certifying election results. Municipal clerks, who come to know individual reporting units' typical patterns, should always note and question odd or surprising results from a single reporting unit. County election officials can quickly calculate undervote rates and other patterns across municipalities and, for example, question election results showing a markedly different pattern in one municipality than in surrounding areas. WEC officials can do the same, across counties, when counties submit their certified results.

Every local jurisdiction should adopt written canvass procedures that incorporate standards for reasonability testing.

Local election officials should commit their local canvass procedures and standards to writing. Political pressures during the canvass can be intense, and conscientious clerks protect themselves by having clear standards established before the election, such as what undervote rate will be accepted as normal and what rate will trigger further investigation. Having these standards set ahead of time will case-by-case decision-making that so easily triggers accusations of bias.

¹⁰ <http://web.archive.org/web/20170125230314/https://www.supportthevoter.gov/>

Auditing results for accuracy. Two types of audits of Election-Night results are performed in Wisconsin, although neither is capable of verifying the outcomes.

The simplest audit can be observed on Election Night in every polling place. Poll workers verify that the number of ballots counted by the voting machines equals the number of voters recorded in the poll books as having voted. Limited in scope and utility, these audits are nonetheless essential and are generally done reliably and well.

Wisconsin's voting machine audits are done after election officials have declared election results final. As a result, they are of no use in preventing miscounts from determining election outcomes.

In addition, a few state-mandated voting-machine audits are conducted shortly after November elections in even-numbered years. These audits involve only four races and about 100 machines statewide. This is not enough to confirm the election outcome in even the audited races. Additionally, the errors the audits find are not corrected because election results have already been certified. Further, state-recommended procedures contain no requirement for expansion of the audit beyond the one machine in which an error is found, nor do they require investigation beyond directing the municipal clerk to provide an explanation. These explanations are often guesses rather than actual investigations. However, citizens may observe the audits to make sure they are performed well and that any noted problems are reported accurately, if not resolved.

While Wisconsin's required accuracy checks are meager and ineffective, local election officials have the option, on their own initiative, to more thoroughly check accuracy and assess performance. As noted above, local officials other than election officials check the accuracy of their work product without insisting that the Legislature pass a law requiring them to do so. Outside elections, checking the quality of the work product is considered a normal managerial responsibility. Local election officials could do the same, by checking accuracy with simple spot checks or more sophisticated statistical-sampling methods either during the canvass process while errors can still be corrected or between elections, when the information could still be useful for quality-improvement purposes.

Many Wisconsin election officials believe that they are prohibited by law or precedent from looking at ballots during the canvass. But this belief has no basis in either law or common sense. They are the legal custodians of the records, including the ballots, and they have the authority to view those records. Municipal and county clerks—and no one else—have the responsibility to certify only accurate election results. It is unreasonable to assume the Legislature gave them the responsibility of certifying

accurate results while forbidding them from carrying out the tasks necessary to accomplish that. Finally, precedent in instances such as the 2014 **Stoughton** referendum miscount (caused by misprogrammed voting machines) clearly established that election officials can access ballots during the canvass process to ensure accuracy.

Wisconsin's election officials could also, at any time, begin to conduct 'process audits' that look not at election results, but at how well required election processes were followed. Currently, most Wisconsin election officials rely exclusively on recounts to initiate systematic quality review of their practices. However, process audits can best be performed between elections, rather than in the hurried few weeks following an election. For example, it is likely that a September process audit of early-ballot handling in the August primary would have enabled clerks to identify and fix problems before the November election.

Appendix: Contact and Acknowledgements

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