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Honorable Co-chairs:

I'm writing as state coordinator of the Election Integrity (EI) Action Team of the Wisconsin Grassroots Network, a nonpartisan group of citizens who have come together based on our commitment that Wisconsin's elections should produce verified accurate results. I would like to share with you some of our observations and concerns as you begin the audit of the Governmental Accountability Board, particularly in relation to the part of the scope described in the audit memo as "training, education, and consultation...related to elections procedures."

Elections are complex endeavors with many component procedures. The EI Action Team has been focusing our attention on the *procedures used to manage the technology that produces election results*. As you conduct this audit, please do not overlook these procedures.

The EI Action Team does not seek to abolish the use of voting machines. Appropriate election technology—*if managed responsibly*—has substantial benefits. Unfortunately, America's adoption of election technology has raced far ahead of our adoption of prudent procedures to ensure its accuracy and integrity.

Criteria: How rigorous should our election-technology management procedures be?

Imagine that our voting machines determined the allocation of thousands of dollars among the candidates rather than thousands of votes. What sorts of management procedures would we and the candidates expect to make sure the machines' reported results were accurate and verified as such?

We might adopt safeguards and verifications similar in rigor to those we use for the barcode scanners that tabulate our grocery bills. Federal and state regulations govern scanning-system specifications. Grocery chains employ full-time professional information technology professionals to manage their IT systems, and they maintain sophisticated computer-security systems to prevent and detect any malfunctions. After we leave the store, the grocery stores conduct prompt and thorough checks of the cash-register tapes and the store's total revenue. The stores conduct routine tests of their own systems, and state officials conduct surprise tests. When investigations find significant problems with any store's scanning system, consequences may include criminal investigation and prosecution.

The single most effective quality-control procedure for grocery-bill technology may be the customer receipt, which enlists every customer in ongoing quality control of the system's accuracy. Unfortunately, there is—and can be—no election-system counterpart for the grocery receipt. Ballot privacy prevents

officials from counting our votes as we cast them, so there is only one tabulation at the end of Election Day. Even if we gave voters a receipt indicating who they voted for (which would enable vote-selling), the receipts could tell voters nothing about whether their votes were tabulated correctly at the end of the day.

Lacking the single most important check on computers' accuracy that grocery-scanner technology relies upon, one would reasonably expect that we would subject election technology to other, stronger and more transparent quality controls.

Condition: How rigorous are the procedures we use to manage our election technology?

Despite the fact that quality assurance for election technology must be conducted without the equivalent of the customer receipt, all the procedures used to protect the accuracy of our election technology—both before and after voting—are weaker than those used to protect the accuracy of our grocery bills.

Before elections, honest county and municipal officials may or may not maintain good security practices while voting machines are in their possession. (These practices are never audited, so we do not know.) But even the most conscientious clerk cannot fully protect his or her voting machines.

- No state or local official inspects each voting machine thoroughly upon delivery or at any later time to make sure, for example, that no hardware adaptations have been made such as installing illegal but hidden wireless communications capability.
- Although state officials have the authority to review samples of the software, neither state nor local officials have the resources or responsibility to inspect the software operating in each precinct's machine on Election Day.
- No state or local official audits the vendors' internal security programs. We do not know how the machines and their software are protected while they are in the vendors' possession.
- The voting machine vendors often take possession of the software between elections and apply patches and upgrades without audit or review by state or local officials.
- Even if our elections officials had the resources needed to operate a strong security and testing program independent of the vendors, our procurement processes have allowed voting system manufacturers to claim trade secrecy and shield their software from review and inspection.

The pre-election testing procedures for each voting machine required by s.5.84, Wis. Stats., do no more than make sure the machines are set up correctly for the ballots and races in that election. This is a necessary and valuable test, but is not capable of detecting malicious programming designed to operate only on Election Day and cannot prevent or detect Election-Day malfunctions.

Post-election procedures are even more astounding. Wisconsin statutes provide no elections official—at either the state or local level—with responsibility for checking the accuracy of machine-generated totals before those totals are certified as final election results. You did not misread that. ***After our votes are counted outside the view of elections officials inside the voting machines' black boxes, Wisconsin employs no routine procedures for detecting whether the machine-generated totals were affected by operator error, computer malfunction, or malicious intervention before we certify them as our official election results.***

The only required election-night procedure relating to accurate results is contained in s.7.51(2), Wis. Stats., which directs local officials to reconcile the number of ballots counted (not votes cast) with the number of voters—a measure intended only to verify that no one manually stuffed the ballot box.

For races not recounted under s.9.01, Wis. Stats., no verification of the machine-generated totals is ever performed, with one small exception. Under s.7.08(6), Wis. Stats., following each general election (not primaries or other elections), GAB randomly selects a minimum of five reporting units for each type of

voting system used in the state and instructs those municipalities to audit the machine by hand-counting the ballots in four races and comparing those totals to the machine's. Procedures for these audits have multiple limitations that reduce their value for prudent management of election technology and for supporting voter confidence.

- The audits are conducted only after election results have been certified as final, reducing their deterrence value; eliminating any value for preventing miscounts from being certified; and maximizing the potential for expensive, destructive dispute in the event a miscount is detected.
- The audits are limited in scope to the accuracy of the voting machines and do not examine other related procedures such as the chain of custody for the marked ballots, the disposition of unmarked ballots, the processing of absentee ballots, and other procedures.
- The procedures for selecting races and reporting units for audit do not take into account observable risk (e.g., high undervote rates or results that exhibit patterns suggestive of deliberate electronic tampering, such as statewide results just outside the 2% recount margin with a few jurisdictions reporting unexpectedly high totals for the victor, or results that exhibit patterns of variance correlated with the size of the reporting unit or the type of voting equipment.)
- Audit procedures employ an unrealistically stringent standard for materiality of the variance between the hand counts and machine counts. State statutes prescribe an error-rate criterion identical to that used in federally required laboratory testing of new electronic voting systems: no more than 1 vote in 500,000, or 99.9998 percent accuracy. In contrast, voting-machine quality-control work outside Wisconsin has determined auditors can reasonably expect to find a difference of up to 0.5 percent between the results of a hand count and of a machine count, simply due to humans' superior ability to understand irregular marks.
- Perhaps as a result of this unrealistically stringent standard, procedures used for the 2012 audits did not, in fact, determine the extent to which the machines counted the votes consistent with the requirements of s.7.50(2), Wis. Stats. Instead, municipal clerks were instructed that "Voter intent is not a factor." Any difference in the hand-count and machine-count total was "not considered to be an error with the voting system" if the clerks could "reasonably explain any difference in the totals by reference to specific ballots."
- Audit procedures do not describe actions to be taken following a finding of material discrepancy, however it may be defined. They contain no provision for expanding an audit, for example, to other jurisdictions that use equipment supported by the same vendor. Statutes merely instruct that "the board shall take remedial action and order remedial action to be taken by affected counties and municipalities to ensure compliance with the standards," and GAB has no administrative code or policies to govern investigations or resolution of significant vote-tabulation errors.
- Particularly when a detected error is attributed to the vendor's performance, as was the November 2004 incident when a vendor's misprogramming disenfranchised more than 600 voters in Medford, our election officials appear to have little authority, ability, or resources to conduct a thorough independent investigation of the vendor's conduct or to refer the matter to any other authority for effective investigation and response.
- In addition, GAB has not at this writing publicly released the results of voting-machine audits, so that their value for building voter confidence remains unfulfilled. The public has not been informed of the results of previous audits or of the audits following the 2012 general elections, or of what action, if any, was taken based on those findings.

We know of no other non-recreational IT application in either business or government for which monitoring of the computers' performance is so anemic. Certainly, consumer protection authorities and grocery-store customers would never accept such meager quality-control procedures for the barcode scanners.

Effect: What happens as a result of our scanty procedures for managing our election technology?

The fraud-deterrence value of both the pre-election voting-machine tests and the post-election voting-machine audits is limited by their scope, predictability, and in the case of the post-election audits, their number and frequency. But because of these limitations, we cannot say whether this has allowed manipulation of Wisconsin's election results.

When allegations of miscounting arise, the absence of routine and prudent quality-assurance procedures makes it impossible for elections officials effectively to defend themselves and their machines. The officials' inability to produce evidence of accuracy leads to additional allegations of cover-up and to open-records requests and citizens' hand counts, which are both disruptive and lacking in the credibility either to disprove the allegations or to document them in an actionable way.

Even if no allegations of miscounts or misconduct ever arose, the absence of prudent procedures to ensure the accuracy of our election results causes problems. Quality-assurance performance monitoring is essential for any organization to maintain high quality, but Wisconsin election officials' meager opportunity to review their operations comes mostly through unpredictably occurring recounts.

The quality-assurance value of recounts is undisputed: As County Clerks Association representative and Manitowoc County Clerk Jamie Aulik recently testified in a Senate Elections Committee hearing, "We always learn something from a recount." GAB Director Kevin Kennedy echoed the same point: "The only feedback poll workers get if they did a good job is if there is a recount."

Official reviews following the events of the 2011 Supreme Court election in Waukesha County and the 2012 recount of the 21st District state senate race found no miscounts, but revealed poor practices that routine quality-assurance procedures almost certainly would have prevented or corrected earlier at lower cost with less disruption. Providing our elections officials with the opportunity to review their operations' quality and their results' accuracy should not be contingent upon the unpredictable call for a recount.

The most nightmarish effect of lax quality-control procedures for vote-counting has not yet happened in Wisconsin, but we are at risk. Under our current practices, if the outcome of a statewide election ever was found to be altered by an accidental or deliberate electronic miscount, it is probable that it would be detected only after election results had been certified as final, and possibly only after the losing candidates already sworn in to office. Procedures to respond to the miscount would need to be developed in the midst of controversy. It is unpleasant to imagine the consequences for the involved officials and the deleterious effect such an event would have on Wisconsin's already fractious civic climate.

Cause: Why doesn't Wisconsin use more rigorous procedures for ensuring accurate election results?

Wisconsin is not unique among states in having adopted election technology before instituting effective, prudent management procedures to ensure its accurate results. As states moved from hand- or mechanically-counted elections to computerized elections, old quality-control procedures remained useful for most other types of error or fraud. However, pre-computer procedures for accurate vote-counting had to be abandoned when tabulation went from being a human-observable process to something that occurs inside a black box. In Wisconsin and elsewhere, voters and elections officials seem only recently to have realized that all our procedures for checking the accuracy of election results need to be reinvented for the computer age, rather than simply discontinued.

In addition, federal officials and voting-machine manufacturers have, since the adoption of the Help America Vote Act in 2002, aggressively pushed states to purchase electronic election technology, and

voting-machine companies have eagerly promoted their products. Promoting prudent management procedures at the same time would have undermined those efforts by drawing attention to the technology's vulnerabilities and costs of operation. As a result, states have not received leadership or support from either federal officials or voting-system vendors for developing and operating strong quality-control procedures for the costly election technology. A few states have better management of election technology than Wisconsin; most have worse.

Conclusion: How a legislative audit of GAB procedures could help to ensure accurate election results and prevent controversy

Election authorities around the nation, including those with ties to universities' information technology departments, have in recent years developed recommended practices for prudent management of electronic election technology. The findings and recommendations of government, academic, and private-sector scientists, voting machine experts, and security professionals are available for consideration. The sources listed in our report, *Wisconsin's Post-election Voting Machine Audit Practices*, (enclosed) represent only some of the authoritative and credible material available.

The GAB audit recently approved by the Joint Audit Committee provides a good opportunity for a reasoned and factual discussion of how well Wisconsin manages its election technology. The Legislative Audit Bureau is uniquely well-situated to articulate appropriate standards for procedures that reliably and transparently ensure the accuracy of election results; to assess the extent to which our current procedures fulfill those standards; and to make recommendations to the Legislature regarding how Wisconsin might better protect the accuracy of our vote-counting and prevent future controversies.

Because our attention is relentlessly drawn to elections procedures that are visible to voters, vote-counting procedures are left unexamined, vulnerable to error and mismanagement. The Joint Committee on Audit and the Legislative Audit Bureau can do much to correct this. As you conduct this audit, please do not overlook the procedures related to prudent management of our election technology.

Sincerely,

Karen McKim
Coordinator, WGN Election Integrity Action Team

Enc: *Wisconsin's Post-election Voting Machine Audit Practices*, July 2013.
Report of the WGN Election Integrity Action Team

cc: State Auditor Joe Chrisman (hard copy)
Members of the Joint Committee on Audit (electronic only)
Kevin Kennedy, Director, Governmental Accountability Board (electronic only)