

Chapter 10: VOTING SYSTEMS AND SECURITY

Directive 2019-31

Section 1.01 Definitions

Critical Infrastructure is defined in federal law as “systems and assets, whether physical or virtual, so vital to the United States that the incapacity or destruction of such systems and assets would have a debilitating impact on security, national economic security, national public health or safety, or any combination of those matters.”¹ Since 2017, the United States Department of Homeland Security has designated United States election systems as part of the nation’s critical infrastructure.

The **U.S. Election Assistance Commission** (EAC) is a federal, independent, and bipartisan commission established by the Help America Vote Act of 2002 (HAVA). It is charged with developing guidance for states to meet the requirements of HAVA, adopting voluntary voting system guidelines, and serving as a national clearinghouse of information on election administration. EAC also accredits testing laboratories, certifies voting systems, and audits the states’ use of HAVA funds.²

The **Ohio Board of Voting Machine Examiners** (BVME) is a bipartisan, four-member board charged with examining and approving voting equipment for use in Ohio elections.³ A **voting system** is defined by the EAC as “a specific combination of mechanical, electromechanical, and electronic equipment used to define ballots, cast and count votes, report or display election results, connect the voting system to the voter registration system, and maintain and produce any audit trail.” EAC oversees a comprehensive testing program for voting systems and assigns a certification number only to those voting systems that meet the standards it has adopted. Information on each system tested and certified by the EAC can be found on the EAC’s website.

¹ 42 U.S.C. § 5195c(e)

² <https://www.eac.gov/about-the-useac/>.

³ [R.C. 3506.05](#).



Voting machines are part of a voting system. Voting machines are defined in Ohio law as “mechanical or electronic equipment for the direct recording and tabulation of votes.”

A **Direct Recording Electronic** (DRE) machine is a touchscreen voting machine “that records votes by means of a ballot display provided with mechanical or electro-optical components that can be actuated by the voter, that processes the data by means of a computer program, and that records voting data and ballot images in internal or external memory components.”⁴ DRE machines contain a Voter Verified Paper Audit Trail (VVPAT), which is “a physical paper printout on which the voter’s ballot choices, as registered by a direct recording electronic voting machine, are recorded.”⁵

A **Precinct Count Optical Scanner** (PCOS) is a portable optical scanner that reads a voter’s marks on a paper ballot and records the results. The voter feeds their ballot into the scanner, and the ballot is deposited into a locked ballot box. One or more PCOS are deployed in each precinct in a county that utilizes an optical scan voting system.

An **electronic poll book** (epollbook) is defined by Ohio law as “an electronic list of registered voters for a particular precinct or polling location that may be transported to a polling location.”⁶ In Ohio, electronic poll books must be tested by an independent testing authority, examined by the BVME, and certified by the Secretary of State.

VOTING SYSTEMS IN OHIO

Each county selects the voting system for the county to use in all elections. The voting system and its machines may be selected by the board of elections, the county commissioners upon the recommendation of the board of elections, or by a vote of the county’s electors.⁷ The voting equipment may be purchased or leased by the county.⁸

Each county board of elections is responsible for contracting for the procurement and maintenance of its voting system and voting equipment and for any and all support arrangements between the board of elections and the vendor of the equipment. A board of elections is encouraged to consult with its legal counsel, the county prosecuting attorney, before it procures a voting system or voting equipment. The board’s legal counsel or county procurement department should be able to assist the board with the bid process (when necessary) and contract terms and negotiation.

Each county board of elections is responsible for the proper storage and security of its voting equipment. The Secretary of State has guidelines for the storage and security of voting equipment and supplies. [That guidance can be found in Chapter 2 of this manual.](#)

⁴ [R.C. 3506.01\(F\).](#)

⁵ [R.C. 3506.01\(H\).](#)

⁶ [R.C. 3506.05\(A\)\(1\).](#)

⁷ [R.C. 3506.02.](#)

⁸ [R.C. 3506.03.](#)



Any questions on these guidelines can be directed to the Elections Division of the Secretary of State's office.

The BVME examines voting systems and voting equipment to ensure that each meets the applicable requirements of Ohio law before it can be used in Ohio elections. If the BVME is satisfied that a voting system or voting equipment meets the requirements of Ohio law, it recommends that the Ohio Secretary of State certify it for use in Ohio elections.⁹ A current list of voting systems and voting equipment that have been certified by the Ohio Secretary of State may be obtained by contacting the Elections Division of the Secretary of State's office.

LAWS GOVERNING THE SALE, TRANSFER, OR DISPOSAL OF VOTING EQUIPMENT

[R.C. 307.12](#) governs the sale or donation of county personal property by a board of county commissioners. A board that wishes to transfer by sale or donation or otherwise dispose of voting equipment should therefore consult with both the county prosecutor and the board of county commissioners to develop a transfer or disposal plan.

[R.C. 3599.27](#) prohibits any unauthorized person from possessing a voting machine that may be owned or leased by any county or any of the parts or keys thereof. The law also prohibits any unauthorized person from possessing "any marking device, automatic tabulating equipment, or any of the parts, appurtenances, or accessories thereof." A violation of this law is a fifth degree felony. Therefore, the Secretary of State prohibits selling or donating voting equipment to private individuals, non-governmental entities, or governmental entities other than county boards of elections. Voting equipment may be transferred via sale, loan, or donation only to another county board of elections within the State of Ohio.

If a board of elections has a voting system that involves DRE machines, the board of elections must maintain the minimum quantity of DRE machines required by [R.C. 3506.22](#). The minimum quantity of DRE machines must be calculated according to the formula set forth in [R.C. 3506.22](#).

FEDERAL REQUIREMENTS RELATED TO HAVA FUNDS

[EAC Funding Advisory Opinion 08-006](#) provides that election jurisdictions may sell voting equipment purchased with HAVA funds and use the revenue from the sale to finance costs of replacement voting equipment and other items or activities authorized under HAVA. Funding Advisory Opinion 08-007 provides additional clarification on the proper sale or disposal of voting equipment purchased with HAVA funds. Opinion 08-

⁹ [R.C. 3506.05](#).



007 states that items of equipment with a current per-unit fair market value of less than \$5,000 may be sold or disposed of with no further obligation. Items with a current per-unit fair market value of \$5,000 or more may be sold, but a share of the proceeds from the sale equal to the proportion of HAVA funds used to purchase the items must be reserved for the purchase of voting equipment or other HAVA-authorized activities or deposited to the State Election Fund.

The opinion further states that for purposes of determining the value of equipment, individual voting machines and supporting equipment, as well as components that support a voter registration system, should be valued collectively as a voting system and not on the basis of the value of each item of equipment. Therefore, any proceeds from the sale of this type of equipment must be proportionally allocated in the same manner as equipment with a fair market value of \$5,000 or more unless the entire system has a fair market value of less than \$5,000. Boards should consult with the county auditor to determine fair market value of the system using generally accepted accounting principles for depreciation based upon life cycle, condition, and usability of the system when compared to similar equipment.

SECRETARY OF STATE'S POLICY ON THE SALE, TRANSFER, OR DISPOSAL OF VOTING EQUIPMENT

The Ohio Secretary of State has a duty to ensure election security and is responsible for administering state and federal grants used in the purchase of voting equipment. Therefore, boards of elections must follow the policy set forth below before transferring or disposing of any voting equipment, which includes voting machines, marking devices, automatic tabulating equipment, electronic poll books, or other voting system equipment. Boards must notify the Elections Division of the Ohio Secretary of State's office and receive its authorization prior to the sale, donation, or disposal of equipment. The proper procedure and necessary forms for receiving approval are described in detail below.

Boards should always consult with both their county prosecuting attorney and the board of county commissioners before engaging in any sale or donation of county-owned voting equipment. Such a sale or donation may be subject to approval of the board of county commissioners.



WIPING DATA AND OTHER SECURITY CONCERNS

A board of elections must pulverize or wipe data from voting equipment's memory prior to any sale, transfer, or disposal. The destruction or data wipe mechanism used must be compliant with National Institute of Standards and Technology 800-88 Media Sanitization standards. These standards can be found at <https://nvlpubs.nist.gov/nistpubs/SpecialPublications/NIST.SP.800-88r1.pdf>

The Ohio Secretary of State's office advises boards to work with IT professionals to ensure all data is wiped. If the voting equipment will not be used by another county board of elections, the EAC advises that "all equipment should be taken back to the condition of a non-functioning piece of hardware with no software or firmware remaining on the equipment¹⁰." Before any data is destroyed, a county board of elections should determine whether any of the information stored in the voting equipment must be preserved to comply with record retention schedules.

A board of elections may recycle voting equipment that is no longer in working condition by contracting with recycling company that has expertise in electronic waste management.

1. Sale of Voting Equipment

A board must obtain authorization from the Secretary of State's Office for the sale of voting equipment prior to any sale. To obtain authorization, the board of elections must complete the prescribed [Form 426](#), Agreement of Permanent Transfer via Sale of Voting Equipment, listing the quantity of equipment, a description, and an estimated value, along with a statement of the intended use of the proceeds of the sale. The prescribed form must be kept on record in the event of relevant audits, claims, litigation, negotiations, or other proceedings regarding permanently transferred equipment.

The receiving entity benefiting from the permanent transfer via sale of voting equipment must sign [Form 426](#). The cost and delivery of permanently transferred accessibility equipment is negotiable between the parties, but the cost of the equipment must be based on the current fair market value.

As explained above, if the equipment was purchased with HAVA funding, items of equipment with a current per-unit fair market value of less than \$5,000 may be transferred without any obligations on the proceeds received in the transfer. Items of equipment with a current per-unit fair market value of \$5,000 or more may also be transferred, but the proceeds from the transfer must be properly

¹⁰ "Wiping Election Equipment before Disposal, Sale, or Destruction." U.S. Election Assistance Commission.
https://www.eac.gov/sites/default/files/eac_assets/1/6/Disposal_Sale_Destruction_Voting-Equipment_FINAL_10.13.17.pdf



allocated. The board receiving proceeds from the sale must reserve a proportionate share of the proceeds equal to the share of HAVA funds used to purchase the equipment; the reserved funds must be used for the purchase of voting equipment or other HAVA-authorized activities.

For example, if a piece of voting equipment was purchased with 80 percent HAVA funds and 20 percent county funds, then 80 percent of the proceeds from the sale of that equipment must be reserved for HAVA purposes and the remaining 20 percent of the proceeds could be used at the discretion of the board of elections. If the equipment was purchased with 100 percent HAVA funds, then all proceeds from any sale must be reserved for HAVA purposes.

As a part of the authorization, prior to transferring by selling the equipment, the board should provide the Secretary of State with the proposed HAVA-qualifying expenditure for review and approval. The Secretary of State has the authority to direct the board of elections to return the HAVA share of any sale proceeds to the State Elections Fund.

2. Permanent and Temporary Transfers of Voting Equipment

- a. Donation of Voting Equipment (only for equipment valued at less than \$5,000)

Pursuant to [R.C. 307.12\(D\)](#), a county may donate county property to another county. EAC Funding Opinion No. 08-007 indicates that voting equipment purchased with HAVA funds with a current per-unit fair market value of \$5,000 or more must be sold (as outlined in Section 1) and may not be donated. Voting equipment with a current per-unit fair market value of less than \$5,000 may be sold or donated. The Ohio Secretary of State recommends that voting equipment purchased with HAVA funds only be donated from one board of elections to another after it is determined that there is no willing and eligible buyer for the equipment.

A board of elections must obtain authorization from the Secretary of State's Office for the permanent transfer via donation of voting equipment prior to the transfer. To obtain authorization, the board must complete the prescribed [Form 427](#), Agreement of Permanent Transfer via Donation of Voting Equipment, listing the quantity of equipment, a description, and an estimated value. The prescribed form must be kept on record in the event of relevant audits, claims, litigation, negotiations, or other proceedings regarding permanently transferred equipment.



Pursuant to this policy, a board that has excess voting equipment and that is no longer using this equipment may ONLY transfer that equipment via donation to another board within the State of Ohio. The board directors and chairs from both counties participating in a permanent transfer via donation of voting equipment must sign [Form 427](#). The delivery of voting equipment permanently transferred via donation is to be negotiated between participating boards of elections.

b. **Loan of Voting Equipment**

A board of elections must obtain authorization from the Secretary of State's Office for the temporary transfer (loan) of voting equipment prior to the transfer. To obtain authorization, the board of elections must complete the prescribed [Form 428](#), Agreement of Temporary Transfer (Loan) of Voting Equipment, listing the quantity of equipment, a description, and an estimated value. The prescribed form must be kept on record in the event of relevant audits, claims, litigation, negotiations, or other proceedings regarding temporarily transferred equipment.

Pursuant to this policy, a board of elections that has excess voting equipment and that is no longer using this equipment to improve access to its polling locations may only transfer that equipment via loan to another board of elections within the State of Ohio. The board directors and chairs from both counties participating in a temporary transfer (loan) of voting equipment must sign [Form 428](#). The delivery of temporarily transferred voting equipment is to be negotiated between participating boards of elections.

3. Disposal of Voting Equipment

A board must obtain authorization from the Secretary of State's office for the disposal of voting equipment prior to disposal. A board that has voting equipment that is no longer in working condition due to age, malfunction, or damage may dispose of the equipment. To obtain authorization, the board of elections must complete the prescribed [Form 429](#), Voting Equipment Disposal Form, describing the type of equipment, quantity, estimated value, and intended method of disposal. The Board of Elections Director and Chairman must sign [Form 429](#) and keep the form on record in the event of relevant audits, claims, litigation, negotiations, or other proceedings regarding the disposal of equipment.



TESTING AND CERTIFICATION OF ELECTRONIC POLL BOOKS

Any electronic poll book used in an Ohio election must be approved by the BVME and certified by the Ohio Secretary of State. The approval and certification of electronic poll books is conducted in accordance with [R.C. 3506.05](#) and standards adopted by the BVME.

Pursuant to these standards, each electronic poll book must undergo testing by an independent testing authority recognized by the National Institute of Standards and Technology (NIST). Once the electronic poll book has completed testing, the vendor may submit an application for examination of the electronic poll book to the BVME. The BVME then reviews the results of the testing completed by the independent testing lab and examines the functionality of the electronic poll book. If the BVME is satisfied with its review of the testing results and the functionality of the poll book, it votes to recommend that the Secretary of State certify the electronic poll book for use in Ohio elections. The Secretary of State's office notifies boards and the vendor whether the electronic poll book is certified.

The standards for the testing and certification of electronic poll book are available upon request. A current list of electronic poll book that have been certified for use in Ohio elections may also be obtained by contacting the Elections Division of the Secretary of State's office.

1. Paper Precinct Poll List

A board must provide at least one paper copy of the precinct poll list (i.e., a list of each elector assigned to vote in the precinct, the elector's voter registration address, and a space for the elector's signature) or signature poll book to each precinct that uses electronic poll books in an election. The paper copy of the poll list or signature poll book is to ensure that voting can continue in the event that an electronic poll book fails to operate as intended.

2. Sealing of Electronic Poll Books

Each electronic poll book must be sealed by the precinct election officials with a tamper-evident seal before being returned from the polling location to the board office. If the electronic poll book uses a removable data storage unit or produces a paper record, the data storage unit and the paper record must also be sealed with a tamper-evident seal in an appropriate storage container before being returned to the board.

Electronic poll books, any removable data storage unit, and any paper record produced by the electronic poll book must be transported to the board office in



the same manner in which all other election materials are transported to the board.

[For additional guidance on the secure transport of election materials, please see Chapter 2 of this manual.](#)

3. Retention of Records or Images Produced by Electronic Poll Books

All audit and transaction records generated by an electronic poll book must be retained by the board for at least six years. The image of an electronic signature captured by an electronic poll book must be archived by the board for at least six years.

4. Evaluation Prior to the Procurement of Electronic Poll Books

Prior to procuring an electronic poll book, a board must evaluate that electronic poll book. Such evaluation must include the following:

- ☐ A review of any repair and maintenance policies;
- ☐ A review of the training materials and user manuals;
- ☐ An explanation of the availability and cost of all consumables necessary to use the electronic poll book, along with a declaration of its supply chain;
- ☐ A demonstration of the electronic poll book's compatibility with any hardware used with the poll book; and
- ☐ A demonstration of how the electronic poll book receives, processes, and transmits a voter record between other systems employed by the board.

5. Acceptance Testing by a Board of Elections

Upon procuring an electronic poll book, a board must conduct acceptance testing using the Acceptance Testing Matrix provided by the Secretary of State's office. [A copy of the Matrix is included on the Secretary of State's website.](#)

6. Notification

Finally, any board that acquires electronic poll books must notify the Elections Division of the Secretary of State's office of the make/model and vendor of the poll books selected by the board.