2025 HOUSE GOVERNMENT AND VETERANS AFFAIRS

HB 1587

2025 HOUSE STANDING COMMITTEE MINUTES

Government and Veterans Affairs Committee
Pioneer Room, State Capitol

HB 1587
2/6/2025

Relating to election security and validation.

3:30 p.m. Chairman Schauer opened the hearing.

Members present: Chairman Schauer, Vice Chairman Satrom, Representatives Bahl, Brown, Grindberg, Karls, McLeod, Rohr, Schneider, Steiner, VanWinkle, Vetter

Members absent: Representatives Christy, Wolff

Discussion Topics:

- Security measures
- Old equipment
- Safety of voting systems

3:30 p.m. Representative Rios, District 23, introduced the bill.

3:33 p.m. Rick Weible, Former Minnesota and South Dakota Legislator, testified in favor and submitted testimony, #35872, #35873.

3:42 p.m. Erika White, North Dakota Secretary of State Election Director, testified in opposition and submitted testimony, #35953.

3:52 p.m. Brandy Madrigga, Cass County Finance Director, testified in opposition and submitted testimony, #35867.

3:57 p.m. Donnell Preskey, ND Association of Counties, testified in opposition.

Additional written testimony:
Marisa Haman, Ward County Auditor/Treasurer, submitted testimony in opposition, #35634.

3:59 p.m. Vice Chairman Satrom adjourned the meeting.

Jackson Toman, Committee Clerk

Auditor / Treasurer's Office

House Government and Veterans Affairs
February 6th, 2025
Marisa Haman, Ward County Auditor/Treasurer

Good afternoon Chairman Schauer, and members of the Government and Veterans Affairs Committee. My name is Marisa Haman and I currently serve as the Auditor/Treasurer for Ward County.

I stand in opposition of HB1587, specifically Section 3, number 5.

The days after a primary election include many tasks including but not limited to posting voter credit, assigning write in votes and preparing for canvassing. To add the monumental task of hand counting all of the ballots to these duties in a county the size of Ward is unreasonable.

I also believe to post all ballot images online is an infringement on voter privacy and that ballots and/or ballot images should only be available in the case of a recount or court order. Absentee voters often mistakenly initial their ballots in the Judge's initial section, which could inadvertently identify their ballot.

I have great respect for election process integrity and am confident that the current logic and accuracy testing validates that results are tabulated accurately. I urge a DO NOT PASS on HB1587.

CASS COUNTY
GOVERNMENT

Finance Office

Telephone: 701-241-5600
Fax: 701-241-5728
SMB-FIN@casscountynd.gov

TESTIMONY ON HOUSE BILL NO. 1587

House Government and Veterans Affairs

February 6, 2025

Chairman Schauer and members of the House Government and Veterans Affairs Committee:

My name is Brandy Madrigga, Finance Director for Cass County and a member of the Auditor/Treasurer's Legislative Committee. Thank you for the opportunity to provide testimony and express opposition to HB 1587.

To begin, item 3 of the section 3 amendment to 16.1-06-15, changes the timeline of the public testing of the voting system from one week prior to the election to 60 days before the election. This timeline is not feasible under the current century code as the candidate filing deadline is set out at 64 days prior to the election and the deadline for withdrawal is set at 4:00pm, 62 days prior to the election. It is at this time in which the county auditor holds the candidate rotation draw. The candidate rotation must be determined in order for the auditor to submit the layout and programming forms. The deadline for auditors to complete the ballot proofs and order forms is approximately 49 days prior to the election. Following these submissions, counties can expect media to be received by approximately 25 days prior to the election. It is only after the media is received that a county can begin logic and accuracy (L&A) testing. Cass County dedicates 6 election workers and 1 week of time to complete L&A testing and results must be 100% accurate in order to pass.

Next, item 5 of the section 3 amendment replaces the postelection audit with a complete postelection hand count audit. I will note that utilizing a sample of a larger population is a standard practice to gather sufficient evidence to form an opinion about the entire population being audited. Completing a postelection hand count of all ballots prior to the meeting of the county canvassing board is not a practical timeline.

Once the polls close on election day, there are numerous additional duties in which an auditor must complete prior to the county canvassing board scheduled on the thirteenth day following each election. It is during these 13 days that the county auditors must complete the write-in races, reconcile voter credit to voted ballots, complete voter credit for canvass board, organize absentee ballots for canvass board action, contact voters who may need to cure absentee or set-aside ballots, unpack voting equipment and supplies, and conduct the post-election audit.

To give the committee an idea of the scale of the proposed postelection hand count that would need to be completed in conjunction with the above noted tasks, during the 2024 general election, Cass County processed over 91,000 ballots that included 34 different ballot styles and comprised 32 separate races. During the 2024 primary election, we processed over 21,000 ballots which included 105 different ballot styles and 148 separate races.

Furthermore, the current L&A testing methods have been proven to be safe, secure, and 100% accurate. This statement can be supported by the countless automatic recounts conducted by the county auditors. It is common during a primary election that a county auditor will be required to conduct a recount. For timeline purposes, the date that the recount must be conducted is dependent on the race but will generally fall between 11 to 18 days following the respective Canvassing Board meetings. During the 2024 primary, Cass County conducted 2 recounts which included manual inspection and a hand recount by the recount board. Both recounts returned results that were 100% consistent with the original tabulated results.

Mr. Chairman, members of the committee, it is for these reasons noted above that I urge a **DO NOT PASS** on HB 1587.

Good morning Chair and Committee Members,

Your ES&S System 6.0.6.0 as approved on Dec 28th, 2021 by the United States Election Assistance Commission (EAC)

https://www.eac.gov/sites/default/files/voting_system/files/ES%26S%20EVS%206060%20Certificate%20and%20Scope%20of%20Conformance%2012_28_21.pdf
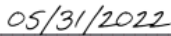
The Virus protection on your Election Management System, (EMS) laptops are based upon Windows Defender, which was set at April 19th, 2021. Since these machines are not connected to the internet, they don't get the much-needed updates, it has to be manually done.

COTS Software

Manufacturer	Application	Version
Microsoft Corporation	Windows Server 2016	WIN2016_6060.iso
Microsoft Corporation	Windows 10 Enterprise LTSC	WIN10_6060.iso
Microsoft Corporation	Windows Updates (Software updates included in the OS image)	Package date: WIN10_6060.iso-4/19/2021 WIN2016_6060.iso-4/19/2020
Microsoft Corporation	Windows Defender Antivirus (Configured within the OS image)	N/A
Dell	TPM Utility	DellTpm2.0_Fw1.3.2.8_V1_64.exe
Cerberus	Cerberus FTP Server - Enterprise	11.3.4 (64-bit)
Adobe	Adobe Acrobat	11.0.07
Yubico Login for Windows	Dual Factor Authentication YubiKey USB keys for dual factor authentication (optional)	2.0.3
PostgreSQL	PostgreSQL11	11

https://www.eac.gov/sites/default/files/voting_system/files/ES%26S%20EVS%206060%20Certificate%20and%20Scope%20of%20Conformance%2012_28_21.pdf
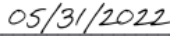
There was an engineering change order on 6/8/2022 from ES&S approved by the EAC to do a Windows update for the Operating System and the antivirus definitions....but why are they not doing others to keep our elections secure...This discovery by Microsoft came out on July 8, 2021 (https://msrc.microsoft.com/blog/2021/07/clarified-guidance-for-cve-2021-34527-windows-print-spooler-vulnerability/) ES&S didn't submit a change order until 5/31/2022 to the EAC, and the EAC approved it on 6/8/2022.

PRO V&V

ENGINEER CHANGE ORDER (ECO) ANALYSIS FORM

Manufacturer:	Election Systems & Software (ES&S)
System:	EVS Windows 10 and Server 2016
ECO Number:	1141
ECO Description:	Windows 10 and Server 2016 PowerShell Script updates

Overview:
This ECO documents the application of Windows 10 and Server 2016 updates to the Election Management Systems (EMS) that consist of running the following two PowerShell Scripts: Windows_Updates.ps1 and Update-AntiVirus-Definitions.ps1. The reason for the updates is to address the Critical Vulnerability CVE-2021-34527, also known as PrintNightmare, in the Windows Operating System and to ensure EVS systems are running the most up-to-date antivirus definitions.

Systems Affected:
Federal: EVS 6.2.0.0, EVS 6.0.6.0
State: EVS 6.0.7.0, EVS 5.2.4.2, EVS 5.5.0.3

Supporting Documentation:
- ECO 1141 ORIGINAL.docx *(ES&S ECO)*
- ECO1141_EVS5242_Security Update Procedures.pdf *(ES&S Security Update Procedure)*
- ECO1141_EVS5503_Security Update Procedures.pdf *(ES&S Security Update Procedure)*
- ECO1141_EVS6060_Security Update Procedures.pdf *(ES&S Security Update Procedure)*
- ECO1141_EVS6070_Security Update Procedures.pdf *(ES&S Security Update Procedure)*
- ECO1141_EVS6200_Security Update Procedures.pdf *(ES&S Security Update Procedure)*

Supporting Tools:
- ECO-1141.zip (PowerShell script files)

Engineering Recommendation:
Technical documentation review and onsite functional regression/verification performed at ES&S facility by Pro V&V to approve change. Functional regression testing consisted of installing the updates on all of the affected systems and executing/running two System Integration elections; one General and one Primary. The elections were executed on all precinct tabulators, central tabulators, and Universal Voting System devices. Each election's results were brought back into the EMS for reporting verification. Pro V&V determined the updates did not adversely impact system reliability, functionality, capability, or operation. No additional testing required.

Engineering Analysis: De Minimis

Reviewer:	**Approver:**
Wendy Owens	**Michael Walker**
Printed Name	Printed Name
Wendy Owens	*Michael Walker*
Signature	Signature
05/31/2022	05/31/2022
Date	Date

Pro V&V, Inc.

https://www.eac.gov/sites/default/files/2023-09/ES%26S%20ECO%201141%20Analysis.pdf

Even for little things Engineering Change Orders are required...look here...for the 6.0.6.0, even a simple battery change must be reviewed and approved.

Change ID	Date	Component	Description	Inclusion
ECO 1089	10/08/20	ExpressVote XL	Updated Bios, Assembly and PCB modifications	De minimis
ECO 1100	10/15/20	ExpressVote v1.0	EV 1.0 Copy Right Information	De minimis
ECO 1103	12/22/20	ExpressVote v2.1	Update CMOS battery	De minimis
ECO 1106	02/19/21	ExpressVote 2.1	Add conductive gasketing to exit guide	De minimis
ECO 1110	07/28/21	DS850	Added alternate manufacturer for camera cable	De minimis

https://www.eac.gov/sites/default/files/voting_system/files/ES%26S%20EVS%206060%20Certificate%20and%20Scope%20of%20Conformance%2012_28_21.pdf
(Page 20/20)

North Dakota requires voting systems follow the EAC's Voluntary Voting System Guidelines, which then makes them required, and your state is responsible for enforcement.
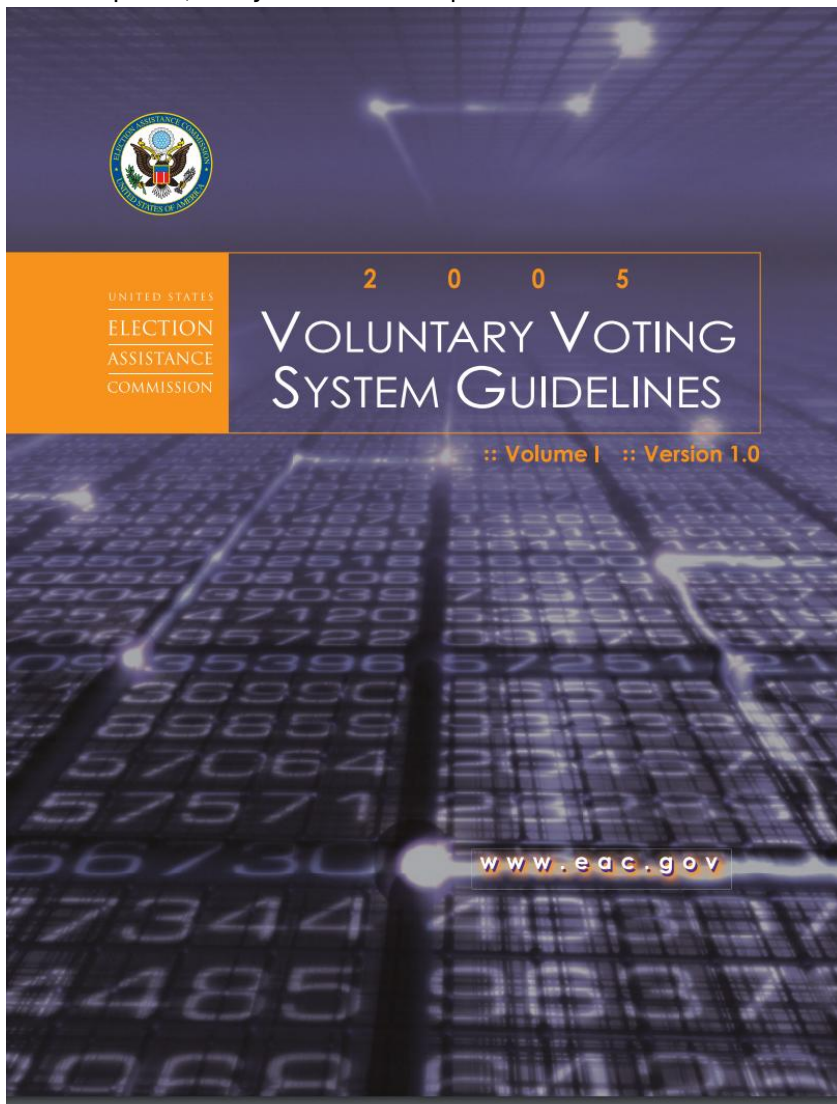
In 7.4.2 of the EAC, VVSG 1.0 Standards this is required of the vendors.

7.4.2 Protection Against Malicious Software

Voting systems shall deploy protection against the many forms of threats to which they may be exposed such as file and macro viruses, worms, Trojan horses, and logic bombs. Vendors shall develop and document the procedures to be followed to ensure that such protection is maintained in a current status.

https://www.eac.gov/sites/default/files/eac_assets/1/28/VVSG.1.0_Volume_1.PDF

With this knowledge of a lack of security updates over the past 2 years before the election, we exposed our systems to millions of trojans and malware....oh so you say they are not connected to the internet....that's not quite true....

Ask your county election officials the following questions.

1) How do you get your election definition files to update the ExpressVote and DS200? Most will say they use the ES&S portal to download the files from their County Internet Connected Computer to download the files onto a USB flash drive.
    a. So now ES&S is making the county liable for security, since it is going through their county PC and who know what status that PC is at....why didn't ES&S mail the thumb drives to the County...they better not say its not secure....since we send absentee ballots that way...
2) Do they ever use a non-Delkin thumb drive on the EMS laptop? If so they exposed it from that end as well...

Oh as a side note your DS200 1.3.11 may have modems in them, and all ES&S did was to remove modemrunner from the software build, but all of the other software is still there....and during the build of an election, modemrunner can easily be placed back into the DS200 by accident.

I recommend you get tough with the vendors and put these stop gaps in place to secure your elections, and if they fail you have a path forward to always conduct and secure your elections.

Thank you,

Rick Weible
Elkton, SD 57026

#2 *(handwritten)*

SECRETARY OF STATE
STATE OF NORTH DAKOTA
600 EAST BOULEVARD AVENUE DEPT 108
BISMARCK ND 58505-0500

State Of North Dakota – Certification of Election Equipment

Effective this date, I certify the following Election Systems and Software, Inc. (**ES&S**) Voting System components for use in the State of North Dakota. These voting system components have been officially determined and designated for use in every county of the State of North Dakota.

The following components are certified for use in the State of North Dakota:

Operating System Requirements:
- Windows 7 Professional, SP-1 (64-bit)
- Windows Server 2008, R2, SP-1 (64-bit)
- Windows 7 Enterprise, SP-1 (64-bit)

used IN 2020! (handwritten)

Software Systems:

Electionware Voting System (EVS) 6.0.4.0 with the following modules:

- Electionware, version 5.0.4.0
- Event Log Service, version 1.6.0.0
- Removeable Media Service, version 1.5.1.0
- ExpressVote Previewer, version 2.4.5.0

Hardware Systems:

- DS200 Hardware 1.3.11, version 2.17.4.0
- DS450 Hardware 1.0, version 3.1.1.0
- DS850 Hardware 1.0, version 3.1.1.0
- ExpressVote Hardware 2.1, version 2.4.5.0

This Certification is granted pursuant to North Dakota Century Code § 16.1-06-26 (attached). It also verifies that all components listed above and provided by ES&S comply with North Dakota Administrative Rule 72-06-01 (attached).

In Testimony Whereof, I have hereunto set my hand and affixed the Great Seal of the state at the Capitol in the City of Bismarck, on June 27, 2019

Alvin A. Jaeger
Secretary of State

Election commission orders top voting machine vendor to correct misleading claims

This isn't the first time Election Systems & Software has faced accusations of making fabricated or misleading assertions about its voting machines.

A voter in a voting booth. | Steve Helber/AP Photo

By **KIM ZETTER**
08/13/2020 05:00 PM EDT

The federal Election Assistance Commission has rebuked the nation's top voting-machine maker over marketing materials that the panel says deceptively implied the company's voting machines are EAC-certified.

The commission admonished Election Systems & Software over promotional literature and statements on its website that appear to assert, falsely, that voting machines the company sells with embedded modems have been sanctioned by the EAC under its testing and certification program. The statements put **ES&S** in violation of the EAC's testing and certification rules, the commission wrote in a previously unreported March 20 letter to the company that POLITICO obtained, and directed ES&S to revise the literature and notify customers that the systems are not certified.

POLITICO reported earlier this year that the EAC was looking into the matter but hadn't yet determined whether ES&S had violated its rules.

Gold Standard Elections

An in-depth look at how our election system can be re-engineered to ensure accessible, secure, transparent, and verifiable elections voters can trust

by Beth Biesel (TX- handcountusa.com), Hava Laudon (OH-veri iedelections.com), Laura Scharr (SC- scsafeelections.org), Rick Weible (MN& SD-USCASE.org)

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Summary

Voter confidence in our elections has reached an all-time low. Politicians, election officials, journalists, and cybersecurity experts alike have raised serious concerns about the integrity of our voting systems. More importantly, voters ask critical questions often dismissed or met with hostility and, in some cases, legal action. Widespread irregularities and inconsistent election results only heighten this mistrust. The current systems fail to meet essential standards of accessibility, security, transparency, and verifiability, leaving no way to prove that a breach has not occurred. As a result, voters are denied the assurance that their vote was counted accurately, free from manipulation, and untainted by fraudulent ballots.

This constitutional republic cannot endure if the foundational mechanism for selecting representatives has lost the trust of its citizens. Since voters are entitled to a reliable and credible election system, it is our collective responsibility to restore that trust and safeguard the integrity of our republic.

Addressing the flaws in our election system requires a unified, nationwide effort. The authors aim to equip citizens with the knowledge and tools to implement election systems that restore public trust. Our team comprises individuals from diverse regions across the United States, reflecting the wide disparities in processes and capabilities at the local level. This regional diversity is crucial given that election laws and administrative rules vary between states and counties. Hundreds of dedicated individuals and countless hours of effort have given the authors the insights and clarity needed to create this document.

This paper presents solutions beyond experience, politics, parties, and personal positions. It begins by proposing a framework for establishing robust metrics and then outlines the key phases of the election process, each of which must meet rigorous standards. Finally, it provides a roadmap to guide readers through the essential components of a sound election system. In addition, it offers practical methods for the public, legislators, and election officials to verify that these objectives have been successfully met.

The authors have analyzed each phase of the election process, from voter registration to tabulation and reporting, identifying four cornerstones of election integrity: security, transparency, verifiability, and accessibility. They propose strategies to re-engineer each phase, enhancing process integrity and public trust. While the authors present comprehensive solutions, each state will implement necessary changes based on specific laws and circumstances.

The recommendations provided here are not intended as legal advice. Each stakeholder or representative should understand the relevant legislative and operational frameworks to ensure the successful implementation of changes that meet the Gold Standard.

This paper evaluates proposals to improve election infrastructure and closely examines the viability of hand-counting ballots. While the call for hand-counting paper ballots has grown, what does it mean, and is it feasible? The authors provide a thorough analysis. Having relied on hand-counting for over 150 years, this paper concludes that hand-counting hand-marked paper ballots remains a viable, fully accessible, secure, transparent, and verifiable solution today.

Election integrity advocates have shown that hand-counting is not only possible but also cost-effective, secure, and transparent. Though it was common in the past, it remains relevant today. The authors propose enhancements to improve its efficiency. Hand-counting hand-marked ballots has long been the gold standard for transparency and accuracy and is still used to validate machine results. Reviving this practice will restore confidence in elections and save millions for local governments, benefiting citizens, legislators, and decision-makers. (See Appendix Exhibit 1 Cost Savings SD Machine vs Hand Count).

While the authors are confident in their recommendations for a virtuous election system, they recognize that achieving perfection—free of any errors—is unlikely. However, the goal is to implement practical reforms that simplify and clarify the current opaque, complex system, making it more reliable and trustworthy. These reforms will enable election officials to quickly detect and address irregularities or even fraudulent activities as they arise. Currently, when errors occur, the system limits officials' ability to rectify or correct them effectively. The proposed changes will create a more robust election system that is secure, transparent, verifiable, and accessible, ensuring issues can be promptly identified and resolved.

It is important to emphasize that convenience will not be among the top priorities in establishing the Gold Standard for elections. Convenience must never outweigh security or transparency. The slogan 'Easy to Vote and Hard to Cheat' is misleading and it prioritizes convenience over integrity. Every eligible voter must have access to cast their ballot. Still, we must ensure that making voting easier does not compromise the integrity of the process or open the door to fraud. Qualified electors deserve the confidence that their votes were counted as they intended. Similarly, the phrase 'safe and secure' often hides a troubling reality: it can mean systems are 'safe from scrutiny' and 'secure from critical review,' such as computer code audits or examinations. Transparency and accountability must be the foundation, not afterthoughts.

The authors aim to dispel the myth that it is impossible to conduct elections in which people can genuinely have confidence. Elections must rise above personal biases, politics, corruption, and demographics. They should serve as the ultimate equalizer, where every legal vote holds the same weight and every voice is heard equally. When election officials, state legislators, county employees, and concerned citizens collaborate to implement solutions across the four phases of the election process, they will restore public trust. The result will uphold the four cornerstones of Gold Standard Elections (accessibility, security, transparency, and verifiability), creating a robust and reliable system.

To fully realize the potential of each of the cornerstones, it is necessary that:

✦ All phases of the election process are open and transparent to the public, with bipartisan and or impartial participation and oversight

✦ Poll workers verify voters through proof of citizenship and photo ID

✦ Local election officials maintain up-to-date voter rolls

✦ Poll workers log and validate voters through paper poll books

✦ States return to one day voting in person at their precinct, except for UOCAVA (Uniformed and Overseas Citizens Absentee Voting Act) voters

- ✦ Laws minimize absentee and mail-in voting

- ✦ Where possible, states institute 100% hand-counting of hand-marked ballots in public with bipartisan representation, with both recorded and live-stream video capabilities

- ✦ Election results are publicly reported first to the precinct, then the county, then the state

- ✦ The public may gain access to election records 48 hours before canvassing certification occurs
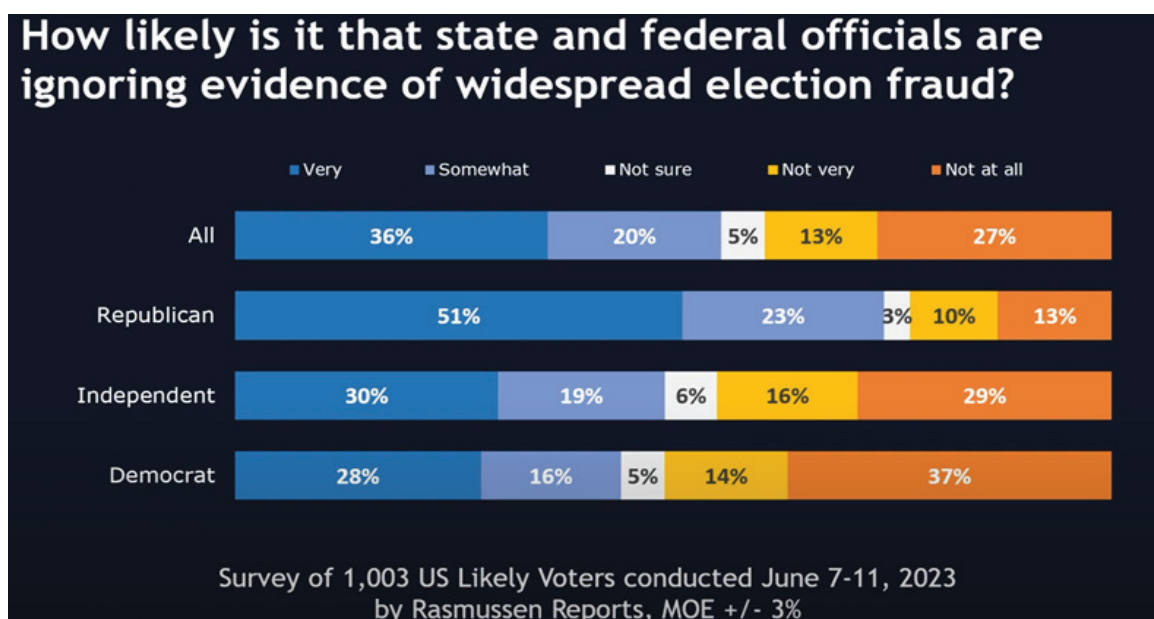
Introduction/
Background

Voters across America are increasingly losing trust in our electronic voting system. This sentiment isn't limited to the electorate alone—it resonates across the political spectrum. Candidates, lawmakers, and citizens from both major political parties have voiced concerns about irregularities, suspected fraud, and foreign interference, especially when their preferred candidates lose. Many of these concerns have proven to be valid.

Polling data underscores this growing distrust among voters. A Rasmussen poll conducted in April/May 2023[1] found that 62% of likely U.S. voters believe there was cheating in the 2020 and 2022 elections. Further Rasmussen surveys in September and November of 2023[2] revealed that 56% of likely voters fear cheating will influence the outcome of the upcoming presidential election. These figures have steadily risen across party lines since 2020, reflecting a widening sense of insecurity. In a CNN poll conducted by SSRS in 2022[3], Americans said they lacked confidence that U.S. elections reflected the will of the people. Forty-eight percent of Americans said they think it is at least somewhat likely that, in the next few years, some individuals involved in the electoral process and elected officials will successfully overturn the results of a U.S. election since their party did not win. Does such widespread doubt suggest that voters have confidence in the election process? The evidence seems to indicate otherwise.

This chart below illustrates the Rasmussen poll from June '23 in the chart below-Figure 1

How likely is it that state and federal officials are ignoring evidence of widespread election fraud?

Legend: Very | Somewhat | Not sure | Not very | Not at all

	Very	Somewhat	Not sure	Not very	Not at all
All	36%	20%	5%	13%	27%
Republican	51%	23%	3%	10%	13%
Independent	30%	19%	6%	16%	29%
Democrat	28%	16%	5%	14%	37%

Survey of 1,003 US Likely Voters conducted June 7-11, 2023
by Rasmussen Reports, MOE +/- 3%

https://www.youtube.com/watch?v=OUTGOIUX97A1

The impact of losing confidence in election results cannot be understated. When security, transparency, verifiability, and accessibility are compromised, it's no surprise that trust in the system has eroded.

Is it time to review the rushed decision post Gore v Bush when the Help America Vote Act (HAVA)[4] was implemented? Looking back, did we, as a nation, make the right choices? Clint Curtis, a former computer programmer who wrote the first computer-based tabulation prototype and vote-flipping algorithm, has doubts.[5]

Before 2004, cyber experts like Clint Curtis, in his testimony to Congress[5] and Avi Rubin[6], warned about the vulnerabilities within our voting system and the genuine possibility that parts or the whole could be compromised, with catastrophic consequences. While some lawmakers heeded these warnings and voiced concerns, the government's response was troubling, doing little or nothing to address the risks. As time passed, the infrastructure for electronic voting expanded, but the vulnerabilities remained.

For example, U.S. Senator Amy Klobuchar, D-MN, issued the following statement on reports that Russians hacked election infrastructure in 39 states on June 13, 2017:

> *"Free and fair elections are the cornerstone of our democracy. It is clear that a foreign adversary*
> *attempted to undermine our election – and now we are learning that as many as 39 states may*
> *have been hit by Russian hackers. This is unacceptable. As Ranking Member of the Senate*
> *Rules Committee, I am renewing my call for a classified briefing for the Committee on the full*
> *extent of Russian interference in U.S. election systems. As much information as possible*
> *should also be made publicly available. We need to know exactly what happened to know how*
> *to best strengthen our election infrastructure and prevent it from ever happening again."* [7]

Cybersecurity experts nationwide who have invested the time to fully understand the election ecosystem agree that electronic voting machines are vulnerable to intrusion and manipulation by domestic and foreign actors with malicious intent. In addition, basic industry standards, such as upgrades to security patches and antivirus software, are often not implemented. Furthermore, computer systems are prone to random reboots, errors, and malfunctions. The primary election equipment vendors, such as Dominion, Election Systems and Software (ES&S), and Hart InterCivic, are owned by private equity firms, often with little transparency about their ownership or operations. These companies, along with their third-party contractors, exercise centralized control over critical aspects of the election process, including data collection, tabulation, and transmission, leaving little room for oversight.

To support this conclusion, Senator Klobuchar stated in an interview with Meet the Press on August 5th, 2018, "I am very concerned that you could have a hack that finally went through. You have 21 states that were hacked into, and they didn't find out about it for a year." [8] Meanwhile, local election officials, who are responsible for operating these voting machines and electronic equipment, have little to no technical experience or expertise to recognize simple mistakes or internal manipulation.

The entire election process is complex, messy, non-transparent, and no longer controlled at the local level. Key administrative responsibilities, once managed by local election officials trusted by voters, have been outsourced to private third-party vendors, who are not subject to Freedom of Information requests. This shift has created a dynamic in which voters and local officials must place their trust in multi-billion-dollar corporations to accurately record, track, count, and protect their votes. Given these

challenges, it's no surprise that confidence in the electronic voting systems is waning, ultimately undermining the faith in the democratic process of our elections in a free Republic.

Can we honestly claim to be free if our votes are not counted accurately and are potentially diluted by fraudulent or illegal votes? As the Federal Prosecution of Election Offenses, Eighth Edition states:

> *Our constitutional system of representative government only works when the worth of honest ballots is not diluted by invalid ballots procured by corruption. As the Supreme Court stated in a case upholding federal convictions for ballot box stuffing: "Every voter in a federal ...election, ... whether he votes for a candidate with little chance of winning or for one with little chance of losing, has a right under the Constitution to have his vote fairly counted, without its being distorted by fraudulently cast votes." Anderson v. United States, 417 US 211, 227 (1974). When the election process is corrupted, democracy is jeopardized. Accordingly, the effective prosecution of corruption of the election process is a significant federal law enforcement priority.[9]*

The only truly secure and transparent way to achieve election results that everyone can trust may be to remove electronic voting machines, electronic poll books, and the reliance on digital systems altogether. Instead, we should return to hand-counted, hand-marked paper ballots, which are less susceptible to manipulation and have not been compromised by fraudulent or illegal votes, many of which have historically emerged through the absentee voting process, unsecure drop boxes, and unverified signatures.

A modernized version of the hand-counting process would be a necessary part of this solution, ensuring transparency and accountability at every stage of the election. Yet, hand-counting alone is not a panacea; it must be part of a broader, more comprehensive approach to rebuilding trust in our elections. This broader framework, addressing multiple components of the election process, will be explored further in Section IV.
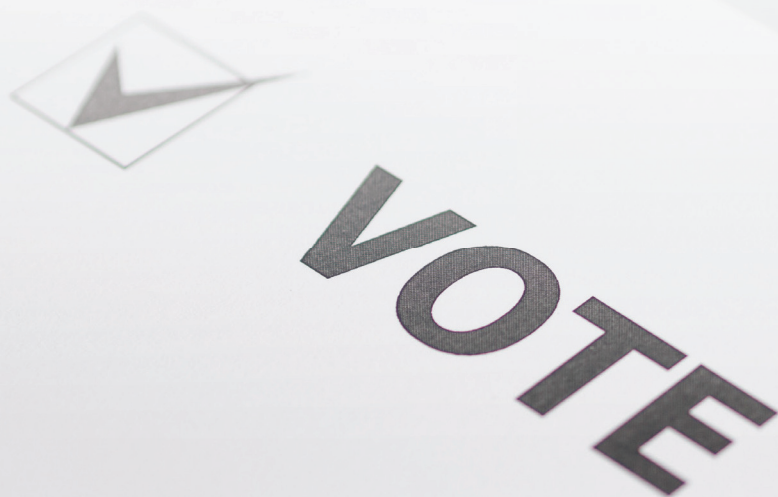
03

Current Situation

We have already demonstrated a lack of security, transparency, verifiability, and accessibility in the current election process, which is a true "BLACK-BOX" operation with multiple physical components, phases, and people involved. According to Texas State Senator Bob Hall, there are only four things we know for sure after an election, which in recent years has often been a drawn-out affair:

01.   There was a voting period where ballots were cast

02.   Some number of people cast votes

03.   Winners were declared

04.   The public lacks evidence to verify #1-3

In many states, existing laws mandate that the counting of ballots shall be public. This high bar of transparency has been under assault since the introduction of electronic election machines into our election process.

Beth Biesel, Dallas County Election Judge since 2010, recently commented, "Oddly enough, the electronic tabulation machines are not held to the same gold standard as hand counting."

In the current computer-based election systems, transparency requires, at a minimum, public access to:

01.   Logic and accuracy tests

02.   Cast vote records

03.   Ballot images

04.   Log files

05.   Source code review and validations

Unfortunately, these are not being made available to the public, and even when they are, they often present significant issues, including:

01. **Logic and accuracy tests:** These tests are often insufficient to instill confidence in the accuracy of the machines. They do not prove that the machines will perform accurately under real-world operating conditions beyond the controlled test scenarios.

02. **Cast Vote Records (CVRs):** These records are vulnerable to manipulation, casting doubt on their integrity.

03. **Ballot images:** These images can also be manipulated, and since the cast vote records are based on the ballot image data, not the actual physical ballots, this introduces further risks to the accuracy of the results.

04. **Log files:** These can be altered, deleted, or set to a limited size before being overwritten and often fail to accurately reflect all activities during the election process.

05. **Source code review:** Transparency is nearly nonexistent here, as primary vendors use proprietary clauses to avoid full disclosure. Additionally, changes to the source code may occur through updates or "patches," which can alter the code without fully revealing what has been modified.

In summary, we cannot prove that our election systems are secure and reliable. There is no independent third-party audit or enforcement to confirm that the equipment is functioning as certified.

As Rick Weible, a Computer Cyber Expert with 28 years of experience, says, "Transparency is the inoculation to all conspiracy theories. When election officials make statements that they do not know what the ballot images or cast vote records are and they fail to release them for public inspection, all trust is immediately lost. An immediate return to hand counting with public bi-partisan oversight is required."

Another primary concern with our current election system is early voting, whether in person or through the mail. Early voting poll data can potentially be modeled to predict not only turnout but potential results via sophisticated algorithms. If nefarious actors can access the tabulator data through hacking or other methods (internal hidden modems/flash drives), they can "fine-tune" algorithms to flip or weight votes in favor of a particular candidate. Professor Halderman demonstrates how easy this is in a GA courtroom for the Curling vs. Raffensberger lawsuit.[10]

The cost and issue of recruiting ample and capable poll workers for early voting is also of concern. A cost-benefit analysis of early voting centers should be assessed since total turnout may be lower than one day of voting. A study in 2017 by the Heritage Foundation concluded that the disadvantages of early voting outweighed the advantages.[11] Regarding mail-in and absentee voting, chain of custody issues abound, and voters are reliant on subjective signature verification. An extended voting period gives potential bad actors more data and time intervals to act. In order to secure our elections, it is recommended to minimize early and absentee voting.

In summary, we have an election system that can be compromised at every stage of the process. Set aside the propagandized debate of the issue and consider the concerns if this were any other sector. Cyber experts across the nation and abroad say that there is no doubt that our electronic election system has been exposed to compromise for years, and no one can prove that it has not been, and there have been no remedies or solutions to these issues. Every electronic system is vulnerable, whether a major industry, large enterprise, banking system, government entity, military operation, or small personal home computer system. How can we delegate our precious, valuable vote, our voice, and the election of our leaders to a process that injects additional avenues for manipulating our elections?

04

Voter Distrust: Major concerns with the current election system

The following summarizes the critical vulnerabilities and attack surfaces contributing to the growing mistrust of electronic voting systems. While this list is not exhaustive, we will address many of these concerns in our recommendations and solutions section, offering secure, transparent, verifiable, and accessible alternatives to mitigate their impact. Ultimately, the role of election officials should be to serve the citizens by ensuring the integrity and fairness of the election process and giving as much control of the process back to the citizenry.

Overall Vulnerabilities

✦ **Unapproved Procedural Changes:** Substantial changes to election procedures have occurred without proper legislative oversight. For example, the Delaware Supreme Court ultimately found same-day voter registration unconstitutional[12] and the Wisconsin Supreme Court ruled absentee ballot drop boxes illegal. [13]

✦ **Compromised Election Integrity:** Modifications to election laws, such as the introduction of early voting, mail-in ballots, Ranked Choice Voting, and drop boxes, have raised concerns over the security of the election process.

✦ **Lack of Transparency:** The denial of access to crucial election records and reports and failure to fulfill record requests breeds distrust. For instance, citizens in Texas, South Carolina and South Dakota were denied access to Cast Vote Records and audit logs, further fueling suspicion.

✦ **Federal Overreach:** Through Albert Sensors, federal agencies have direct access to county voting equipment and are continuously monitoring activity. While states are constitutionally responsible for managing their elections, the use of these sensors opens a vulnerability door, compromising state control and introducing federal overreach during the voting process. [14]

✦ **Weak Chain of Custody:** Inadequate or nonexistent chain of custody protocols have led to the disappearance of ballots and election equipment, undermining the integrity of the election process. [15]

✦ **Poor Voter/Signature Verification:** Inadequate or inconsistent verification of voters and signatures raises questions about the legitimacy of ballots and election outcomes. [16]

✦ **Inaccurate Voter Rolls:** Voter rolls contain inaccuracies, such as ineligible domiciles or electors. For instance, the Wisconsin voter database contained 7.1 million registrants despite the state only having 4 million adults eligible to vote. [17]

✦ **Unverifiable Ballots:** Many ballots use barcodes or QR codes for tabulation, preventing voters from independently verifying that their votes are accurately recorded and counted.

- **Vendor Control:** Billion-dollar companies hold near-total control over the election process, providing the following essential systems:

  - Vendor-supplied paper for ballots
  - Vendor-developed software for election day operations
  - Ballot Marking Devices (BMDs) for printing ballot codes that voters cannot verify
  - Scanners for reading ballots
  - Tabulators for counting votes
  - Programmed USB sticks to compile vote totals for counties

The core issue here is that citizens no longer control their election systems. If citizens do not control the process, the system is fundamentally flawed. Election officials should assist citizens in managing and conducting their elections, ensuring transparency, security, and trust at every step.

Voting Machine Vulnerabilities

- **Lack of Access to Source Code:** In most states, IT experts are denied access to the source code of voting machines, preventing independent scrutiny and raising serious concerns about the integrity of the systems. [18]

- **Excessive Code Complexity:** The source code is reported to be 2-4 million lines long—an alarming figure for a system whose primary function is simply to count names or marks on a ballot. This complexity raises questions about unnecessary vulnerabilities and potential backdoors.

- **Outdated Security Standards:** Many voting machines fail to meet modern security standards for both corporate and government systems. They are still certified under outdated 2005 standards by the Election Assistance Commission (EAC)[19], despite the availability of more stringent guidelines, such as the 2021 Voluntary Voting System Guidelines (VVSG 2.0). Even with these updated standards, the newer guidelines still fall short of the security requirements to protect sensitive election data. Older machines, often no longer supported by software vendors with patches or updates, remain in use without being decertified, leaving them vulnerable to attack.

- **Vulnerabilities to Attackers:** Voting systems are vulnerable to manipulation by individuals with minimal technical expertise. Such tampering can go undetected by election officials or the public, highlighting the ease with which elections can be compromised.

- **Irregular Software Updates:** Critical software updates are not performed regularly, exposing systems to security breaches. These updates, often described as "de minimis," can be used to manipulate voting systems without detection, making the machines highly susceptible to tampering.

While the above list is not exhaustive, it underscores significant weaknesses in our electronic voting systems. We will address these issues with specific solutions to minimize their impact. A "Risk and Remediation Matrix" is provided in the Appendix, "Exhibit 2," with a more comprehensive list of potential risks and possible remedial alternatives to the current electronic election process.

The Gold Standard: Four Cornerstones of Safe Elections

Restoring trust in our election system must be our highest priority—and trust must be earned, not demanded. In a constitutional republic, trust is not something we can command and expect people to blindly follow. The solution to restoring trust is the Gold Standard.

The Gold Standard is built on four cornerstone principles that must be applied to every phase of the election process. When properly implemented, these principles create an election system that minimizes vulnerabilities and ensures that immediate corrective action can be taken when necessary. Following the Gold Standard creates an environment where public trust can be restored, ensuring that every voter has confidence that the election was conducted properly. The four phases of the election process will be discussed in detail in Section VII.

01. **Elections must be secure** – The integrity of the election ecosystem begins with security. There should be no connection to vulnerable networks that could compromise the system. This includes ensuring that election equipment, materials, and data are always secure. Proper security protocols must be in place at every stage, including using locks, seals, surveillance, inventory management, and a strict chain of custody. All processes should be meticulously documented to demonstrate adherence to these protocols. Election equipment and materials should be transferred only by bipartisan teams and under continuous surveillance. Access to election data and equipment should be highly restricted and carefully monitored.

02. **Elections must be transparent** – Casting one's ballot must be done in private; every other part of the election process must be done in public. Observers or poll watchers must be able to observe every phase of the election process, and public documentation must be produced to allow the public to review the process later. All phases and reports for elections should be fully observable by the citizens. These principles should be incorporated into state laws across the country. All ballot counting and tallying should be recorded, and the video should be stored as an election record on the county's website according to state law. Anyone, anytime, anywhere, must be able to review the video of a particular race or an entire election if they so choose so that the results of the elections can be easily verified no later than 48 hours after the polls close. Public Information requests should not be required to view the election results.

03. **Elections must be verifiable** – Accuracy of the vote is of utmost importance. When voters can verify that the votes are correctly counted, this increases their confidence in the outcome. The chain of custody documentation must be timely, legitimate, and verified. Reconciliation of votes and voters must be done in a fully transparent way. Again, anyone, anytime, anywhere, must be able to review the video of a particular race or an entire election if they so choose so that the results of the elections can be quickly confirmed or corrected no later than 48 hours after the polls close. Public information requests should not be required to view the election results. Ideally, all this information should be free to the voters. If the cornerstones of accessibility, transparency, and security are met, citizens can verify that the election was called correctly.

04. **Elections must be accessible for all legal voters** – Election laws must make provisions for ADA, military, and overseas voters to ensure accessibility for those unable to participate in person on Election Day. Security measures for any mailed ballots must be employed to every possible extent. As stated above, public access to reports for auditing purposes is also of utmost importance, such as voter rolls, poll books, signature verification, chain of custody documentation, and registration documentation, to name a few.

To meet the Gold Standard, each of these four cornerstone principles must be rigorously applied across all phases of the election process: voter registration, voter validation, vote tabulation, and election reporting. By implementing these principles, we can build a system that not only meets the security, transparency, and accessibility needs of our elections but also restores the public's faith in the integrity of the entire process.

05

Hand-counted, hand-marked ballot election system

The four cornerstones determining the Gold Standard can be achieved with a hand-counted, hand-marked paper ballot election system. Hand-counting is the longstanding bedrock of trust for reliable elections. We need to return to the basics. A simple system that is local (precinct-based), in which the voter casts his vote in secret by hand-marking a paper ballot with bipartisan teams counting these ballots in public, is the most preferred solution. Doing so with a live video feed (only after the polls have closed) provides the ultimate transparency and accessibility.

This classic process with a few modern twists saves time and money and cements the confidence that our elections are accurate and trustworthy. For this paper balloting system to work, precinct sizes must be small—no larger than 1,500 registrants. Turnout for most primaries is low, around 20-30%, and general elections around 50%. Even a major presidential election would expect no more than a 65-70% turnout. Given these numbers, hand-counting is realistically accomplished and would reduce costs dramatically in the long run.

Pros/cons of a hand-marked, hand-counted "paper ballot" system

Pros	Cons
Reduces the threat of connectivity —internet, cell, modem, etc.	Some people may prefer the machines.
Less complex	May need to recruit more people as counting can be tedious if done for hours on end without breaks
Saves time—no prep, testing, programming, maintenance of machines	
Anyone can understand and verify the process.	
Allows citizens to count their votes instead of private companies or the government counting their votes	
Removes an entire slate of uncontrolled vulnerabilities currently associated with our existing systems	

Pros	Cons
Hand-counting statutes require fewer updates due to technological changes.	
Results easily audited/verified—transparent (can replay video)	
Removes the possibility of programming and reporting mistakes	
It gives power back to citizens and officials at the local level.	
No interruptions to the voting process compared to electronic systems, which are vulnerable to down machines, technical glitches, or power outages	
Counting can be done in the same location where votes are cast.	
Complex user manuals and technicians are not required.	

Below, we summarize our recommended methods, costs, materials, and results for hand-marked, hand-counted paper ballot tests conducted around the United States over the past year. Many lessons were learned, and we are confident that our recommended methods and procedures will be enlightening and informative for election officials and voters alike.

Multiple tests were conducted to understand best how to optimize the efficiency of the hand-counting process. Two methods were investigated: 1) the hand count tally method using paper tally sheets, and 2) the "calculator method." This paper primarily focuses on the tally method. See Exhibit 9, Summary of Test Findings, for a summary of the various tests conducted for both methods over the last year.

The Tally Method

For more detailed info, see https://uscase.org/

The tally method described below was conducted with 4-person teams using paper, pens, and people. Test volunteers were able to consistently count each race in 50 ballot batches in roughly 2 minutes. Further, a pilot test with 250 ballots was conducted with 11 races, and all were successfully counted in approximately two and a half hours. We estimate that if precincts are kept to a maximum of 1,500 registrants and turnout is approximately 65% or roughly 1,000 ballots, three teams could count the precinct in approximately three hours, including breaks. Total costs are far less than purchasing and maintaining the electronic voting systems. (See Appendix Exhibit 1 SD Machine vs Hand Count.) Most importantly, if the entire process is recorded, the people can fully observe, verify, and confirm that their vote count is legitimate.

METHODOLOGY

Each team consists of four people per station. The more people, the more stations, and the quicker one can count the ballots. For the room setup, comfort and space are key; having a large enough table for four people to sit on comfortable cushioned chairs, proper lighting, and a relatively quiet atmosphere helps enhance productivity. Teams should be kept as far apart as possible so that the talliers (persons who tally the votes) can hear the callers (persons who call out the name of the vote recipient).
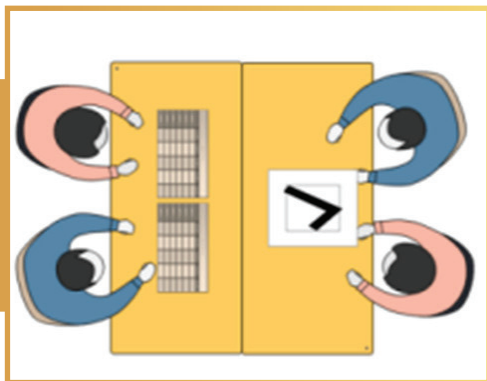

Image from Missouri Elections:
Return to Hand Counting by Linda Rantz, Copyright Linda Rantz, Used with Permission,

https://handcounting.com/eManual

Ideally, there should be four election judges or clerks per table, two from each party. The callers- 2 representatives, one from each party review the ballots and take turns calling out the name of the winner of each race on the ballot.

The other two election judges/election workers from each party will mark their tally sheets with a slash for the candidate receiving the vote.
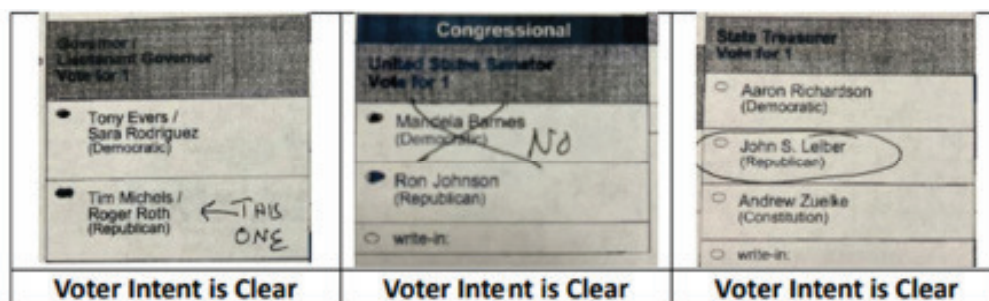
> *Note:*
> *It is recommended that each race be called separately.*
> *So, work through all the ballots for one race before moving*
> *to the next. This method was the most efficient.*

Voter Intent is a big deal when assessing the actual vote on a ballot. This is handled differently nationwide, depending on state laws and rules.

An acceptable distinguishing mark for a vote can be defined in three ways – 1) a mark in the oval adjacent to the name, 2) a mark beside the name/referendum, or 3) a circled preference.

Here are some examples of voter intent the machines would miss.

Voter Intent is Clear   **Voter Intent is Clear**   **Voter Intent is Clear**

TALLY METHOD STEPS:

01. Fill out the election information, the seal number, and the judge/poll worker information in the "Official Election Results Workbook" (see Appendix Exhibit 3). Note ballots should already be pre-sorted by precinct and perhaps ballot style.

02. Count the number of ballots in the container or box provided, stacking them in groups of 50, and then enter the total amount of ballots received in the "Official Election Results Workbook"; for an example of a completed worksheet, see Appendix Exhibit 6 Example Totals Worksheet.

03. Enter the races and candidates in the Excel spreadsheet provided (Appendix Exhibit 4 Excel Spreadsheet to Generate Tally Sheets) so that the tally sheets can be printed out before counting; note that there is a section for Under Vote (no vote was marked), Over Vote (too many votes were marked), and "Write in." For an example of a completed tally sheet, See Appendix Exhibit 5 Treasurer Race for Dodge County WI 2022.

TALLY SHEET — Type of Ballots (__)ABSENTE (__) UOCAVA (__) MAIL-IN (__) PRECINCT DAY — RACE **Secretary of State** — Precinct ___ Sheet ___ of ___ — Date ___ — Election Date ___ — Election Type ___

Columns: Sharyl R McFarland | " " | " " | Blank / No Selection / Under Vote | WRITE IN | OVER VOTE

Each column contains tally grid numbered 1 through 130.

Total (each column)

Recommendations
1) Pre Count and stack ballots in counts of 50, process 50 ballots at a time, confirming counts between judges before proceeding.
2) Have a red and blue pen, only mark with a "/" slash through the box, if you need to reconfirm a count then you can do an X", if a third count is needed then you can fill in box.
3) Switch colored pens between each stack of 50 ballots.   US Council on Accurate and Secure Elections - Version 20231229G_Large

Election Judge Signatures   TOTAL COUNT ___

04. Counting is conducted one race at a time. Two judges review the ballots on one side of the table. They will take turns calling out the office or issue by name for that race until they finish the votes. The other two judges will put a slash mark on the Tally Sheet on the first available number for that candidate. They should start with one particular color, say a blue pen for the first 50, then switch to another color, say a red pen for the next 50, and then continue to alternate blue/red color pens for each set of 50. Note: some precincts prefer to sort ballots into stacks of 25 instead of 50; try both to see what makes sense for your county/state/polling location.

https://www.youtube.com/watch?v=Y2WCL1fcEus
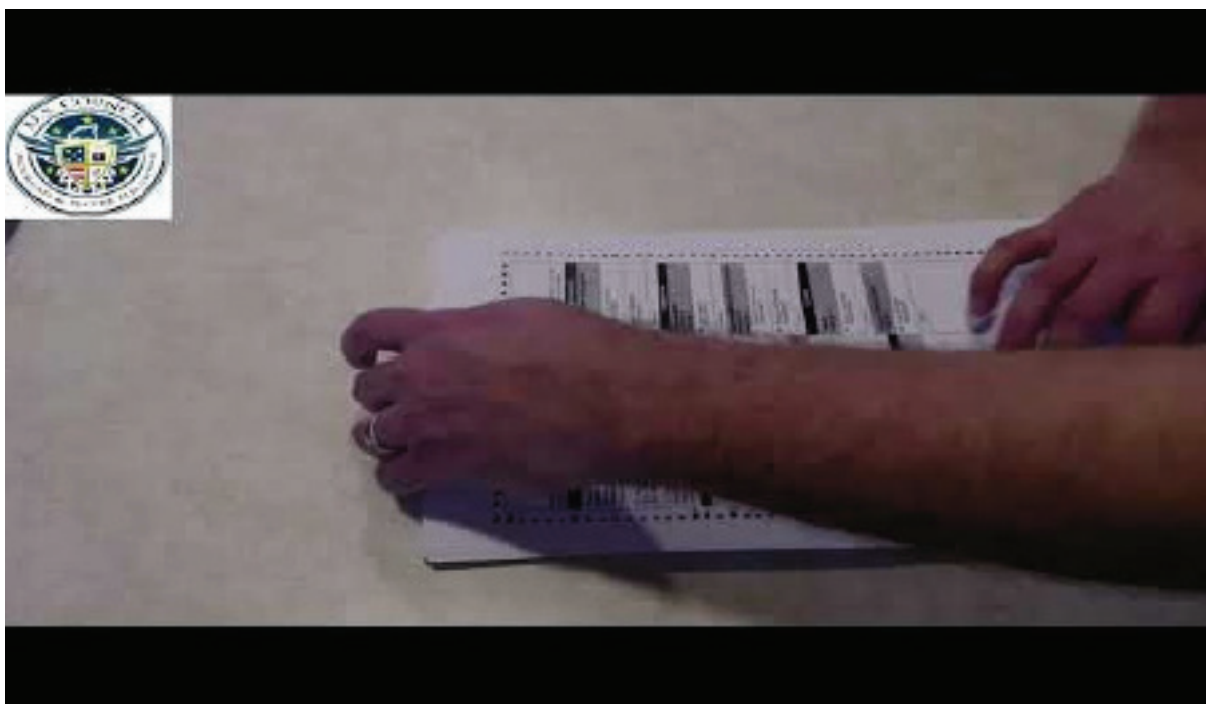
05. Once the first batch of ballots is reviewed and tallied, the judges with the Tally Sheets should compare numbers/totals. If there are any discrepancies, recount the race from those ballots, then make any corrections as needed. Instead of using a slash mark, an X can be made through the current race tally being recounted. Fill the box entirely with either color pen if a third count is required for the same race. Each team can choose the ink color for a third recount to enhance reporting clarity.

Note:
Multiple tally sheets may be needed for each race. So, if the talliers start to run out of room on the sheet, both talliers should move to the next tally sheet. Totals will be reconciled across all sheets at the end of the counting for that race. Sheets should be numbered consecutively and consistently between talliers.

06. Once done with the counting of the ballots, write the totals for each race in the boxes at the bottom of the page for each Tally Sheet, then add the totals from the boxes of the Tally Sheet races together and then record grand totals on the "Official Election Results Workbook."

07. Start with a set of new Tally Sheets for each race. Note: for ease of counting and to save time, have several copies of the tally sheet for each race based on the number of ballots you are counting sequentially placed in the binder with the "Official Results Worksheet" at the back of these sheets. This will allow the counters to move quickly from batch to batch and race to race. For races that require two tally sheets due to the number of candidates, you can place them beside each other while tallying.

See Exhibit 5, Example Treasurer Race for Dodge County WI 2022, and Exhibit 6, Example Totals Sheet

08. Talliers and the poll clerk/judge sign the Tally Sheets and the "Official Election Results Workbook."

09. Follow your state's additional instructions for placing the materials in the secure box or container provided with a new seal that you would document for chain of custody reasons.
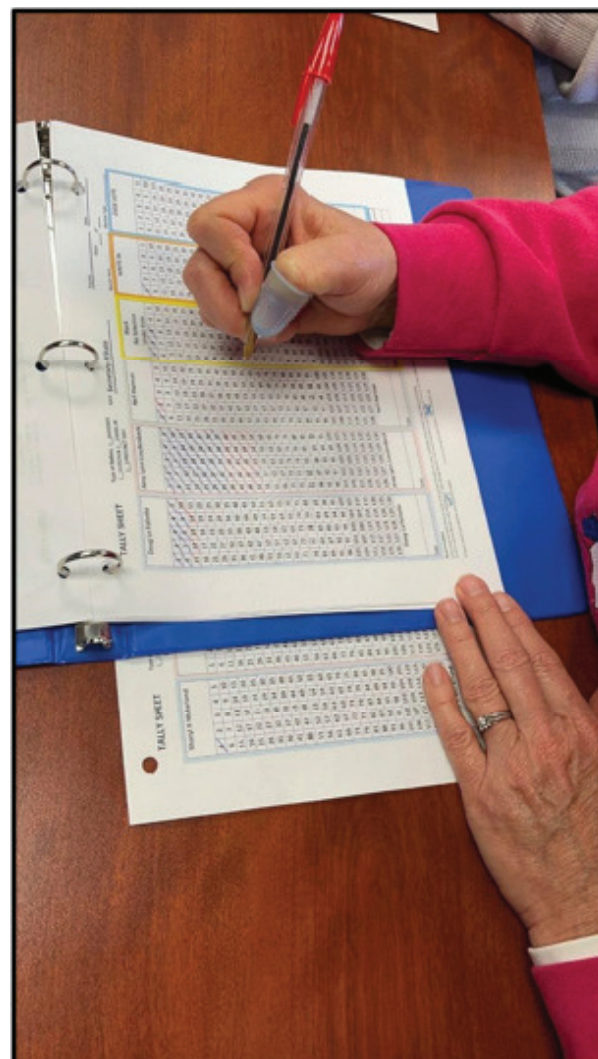
Expected timing: After several trials to optimize the process, we found that it takes about 2 minutes to count each batch of 50 ballots. We consistently counted 250 ballots in roughly 2.5 hours with one team of 4 people. The following are some quick videos that demonstrate our method:

https://rumble.com/v5api6c-how-to-handcount-ballots-for-an-election-efficiently.html
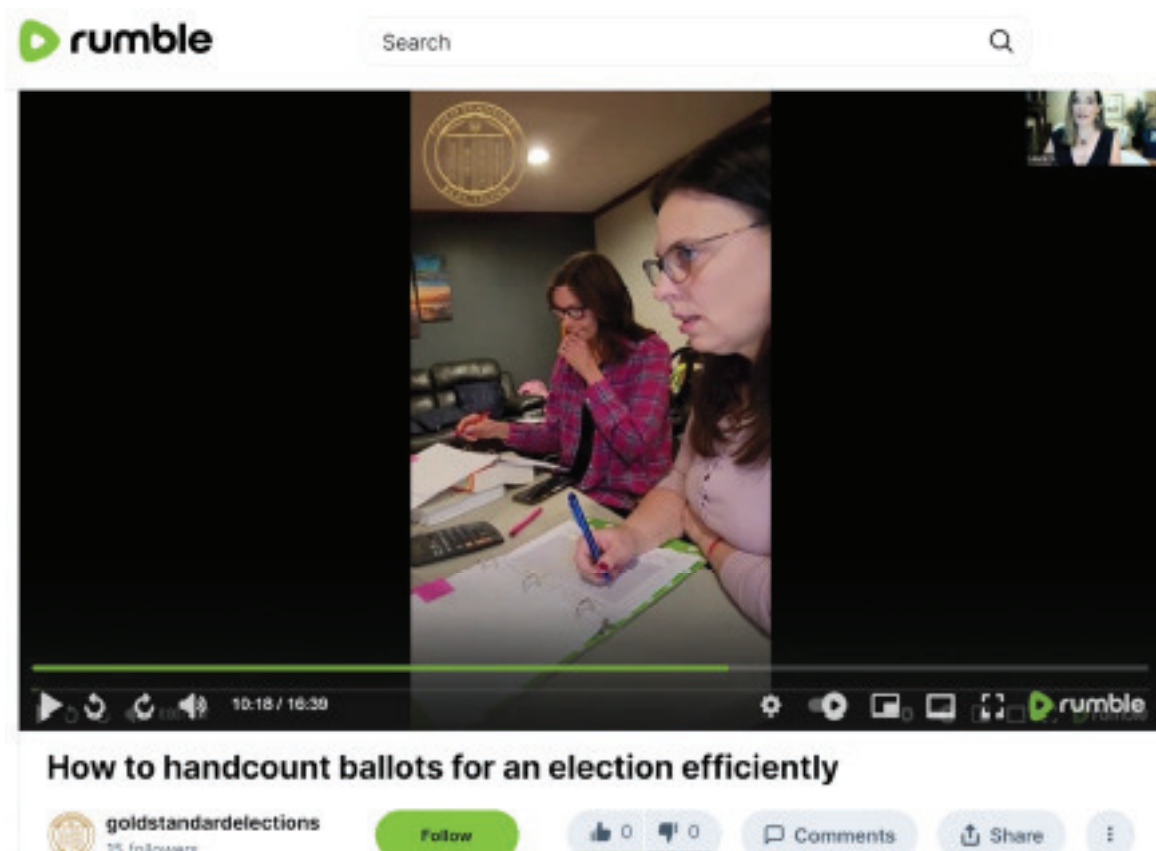
Here is another longer video for you to practice with a total of 126 ballots for a governor's race:

https://www.youtube.com/watch?v=Y2WCL1fcEus&t=396s

MATERIALS:

It is recommended to have the following items:

01. Gel pens with at least three colors—have multiple pens on hand in case some run out of ink (Red, Blue, Purple)

02. 2 – 3 Ring Binders – 1" wide per station (place tally sheets in binder)

03. Silicone fingertips mixed sizes, surgical gloves, or SORTKWIK fingertip moistener to aid in flipping ballots or tally sheets

04. Pre-Printed Tally Sheets in Color

05. 2 Pre-Printed "Official Election Results Workbooks" – each for box and auditor

06. Cameras, laptops, and tripods to video record ballots and

07. overall workspace with comfortable chairs and a large enough desk to fit the team.

Here is a helpful video that reviews all the materials:

https://www.youtube.com/watch?v=Ba6FYAxshYw&t=7s
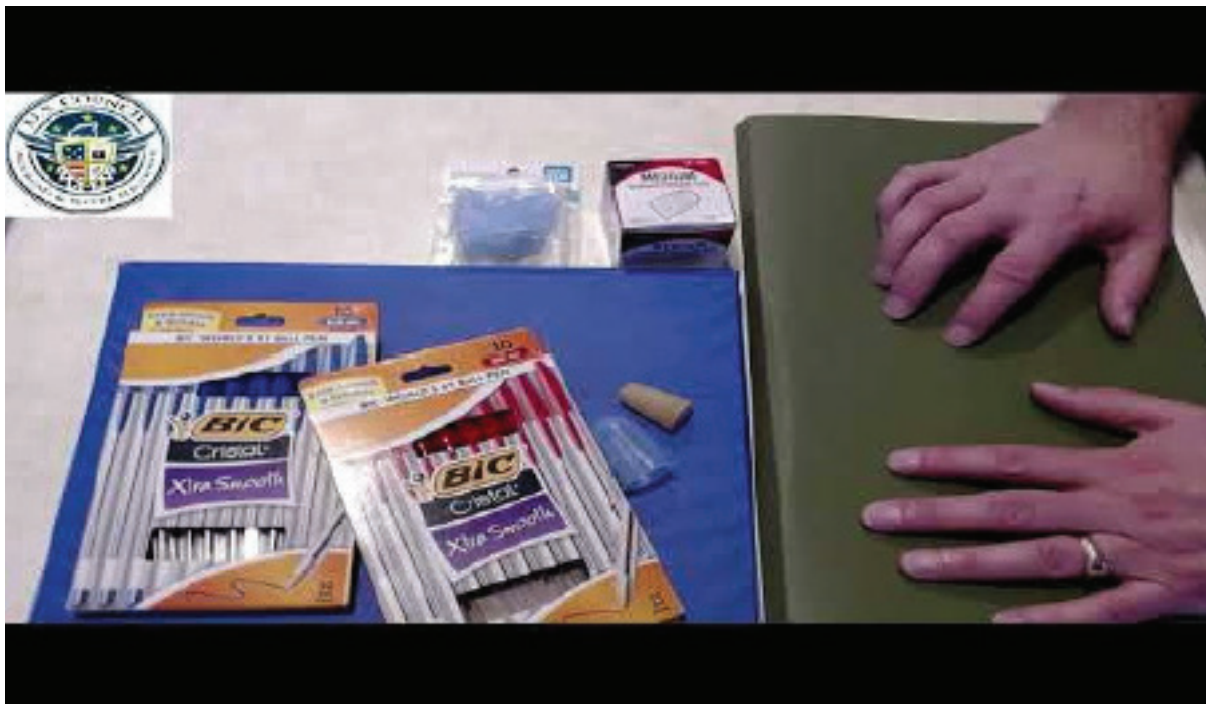
The Calculator Method

For more detailed information on this method, see handcountusa.com

While hand counting ballots with paper and pen on a Tally Sheet has been a longstanding, acceptable method for counting ballots, other methods have emerged that may also offer transparency, verifiability, security, and accuracy and allow every citizen to personally verify that their ballot is counted correctly.

One such method is the use of hand counting calculators that are limited to the functionality of adding one or subtracting one when the person doing the counting presses the button on the calculator. The calculator includes an LED display that shows the number of votes when the hand-counting person presses the buttons associated with the vote selection.

The term "calculator" was chosen because of its similarity to traditional calculators, which add, subtract, multiply, and divide. Both types of calculators have the 'Clear' function. Clearly, the hand count calculator has much less functionality than a 4-function calculator. Like traditional calculators, an LED display shows the numbers when pushing a plus-one or minus-one button. The hand count calculator does not need certification because it is not a voting system. The calculator is not counting anything; it does not generate anything. Nothing happens until a person pushes a plus button or a minus button. Only people are doing the counting. With electronic tabulators, the computer is doing the counting and this counting is hidden from the public. With the Calculator Method, and with the Tally Method, the counting is done so everyone can see the count happening in real time. Using the Calculators with their LED display makes the count easier to see on a camera.

The two LED displays on the hand count calculators must be large enough so that every citizen can view and count the votes from a video recording posted on the county election department's website the day after the election. The video recording is made by two high-resolution cameras. Each of the two cameras is suspended above the calculator stations and the ballots so that the citizens may have 100% transparency and trust in the election results. One camera focuses solely on the ballot, while the other focuses on the entire counting station. Room cameras are recommended but not required. Using a video recording, which documents and memorializes the counting process, allows anyone, anytime and anywhere, to recount the entire election or a particular race for themselves. This level of transparency, verifiability, and security is exceptional. Minimizing the opportunity to cheat and or maximizing the opportunity to correct an honest mistake with the video cameras increases vote count accuracy and, most importantly, TRUST in the election results.

After numerous tests and election simulations, the calculators offer remarkable scalability and efficiency. The throughput rate (man-hours per ballot or race) is impressive for many reasons. Each station or counting team only requires two people, leaving little to no wasted downtime during a counting session. Counting by pairs (candidates, under-votes, over-votes, propositions, etc.) simplifies the process, allowing counting people to move through the selections faster. Pushing a button seems to be faster than making a tally mark or dot on a piece of paper; however, the speed can be affected by external factors common to all methods (dexterity, distractions, endurance).

The hand count calculators offer an additional advantage to increasing transparency, verifiability, and security by reconciling the vote count in two separate ways for each count run and race. The ultimate reconciliation is with the camera recording for the public to view anytime, anywhere, at no cost to the individual viewer.

Any attempts to manipulate the vote on the video recording would be arduous and almost impossible, and even if it could be done, the paper result would contradict the result, creating a need to recount. Any attempts to manipulate the vote result by the people pushing the calculator buttons would be detected during the reconciliation processes or by the video camera viewers. This allows any candidate or interested party to independently verify the election without the cost of a recount or the sometimes difficult task of acquiring information from election officials. This will provide the maximum trust in our elections. Note that this method requires fewer people than the tally method: two rather than four people.

See Exhibit 11 – Video Demonstration of the Calculator Method   **Exhibit 12-Batch Total Sheet**

> *Note:*
> *Calculators shown in the video are simply a proof of concept. Variations on the current models are evolving.*

06

The Four Phases of the Election Process

Recommendations to attain the Gold Standard

While we highlighted the method for hand-counting hand-marked ballots above, the election process has four phases. The four cornerstones of secure elections must be optimized for all of these phases to attain the gold standard for secure elections. Our recommended solutions below address each phase with specific recommendations. The four phases are:

01. **Voter Registration:** controls who and how many ballots are issued

02. **Voter Validation:** controls the legitimacy of ballots eligible for tabulation

03. **Vote Tabulation:** controls when/where/how the votes are counted

04. **Election Night Results Reporting:** controls what results are ultimately reported and certified in a timely manner.

Phase 1. Voter Registration

For voter registration to meet the four cornerstones of trusted elections, we recommend the following:

SECURE: All states should withdraw from ERIC, BPro, or any third-party companies who claim to perform voter registration database maintenance, as these entities share data with NGOs or Non-Governmental Organizations. Responsibility for maintenance of or changes to the voter registration database should be internal to the county auditors or Boards of Elections only. The state-run system can be cross-referenced with the county's voter registration database. Voter registration should ONLY be done in person at the county election office or by a Deputy Voter Registrar in person on a sworn affidavit application. It is nearly impossible to verify and secure a registration if other agencies like the Department of Motor Vehicles are allowed to connect and transfer data electronically with voter registration databases.

TRANSPARENT: All voter rolls must be free to the public and published online. Information that could be used for identity theft, such as social security numbers (SSNs), must not be disclosed. However, the registrant's Date of Birth (DOB) and address must be included so that the public can thoroughly and accurately analyze the voter roll.

Department of Motor Vehicle data (after redacting Personal Identifying Information such as SSN) should also be made available to the public to show who has received new licenses or relinquished their old. States should require proof of citizenship (passport

or birth certificate) when issuing state IDs or driver's licenses. Non-citizens should be noted on state-issued IDs and driver's licenses so they can easily be blocked from registering in the voter registration database.
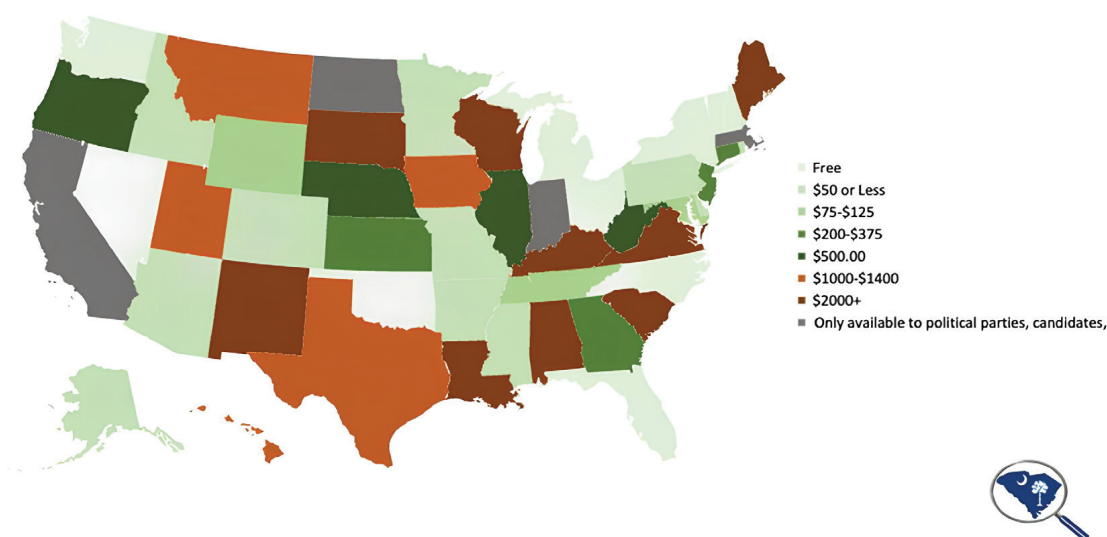
VERIFIABLE: Deceased people should be immediately removed from the rolls. Voters no longer residing in their original state should be deleted from their original state's voter registration database. The legitimacy of the voter domicile should be confirmed. Voter registration cards signed by the registrant must be used as a validating component at the precinct level on election day. Every four years, people should re-register or confirm their current address. In addition to the voter registration cards, a state-issued ID or driver's license must be shown before the voter can vote.

All counties should share read-only versions of their voter rolls with other counties and the state. Programmatically, voter rolls can be easily cross-referenced among counties for duplicate entries.

Each County and Secretary of State budget should have adequate funding for verifying their voter registration databases with state intra-agency information as well as the Social Security Master Database and other state agencies' records such as the DMV. Things to check should include, but not be limited to, invalid addresses, date of registration prior to the date of birth, registrations of citizens over the age of 90, or registrations well before eligibility. Database programs and queries to look for these anomalies may expedite this process. States should work with other states to check for duplicate voter names and share NCOA analysis and Social Security information.

ACCESSIBLE: Make voter rolls accessible to all people without charging a fee. (See the chart below for current costs to attain voter rolls by state). Any digital database must be READ-ONLY. It can only be created/updated by registration cards. Counties must publish their voter rolls in a common data format and central location so that all other counties, citizens, and groups can access them. Proper data management practices should be employed, such as using a consistent method of assigning registration numbers. Election officials should partner with the public to help clean up incorrect or improper registrants easily. For example, the state of Ohio does this.[20]

Cost of Voter Rolls

Legend:
- Free
- $50 or Less
- $75-$125
- $200-$375
- $500.00
- $1000-$1400
- $2000+
- Only available to political parties, candidates,

Phase 2. Voter Validation

For voter validation to meet the four cornerstones of trusted elections, we recommend the following:

SECURE: Only eligible pre-registered voters should be allowed to vote on a regular ballot; all others may vote on a provisional ballot. Freezing the poll book lists 30 days before an election ensures the integrity of the election by giving the County and or Secretary of State time to confirm voter eligibility of all registrants.

To further ensure the security and integrity of the vote, felony legislation that mandates fines and jail time for people who knowingly vote fraudulently should be implemented. As a deterrent against this behavior, these fraudulent voters should be prohibited from voting for a significant period of time in future elections.

TRANSPARENT: Paper poll books must be used. The poll book list must include the voter's name, Date of Birth (DOB), address, precinct number, ballot style, and unique identification number. The voter names must be alphabetized and printed in the poll book with a place for the voter to sign their name once they are deemed qualified to vote. A place to designate other content, such as Suspense*, Absentee Ballot, UOCAVA, or Early Voted, must be included. The voter must provide a valid photo ID, which must be verified before the voter may vote. (*Suspense is a term used to describe a voter who must complete a change of address form before voting.)

At designated intervals, an image of the poll books should be taken and archived to document updates/changes to the poll book over time.

Ideally, in addition to using the paper poll books, clerks would handwrite the names of the qualified voters in the "Voter Roster." The first and last name of the voter will be written in the "Vote Roster," as well as the precinct/ballot style number. Multiple copies of the Voter Roster must be kept. The poll books will be returned to the Elections Department after all the ballots have been counted in the precinct. These should be scanned and made available to the public.

The paper poll book must have an Omissions List Form to be used if an eligible, qualified voter is erroneously omitted from the poll book. The procedures for checking in this voter would be the same as for other qualified voters. A phone call to the County or the state elections office would confirm the eligibility of the voter in question. If the voter is ineligible to vote or has been removed or archived for legitimate reasons, they must re-register.

Voters who are not eligible to vote may vote on a provisional ballot. A separate Vote Roster will be used for the provisional voter.

VERIFIABLE: Hourly reconciliation of votes and voters must be done by matching the number of ballots with the number of names handwritten by the clerks. Posting the number of voters on the front door of the polling place may be done every 2 hours.

All poll books should be free to the public and public officials post-election.

ACCESSIBLE: All poll books should be available for free via public information request/FOIA Freedom of Information Act and must be printed to make it easy for the voter to sign or for the voter's guardian to sign. The signature line may be turned upside down so voters cannot read other signatures.

Phase 3. Marking & Counting the Ballots

For Marking & Counting Systems to meet the four cornerstones of trusted elections, we recommend the following

SECURE: Deliver ballots under lock and seal with the Chain of custody form completed (this is especially important for early votes that are counted). Chain of custody issues are minimized if all ballots are counted at the precinct level.

TRANSPARENT: After the polls are closed, all ballots will be viewed by bipartisan teams and the public and counted by several people, and the process will be video recorded for easy auditing, including video surveillance of the entire room if feasible. Election results must be posted on the door at the precinct where the ballots were counted.

VERIFIABLE: Video recording of counting provides an easy pathway to successful auditing and can be followed in real time. Enough counting teams must be hired to finish counting the ballots in 4 hours.

ACCESSIBLE: The public should have access to view the counting as long as they do not interfere with the process. We strongly encourage a live feed as well to ensure transparency. They must also have access to the video recording once it is available. The process is more trustworthy and may increase voter turnout. Ease and simplicity would also potentially reduce or minimize wait times.

BALLOT PRINTING

SECURE: All ballots should be inventoried. Strong chain of custody procedures and documentation must be utilized, tracked, and monitored. The ballots could also be printed on paper employing reasonable anti-copy features such as watermarks, micro-letters, guilloches, UV ink, and integrated security holograms, etc.

TRANSPARENT: Ballots should be printed so that a video camera recording can see them.

VERIFIABLE: Ballots should be sequentially numbered. Alpha-numeric serial numbers are not acceptable because they make audits much more difficult. Ballots will also be printed with the precinct and ballot style number. Ballots must be randomized for the voter to select the ballot of their choice.

ACCESSIBLE: All ballots should be printed in a format that is easily readable and easily marked by the voter. Visually impaired voters should have multiple options for marking the ballots via the election clerk, driver, or a friend or family member.

EARLY VOTING (EV)

Voting in person:

SECURE: Ideally, we recommend one day for voting; however, this goal may not be realistic for some. If early voting cannot be eliminated, it must be constrained to a single voting period, not to exceed 1 week, with no gap between early voting and election day. A reduced timeframe for early voting minimizes many potential avenues for manipulation and fraud: chain of custody lapses when delivering ballots to and from voting locations when ballot boxes overflow; intel about voter turnout data which gets released to the public, revealing enough voter information to predict what the election results are at that point in time; and early tabulation of vote results opening windows of opportunity for election result leaks or vote manipulation, just to name a few.

TRANSPARENT: Early voting gives more time for a bad actor to act and, therefore, does not benefit transparency in our elections, especially when it is not precinct only. Limiting early voting to "precincts only" provides a modicum of transparency because decentralizing the vote location makes counting the votes more manageable.

VERIFIABLE: Multiple days of early voting make verifying vote results much more difficult for the same concerns listed above about increased potential vulnerabilities. It is recommended that Early Voting is limited to no more than a week; strict chain of custody documentation must be employed; tabulation must not begin until after the polls close on election night; and the early voting ballots must be counted at the same place in the same manner as election day ballots. Limiting early voting to precincts provides ultimate verifiability because decentralizing the vote makes auditing much more manageable.

ACCESSIBLE: In-person early voting, if done, should ideally be limited to "precinct-only" voting where people don't have to travel far from their homes to vote. The locations must be the same as election day locations for maximum accessibility and familiarity. Voting at the County Seat or Board of Elections may also be considered as it minimizes chain of custody issues. Curbside voting is also available throughout the voting period.

Voting by mail/dropbox

SECURE: Voters must mail or deliver absentee ballot packets directly to their county election offices. They can be hand-counted like the "in person" ballots at the county offices or sorted for counting at the precinct. Absentee ballots should be printed on sequentially numbered ballots in the same manner as election-day ballots including precinct number and ballot style. Tracking and reconciliation are crucial with absentee ballots to document the number of applications requested/sent/received and counted. It is also strongly recommended that the county or the SOS have a website where voters can track their ballots. After signatures on the outside envelopes are verified, ballots remain at the County under extreme surveillance and 24/7 in-person guards. Once the signatures are verified, the outside carrier envelope can be separated from the inner secrecy envelope. The secrecy envelope must also have a precinct number to sort the unopened secret envelopes.

*Note that the envelope and ballot are separated to ensure anonymity. The signature verification team should do signature verification without opening ballots. Ideally, only the counting team should be opening the ballots. It is recommended to position the verification signature line over the edge of the secret envelope's sealed flap to discourage tampering.

The ballots will be counted once the signature is approved and sorted in the same manner as the election day ballots, ideally after the polls close.

To transport the unopened absentee ballots (with secrecy ballots), optimal chain of custody would consist of a double lock/double seal with paper documentation, which includes seal numbers. Sheriff deputy transfers and documentation should prove that no changes were made to the seals/locks and that people who sent/received/were involved in the transfer are noted. Detailed logs are to be kept at every step and reconciled. The appropriate election official would do any adjudication under a camera and in complete observation from the public.

When feasible, absentee ballots may be counted at one central location rather than delivered to individual precincts; they must, however, be separated and counted by precinct.

TRANSPARENT: People physically showing up to the polls maximizes transparency and makes it easier to verify ID. Thus, we recommend strictly limiting absentee voting to the following:

Disabled voters, women expecting to give birth within 3 weeks of election day, homebound/nursing home occupants, (UOCAVA) overseas military, out of the county during the entire election (must provide an out-of-county address and the beginning and ending date of time expected t be out-of-jurisdiction location), confined to jail or involuntary civil commitment.

Documentation via a signed affidavit explaining why the individual cannot vote in person should be required before a specified deadline for the presentation of documentation. In addition, thirty days before the election, there should be a freeze of the registered voter database, with no new registrations allowed until post-election. Verification of the voter should be done both when absentee is requested and again when it is returned.

Following the election, all absentee ballots sent should be publicly available along with their serial number and precinct location. A public site must also track which of the absentee ballots were returned.

All absentee ballots requested, sent, received, voted, and counted for auditing purposes will be available to the public at no charge via information requests.

It is recommended that the precinct number and ballot style be printed on the carrier (outside envelope) and the privacy envelope. Poll watchers must be allowed to be close enough to see the signatures. Video recording should be audible and easily visible, which can be tested and verified for visibility in advance.

VERIFIABLE: All absentee ballots must be accounted for by sequential numbers and reconciled with the public list before being sent out. When the ballot is returned, a second verification must be done to ensure that the correct person has voted and that the registration has not already been used. This verification must take place on election day.

Only trained teams will verify signatures under a video camera and record them for future auditing and verification by the public. Signature verification could be live-streamed where feasible.

ACCESSIBLE: When correctly done, absentee voting allows every legal citizen to properly and legally cast a vote.

- ✦ **NOTE:** Some states are eliminating in-person voting in favor of mail-in precincts. Mail-in voting creates multiple chain-of-custody issues.

- ✦ **NOTE:** Unattended Drop boxes are strongly discouraged. If used at all, they should be located securely in the elections office.

Important considerations for Early Voting via absentee ballots

All forms of early and absentee voting introduce vulnerability into the election ecosystem. If any voting is done which is not in person, the following procedures should be in place:

01. No absentee ballot requests should be automatically sent. They must be individually requested for each election

   a) The absentee ballot shall include an area with a valid excuse and
   shall be notarized or verified by a third-party
   b) Voter's identity must be checked before the ballot is sent

02. All absentee ballots must have sequential serial numbers

03. When an absentee ballot is sent, the County shall post the precinct and serial number of the ballot sent on their website.

04. All ballots must be sent in sequential order, or if any mistakes are made, that serial numbered ballot must be spoiled, just as a filled-in ballot is when a mistake is made. This way, every ballot will be accounted for when tabulated.

05. When the absentee ballot is returned, the County website will be updated to note that the ballot is no longer outstanding.

06. Absentee ballots shall be stored in a secure location when returned and not opened until the counting commences.

07. On election day, the published list of serial numbers and precincts shall be reconciled with the ballot envelopes before opening.

08. The voter's identity shall also be rechecked to verify that the correct voter used that voter registration and that no one else has used that voter registration. The envelope shall remain sealed through this verification.

09. The envelopes shall be then given to a different team to remove the ballots from the envelopes and stacked.

10. The ballots shall then be given to a tabulation team and tabulated in the same manner as in-person ballots.

OTHER

Provisional balloting: See Exhibit 7
ADA Voting: See Exhibit 8

Phase 4. Election Night Reporting

For Election Night Reporting to meet the four cornerstones of trusted elections, we recommend the following:

SECURE: All ballot counting is recorded on a camera, with one over the ballot and one over the counting station. The paper copies of vote result reports perhaps could be altered by a bad actor; however, the video evidence of the vote results and counting processes would make that effort futile. Results may be called into the county and the state. Ballots and Batch Summary Sheets or Tally Sheets will be delivered to the County immediately after counting is complete. Election records will be secured in a locked location and stored within the county for 24 months after an election.

TRANSPARENT: Counting will not start until after the polls close. No vote results will be posted until after the polls close. Election day, in-person early votes, and absentee ballots will be counted and reported after the polls close. No third-party entities may count or report the vote results. The vote results will immediately be posted on the front door of the polling place when counting is complete, and they will be reported to proper election authorities.

VERIFIABLE: Vote results reported by the county should match vote results reported by the state. Similarly, the sum of the precinct vote results should match the total that the county reports. The vote results shall be posted on the county and state website within 24 hours of completion of the count.

ACCESSIBLE: The vote results will immediately be posted on the front door of the polling place when counting is complete. All information should be posted within 24 hours on the state (Secretary of State/Election Commission) and or County's website by the end of the next business day. The public may see all election records at no charge as early as 2 days after the counting is complete.

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Summary of Recommendations

While the primary focus of this paper is to propose solutions and procedural recommendations for the physical process of voting and counting ballots, the other goals of this document are to reduce the unnecessary complexity of the current system and minimize the potential for maladministration and fraud. The validity of the vote results depends upon overhauling the entire election system. The following is a summary list of the recommendations we provided above, which are necessary to ensure a trusted election process.

✦ Clean voter rolls to include only legitimate, registered US Citizens (proof of ID and citizenship required)

✦ Voter rolls are adequately maintained by the counties so that the deceased and those who moved are removed in a timely fashion.

✦ Voter rolls that are free to the public and available online

✦ Fixed voter registration – no additional registration updates >30 days before an election

✦ Paper poll books and a paper Voter Roster, which is handwritten by the poll workers and accessible to the public via public information requests

✦ Hand-counting of Hand-marked paper ballots begins after the polls close

✦ Ballots that are printed with anti-copy features so they can be easily viewed via the camera

✦ Limited Absentee Ballots; strict signature verification and strict tracking

✦ Limited Early Voting with no gap between Election Day and Early Voting

✦ ADA provisions and curbside voting that are available for those who need it

✦ Hand Counted (Hand-marked) Paper Ballots starting after polls close

✦ Vote Results that are posted on the precinct door and called into the County Elections Department

✦ Precinct-only voting

✦ Bipartisan counting teams and public observation of the process

✦ Video Cameras on ballots and counting stations and additional room camera(s)

✦ Videos that are recorded and posted on the County's website within 24 hours of polls closing

✦ Election Records available to the public within 2 days of polls closing

✦ Ongoing public education throughout the year of changes in the voting process, registration deadlines, etc.

08

Conclusions

The four cornerstones of trustworthy elections are security, transparency, verifiability, and accessibility. The current electronic voting system does not adequately meet these Gold Standard cornerstones. We have demonstrated that hand-counting hand-marked ballots can be done cost-effectively; that ballots can be counted promptly; and that results can be reported before election day has ended. Ballots can be counted promptly, and results can be reported before election day has ended. Counties and states can save millions of dollars. All phases of the election process were optimized to reflect the four major cornerstones of secure, transparent, verifiable, and accessible elections. Most importantly, people will regain trust in the election system due to the transparency and simplicity of this re-engineered process.

How can we correctly and confidently transition to a new paradigm of voting? The following elements must be strongly considered:

✦ Increase awareness/education of the method and demonstrate its simplicity

✦ "Train the trainer": Demonstrate the system's ease, simplicity, and benefits so that others can show their local communities and election officials how it can be done.

✦ Solicit and equip team volunteers to assist in bringing this methodology to their counties.

✦ Pass laws that allow for this to at least be conducted on a pilot program basis and, once successful, expand this new process across the nation.

✦ Provide support and training documentation to counties who earnestly desire to change their current system and equip them with the knowledge, training, and resources they need to implement effectively.

The time is now to change to a new voting paradigm before we lose the people's confidence, leading them to disengage from the voting process. Elections must be for the people, by the people.

We hope you find this guide helpful and look forward to your feedback and questions.

At this critical moment in our nation's history, we hope you can now see the pathway to an improved election process that everyone can trust. We encourage you to embrace the Gold Standard for Election Excellence. Elections must be for the people, by the people.

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Appendix

Exhibit 1 Cost Savings South Dakota Machine vs Hand Count-2024

Exhibit 2 Risk and Remediation Matrix

Exhibit 3 Official Election Resource Workbook

Exhibit 4 Excel Spreadsheets to Generate Tally Sheets

Exhibit 5 Example (Treasurer Exhibit Race for Dodge County, WI 2022)

Exhibit 6 Example Totals Sheet

Exhibit 7 Provisional Ballots

Exhibit 8 ADA voting

Exhibit 9 Summary of Test Findings

Exhibit 10 Estimate of Costs of Tally Method Hand-counting

Exhibit 11 Video demonstration of the Calculator Method /Estimated Costs

Exhibit 12 Batch Total Sheet Calculator Method

Exhibit 1 Cost Savings SD Machine vs Hand Count - 2024

SD Machine vs Hand Count - 2024

- South Dakota
  - Tabulators (central count, not precinct)   2017-2019 $3,170,155
  - Maintenance Est.   2019-2022 $ 934,800
  - Reporting (Laptop & Software Maint. Est.)   2019-2022 $2,336,000
  - **Total**   **$6,440,955**

Year	Election	Ballots Cast	Precincts	Ave Ballots Precinct	250 Ballots Teams	Per Table	PrecSup	Total People	Time	Pay/Hr	Total Per Precint		Total Statewide Cost
2020	Pri	154342	667	232	1	4	1	5	3	$ 30.00	$ 450.00	$	104,400.00
2020	Gen	427529	693	617	3	4	1	13	3	$ 30.00	$ 1,170.00	$	721,890.00
2022	Pri	186896	679	276	2	4	1	9	2.5	$ 30.00	$ 675.00	$	186,300.00
2022	Gen	354670	687	517	2	4	1	9	3	$ 30.00	$ 810.00	$	418,770.00
											Hand Count Costs	$	1,431,360.00

Live Feed Costs (Live Stream to YouTube Channel)									
Precincts	iPad Mini/Wifi/Cell		Cell Sub	Mini-Stand	Teams(2024)	Supplies (Pens, Fingers, Binders, Paper)			
693	$649		$ 60	$80	3	$ 15.00			$1,671,516
							Hand Count with Live Strear	$	3,102,876.00

Exhibit 2 Electronic Voting System Risk & Mitigation Matrix Here is a more comprehensive list of potential risks in the current electronic election process:

Area	Risk/Issue/concern	Can it be mitigated? Y/N/ Maybe	Remediation
Voter Rolls/Registration	✦ DMV data sent to ERIC or other 3rd party vendors ✦ Deceased and "moved out of state" voters not removed from voter rolls. ✦ Non-citizens included in the voting process ✦ States that use ERIC receive left-wing funding and share data with left-leaning nonprofit organizations for vote targeting/ballot stuffing. ✦ Too many vendors/ in-house support involved in data (adds complexity)	Maybe	Discontinue use of ERIC and analyze/clean rolls in-house; Create a separation of databases (active, inactive, archived) Remove non-citizens/have stricter ID requirements to confirm citizenship. Transparency and free access to voter rolls for validation Minimize the number of people/vendors with access to the data.
Early Voting	✦ It informs potential nefarious actors about the magnitude of data manipulation needed to overcome actual election results.	Y	Go to 1 day of voting and start the counting only after the polls are closed.
Voter Validation	✦ It informs potential nefarious actors about the magnitude of data manipulation needed to overcome actual election results.	Y	Go to 1 day of voting and start the counting only after the polls are closed.

Area	Risk/Issue/concern	Can it be mitigated? Y/N/ Maybe	Remediation
Voting ✦ BMDs ✦ Tabulators ✦ E poll books Electionware	✦ Hacking risks – USB, Internet ✦ There is no transparency regarding voting & security processes, no access to slogs, poll tapes, audit logs, or CVRs ✦ Vendor-provided flash drives could contain malware and be used to compromise "air-gapped" systems. ✦ Poor chain of custody ✦ Potential internet connectivity (Albert sensors) ✦ Requires trust factor with corporations, federal gov, and the state ✦ Federal involvement is concerning	N biggest RISK Y/N	Hand-marked, hand-counted paper ballots are the best option. Need CVRs, audit logs, and poll tapes – free, ongoing access to this data. Note that these reports can be faked and subverted, which is why hand-counting, hand-marked ballots are ideal Transparency is needed around election officials' USB hygiene practices, SOP (Standard Operating Procedure) for chain of custody, training, and other election processes. Remove Albert Sensors & ANY network connectivity to election infrastructure. Allow for independent monitoring (note that can also create a false sense of security as manipulation can occur that independent monitoring can't capture) Detailed information is needed on 3rd party vendor security architecture, secure SDLC (Systems Development Life Cycle), penetration testing results, certification reports, and contracts. Build trust through greater transparency. Control of state elections should remain in the state.

Area	Risk/Issue/concern	Can it be mitigated? Y/N/ Maybe	Remediation
Election Night Reporting	✦ Many Foreign (SCTYL) or closely held corporations involved	Y	Reporting should be managed locally and never by a foreign-owned company; why is it essential to get this information to the media? If we hand count results, they will be completed at night's end and reported promptly.
Personnel	✦ Lack of technical training/IT/IS	Y	Get technical people on the county boards of elections & election commissions. Centralize training and ensure it is robust and consistent. Provide training manuals with operating procedures, etc.
Ancillary equipment	✦ Commercial off-the-shelf (COTS) components –foreign-made		Hand count paper Ensure scanners, printers, and COTS (Commercial Off the Shelf components) are made in the USA.
Programming	✦ Mistakes or "by design." ✦ Voters cannot validate barcodes.	Not unless you go to hand-counted, hand-marked ballots	Secure SDLC (software development life cycle), complete source code testing and review; ballot style reviews; check CVRs (Cast Vote Records) for L&A logic and accuracy tests; Risk limiting and hand count audits across all precincts. **Note:** Most citizens don't understand and cannot read source code, so software should not be used as the primary means of voting The best move is to go to hand-marked, hand-counted paper ballots.

Area	Risk/Issue/concern	Can it be mitigated? Y/N/ Maybe	Remediation
Opaque corporations and third-party involvement	✦ Most states outsource elections to 3rd parties/ corporations	Y	You can save money and reduce this risk with hand-marked, hand-counted paper ballots or improve transparency as described above and below.
Lack of participation by people/candidates who don't trust the system	✦ We need to enhance transparency so that people have less suspicion regarding the process.	Y/N	Hand-marked, hand-counted paper ballots are the best solution. Complete transparency is needed from all vendors – financial, technical, and contractual.

As you can see from the above mitigation matrix, much of the risk can be reduced, if not eliminated, by moving to an actual paper system of hand-marked, hand-counted ballots.

Exhibit 3 Official Results Workbook

County	Dodge County	Precinct	Clyman		Election	General		Election Date	Nov 8th, 2022	Today's Date	Nov 8th, 2022

Official Election Results WorkBook — Seal Number(s) — Number of Ballots Received

Race	Candidate	Totals 1-12	Totals13-24							Grand Total (1-24)
Gov	Tony Evers									
	Tim Michels									
	Joan Ellis									
	Write-in									
	Blank									
	Over Vote									
								Total Ballots		
AG	Josh Kaul									
	Eric Toney									
	Write-in									
	Blank									
	Over Vote									
								Total Ballots		

https://img1.wsimg.com/blobby/go/a490ef07-664f-4244-b734-db8ab9a64e8d/downloads/USCASE_Master_OfficialElectionResultsWorkBook.xlsx?ver=1707086437480

Exhibit 4 Excel Spreadsheet to Generate Tally Sheets

— CLYMAN WI 2022 GENERAL ELECTION EXAMPLE IN EXCEL

For more information on hand-count materials go to   https://uscase.org/hand-count-materials

Exhibit 5 Example (Treasurer Race for Dodge County WI 2022)

TALLY SHEET

Type of Ballots ( ) ABSENTE ( ) UOCAVA ( ) MAIL-IN (X) PRECINCT DAY

RACE **Treasurer**

Precinct *Clyman* Date _____
Sheet 1 of 1
Election Date _____ Election Type _____

Aaron Richardson	John S Leiber	Andrew Zuelke	Blank / No Selection / Under Vote	WRITE IN	OVER VOTE
Total **34**	Total **80**	Total **6**	Total **4**	Total **2**	Total **0**

Recommendations

1) Pre Count and stack ballots in counts of 50, process 50 ballots at a time, confirming counts between judges before proceeding.

2) Have a red and blue pen, only mark with a "/" slash through the box, if you need to reconfirm a count then you can do an X", if a third count is needed then you can fill in box.

3) Switch colored pens between each stack of 50 ballots.

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Election Judge Signatures

TOTAL COUNT _____

Exhibit 6 Example Totals Sheet

County	Dodge County		Precinct	Clyman		Election	General		Election Date	Nov 8th, 2022		Today's Date		Nov 8th, 2022

Results Workbook Seal Number(s) IN 38949 / OUT 79886 Number of Ballots Received **126**

Race	Candidate	Tally 1	Tally 2	Tally 3	Tally 4	Tally 5	Tally 6	Tally 7	Tally 8	Tally 9	Tally 10	Tally 11	Tally 12	Grand Total (1-12)
Gov	Tony Evers	39												39
	Tim Michels	82												82
	Joan Ellis	3												3
	Write-in	2												2
	Blank	0												0
	Over Vote	Ø												0
												Total Ballots		126
AG	Josh Kaul	35												35
	Eric Toney	84												84
	Write-in	2												2
	Blank	5												5
	Over Vote	Ø												Ø
												Total Ballots		126
SOS	Doug La Follette	35												35
	Amy Lynn Loudenbeck	80												80
	Neil Harmon	2												2
	Sharyl R McFarland	3												3
	Write-in	1												1
	Blank	5												5
	Over Vote	Ø												Ø
												Total Ballots		126
Treasurer	Aaron Richardson	34												34
	John S Leiber	80												80
	Andrew Zuelke	6												6
	Write-in	2												2
	Blank	4												4
	Over Vote	Ø												0
												Total Ballots		126
US Senate	Mandela Barnes	33												33
	Ron Johnson	89												89
	Write-in	2												2
	Blank	2												2
	Over Vote	Ø												0
												Total Ballots		126

Exhibit 7 Provisional Ballots

A provisional ballot records a vote when there are questions about a voter's eligibility, which must be resolved before the vote can be counted. A provisional ballot is issued when the voter's name doesn't appear on the rolls, their eligibility cannot be verified, the voter lacks proper photo ID, or their information is outdated or incorrect.

If this is the case, adjudication should be done publicly, or the voter should be contacted to cure their ballot. If the state conducts ballot hearings after election day, these should be video recorded, and the public can observe. Provisional ballots should be reported and reconciled as a separate category on the state website by county and precinct

Exhibit 8 ADA Voting

The ADA requires state and local governments and their election officials to ensure that people with disabilities have a full and equal opportunity to vote in all elections. This includes federal, state, and local elections and involves all phases of the process: voter registration, selection of polling place locations, and voting---whether on election day or during early or absentee voting. Registration may require assistance from a special administrator. All county offices and agencies that provide voter registration forms must provide this support.

Curbside voting and special equipment and access (parking, ramps) to the polling places must be available to people with disabilities. ADA-compliant machines should also be available and easily navigable within the polling place.

HERE IS THE CHECKLIST FOR POLLING PLACES.

https://archive.ada.gov/votingchecklist.htm

https://archive.ada.gov/ada_voting/voting_solutions_ta/polling_place_solutions.htm

Exhibit 9 Summary of Test Findings

Two methods were evaluated: a tally method and a calculator method. An explanation of each method is provided below, along with a summary of the test results.

SUMMARY: COUNTING PER BALLOT VERSUS PER RACE WITH THE TALLY METHOD

Test Description	Variable tested	Results	Comments
Tally sheet hand-count method—two callers, two talliers	Left to right marking counting one ballot at a time; we tested 50 ballots at a time with 11 races	This test took about 50 minutes	Loud noise and distractions, as well as a learning curve
Hand-count Tally Sheet method.	Count each race at a time as opposed to one ballot; same 50 ballots, 11 races	22 minutes for 11 races	This was quicker
			Tips: Utilize binder 3-hole punch for ease of flipping tally sheets Use fingertip moistener pads or rubber fingertips. The table area must be large enough to accommodate six stacks/piles of paper (Two stacks of ballot-sized 11x14 paper for callers, two stacks each for talliers (preferably also 11x14) Tally sheets with color help with concentration and focus vs B&W
Tested top-to-bottom tally sheet versus left-to-right	The layout of the tally sheet	Talliers preferred top-down	Count ballots and pre-label all races; use gel pens of 2 different colors;

Test Description	Variable tested	Results	Comments
Felt tip markers vs pens Try dotting and slashing with marker vs pen	Type of pen	Talliers preferred gel pen	
Tested using rubber fingertips, surgical gloves, and sticky goop to turn the pages	Each caller had their preference.		Have all available for callers Callers also prefer pausing after an infrequent call—write in, over, under
Tested times and productivity of the top-down tally sheet	Call varying races with different numbers of candidates	Actual times ranged from 1:25 to 2minutes	It is beneficial to agree on how to shorten the names so they can be called out. The teams thought using a second color for the recount was better, so starting with blue and recounting in red was suggested. Then, when you get to the subsequent 50 ballots, you can switch to red and recount blue. Overall, they didn't prefer blue or black and wondered if they could do purple and green as colors that would pop more. There is a tradeoff between productivity and accuracy, and there seemed to be a nice cadence pace at around 1:45-2 minutes. If you go faster, it may lead to fatigue or inaccuracies. If it goes too fast, it can create anxiety. For more info and a video demo: https://www.scsafeelections.org/updates/notes-from-our-hand-count-workshop/

TEST OF TALLY METHOD-USCASE.ORG- 4 PERSON TEAMS 2 CALLERS, 2 TALLIERS; SEE DETAILS IN THE APPENDIX

Test Description	Variable tested	Results	Comments
Sort candidates for each race count in stacks of 25	Batches grouped in stacks of 25. A total of 126 ballots	15 minutes for six items/races, 12 minutes for five items, and seven items	One Democrat and one Republican were responsible for reviewing the ballots and calling out one race at a time for all of the ballots before proceeding to the next race; both election judges would review and agree on the winner and make decisions about ballot issues together, for example, voter intent issues, while the other side of the table had one Democrat and one Republican with their tally sheets in binders, where they would record the vote called out for each race and each candidate, with a "/".

Test Description	Variable tested	Results	Comments
	Count per race in batches of 50 for a total of 126 ballots	7-10 minutes per race	
	Count per race in batches of 50 for a total of 126 ballots	7-8 minutes per race	
	Count per race in batches of 50 for a total of 386 ballots	21-24 minutes per race	
Virtual Hand-count test	Counted per race in batches of 50 ballots 11 races in total	1:30 minutes per batch and roughly 9-10 minutes per race. We finished the 11 races and all 250 ballots in roughly 2 ½ hours.	Pause if a different category is mentioned that is not common, ex, Write in, Overvote, Undervote Inflection and pitch are extremely important. Use a different pitch when announcing one name or category versus another. Choose and agree on a shorter first or last name to reduce time. Write that under the formal name before you start. Determine which way you will slant the tally in the box based on whether you are left or right-handed. Move empty columns on the sheet to the right to minimize hand-eye movement Don't forget to switch pen colors every 50 ballots Races where one candidate dominates are quicker to count.
			Use commands such as "Start," "Match," "Switch pens," and "Last Ballot" to save time and for the whole team to hear. Minimize any casual talking; stay focused on the counting. Take a break at least every hour to an hour and a half.

Conclusions from the above test: top-down instead of left-to-right tally sheets were the most productive and had the best times. We can count 50 ballots per race in less than 2 minutes.

SUMMARY OF CALCULATOR METHOD TEST FINDINGS– CONDUCTED IN TEXAS

Test Description	Variable tested	Results	Comments
Push button custom-made "calculator" with four buttons on each one. Two people, one Dem, and one Rep, review and press what is called. One caller who can rotate	250 ballots, 21 races, 42 candidates, a batch of 50 each for five stations, ten people	On average, 250 ballots in 1 hour with the variables listed in column 2	Electricity needed; not required to be certified because there is no computer hardware or software; counting in pairs; 2 reconciliation methods; pairs within a race are counted – not the entire ballot; no paper trail for how the tally was achieved, but the camera video would show it; correcting a mistake is very easy –push the red button; training was easy in the numerous simulations done in TX; setup is simple after a couple of practices.
	Two cameras per station: one over the ballots, one over each station; a room camera would be ideal	Video can be recorded and live streamed where feasible or recorded only and posted on the county website or the party's website the next day.	Each ballot can be seen and recounted without expensive recounts; no poll watchers are needed; mistakes can be found easily by replaying the video; manipulating the footage would be astronomically mathematically impracticable, but if done, the fraudulent result would conflict with the paper result so that a recount would be done immediately

Exhibit 10 – Estimate of Costs of Tally Method Hand-counting

Here are the costs for the materials necessary for the count. A cost analysis for South Dakota comparing the ongoing costs of an electronic system versus a hand count system is provided in Exhibit 1.

GENERAL COST ESTIMATES FOR HAND-COUNTING

Assumptions:

✦ Precinct size must be kept to a maximum of 1,500

✦ Maximum turnout for the most significant general elections is approximately 65%

✦ Typical productivity, including breaks, is about 100 ballots per hour per 4-person team

Items	Per Unit Cost	#Items needed for 1500 elector precinct 3 teams	Total cost 3 teams	Upfront cost for added transparency 3 teams
People/workers	$30/hour 3 hours	13 3 teams of 4 plus supervisor	$1,170.00	
BIC crystal Xtra Smooth Ballpoint pen, Medium Point (1.0mm) 10 for $1.57 on Amazon	$1.57 for 10		2.00	
Tally sheets	500 sheets of 28lb paper = $21		$21.00	
Binders 1 inch	$2.50 for 2	3	$7.50	
Tripod for overhead mount of camera(s) for video (with clamp)	$80	3		$240
Camera for video of counting /ballot	Andriod (refurbished) A12 $105	3		$315
Laptop for live feed (optional)	$500	3		$1500
Total ongoing			$1,200.50	
Total upfront investment				$2010

iPhone/Android holder – https://www.sweetwater.com/store/detail/CompLightKit--joby-compact-light-kit
**Android - (Walmart)** https://www.walmart.com/ip/SAMSUNG-Galaxy-A12-A125U-32GB-GSM-CDMA-Unlocked-Android-Smartphone-US-Version-Black/883787164?wmlspartner=wlpa&selectedSellerId=101016675

Optional for ballot handling: Fingertip moistener or surgical gloves, etc.- optional Lee Sortkwik™ Fingertip Moistener,50% Recycled, 0.63 Oz, Pink, Pack Of 3 $6.77; Swingline Rubber Fingertips, Medium, Size 11-1/2, Finger Cots, 12 Pack (54035) $3.79

Exhibit 11 – Video Demonstration of the Calculator Method

Here is a video of Clint Curtis explaining the method in detail.

Click here to watch: https://rumble.com/embed/v4cgd0q/?pub=10a4fb
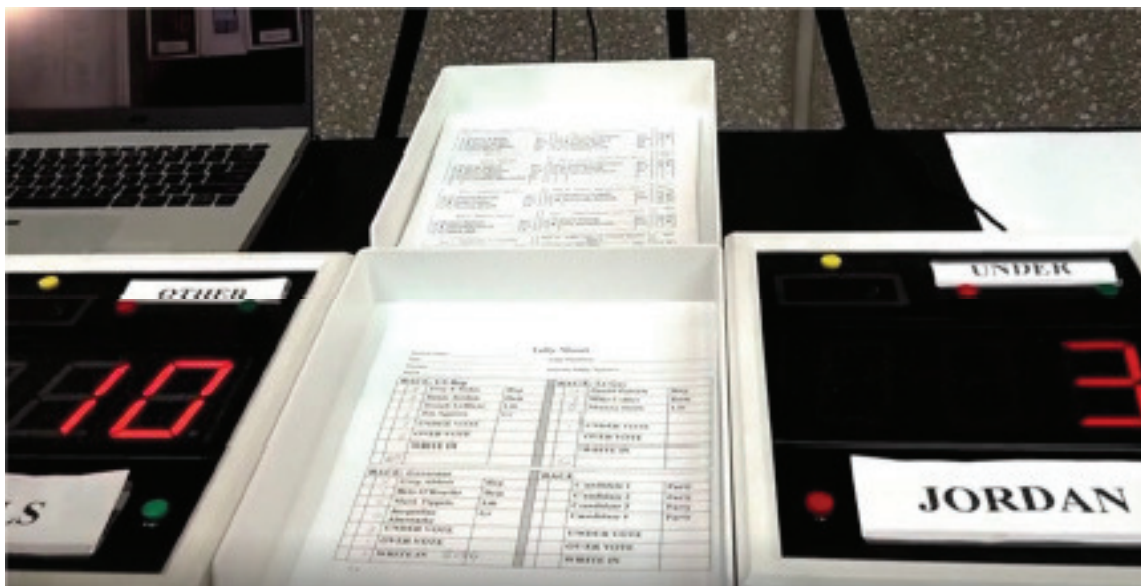
ESTIMATE OF RETAIL PRICING FOR CALCULATOR METHOD

- ✦ 2 Calculators
- ✦ 2 Paper Trays
- ✦ 2 Samsung Android A12
- ✦ 1 Tripod with 2 Selfie Sticks
- ✦ Power Block
- ✦ Clapper Cards on card stock – depends upon how many pairs of candidates
- ✦ Batch Totals Sheets depends upon how many pairs of candidates
- ✦ Pens
- ✦ 1 Laptop per **6-10 stations**
- ✦ 1 Router that is locked down to only the camera in the precinct
- ✦ Power Cables for A12s and laptops
- ✦ Manpower – 2 per counting station – pay scale determined by County

Approximate total retail pricing for each counting station = $500. This estimate does not include personnel costs and does not include the laptop.

Exhibit 12-Batch Total Sheet Calculator Method

| Batch Totals Sheet

Election Name:

Date:

Precinct:

Batch:

Judge Signature:_____

Alternate Judge Signature:_____

Counter1 Signature _____

Counter2 Signature

SECRETARY OF STATE		
Votes	Name	Party
	Candidate1	
	Candidate2	
	Candidate3	
	Candidate4	
	Candidate5	
	Under Vote	
	Over Vote	
	TOTAL TALLY	
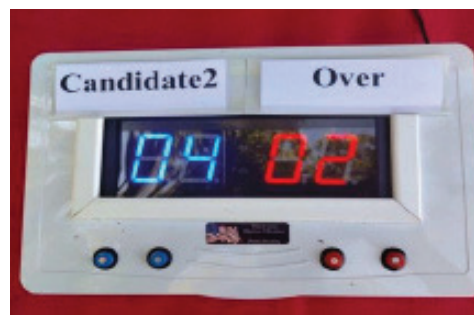
The sample Batch Totals Sheet for the Secretary of State race shows how clearly the tally totals can be seen on the video recording, rendering manipulation of the recording pointless. The other two ways of reconciliation and confirmation of the correct vote totals can also be seen in this sample. The Tally total of 56 votes matches the number of ballots in the batch, confirming that the counting team did not over count or under count ballots or votes. The method of counting by pairs allows the second way of reconciliation to occur on this Batch Totals Sheet by adding the votes for Candidate 1 and Candidate 2, which equals 47. Adding all four of the numbers on the two calculators at this counting station will also add to 47. Again, confirming that the counting team did not over count or under count ballots or votes.

This Batch Totals Sheet works well for as few as one or two candidates in a race or as many candidates as you may have in a given race. Multiple races may be included on one sheet. Write-in candidates may also be included. After all the counting teams have completed their batches, the counting judge will aggregate all of the totals, again, under the camera, for the final result. Tally Sheets and Aggregation Sheets may vary according to the reporting requirements of each state. The format of the reports must be done in such a way that the video recording can clearly show the vote results for each candidate and each race.

Notes

1. April 20, 2023- Rasmussen Most Voters Suspect Fraud, "A majority of voters suspect recent elections have been affected by cheating, and believe officials are ignoring the problem."
https://www.rasmussenreports.com/public_content/politics/biden_administration/election_integrity_most_voters_suspect_fraud

2. Nov 17, 2023 – "The latest Rasmussen Reports national telephone and online survey finds that 56% of Likely U.S. voters believe cheating is likely to affect the outcome of the next presidential election,"
https://www.rasmussenreports.com/public_content/politics/biden_administration/election_integrity_56_say_cheating_likely_in_2024

3. July 21, 2022-CNN Poll: Americans' confidence in elections has faded since January 6
https://www.cnn.com/2022/07/21/politics/cnn-poll-elections

4. Help America Vote Act of 2002 https://www.eac.gov/sites/default/files/eac_assets/1/6/HAVA41.PDF

5. Clint Curtis's Congressional testimony on the allegation that he was asked to write a program for a touchscreen voting machine that would make it possible to change the results of an election undetectably
https://www.youtube.com/watch?v=1uvB1x8Gb_s

6. Avi Rubin on how to hack a voting machine
https://www.youtube.com/watch?v=HvJQ4FK-jE0

7. June 13, 2017, Klobuchar Statement on Reports that Russians Hacked Election Infrastructure in 39 States

8. August 5, 2018, Meet the Press Amy Klobuchar
https://www.youtube.com/watch?v=9wtUxqqLh6U

9. Federal Prosecution of Election Offenses, Eighth Edition Source:
https://www.justice.gov/crt/title-52-voting-and-elections-subtitle-i-and-ii (4)

10. January 25, 2024, Gateway Pundit: Full Scope of Dominion ICX Hack in Federal Court is FAR Worse than Just the BIC Pen Hack – With Transcript
https://www.thegatewaypundit.com/2024/01/breaking-professor-election-expert-j-halderman-hacks-dominion/

11. October 18, 2017 (Heritage Foundation 2017-Early Voting Disadvantages Seem to Outweigh Benefits)

12. October 7, 2022-Delaware Supreme Court Finds Vote by mail, same-day registration unconstitutional
https://www.delawareonline.com/story/news/politics/2022/10/07/delaware-vote-by-mail-ruled-unconstitutional-by-state-supreme-court/69547603007/

13. July 8, 2022, Wisconsin Supreme Court declares absentee ballot drop boxes are illegal
https://wisconsinexaminer.com/2022/07/08/Wisconsin-supreme-court-declares-absentee-ballot-drop-boxes-are-illegal/

14. Albert Sensors: Front Door to Sensitive Election Data? By Patrick
Colbeck-https://letsfixstuff.org/2022/12/albert-sensors-front-door-to-sensitive-election-data/

15. Whistleblower provides video of PA election evidence being destroyed-
https://www.americanlibertyreportnews.com/articles/whistleblower-provides-video-of-pa-election-evidence-being-destroyed/

16. November 11, 2020, newsobserver.com- North Carolina doesn't verify voter signature on mail-in ballots-
https://www.newsobserver.com/news/politics-government/election/article247083467.html

17. 17- Evidence presentation for the Wisconsin 2020 Election-
https://rumble.com/vulh4k-evidence-presentation-for-the-wisconsin-2020-election.html

18. Vulnerabilities of the ES&S DS200 Tabulator-
https://www.uncoverdc.com/2021/08/03/vulnerabilities-of-the-ess-ds200-vote-tabulator/

19. EAC VVSG 1.0 (2005) standards
https://www.eac.gov/vvsg-10-2005

20. Ohio Voter Files download Page
https://www6.ohiosos.gov/ords/f?p=VOTERFTP:HOME:

11

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For more information or to get in touch with our team contact contact@goldstandardelections.com
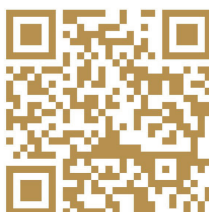
QR code for digital version of this paper

NORTH DAKOTA SECRETARY ✓F STATE

HOUSE BILL No. 1587
FEBRUARY 6, 2025

HOUSE GOVERNMENT AND VETERANS AFFAIRS
REPRESENTATIVE AUSTEN SCHAUER, CHAIR

TESTIMONY PRESENTED BY
ERIKA WHITE, STATE ELECTIONS DIRECTOR

Chairman Schauer and members of the committee, I'm Erika White and I serve as the State Election Director in the Office of the Secretary of State. I am here in opposition to HB 1587. I want to start my testimony by stating that the Office of the Secretary of State is supportive of security measures and our office, county auditors, and election officials across our state, take testing of our election systems very seriously. This bill is in direct conflict with those processes and jeopardizes testing undertaken by North Dakota election officials and the U.S. Election Assistance Commission (EAC).

First, I'd like to provide an explanation of how equipment certification works at the federal level. The EAC publishes Voluntary Voting System Guidelines (VVSG) that election tabulation companies are required to follow to obtain certification. The certification process is extensive, utilizing independent, federally accredited testing labs, and can take many months to years for the EAC to certify systems. All tabulation systems are currently certified to VVSG 1.0 or 1.1. In 2021, the EAC adopted VVSG 2.0 which better defines standards. But the adoption of VVSG 2.0 in no way decertifies equipment that is operating under VVSG 1.0 or 1.1. The Secretary of State then further certifies tabulation systems used in North Dakota to ensure compliance with state law.

We have many concerns with the language outlined in this bill, beginning in Section 2, subsection 13 it states all voting systems must be certified to version 2.0 for use in this state and any system certified to 1.0 must be immediately decertified. There are no tabulation systems in the United States that are currently certified to VVSG 2.0 as this process is extensive. Election tabulation companies are now building equipment and operating systems to these standards, which then goes through EAC certification, which takes many months to years to complete. Anticipated availability of equipment certified to these standards is expected by 2027, and our office has already informed appropriators that our agency will be seeking equipment replacement at such time.

Section 2, subsection 14 further states the Secretary of State shall ensure voting systems are current regarding security patches for operating systems and antivirus software. Our equipment undergoes regular maintenance to ensure operability and compliance which we assume is the intent behind the security patch language proposed.

However, antivirus software is non-existent on our ballot tabulation equipment because it's simply not necessary. Our equipment is not connected to the internet and contains no components for such a connection. We also don't allow devices that have ever touched a network to be used on this equipment to ensure our tabulation system remains isolated. Further, our tabulation systems have other security mechanisms that prevent tampering or malicious activity should an individual attempt to tamper with the equipment. Security measures include:

- Physical security which includes use of unique tamper-evident seals to prevent tampering before, during, and after an election.
- System hardening and data encryption which prevents unauthorized USBs, restricts users to only perform necessary actions, and requires multi-factor authentication.
- Independent testing of systems from federally accredited labs, the EAC, the Secretary of State, and county auditors.

Section 2, subsection 14 states that the Secretary of State shall maintain the source code and a district chair may audit that code upon request. Source code from our vendor would have to be held in escrow to protect the security and integrity of our systems. I'm sure you can imagine the issues and concerns we have with releasing the inner workings of our tabulation systems to the general public. This alone creates a greater security risk in our election systems than any risk that exists today.

Section 3, subsection 3 of the bill discusses when public testing of our systems must occur. County auditors across our state conduct extensive logic & accuracy testing before each election to ensure ballot tabulators are accurate – there is zero tolerance for discrepancies. County auditors also complete a public test which must be completed at least 7 days before election day, where the public is allowed to view and verify the results of the test. The proposed changes outlined in this section are unworkable - moving the test to 60 days before election day – before counties have programming or ballots to complete the public test.

Section 3, subsection 5 states that the county auditor must complete a full hand count of all ballots cast in the election as part of a post election audit process. Hand counting is not more accurate, but is inefficient and would create more, rather than less, distrust in our election processes. Our office firmly believes this would undermine the trust we've been working to build in the last two years in our election processes.

Section 5 states that if a system fails security testing that it must be immediately decertified and a hand count conducted to tabulate ballots. Our systems have **NEVER** failed a security or testing requirement and operate with 100% accuracy when tabulating votes. Again, our systems are tested extensively before and after the election to

ensure all machines are working with 100% accuracy. I would argue that a hand count would not yield the same results.

Mr. Chairman, members of the committee, our systems are secure, and the citizens of North Dakota can be assured of the integrity of our systems and processes. This bill is in direct conflict with our effort to keep North Dakota elections secure by undermining our certification and testing. I urge a **DO NOT PASS** on HB 1587.

2025 HOUSE STANDING COMMITTEE MINUTES

Government and Veterans Affairs Committee
Pioneer Room, State Capitol

HB 1587
2/13/2025

Relating to election security and validation.

9:32 a.m. Chairman Schauer opened the meeting.

Members present: Chairman Schauer, Vice Chairman Satrom, Representatives Brown, Grindberg, Karls, Rohr, Schneider, Steiner, VanWinkle, Vetter, Wolff
Members absent: Representatives Bahl, Christy, McLeod

Discussion Topics:
- Committee work

9:33 a.m. Vice-Chairman Satrom moved a Do Not Pass.

9:33 a.m. Representative Karls seconded the motion.

Representatives	Vote
Representative Austen Schauer	Y
Representative Bernie Satrom	Y
Representative Landon Bahl	AB
Representative Collette Brown	Y
Representative Josh Christy	AB
Representative Karen Grindberg	Y
Representative Karen Karls	Y
Representative Carrie McLeod	AB
Representative Karen Rohr	N
Representative Mary Schneider	Y
Representative Vicky Steiner	N
Representative Lori VanWinkle	N
Representative Steve Vetter	Y
Representative Christina Wolff	N

9:35 a.m. Motion passed 7-4-3.

Representative Karls will carry the bill.

9:35 a.m. Chairman Schauer closed the meeting.

Jackson Toman, Committee Clerk

REPORT OF STANDING COMMITTEE
HB 1587 (25.1061.01000)

Government and Veterans Affairs Committee (Rep. Schauer, Chairman) recommends
DO NOT PASS (7 YEAS, 4 NAYS, 3 ABSENT AND NOT VOTING). HB 1587 was placed on
the Eleventh order on the calendar.