



# TENNESSEE VOTERS FOR ELECTION INTEGRITY

Ensuring Election Integrity for Tennessee Voters

October 11, 2021



## SINCE WE WERE LAST BEFORE YOU...

- Our research deepened more issues arisen: citizens concerned, we're constantly updating recommendations.
- Today
  - We'll tell you what citizens have told us: **vast number and growing**
  - They don't like what they're seeing with election integrity in state
    - Their ex-customer, clients, informed, but they feel
      - Legislators, government officials aren't listening to them.
  - They want assurance of Election Integrity. **How do we give it to them, you, in the election process, but today we ask you listen to what we've heard!**



## OUR PURPOSE TODAY.

- **Who we are**
  - Eight states: no 501(c)(3) no website, no funds
  - 2 former CEOs, Decade and/or 40+yr IT expert, Board/IT analyst
- **Process** Eng, net, ops, sys, ops, sys, expert, business/men
- **What we've heard** Light checks
- **Accompanions**, more secure voting model, ready for 2022
- **Assurance Risk Evaluation vs. simple recertification of machines**



## WHAT WE'VE HEARD.

- Tennessee's are seriously concerned about election integrity
- What citizens want:
  - Manage technology in the voting process
  - Official scanners are accepted to count the vote. **E-Scanners**
  - Voter rolls significantly cleaned. **the process more aggressive.**
  - Return to **direct verification, voters/clients**
  - **Directly linked and linked with social codes ASAP** - both hackable
  - **Change to hand marked input, secure ballot boxes, with unique IDs**
  - **Streets, strengthen and processes and**
  - **Stop outsourcing any portion of the voting process**

## Comprehensive Voting Model Recommendations

**01** **Pre-voting**  
Voter registration  
Voter ID

**02** **On-site**  
Voter ID  
Voter ID

**03** **Ballot**  
Ballot  
Ballot

**04** **Ballot**  
Ballot  
Ballot

**05** **Ballot**  
Ballot  
Ballot

**06** **Ballot**  
Ballot  
Ballot

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## PROBLEM: VOTER ROLL DATA INTEGRITY, MANAGEMENT ARE CONCERNING.

- Data is the model, include, connectivity
- Voter estimates - 100-10% voter registration of 18+ population on 11/3/2020
- County voter ID numbers assigned sequentially, can be reassigned
- Connected functional and security concerns
- Current voter databases in constant flux during voting periods can be an
- County may be less empowered to help maintain voter rolls, is data-well tools
- High degree mobility = high frequency of new individuals within county

**TENNESSEE VOTERS FOR ELECTION INTEGRITY**

**SOLUTION: MORE AGGRESSIVE WITH VOTER ROLL INTEGRITY.**

- List Maintenance Program – change min. requirement from 2 years to annual
- Continue use USPS National Change of Address (NCOA) System, TN Department of Safety address records, & Williamson County, continues
- Add resources and/or annual contractor access for supplementary monthly checks
  - E-Verify 8 USC(1373)(c) Fed gov. MUST report to state!
  - Local officials request to determine migration status of residents
  - U.S. Immigration Services SAVE Program via TN Dept of Safety
  - State Security's Ballot Drop/Elect. File and/or HAWK
  - County, Municipalities, residence vs commercial address
  - Tennessee Bureau of Investigation (TBI)



**TENNESSEE VOTERS FOR ELECTION INTEGRITY**

**SOLUTION: MORE AGGRESSIVE WITH VOTER ROLL INTEGRITY.**

- Enhanced review of overall Voter Registration software and process
- Database/criminal minimum voter registration address standards and check for functionality to ensure data integrity, proactive monitoring
- Data logic checks as SOPs to detect invalid and/or bad data
- Fraud Detection and Pattern Analysis to assist w/proactive roll cleanup
- Ensure Robust Election and List Maintenance Attacks
  - Data-specific database imp/vulnerability reports
  - Voter roll referring reporting of anomalies and live-item details for minimum two-year record retention
  - Supports audits and/or troubleshooting



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**PROBLEM: VOTING CENTERS ARE AN OPENING FOR FRAUD.**

- Early Voting and Election Day Vote Centers have VPN network centralized for real-time check-in
- Network connectivity allows real-time monitoring by malicious actors
- Security via VPN are still vulnerable
  - Even high-dollar orgs are hacked consistently
  - (T-Mobile, Facebook, Marriott, Colonial Oil, JBS, Yahoo, DoD/OPM, )
- Loss control of valuable precinct-level data and the ability to more quickly identify discrepancies or data oddities

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**SOLUTION: SECURE PRECINCT-BASED VOTING.**

- Return to Precinct-Based Voting
- Drop Voting Centers for both Early Voting and Election Day
- More control over ballots printed per precinct and possible ballot types
- Smaller precincts (predictable data) can better highlight any discrepancies
- Keep registration software, but go offline for Early Voting, Election Day
- Includes paper-qualified voter database reports
- Continue use of check-in artifacts to error ballot artifacts
- Eliminate the need for network connections
- Prevents real-time monitoring and exploitation of valuable voter and voting data



**TENNESSEE VOTERS FOR ELECTION INTEGRITY**

**PROBLEM: WITHOUT SECURE BALLOTS, FAKE BALLOTS CAN BE INSERTED INTO THE COUNTING PROCESS.**

- Should never depend on vendor-supplied ballots. Need secure stock
- Current BMDs have had reports in Wilson of vote switching
- Vendor-supplied BMD paper is OR coded, unable to verify/audit, vote as cast
- BMDs currently control marking paper and tabulation
- Absentee ballot: Reports of machine ballots into several state counts
- Supported by numerous affidavits
- **Underlying affirms that ballot security must be improved**

**TENNESSEE VOTERS FOR ELECTION INTEGRITY**

**PROBLEM: BALLOT MARKING DEVICES HAVE ISSUES**

- BMDs can be hacked, misconfigured or contain malware
- Unable to maintain proper artifacts, (i.e., memory cards not retained, no backup before machines reset, etc)
- Hackerman: Serious BMD vulnerabilities in 2020 Georgia. Allow ordinary voter to insert malware during voting with little likelihood of detection... spread undetected to machines, & county EMS.
- BMD technology difficult, expensive, not transparent w/proprietary vendor hardware vs secure paper costs: \$0.25 per 7M
- BMDs don't have secure paper, batches can be eliminated, replaced
- Excessive expense: County must hire tech experts at polls, BMD life span is roughly 24 months. Numerous updates by vendor/resetting machines



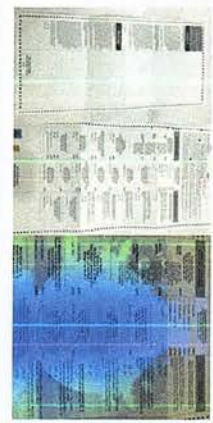
- SOLUTION: SECURE HAND-MARKED PAPER BALLOTS.**
- Security standards used by US World banks to prevent counterfeiting
  - Unique ID, watermark, holograms in transparent metal, microprinting
  - 8 "gates" of security, covert markings, unique identifier
  - Unique ID only known by the voter
    - Ensures only a finite number of ballots produced per precinct pre-election, and
    - Deters ability to create batches, print new ones, etc.
  - Provides a secure audit trail
  - Allows voter to check that their vote has been counted as cast



- SOLUTION: SECURE HAND-MARKED PAPER BALLOTS.**
- Ballot initiatives should be driven by states, not vendors
  - Proven innovative authentication services spans global industries, including
    - World banks, fuel, product authentication
  - 7 states have reviewed, embraced this ballot. 28 more states interested
  - Authentication factors can apply to absentee and in-person voting
  - Authentication of the vote should be out of the vendor's control



- SOLUTION: HAND-MARKED PAPER COUNTED BY OPTICAL TABULATOR.**
- Quotely counts all paper absentee/ballot and totals results
  - Scanner authorization/duration will have been checked via Secure Risk Evaluation
  - Separate process independent of the vendor
    - Only one optical scanner & one backup needed per precinct
  - Optical scanners must provide real-time self-auditation
  - All precinct totals must be verified to County totals and then, to State certification totals



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**PROBLEM: 70% TENNESSEE COUNTIES HAVE NO PAPER ON WHICH TO CHECK THEIR VOTE NOR COUNT/AUDIT THEIR VOTE.**

- Majority of Tennessee counties (67) use aging DREs on which to vote
- No VVPAT to check your vote in your hands separate from software/machine
- No paper ballots separate from software/machine to audit the vote
- Software can be hacked. DREs are particularly susceptible
- Affected citizens no paper: 2.6 million (56%)
- Affected citizens yes paper: 1.8 million (41%)

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**PROBLEM: MAJORITY TENNESSEANS ARE VOTING ON DRE'S**

COUNTIES WITH LAW OF SALES OF BALLOTS

COUNTIES BY VOTER TYPE

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**PROBLEM: WEAK AUDITS = FALSE ELECTION CONFIDENCE.**

- Audits only way to truly check election results
- 70% of counties can't be audited: no paper ballots held separate from machines and their software, which can be hacked
- Or those audited, only 1 of 3 process functions are examined
  - Given a false positive, one-confidence with the election audit
- The audit should be end-to-end and answer these three questions:
  - Voter intention > vote cast? Ballot scan code represent voter's vote?
  - Vote cast > vote count? Tabulator correctly record count the ballot?
  - Vote count > vote tally? Report system correctly tally tabulator votes?
- Specific type of risk limiting audit will achieve voter confidence in results.

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**SOLUTION: MANDATORY, POST-ELECTION BALLOT POLLING RISK LIMITING AUDIT OF PAPER BALLOTS TO SUBSTANTIATE THE MACHINE COUNT.**

- Hedge verify - with minimal cost - that the winner won
- Statistical, random sample, hand counted, end-2-end, Ballot Polling RLA
- 95% confidence with a few hand counted ballots in a small margin race
- If BPRLA can't confirm election results, implement ballot hand count
- A higher confidence audit vs. partner (BNC tabulator or in-person) audit.
- Unique randomized number on ballot avoids duplicates
- Update TCA 2-20-103 to achieve this extra security, ID process
- Running Monte Carlo simulations to ensure Best RLA option

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**SOLUTION: OPERATIONAL AUDIT OF EFFECTIVENESS/ EFFICIENCY OF ACTIVITIES TO ENSURE ELECTION INTEGRITY AMONG ELECTION COMMISSION OPERATIONS STATEWIDE.**

Evaluates the effectiveness, security of election integrity procedures, systems and training @ county level to include, but not limited to:

- Voter demarcation, registration and maintenance, chain of ballot custody, voter-to-voter ballot control, transparency and oversight, mandatory audits, voter verification, tabulation, compliance with state and federal laws and operational security
- State Election Coordinator, which 20% of Tennessee counties annually to audit, splitting through all counties in a 5-year period, independent auditor
- This audit • BPRLA cover all county recommendations from HASIS Task Force on Voter Verification Post-election Audit Recommendations

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**PROBLEM: ELECTION ISSUES IN WILLIAMSON COUNTY**

- Demarcation in Williamson County revealed issues
- Review many of these issues and common with other Tennessee counties
- Three categories of solutions:
  - Technological solutions.
  - Process solutions.
  - Legislative solutions

**TENNESSEE VOTERS FOR ELECTION INTEGRITY**

**SOLUTION: BEST PRACTICES REPLACE ISSUES TECHNOLOGICAL**

- Passwords managed by users & should require change on first login and if compromised. All system users should have separate IDs, forced changes.

**PROCESS**

- County election officials must ensure sufficient resource/staff are trained to operate election system fully, without machine vendor presence or interaction with the system. Williamson County relied extensively on a Dominion employee to run the scanner during absentee ballot counting. When she was called away for several hours, ballot processing stopped.

**TENNESSEE VOTERS FOR ELECTION INTEGRITY**

**SOLUTION: BEST PRACTICES REPLACE ISSUES LEGISLATIVE**

- Audits/recommendations will require legislation.

**National Integrity sources 26 General Best Practices, including:**

- Election laws/regulations can't be changed within 180 days prior.
- No automatic voter registration, no day-of-vote registration.
- No drop boxes – ease of tampering, no chain of custody.
- Ballot counting continues without pause until all votes tabulated.

**TENNESSEE VOTERS FOR ELECTION INTEGRITY**

**PROBLEM: VOTING MACHINES CAN BE HACKED.**

- Foundation of citizen concerns
- Registration is useless – checking the mark
- Process was involve EDC and VSI's and they are limited as judges
- Simple recertification will not stop the fix of consumercitizens
  - Not just eight of us saying this
  - Tennessee citizens from across the state have voiced this concern.
- Extra security steps, however, will give citizens comfort their concerns are now being addressed



**TENNESSEE VOTERS FOR ELECTION INTEGRITY**

**PROBLEM: SPECIFIC MACHINE ISSUES NATIONWIDE**

- **Dallas 2019:** Imprecise system has numerous exposed security issues/ part "Voting Village" hackathon report.
- **Texas:** SOS report denied Dominion certification for use anywhere in Texas 2020.
- **Michigan:** Auburn forensics report: "Dominion appears to be intentionally rigged with inherent errors to cause systemic fraud and influence an election."
- **Georgia:** Forensics report: "The system is riddled with errors and vulnerabilities."
- **November 2, 2020:** "Without testing the software or a being newly certified."
- **Georgia:** Cybersecurity affidavit of Henri Hurst August 24, 2020.
- Multiple system issues causing intentional votes clearly not to be counted.
- System escalates the security risks to the extreme.
- Dominion employees nearly troubleshooting via remote access to system.
- Dominion employees working the election, not Georgia election employees.



- PROBLEM: SPECIFIC MACHINE ISSUES NATIONWIDE**
- Election Assistance Commission (EAC) in March 19/20/21
  - Dominion machines can look to the internet (2/17/20)
  - Dominion Election Integrity data shows presentation video data from Dominion user manuals. Vulnerabilities open doors for fraudulent behaviors.
  - Questions to all five vendors seeking answers about security and process concerns
    - No vendor/TN Director of Elections/WCEC have answered



- PROBLEM: MACHINE CERTIFICATION PROCESS WEAK.**
- Election Assistance Commission (EAC) in March 19/20/21
  - None of five voting machine brands are certified beyond 2005 VVSG 1.0
  - Two years before snapshoots! (2015 = VVSG 1.1) (2021 = VVSG 2.0)
  - With no public details, EAC recently approved guideline changes imposed by machine manufacturers, that reduce suppliers, cost and allow wireless network connectivity in machines. Board member quit & now suing EAC over this
  - Suspectedly an independent body, EAC appointed Jessica Bowker a former Intel
  - Vendor do their own testing, then Voting System Testing Lab (VSTL) checks against 2005 standards and EAC criteria
  - Only 2 VSTLs accredited to do certifications. Pro/AVL, Votsecure, webdela



- PROBLEM: MACHINE CERTIFICATION PROCESS WEAK.**
- Machines certified BUT... it appears the Dominion Result Relay and Reporting (RRR) system (per manual):
    - Call allow mass vote changing by deleting results previously entered from secure removable media and replacing them with data from a local file... with no dual-party authentication required.
    - Reports can be published to "Public" transfer points inferring that there is at least an indirect connection to the internet
    - Remote clients can communicate with the server through Dominion, again inferring a network connection
  - Certification from vendors, Director of Elections, WCEC? No difficulties



- SOLUTION: A DIFFERENT PATH.**
- Tennessee and State Election Commission should stop in. OVA/Inte
  - EDC/SEC
  - SEC subcontractor has determined to reify all 5 brands
  - Recommend Security Risk Evaluation - versus recertification - of all brands of machinery from voting and registration side of precinct
  - Caution: Even with Evaluation, the public won't accept a vendor-controlled opaque process with flawed technology that cannot be authenticated to assure the voter their vote was counted as cast.



- SOLUTION: SECURITY RISK EVALUATION - PROCESS**
- Tennessee establishes Minimum Voting Standards Guidelines (MVS) mapped to VVSG 2.0 and includes essential requirements such as:
    - Paper ballots, protection from counterfeit ballots, not counted twice.
    - No encryption of voter selections.
    - No authentication any form of internet connection (WiFi, Bluetooth, modem) on any form of network connection beyond necessary
    - Protection against any form of network connection beyond necessary
    - "whitelisted" devices.
    - No unauthorized hardware and software utilized.
    - No tampering with software/hardware after inspection
    - Etc....



- SOLUTION: SECURITY RISK EVALUATION - PROCESS**
- SEC establishes team of 6 bipartisan IT, cybersecurity, and several contractors who sign an NDA because of proprietary nature of this work
    - NDA should give vendors comfort
  - Team evaluates VVSG 2.0 and creates M/SG, standards most critical to ensuring a secure and accurate election.
  - Approved by the SEC
  - Criteria sent each vendor to self-analyze and report back one month as to whether they fully meet, 2 partially meet, or 3 do not meet each criteria
  - Vendors describe any pertinent details or features above/beyond criteria.



- SOLUTION: SECURITY/RISK EVALUATION – PROCESS**
- Team audits each vendor on responses, checks for hardware and software issues and anywhere they believe vendor is weaker than reported.
  - Team recommendations to SEC by ranking vendors, stating which vendors are adequate to be certified, providing critical pros and cons, including:
    - Prioritize risks, determine the likelihood and impact of those risks;
    - Document vendor's ability/plans to remediate risks.
  - SEC evaluate recommendations/data and makes decision on which and how many systems would be certified.
  - Process and team concept becomes ongoing process, rotating team members for new certifications every 5 years and changes made to existing systems.
  - SEC issues report to the state concerning findings.



- SOLUTION: SECURITY/RISK EVALUATION – BENEFITS**
- Thorough check of the machinery by independent, knowledgeable cybersecurity experts that will ensure against nefarious enhancements.
  - This tells the public: The State Election Commission, County Election Commissions and the State of Tennessee all take election integrity seriously and are committed to doing everything possible to build back confidence in our election process.
  - Another example of Tennessee taking the lead nationally in election integrity.
  - Next step: Pilot test of best practices model to prove Tennessee isn't slipping with just one new wrinkle. Says: "We're all in on Election Integrity."



IN SUMMARY



- WHAT CITIZENS WANT IN ELECTION INTEGRITY:**
- More secure, comprehensive voting model with best technology:
  - Voter rolls: Protect them more
  - Precinct voting: No voting centers, no online check-in
  - Paper ballots: Hand marked, random ID watermarking, no BMD/DREs
  - Optical scanners: Resealing hand state not CR codes
  - Ballot Position Tracking/Audit: Post-election, end-to-end validation of the election process, including the vote
  - Operational Audit: Annual state audit of county election commissions
  - Chain of custody: Ballot/precinct/county/state total, physical security
  - Security Risk Evaluation of voting & registration, not registration



- WHY ITS WANTED BY TENNESSEANS:**
- Every voter wants to know that their vote counted
  - That the election was fair, not hacked, and
  - That the results truly represent the will of the people, whatever that may be
  - There are holes in our system preventing this clear outcome
  - And it starts with these practices and the voters
  - Tennessee needs to close those holes to enter Election Integrity
  - **Your customers – your citizens – are counting on you**

