

DEFENSE HUMAN RESOURCES ACTIVITY FEDERAL VOTING ASSISTANCE PROGRAM

2010 Electronic Voting Support Wizard (EVSW) Technology Pilot Program Report to Congress

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Federal Voting Assistance Program

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Executive Summary

The Federal Voting Assistance Program (FVAP) submits this report on the conduct of the Electronic Voting Support Wizard (EVSW) pilot project for the 2010 General Election. The enclosed report and associated findings are required pursuant to section 589 of the Military and Overseas Voter Empowerment (MOVE) Act of 2009.¹

The EVSW pilot project provided qualified Uniformed and Overseas Citizens Absentee Voting Act (UOCAVA) voters the ability to receive their individual ballot electronically, mark it online, and return it through traditional postal methods. Of the almost 40,000 ballots cast by UOCAVA voters rejected during the 2008 election, more than 43 percent failed to meet State-prescribed deadlines for ballot receipt. Another 300,000 ballots were never received by their local election official.² The purpose of this pilot project was to address the significant time required for military and overseas citizens to cast a ballot successfully. The EVSW pilot project demonstrated the value of delivering absentee ballots electronically to military and overseas citizens by reducing the traditional mail transit time by half.

At a cost of \$1.77 million, the EVSW pilot project facilitated military and overseas citizen voting during the 2010 General Election in participating local jurisdictions across 17 States with a total of 2,616 ballots downloaded from these pilot systems. Throughout the conduct of the project, State and local election officials expressed a desire for more flexibility with specifying their requirements and directly interacting with support providers. The ability to secure candidate information in a readily accessible format continued to be a challenge for project participants. Based on the findings from this pilot project, FVAP recommends the following:

FVAP should examine the use of grants to assist States as a method of further encouraging this type of solution for military and overseas citizen voters. FVAP's experience demonstrated that this type of funding activity alleviates the frustration experienced by many of the States with the Federal acquisition process.

FVAP should examine ways to enable greater data standardization to support this type of service including the potential development of a software tool to assist election officials with preparing data for electronic display.

Overall, the EVSW pilot project was successful in terms of its service as a technological proof-of-concept and provided valuable input for FVAP to consider for future pilot projects as authorized by the MOVE Act. Due to the limited number of ballots observed during this pilot, further research and analysis is necessary to determine if this type of solution will increase the rate of military and overseas citizens to cast a ballot in a Federal election successfully.

¹ 42 U.S.C. § 1973ff-7(d).

² Uniformed and Overseas Citizens Absentee Voting Act, Survey Findings, November 2009, United States Election Assistance Commission.

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Project Overview

Background

Of the nearly 40,000 ballots cast by Uniformed and Overseas Citizens Absentee Voting Act (UOCAVA) voters that were rejected during the 2008 election, more than 43 percent were rejected due to the failure to meet State-prescribed deadlines for ballot receipt. Another 300,000 ballots were never received by their local election official.³

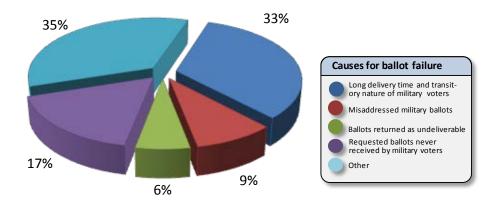


Figure 1. Hindrances to military voters in the 2008 general election

Improving UOCAVA voter success rates is a high priority for the Federal Voting Assistance Program (FVAP), with a goal of bringing the percentage of UOCAVA ballots successfully cast in line with the general absentee population's rate of 91 percent by 2016. The Electronic Voting Support Wizard (EVSW) pilot project brings FVAP closer to this goal by serving as a means to explore the practical use of technology to streamline the voting process for UOCAVA voters by cutting the overall transit time by fifty percent.

Section 589 of the Military and Overseas Voter Empowerment (MOVE) Act⁴ authorizes the Department of Defense (DoD) to create one or more pilot programs to test new technologies that would help with the voting process. Based on this authority, FVAP created and implemented the EVSW pilot project for use in the November 2010 General Election. The EVSW systems allowed absent military and overseas citizen voters to access their full ballot online, download it, mark it, print it, and mail the ballot back to their jurisdiction. This effectively cut the transit time in half, alleviating the difficulties associated with long delivery times experienced via traditional postal mail.

This report captures information learned during the project from interviews with FVAP staff, State officials participating in the pilot project and feedback from those involved with

³ Ibid.

⁴ 42 U.S.C. § 1973ff-7

procurement and project management.⁵ This report draws on this information to describe—for all phases of the project—what was successful, what was unsuccessful, and what can be done in the future to ensure greater success in similar projects.

The UOCAVA of 1986 was amended by the MOVE Act,⁶ imposing additional requirements on the DoD on behalf of absentee voters to:

- Assist military and overseas voters in exercising their right to vote;
- Assist State and local election officials in complying with the requirements of Federal law and in providing equal voting opportunity for military and overseas voters; and
- Develop a technology pilot program to assist military and overseas voters with the absentee voting process.

A key provision of the MOVE Act requires all States to "use methods of electronic communication for sending electronic information, voter registration and absentee ballot applications" and to "establish procedures for transmitting ballots by mail and electronically."⁷ To serve as a catalyst for the States to comply with these provisions, section 589 of the MOVE Act (title 42 U.S. Code section 1973ff-7) allows the Presidential designee to establish one or more pilot programs that would test "new election technology" for the benefit of absent and overseas Service members claiming rights under UOCAVA. Section 589 allows any pilot program pursued under these provisions to consider any of the following elements:

- 1. The transmission of electronic voting material across military networks;
- 2. Virtual private networks, cryptographic voting systems, centrally controlled voting stations, and other information security techniques;
- 3. The transmission of ballot representations and scanned pictures in a secure manner;
- 4. Capturing, retaining, and comparing electronic and physical ballot representations;
- 5. Utilization of voting stations at military bases;
- 6. Document delivery and upload systems; and
- 7. The functional effectiveness of the application or adoption of the pilot program to operational environments, taking into account environmental and logistical obstacles, and State procedures.

This report details outcomes of the EVSW pilot project and provides a set of recommendations for future pilot projects based on an analysis of the data gathered during the project.

⁵ The Business Transformation Agency (BTA) was involved with procurement and project management.

⁶ Subtitle H, National Defense Authorization Act (NDAA) for FY 2010 (Public Law 111-84).

⁷ See Section 578(a) "(7) in addition to any other method of transmitting blank absentee ballots in the State, establish procedures for transmitting by mail and electronically blank absentee ballots to absent uniformed services voters and overseas voters with respect to general, special, primary, and runoff elections for Federal office in accordance with subsection (f)."; 42 U.S.C. § 1973ff-1(7).

Brief History of Internet Voting Pilot Projects

The overall EVSW pilot relies on an internet-based architecture for the delivery of blank ballots; however, this project did not intend to offer a full internet voting experience due to outstanding concerns over internet voting security and the lack of applicable guidelines established by the United States Election Assistance Commission (EAC). To understand the proper placement of the EVSW within a historical context of solutions that FVAP has explored, it is important to revisit past initiatives that speak to the need for an innovative solution that does not inject new weaknesses into the process.

In preparation for the November 2000 General Election, FVAP sponsored a small pilot project called "Voting Over the Internet (VOI)" in which Service members used their own personal computers to securely register, request and receive absentee ballots, and returned their marked ballots online.⁸ This project encouraged inclusion of language in NDAA FY 2002 (Public Law 107-107)⁹ that instructed the Secretary of Defense to implement a larger project. Thus, the "Secure Electronic Registration and Voting Experiment (SERVE)," was developed to allow Service members to vote online using their Common Access Card (CAC). SERVE was planned for the 2004 election; however it was cancelled before implementation. As a result of the cancelled SERVE project, NDAA FY 2005 (P.L. 108-375) delayed the requirement for the Secretary of Defense to conduct an electronic voting demonstration project. NDAA FY 2005 modified the timing of this requirement "until the first regularly scheduled general election for Federal office which occurs after the Election Assistance Commission notifies the Secretary of Defense that the Commission has established absentee voting guidelines and certifies that it will assist the Secretary in carrying out the project."¹⁰

In September 2004, FVAP created and developed a new online project called the Interim Voting Assistance System (IVAS). This system provided for electronic submission of ballot requests and delivery of blank ballots using a secure DoD server. The voter was notified by email when his or her ballot was available on the server. The voter would then download and print the ballot, mark his or her selections, and return the voted ballot by postal mail or fax (if the voter's State permitted this option).

For the 2006 election, the capabilities of IVAS were extended to enable all UOCAVA voters to use the system for submitting ballot requests. In 2008, IVAS was further modified to enable all UOCAVA voters to make ballot requests and receive blank ballots. This enhanced capability was called the Voter Registration/Ballot Delivery System.

⁸ ⁸ The version of this report available at FVAP.gov before July 31, 2013, inaccurately stated VOI participants returned ballots via traditional mail methods. FVAP regrets the error.

⁹ Public Law 107-107 Section 1604 (a)(1):

ESTABLISHMENT OF DEMONSTRATION PROJECT.

⁽¹⁾ IN GENERAL.—Subject to paragraph (2), the Secretary of Defense shall carry out a demonstration project under which absent uniformed services voters are permitted to cast ballots in the regularly scheduled general election for Federal office for November 2002 through an electronic voting system. The project shall be carried out with participation of sufficient numbers of absent uniformed services voters so that the results are statistically relevant. ¹⁰ Public Law 107-107, Section 1604(2).

In the 2008 General Election, Okaloosa County, Florida implemented the Okaloosa Distance Balloting Pilot sponsored by the Operation Bravo Foundation. FVAP did not sponsor or directly participate in this project; however, it remains in this historical timeline as an important milestone in the level of services previously made available to UOCAVA voters. During this particular project, voters could return their voted ballots electronically using "kiosks" at locations in England, Germany, and Japan. A kiosk in this environment actually referred to a designated facility equipped with computer workstations for UOCAVA voters to access and cast their ballots online. A staffer was on hand to verify voter ID and eligibility by using an online connection to the voter registration system. A paper record was printed and used to verify the electronic results when the votes were tabulated.

Due to unresolved security concerns regarding the electronic return of voted ballots, FVAP purposefully designed the EVSW project to refrain from considering that aspect and remain in alignment with previous efforts without injecting concerns over security over the use of the internet. Electronic delivery of a blank ballot, when combined with the postal return of the voted ballot, remains the most responsible method for moving forward until such time applicable Federal security guidelines are adopted by the EAC.

EVSW Objectives and Scope

When developing requirements for the EVSW pilot, FVAP drew on lessons learned from previous pilot projects to ensure the new system would provide the following functional elements:

- Online delivery of blank (unmarked) absentee ballots for voters to print and hand mark, as necessary, with State-specific casting and return instructions;
- Optional online marking of ballots for all Federal, State and local elections (except where prohibited by State laws) for subsequent printing and mailing;
- Hard-copy printouts of the voted ballots with all voter markings populated on the printed ballots for postal return; and
- State- and jurisdiction-specific wizards linkable from the FVAP web portal (www.FVAP.gov) to serve as a point of referral and become accessible at least 45 days before the November 2010 General Election in compliance with the MOVE Act.

Additionally, FVAP applied the following operating assumptions during its pilot program planning:¹¹

• Electronic delivery of blank ballots eliminates the mail problems associated with delivery of absentee ballots to a highly mobile military force. By allowing a voter to download the ballot on demand, delays or other potential problems associated with postal mail delivery are eliminated.

¹¹ With assistance from BTA for pre-coordination on earlier drafts, during the acquisition process and subsequent program management.

- The ability to mark a ballot online to then print and mail, where permitted by State law, can help reduce voter errors and make it easier for election officials to properly discern voter intent. Online marking tools can also help catch errors such as under-voting and over-voting.
- Printing ballots allows the voter to verify selections before returning the ballot by mail. This step eliminates any potential for computer malware to change or deny the voter's intent.
- The ballots used for printing and on-screen marking fully matched States' positional and ballot content requirements.

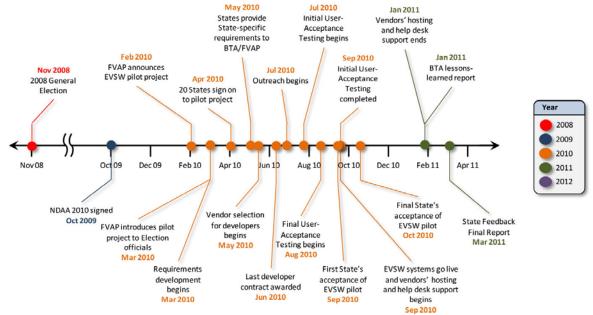


Figure 2. EVSW pilot project timeline

Ultimately, FVAP recognized that the project life cycle was aggressive. Nonetheless, FVAP was able to complete the project within a tight deadline. Only 11 months were available for project implementation from the signing of the MOVE Act into law in October 2009 to the establishment of the EVSW pilot project and the requirement for the systems to go live by September 2010. Included were all of the phases of system development: voter outreach, staff training, requirements generation, source selection, testing, and implementation.

Project Implementation

Requirements Development

In spring 2010, FVAP met with a group of State and local election officials to baseline the functionality for the blank ballot delivery system that would need to be in place at least 45 days before the November 2010 General Election. The specific general requirements for the system that would be capable of producing a full ballot (including Federal, State, and local elections) included:

- Online delivery of blank (unmarked) ballot for voters to print and hand mark, as necessary, with State-specific casting and return instructions;
- Optional online marking of absentee ballot, for subsequent printing and mailing of the hard-copy voted ballot, for all Federal, State, and local elections for a participating voter's precinct;
- Wizards linkable from the FVAP web portal (www.FVAP.gov) as a point of referral but also accessible independently (see below); and
- Help desk services for voters and election officials.

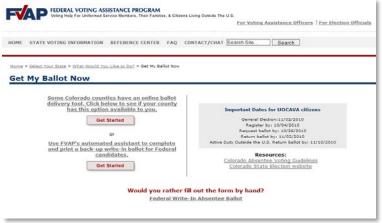


Figure 3. Typical State portal page on www.FVAP.gov

The Federal Government contracted directly with each vendor, based on specific State requirements. States expected a level of flexibility and ease in changing requirements that did not exist, given the requirements of, and limitations associated with, the Federal procurement system, among other things. The States were advised earlier that changing requirements after contract award would require negotiation and a separate contracting arrangement. FVAP maintained tight control over the requirements to achieve program objectives within budget, but also gained a new appreciation for the complexity of State election administration rules and requirements.

Procurement

The EVSW pilot project was announced during a National Association of State Election Directors Meeting in February 2010 accompanied with press releases and emails sent to election officials at approximately the same time. FVAP then held a webinar for an estimated 70 participants who were interested in taking part in the EVSW pilot project. By April 30, 2010, 20 States decided to proceed with the pilot project and, by May 7, those States provided detailed State-specific system requirements to FVAP.

Several system developers were employed across the participating States. While the States were able to recommend requirements, they were instructed to stay within a specific scope selection authority. Contracts were awarded May 2010 through June 17, 2010, on a technically acceptable/lowest cost basis with limited funding provided by FVAP for each purchase order under a Blanket Purchase Agreement (BPA) of no more than \$250,000 for customization and operation of the system(s).

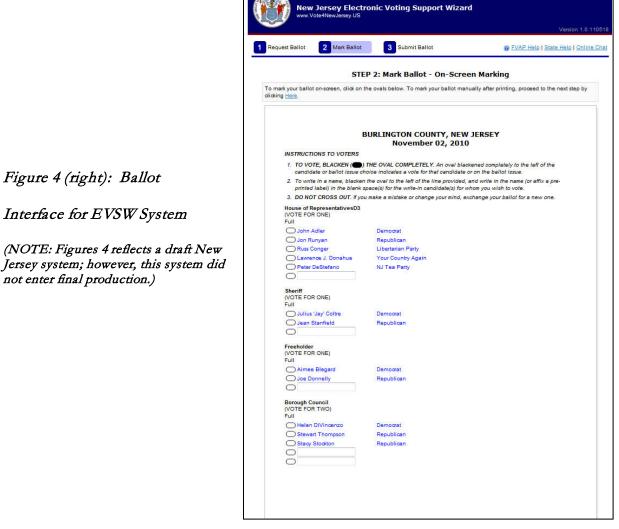
To qualify under the BPA, each vendor was required to provide the following capabilities:

- Public accessibility through the internet;
- Online marking of an absentee ballot for all Federal, State, and local elections for a participating voter's precinct;
- Hard-copy printout of a blank ballot or the voted ballot with all voter marking populated on the printed ballot;
- Online delivery of blank (unmarked) ballot for printing and hand marking;
- State/jurisdiction specific casting and return instructions;
- Wizards linkable from the FVAP web portal (www.FVAP.gov) as a point of referral, but also accessible independently;
- Help desk services for voters and election officials;
- Compliance with section 508 of the Rehabilitation Act of 1973; and
- Hosting at the contractor's location.

The final selection of a vendor for each State was made using the State-provided requirements. Election officials expressed their desire to withdraw if they did not approve of the vendor selected for them, while others wanted to be able to withdraw if the timeline became so cumbersome that they could not adequately train their staff on the new system, properly publicize the new service or if project completion became at-risk. FVAP instructed the States that they could withdraw from the program at any time if they were not satisfied.

System Testing

Sixty days following the contract awards, the developers began to test the first of the States' EVSW adaptations. Initial user-acceptance testing took place from late July to September 18, 2010, and overlapped with final user-acceptance testing from mid-August to October 12, 2010. State acceptance began on September 16 with the final acceptance on October 12.



FVAP subjected all EVSW providers to a structured testing protocol including a requirement for demonstration of section 508 compliance to document accessibility of the systems. No system was permitted to go live until all of the contractual requirements, including those specified by the participating State and local election officials were met. Testing included functional use cases whereby users went through each process including logging on, marking the ballot and finally printing the ballot. Specific user testing efforts also verified that the ballot appearance met all jurisdiction requirements, that data was not stored locally which would compromise the voter's identity, and that residual data was not stored in fillable data fields which would still be present upon completion of the process in order to maintain voter privacy.

Key Findings

State Participation

The 20 States that initially explored participation in the EVSW pilot project were: Arkansas, Colorado, Delaware, Idaho, Indiana, Kansas, Mississippi, Missouri, Montana, Nebraska, Nevada, New Jersey, New Mexico, New York, South Carolina, Tennessee, Utah, Virginia, Washington, and West Virginia. Arkansas, New Jersey, and South Carolina decided not to go live. Nine States and the District of Columbia had initiatives similar to the EVSW pilot project already in place and chose not to participate.

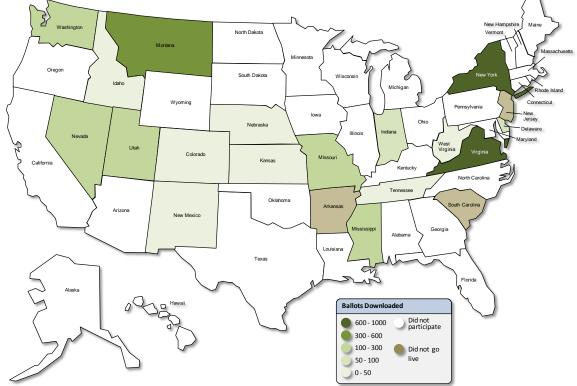


Figure 5. States participating in EVSW and the number of ballots downloaded. Ballots downloaded across all States during EVSW pilot was 2,616.

Although 17 States ultimately participated, the implementation and availability of these systems varied in terms of functionality and availability as some offered the service at a Statewide level while others limited this to specific jurisdictions which impacted the total number of participating voters (*see* Appendix A).

Upon completion of the pilot project on January 31, 2011, FVAP conducted interviews with Secretaries of State, State Election Directors, and/or their designated representatives. The information gathered by FVAP were essential inputs to the findings detailed in this report and reflect project challenges in the following areas: project timeline constraints, need for greater communication, flexibility in the procurement process, and a recognized need to standardize ballot information.

FVAP initiated the EVSW planning process in October 2009, shortly after the MOVE Act was passed. However, the consensus among all States was that the timeline was too aggressive.¹² State feedback reflected a desire for more time for voter outreach, staff training, requirements generation, source selection, testing, and implementation. This view was the primary reason that half of the non-participating States sampled chose not to participate.¹³ Others did not participate based on a perceived high risk of failure to meet MOVE Act timelines.

Half of the States polled following the conclusion of the project did not promote it to UOCAVA voters, citing a preference not to publicize a tool before its deployment, which would have required some amount of lead time between the go-live date and when the system would need to be accessed by voters.¹⁴ Moving forward, FVAP recognizes the need for lead times greater than 11 months for projects of similar scope.

The issue of ballot complexity and the ability to exchange data between commercial systems became one of the biggest challenges during project implementation. Some of the EVSW providers seemingly underestimated the difficulty in obtaining this type of information in a manageable format. Although States were required to furnish ballot information, the complexity of offering full ballots was an additional hurdle that had to be overcome amongst all of the project participants. Some States continued to express concern over the lack of a few vendors' understanding of ballot complexities and the unique ballots combinations required for their elections. For example, New Mexico, the State with the fewest unique ballot styles, has 37, while New York, the State with the greatest number has 16,901 ballot styles. To the greatest extent possible, the ballots used for on-screen marking were required to match State positional and ballot content requirements to avoid conditions that could have led to miscounting of ballots.

The States, and FVAP, did not anticipate that accessing ballot data in a format that could be used by the vendors would be an issue. All but one vendor had difficulty extracting candidate/ballot data from the variety of different formats that existed throughout the participating States'/jurisdictions' systems.¹⁵ In five States, jurisdictions did not have this data and had to procure it from the vendors that run their election systems. This process caused a significant delay in the pilot timeline as it took 60 days on average to retrieve the data.¹⁶

Other findings from interviews with the project staff include:

• A standard testing process should be defined well in advance with all necessary details in a testing plan with "go-live" test instructions provided to vendors as requirements are finalized. If changes are to be permitted during the testing process, they must receive approval by all parties;

¹² Taken from phone interviews conducted after the completion of the Pilot with State election officials by FVAP.

¹³ Ibid.

¹⁴ Ibid.

¹⁵ Ibid.

¹⁶ Ibid.

- Selection criteria should be clearly defined by FVAP in conjunction with the acquisition management office and information clearly shared with States/jurisdictions prior to State development of specific criteria; and
- States, rather than FVAP, should be given more control of their own contracting process in appreciation of the complexity in offering a full ballot to UOCAVA voters based on unique State laws. Many of the requirements-related concerns and frustrations voiced by the States following the EVSW pilot project could have been prevented if the States had more control and ability to ensure proper performance requirements that could be tailored State-by-State.

Recommendations

Future Strategies

Upon completion of the pilot, FVAP announced the availability of \$25 million in Federal grant funding to support research and development to advance the electronic options for military and overseas citizens when voting absentee. As a follow-up to the EVSW pilot project, States and local governments were eligible to apply for these grants. FVAP's grant program, known as the Electronic Absentee Systems for Elections (EASE) grants, has allowed DoD to competitively offer grant funding to election officials. The EASE grants offer significantly more leeway to the jurisdictions than the Federally managed EVSW pilot project; thereby allowing election officials to develop their own requirements and manage their jurisdictions' procurements based on their particular needs and objectives. In 2012, DoD awarded grants to State and local election administration offices through a competitive selection process that evaluated the ability of the applicants to develop significant and sustainable tools to overcome difficulties such as slow mail delivery times to and from overseas citizens, especially military personnel. The minimum term of the grants extended through the ballot certification deadline for the November 2012 General Election and may extend to 5 years.

FVAP should continue to examine the use of grants to assist States as a method of further encouraging this type of solution for military and overseas citizen voters. The advantages of a grant program would include the ability for the States/jurisdictions to maintain control of the source selection (continuing established vendor relationships if they prefer); develop new systems from the ground up or build on systems that already exist; and possess greater control of the system in the areas of requirements development, procurement, implementation, and testing. Under such a program, standard reporting from the States/jurisdictions to FVAP would be required to ensure findings were captured from all grant-funded pilot projects and provided in a standard format. Management of the procurement process at the State/jurisdiction level would ensure sufficient subject matter experts were available throughout the procurement process to provide expertise regarding State-specific election laws and procedures. It would also give the States more ownership of the results and would ensure their level of responsiveness to, and cooperation with, developers was maximized.

Requirement for Data Standardization

FVAP should examine ways to enable greater data standardization. To enhance the effectiveness of the EASE Grant Program and future similar endeavors, FVAP is also procuring services for creation of a tool that will simplify the data extraction difficulties encountered during the EVSW pilot project. This tool will be used to associate data from various proprietary systems into a more usable format. Upon development, this tool will serve as important infrastructure for decreasing the complexity associated with offering full ballots to UOCAVA voters in a more usable format.

State	Statewide participation? (Y/N)	Name of counties participating
Montana	Y	All 56 Counties
Nevada	Ν	11 out 16 counties participating:Elko, Esmeralda, Eureka,Humboldt, Lander, Lincoln,Mineral, Nye, Pershing, Storey,White Pine
Virginia	Y	All 95 counties and 39 independent cities Statewide - Total 134
Utah	N	Participating Counties: Beaver, Box Elder, Cache, Davis, Kane, Salt Lake, Sanpete, Summit, Tooele, Washington, Weber
Indiana	Y	All
Kansas	N	Butler, Geary, Harvey, Johnson, Leavenworth, Sedgwick
Missouri	Ν	Boone
Mississippi	Y	All
Nebraska	Y	All
New Mexico	N	Curry
New York	Y	All
Washington	N	Participating Counties: King, Yakima
Delaware	Yes	Participating Counties: New Castle County, Kent County, Sussex County
Colorado	No	Participating Counties: Gilpin, Morgan, Park, Weld, Yuma
Idaho	Yes	Statewide - All Counties
Tennessee	No (For Ballot Delivery) Yes (For Ballot Tracking)	Participating Counties: Blount, Cheatham, Davidson, Hamilton, Montgomery, Rutherford, Shelby, Sullivan, Washington and Williamson
West Virginia	Yes	Statewide - all counties

Appendix A: Participating Jurisdictions-By State