



**Benton County Elections Department, WA
Hash Verification Project Report
March 25, 2026**



U.S. Election Assistance Commission

Field Services Program

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Purpose

The U.S. Election Assistance Commission (EAC), in partnership with the Washington Secretary of State Elections Division and the Benton County Elections Department, performed a review of Benton County's voting system on July 1, 2025. The purpose of this review was to verify that the system is identical to the one certified by the EAC. With that goal in mind, the EAC set out to:

1. Observe and verify that the certified Clear Ballot Group, Inc. (hereafter referred to as Clear Ballot) verification procedures were followed during the review
2. Perform a scope of certification review of ClearVote 2.3, as fielded at the Benton County Elections Department
3. Observe, assist, and document a hash verification of ClearVote 2.3 central count voting equipment, and
4. Observe the physical voting system, facility security measures, logic, and accuracy testing, as well as prescribed best practices used during the project

Background

The EAC's Testing and Certification Program assists 50 states, five U.S. territories, and the District of Columbia by providing voting machine testing and certification. This program is a requirement of the Help America Vote Act (HAVA) of 2002, legislation that created the EAC and mandated that the Commission provide certification, decertification, and recertification of voting systems, and accreditation of voting system testing laboratories and quality monitoring of fielded voting systems. This legislation marked the first time the federal government provided oversight into these activities, allowing states to procure new certified voting systems without the added expense of independent testing and certification.

The EAC's Field Services Program (FSP) is tasked with implementing the Testing and Certification's Quality Monitoring Program (QMP). One element of QMP is fielded system conformance reviews, which the EAC may conduct upon invitation or with permission from the state or local election authority. The purpose of these reviews is to ensure voting systems used by jurisdictions are identical to those tested by an EAC-accredited Voting System Test Laboratory (VSTL) and certified by the EAC.

The EAC's Testing and Certification Program is the critical first step in establishing a chain of custody over the voting systems used in our nation's elections. A registered voting system manufacturer that wishes to have their system tested and certified by the EAC must provide their software code to an EAC-accredited VSTL for



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review and testing. The VSTL uses the manufacturer's code to build the system in a secure and safe environment and subsequently tests the system against the Voluntary Voting System Guidelines (VVSG). Once testing is completed and the VSTL determines the system conforms with all applicable requirements, the voting system may be certified by the EAC. At this point, the VSTL generates the trusted hash values for the system that will be used later to verify the voting system. This ensures that the system deployed in any jurisdiction is identical to the system reviewed and tested by the VSTL and certified by the EAC.

Clear Ballot's ClearVote 2.3 system was certified and issued a Scope of Certification by the EAC on October 31, 2022. The Clear Vote 2.3 system used by the Benton County Election Department includes specific hardware and software components which include an Election Management System (EMS) workstation, central scanners, central count workstations, secure flash drives, and other components of the certified system.

Definitions

Ballot Marking Device (BMD): A device that permits contest options to be reviewed on an electronic interface, produces a human-readable paper ballot, and does not make any other lasting record of the voter's selections. The BMD can be used as an accessibility device when paired with an audio voting and/or sip-and-puff component that can allow voters with disabilities to be able to vote independently.

Central Count Scanner: A high-speed, digital ballot scanner typically used at a central count facility or election office to process a high volume of paper ballots. A central scanner uses digital cameras and imaging systems to read the front and back of each ballot, analyze each ballot image, verify ballot validity, and identify marks on the ballot.

Chain of Custody: A process used to track the movement and control of an asset through its lifecycle by documenting each person and organization who handles an asset, the date/time it was collected or transferred, and the purpose of the transfer.

Conformance Review: A conformance review includes documenting all components of a voting system that are used and present to ensure that the items are listed on the Scope of Conformance in the EAC's Certification.

Election Management Guidelines (EMG): The guidelines were created to assist state and local election officials in effectively managing and administering elections. These guidelines complement the technical standards for the VVSG for voting



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equipment. Each chapter of the EMG is vetted by recognized election experts and offers practical discussions on election issues, including examples and helpful tips like physical security and chain of custody. The guidelines' goal is to familiarize election officials with election processes and challenges they will likely encounter during their tenure. They are designed to be accessible to election officials at all levels.

Election Management System (EMS): A set of processing functions and databases within a voting system that defines, develops, and maintains election databases, performs election definitions and setup functions, formats ballots, counts votes, consolidates and reports results, and maintains audit trails.

Engineering Change Order (ECO): A change to a certified voting system's hardware, software, technical data package, or other data, the nature of which does not materially alter the system's reliability, functionality, capability, or operation. Such changes require VSTL review and endorsement, and EAC approval.

Help America Vote Act (HAVA): Act passed by Congress in 2002 to make sweeping reforms to the nation's voting process. HAVA addresses improvements to voting systems and voter access that were identified following the 2000 presidential election.

Hashing: Hashing is the process of computing a unique alphanumeric value on a data file or electronic message such as text, numbers, photos, programs, or files, creating a fixed-length string of letters and numbers through a mathematical algorithm.

Hash Value: A hash value is a signature that identifies some amount of data, usually a file or message. Cryptographic hashing algorithms are one-directional mathematical formulas designed to generate a unique value for every possible input — in this case, the data. Common algorithms include MD5, SHA-1, SHA-256, and SHA-512.

Hash Verification Review: A hash verification review involves generating the hashes from a voting system component's software and verifying those hashes against a trusted source. This review provides assurance that the system is the same as that which was certified by the EAC and that there has been no manipulation of the program files.

Logic and Accuracy (L&A) Testing: Ensures the election and voting equipment function performs as expected and accurately counts votes as marked.



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Scope of Certification: Documentation created by the EAC at the end of the testing and as part of certification. This document details the configuration of the system that underwent testing and can be used as a checklist in evaluating a fielded system.

Technical Data Package (TDP): Manufacturer documentation relating to the voting system, which can include manuals, description of components, and details of architectural and engineering design.

Voting System Testing and Certification Program Manual: The primary purpose of this manual is to provide clear procedures to manufacturers for the testing and certification of voting systems to the VVSG, consistent with the requirements of HAVA Section 231(a)(1).

Voting System Test Lab (VSTL): Laboratories accredited by the EAC to test voting systems to EAC-approved voting system standards.

Voluntary Voting System Guidelines (VVSG): A set of specifications and requirements against which voting systems can be tested to determine if they meet the required standards. Developed, adopted, and published by the EAC, the guidelines are identified by version number and date. Some factors examined under these tests include functionality, accessibility, and security capabilities. While HAVA mandates the EAC to develop and maintain these requirements, adhering to the VVSG is voluntary except in select states where it is required by their own state law.

References

- A. [EAC Scope of Certification for Clear Ballot ClearVote 2.3](#)
- B. [EAC Testing and Certification Program Manual](#)
- C. ClearDesign 2.3 System Identification Guide
- D. ClearCount 2.3 System Identification Guide
- E. Benton County — Policies and Procedures on Hash Verification
- F. [Help America Vote Act \(HAVA\)](#)
- G. The [EAC Election Management Guidelines](#)
- H. [EAC Chain of Custody Best Practices](#)
- I. [EAC Logic and Accuracy Testing Quick Start Guide](#)
- J. [Voluntary Voting System Guidelines Version 1.0 \(2005\), Volume 1](#)



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Participants

U.S. Election Assistance Commission

- Thomas Freitag, Field Services Specialist
- Rene Rojas, Election Technology Specialist

Washington Secretary of State Elections Division

- Stuart Holmes, Director of Elections

Benton County Elections Department

- Brenda Chilton, County Auditor
- Amanda Hatfield, Elections Manager
- Grace Davidson, Elections System Supervisor

Roles

U.S. Election Assistance Commission (EAC)

The EAC provided project scope, guidance, and coordination for the fielded system review to the Benton County Elections Department. EAC staff conducted a conformance review on a sample of voting system devices at the County Elections Center to ensure conformance with the EAC Scope of Certification. Secondly, the EAC observed and documented the results and processes used during voting system hash verification. Lastly, the EAC observed and noted best practices such as voting system and facility security measures, and L&A testing.

Washington Secretary of State Elections Division

The Washington Secretary of State Elections Division supported the effort by encouraging county participation and granting Field Services permission to engage directly with local jurisdictions. The state provided oversight and remained available to offer guidance and support, as necessary, throughout the planning and execution of the review.

Benton County Elections Department

The Benton County Elections Department provided technical staffing needed to conduct the hash verification review and provided access to voting equipment and facilities. During the review, they provided constant oversight of their election equipment to maintain their system's chain of custody. In addition, Benton County also provided the EAC with detailed specifics to how they conduct their elections and use their voting system.



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Scope of Review

The scope of review covers what the EAC examined, how it was examined, and the objectives achieved during the review process. The scope of review provides the foundation on which results were obtained, and observations or suggestions were provided.

Device Sample Size

The equipment to be inspected, both the ClearCount and ClearDesign servers, was agreed upon by the EAC in partnership with the Benton County Elections Department.

Confirm Application of Clear Ballot's Certified Procedures

EAC staff observed and documented that the verification procedures applied during the review by the Benton County Elections Department are identical to the certified Clear Ballot verification procedures published in the TDP.

Voting System Conformance Review

During the conformance review process in Benton County, the EAC reviewed and verified the ClearVote 2.3 voting system devices used at the County Elections Center to ensure they fall within the EAC's Scope of Certification as certified on Oct. 31, 2022, and any other changes to the system configuration made through an EAC-approved engineering change order (ECO), if applicable.

Hash Verification Review

The EAC observed and documented the setup of a non-Clear Ballot computer for use as a verification comparison tool for export of USB flash drives used in the verification process. The EAC observed and documented the results of the hash verification performed by the county on the ClearDesign and ClearCount server stations, including equipment serial numbers and USB used while noting the roles, protocols, and procedures used throughout the process.

The hash verification procedure used during the review followed the system verification instructions created by Clear Ballot under the VVSG 1.0, as certified by the EAC and outlined in the ClearCount and ClearDesign System Identification Guides.

Physical Voting System and Facility Security Observations

The EAC observed the physical voting system and facility security processes and procedures implemented by the Benton County Elections Department to ensure that they met industry best practices, as outlined in the EAC Election Management Guidelines, and are adequate to ensure robust security of the voting system and



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facility. Specific measures observed included the use of tamper-evident seals, restricted badge access to sensitive areas, video surveillance, visibility of the system's air-gapped network cabling, and multimember team sign-off procedures.

Pre-election Procedure Observations

The EAC observed preelection of L&A Testing. These procedures were reviewed to ensure they met industry best practices, as outlined in the EAC Election Management Guidelines and EAC Logic & Accuracy Quick Start Guide. The processes observed were adequate for maintaining robust voting system accuracy. Specific measures observed included detailed USB and ballot container logs, transparency in procedures, and thorough validation of equipment functionality.

Results and Observations

Clear Ballot Certified Procedures

All system verification procedures followed by the Benton County Elections Office were observed by EAC personnel to ensure compliance with Clear Ballot's System Identification Guides, as certified by the EAC.

System Conformance

ClearCount Scanning Station

Two ClearCount Stations at the election office were reviewed, and the model numbers matched the scope of certification. All proprietary and commercial-off-the-shelf (COTS) components for the workstation laptops and high-speed scanners were reviewed and found to be functional and within the scope of certification.

ClearCount Server Station

The stand-alone workstation was reviewed for conformance, and the model number matched the scope of certification. All proprietary and COTS software and hardware were reviewed and found to be functional and within the scope of certification.

ClearDesign Server Station

The stand-alone workstation was reviewed for conformance, and the model number matched the scope of certification. All proprietary and COTS software and hardware were reviewed and were found to be functional and within the scope of certification.



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ClearAccess Station

The stand-alone station was reviewed for conformance, and the model number matched the scope of certification. All proprietary and COTS software and hardware were reviewed and were found to be functional and within the scope of certification.

Hash Verification

ClearCount and ClearDesign

The ClearCount and ClearDesign Server Stations were reviewed; the hashes were generated and then verified against trusted hashes the Benton County Elections Department obtained from the EAC. Field Services Program staff observed as hashes were generated and compared. Hashes for the server stations were confirmed using Clear Ballot's methods of verifying, as outlined in its system identification guides. No discrepancies were identified.

Physical Voting System and Facility Security Observations

Benton County Center and Voting System Security

The Benton County Elections Department maintained restricted access to the building, sensitive voting system equipment, and designated work areas. Interior doors were secured with electronic badge access, and all election staff were easily identifiable by official name badges. Security cameras were installed throughout the facility, with additional cameras configured for livestreaming during live election events. Members of the public were required to sign security logs and were issued visitor badges upon entry.

Secure areas were accessible only to authorized personnel with badge credentials. Clear Ballot CPU towers were stored in lockable CPU enclosures, with physical locks on the front and tamper-evident sticker seals applied to the rear doors. Network cabling for the air-gapped voting system was clearly visible, neatly organized using color-coded cables routed through wire mesh cable trays. This configuration enabled observers to visually trace all connections and confirm the absence of unauthorized or external network access points.

As an added layer of security, county personnel performed a wireless signal sweep of each piece of election equipment prior to testing, using a signal detection device to verify that no unauthorized wireless components had been introduced. Throughout the observation, staff demonstrated a strong commitment to established security protocols and exhibited a clear understanding of the importance of maintaining both facility and system integrity. All procedures were open to public observation to ensure transparency.



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Pre-election Procedure Observations

Logic and Accuracy (L&A) Testing

For the L&A testing conducted for the 2025 primary, Benton County prepared a test deck that included each ballot style. The vote pattern on each ballot was designed to ensure that every candidate in each contest received a unique and predetermined vote total; one vote for the first candidate for each ballot style, two votes for the second candidate, three votes for the third candidate, and so on for each race on the ballot. The test deck consisted of a mix of preprinted and hand-marked ballots and included overvoted ballots, undervoted ballots, write-in votes, and an online ballot that required adjudication. County staff activated the election and scanned the pre-marked test deck ballots into each of the count stations. Once scanning was complete and the online ballot adjudicated, the election was closed, results were tabulated and printed, and the results were reviewed against the expected outcomes outlined in the test matrix. All results matched exactly, confirming the system's accuracy.

Chain of Custody

Stringent chain of custody procedures were observed at the Benton County Elections Department, in alignment with best practices outlined in the EAC Chain of Custody Best Practices guide. During hash verification, a tamper-evident sealed USB drive provided by the Secretary of State's Office was used. The seal was broken in the presence of election staff, and the seal number, along with the date and time of unsealing, was recorded in a secure USB log. Two county officials signed off on the entry, and the physical seal was retained with the documentation for transparency and audit purposes. Following the completion of L&A testing, the test deck was sealed inside a ballot container. Prior to sealing, the container's seal number and date were documented on a "Certificate of Ballot Container," which was signed by two staff members. The signed certificate was inserted into the container before it was sealed, ensuring a verifiable chain of custody. Multi-team logging procedures were used throughout to track sensitive materials, reinforcing Benton County's commitment to secure and accountable election processes.

Suggestions

Hash Verification Program

The EAC recommends that Benton County Elections expand its hash verification procedures to include additional components of its voting system. While current practices involve verifying hashes for the ClearDesign and ClearCount server devices, extending this process to the two ClearCount scan station laptops and the department's ClearAccess Ballot Marking Device (BMD) would provide a more



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comprehensive validation of the system configuration. Incorporating these devices into routine hash verification would further enhance transparency and reinforce public trust.

Upon a post-review debrief with the county, officials indicated they intend to expand their hash verification to include the ClearCount scan station laptops and ClearAccess BMD, with a planned implementation ahead of the 2026 primary election.

System Security

During the observation, all Clear Ballot PC towers were securely housed in locked CPU enclosures, supporting strong physical security. However, the EAC identified an opportunity to further enhance system protections by applying tamper-evident USB port blocking seals to the ClearCount laptop devices. These inexpensive yet effective controls can reduce the risk of unauthorized access and are especially beneficial for equipment not enclosed in locked housing. Implementing such measures would align with best practices in physical system hardening and improve overall security posture.

Following the site visit and prior to a post-review debrief, Benton County proactively installed USB port blockers on both of its ClearCount laptops.

Conclusions

The ClearVote 2.3 procedural, conformance, hash, and security review conducted July 1, 2025, yielded no findings, observations, or issues that could potentially impact the security of the system as deployed. All Clear Ballot system verification procedures, as certified, were followed during the review. The ClearDesign and ClearCount workstations and scan stations and ClearAccess stations reviewed fell within either the original Scope of Certification or applicable EAC-approved ECOs. The ClearDesign and ClearCount server hashes were reviewed, and all matched the EAC trusted hashes in accordance with Clear Ballot's EAC-certified verification procedures. Therefore, the EAC can independently confirm that the software compared is equivalent to, and the hardware inspected is consistent with the Scope of Certification issued by the EAC for the ClearVote 2.3 voting system. Benton County has successfully taken on a critical security tool with hash verification and is successfully standing this up as a pre-election practice.



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Recognition

Benton County Elections Department

The EAC's Field Services Team would like to express its sincere appreciation to County Auditor Brenda Chilton for her support and permission to conduct this review in Benton County. Special thanks are also extended to Elections Manager Amanda Hatfield and Elections System Supervisor Grace Davidson for their instrumental roles in facilitating the project and providing the resources necessary to ensure its success. Their leadership and commitment to secure, accurate, and accessible elections are commendable. When presented with the opportunity to participate in this initiative, Benton County immediately recognized the value and opportunity a project like this was for their state, and their proactive engagement is recognized. The EAC looks forward to continued collaboration with Benton County and appreciates their contribution to advancing election integrity across Washington State.

Washington Secretary of State

We extend our sincere gratitude to the Washington Secretary of State's Elections Division for authorizing the EAC's Field Services Program to collaborate with local county election departments. This partnership reflects the Secretary of State's strong commitment to preserving the integrity, transparency, and security of the electoral process across Washington. By facilitating our engagement with county officials, State Director of Elections Stuart Holmes has enabled the EAC to support and contribute meaningfully to the administration of fair and secure elections throughout the state.