GREBook

20 Voting Equipment

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This chapter provides an overview of voting equipment use for elections in the Commonwealth of Virginia. *See*, §§ 24.2-642 – 652 (detailing requirements for voting equipment and systems).

The Help America Vote Act of 2002 (HAVA) led to election reforms which included specific requirements for voting systems which prompted the transition away from punch card and lever type voting equipment to electronic voting systems. One of the key provisions of HAVA was accessibility accommodations for disabled persons. All voting systems used in Virginia must meet the requirements set forth in the State Certification of Voting Systems, Requirements and Procedures. These requirements are outlined in the Voting Equipment Certification Procedures section of this document (20.9).

All localities must provide electronic voting or counting systems, including accessible equipment, of a kind approved by the State Board of Elections at every precinct, for all elections. §§ 24.2-626, 24.2-626.1. Note the restrictions on direct recording electronic (DRE) systems. The General Assembly passed additional criteria with respect to DRE systems, permitting the acquisition of DREs to meet the legal mandate to *****provide

accessible voting equipment. The law went into effect on July 1, 2012.All rules pertaining to the procedures for acquiring voting equipment remain the same.[1]

20.1 Types of Voting Equipment

There are two general types of voting equipment approved for use in state of Virginia. They are optical/digital scan machines and existing DREs.

20.1.1 Optical Ballot Scanning Equipment

On this type of equipment, electronic counters "read" marks made on ballots specifically formatted for the purpose of being scanned, similar to feeding a document into a fax machine. The voter makes his choice(s) by shading an oval or other designation, such as completing the line between two dashes, next to the candidate's name. The ballot is then fed into the counter. Generally, only one counter is needed for each polling place. Some optical scanning equipment does not satisfy HAVA accessibility requirements and additional equipment must also be provided in order to provide access to persons with a disability. Newer scanning type equipment certified in 2012 and 2013 meets the accessibility requirements and additional equipment is not necessary to meet accessibility requirements.

20.1.2 Direct Recording Electronic (DRE)

On these computerized machines, the voter touches areas of a screen, or uses other control features, and his choice(s) is recorded electronically. For most DRE machines, the results are recorded in two places: an on-board data storage device embedded in the machine and a removable data storage device. These systems are equipped with a printer feature for printing out the results. DREs meet the requirements for accessibility.

On and after July 1, 2007, no county or city shall acquire any direct recording electronic machine (DRE) for use in elections in the county or city except as provided for in § 24.2-626. These exceptions include:

1. DREs acquired prior to July 1, 2007, may be used in elections in the county or city for the remainder of their useful life.

2.Any locality that acquired DREs prior to July 1, 2007, may acquire DREs on a temporary basis to conduct an election when the existing DRE inventory is insufficient to

[1] SB 1340 7/2011

conduct the election because all or part of its inventory is under lock or seal as required by § 24.2-659.

3. Any locality may acquire DREs for the express purpose of providing accessible voting equipment as required by § 24.2-626.1. The local electoral board shall notify the State Board at least 30 days prior to acquiring any DRE under this provision and shall certify to the State Board that the DRE acquired under this provision is necessary to meet accessible voting requirements.

> Note: Effective until June 30, 2012, localities may acquire DREs for the express purpose of providing accessible voting equipment as required by § 24.2-626.1.
>
> Note: Effective June 30, 2012 localities may acquire DREs from another locality within the Commonwealth, from among their existing inventories, for the expressed purpose of providing accessible voting equipment as required by § 24.2-626.1.

20.2 Number of Voting Machines Required

All localities are required to use electronic voting or counting systems, of a kind approved by the State Board, at every precinct and for all elections held in the county, the city, or any part of the county or city. The minimum number required is set in the Code. *See*, §§ 24.2-626, 24.2-627.

20.2.1 Optical Ballot Scanning Equipment

- For November general elections, localities using optical scanning systems must have at least one counter for each precinct and one voting booth with a marking device for every 425 active registered voters. § 24.2-627.
- For May general elections, special elections, and primaries, the local electoral board may use the number of voting booths and devices it deems appropriate for each precinct. § 24.2-627.

20.2.2 Direct Recording Devices (DREs)

§ 24.2-627 sets the **minimum number** of voting devices needed in a precinct.

- For November general elections, localities using DRE machines must have one machine in each precinct for every 750 active registered voters. This means, if a

precinct has 751 active registered voters, at least two machines are required; if a precinct has 1501 voters, at least three machines are required, and so on. § 24.2-627.

- For May general elections, special elections, and primaries, the local electoral board may use the number of machines and devices it deems appropriate for each precinct. § 24.2-627.

20.2.3 Accessible Equipment

The Code of Virginia and HAVA require at least one accessible piece of voting equipment be available and operational in each precinct for all elections. This includes all state, local, and town elections, as well as central absentee precincts (CAPs). An accessible piece of equipment is also required during in-person absentee voting. *See*, § 24.2-626.1; *see also*, the EAC's website for more information. http://www.eac.gov/search/?keywords=Advisory+2007-001

20.2.4 Paper Ballots

Paper ballots may only be used for the following specific reasons cited in § 24.2-646.1:

- The official paper ballot is the only ballot in use in the precinct.
- The official paper ballot is used by voters voting outside the polling place. § 24.2-649.
- The voter is casting a provisional ballot.
- The voter is provided an official paper ballot or copy thereof when voting equipment is inoperable or otherwise unavailable. § 24.2-642.
- The official absentee paper ballot voted used in accordance with § 24.2-700 et seq.
- The voter is provided an official paper ballot for a presidential election. § 24.2-402.

20.3 Mixing and Experimenting with Systems

Localities may use different kinds of systems in different precincts – or even in the same precinct – but only with approval of the SBE. § 24.2-630. Requests for such approval should be forwarded from the electoral board to the Secretary of the SBE.

Localities may also experiment with new voting systems in one or more precincts. A new system may be one that has already been certified for use by the SBE, or it may be one that is still in the testing stage. In either case, the electoral board must (1) gain approval from the SBE for such an experimental use~~, and (2) unless the locality has~~

~~successfully completed the bailout process, apply for pre-clearance of the experimental usage with the U.S. Department of Justice~~.[2] §§ 24.2-630, 24.2-631.

20.4 Purchasing Voting Machines

The Code permits localities to obtain machines by purchase, lease, lease purchase, or any other method deemed appropriate. § 24.2-626. All voting equipment lease or purchase contracts, whether for a new system or for additional units of an existing system, must be submitted to the SBE for review and approval prior to execution of the contract. The contract submitted must contain only the vendor's signature. It must not contain the signature of anyone from the purchasing locality.

This procedure ensures that only the certified version of any voting system is purchased, that the number of units purchased is in compliance with the requirements of § 24.2-627, and that a warranty and specific delivery date are detailed by the vendor.

~~When a locality purchases a voting system that is new to that locality, such a purchase may constitute a voting change that must be submitted to, and approved by, the U.S. Department of Justice as required by the Federal Voting Rights Act. All localities except those which have completed the bailout process must request pre-clearance prior to implementing a new voting system. This requirement also applies to the purchase of a new system to be used in a central absentee voter precinct (CAP). If a locality adopts, for locality-wide polling place use, a system previously used only in a CAP, such adoption must likewise be pre-cleared prior to implementation.~~[3]

20.5 Custodians

For the purpose of programming and preparing voting and counting equipment, including the programming of any electronic activation devices or data storage media used to program or operate the equipment, and maintaining, testing, calibrating, and delivering it, the electoral board must employ one or more custodians. In many cases, the custodians may be provided by the authorized sales and service representative of the equipment in use. It is highly recommended, however, that board members become thoroughly familiar with the system requirements and train the individual(s) who will serve in this capacity. In fact, several localities may share a custodian, greatly reducing their

[2] On June 25, 2013, the U.S. Supreme Court held invalid Section 4 of the Voting Rights Act that outlines the formula for determining what jurisdictions are covered under the Section 5 Preclearance processes. This ruling makes Section 5 dormant until such time as Congress enacts another formula for coverage that is consistent with the Constitution. The practical effect is that it is no longer necessary to preclear changes affecting voting with the Department of Justice.

[3] See footnote 2.

dependence on vendor support and, in some cases, reducing their cost. Custodians must be sworn to perform their duties honestly and faithfully. § 24.2-632.

The final testing of equipment prior to each election shall be done in the presence of an electoral board member or a representative of the board. Such representative shall in no case be the custodian or a vendor or contractor technician who was responsible for programming the ballot software, electronic activation devices, or electronic storage media. § 24.2-632.

The electoral board may assign a board member or registrar to serve without pay as a custodian. Whenever the presence of an electoral board member and custodian is required by the provisions of this title, the same person shall not serve in both capacities. § 24.2-632.

20.6 Preparing and Testing the Equipment

Before the final testing of voting or counting equipment for any election, the electoral board must notify the local political party chairs of the time and place the equipment will be prepared. Each party is allowed to have one representative witness the preparation of the equipment. If the election is a primary election, then only the party chairman holding the primary needs to be notified. If it is a city or town election with no political party nominees, then the candidates must be notified. § 24.2-633.

Logic and accuracy testing is an integral part of preparing for an election. Every machine (not a sampling of machines) that will be used in an election must be tested prior to that election to ensure it is functioning properly. The machine custodian typically manages this process. Each machine should be tested with enough sample ballots/votes to substantiate that each machine recorded the correct number of votes for each candidate. An electoral board member, or a designated representative, must be present during this process and must certify the results from each machine. A representative should be used only if it is impracticable for a board member to be present. § 24.2-632. See 2006 Va. Atty. Gen. Op. (9.15.06 to Jensen) ("practicable" means "reasonably capable of being accomplished; feasible.")

> ⓘ The EAC has developed Quick Start Guides for ballot preparation and printing, pre-Election testing and voting system security. The guides are available on the EAC's website here: Quick Start Guides (see the Ballot Preparation/Printing and Pre-Election Testing, and Voting System Security guides).

After the equipment is prepared and tested, each machine must be sealed with a numbered seal or locked with a key. All the keys and any electronic activation devices must then be delivered to the electoral board who shall keep them until they are delivered to the officers of election. § 24.2-634.

20.7 Voting Equipment Security

As with other computer systems, the State Board of Elections recognizes the need for voting systems to be subject to the same security concerns and necessary safeguards as other Information Technology systems. Consequently, in accordance with COV ITRM Policy SEC500-02, *Information Technology Security Policy*, the State Board of Elections published a *Voting Systems Security Policy* that defines a formal Voting Systems Security Program.

It is the policy of the State Board of Elections that each electoral board is responsible for the security of ALL voting systems, including electronic pollbooks, under their control and that they shall take appropriate steps to provide for the security of these systems through the implementation of a local Voting Systems Security Program (VSSP). The State program requires each locality to develop a written security plan and review the plan annually. § 24.2-625.1(D). Copies of the VSSP should be submitted to the SBE and localities must submit a written statement to the SBE annually regarding their review of the VSSP and any changes or updates incorporated into the VSSP. The annual review statement should be submitted to SBE by the end of December each year. Initial VSSP plans submitted to the SBE will be reviewed and will be officially endorse if the plan meets all the requirements set forth in the *Voting Systems Security Standards* (COV VSM Standard SEC2005-01.1, dated January 17, 2005).

The Election Assistance Commission has developed some general best practices and published them in 2004; and they are available on their website at eac.gov.

To achieve the objectives of the Voting Systems Security Program, SBE adopted voting systems security *policies*, *standards*, and *guidelines* (PSGs) which constitute recommended minimum considerations for a comprehensive program. This four part document articulates policy, standards, and extensive reference and self-assessment guidance:

- The *Policy* document emphasizes that each electoral board is responsible for the security of all voting systems under their control and directs the local boards to develop and implement a Voting Systems Security Program. The local program must be documented in a security plan that must be submitted to SBE for review.

- The *Standards* document defines the recommended minimum requirements of a comprehensive Voting Systems Security Program. Local plans must address ALL requirements of these standards to be endorsed by SBE.

- The *Guidelines* document is designed to complement the Voting Systems Security Standards. It provides additional information, examples, and recommendations to further strengthen local programs.

- The *Self-Assessment* document consists of a series of questions that, when answered, will indicate the extent of compliance with the standards.

SBE also developed tools designed to aid localities in developing their plans and to formalize SBE's review process.

- The ***Précis*** is an abridged version of the Voting System Security Standards and Guidelines. It summarizes all the specific requirements that must be addressed in a security plan to receive SBE's endorsement (consolidates the thirty-five pages of Standards and Guidelines content into five pages).

- The ***Review Checklist*** itemizes the requirements summarized in the *Précis.* It is the baseline SBE uses to review security plans submitted by localities (4 pages of content). Localities may find the Checklist useful as an outline or a quick reference guide in developing their plans.

- The ***On-site Assessment Checklist*** itemizes the requirements summarized in the *Précis,* similar to the *Review Checklist,* but with emphasis on documentation. It is a useful tool to gauge compliance with the standards. Localities may use this Checklist in lieu of the Self-Assessment Questionnaire (which accompanies the PSGs) to facilitate their annual program reviews.

For reference, please be aware that "records of the SBE or of a local electoral board, to the extent such records describe protocols for maintaining the security of ballots or voting and counting equipment, or reveal the results of risk assessments of specific local electoral procedures, the release of which would compromise the security of any election, shall be confidential and excluded from inspection and copying under the Virginia Freedom of Information Act (FOIA)." § 24.2-625.1. Electoral boards or the SBE may hold a closed meeting pursuant to the provisions of FOIA to discuss security protocols under circumstances outlined in the code section. However, this section of the Code does not authorize the use of a closed meeting to discuss a breach of security.

Two members of a local electoral board may conduct site visits for the sole purpose for investigating compliance with security policies and procedures. § 24.2-625.1(C).

20.7.1 Configuration Management Database

The Security Procedures also require that each local board establish a "Configuration Management Database." This simply means compiling a list of all voting system hardware, software, and firmware, complete with version numbers and serial numbers where appropriate. Any time any person, for any reason, has access to any component, the time, date, person, reason for access, and the activity must be noted in the database. These requirements are best practices that will help ensure that no changes are made to any component, firmware, or software without the knowledge and consent of the

responsible person in the locality. SBE highly recommends using a software tool such as a spreadsheet or database application to maintain your database.

ⓘ According to the State Certification of Voting Systems, Requirements and Procedures, (item 1.3. Applicability); any changes to firmware or software could invalidate the certification of the equipment.

20.7.2 Wireless Prohibition

Wireless communications to or from any piece of voting equipment is prohibited while the polls are open on Election Day. Wireless features may still be used to set up, program, open, close, and get vote totals from the voting equipment before the polls open and after the polls have closed. This wireless prohibition does not apply to voting machines purchased by any locality before July 1, 2007. In addition, this prohibition does not prohibit the use of electronic pollbooks on Election Day. § 24.2-625.2.

20.8 Virginia Freedom of Information Act (VFOIA) Considerations

There are limited exemptions from VFOIA public meeting and records disclosure requirements for voting equipment security issues. An electoral board may close a meeting to discuss security protocols and conduct security compliance site visits preceded and followed by open meetings about the visits. § 24.2-625.1. Records describing security protocols or specific risk assessments that could compromise election security if released are exempt from disclosure. This exemption does not extend to records concerning voting equipment security breaches.

There is a further exemption from public meeting requirements for certain election related matters. § 24.2-107. This exemption includes preparation for specific elections without discussion or deliberation requiring a public meeting. Examples of such preparations include preparation of ballots, election materials or voting equipment, Inspection of polling places and training of officers of election. Election Day discussion of a matter requiring immediate resolution following effort to notify all board members is also exempt.

The exemption for election preparations recognizes that electoral boards have functions that do not necessarily take place in (or require) a meeting, and are not necessarily open to the public. This exemption is similar to the "social exemption" in VFOIA in that it does not apply to discussion or deliberation of what would otherwise require a public meeting (e.g. adoption of a new policy regarding assistance at polling places). *See*, § 2.2-3707(G); *see also*, GREB 26.

20.9 Voting Equipment Certification Procedures

Under the Code of Virginia, the SBE must approve any mechanical or electronic voting system or equipment before it can be purchased or used by any locality. § 24.2-626. This includes *any* upgrades or modifications to hardware, firmware, and software. The State Certification of Voting Systems, Requirements and Procedures, state that any modification to existing software, which has been previously certified will, in general, invalidate the results of the prior certification unless and until it can be determined by the SBE that the change does not affect the overall flow of program control or the manner in which ballots are interpreted and the vote data are processed. This means that no change of any kind can be made to any voting system software or firmware unless the SBE has been informed of the proposed change and determined whether or not it will require re-certification of the system.

ⓘ These procedures are strict in order to protect the locality. Failure to follow these requirements may result in decertification of voting equipment and provide candidates a reason to contest an election.

As set forth in the State Certification of Voting Systems, Requirements and Procedures (Revised May 3, 2012), the voting system or equipment must meet the following requirements:

- The voting system or equipment must meet the requirements contained in the most recent version or versions of the Voluntary Voting System Guidelines (VVSG) or Voting System Standards (VSS) currently accepted for testing and certification by the U.S. Election Assistance Commission (EAC). Compliance with the applicable VVSG/VSS may be substantiated through federal certification by the EAC, through certification by another state that requires compliance with the applicable VVSG/VSS, or through testing conducted by a federally certified voting system test laboratory (VSTL) to the standards contained in the applicable VVSG/VSS. Meeting the requirements contained in the VVSG or VSS will substantiate compliance with the voting system requirements contained in Section 301 of the Help America Vote Act of 2002 (HAVA).
- A modification to a voting system previously certified by SBE will be tested in a manner necessary to ensure that all changes meet applicable standards and that the modified system (as a whole) will function properly and reliably. If the system being modified has been tested or certified to a previous VVSG/VSS version, SBE may allow testing of modifications to the prior standards or require testing of the modification to the most current standards, at its discretion.

- The voting system or equipment must comply with the provisions in the *Code of Virginia* relating to voting equipment (Article 3, Chapter 6 of Title 24.2).

- The voting system or equipment must comply with any applicable regulations or policies issued by the State Board of Elections.

- The vendor must ensure that the equipment and software can accommodate interactive visual and non-visual presentation of information to voters and alternative languages when required. (See HAVA, 42 USC 15481(a)(3), (4), §203 of the Voting Rights Act (42 USC 1973aa-1a) and Virginia Code Section 24.2-626.1)

Each system must successfully complete three distinct levels of testing:

- Qualification testing: The purpose of qualification testing is to show that the voting system complies with the requirements of its own design specification and with the requirements of the SBE. The testing of hardware and software may be conducted by an Independent Testing Authority.
- Certification testing: The purpose of certification testing is to ensure the system meets all applicable requirements of the Code of Virginia. It is not intended to result in exhaustive tests of system hardware and software attributes; these are evaluated during qualification testing. However, all system functions, which are essential to the conduct of an election, will be evaluated.
- Acceptance testing: This test is conducted by the locality to assure the system meets their needs and is identical to the certified system. Acceptance tests will be conducted by the local jurisdiction with the assistance of state officials or consultants. The tests will be performed as part of the procurement process for the voting system.

The following is a summary of the certification Process:

- Letter of Request for Certification and Certification Fee
- Vendor submission of technical Data Package and Corporate Information
- Preliminary review by evaluation agent
- Vendor authorization to proceed
- Evaluation by evaluation agent
- Board review of evaluation
- Test election
- Board certification and notification

20.9.1 Voting Equipment Certified for Use in Virginia

The voting systems listed below have been certified for use in Virginia elections. Please contact SBE for system version, vendor contact, or any other additional information. See notes following the chart for vendor updates.

Model	Vendor	Equipment Type
Accu-Vote	Premier Election Solutions	Optical Scan
Accu-Vote TSR6	Premier Election Solutions	DRE
Accu-Vote TSX	Premier Election Solutions	DRE
Automark	Election Systems and Software	Marksense Voter Assist Terminal
AVC Advantage	Sequoia Voting Systems	DRE
Ballot Now	Hart Intercivic	Optical Scan
Edge	Sequoia Voting Systems	DRE
eScan	Hart Intercivic	Optical Scan
eSlate	Hart Intercivic	DRE
ImageCast Central	Dominion Voting	Optical Scan
ImageCast Evolution	Dominion Voting	Optical Scan
ImageCast Precinct	Dominion Voting	Optical Scan
Insight	Sequoia Voting Systems	Optical Scan
iVotronic	Election Systems and Software	DRE
M100	Election Systems and Software	Optical Scan
M650	Election Systems and Software	Optical Scan
DS200	Election Systems and Software	Optical Scan
DS850	Election Systems and Software	Optical Scan
Optech III-PE	Sequoia Voting Systems	Optical Scan
Patriot	Unilect Corporation	DRE
Patriot MS	Unilect Corporation	Optical Scan
OpenElect Voting Central Scan	Unisyn	Optical Scan
OpenElect Voting Interface	Unisyn	ADA Voter Assist Device
OpenElect Voting Optical Scan	Unisyn	Optical Scan
Winvote	Advanced Voting Solutions	DRE
Winscan	Advanced Voting Solutions	Optical Scan

Notes:

1. Premier Election Solutions voting systems interests were acquired by Election Systems and Software and Dominion Voting Systems in 2009. These companies support Premier equipment.

2. Advanced Voting Solutions no longer supports voting equipment. Election Services Online provides support for their systems.
3. Dominion Voting Systems acquired Sequoia Voting System in 2010.

20.10 Electronic Pollbooks

Virginia localities are authorized to use electronic pollbook (EPB) systems of a type approved by the State Board of Elections (§24.2-611). An EPB system acceptable for use in Virginia must process voter registration data as required by the Code of Virginia and must provide the functionality required by the State Board of Elections. See the Electronic Pollbook Standards.

20.10.1 Electronic Pollbooks Approved for Use in Virginia

The voting systems listed below have been certified for use in Virginia elections. Please contact SBE for system version, vendor contact, or any other additional information. See notes following the chart for vendor updates.

Model	**Vendor**
Advocate	Datacard
ExpressPoll	Election Systems and Software
EViD	Decision Support

20.10.2 Requests for Board Approval of New Systems or Upgrades

Requests for Board approval must be initiated by a letter from the vendor to the Secretary of the State Board of Elections. This letter shall be for either a specific Electronic Pollbook or for a software/firmware upgrade to an Electronic Pollbook system. In addition, vendors must complete the Request for Certification Checklist – Electronic Pollbooks (EPB). Staff will conduct an examination of the proposed system to ensure the system is acceptable for use in Virginia, processes voter registration data as required and has the functionality required by the State Board of Elections.