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MEMORANDUM

DATE: For the December 3, 2018 Commission Meeting

TO: Members, Wisconsin Elections Commission

FROM: Meagan Wolfe
Interim Administrator, Wisconsin Elections Commission

Prepared and presented by:

Richard Rydecki William Wirkus
Assistant Administrator Elections Specialist

SUBJECT: 2018 Voluntary County Canvass Audit and Post-Election Audit of Electronic Voting Equipment Report

Voluntary County Canvass Audits

At its September 25, 2018 meeting, the Commission encouraged counties to consider implementing voluntary audits as part of their county canvass procedures, if their time and resources allowed. These voluntary audits are aimed at confirming the accurate tabulation of votes and increasing public confidence in the counting of votes prior to certification of election results. These audits would serve as a spot check on both hand-count paper as well as electronically-cast ballot tabulation and are conducted on the county-level, a different level of government than that which originally administered and counted the votes on Election Day.

To date, we have ascertained that at least 7 counties participated in a Voluntary County Canvass Audit. Those counties include Dane, Milwaukee, Marathon, Portage, Shawano, Washington, and Wood. These audits have verified the reported results in the selected reporting units and to the Commission staff's knowledge, have not identified any discrepancies.

The Commission authorized each county participating in the voluntary audits a reimbursement up to \$300 per county for actual expenses incurred as a result of the audit. As of November 23, 2018, the Commission has received reimbursement requests totaling \$478.25 from two counties.

Post-Election Voting Equipment Audit Introduction

Wis. Stat. § 7.08(6) is the state embodiment of § 301(a)(5) of the Help America Vote Act of 2002 (HAVA). Wis. Stat. § 7.08(6), requires the Wisconsin Elections Commission ("WEC") to audit each voting system that is used in this state following each General Election:

(6) Enforcement of federal voting system standards. Following each general election audit the performance of each voting system used in this state to determine the error rate of the system in counting ballots that are validly cast by electors. If the error rate exceeds the rate permitted under standards of the federal election commission in effect on October 29, 2002, the commission shall take remedial action and order remedial action to be taken by affected counties and municipalities to ensure compliance with the standards.¹ Each county and municipality shall comply with any order received under this subsection.

The Commission approves the sample size, procedures and timeline for conducting the audit. Each selected municipality is required to conduct the audit, and some local election officials receive assistance from their county clerk's office. The post-election voting equipment audit has been conducted after each General Election since 2006.

Reporting Unit Selection Process

The Wisconsin Elections Commission randomly selected a pre-determined number of reporting units across Wisconsin for participation in the post-election voting equipment audit. The selection took place as part of a public meeting on November 7, 2018 in accordance with the guidelines approved at the September 25, 2018 meeting of the Wisconsin Elections Commission.

For the 2018 post-election audit, the Commission approved an increase of the sample size to 5% of all reporting units statewide. The three previous audits had been conducted using a sample of a minimum of 100 reporting units statewide. The increase in sample size increase resulted in a minimum of 183 reporting units selected for the 2018 audit. Staff also recommended that at least one reporting unit from each county be included in the sample selected for audit.

In summary, the Commission approved the following selection criteria for the 2018 audit:

1. An increase in the audit sample to 5% of all reporting units statewide for a minimum of 183 total audits.
2. Ensure that at least one (1) piece of voting equipment is selected for audit in each of the 72 Wisconsin counties.
3. Ensure that a minimum of five (5) reporting units are selected for each piece of equipment certified for use in Wisconsin that records and tabulates votes.
4. Limit to two (2) the number of reporting units selected from the same municipality.

Reporting Unit and Contest Selection Outcome and Clerk Notification

Staff selected 185 total reporting units that were ultimately subject to audit, with 9 additional reporting units excused due to zero voters residing within those wards. With 3,681 total reporting units across the state, the final selection represents just over 5% of all statewide reporting units. Every county is represented by at least one reporting unit and 170 different municipalities will participate in the audit

¹ The current federal standard is 1 in 500,000 ballots. Accordingly, auditing teams must reconcile the Voter Verified Paper Record with ballots or records tabulated and recorded by equipment and eliminate any potential non-tabulation related sources of error including printer malfunctions, voter generated ballot marking errors, poll worker errors, or chief inspector errors.

including 16 municipalities required to conduct audits of two reporting units. A complete list of all selected reporting units is included with this memorandum as **Appendix A**.

The total ballots cast for the 2018 General Election in selected reporting units represents approximately 5.6% of all ballots cast statewide, with roughly 150,000 ballots hand-counted during the audit process. In addition, over one million ballots were cast in municipalities subject to audit, or 41% of the total ballots cast across the state. The random selection process also resulted in reporting units from each of the top 10 most populous Wisconsin municipalities being audited.

In addition, staff selected the contests for audit during the public meeting. All contests that appeared on ballots across the state were included as possible selections, with the addition of State Senate. As this contest is never on all ballots statewide, it had never been included as part of the audit. Staff included this contest in the list of possible selections, along with the caveat that if State Senate was selected an alternative contest would be selected for reporting units whose State Senator was not up for election this cycle. To increase transparency in the selection process, a member of the public who attended the meeting was selected by staff to make the random selection of contests. The result of the contest selection is as follows:

1. Governor/Lieutenant Governor (required)
2. Representative to Congress
3. Representative to the Assembly
4. State Senate or Sheriff: Selected municipalities with a **State Senate** race on the ballot audited that contest. If that contest was not on the ballot in that reporting unit, the **Sheriff** contest was audited instead.

Staff reviewed the initial sample selected for audit to ensure that all voting equipment that records and tabulates votes were represented by at least 5 reporting units. Included in this sample were reporting units where the Clear Ballot Group ClearCast system is used, marking the first time this newly approved system will be part of the audit. The only exceptions to the 5-reporting unit rule were the ES&S DS850, a high-speed scanner and tabulator, which is used only by the City of Milwaukee to tabulate absentee ballots at their central count facility and the Populex, which is accessible voting equipment used only by the Town of Fern in Florence County. A full list of the voting equipment subject to audit can be found in **Appendix B**.

All selected municipalities were notified of their selection by email on November 7, 2018. Included in the email was a [link to a page on the agency website](#) where audit materials were posted, including a training webinar, instructions, tally sheets, reporting forms and municipal reimbursement information. Notification of selection for audit was sent to both municipal and county clerks for impacted jurisdictions.

Audit Completion Timeline

For the 2018 post-election voting equipment audit, the Commission determined that all post-election audits should be conducted prior to the state deadline to certify election results on December 3, 2018. The Commission specifically established November 28, 2018 as the deadline to complete and report the results to the WEC. Staff also recommended that any selected municipality may request an extension

waiver if it shows cause that it will not be able to meet this deadline and the Commission set a submission deadline of November 12 for those requests. As of November 26, 2018, staff has received 99 audit reports from 92 individual municipalities. Please note that this number will be updated in advance of the Commission Meeting on December 3, 2018 and a final report on the results of the audit will be presented to the Commission at a future meeting.

Post-Audit Procedures and Municipal Reimbursement

Each municipality conducting an audit was required to submit the designated reporting forms and supporting documents from the audit, including tally sheets, to WEC staff to indicate the audit was completed and describe any discrepancies that were found. Staff followed up with municipalities to clarify audit results when necessary, and to ensure that all required materials had been submitted. All submitted results were reviewed by staff to ensure that the audits did not identify voting equipment results that were incongruent with the hand-count tallies.

The Wisconsin Elections Commission elected to offer municipalities reimbursement for actual costs incurred, up to \$300 per reporting unit, for conducting each audit. Each municipality seeking reimbursement was required to submit an itemized request that included the names of the auditors, the pay rate at which they were compensated, the total sum requested for reimbursement and information on where the WEC can transmit any approved reimbursement amount. To date, WEC has received 67 reimbursement requests totaling \$18,288.02 and the agency financial team is working on processing those reimbursements. Staff also received 13 requests that exceeded the \$300 per reporting unit total. These requests total \$6,994.48 with several of the requests less than \$100 over the maximum and the highest requested amount being \$1,052.17.

2018 Voting Equipment Audit Summary

This summary section contains analysis of the audits results received as of November 26, 2018 and is intended to serve as a resource for Commissioners during the certification process for the 2018 General Election results. The audit results as reported by local election officials and reviewed by WEC did not identify any issues with the tabulation functionality of the voting equipment nor did it uncover any programming issues with the machines on which results were audited.

Included in the totals below are the results of the two audits for reporting units in the Village of Menomonee Falls. Staff approached the Village about conducting these audits on the Village's behalf as an opportunity for staff to gain experience conducting audits and to determine the efficiency of suggested audit procedures, training materials and tally sheets. These audits were conducted as part of a public meeting on November 23, 2018 in the WEC offices.

Accessible Voting Equipment Audit Results Summary

Accessible Voting Equipment that Records Tallies Votes	Audits Conducted
Sequoia Edge	63
AccuVote-TSX	5
iVotronic	5
Populex	1
Ballot Marking Devices that Assist Voters with Marking Ballots Processed by Optical Scan Equipment	Audited as Part of Optical Scan Ballots
AutoMark	51
ExpressVote	40
ClearAccess	5
ImageCast Evolution	16

There are four approved accessible voting systems that record and tabulate votes that are in use in Wisconsin. These types of equipment are often referred to as Direct Recording Electronic machines, or DREs. In addition to DREs, there are four different ballot marking devices approved for use in Wisconsin. Voters use a touchscreen interface or tactile keypad on these devices to make their ballot choices. When the voter is finished, the machine provides them with a paper ballot marked with their choices and those ballots are then inserted into and tabulated by the optical scan equipment or hand-tallied.

All voting equipment audits of DREs were completed by municipal or county clerks. The audit reports indicate the machine tallying function on all audited devices tabulated correctly, with no identifiable bugs, errors, or failures occurring between the individual cast vote record and the total tabulated vote record. The only noted issue arose with auditors not being able to verify several ballots cast on the Sequoia Edge due to paper jams of the Voter Verified Paper Audit Trail (VVPAT) on Election Day. Until cleared, the paper jams may not allow for the recording of votes by the VVPAT.

Ballots marked by the four different ballot marking devices were audited along with the rest of the ballots processed by the optical scan tabulator. These ballots are not segregated from other optical scan ballots, so it is difficult to determine how many ballots marked by these devices were audited. Auditors did not report any discrepancies that could be attributed to ballot marking devices.

Tabulation Voting Equipment (Optical Scan) Results Summary

Optical Scan Equipment	Audits Conducted
Sequoia Insight	19
ES&S M100	6
Optech Eagle	1
AccuVote-OS	5
ES&S DS200	84
Dominion ICE	16
ES&S DS850	2
Clear Ballot Group ClearCast	5
Hand-Count Paper Ballots – No OS Equipment	48

All voting equipment audits of tabulation equipment were completed by municipal or county clerks. The individual audits indicate the tabulation voting equipment performed up to certification standards and accurately recorded and tabulated votes. Minor discrepancies were reconciled between the audit hand count totals and the election results produced by the voting equipment from Election Day. Staff contacted municipalities for clarification if any discrepancies were reported to WEC and a representative summary of those issues is itemized below:

- A blank ballot found in the ballot bag was counted as part of the audit resulting in an additional undervote for each audited contest. Auditors later determined that the blank ballot was not processed by the equipment on Election Day.
- Write in votes where a candidate name was written in without the accompanying oval filled in or arrow connected were initially tallied as write in votes in several instances during the audit. Per Wis Stats. §7.50 the write-in votes *should* be counted by election inspectors, but the voting equipment requires a good mark next the write-in line for the machine to tally a vote for a contest. In these cases, the voting equipment performed up to expectations and those votes should be hand tallied by election inspectors who would then adjust the results tape during results reconciliation.
- A marginal mark was identified that was determined to be inconclusive as to whether the machine counted this mark as a vote. Auditors initially felt the equipment would have counted the vote, but that assumption lead to an extra candidate vote in the audit totals leaving the auditors to believe the mark was not recognized by the machine. All other results from this audit reconciled.
- The ballot pool for an audit initially contained 8 ballots from another reporting unit leading to inaccurate audit results. The offending ballots were identified and removed from the pool and the adjusted totals reconciled with the machine totals from Election Night.
- Various voter intent related issues were identified when reviewing ballots as part of the audit. For example, a voter marked the oval for a write in line, but crossed off the candidate name they initially wrote in. The machine tallied this mark as a write in on the results tape, but no vote was able to be counted by the election inspectors in this situation.

Many of the initial reported discrepancies occurred because voter intent was taken into account when hand counting ballots. The instructions provided to local election officials clearly state that the purpose of this process is to verify the performance of the voting equipment, not to determine the voter's intent as to ballots which the equipment cannot read. For example, if a voter circled the name of a candidate on their ballot, the voting equipment would not record a vote for that candidate. A visual inspection of the ballot could allow the election official to determine voter intent but voting equipment cannot be expected to recognize improper marks, so no vote for that candidate should be tallied during the audit process.

Conclusion

Both the accessible voting equipment and tabulation equipment used and audited for the 2018 General Election recorded and tabulated votes as expected and according to certification standards. The audit results indicated there were no identifiable bugs, errors, or failures of the tabulation voting equipment and discrepancies identified during the audit were the result of human error when conducting the audit. In addition, the results of the audit did not identify any programming errors that impacted how the voting equipment subject to audit counted votes. The audit results did not identify any reason for the Commission to delay the certification of official results of the 2018 General Election.

Throughout the course of the audit, over 150,000 ballots from 186 randomly selected reporting units were counted by hand. The municipalities where equipment was audited represented over 40% percent of all of the ballots cast statewide for this election. The 2018 post-election voting equipment audit was the largest sampling of reporting units involved in the audit since this program was implemented in 2006. The expanded audit and random selection process effectively confirmed the accuracy of voting equipment used in Wisconsin at the election.

Recommended Motions:

1. Staff recommends that the Commission continue to encourage counties to consider conducting a voluntary audit as part of their canvass procedures for the 2019 Spring election cycle and will continue to offer reimbursements for up to \$300 per reporting unit for each audit conducted, up to a maximum of two reporting units.
2. Staff recommends that the Commission accept this preliminary report of the 2018 Voluntary County Canvass and Post-Election Voting Equipment Audits and directs staff to provide a supplemental report regarding the two audit programs, including comprehensive reimbursement request information, for its March 2019 meeting.

Appendix A

Table of 2018 Municipalities Audited

County	Municipality	Reporting Unit	Optical/Digital Scan Tabulator	Accessible Voting Equipment
ADAMS	CITY OF ADAMS	Wards 1-4	Optech- Eagle	ES&S Automark
ASHLAND	CITY OF ASHLAND	Ward 9	ES&S M100	ES&S Automark
BARRON	TOWN OF BARRON	Wards 1-2	None	AVC Edge
BARRON	TOWN OF PRAIRIE LAKE	Wards 1-2	None	AVC Edge
BARRON	TOWN OF RICE LAKE	Wards 1-4	Optech Insight	AVC Edge
BARRON	TOWN OF SIOUX CREEK	Ward 1	None	AVC Edge
BAYFIELD	TOWN OF EILEEN	Wards 1-2	ES&S M100	ES&S Automark
BROWN	CITY OF GREEN BAY	Ward 2	ES&S DS200	ES&S Automark
BROWN	CITY OF GREEN BAY	Ward 7	ES&S DS200	ES&S Automark
BROWN	TOWN OF HOLLAND	Wards 1-2	ES&S DS200	ES&S Automark
BROWN	TOWN OF SCOTT	Wards 1-4	ES&S DS200	ES&S Automark
BROWN	TOWN OF WRIGHTSTOWN	Wards 1-3	ES&S DS200	ES&S Automark
BROWN	VILLAGE OF ALLOUEZ	Wards 1-2	ES&S DS200	ES&S Automark
BUFFALO	TOWN OF MILTON	Ward 1	None	AVC Edge
BURNETT	TOWN OF OAKLAND	Wards 1-2	None	AVC Edge
CALUMET	CITY OF KAUKAUNA	Ward 11	Accuvote-OS	Accuvote TSX
CALUMET	TOWN OF BROTHERTOWN	Wards 1-2	Accuvote-OS	Accuvote TSX
CALUMET	TOWN OF NEW HOLSTEIN	Wards 1-3	Accuvote-OS	Accuvote TSX
CALUMET	VILLAGE OF HARRISON	Wards 7-9,14	Accuvote-OS/ES&S DS200	Accuvote TSX/ES&S ExpressVote
CALUMET	VILLAGE OF STOCKBRIDGE	Ward 1	Accuvote-OS	Accuvote TSX
CHIPPEWA	CITY OF BLOOMER	Wards 1-4	Optech Insight	AVC Edge
CHIPPEWA	TOWN OF COLBURN	Ward 1	Optech Insight	AVC Edge
CHIPPEWA	TOWN OF ESTELLA	Ward 1	Optech Insight	AVC Edge
CHIPPEWA	TOWN OF WHEATON	Wards 1-3	Optech Insight	AVC Edge
CHIPPEWA	VILLAGE OF NEW AUBURN	Ward 1	Optech Insight	AVC Edge
CLARK	TOWN OF BUTLER	Ward 1	None	ES&S iVotronic
CLARK	TOWN OF WESTON	Wards 1-2	ES&S M100	ES&S iVotronic
COLUMBIA	CITY OF WISCONSIN DELLS	Wards 11-12	ES&S DS200	ES&S Automark
COLUMBIA	TOWN OF MARCELLON	Wards 1-2	ES&S DS200	ES&S Automark
COLUMBIA	VILLAGE OF PARDEEVILLE	Wards 1-3	ES&S DS200	ES&S Automark
CRAWFORD	TOWN OF HANEY	Ward 1	None	AVC Edge
DANE	CITY OF MADISON	Ward 17	ES&S DS200	ES&S ExpressVote
DANE	CITY OF MADISON	Ward 68	ES&S DS200	ES&S ExpressVote
DANE	CITY OF STOUGHTON	Wards 7-8	ES&S DS200	ES&S Automark
DANE	TOWN OF MONTROSE	Wards 1-2	ES&S DS200	ES&S Automark
DANE	TOWN OF OREGON	Wards 1-4	ES&S DS200	ES&S Automark

DANE	TOWN OF SPRINGDALE	Wards 1-2	ES&S DS200	ES&S Automark
DANE	VILLAGE OF BELLEVILLE	Wards 1-2	ES&S DS200	ES&S Automark
DANE	VILLAGE OF DEFOREST	Wards 13,19,22	ES&S DS200	ES&S ExpressVote
DANE	VILLAGE OF MCFARLAND	Wards 1-12	ES&S DS200	ES&S ExpressVote
DANE	VILLAGE OF Windsor	Wards 3-5	ES&S DS200	ES&S ExpressVote
DODGE	CITY OF BEAVER DAM	Wards 7,12-13	ES&S DS200	ES&S ExpressVote
DODGE	CITY OF FOX LAKE	Wards 1-3	ES&S DS200	ES&S ExpressVote
DODGE	CITY OF WAUPUN	Wards 1-8	ES&S DS200	ES&S ExpressVote
DODGE	TOWN OF HUBBARD	Wards 5-6	ES&S DS200	ES&S ExpressVote
DOOR	TOWN OF BAILEYS HARBOR	Wards 1-2	Dominion ImageCast Evolution	Dominion ImageCast Evolution
DOUGLAS	TOWN OF PARKLAND	Wards 1-2	ES&S DS200	ES&S ExpressVote
DOUGLAS	TOWN OF SOLON SPRINGS	Wards 1-3	ES&S DS200	ES&S ExpressVote
DOUGLAS	VILLAGE OF OLIVER	Ward 1	ES&S DS200	ES&S ExpressVote
DUNN	TOWN OF EAU GALLE	Ward 1	Optech Insight	AVC Edge
DUNN	TOWN OF ELK MOUND	Wards 1-3	Optech Insight	AVC Edge
DUNN	TOWN OF SPRING BROOK	Wards 1-2	Optech Insight	AVC Edge
EAU CLAIRE	CITY OF EAU CLAIRE	Ward 3	ES&S DS200	ES&S ExpressVote
EAU CLAIRE	TOWN OF DRAMMEN	Ward 1	ES&S DS200	ES&S ExpressVote
FLORENCE	TOWN OF FENCE	Ward 1	None	AVC Edge
FLORENCE	TOWN OF FERN	Ward 1	None	Populex-Populex 2.3
FOND DU LAC	CITY OF FOND DU LAC	Ward 31	Dominion ImageCast Evolution	Dominion ImageCast Evolution
FOND DU LAC	TOWN OF FOREST	Wards 1-2	Dominion ImageCast Evolution	Dominion ImageCast Evolution
FOREST	TOWN OF LINCOLN	Wards 1-3	None	AVC Edge
GRANT	TOWN OF PARIS	Wards 1-2	None	AVC Edge
GRANT	TOWN OF PLATTEVILLE	Wards 1-3	None	AVC Edge
GRANT	TOWN OF WATERLOO	Ward 1	None	AVC Edge
GREEN	VILLAGE OF MONTICELLO	Wards 1-2	Dominion ImageCast Evolution	Dominion ImageCast Evolution
GREEN LAKE	TOWN OF GREEN LAKE	Wards 1-2	Optech Insight	AVC Edge
IOWA	TOWN OF MOSCOW	Wards 1-2	None	AVC Edge
IRON	TOWN OF CAREY	Ward 1	None	AVC Edge
JACKSON	TOWN OF ALBION	Wards 1-4	None	AVC Edge
JACKSON	TOWN OF BEAR BLUFF	Ward 1	None	AVC Edge
JEFFERSON	TOWN OF JEFFERSON	Wards 1-3	ES&S DS200	ES&S ExpressVote
JUNEAU	CITY OF NEW LISBON	Wards 1-7	None	AVC Edge
JUNEAU	TOWN OF LISBON	Ward 3	None	AVC Edge
JUNEAU	TOWN OF NECEDAH	Wards 1-4	None	AVC Edge

JUNEAU	VILLAGE OF HUSTLER	Ward 1	None	AVC Edge
KENOSHA	CITY OF KENOSHA	Ward 22	ES&S DS200	ES&S ExpressVote
KENOSHA	CITY OF KENOSHA	Ward 50	ES&S DS200	ES&S ExpressVote
KENOSHA	TOWN OF BRIGHTON	Wards 1-4	ES&S DS200	ES&S ExpressVote
KENOSHA	VILLAGE OF SOMERS	Ward 12	ES&S DS200	ES&S ExpressVote
KENOSHA	VILLAGE OF TWIN LAKES	Wards 1-8	ES&S DS200	ES&S ExpressVote
KEWAUNEE	TOWN OF CARLTON	Wards 1-2	Optech Insight	AVC Edge
LA CROSSE	CITY OF LA CROSSE	Ward 18	ES&S DS200	ES&S Automark
LA CROSSE	CITY OF LA CROSSE	Ward 26	ES&S DS200	ES&S Automark
LA CROSSE	TOWN OF HAMILTON	Wards 1-5	ES&S DS200	ES&S Automark
LAFAYETTE	TOWN OF GRATIOT	Ward 1	None	AVC Edge
LAFAYETTE	TOWN OF WIOTA	Ward 1	None	AVC Edge
LANGLADE	TOWN OF AINSWORTH	Ward 1	None	AVC Edge
LANGLADE	TOWN OF EVERGREEN	Ward 1	None	AVC Edge
LINCOLN	CITY OF TOMAHAWK	Wards 1-2	ES&S DS200	ES&S Automark
MANITOWOC	CITY OF TWO RIVERS	Wards 1-2	ES&S M100	ES&S Automark
MANITOWOC	CITY OF TWO RIVERS	Wards 7-8	ES&S M100	ES&S Automark
MANITOWOC	TOWN OF FRANKLIN	Wards 1-3	ES&S M100	ES&S Automark
MANITOWOC	TOWN OF MEEME	Wards 2-3	ES&S M100	ES&S Automark
MARATHON	CITY OF MARSHFIELD	Wards 12,20-21,24	ES&S DS200	ES&S Automark
MARATHON	CITY OF WAUSAU	Ward 1	ES&S DS200	ES&S Automark
MARATHON	CITY OF WAUSAU	Ward 30	ES&S DS200	ES&S Automark
MARATHON	TOWN OF EAU PLEINE	Ward 1	ES&S DS200	ES&S Automark
MARATHON	TOWN OF RIB FALLS	Ward 1	ES&S DS200	ES&S Automark
MARATHON	TOWN OF RINGLE	Wards 1-2	ES&S DS200	ES&S Automark
MARATHON	VILLAGE OF DORCHESTER	Ward 2	ES&S M100	ES&S iVotronic
MARATHON	VILLAGE OF ELDERON	Ward 1	ES&S DS200	ES&S Automark
MARINETTE	TOWN OF PESHTIGO	Wards 1,4	None	AVC Edge
MARQUETTE	TOWN OF MECAN	Ward 1	None	AVC Edge
MARQUETTE	TOWN OF NESHKORO	Wards 1-2	None	AVC Edge
MENOMINEE	TOWN OF MENOMINEE	Ward 2	ES&S DS200	ES&S Automark
MILWAUKEE	CITY OF FRANKLIN	Ward 15B	ES&S DS200	ES&S Automark
MILWAUKEE	CITY OF FRANKLIN	Ward 18	ES&S DS200	ES&S Automark
MILWAUKEE	CITY OF GLENDALE	Ward 8	ES&S DS200	ES&S Automark
MILWAUKEE	CITY OF GREENFIELD	Ward 12	ES&S DS200	ES&S Automark
MILWAUKEE	CITY OF GREENFIELD	Ward 20	ES&S DS200	ES&S Automark
MILWAUKEE	CITY OF MILWAUKEE	Ward 116	ES&S DS200/DS850	ES&S Automark
MILWAUKEE	CITY OF MILWAUKEE	Ward 315	ES&S DS200/DS850	ES&S Automark
MILWAUKEE	CITY OF OAK CREEK	Wards 7-9	ES&S DS200	ES&S Automark
MILWAUKEE	CITY OF SOUTH MILWAUKEE	Wards 5-8	ES&S DS200	ES&S Automark
MILWAUKEE	CITY OF ST. FRANCIS	Wards 9-12	ES&S DS200	ES&S Automark

MILWAUKEE	CITY OF WEST ALLIS	Ward 25	ES&S DS200	ES&S Automark
MILWAUKEE	VILLAGE OF HALES CORNERS	Wards 4-6	ES&S DS200	ES&S Automark
MILWAUKEE	VILLAGE OF WHITEFISH BAY	Ward 12	ES&S DS200	ES&S Automark
MONROE	CITY OF SPARTA	Wards 7-11	Optech Insight	AVC Edge
MONROE	CITY OF TOMAH	Wards 1-5A,6	Optech Insight	AVC Edge
MONROE	CITY OF TOMAH	Wards 5B,24	Optech Insight	AVC Edge
MONROE	TOWN OF GREENFIELD	Wards 1-2	None	AVC Edge
MONROE	TOWN OF WILTON	Wards 1-5	None	AVC Edge
OCONTO	TOWN OF MAPLE VALLEY	Ward 1	None	AVC Edge
ONEIDA	CITY OF RHINELANDER	Ward 10	Optech Insight	AVC Edge
ONEIDA	TOWN OF CASSIAN	Wards 1-2	Optech Insight	AVC Edge
ONEIDA	TOWN OF CRESCENT	Wards 1-3	Optech Insight	AVC Edge
OUTAGAMIE	CITY OF APPLETON	Ward 29	ES&S DS200	ES&S ExpressVote
OUTAGAMIE	CITY OF APPLETON	Ward 35	ES&S DS200	ES&S ExpressVote
OUTAGAMIE	TOWN OF GRAND CHUTE	Wards 1-3	ES&S DS200	ES&S ExpressVote
OUTAGAMIE	TOWN OF GRAND CHUTE	Wards 7-8	ES&S DS200	ES&S ExpressVote
OUTAGAMIE	VILLAGE OF HARRISON	Wards 1-2	Accuvote-OS/ES&S DS200	Accuvote TSX/ES&S ExpressVote
OZAUKEE	CITY OF MEQUON	Wards 13-14	Dominion ImageCast Evolution	Dominion ImageCast Evolution
OZAUKEE	TOWN OF SAUKVILLE	Wards 1-3	Dominion ImageCast Evolution	Dominion ImageCast Evolution
PEPIN	TOWN OF FRANKFORT	Ward 1	None	AVC Edge
PIERCE	TOWN OF EL PASO	Ward 1	ES&S DS200	ES&S ExpressVote
PIERCE	CITY OF RIVER FALLS	Ward 5	ES&S DS200	ES&S ExpressVote
POLK	TOWN OF BLACK BROOK	Wards 1-2	None	AVC Edge
PORTAGE	CITY OF STEVENS POINT	Wards 7-9	ES&S DS200	ES&S Automark
PORTAGE	CITY OF STEVENS POINT	Wards 36,38,41,45	ES&S DS200	ES&S Automark
PORTAGE	TOWN OF HULL	Wards 6-8	ES&S DS200	ES&S Automark
PRICE	TOWN OF EISENSTEIN	Wards 1-2	None	AVC Edge
RACINE	CITY OF RACINE	Ward 23	Dominion ImageCast Evolution	Dominion ImageCast Evolution
RACINE	VILLAGE OF CALEDONIA	Ward 3B	Dominion ImageCast Evolution	Dominion ImageCast Evolution
RICHLAND	CITY OF RICHLAND CENTER	Ward 7	None	AVC Edge
ROCK	CITY OF БЕЛОIT	Ward 19	ES&S DS200	ES&S Automark
ROCK	CITY OF БЕЛОIT	Ward 24	ES&S DS200	ES&S Automark
ROCK	CITY OF JANESVILLE	Ward 25	ES&S DS200	ES&S Automark
RUSK	TOWN OF STUBBS	Wards 1-2	None	AVC Edge
RUSK	TOWN OF TRUE	Ward 1	None	AVC Edge
RUSK	TOWN OF WILSON	Ward 1	None	AVC Edge

SAUK	TOWN OF FAIRFIELD	Wards 1-2	ES&S DS200	ES&S ExpressVote
SAUK	TOWN OF LA VALLE	Wards 1-3	ES&S DS200	ES&S ExpressVote
SAUK	VILLAGE OF LIME RIDGE	Ward 1	ES&S DS200	ES&S ExpressVote
SAUK	VILLAGE OF SAUK CITY	Wards 1-5	ES&S DS200	ES&S ExpressVote
SAWYER	TOWN OF COUDERAY	Ward 1	None	AVC Edge
SHAWANO	CITY OF MARION	Wards 4-6	Optech Insight	AVC Edge
SHAWANO	TOWN OF HARTLAND	Ward 1	Optech Insight	AVC Edge
SHAWANO	VILLAGE OF BOWLER	Ward 1	None	AVC Edge
SHEBOYGAN	CITY OF SHEBOYGAN	Ward 16	CBG, Clear Cast	Clear Ballot Group, Inc. - Clear Access
SHEBOYGAN	CITY OF SHEBOYGAN	Ward 18	CBG, Clear Cast	Clear Ballot Group, Inc. - Clear Access
SHEBOYGAN	TOWN OF HERMAN	Wards 1-3	CBG, Clear Cast	Clear Ballot Group, Inc. - Clear Access
SHEBOYGAN	VILLAGE OF RANDOM LAKE	Wards 1-2	CBG, Clear Cast	Clear Ballot Group, Inc. - Clear Access
SHEBOYGAN	TOWN OF WILSON	Wards 1-4	CBG, Clear Cast	Clear Ballot Group, Inc. - Clear Access
ST. CROIX	TOWN OF CYLON	Ward 1	ES&S DS200	ES&S ExpressVote
ST. CROIX	TOWN OF FOREST	Ward 1	ES&S DS200	ES&S ExpressVote
ST. CROIX	VILLAGE OF DEER PARK	Ward 1	ES&S DS200	ES&S ExpressVote
ST. CROIX	VILLAGE OF ROBERTS	Wards 1-4	ES&S DS200	ES&S ExpressVote
TAYLOR	TOWN OF GOODRICH	Ward 1	None	ES&S iVotronic
TAYLOR	VILLAGE OF LUBLIN	Ward 1	None	ES&S iVotronic
TREMPEALEAU	TOWN OF ARCADIA	Wards 1-4	None	AVC Edge
TREMPEALEAU	TOWN OF PIGEON	Wards 1-2	None	AVC Edge
VERNON	TOWN OF FRANKLIN	Wards 1-2	None	AVC Edge
VILAS	TOWN OF BOULDER JUNCTION	Wards 1-2	Dominion ImageCast Evolution	Dominion ImageCast Evolution
WALWORTH	CITY OF LAKE GENEVA	Wards 5-6,10	Dominion ImageCast Evolution	Dominion ImageCast Evolution
WALWORTH	TOWN OF EAST TROY	Ward 1	Dominion ImageCast Evolution	Dominion ImageCast Evolution
WASHBURN	TOWN OF EVERGREEN	Wards 1-2	None	AVC Edge
WASHBURN	TOWN OF STONE LAKE	Ward 1	None	AVC Edge
WASHINGTON	CITY OF WEST BEND	Wards 1-3	Dominion ImageCast Evolution	Dominion ImageCast Evolution
WASHINGTON	TOWN OF JACKSON	Wards 1-6	Dominion ImageCast Evolution	Dominion ImageCast Evolution
WASHINGTON	VILLAGE OF GERMANTOWN	Wards 12-15	Dominion ImageCast Evolution	Dominion ImageCast Evolution

WASHINGTON	VILLAGE OF RICHFIELD	Wards 5-6	Dominion ImageCast Evolution	Dominion ImageCast Evolution
WAUKESHA	CITY OF NEW BERLIN	Ward 3	ES&S DS200	ES&S ExpressVote
WAUKESHA	CITY OF WAUKESHA	Ward 2	ES&S DS200	ES&S ExpressVote
WAUKESHA	CITY OF WAUKESHA	Ward 36	ES&S DS200	ES&S ExpressVote
WAUKESHA	VILLAGE OF HARTLAND	Wards 1-14	ES&S DS200	ES&S ExpressVote
WAUKESHA	VILLAGE OF MENOM. FALLS	Ward 4	ES&S DS200	ES&S ExpressVote
WAUKESHA	VILLAGE OF MENOM. FALLS	Ward 21	ES&S DS200	ES&S ExpressVote
WAUPACA	TOWN OF UNION	Wards 1-2	Optech Insight	AVC Edge
WAUSHARA	TOWN OF BLOOMFIELD	Wards 1-2	None	AVC Edge
WINNEBAGO	CITY OF OSHKOSH	Ward 6	Dominion ImageCast Evolution	Dominion ImageCast Evolution
WINNEBAGO	CITY OF OSHKOSH	Ward 13	Dominion ImageCast Evolution	Dominion ImageCast Evolution
WINNEBAGO	TOWN OF NEKIMI	Wards 1-2	Dominion ImageCast Evolution	Dominion ImageCast Evolution
WINNEBAGO	TOWN OF NEPEUSKUN	Ward 1	Dominion ImageCast Evolution	Dominion ImageCast Evolution
WOOD	CITY OF WISCONSIN RAPIDS	Wards 11-21,24-29	ES&S DS200	ES&S Automark
WOOD	VILLAGE OF PORT EDWARDS	Wards 1-3	ES&S DS200	ES&S Automark

Appendix B

Voting Equipment Subject to the Post-Election Audit

Accessible Equipment

1. *Sequoia Edge*

The Board approved Sequoia's AVC-Edge with VeriVote Printer DRE system, version 5.024 on March 22, 2006. This system was approved under NASED # N-1-07-22-22-002. Most municipalities who use the AVC-Edge utilize them to meet accessibility requirements and use another system, usually traditional paper or optical scan, to fulfill the majority of voting needs.

2. *ES&S iVotronic*

The Board approved ES&S's iVotronic DRE with Real Time Audit Log, version 9.1.4.0 on April 26, 2006. This system was approved under NASED # N-2-02-22-22-005. Most municipalities that use the iVotronic utilize it to meet accessibility requirements and use another system, usually traditional paper or optical scan, to fulfill the majority of their voting needs.

3. *AccuVote TSX*

The Board first approved Diebold's AccuVote TSX DRE Touch Screen and AccuView Printer Module, version 4.6.3 on March 22, 2006. This system was approved under NASED # N-1-06-22-22-001. Most municipalities that use the AccuVote TSX utilize it to meet accessibility requirements and use another system, usually traditional paper or optical scan, to fulfill the majority of their voting needs.

4. *Populex*

Populex Digital Paper Ballot Voting System, version was approved by the State Elections Board at the May 17, 2006 meeting.

Optical Scan Tabulators

1. *Dominion ImageCast Evolution*

ImageCast Evolution version 410A was originally approved for use in Wisconsin by the Board on June 18, 2015.

2. *ES&S M100*

System assigned NASED # N-2-02-22-22-005. This equipment was approved by the State Elections Board April 26, 2006.

3. *ES&S DS200*

DS200 digital scanner, version 1.6.1.0, was originally approved by the Board on August 28, 2012.

4. *ES&S DS850*

DS850 central count digital scanner, version 1.6.1.0, was last approved by the Commission on June 20, 2017.

5. *Optech Insight*

Formerly a Sequoia Product that has been acquired by Dominion Voting, the Optech Insight optical scan ballot reader, version. APXK2.10/HPX K1.42 was assigned NASED system ID # N-1-07-22-22-002. The State Elections Board approved this equipment on March 22, 2006.

6. *Optech Eagle*

The Optech IIP Eagle originally made by Business Records Corporation and later (as a result of merger and an antitrust decision, by both Sequoia Voting Systems and by Election Systems and Software). It has been in use in Wisconsin for over 20 years in some jurisdictions. As of December 31, 2018, the Optech Eagle will have its approval certification revoked. As a result, these machines will no longer be approved for use in elections throughout the state of Wisconsin. Currently, WEC records indicate that only one municipality used an Optech Eagle for the November General Election.

7. *Diebold/Premier-AccuVote-OS*

This was formerly a Diebold Elections System Product that has been acquired by Dominion Voting. The AccuVote-OS (model D) Optical Scan, version 1.96.6, was approved by the State along with a series of security recommendations, at the March 22, 2006 meeting. The system was assigned NASED system ID # N-1-06-22-22-001.

8. *ClearBallot Group ClearCast*

ClearCast is a COTS based polling place ballot tabulator originally approved for use by the Wisconsin Elections Commission on December 12, 2017.