Legislative Report

West Virginia Uniformed Services and Overseas Citizen Online Voting Pilot Project

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West Virginia Secretary of State

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Introduction

In anticipation of Federal requirements to improve ballot access for uniform service members, their dependents, and overseas citizen voters--those covered by the Uniformed and Overseas Citizen Absentee Voting Act (UOCAVA), in late 2009 the West Virginia Legislature authorized the Secretary of State to conduct a Uniform Services and Overseas Voter Pilot Program. Those anticipated federal requirements were subsequently detailed in the federal Military and Overseas Voter Empowerment Act of 2009 (MOVE Act).

As part of the West Virginia legislation, the Secretary of State was charged with evaluating the pilot program for functional effectiveness and to terminate the program should it fail to "adequately and securely ensure that absent uniformed services voters and overseas voters have their absentee ballots cast and counted in the primary election". §3-3B-3 W.Va. Code. This report represents the final evaluation of the pilot program, along with recommendations for future action on this subject.

To date, no significant deficiencies or concerns have been identified with the West Virginia online voting pilot. However, significant online voting-related events elsewhere in the nation have an impact on the final analysis of the project and perhaps on the recommendations for continuation. Furthermore, West Virginia partnered with the Federal Voting Assistance Program on a very similar pilot which provided electronic delivery of ballots to UOCAVA voters. An evaluation of that partnership will be incorporated into this summary to provide a 360-degree analysis of UOCAVA voting options.

Executive Summary

Process

Following the first phase of the online voting pilot project, completed during the 2010 primary elections, an interim project report was submitted to the legislature recommending passage of legislation to allow additional counties to participate. Upon review of the pilot progress to-date, the legislature passed an expansion bill and several counties expressed interest in joining the original five pilot counties: Jackson, Kanawha, Marshall, Monongalia and Wood. After analysis of projected numbers of UOCAVA voters and other viability factors, three additional counties were added to the pilot program: Mason, Monroe and Putnam. Prior to program acceptance, each county submitted a letter of request to participate in the pilot and agreed to the pilot program terms. The two previously-approved online voting system vendors, Scytl-USA and Everyone Counts, Inc., made presentations to new participant counties and each acquired additional pilot project partner counties. Once the pilot counties and their partner project vendors were identified, the Secretary of State's office moved into its capacity as the oversight body responsible for ensuring the pilot was conducted in accordance with the law. The individual counties were responsible for negotiating the specific terms of the pilot with their respective project vendor partners.

Success or failure of this pilot partially hinged upon the ability of voters to know about the existence of the program and how to participate. Reaching a population that, by definition, is scattered around the globe remains a challenge. However, now that all states are required to provide electronic ballot transmission options to UOCAVA voters, there should be a gradual increase in the awareness of the various absentee voting methods currently available to both the uniformed services and overseas citizen communities. This should lead to improved participation rates in any electronic voting option adopted by the state.

To reach the desired communities during the conduct of the pilot, the Secretary of State's Office and partner counties used a three-pronged approach: 1) targeted broad media outlets – RSS feeds by the Federal Voting Assistance Program, communications produced by organizations such as the Overseas Vote Foundation, Democrats Abroad, Republicans Abroad, and military spouse magazines, 2) targeted small-group outreach – presentations and absentee ballot application distribution to West Virginia military installations and guard units, and 3) individual contact – communications sent directly from county clerks to known UOCAVA voters designed to educate them about electronic voting options.

Results

As shown in the following chart, during the 2010 General Election, 165 UOCAVA voters in the eight participant counties completed an absentee ballot application indicating they would like to receive their ballot electronically. Of these applicants, 125, or 76%, cast their ballots using the online voting pilot process. This number of participants represents a 162% increase over the participation in the primary election. Adjusting for the expansion in the number of counties involved in the pilot (an increase from five to eight counties for a 160% increase), the 162% increase in the number of voters participating in the pilot shows similar numbers of voters per county participated in the general election when compared to the primary election (60% more counties – 62% more voters). Clerks from the five original counties reported most of the voters using the program in November were the same voters who participated in the primary, indicating their acceptance of online voting as a safe and viable option.

The 76% online-vote return rate far exceeds the average 58% absentee ballot return rate experienced by counties using standard mail as the ballot transmission method. Drawing conclusions from this enhanced return rate in both the primary and general elections, it would appear that voters having electronic access to their ballot have a higher-than-average likelihood of returning a completed ballot in time to be included in the final vote totals.
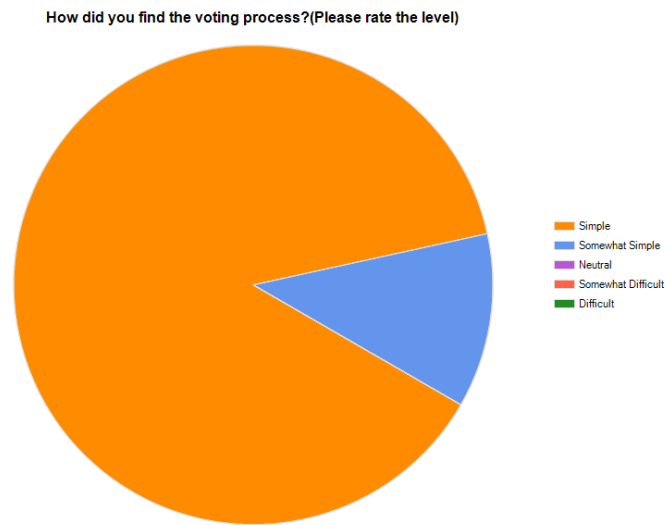
2010 General Election

Online Voting Participation Rates

County	Online Pilot Absentee Applicants	Votes Cast	Vendor	Percent Votes Cast
Jackson	13	10	Scytl	76.92%
Kanawha	41	35	Everyone Counts	85.37%
Marshall	31	9	Scytl	29.03%*
Mason	3	1	Scytl	33.33%
Monongalia	22	22	Everyone Counts	100.00%
Monroe	3	3	Everyone Counts	100.00%
Putnam	16	15	Everyone Counts	93.75%
Wood	36	30	Everyone Counts	83.33%
TOTALS	**165**	**125**		**75.76%**

Marshall County reported a number of UOCAVA voters returned from overseas/deployment after submitting a Federal Post Card Application for an Absentee Ballot (valid for one calendar year) and subsequently voted at the polls on Election Day. Several others took advantage of alternate voting methods, including the FVAP pilot, resulting in an apparent low ballot return rate. The above chart only represents UOCAVA voters who utilized the online voting pilot system for ballot access and submission.

According to a post-election survey, voter satisfaction with the online voting pilot program remains high. Of 34 survey respondents, 100% rated the system's ease of use as "simple" or "somewhat simple."

How did you find the voting process?(Please rate the level)

- Simple
- Somewhat Simple
- Neutral
- Somewhat Difficult
- Difficult

Survey respondents learned of the online voting pilot project through diverse methods, including: Democrats Abroad, Military Voting Assistance Officers, a "tweet" from the Secretary of State, and the American Forces Television Network, among others. The primary source of information remains the voter's local County Clerk. This list demonstrates the benefits of using traditional and non-traditional communication methods when interacting with military and overseas citizens.

Security

In today's world, and particularly as it relates to voting, the most important concern in the selection or development of an on-line, web-based application is security. As soon as an application is available and utilized, it is potentially vulnerable for any number of risks. Therefore, it is critical that on-line voting systems be continuously monitored and updated to correct any identified security weaknesses or to include new capabilities.

The two participating online voting pilot vendors are each registered with Dunn and Bradstreet and are familiar names in the Election Systems arena. Scytl has been a world-wide leader in election-related applications since 1994 and Everyone Counts is an established on-line systems business specialist.

The online voting systems were running on redundant servers, located locally and remotely. Each system uses 2048-bit encryption, a Secure Socket Layer access to the application (a method for securing communications between a client and a server), and was developed to serve West Virginia-specific requirements with each using different programming languages and system design architectures.

The on-line voting applications use a form of cryptography, including separate encryption/ decryption algorithms, for creating keys to link the voter data with ballot data. While neither of the two companies has submitted their processes for validation by the National Institute of Standards and Technology's (NIST) Cryptographic Algorithm Validation Program (CAVP), there is no current requirement for this review.

All data that has been provided or received by each of the vendors has been handled by a minimal number of individuals, who are bound by a Confidentiality Statement executed prior to the transfer of voter data. Each vendor developed distinctive methods for purging all voter-related data from their systems following the completion of the pilot program. A copy of all data requiring retention or archival was provided to the Secretary of State before being purged from the vendor's files.

In summary, each vendor demonstrated unique proficiencies; with the only true constant being those security measures utilized to provide secure access to the data by the voter. The disparate practices served as another layer of security—any outside attempt at unauthorized access would require knowledge of each of the systems in order to adversely impact the pilot as a whole.

Findings

There is no doubt that online voting is a popular option for those voters having the opportunity to utilize the full system. The process is convenient-- allowing the voter to cast a ballot at a time suitable to the time zone in which he is currently located. The process is efficient-- there is no need to print a ballot, travel to a postal facility or access a fax machine. The process is adaptable--accessible to users in a variety of circumstances, including those with limited access to printers, faxes, or traditional mail systems. Following are some of the comments received from online voters:

> *"Thank you for allowing Monroe County as a Pilot Program in Voting Online. I am presently in Iraq on assignment with Operation Iraqi Freedom and this online voting process gave me a chance to Vote here while in a Combat Zone. Many of our soldiers last election did not have their vote counted due to being overseas in a combat zone. That was wrong for their vote Not to count. This way that you have developed is excellent. Thank You."*

> *"I will be working in the Kingdom of Saudi Arabia for at least the next two years. This program has enabled me to still cast my vote from 8500 miles away. I have nothing but praise for this system."*

In order to fully evaluate voting options available to UOCAVA voters and to ensure MOVE Act compliance in all 55 West Virginia counties, the Secretary of State's office participated in an online "ballot delivery" pilot project in conjunction with the Department of Defense and the Federal Voting Assistance Program (FVAP). This program differed from the online voting project in two key areas. First,

the voter was required to print the ballot prior to marking, thereby losing the automatic "overvote" warning mechanism incorporated into the online voting pilot. It is important to note this loss of utility was neither by design, nor due to a failure of the state, but was a function of an inability to obtain individual county ballot data from the ballot-preparation vendor in time for the FVAP project's electronic ballot-delivery vendor to activate this function. Methods to address this issue are addressed later in this report.

The second and perhaps most significant difference was the method of ballot return. Under the FVAP pilot, the voter was required to print the ballot and then return by standard mail, fax or e-mail. Use of standard mail reintroduces the return travel-time and post-mark issues sought to be eliminated by the online voting pilot project. The remaining two ballot-return methods, fax and e-mail, require the voter to waive the right to a secret ballot. Online ballot submission addresses both of these shortcomings.

A substantial benefit of both pilot projects was the integration of a ballot-tracking mechanism into the online portal used by the voter for ballot access. The MOVE Act required states to provide this service to UOCAVA voters, essentially allowing the voter to see when their ballot was mailed or transmitted to them and when it was received by the local election official. This system would also indicate if the voter's ballot was rejected for any reason. Any future program will need to incorporate a free-access ballot tracking mechanism, as required by law.

An additional feature of both pilot programs is the ability to collect and analyze a variety of data sets related to UOCAVA voters. After each federal election, states are required to collect and report several statistics related to military and overseas voters. The online voting pilot project allowed the state and the participant counties to see the number of times the system was accessed by voters and an audit log of all activity on the site (important note: nothing in these data sets included any information regarding the content of the voter's ballot). The FVAP pilot allowed similar reporting for the ballot-delivery portion of the absentee process. These reporting features save the time and effort required to collect data from individual counties.

During the 2010 election cycle, thirty-one states provided military and overseas voters enhanced ballot access. This included electronic delivery of ballots, online access to ballots, and a variety of electronic ballot return options. The District of Columbia planned an online voting pilot program similar to the pilot being conducted in West Virginia. However, the DC Board of Ethics and Elections (DCBOEE) chose to utilize an "in-house" program developed using open-source technology. Prior to deployment of the system, the DCBOEE staged a public test of the system allowing any individual to request credentials to enter the system and cast a test vote. During this public test, a class of graduate school students successfully "hacked" the vote system and exposed some internal design flaws. Based on this testing

result, the DCBOEE chose to abandon the online voting pilot for the 2010 general election cycle. This experiment prompted several press inquiries regarding the West Virginia pilot. Secretary Tennant explained that the systems in use in West Virginia were quite different than the DC open-source system and that the West Virginia systems incorporate a number of safeguards that would allow any suspect ballots to be segregated (while still encrypted) for further investigation. She noted that any attempt to "hack" or otherwise interfere with the online voting program is a felony offense, punishable to the full extent of the law. Rigorous ballot safeguards were in place comparable to those in place for all voting systems in use in the state.

Even before the DC online voting test problems, several well-known internet security experts had voiced concerns regarding the safety and advisability of online voting programs. At a conference hosted by the Federal Voting Assistance Program, NIST and the U. S. Elections Assistance Commission, several prominent computer experts expressed concerns about internet-based voting. Their comments centered on national-security aspects; would a large-scale internet voting program be an attractive target to an outside entity or a "joy-hacker" (someone who hacks systems simply to prove a point)? They also expressed concerns about a "slippery slope," wherein internet voting is seen by the general population as a convenient voting method, increasing the demand for this service but, by the same token, increasing the desirability as a target. Future program considerations will require an evaluation of these concerns and the potential costs of additional security measures, if warranted.

A key finding of the collective pilot projects is the essential need for West Virginia to retain greater control over ballot data collection and ballot production processes. Under current practice, individual counties provide ballot data primarily to a single vendor in the state who serves as a subcontractor for the state's voting equipment vendor. The state provides state-level office data to this vendor, as well. The vendor then creates a comprehensive database of candidates, ballot issues, and related ballot data in order to produce the ballots for the respective counties. Each county then reviews their ballot format and content and authorizes ballot production and programming of ballots onto the electronic voting equipment or into optical scan counting devices.

This practice does not support the new requirements of the MOVE Act (as adopted by the West Virginia Legislature) which mandate the availability of an electronically-transmittable ballot at least 46 days prior to a federal election. The non-centralized collection of the data caused a significant delay in the availability of the data in a format supported by the state's selected ballot delivery vendors. Additionally, questions arose as to the proprietary rights to the ballot data and issues involving vendor-to-vendor data transfers.

Ideally, ballot data collection would become a centralized function tied to a variety of other internal functions. Central collation of ballot data would allow the state to integrate this same information into election night reporting systems, online election results, preparation of certification documents, and automation of a variety of ballot preparation and candidate processing functions. Centralization will contribute to the goal of uniform practices and standardization of data to ensure equal protection for voters and candidates for office.

Secretary of State's Recommendations

After consideration of the many factors involved in the conduct of this pilot, including voter participation and feedback, security considerations, cost-per-voter, legislative mandates and administrative requirements, I recommend a study committee be convened to review each of these factors in depth. I further recommend that this study committee include representatives from the County Clerks' Association, internet security experts – including internal Information Technology staff, representatives of the uniformed services and overseas voter communities, and administrative staff from the elections division. Since multiple vendors instituted a variety of programs to provide MOVE Act solutions around the nation, it may prove beneficial to review the varying options available and evaluate system enhancements being developed following the initial system deployments.

I propose the study committee be charged with reviewing proposed vendor solutions, taking into account each of the administrative factors mentioned above and considering all competing options for ensuring West Virginia remains in full compliance with the requirements of the MOVE Act and continues to provide free, fair and secure voting options for UOCAVA voters. The committee should additionally be charged with providing a summary of findings and a recommendation for action to the legislature at the conclusion of their analysis in a time and manner that would support the administration of any upcoming election cycle.