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MEMORANDUM

TO: Commission Members

FROM: Cliff Lippard *Cliff*
Executive Director

DATE: 6 September 2018

SUBJECT: Election Study Update–Preliminary Information

In an April 2018 letter to the Commission (appendix A), Senator Niceley expressed concern about new threats to Tennessee’s voting system and requested that the Commission revisit and update its 2007 staff report *Trust but Verify: Increasing Voter Confidence in Election Results*, which examined election security in Tennessee and included several findings and recommendations (appendix B). He asked the Commission to address two specific topics:

1. The most cost-effective and efficient voter-verified paper audit trail (VVPAT) options for Tennessee counties
2. Opportunities to offset VVPAT costs with the use of Secure Electronic Transfer (SET), a system used by 35 states to ensure that data from all agencies is available to verify the accuracy of voter rolls

Previous Legislation

Since 2007, several bills have been introduced and passed affecting voting systems in Tennessee. In 2008, the General Assembly passed the Tennessee Voter Confidence Act,¹ mandating the use of precinct-based optical scanner voting systems—which scan and count voter-verified paper ballots²—on or before the November 2010 general election. After being scanned and counted, the paper ballots are securely stored, thus providing

¹ Public Chapter 1108, Acts of 2008.

² See Tennessee Code Annotated, Section 2-20-101, for definitions of “precinct-based optical scanner” and “voter-verified paper ballot”.

a VVPAT. The law was amended in 2010 to delay implementation until no later than the 2012 general election³ and was amended again in 2011 to authorize, rather than require, counties to use precinct-based optical scanners.⁴ County election commissions that use precinct-based optical scanners are required to conduct automatic audits of randomly selected voter-verified paper ballots cast in certain elections.⁵ The Voter Confidence Act applies to county election commissions, not cities, because county election commissions are required to run city elections,⁶ and cities reimburse the counties for the cost.⁷ All elections for public office in the state are conducted according to Tennessee Code Annotated, Title 2.⁸ The table on page 4 shows the 14 counties that have chosen to use equipment that produces a VVPAT and when they began using that equipment.

Two bills were introduced in 2018, but not passed, that would have required voter-verified paper ballots in Tennessee. Senate Bill 2438 by Yarbrow and House Bill 2567 by Stewart (appendix C) would have required each county election commission to use precinct-based optical scanners no later than January 1, 2020. Senate Bill 2090 by Niceley and House Bill 2300 by Beck (appendix D), would have required every precinct using direct recording electronic (DRE) machines in Tennessee to, by January 1, 2020, create a VVPAT for each ballot cast. Because the bills did not pass, counties may still choose the type of voting equipment they use.

This brief update provides preliminary information addressing Senator Niceley's request. A full update is scheduled to be complete by December 2018.

Topic 1: VVPAT Options for Tennessee Counties

Several types of voting equipment technology are currently available for local jurisdictions to use in the US:

- optical or digital scan: scanning devices that tabulate paper ballots
- ballot marking device (electronic ballot markers): a device that permits voters to mark a paper ballot

³ Public Chapter 612, Acts of 2010.

⁴ Public Chapter 301, Acts of 2011.

⁵ Tennessee Code Annotated, Section 2-20-101.

⁶ Tennessee Code Annotated, Section 6-53-101.

⁷ Tennessee Code Annotated, Section 2-12-109.

⁸ Tennessee Code Annotated, Section 2-1-103.

- direct-recording electronic (DRE) machine: a voting machine designed to allow a direct vote on the machine by the manual touch of a screen, monitor, wheel, or other device
- DRE with VVPAT: DRE machines that create a paper record that voters can review before casting ballot
- hand count: the process of counting paper ballots without the use of technology⁹

The US Election Assistance Commission (EAC) develops standards for testing and certifying voting systems, called Voluntary Voting System Guidelines (VVSG).¹⁰ According to its website, they have certified 18 vendors and 47 different voting systems in compliance with the 2005 VVSG.¹¹ Although states are not required to follow the guidelines, Tennessee, along with many other states, does and requires testing to the federal standards.¹²

The Tennessee Secretary of State's website lists the vendors and equipment currently certified according to federal standards, field-tested by the State Election Commission, and available for county election commissions to use in Tennessee.¹³ The options, provided by five different vendors, include equipment that creates a VVPAT and DRE machines with no VVPAT. As of August 2018, at least 14 counties in Tennessee are using systems that produce a VVPAT (see table).¹⁴ A list of vendors and voting systems for all Tennessee counties is included as appendix E.

⁹ National Conference of State Legislatures. "Voting Equipment." April 16, 2018.

<http://www.ncsl.org/research/elections-and-campaigns/voting-equipment.aspx>.

¹⁰ See <https://www.eac.gov/voting-equipment/voluntary-voting-system-guidelines/> and <http://www.ncsl.org/research/elections-and-campaigns/voting-system-standards-testing-and-certification.aspx>.

¹¹ See <https://www.eac.gov/voting-equipment/certified-voting-systems/>.

¹² Interview with Mark Goins, coordinator of elections, and Andrew Dodd, elections attorney, Division of Elections, Tennessee Secretary of State, August 23, 2018; and National Conference of State Legislatures, "Voting System Standards, Testing, and Certification", August 6, 2018.

<http://www.ncsl.org/research/elections-and-campaigns/voting-system-standards-testing-and-certification.aspx>.

¹³ See <https://sos.tn.gov/products/elections/voting-systems-tennessee>. The list does not include Hart InterCivic Verity Voting system, which was certified in February 2018 and provides electronic and paper voting. <https://www.prnewswire.com/news-releases/latest-release-of-verity-voting-ready-for-purchase-in-tennessee-300600888.html>.

¹⁴ Interviews with county election administrators, June and July 2018; and Tennessee Secretary of State, Division of Elections, "Voting Systems by County". <https://sos-tn-gov-files.tnsosfiles.com/forms/Voting%20Systems%20by%20County.pdf>.

Tennessee Counties using VVPAT as of August 2018.

County	Year*	Type of Equipment
Benton	2008	pre-printed optical scan
Chester	2018	ballot marking device and optical scan
Coffee	2018	ballot marking device and optical scan
Decatur	2018	ballot marking device and optical scan
Hamilton	has always used paper ballots	pre-printed optical scan
Hardin	2016	ballot marking device and optical scan
Lincoln	2018	ballot marking device and optical scan
McNairy	2016	ballot marking device and optical scan
Moore	2018	ballot marking device and optical scan
Pickett	has always used paper ballots	pre-printed optical scan
Polk	2014	pre-printed optical scan
Sevier	2018	ballot marking device and optical scan
Weakley	2018	ballot marking device and optical scan
Wilson	2016	ballot marking device and optical scan

*Some years listed are approximated because a few election administrators were not sure exactly when the county started using the equipment.

Sources: Interviews with county election administrators, June and July 2018; interview with Mark Goins, coordinator of elections, and Andrew Dodd, elections attorney, Division of Elections, Tennessee Secretary of State, June 20, 2018; and

<https://sos-tn-gov-files.tnsosfiles.com/forms/Voting%20Systems%20by%20County.pdf>.

In interviews with TACIR staff, elections administrators said they chose to replace their DRE equipment with optical scan equipment because they see the national trend

moving towards VVPAT.¹⁵ They think the equipment is more secure than systems without a paper trail, and this is the best choice going forward. They say systems are easy to use, they have received positive feedback from voters, poll workers, and elected officials, and ballot storage has not been an issue or cost burden. Other counties, including Cheatham, Davidson, and Shelby counties,¹⁶ are considering or are in the process of replacing their voting equipment with equipment that produces a VVPAT. The state coordinator of elections, Mark Goins, speaking at the Tennessee Association of County Election Officials conference in June 2018, recommended that counties delay purchasing DREs or move to VVPAT when they are ready to replace their equipment. This recommendation is based on the current legislative environment and vendor focus on systems with VVPAT.

State and local elections officials agree that it is difficult to compare voting equipment costs because counties' needs vary, each county negotiates its own contract with the vendor, and various factors affect initial and ongoing costs, such as whether the ballots are pre-printed or blank before voting. Election administrators in counties using or considering VVPAT systems are confident that creating a VVPAT is critical regardless of the cost.

All but five states are using some type of paper ballot system in at least some jurisdictions.¹⁷ Eighteen states use paper ballots; 14 states use a mix of paper ballots and DREs with VVPAT; three states use a mix of paper ballots and DREs with and without VVPAT; seven states, including Tennessee, use a mix of paper ballots and DREs without VVPAT; and three states vote by mail.

Topic 2: Opportunities to Offset VVPAT Costs with the Use of Secure Electronic Transfer (SET)

In addition to implementing online voter registration in 2017,¹⁸ Tennessee is implementing a secure method to electronically transfer data from the Department of

¹⁵ Interviews with election administrators in Benton, Chester, Coffee, Decatur, Hardin, Lincoln, McNairy, Moore, Pickett, Polk, Sevier, Weakley, and Wilson counties, June and July 2018.

¹⁶ Interviews with Pam Frejosky, election administrator, Cheatham County, June 28, 2018; Jeff Roberts, election administrator, Davidson County, August 7, 2018; and Linda Phillips, election administrator, Shelby County, May 30, 2018.

¹⁷ Verified Voting. "The Verifier – Polling Place Equipment – November 2018." <https://thevotingnews.com/verifier/>.

¹⁸ Public Chapter 936, Acts of 2016. See also <https://govotetn.com/> and <https://sos.tn.gov/news/tennesseans-can-now-register-vote-online>.

Safety driver services division in 2018. The system is in place for transactions conducted online through e-Services and will launch soon at self-service kiosks.¹⁹ Secure electronic transfer (SET), sometimes also called electronic registration, digitally transmits voter registration data from state agencies that process voter registration applications to county election commissions, which use the data to verify and update voter rolls. Making the process electronic could make it easier to register, improve accuracy of voter rolls, and potentially save money.²⁰

While studies have found that state and local governments could save costs with SET, in a June 2018 interview with Commission staff, Coordinator of Elections Goins said implementing the secure system to electronically transfer data increases, not decreases, cost for state government because of the setup cost. In its 2015 study *Voter Registration in a Digital Age: 2015 Update*, the Brennan Center for Justice found that although not all states measured their cost savings, they agreed that both electronic and online registration result in cost savings for state and local governments, most commonly because of reduced staff time for data entry at the county level. One survey of Tennessee election officials conducted in January 2018, found, based on responses from 22 of all 95 counties, that moving away from paper-based voter registration could reduce costs both for state and local governments while improving security.²¹ It remains unclear whether the cost savings from SET over time will offset the cost of VVPAT.

Federal Government Action on Election Security

In 2002, Congress enacted the Help America Vote Act (HAVA), which provided \$3 billion to states to replace punch card and lever voting systems with new technology and mandated statewide voter registration systems. Tennessee received over \$57 million²² and, as mandated, used the funds to replace voting equipment and implement a statewide voter registration system. Of the approximately \$28 million that Tennessee

¹⁹ Interviews with Mark Goins, coordinator of elections, and Andrew Dodd, elections attorney, Division of Elections, Tennessee Secretary of State, June 20 and August 23, 2018.

²⁰ Maluk, Holly, Myrna Perez, and Lucy Zhou. 2015. *Voter Registration in a Digital Age: 2015 Update*. Brennan Center for Justice.

²¹ Doug Chapin and Damon Daniels. 2018. "The Cost Savings of Reform: An Analysis of Local Registration-Related Costs in Tennessee" and email received from Doug Chapin, director, Election Academy, Humphrey School of Public Affairs, August 8, 2018.

²² Including interest earned, the total is over \$65 million. US Election Assistance Commission. 2017. *FY 2016 HAVA Grant Expenditure Report*. <https://www.eac.gov/documents/2017/08/16/fy-2016-hava-grant-expenditure-report-payments-state-expenditures-report/>.

has not yet spent, about \$15 million is designated for new voting equipment and \$13 million for voter registration system updates, administration, accessibility, and training expenditures.²³ While both houses of Congress are considering elections security legislation, in March 2018, President Trump signed the Consolidated Appropriations Act of 2018, which includes \$380 million in grants for states to improve and secure the election system, in addition to the funds approved in 2002. Among other authorized actions to improve security, states can use the funds to replace non-VVPAT equipment with VVPAT equipment. Tennessee is eligible to receive \$7.6 million of these funds.²⁴

In January 2017, the Department of Homeland Security (DHS) designated elections as “critical infrastructure” to more formally make election infrastructure “a priority for cybersecurity assistance and protections” and allow DHS to provide cybersecurity assistance to state and local election officials who request it.²⁵ However, many state and local election officials question and oppose the designation because of concerns and uncertainty about what the designation means. The first Government Coordinating Council for the new Election Infrastructure Subsector convened in October 2017, a collaboration between DHS, the Election Assistance Commission (EAC), the National Association of Secretaries of State (NASS), and state and local election officials, to provide “a well-tested mechanism for sharing threat information between the federal government and council partners, advancing risk management efforts, and prioritizing focus of services available to sector partners in a trusted environment.”²⁶ Tennessee’s Coordinator of Elections Mark Goins is a member of the Council. The DHS also launched its Elections Infrastructure Information Sharing and Analysis Center (EI-ISAC) in March 2018,²⁷ which provides elections-focused cyber defense assistance to state and local elections offices nationwide. Over 450 local election offices and all 50 states are members.²⁸

²³ Interviews with Mark Goins, coordinator of elections, and Andrew Dodd, elections attorney, Division of Elections, Tennessee Secretary of State, June 20 and August 23, 2018.

²⁴ Including the 5% state match, the total award available to Tennessee is \$7.9 million. See <https://www.eac.gov/2018-hava-election-security-funds/>.

²⁵ US Department of Homeland Security, “Statement by Secretary Jeh Johnson on the Designation of Election Infrastructure as a Critical Infrastructure Subsector”, January 6, 2017. <https://www.dhs.gov/news/2017/01/06/statement-secretary-johnson-designation-election-infrastructure-critical>. See also <https://www.dhs.gov/topic/election-security>.

²⁶ See <https://www.dhs.gov/news/2017/10/14/dhs-and-partners-convene-first-election-infrastructure-coordinating-council>.

²⁷ See <https://www.dhs.gov/sites/default/files/publications/Issue%20%20Communique.pdf>.

²⁸ See <http://www.naco.org/articles/ei-isac-protects-nation%E2%80%99s-voting-infrastructure>.

On May 8, 2018, the US Senate Select Committee on Intelligence released a summary of its initial findings and recommendations from its investigation into Russian targeting of election infrastructure during the 2016 election (appendix F). Several of the findings and recommendations concern election-voting equipment and are similar to TACIR's 2007 findings and recommendations, including a strong recommendation for VVPAT.

Appendices

Appendix A: April 2018 letter from Senator Niceley

Appendix B: *Trust but Verify: Increasing Voter Confidence in Election Results*, 2007 report brief

Appendix C: Senate Bill 2438 by Yarbrow and House Bill 2567 by Stewart

Appendix D: Senate Bill 2090 by Niceley and House Bill 2300 by Beck

Appendix E: Voting Systems by County, Tennessee Secretary of State

Appendix F: US Senate Select Committee on Intelligence May 8, 2018 findings and recommendations