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House Committee on Veterans Affairs & Emergency Preparedness
Senate Committee on Veterans Affairs & Emergency Preparedness
Joint Informational Meeting
February 11, 2019
1 p.m. G-50 Irvis Office Building
Commonwealth Avenue, Harrisburg, PA

Written Testimony of
Lt. Colonel Anthony Shaffer
February 8, 2019

Thank you Chairmen Barrar, Regan, Sainato and Williams, and members of the Committee for allowing me to submit written testimony in connection with this Joint Meeting to discuss national security interests and voting machines. I write to address the national security implications of Pennsylvania's continued use of insecure and vulnerable paperless voting systems. Because of these urgent concerns, it is imperative for the Pennsylvania General Assembly to appropriate adequate funding to assist counties in replacing their systems before the 2020 election.

I am a cyber operations expert, having worked as a Senior Intelligence Operations Office with the FBI, NSA and CIA to develop both offensive and defensive cyber capabilities. I created and directed Task Force STRATUS IVY, the first undercover offensive Cyber Unit at the Department of Defense. I continue to advise the Pentagon, the Army War College and multiple members of the current Cabinet on cyber threat and intervention issues. Frequently I am interviewed on this and related threat issues throughout the spectrum media - electronic and print because of my 40 years of experience in national security, cyber security, and cyber defense.

My purpose here today is twofold: First, I am here to warn the Pennsylvania General Assembly that the Keystone State's elections are an open target for foreign interference. We cannot afford to have the results of elections questioned, especially in an important swing state like Pennsylvania, which is certainly a target of opportunity for anyone wanting to undermine the validity of U.S. elections. Pennsylvanians deserve to be confident their votes will be cast as intended and counted as cast. That's why Pennsylvania should support the Trump Administration's endorsement of paper ballots and answer Homeland Security Secretary Kirstjen Nielsen's call for "all state and local election officials to make certain that by the 2020 presidential election, every American votes on a verifiable and auditable ballot."

Second, in light of Governor's Wolf budget presented this past Tuesday, I write to urge the General Assembly to include adequate funding in the budget for counties to move forward as expeditiously as possible to replace their current aging and vulnerable voting systems. Local election officials, and national advocacy groups believe the cost to replace the existing equipment, including training, voter outreach and logistical needs for deployment is $150 million. The Governor's budget asks for only $15 million this year, 10% of the actual estimated cost, and would include an additional $15 million each year over the next 4 years. Even as a fiscal conservative, I see this proposal as insufficient, and too vague to allow counties to adequately plan their budgets and replace vulnerable equipment ahead of the 2020 election. Because we count our votes on computers, it is vitally important, now more than ever, to invest

in protecting our national security. As someone who has spent a career in the trenches of cyber warfare, I understand the threat and I'm here to urge you to stand strong in our national defense.

By way of background, Pennsylvania uses two basic kinds of electronic voting systems: 1) Direct recording electronic (DRE) or 2) optical scan systems. Both types of systems are computers but with a significant difference: optical scan systems incorporate a voter-marked paper ballot, marked either with a pen or pencil or with a ballot marking device and that ballot is retained for recounts or audits. Optical scan systems leverage the speed of the computer to report unofficial results quickly. The paper ballots provide a way to check that the computer reported the results accurately either by sampling them in an audit or hand counting the paper ballots if necessary. ***Seventeen counties in Pennsylvania already benefit from the security protection of paper ballots.***

It is my judgment that Pennsylvania must act PRUDENLY to both standardize the best practices and select best technology to protect the sacred right to vote for all citizens of Pennsylvania.

Unfortunately, a majority of Pennsylvania voters use computers that record their vote choices directly to computer memory with no other record of their choice. These kinds of computers cannot be audited, or recounted. And, because they are programmed by other computers, they may be indirectly connected to a network even if they themselves are not connected to the internet.

It's these paperless electronic voting systems that must be replaced as soon as possible. A computer voting system that incorporates a paper ballot provides a way to check on the results of the computer. That check is also a critically important step in the process of shoring up the legitimacy of our elections. Pennsylvania should institute mandatory routine post-election audits that use statistical methods to verify the accuracy of the reported results. Without these steps, our elections will continually be dogged by legitimacy questions at a time when our local election officials do not need to be hampered by such questions.

Pennsylvania will be the only swing state without paper records of the intent of voters for the 2020 election unless we act soon. Election security experts and cyber experts like me support electronic voting systems only if they incorporate voter-marked paper ballots (whether marked by hand or device) and those paper ballots are retained for recounts and ballots. Integrity in process and reliable audit process are paramount.

As I have done in Washington, I am here to warn the Pennsylvania General Assembly that paperless DREs are an open target for foreign interference in our elections; whether the threat emanates from the Chinese trying to undermine President Trump or the Russians doing the opposite. It could as well be the Iranians or the North Koreans that try to intervene. We cannot afford to have the results of elections questioned, especially in an important swing state like Pennsylvania. Because of its vulnerable technology, Pennsylvania is certainly a prime target and presents opportunity for anyone wanting to undermine the validity of US elections. It is critical that paperless DRE machines be replaced in time for the 2020 election.

As has been its history, Pennsylvania is truly the keystone state. In 2020, the election could be decided by Pennsylvania and its electoral votes. If you remember the Florida election

disaster of 2000, with the infamous hanging chads technology and the negative reputation Florida had following that election, you might want to consider making this investment for Pennsylvania, so that Pennsylvania does not suffer the same fate as Florida in 2020. This is the appropriate time and the geopolitical climate to recognize that the most secure technology mix in all new voting systems will be a ***technology to count votes rapidly***, but that is still safe in that it is able to provide paper backups if necessary.

The solution to this problem is known and achievable. The threats to the existing process are known and real.   It is not a political issue or a partisan issue. Rather, it is an issue of national security and acting to protect a sacred right. Even though election administration discussion sometimes veers off into the political realm, election security is not one of those issues. Election security is national security and these committees, which are charged with emergency preparedness, should do everything necessary to ensure that Pennsylvania is ready to meet this threat, mitigate the risk, and protect our democracy from outside interference. I ask you to stand with me in calling for adequate funding in the amount of $150 million to make sure that paper ballots are everywhere in Pennsylvania in 2020.