TENNESSEE VOTERS FOR ELECTION INTEGRITY

Ensuring Election Integrity for Tennessee Voters

October 19, 2021

TENNESSEE VOTERS FOR ELECTION INTEGRITY

WE ARE A CITIZENS GROUP.

- Expertise in IT, info systems, data systems, auditing and processes
- Parallel group to those pursing an audit; support each other
- Our research includes (but not limited to)
  - Internal (local/state systems);
  - National (states and think tanks);
  - Manuals, courts, poll workers, legislators, committees/commissions, and
  - Consumers/citizens, open meetings

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OUR CONCLUSION: COMPROMISED SECURITY ISSUES EXIST.

- Electronic voting systems
  - System standards weaker than first smartphone (2005 vs. 2021)
  - Standards not being enforced by entities charged with doing so
  - Vendors (not citizens) control the process: ballot/tabulation/**post-election**
- Front-door vulnerabilities
  - Voter rolls and voting centers
  - Poll watchers/workers critical component; organization, training weak.
- Back-door vulnerabilities
  - Tabulating, vendor system control, post-election reporting, auditing
- State trending to more electronic machines with vendor control

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SO WHAT IS NEEDED...

- Implementation of a voting model that supports
  - Authentication of the Voter: Voter Rolls
  - Authentication of the Ballot: Ensure vote is secure, counted as cast
  - Authentication of the Count: Audit the tabulation
- Downsize technology: put voter closer to his/her vote.
- Transparent process

Comprehensive Voting Model Recommendations

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PROBLEM: FRONT DOOR

VOTER ROLL DATA INTEGRITY, MANAGEMENT ARE CONCERNING.

- Data is the most valuable commodity
- County Voter Reg ID numbers predictably assigned: can be reassigned
  - Downstream functional and security concerns
- County/State voter databases in constant flux – potentially during voting periods – can be an exploited weakness
- County may be less empowered to help maintain voter rolls vs. state-level tools.
- High citizen mobility = high frequency of move ins/outs/within county

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SOLUTION: FRONT DOOR

MORE AGGRESSIVE WITH VOTER ROLL INTEGRITY.

- County List Maintenance Program
  - Continue: USPS NCOA system; State review of TN Dept of Safety address records; Printed/web obituary resources
- Recommended updates
  - Increase frequency where legally possible and/or add specific monthly checks
  - Ensure county-level access to more maintenance resources such as:
    - E-Verify: 8 USC§1373(c) and/or more access to TN Dept Safety;
    - Social Security's Master Death File and/or HAVV;
    - County tax records (e.g., residence vs. commercial address), and

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SOLUTION: FRONT DOOR

MORE AGGRESSIVE WITH VOTER ROLL INTEGRITY.

- Enhanced review of overall Voter Registration software and process
  - Review existing State Certification processes to check for functionality that ensures data integrity, proactive monitoring, etc. AND recommend additional standards as needed
  - Data logic checks as SOPs to detect invalid and/or bad data
  - Fraud Detection and Pattern Analysis assist w/proactive roll cleanup
  - Ensure Robust Election and List Maintenance Artifacts.
    - Paper and electronic artifacts for 22 months.

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PROBLEM: FRONT DOOR

"CONVENIENT" VOTING CENTERS ARE AN OPENING FOR FRAUD.

- Require internet connectivity which can be exploited by malicious actors.
- Lose control of valuable precinct-level data and the ability to more quickly identify discrepancies or data oddities -- Where's Waldo?
- Security via VPN, etc., yet still vulnerable:
  - Even high-dollar orgs are hacked consistently:
  - (T-Mobile, Facebook, Marriott, Colonial Pipeline, JBS, Yahoo, DoD/OPM).
- Citizens have voiced desire for **SECURITY** over **CONVENIENCE** of voting centers.

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SOLUTION: FRONT DOOR

ELIMINATE VOTING CENTERS.

- Voting Centers:
  - Rely on Ballot Marking Devices (BMDs) (unneeded tech)
  - Are costly, vendor-heavy, complicated, not transparent.
- Return to precinct-based voting, which:
  - Authenticates the voter with paper check-in
  - Reduces reliance on the internet connectivity and technology
  - Eliminates possible activity of bad actors

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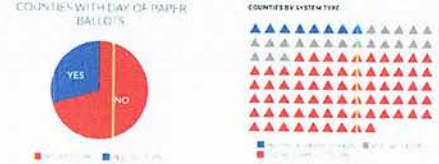
PROBLEM: MAJORITY COUNTIES DON'T HAVE PAPER (DRE'S)



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PROBLEM: WITHOUT HAND-MARKED PAPER BALLOTS, VENDORS CONTROL THE PROCESS.

- Ballot is:
  - Printed in many counties on vendor-supplied ballot paper
  - Printed by the vendor's Ballot Marking Device (BMD).
  - Controlled by the vendor's source code/software
  - Encrypted by the vendor's QR code.
  - Scanned by the vendor's tabulator
  - Tallied by the vendor's Election Management System (EMS)
- Steps of the voting process should be siloed/firewalled to aid security

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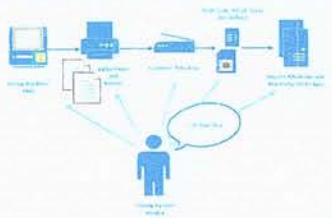

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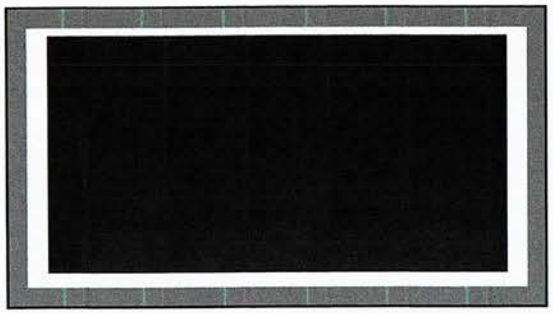
PROBLEM: WITHOUT HAND-MARKED PAPER BALLOTS, TOO MUCH DEPENDENCY ON VENDOR AND HIS TECHNOLOGY.

- Vendor control.
- Experts affirm.
  - J. Alex Halderman, UofM professor, computer science and engineering.
  - Decade pointing to problems.



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SOLUTION: AUTHENTICATED HAND-MARKED PAPER BALLOTS.

- Ballot initiatives should be driven by states, not vendors.
- AZ Rep. Mark Finchem ballot initiative; 37 other states currently interested.
  - Authentix. Worldwide currency/fuel/pharmaceuticals/misc. products.
- Ballot characteristics:
  - Embedded security gates, visible/invisible = U.S. currency.
  - Watermarked, holograms, microprinting.
  - Unique, randomized ID that:
    - Ensures finite, traceable # ballots produced ea. election.
    - Provides voter secure ID allowing voter verification online to ensure vote tabulated same as cast.

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SOLUTION: AUTHENTICATED HAND-MARKED PAPER BALLOTS.

- Transparent and cost-effective
  - Eliminates BMD and technology vulnerabilities.
  - Hand-marked, optical tabulator, self adjudication
    - Unique ID allows voter to check ballot online.
    - Ensures ballot not counted more than once.
  - Cost: $0.25 per ballot (per 3 million).

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SOLUTION: TABULATOR.

- Tabulator: Vendor should be separate from ballot vendor.
  - Firewall between the two for security.
- ADA accommodation:
  - Assist handicapped precinct voters in same manor as done in a nursing home or other off-site locality.

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PROBLEM: BACK DOOR

PER MANUAL: RESULTS TALLY & REPORTING (RTR) SYSTEM

- Can allow mass vote changing downstream:
  - Can delete results and substitute with data from local source.
  - No dual-party authentication required.
- Reports can be published to "Public" transfer points:
  - Inferring an indirect connection to the internet.
- Remote clients can communicate with server via Dominion.
  - Again inferring a network connection.
- No clarification from vendor, TN Coordinator of Elections.
- WCEC Elections Office has verified.

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PROBLEM: BACK DOOR

WEAK AUDIT.

- It audits 1/3 of the process in less than 1/3 of the counties in Tennessee.
  - Yields false election confidence. Should be end-to-end.
- What is an end-to-end audit? Three segments:
  - 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?
- Only 1/3 of Tennessee counties?
  - Only 28 counties produce paper ballots able to be audited

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SOLUTION: BACK DOOR

AN ENHANCED RISK LIMITING AUDIT.

- Mandatory, post-election ballot poling risk limiting audit of paper ballots to substantiate the machine count and verify that the winner won
  - Statistical, random sample, hand-counted, end-2-end
  - Unique randomized number on ballot supports the audit
  - 90+% confidence with few hand-counted ballots in small margin race.
  - Update in process.

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SOLUTION: BACK DOOR
OPERATIONAL AUDIT.

- Evaluates the performance of election commission operations statewide
  - Checks compliance on various responsibilities, laws, security issues.
- 20% of Tennessee counties audited annually over five-year period
- Independent auditor
- Together, both audits address all recommendations from the National Association of Secretaries of State (NASS)

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IN SUMMARY

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WHAT CITIZENS WANT IN THIS ELECTION INTEGRITY MODEL.

- More secure, comprehensive voting model with less technology:
  - **Voter rolls**: Protect them more
  - **Precinct voting**: No voting centers; no online check-in
  - **Paper ballots**: Hand-marked, random ID, watermarked, no BMDs/DREs
  - **Optical scanners**: Reading hand marks not QR codes
  - **Ballot Polling Risk Limiting Audit**: Post-election, end-2-end validation of the electronic vote count…to affirm the winner.
  - **Operational Audit**: Annual state audit of county election commissions
  - **Unrelenting chain of custody**: Ballots/precincts/county/state totals, physical accountability.
  - **Security Risk Evaluation** of machines vs. simple recertification.

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WHY ITS WANTED BY CITIZENS.

- Every voter wants to know that their vote counted
- That the election was fair and honest …and
- That the results truly represents the will of the people, whatever that may be
- There are holes in our system preventing this clear outcome
- Tennessee needs to close those holes to better ensure election integrity

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WHAT YOU CAN DO.

- Build relationships with local election commission and state reps/senators
  - Write, call, email, let them know your concerns
- State the issues
  - Advocate for study of voter roll integrity, hand-marked paper ballot vendor separate from tabulation vendor, eliminate voting centers & return to precinct voting, implement vote and report audits, shorten early voting
- Let them know: **Accuracy is more important than convenience**
- Get involved: Poll worker, poll watcher, precinct chair
- Go to meetings: Learn voting systems, read past minutes, voice concerns

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