Technical Proposal: NJ SVRS Enhancements to improve service to UOCAVA Voters

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Identity of applicant and complete list of contractors, and/or sub recipients, if applicable: **State of New Jersey, Department of State, Division of Elections Hewlett Packard Enterprise Services**

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Proposed Period of Performance: ~~August 2011--December 2012~~

OK ███ 10/24/13

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Executive Summary

The New Jersey Division of Elections integrated emailing and faxing of overseas ballots into the New Jersey Statewide Voter Registration System (SVRS) two years ago to comply with New Jersey State Law which also prepared the State for compliance with the MOVE Act; while this integration has moved the issuance of ballots forward there is still room for improvement. Specifically this research aims to prove that speed and efficiency can be increased in the ballot preparation and delivery process to Military and Overseas voters.

Our approach will upgrade our SVRS by leveraging current application functionality to sustain improved access for Military and Overseas voters for years to come. This approach will ensure that all county election offices use the functionality to speed delivery of ballots and provide centralized management, maintenance, and reporting.

County Clerks in all of New Jersey's 21 counties are committed to serving the UOCAVA voter population. Since 2007 the State Division of Elections has coordinated the ballot preparation process in the County Clerk offices through the SVRS. The SVRS is managed for the State of New Jersey by Hewlett Packard Enterprise Services (HP); the enhancements proposed in Phase One of this grant application will be developed and implemented by HP and become an integral part of our SVRS.

We propose a two phase project. Phase One will demonstrate that by integrating the ballot preparation process inside the SVRS we will not only achieve greater processing efficiencies but will also improve speed of processing voter requests which in turn should yield higher participation. Since Phase One focuses on the SVRS the other major component of this phase is to improve the UOCAVA reports and features in the SVRS; these improvements are listed in greater detail later in Appendix 1.

New Jersey understands that Idaho, Rhode Island, Maine, West Virginia and Connecticut all use the same ElectioNet platform for their Statewide Voter Registration Systems. Proving our hypothesis that we can increase UOCAVA voter participation by improving the SVRS will yield possible benefits to these other states using ElectioNet software.

Phase Two in our application is to request funding in support of our acquisition and implementation of an electronic ballot duplication system for our military and overseas citizens. Our goal is to make the processing of returned email ballots from UOCAVA voters more efficient without the additional burden of remaking, or manual duplication of potentially thousands of UOCAVA e-ballots.

Goals and Objectives
Overview
The State of New Jersey is applying for this grant to conduct statewide research in our twenty-one counties to provide UOCAVA voters with a more accessible, secure, and efficient process for requesting vote by mail ballots, and voting in federal, state, and municipal elections. With the assistance of the EASE grant, our proposed solution will improve UOCAVA voters' experience and give FVAP useful data comparisons showing the benefit of integrating the ballot generation process with the State's SVRS.

Specifically, New Jersey is addressing each mandate as required by UOCAVA, including
- Easing the registration and Vote By Mail ballot request process,
- Transmitting the ballot electronically,
- Providing UOCAVA voters with the opportunity to electronically track their ballot,
- Ensuring that ballots are transmitted a full 45 days prior to an election,
- Providing reporting on the data collected.

New Jersey's strategic approach allows this program to be sustainable and scalable, using technological innovation to deliver the best possible solution.

Proposed Solutions

Research Module 1: Application Request Improvement

Problem: UOCAVA voters experience failures associated with registration and ballot request

Solution: Tie UOCAVA request directly into Statewide Voter Registration System to speed and improve registration and ballot request success

Goals
- Reduce time determining voter eligibility and approving UOCAVA ballot request
- Increase timely voter feedback: auto response at each step of application and ballot submittal
- SVRS integration: ensures long term sustainability of UOCAVA solutions.

Process Description
- An online solution that integrates with the statewide voter registration database will be used to allow voters to complete the FPCA or state application via an online solution. This form will be made available in a consistent location on the State's website.
- When accessed, completed and returned, the form is matched against the statewide voter registration database to determine eligibility for absentee voting. Upon approval, the voter receives the appropriate instructions for the next steps of the election process.

- If the registration is handled outside the 45-day voting window, the voter will receive an email confirming the ballot application and status. Inside the 45-day window the email will include their ballot as an attachment which can be returned by mail, fax or email. Current New Jersey law does not allow for online voting.

Justification for Pursuing this Strategic Approach

The first step for a UOCAVA voter after general registration, which is required by all voters, is to identify himself or herself as a Vote By Mail (VBM) UOCAVA voter to the election official. New Jersey proposes to allow voters to submit their VBM request electronically and provide the voter with instant feedback that their ballot request has been received. The voter is entered into the SVRS and the system authenticates their VBM ballot application and prompts the County Clerk to send a reply to the voter indicating application status; if approved and within 45 days of the election that reply will include the ballot. New Jersey expects this will have a significant impact on voter participation rates since it is the application and receipt of blank ballot steps where UOCAVA voters may not complete the process because of the complexity of the existing process.

Success Factors
- **Faster voter eligibility and UOCAVA ballot request processing**
- **Improved speed of communications with UOCAVA voters**
- **Increased Participation**: Increase in UOCAVA ballots returned will be the true indicator of success.
- **Cost Savings:** Voters save handling costs of mailing form, election officials eliminate time-consuming tasks associated with paper VBM request process
- **Reduced Errors**: Online process reduces manual errors and secondary handling of VBM requests

Improve Services for UOCAVA Voters
- Provide streamlined application process for the ballot for UOCAVA voters by removing additional steps and providing immediate feedback of application status and next steps.
- Creates uniform statewide processes that can be used by all New Jersey counties through the existing SVRS network and system they have been using for the past four years.

Research Module 2: Email Ballot Access

Solution: **Ballot Matching Integrated in SVRS.**

Problem: Failure rates experienced by UOCAVA voters associated with ballot delivery

Goals:

- **Compliance**: Provide a full PDF HAVA compliant ballot to UOCAVA voters through electronic transmission
- **Ballot Accuracy**: Ensure all of the ballot styles, contests, and candidates are correct.
- **Reliability**: Ensure the availability and accuracy of the election remains in place for the full 45 day time period.
- **Participation**: Our estimation of the increase of successful ballot return rates for UOCAVA voters is 30%. We will demonstrate this by comparing to similar, previous elections.

Process Description

The ballot delivery method chosen by the State of New Jersey is to upload previously approved PDFs of the ballot into the SVRS. Providing a PDF uploader instead of a data import tool or a programmatic way of re-creating the ballots saves elections officials the burden of reviewing and approving the ballot content for each of their ballot styles a second time.

The concept of our PDF uploader is to upload all 600 PDF ballot styles into the SVRS based on the Municipality/Ward/District. The County Clerk will have the voter's correct ballot automatically attached to a personalized email sent to the voter. When the PDF ballot is returned to the Board the PDF must be translated to a scanable ballot; this currently is a manual transcription process.

Justification for Pursuing this Strategic Approach
Ballot delivery has proved to be one of the more difficult points for Election Officials serving their UOCAVA voters. 17% of the military requesting absentee ballots never receive their ballots. Service members may lose their ability to vote due to the remoteness of their location or inability to receive mail in a timely manner, particularly for voters who are deployed in remote and/or hostile areas.

Success Factors
- **Compliance**: Provide a fully HAVA compliant ballot to UOCAVA voters electronically.
- **Accuracy**: Ensure all 600 of the ballot styles, contests, and candidates are correct.
- **Reliability**: The proposed system changes, once tested, will force a repeatable workflow for the distribution and receipt processing of ballots in the SVRS.
- **Participation**: Higher percentage of ballots included in the final count due to lower error rates.

Improve Services for UOCAVA voters
- Provide a complete and full ballot solution for all UOCAVA voters, just as the voters in their home jurisdiction receive.

- Create uniform processes statewide.

Research Module 3: Secure Ballot Return and Tracking

Solution: HP enhancements to NJ SVRS
Problem: 81.1% of UOCAVA ballot failures occur in the return of ballots

Goals
- **Compliance**: Provide a secure email return system which will allow Voter Tracking of Ballot Status**.**
- **Reliability**: Ensure the availability and accuracy of the election remain in place for the full 45 day time period
- **Participation**: Higher percentage of ballots for comparison to final count of actual election, due to lower error rates.
- **Simple Receipt Tracking:** Allow voters to track their ballot online at each stage.

Process Description
- After their application is approved the voter is provided with their unique ballot style based on their home registration municipality, ward and district.
- Provide voter with clear instructions on how to vote and return ballot.
- Provide voter with the ability to electronically return their marked ballot.
- Provide web access to track ballot status.

Justification for Pursuing this Strategic Approach
Ballot return is the single greatest point of failure in the entire UOCAVA process. With FVAP reporting that 81% of the votes not counted are due to ballot return failure, it is crucial that secure, electronic submission be an option for ballot return. This removes time and logistical barriers, while allowing for an auditable paper trail.

Success Factors
- **Compliance**: Specific return instructions have to be entered once by each County to give UOCAVA voters the correct Board address for their ballot return.
- **Accuracy**: Ensure return information is correct and complete for voter's home district.
- **Efficiency of ballot return**: UOCAVA voter's home county Board of Election return information is automatically tied to their home ballot**.**
- **Participation**: Higher percentage of ballots returned due to ease of receiving and returning the same ballot the voter would have seen in their home jurisdiction.

Improve Services for UOCAVA voters
- Provide a complete and full ballot solution for UOCAVA voters.

- Provide tracking updates to voter to notify of ballot status.
- Create replicable processes that can be used for other jurisdictions.
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Phase 2: Auto Duplication of Returned Ballots

Our working hypothesis for the auto-duplication phase:
An automated method to remake or duplicate ballots will significantly reduce the time to prepare ballots for tabulation, in turn ensuring that local election officials are not burdened by the increase of UOCAVA ballots expected by the overall program.

- Reduce costs associated with MOVE Act compliance
- Reduce time to prepare and process incoming ballots
- Encourage all counties to participate in the program.

The selected vendor will research the feasibility of an auto-duplication system that does not require a bar code on the ballot. Based on the outcome of that research the State of New Jersey will provide a turn-key, auto-duplication system to every participating county in the State. With the auto-duplication system our election boards will not be significantly impacted by the expected growth in our UOCAVA ballot returns. Since this technology is currently not in use it is a focus point of our research to demonstrate that a returned PDF of a voted ballot can be duplicated for entry into our Board of Election tabulation machines.

Goals
- The primary goals of this project phase are to increase the State of New Jersey's UOCAVA voter participation, without the increased costs associated with ballot processing and remaking of the growing number of email delivered ballots.
- Develop and deploy technology that will provide auto-duplication of returned e-ballots.
- Reduce our overall long term costs of managing and supporting MOVE Act compliance and UOCAVA services.

Key objectives for this project phase include:
- Improve ballot access for the State of New Jersey's UOCAVA voters, while at the same time, providing a positive solution/experience for the local election officials.
- Provide a means for the State of New Jersey to tabulate email delivered ballots without expensive and time consuming manual ballot duplication by our Election Boards.
- Provide an overall long term cost-effective solution for the State of New Jersey elections.
- Provide analytical information regarding the usage of the auto-duplication solution.

Process Description
Research is needed to solve some key issues and obstacles in order to make the auto transcription/ auto duplication or ballot remaking solution a reality. Summarized below is an overview of our proposed research and development of the auto-duplication system and the

prospective key features which offer us the specific tools to meet our goals and objectives for this grant. A key component of this phase will be to investigate the areas that will be required for an automated ballot duplication system.   The selected vendor will work with the State to analyze the various points of integration and highlight the state specific issues surrounding ballot duplication.   These issues include, but are not limited to:

1. Differences in page dimensions - Ballots are typically printed on an 8.5" x 14" piece of paper. We cannot depend on voters to have 8.5 x 14" paper stock in their home printer so there has to be a way to convert between the two page dimensions. One may propose the idea of scaling down the original ballot style to fit in an 8.5 x 11" piece of paper, but due to regulations, the print on the scaled down ballot would be small and hard to read. If the PDF is presented to the voter as an 8.5 x 14" PDF, the printout for the voter can vary greatly depending on their personal preferences and settings. The best solution would be to have the PDF uploader "break up" the ballot into multiple pages. However, given the non-linear horizontal alignment of the ballot content, this is a significant issue.

2. Auto Duplication: Setup - Assuming even if the ballots returned from voters come in a consistent format, translating their selections on to a scanable ballot is a very difficult process. There are three main steps involved in this process. First, the original PDF ballot must be loaded into the software and interpreted to understand where the selection ovals (or arrows) are positioned. Ideally, this would be possible through advanced image recognition. If this is not possible, a user interface will be necessary for an elections official to highlight the locations of each oval (or arrow) on the ballot for each ballot style. Research is needed to determine if and how image recognition can be used to automate this setup process along with its associated costs.

3. Auto Duplication: Mapping - Second, a program must be written to map or associate the markings on the voter presented PDF to the original ballot PDF. Because the two PDFs will differ in layout (assuming scaling down is not an option), election officials must map ballot content between the two PDFs to ensure the voter's markings are translated correctly. Again, this will either be a manual process performed by an election official using a user interface, or it will be automated using image recognition. Research is needed to determine if a sequential order of ballot content will be reliable enough to map the content between the two PDFs. In order to use this method, the software must be able to reliably determine the start and end points of each contest on each ballot. Variables which may cause inconsistency here will be accidental voter markings, page folds, or other unexpected information on the returned ballots.

4. Auto Duplication: Marking - Third, a translation program must be written to scan the voter returned ballot, detect their selections, and mark the selections on the machine

readable PDF. The major obstacle in this step is in detecting the voter's selections to determine their intent accurately. Once the voter selections are determined, the software will use the mapping relationships created in the previous step to correctly mark the machine readable PDF. The marked PDF is then printed on ballot stock to be tabulated.

Justification for Pursuing this Strategic Approach

We project that by fully deploying this new technology, we will dramatically streamline and speed the balloting process for our UOCAVA voting population, as well as save significant staff time complying with the new mandates of the MOVE Act.

- We anticipate that County Clerks' staff time complying with the new MOVE Act requirements will decrease.
- New Jersey's return rates are similar to the national ballot return rates during a Presidential year but fall sharply in non-Presidential years.

    National Absentee Ballot Return Rates:
    91%= General Population
    67%= UOCAVA voters

- We expect to see a significant increase in returned ballots from our UOCAVA voters due to this implementation. The proposed auto-duplication solution may reduce duplication time by over 60%.

Sustainability

The State of New Jersey has designed this project to meet the following criteria:

- Low long-term costs –employing a fixed cost system our long term costs are minimal. .
- To ensure long-term sustainability, the prospective auto-duplication system can be used for a wide variety of ballots that require duplication, thus widening the base of uses for the auto-duplication system.

Scalability

We are projecting a significant increase of our UOCAVA ballot returns and thus need to acquire an automated ballot duplication system to increase efficiency of processing these ballots. Once operational the system could not only scan and print over 17,000 tabulated ballots in New Jersey but the solution could serve as a model to serve UOCAVA voters in other jurisdictions as well.

Success Factors

- **Accuracy**: Elimination of hand transcribing email ballot will insure accuracy.
- **Efficiency of ballot processing**: UOCAVA voter's ballot counted along with regular Vote By Mail ballots**;** decreased time spent at County processing UOCAVA ballots.
- **Cost savings**: Elimination of costly manual transcriptions.

Additional Components of New Jersey FVAP Program

Baseline Metrics

Estimation of reduction in failure rates in each of the various stages of the absentee voting process:

1) Registration- 30% reduction in failure rates
2) ballot request-20% reduction in failure rates
3) ballot delivery-30% reduction in failure rates
4) ballot marking-no change
5) ballot tabulation-60% time savings, increased accuracy
6) ballot return verification-30% reduction in failure rates

Security Measures

An election solution - the infrastructure (hardware, networks, and software) and the actual data (voter registration information, and, where applicable, ballots cast and tabulated results) - must be protected from both intentional and unintentional interference. Our vendor of choice has demonstrated implementation of measures to protect users' personal identifying information and any transmitted election material. HP adheres to the National Institute of Standards and Technology's (NIST) guidelines for encryption, threat modeling, physical server security, and tamper-detection monitoring. These measures enable us to identify suspicious activity and anticipate any potential threats.

Schedule and Milestones

1) Select ballot auto-duplication vendor in October 2011.
2) Ballot auto-duplication research and testing October 2011-May 2012
3) Implement HP enhancements into SVRS in December 2011.
4) Train County Election offices in new processes in December 2011
5) Implement enhancements to State website (njelections.org) in December 2011
6) Pilot ballot auto-duplication in June 2012 Primary.
7) Tabulate results from June 2012 Primary and compare to 2008 and 2010 results
8) If auto-duplication is proven roll out to remaining counties July/August 2012.
9) Repeat process for November 2012 Election
10) Submit final reports on research results December 31, 2012.

Reporting

Comprehensive reporting has always been integrated into the SVRS; we now plan on enhancing this functionality to provide more detailed reporting of UOCAVA activities. Details of reports that will be added as part of this research are contained in Appendix A.

Data Analysis

Upon the conclusion of all elections, data will be analyzed to measure the effectiveness of each election by comparing statistics to 2008 and 2010.

UOCAVA Voter-Accessible Tracking of Ballot

Voters have the ability on the Division of Elections website to track their ballot progress.

- Application status, Ballot sent, Ballot received, Ballot accepted.

Management Approach

The goal of this research is to demonstrate that by improving the local election officials tools, UOCAVA processing will quickly improve and voters will receive more timely feedback resulting in higher participation.

Support Team for Research:

1. State Personnel: Robert Giles, Director of Elections; Michael DiSimoni, Deputy Director of Elections; Patrick Parmelee, SVRS Analyst.
2. Contractor: HP. We have worked with our chosen provider, HP, to tailor this research plan to meet the needs of our UOCAVA voters and comply with Federal and State laws and regulations.
3. Contractor TBD to research and develop a PDF returned ballot auto duplication solution to make e-mail delivered ballots scanable into a ballot reader.

Analysis and Measurement of Current Processes

Current Process for UOCAVA Vote by Mail Registration and Ballot Delivery

- FPCA or State Absentee Request
- U.S. Postal Service Delivery of Ballots
- Expedited Delivery of Ballots (primary or follow-up method)
- Manual PDF Ballot Process on request
- Access to FWAB via State link, FVAP or other site

Baseline Data

We will compare our 2012 elections results against the data below. We will have the benefit of being able to implement uniform statewide processes and procedures which will enable us in future years to gather data for ongoing comparisons and to study the effectiveness of processes improved due to the EASE grant.

County	UOCAVA ballots sent (2008 General)	UOCAVA ballots returned (2008 General)		UOCAVA ballots sent (2010 General)	UOCAVA ballots returned (2010 General)
ATLANTIC	30	16		20	11
BERGEN	2795	1986		1901	530
BURLINGTON	989	748		788	156

CAMDEN	879	438		553	158
CAPE MAY	196	157		156	42
CUMBERLAND	333	170		107	23
ESSEX	652	547		116	63
GLOUCESTER	468	290		402	65
HUDSON	1446	502		764	178
HUNTERDON	340	274		278	64
MERCER	1186	806		211	77
MIDDLESEX	1643	1273		1254	322
MONMOUTH	1498	1249		1351	264
MORRIS	1228	1008		905	178
OCEAN	1419	1015		788	232
PASSAIC	857	586		664	123
SALEM	103	78		74	15
SOMERSET	961	785		615	149
SUSSEX	331	200		207	50
UNION	1168	822		501	225
WARREN	196	120		62	8
Total	**18718**	**13070**		**11717**	**2933**

Justification to Modify Current Processes

1. **Timeliness and Delivery**: Seventeen percent (17%) of the military requesting absentee ballots never receive their ballots.
2. **Accuracy**: Clerical errors or outdated voter address information may result in wrong PDF ballots being sent to the voter, increasing possible spoiled ballots and/or late voting.
3. **Time to Vote**: One of the primary challenges faced by UOCAVA voters is the length of time required between registration as an overseas voter and the time of actual balloting. Because of the MOVE Act, starting in 2011, FVAP recommends that UOCAVA voters submit a Federal Post Card Application to their state of legal residence in January of each year, and again each time there is a change in the voters' mailing address, email address, or fax number. By automating the UOCAVA ballot request process, and allowing registered voters to receive and return their ballots via email, we hope to reduce the time required for UOCAVA voters to complete and return their ballot, increasing ballot completion rates.
4. **Cost Effectiveness**: Overnight and Expedited delivery is costly and does not always ensure receipt.
5. **FWAB Limits**: Voter not able to vote complete ballot - only Federal Contest Write-ins. No assistance provided in the form of candidates, contests, etc.
6. **Disenfranchising Voters**: Our UOCAVA voters need a complete, full and timely ballot and access to voting instruction and candidate information.

Proposed Project Plan

Following are the research options that New Jersey is proposing for use in the 2011 and 2012 elections and beyond to support UOCAVA Voters.

Research Module 1: Application Request Improvement

Solution: Tie UOCAVA request directly into Statewide Voter Registration System.

The Process
- A module in the statewide voter registration system will be developed / used to allow County clerks offices to accept the FPCA or state applications via an email request from the voter. An application form will also be made available on the State website.
- Once the form is accessed, completed and returned, it will be matched against the statewide voter registration database to determine eligibility for absentee voting. Once approved, the voter will receive the appropriate instructions for the next steps of the election process.
- If the registration is handled outside the 45 day voting window, the voter is told when the election open date will occur. If received during the 45 day election window, the voter will receive an email containing their correct and full ballot.
- By automating the UOCAVA vote by mail ballot request process and allowing registered voters to receive their ballot by email the time required to complete and return a ballot will decrease and ballot completion rates will rise.

Goals
- Reduce time from request to voting
- Streamline process for Election Official and Voter
- Decrease time to process request, thus making the voter eligible for voting sooner
- Seamlessly integrate new MOVE Act mandate requiring UOCAVA request each year

Identification of Each Process and the Elements Related to the Processes
1. Complete Integration with New Jersey's SVRS.
2. Train all New Jersey county election officials in new statewide process.
3. Public Awareness campaign to notify voters of new system.
4. Reporting of final results.

Performance Indicators
- **Increased Participation**: Increase in UOCAVA ballot returns.
- **Cost Savings:** Voters save handling costs of mailing form, Election Officials eliminate manual tasks associated with paper absentee request process and manual matching of PDF ballots to voter email requests.
- **Reduced Errors**: Automated process reduces manual errors and secondary handling of absentee requests.

Projections of the Effectiveness of Modifications
- Implementing an email balloting system with automated ballot matching will:
    - Increase the speed of County Clerks processing applications and sending out PDF ballots.
    - Increase the percentage of ballots successfully returned by UOCAVA voters.
    - Reduce the failure rate UOCAVA voters experience between absentee ballot request and blank absentee ballot delivery.

Performance Measurement
- One measurement with this project is to determine whether eliminating the delays from ballot request to approved ballot delivery will increase UOCAVA ballot return rates.

Research Module 2: Email Ballot Delivery

Solution: HP integration into NJ SVRS

The Process
The key challenge faced by UOCAVA voters is the length of time required for absentee ballot delivery and return. Data from EAC and FVAP sources indicates that the absentee ballot return rate for UOCAVA voters in the 2008 General Election was only 67%, compared to 91% for the general population. By automating the UOCAVA ballot delivery and return process, this enhancement aims to reduce the time required for UOCAVA voters to complete and return their ballot, increasing ballot completion rates and reducing failure rates for such voters.

Goals
- **Compliance**: Provide a full PDF HAVA compliant ballot to UOCAVA voters.
- **Ballot Accuracy**: Ensure all of the ballot styles, contests, and candidates are correct
- **Reliability**: Ensure the availability and accuracy of the election remain in place for the full 45 day time period
- **Participation**: Higher percentage of ballots included in the final count due to lower error rates. We derived this by comparing to similar, previous elections. Our estimation of the increase of successful ballot return rates for UOCAVA voters is 30%.
- **Simple Receipt Tracking:** Voters can track a ballot online at each stage in the process.

Identification of Each Process and the Elements Related to the Processes
- Give voters access to voting materials, county-specific instructions, and any other materials to help the voter (candidate statements, voter guides).
- Provide voter with instructions and context-specific help.
- Voter package will include all required documents needed by the county, including:
    - Envelope templates, Oath and affirmations, Return package instructions.

Projections of the Effectiveness of Modifications
- Implementing integrated ballot matching and preparation is projected to:
    - Increase the speed and accuracy a UOCAVA voter receives their ballot.
    - Increase the percentage of ballots successfully returned by UOCAVA voters
    - Reduce the failure rate UOCAVA voters experience between blank absentee ballot delivery and absentee ballot return.

Performance Indicators
- **Compliance**: Provide a full PDF ballot to UOCAVA voters.
- **Efficiency of ballot creation**: In NJ the ballot is already created in PDF format for the domestic Vote by Mail voters**; this same PDF will be delivered to the voter; no extra work is involved.**
- **Advanced Availability**: Ensure the availability of the election during the full 45 day voting period
- **Accuracy**: Ensure all of the ballot styles, contests, and candidates are correct
- **Reliability**: Ensure that the availability and accuracy of the election remain in place for the full 45 day time period
- **Participation**: Higher percentage of ballots included in the final count due to lower error rates. We derived this by comparing to similar, previous elections.
- **Simple Receipt Tracking:** Voters can track their ballot online throughout the process**.**

Research Module 3: Secure Ballot Return and Tracking

The Process

Since 81.1% of UOCAVA ballot failures occur in the return of ballots our solution will mitigate failed returns by insuring the SVRS customizes each voter's return email cover sheet with pre-populated fax numbers, emails, physical addresses and contact information for that specific voters' County Board of Election. Also with the www.njelections.org "ballot status lookup", the military and overseas voters will have the ability to view their ballot status at their convenience.

Goals
- **Simple Receipt Tracking:** Voters can track their ballot online throughout the process.
- **Compliance**: Automated voter specific return instructions are entered once by each County, UOCAVA voters will be automatically matched to their Board for ballot return.
- **Advanced Availability**: Availability of the election during the full 45 day voting period
- **Accuracy**: Ensure all return information is correct/complete for the voters' home district.
- **Reliability**: Ensure the availability and accuracy of the election remain in place for the full 45 day time period
- **Efficiency of ballot return**: UOCAVA voter's home county Board of Election return information is automatically tied to their home ballot**.**

- **Participation**: Higher percentage of ballots returned due to ease of receiving and returning the same ballot the voter would have seen at their home jurisdiction.

Performance Indicators
- **Accuracy**: Ensure all of the ballot return information is correct for the voter's home County Board of Election, this information will be maintained by each County Board and automatically matched to each voter based on the voter's municipality, ward and district.
- **Participation**: Higher percentage of returned ballots for comparison to final count of actual election due to lower error rates, and increased ballot return rates. We derive this by comparing to similar, previous elections.

Projections of the Effectiveness of Modifications
- Implementing email ballot access and return is projected to:
  - Increase the percentage of ballots successfully returned by UOCAVA voters
  - Reduce the failure rate UOCAVA voters experience between blank absentee ballot delivery and absentee ballot return

Phase 2: Auto Duplication of Returned Ballots
The Process
A ballot auto-duplication system will enable our counties to aggressively push for greater UOCAVA participation while not being concerned about the potential bottlenecks and backlog typically associated with manual duplication. Since online voting has not been widely embraced at this time the concept of PDF scrapping is vital. We can take hundreds of email ballots and have the PDF automatically remade and ready to be scanned as if it were a returned paper ballot.

Since New Jersey has not, at the time of grant application, selected a vendor to perform the auto-duplication solution we can only speak to the qualifications we will be looking for when selecting a vendor. Primarily we will choose a vendor who has proven experience supporting election management and administration. A clear understanding of technologies available and PDF manipulation and duplication are essential qualifications. Many of the vendors who participated in last year's FVAP pilot program are currently researching our proposed concept.

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Goals
- **Streamline processing of returned PDF ballots**
- **Efficiency of ballot return**: auto duplication and tabulation preparation.
- **Participation**: Efficient ballot processing allows faster feedback to UOCAVA voter; a positive experience with emailing a ballot will result in higher future participation.

Identification of the process and elements of the process

Development

The development of an auto-duplication system will employ current technologies and expertise to properly scan a marked PDF of the ballot from software scanning tools, print the ballot in the form and condition our individual County Election Boards require for successful tabulation of the remade ballot.

Interfaces to External Systems

Vendor neutral architectural design is expected to be implemented with the proposed auto-duplication system. The proposed system will handle structured data exports (.txt, and .csv, .edx, and .xml) from the major election management and ballot tabulation system vendors.

Data Import/Export Interface

There is a wide range of tabulation systems that any auto-duplication systems must work with. Our proposed system will allow customizations to Counties without compromising the core foundation of the application.

Flexible Ballot Display and Print Capability

The auto-duplication system is expected to support both standard US (8.5x11) and European (A4) sizes. Ballots printed using the New Jersey PDF ballot delivery tool use standard computer printer paper sizes. Voters will print a blank PDF ballot to be marked by hand. Ballots are downloaded to the voter's computer in a PDF format and are sized to print on any home printer.

Ballot Imaging

The PDF ballots that are returned will be scanned through the prospective auto-duplication system and be stored in an image reader to be viewed online or on-demand.

Ballot Association

The prospective auto-duplication solution will enable the local Boards of Election to track and identify each PDF ballot to its corresponding scanable ballot. This would be done by printing related identifiers on associated ballot pairings; the identifiers will be determined by the county.

Reporting

The prospective auto-duplication system will track ballot events to offer a number of valuable statistical reports. Examples of some of the reports provided by the proposed system are:

- Ballots submitted into the auto-duplication system, Scanable ballots produced, Auto-duplication processing speed, Time Savings over manual duplication .

Performance Indicators

- **Processing efficiency**: 60% time reduction in processing
- **Accuracy**: zero defects in transcription
- **Reliability**: proven technology through vigorous testing

Projections of the Effectiveness of Modifications

- Implementing the auto duplication of returned ballots will save County Election Boards significant time processing e-ballots.
- The auto-duplication solution is designed to reduce manual ballot duplication time by up to 60%. This will be a substantial savings as the number of UOCAVA voters increase.

Additional Management Approach Features

Measurement of Performance

Increase in percentage of ballots successfully returned by UOCAVA voters will be measured by comparing UOCAVA return rates from the most recent (similar) election prior to this program, to the 2008 and 2010 General Elections and performing a statistical analysis of whether any change in ballot return has been statistically significant. Reduction of staff, time, and costs associated with ballot remaking will be measured by comparing the same against manual transcription.

Milestones

Milestones during the EASE grant time period:
1) Select ballot auto-duplication vendor in October 2011.
2) Ballot auto-duplication research and testing October 2011-May 2012
3) Implement HP enhancements into SVRS in December 2011.
4) Train County Election offices in new processes in December 2011
5) Implement enhancements to State website (njelections.org) in December 2011
6) Pilot ballot auto-duplication in June 2012 Primary.
7) Tabulate results from June 2012 Primary and compare to 2008 and 2010 results
8) If auto-duplication is proven roll out to remaining counties July/August 2012.
9) Repeat process for November 2012 Election
10) Submit final reports on research results December 31, 2012.

Financial Management

This project will include financially-based milestone deliverables. Payment to the vendor will be due upon successful completion of predefined acceptance tests for each milestone.

Risk Management

Risks for this project will be maintained using a risk register, with identified risks listed along with impact, probability, and mitigations. Since we are incorporating much of our EASE grant improvements into our existing SVRS assess overall risk to be very low. We of course will vigorously test all improvements in our test SVRS system prior to adding them to our live SVRS.

Conclusion

Since New Jersey does not allow online voting, our goal for this research is to prove that the UOCAVA voter participation rate can be positively impacted by streamlining email balloting and simplifying the administration of this process inside the New Jersey SVRS.

Since the SVRS is used daily in all 54 of the States' Election Offices, (County Clerks, County Boards and County Superintendents) it makes practical sense to build upon this platform to

improve service to our Military and Overseas Voters. Rather than introduce another piece of software to train and support remotely it is more sustainable to add to a system we are already committed to supporting. By taking the basic UOCAVA features now contained in the SVRS and fully building out that software module, both our 21 County Clerks (who issue the ballots) and our 21 County Boards (who receive the ballots) will have the ability to better serve the UOCAVA population.

It is our hope that by further automating the PDF ballot delivery, the faster return service to the UOCAVA voter from application to ballot mailed will increase the likelihood of the ballot getting to them with ample time to vote and return. Some overseas email requesters will physically mail their return ballot, making the expedited delivery of the PDF ballot essential.

By partnering with HP, our existing SVRS software support vendor, we have mitigated any risk involved with training a new vendor on NJ laws and practices. In addition by integrating the entire process in the SVRS we have also mitigated the risk involved in transferring registration data to a separate ballot management system. By integrating this functionality inside of the SVRS we have ensured its scalability and sustainability. Scalable because the entire state will be using the same platform and we can easily add to this module in the future should laws and requirements change. Sustainable because the UOCAVA ballot system becomes an integrated part of our State SVRS.

By adding rich additional features to our reporting of UOCAVA voter activities we will be able to provide all jurisdictions and the Department of Defense with valuable data and trends on this focused population. These reports will be an integrated part of the SVRS and will remain long after the research period for this grant ends. Sustainability is crucial to us because we would not ask our voters or county officials to implement a solution on a trial basis; once these improvements go live in SVRS they are permanent and though they may be modified as experience through use may dictate, they will become the normal course of business in the State.

To avoid confusion we have always directed our voters to our website, www.njelections.org; it is our belief that voters presented with too many options may not remember where to go for what service. By providing all of our voter services at one location it eases the burden on the citizen who is trying to either check their registration, find their polling place or figure out how to apply for a ballot.

Through this research project we hope to not only demonstrate an increase in UOCAVA voter participation but plan to build a permanent, robust tool for those voters and the county election officials who support them.