

Report to the EAC on Santa Cruz County Pre-Election Testing & Post-Election Audit Grant Project



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What We Set Out To Do

In our original application, we set some very ambitious goals for our project. Some of those goals we were able to accomplish, while some we found to be impossible. Other goals we were able to partially complete due to some limitations and constraints. Below is a bulleted summary of what we intended to do:

- Visit and survey all 21 other counties that use the equipment we do.
- Ask for the Pre-LAT documentation including:
 - Testing documents
 - Procedures for equipment handling, processing, distribution and receiving
 - Observation rules
 - Physical equipment management strategies
- Ask for Post-Election Auditing info from counties regardless of the voting system and to see how they can best be adopted for the Dominion voting equipment including:
 - 1% manual tally documents (regardless of voting system)
 - Precinct audit documents (regardless of voting system)
 - Processes and procedures for audit escalations (regardless of voting system)
 - Random draw procedures and methods (regardless of voting system)
 - 100% manual tally documents and procedures (Dominion users only)
 - Insight tape audit procedures (Dominion users only)
- Establish a library of current practices
- Create the following procedures:
 - A concrete internal chain of custody
 - Use of physical space in regards to the storage and handling of our ballots and who has access to those spaces
 - Create a system of checks and balances for each step of auditing returns
 - Institute a “big picture” tracking system for each activity in the canvass
 - Define staff roles in a way to have a single “gate-keeper” over canvass activities focusing on the outcomes of audits and utilize another staff person

- as the lead member on a given task to focus on timely progress and adherence to procedure
- Create a uniform report that goes into each Statement of the Vote that covers every audit in the canvass and the ultimate findings from each, instead of a selected sampling of reports.
 - Examine and document every process from the arrival of the ballots to their ultimate storage and destruction, with the exception of Election Day activities at the polling places. The materials will address all types of voting methods such as vote-by-mail, paper ballots at the polling place, touchscreen ballots at the polling place, and provisional ballots.
 - Develop a clear and uniform procedure for determining statistically relevant audits as well as triggers for audits traditionally done at the discretion of the County Clerk.
 - Test documents using the old election data or data from other counties or specials held during the testing period.
 - Draft all documents produced in the course of the study using clear, plain English and in a manner that reduces errors for new auditors. This type of formatting will help observers who are unfamiliar with the large amount of jargon used in elections and members of the media or academia who may wish to analyze the data.
 - Purchase a small amount of office supply equipment including white boards, folders, labels and lamination supplies.
 - Visit selected other counties that use different voting systems to see if they have transferable processes that would compliment our system.
 - Create a document to assist with Audit Log Reviews and outline when those logs should be reviewed. (develop a set of tools that will create consistency that will be translated into the Statement of the Vote making it easier to compare and contrast elections on many levels)
 - Participate in the Risk Limiting Audit as part of California Assembly Bill 2023
 - Survey staff on improved procedures and documents.
 - Ease of instructions compared to prior elections

- Clearer forms compared to prior elections
- Ease of locating required items compared to prior elections
- Ease of finding required information compared to prior elections
- Other comments to assist in further refinements
- Post the report and recommendations to the CACEO website
- Employ a variety of performance measures to assure the proposed changes are beneficial in all ways. We anticipate finding:
 - A decrease in errors that are found after Pre-LAT testing (based on historical statistics)
 - A decrease in overall canvass staff costs (based on tracked staff hours from past elections)
 - A decrease in overall overtime hours (based on tracked staff hours from past elections)

What We Have Done

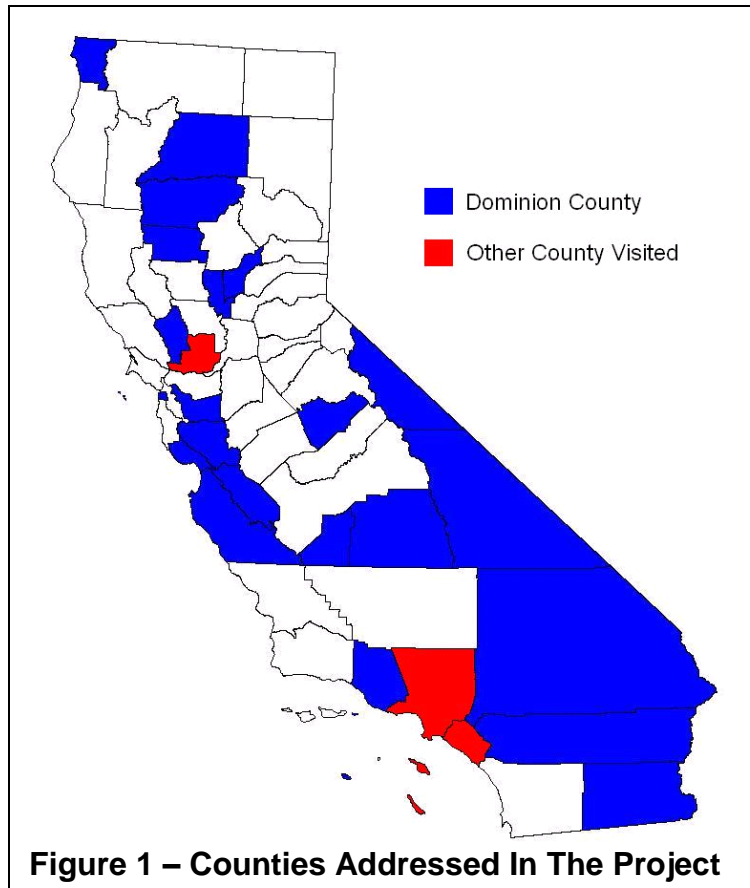
Site Visits

At the completion of the grant period, Santa Cruz County staff has visited 20 of the 21 counties that use the same equipment and have visited an additional 3 counties that use other types of voting equipment, but are known as leaders in canvass management and innovations. We were unable to find a time that would allow us to visit Del Norte County. The counties visited are:

- Alameda County
- Glenn County
- Imperial County
- Inyo County
- Kings County
- Mariposa County
- Mono County
- Monterey County
- Napa County
- Riverside County
- San Benito County

The additional counties visited (and the voting system they use) are:

- Los Angeles County (InkaVote)
- Orange County (Hart)
- Solano County (ES&S)



- San Bernardino County
- San Francisco County
- Santa Clara County
- Shasta County
- Sutter County
- Tehama County
- Tulare County
- Ventura County
- Yuba County

Surveys Sent

We have provided a 17 page survey to the counties that we have visited, requesting documents, procedure guides, and other pertinent information about their pre-election testing and their post-election auditing. A copy of the survey is attached to this report as Appendix A. The survey questions are culled from the California Elections Code (2010 version ISBN 1-889056-14-6), the Sequoia/Dominion Conditional Certification (found at <http://www.sos.ca.gov/voting-systems/vendors/sequoia/sequoia-31012-revision-1209.pdf>), and the Sequoia/Dominion California Use Procedures (version 3.05 February 2010).

Establish A Document Library

Two areas of the CACEO website have been created to address best practices regarding voting systems. These improvements are available to all California counties regardless of voting systems used. The first area is located in the document library and will function as a repository for documents and procedures pertaining to equipment use. The second area is a portion of the user forums where users can post questions, concerns, or best practices and others can respond. These two areas will assist Election Officials to be able to quickly share information and receive input from other users regarding their experiences.

Convert All Documents To Plain Language And Accessible Formats

As documents were updated or created, all efforts were made to do so using simple formatting, large print, and plain language at the lowest reading level possible. Jargon was also used as infrequently as possible and when it could not be avoided, the terms were defined.

Purchase Supplies

We originally looked at ordering storage equipment to help keep our numerous items together during the canvass period such as shelves, rolling carts, etc. Because space is an issue in our office and because no permanent structures could be done through the course of the grant, we only purchased a few supplies.

4' x 6' White Board

This was mounted to the wall in the back of our office next to the large work tables where the most of the canvass activities take place. The white board was updated daily by the Canvass Manager to detail that day's activities. Each activity included the names of the people assigned to it, the name of

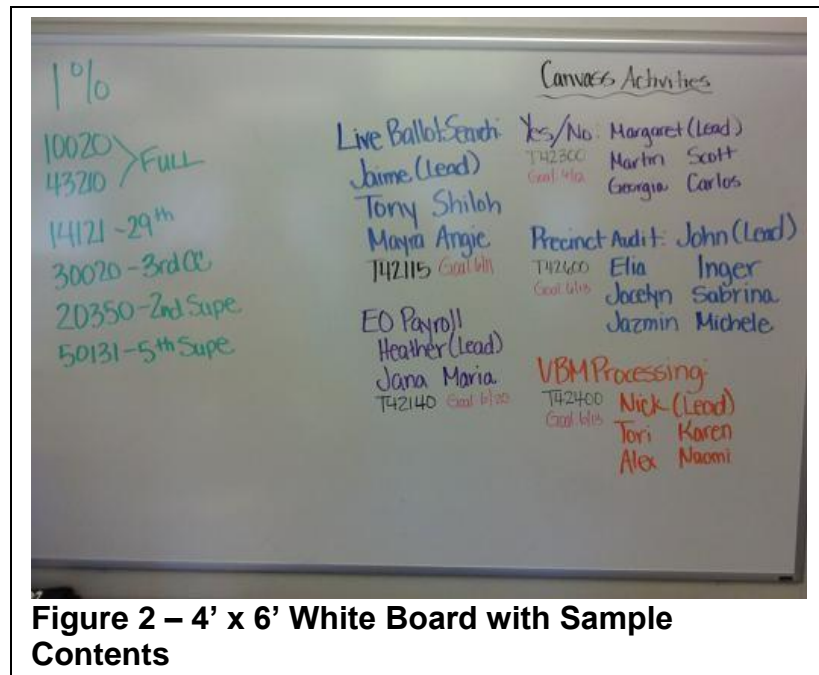


Figure 2 – 4' x 6' White Board with Sample Contents

the team leader, the labor activity number for time card purposes and the anticipated completion date. The board served many purposes: everyone knew where we were in the process; everyone knew what was expected of them and when it was expected; and there were fewer questions asked of the Canvass Manager as they were directed to the team leaders.

2' x 3' White Board

This white board is not mounted allowing it to be moved to satellite locations. Some canvass projects are moved to other areas (other County offices and facilities) because of space constraints. This board was used in the same manner as discussed above.

Legal Sized Plastic Folders

These “locking” folders (close with string and buttons) are used during the Election to keep all the materials together for each precinct. In the Canvass period, as each audit is completed (DRE manual tally, Write-In Tally, Precinct Audit, etc) the tally sheet will be placed in the corresponding precinct's folder. Also contained in the folder will be the

Equipment Distribution Reports, Ballot Receipts, Election Officer information, and all other documents that would trace the precinct from pre-Election testing through post-Election auditing, including Election Day. The benefit of having all this information together is immense because it gives a clear picture of what occurred in that precinct. It is also helpful, if a recount is conducted, to have all the documents together rather than having to dig through several boxes to get all the data.

Risk Limiting Audit Participation

In conjunction with the CA Secretary of State Office, our department is participating in a Risk Limiting Audit to test different ways of auditing voted paper ballots during the canvass period. Our portion of the project focuses on 6 different contests on the June 2012 ballot for a total of ~36,000 ballots.

The first step of the project was to make an image of each ballot and saving the images onto a hard drive that was sent to the research team at UC Berkeley. To do this we numbered each ballot on the back making it possible to locate a specific ballot after it was scanned. This step was made more efficient by having teams assigned to either label or scan. It took one week to number and scan the 36,000 ballots.

Various checks were put into the project to verify that the ballots were properly scanned. First, during the numbering process each precinct's ballot total was compared to the number reported on the Statement of Vote to make sure none were skipped. Second, as each ballot was being scanned, the equipment was capable of detecting when there was an issue (such as overlapping or 2 ballots being pulled through at the same time,) making it possible to correct an error instantaneously. After each precinct was scanned, the number of scanned images was compared against the number of ballots labeled to confirm that the precinct was accurately processed.

We are awaiting word from the research team as to when we can move to Phase 2 of the project: a manual tally. The premise of the project is that small batches from multiple precincts can be tallied with greater accuracy in less time than the current 1% Manual

Tally we are required to conduct. Many California counties are participating in the project, which is scheduled to be completed by 2013.

Survey Staff On Improved Documents As A Measure of Performance

Selected staff were interviewed regarding the changes to procedures used during the June 2012 Election. Surveyed staff were also asked to suggest further refinements. The survey was given during informal election debriefings. Responses were generally positive. The feedback is discussed further later in this document.

Post to CACEO Website

A copy of this report as well as selected related documents were posted to the CACEO website in the Document Library section.

Challenges Faced And Where We Failed

Challenge: County Reluctance

During our visits, we encountered surprising reluctance to disclose practices due to a number of concerns. Counties expressed fears that they would be penalized for any shortcomings in their current practices, fear that they are not doing enough, that they are doing things incorrectly, that they will be singled out as failing to comply, thus jeopardizing certification on their equipment, or that given their responses, even if provided anonymously, they could be identified based on the unique attributes of their county (such as size, geography, population, etc.) Furthermore, the counties may feel that due to the current requirements they may be labeled as deploying the equipment in a manner that is not congruent with the intent of the Help America Vote Act of 2002, which funded the purchase of much of the equipment in the state, or the Voting Rights Act of 1965 (for example, not well serving the disability community or language minority communities). This reluctance to participate in the project was worrisome and problematic for the ultimate goal of this grant and has caused a significant reworking of our goals.

Challenge: Identification And Removal Of Barriers To Participation

Due to the concerns of the counties, all included materials and information have been cleared by the named county prior to inclusion. The opportunity for information to be submitted anonymously or “off the record” was extended in an effort to try to include as many perspectives as possible while not putting any county at undue risk. Eight counties have provided information and only six counties completed and returned the survey, despite efforts to address their concerns. Because some of the counties wished to remain anonymous, all the information gathered will be kept confidential and used as described in the Goals Remaining section of this report.

Counties of all sizes had trouble interpreting the documents as written from the vendor and/or the Secretary of State. Furthermore, the requirements are not always clear as to

how they are to be implemented due to lack of clear example documents and checklists. As such, we received a variety of interpretations, some of which may include entirely different processes or procedures to comply with a single, vague requirement.

Failure: Draft Procedures And Practices

With the minimal responses to our questionnaire and request for documents, we were unable to get a large enough sample size to suggest new uniform procedures. However, we were able to look at other processes and procedures and make changes to our own procedures. Those documents will be posted on the CACEO website in the Document Library. Outside the scope of this grant, we will continue to seek permission from other counties to post their materials in the Document Library. This is discussed further in the Goals Remaining Section of this grant.

Failure: Testing

Since we were unable to draft new procedures, create or modify old processes to test, we are unable to report on those aspects. Having said that, it is important to note that we did update our procedures internally to the county. We tested some of those changes during the June 2012 Presidential Primary. Two changes of note were box-top tracking of outstacked and write-in ballots and the creation of a special precincts processing table at our central receiving center.

Having a system that keeps track of all the moving parts of an election really helps to make sure that all eligible ballots are accounted for. Though there are clear checks and balances in the Canvass (audit) section of the election, the Vote by Mail ballots happen prior to Election Day and don't really have a clear and defined audit. One of the goals of this grant was to help address this particular area.

During an election, there is a large number of vote by mail ballots that are moving through the system at any given moment. These ballots are in the form of unvoted, issued to a Vote by Mail voter, returned by the Vote by Mail voter, prepared for tally by

the Vote by Mail team, and tallied. It is necessary for the Vote by Mail team to keep accurate records in order to balance.

Keyed vs. Run is one of the check and balances that we use to audit the Vote by Mail ballots, but in each election it is a real struggle to make the audit work. Keyed vs. Run is looked at twice in each election: first when the “early” Vote by Mails are tallied for Election Night results; and second when the “late” Vote by Mails are tallied for the final certified results. The audit is done by comparing the total ballots tallied to the number of Vote by Mail envelopes keyed (returned in the system) plus the Confidential Voters minus the number of Rejected Ballots. The formula looks like this:

$$\text{Ballots Tallied} = \text{VBM keyed} + \text{Confidential Voters} - \text{Rejected Ballots}$$

To help aid in this, we instituted a new tracking system for the June 2012 election. As each Vote by Mail precinct was tallied, the number of ballots tallied was written on the top of the storage box. This number was then checked against the Precinct Control Sheet that was used to account for the number of ballots being prepared for the tally. Any discrepancy was noted, researched and resolved at that time, rather than waiting for the actual audit to occur.

Though this system made the Keyed vs. Run audit easier, there is still room for improvement. For the November 2012 election, we will be setting up a spreadsheet that will have the keyed numbers entered on it, the tally room will enter the amount tallied as well as writing it on the storage box lid, and the computations will be done automatically at that point. The tally operator will be able to see if there is a discrepancy immediately and notify the Vote by Mail team for resolution.

On Election Night, approximately ½ of precincts return their materials to the central receiving center. For precincts that had equipment issues on Election Day, this often means having to return extra memory media or printers on Election Night. Sometimes these precincts may have ballots that need to be centrally counted and therefore need expedited processing. For the June 2012 Presidential Primary Election, we created a special processing table for precincts that fell into these categories. This helped move

the materials to the proper hands significantly faster than in previous elections. Additionally, this meant we did not need to train all the check in staff on how to handle special precincts. That change alone improved efficiency by keeping the teams moving quickly through the simple precincts and letting just one team act as problem solvers.

As changes continue to be implemented, we anticipate even greater returns.

Conclusions

Every Size Jurisdiction Has Good Ideas To Share

Every county visited does something unique and creative to solve common problems that we all face. Below we discuss some of the best examples of effective programs we saw during our travels. Many of the items discussed below are scalable to any size jurisdiction or can be easily adapted to specific needs of a jurisdiction. For the purpose of this exercise, counties have been divided into three sizes:

- Small (up to 75,000 registered voters)
- Medium (up 76,000 to 400,000 registered voters)
- Large (over 400,000 registered voters)

Alameda County

Alameda County is a large county with approximately 752,000 registered voters. It is located on the east side of the San Francisco Bay. Alameda is one of two counties in the state that uses Ranked-Choice Voting. Additionally, Alameda is one of five counties that uses the Edge touchscreens and Insight scanners at the polling place and counts Vote-by-Mails using the 400-C ballot counters. They also produce materials in English, Chinese, Spanish, Filipino, and Vietnamese.

Being a large sized county, keeping the substantial amounts of data and ballots organized is critical. To accomplish this, staff have developed Vote Count Room Ballot Processing Procedures. These procedures use simple language and large, clear pictures to illustrate the concepts and processes it covers. Roles for the different staff positions are clearly defined. The document covers the most common problems the users may encounter and ballot jams. It also details how to address ballots that need special processing, such as outstacks and write-ins. The instructions are in a slideshow format so that they may be used in conjunction with staff training presentations.

When the procedures are coupled with excellent spatial controls on where the ballots are held, the potential for ballot mishandling is greatly reduced. Furthermore, the paper

tracking system used with the ballots further assures that the chain of custody on the ballots is maintained at all times and that all ballots are fully accounted for, even when they may go to separate physical locations such as the case with write-ins and outstacks.

Glenn County

Glenn County is a small county with approximately 12,000 registered voters. It is located in the northern third of the state along Hwy. 5. Glenn County uses Edge touchscreens at the polls for accessible voting and centrally counts their ballots on Insight Scanners. They produce their materials in English and Spanish. A significant challenge that small counties face is having a small number of staff to accomplish a large amount of work. Glenn County has an elected Clerk/Recorder/Assessor, a supervisor and one permanent employee in their division. They have solved this challenge by cross training the staff in their other divisions (Assessor and Recorder). During peak times the Elections Division is able to utilize staff from the other divisions as well as working with staff from the groundskeeper's office for deliveries. Furthermore, the relationship was reciprocal and during peak times for the other divisions, elections staff can assist them.

Imperial County

Imperial County is a small sized county with approximately 55,000 registered voters. It is located in the extreme southeast corner of the state bordering Arizona and Mexico. Imperial County uses the Edge touchscreens at the polls for accessible voting and centrally counts their ballots on a 400-C ballot scanner. Imperial produces materials in English, Spanish, and in the past, an oral-only language (Yuman) which is spoken by a local group of Native Americans.

Imperial County had two important innovations. First Imperial County has recently expanded their office space which allows them to create clear and sufficient physical workflows that are flexible so that the space may be converted from one project to another easily and quickly.

Keeping the open space dynamic allows the office

tremendous flexibility which a more structured space would not allow. Second, Imperial County was improving their asset tracking processes and had just contracted with a vendor to provide customizable tracking solutions for voting equipment and sensitive supplies. By improving their tracking capabilities they were increasing their ability to track down sensitive items quickly and assure chain of custody is maintained. These innovations have increased the County's responsiveness to all manner of challenges.

Inyo County

Inyo County is located on the far eastern side of the state beyond the Sierra Nevada Mountains and contains the majority of the Death Valley National Park. Although it is the second largest geographic county in California, it has a very small population with approximately 9,500 registered voters. Inyo County uses Edge touchscreens at the polls for accessible voting and centrally counts their ballots on Insight Scanners. They produce their materials only in English.



Figure 3 – Wide Open Floor Plan

Due to their very small population, the department has been allocated a total of four people including the elected Clerk/Recorder, to manage three county departments. To handle the three divisions, Inyo has been very creative in squeezing the most “bang for their buck” out of their pre LAT process. Pre LAT testing on the equipment is completed by the election officer who will be using the



Figure 4 – Inyo County Office. Testing Area is directly through the double doors

equipment under the direct supervision of department staff. This allows election officers to learn how to use the equipment, troubleshoot basic issues, and help the department complete the testing. The tests are conducted in the lobby of the county building in full view of anyone who either comes to observe or on other business. This highly creative procedure addressed several challenges and dramatically improved efficiency.

Kings County

Kings County is a small sized county with approximately 47,000 registered voters. It is



Figure 5 – Wide Open Area with Moveable Furniture

located in the southern half of the Central Valley along Hwy. 5. They use Edge touchscreens for accessible voting at the polls and centrally count their ballots on 400-C ballot scanners. Kings County produces materials in

English and Spanish. Additionally, Kings County is one of three counties that must seek “preclearance” from the USDOJ for any changes to their program.

Kings County’s office design creates a sense of openness and transparency. With wide open paths, clearly visible work surfaces and multiple ways to see into the tally room, observers have ample ways to see the action wherever it is occurring. The large open spaces also provide the ability for both staff and observers to move freely. The spaces also allow for observers who may need accessibility accommodations.

Mariposa County

Mariposa County is a small county with approximately 10,500 registered voters. It is located west of Sierra Nevada Mountain Range and contains Yosemite National Park. They use Edge touchscreens for accessible voting in the polls and centrally count their ballots on Insight scanners. Mariposa only produces materials in English.



Like Inyo, Mariposa has a very small elections division staff, the elected Treasurer-Tax Collector/County Clerk/Registrar of Voters, and six permanent staff. With only one of those staff members assigned full time to the elections division, peak work periods are problematic for the division.

Additionally, the office space the departments share is very small. To address these issues, the department creates partnerships with the other divisions as well as other

departments to share staff time and space. For example, other division staff assists with accepting ballot requests at the counter or Public Works deliver polling place supplies. For ballot counting, the division partners with the Board of Supervisors to use the chambers for ballot counting. These partnerships are beneficial to the division in time and money savings as well as beneficial to the other departments who gain a better understanding of the election process.

Monterey County

Monterey County is a midsized county with approximately 158,000 registered voters. It is a geographically diverse county, with the Monterey Bay and Pacific Ocean bordering the west, two mountain ranges (the Gabilan and Santa Lucia Mountains), two large lakes (Lake San Antonio and Lake Nacimiento), and Highway 101 and the Salinas Valley's large agricultural area dividing the two. Monterey also has a large military population with Fort Hunter Liggett and Camp Roberts at its south border, Fort Ord Military Base in Marina, the Defense Language Institute and the Navy Post Graduate



Figure 7 – Open Catwalks Give A Clear View of Cables

School in Monterey. Monterey produces bilingual voting materials in English and Spanish. Monterey is one of the three counties, along with King and Yuba (Merced County recently sought and gained relief) that must seek “pre-clearance” from the USDOJ for any changes made relating to registration and/or voting. The county has a large population of Vote by Mail voters, and offers polling place voters the option of voting a paper ballot or use of Edge II touchscreen voting machines for accessible voting. All paper ballots are centrally counted at the Department on three 400-C ballot scanners.

In response to the 2007 Conditional Certification of Voting Systems by the Secretary of State, and to meet the needs of the small office and number of election observers, Monterey has developed the most transparent tally room of all counties visited. The front wall of the tally room is comprised of two large windows with eight outward-facing monitors so observers may see the same information as presented to system operators. The wiring from each 400-C ballot scanner to the system servers is color coded and runs on open “cat walks” suspended from the ceiling. Above each machine is a drop down air compressor from the “cat walk,” that assists operator maintenance and reduces the Department’s environmental impact. Each 400-C also has its own staging table for ballot prep with bins to capture processed ballots for sealing and storage. The highly visible nature of this design is innovative and fosters a trusting relationship with the observers by providing them maximum transparency.

Mono

Mono County is a small county with approximately 5,500 registered voters. It is located east of the Sierra Nevada Mountains, north of Inyo County. They use Edge touchscreens for accessible voting in the polls and centrally count their ballots on Insight scanners. Mono only produces materials in English. By far the smallest of all the



Figure 8 – Mono County Warehouse Space

counties using this equipment, (~43% of next smallest) Mono has had to become the most creative in using what it has to make it work. Mono houses its equipment and supplies in an abandoned surgical suite and room they have adjoining. Having to make do with what is available is a challenge for any size county, but when you are so small and in an area with no growth, being creative in where and how you use your space is critical. Mono has really used outside the box thinking.

Napa County

Napa County is a rural county with approximately 68,000 registered voters. It is located northeast of the San Francisco Bay in the heart of California's wine country. They use the Edge touchscreens for accessible voting in the polls and centrally count their paper ballots on 400-C ballot scanners.

Effective October 2011 Napa produces their materials in English and Spanish.

Napa County does not release further vote tallies after election night until the certified statement of vote is released. After an election where a problem with the calibration of the 400-C ballot scanner was discovered late in the canvass

process, Napa conducts the 1% manual tally (required per California Elections Code §15360) as the final step in their canvass process. By moving the 1% to the end of the canvass, Napa is able to ensure that the ballot scanners have functioned properly through the entire tally process.



Figure 9 – Napa County's Tally Area

Riverside County

Riverside County is a large size county with approximately 852,000 registered voters. It is located in Southern California stretching nearly across the entire state from the Arizona border to Orange County (a coastal county), in a long, skinny shape. They use Edge Touchscreens for accessible voting at the polls and centrally count on 400-C ballot scanners. Riverside County produces materials in English and Spanish.

Having been one of the first counties in the nation to use touch screens exclusively at the polls, Riverside has developed robust testing procedures to address the concerns of their constituents. Their testing procedures are well written and go above and beyond the standard tests to address and demonstrate a variety of the security steps they have

taken to comply with certification requirements. For example, Certification Requirement #11 states:

“No network connection to any device not directly used and necessary for voting system functions may be established. Communication by or with any component of the voting system by wireless or modem transmission is prohibited at any time. No component of the voting system, or any device with network connectivity to the voting system, may be connected to the Internet, directly or indirectly, at any time.”

To demonstrate this, Riverside has a procedure to show observers that “pings” sent out to common internet addresses will not return because the machine is not connected to the internet. These simple demonstrations can help reduce challenges and help educate observers.



San Benito County

San Benito is a small sized county with approximately 25,000 registered voters. It is located slightly southeast and inland from the Monterey Bay to the west and the Central

Valley to the east. They use Edge touchscreens for accessible voting at the polls and centrally count the ballots on 400-C ballot scanners. San Benito produces their materials in English and Spanish.

San Benito County is in the beginning stages of creating a new in-house technical position to perform the functions that require a higher level of technical expertise than the other members of the small staff can maintain. This position will collaborate with staff and other departments, such as Information Technology and GIS. For example, this technical position will assist with ballot design and database and ballot tally system programming which require substantial technical expertise and time to complete and test while other staff are busy with other election deadlines.

San Bernardino

San Bernardino is a large county with approximately 815,000 registered voters. With over 20,000 square miles, it is the largest county in the contiguous US and is larger than 9 states. It is bordered on the east by both Arizona and Nevada and on the west by Kern and Los Angeles Counties. San Bernardino uses Optech paper ballots that are



Figure 11 – San Bernardino County’s Warehouse and Mezzanine

centrally counted on 400-C ballot scanners, and use Edge touchscreens for accessible voting at the polls. All voting materials are produced in English and Spanish.

Despite being a large size county, San Bernardino has very limited storage and testing spaces. The space was adequate for their prior voting system, but is grossly inadequate for the current system. They did mainly two things to alleviate this problem. First, they added a second level mezzanine to their warehouse for an additional 5,000 square feet to store official ballots and materials from previous elections; then they added up to 20 large (40 ft. x 8 ft.) shipping containers to the parking lot to house polling place equipment and supplies. With these two improvements they were able to free up close to 6,000 square feet of floor space for equipment testing, ballot processing, supply collation, canvass activities, etc.



Figure 12 – San Bernardino Storage Containers

San Francisco County

San Francisco is a large size county with approximately 470,000 registered voters. They are located at the gateway to the San Francisco Bay. It is the smallest geographic county in California. They use Edge touchscreens at the polls for accessible voting, count the paper ballots at the polls on Insight Optical Scanners, and count Vote by Mails and provisionals on 400-C ballot scanners. San Francisco was the first county in the state to use Rank Choice Voting. They produce materials in English, Spanish and Chinese languages.

Rank Choice Voting is very different than regular voting. As such, the preparation for the testing required for it takes more time than the average preLAT for a non-rank choice election. A longer testing process combined with its large size has caused San

Francisco to develop testing procedures that allow the use of vendor assistance during testing and bar-coded checklists. The way the process works is simple. The vendor tester is paired with a county tester. The vendor runs the tests by following the checklist and the county testers sign off that the tests were conducted correctly as the tests occur. Other county staff signs off on the test verifying that the results are 100% accurate. In addition, they now use pre-marked test ballots from their printer. All these steps have helped the county to meet the tight time frames of the election.

Santa Clara County

Santa Clara County is a large size county with approximately 755,000 registered voters. It is located at the extreme southeast corner of the San Francisco Bay with the Santa Cruz Mountains to the southwest, Calaveras Reservoir to the North, Henry Coe State Park on the east, and Pacheco Pass to the south. They use Edge touchscreens for accessible voting at the polls and centrally count their ballots on 400-C ballot scanners. They produce their materials in English, Spanish, Chinese, Vietnamese, and Filipino.

Santa Clara County has fully embraced automation to free up staff and space for more technical or labor intensive activities. For example, they use a Vote-by-Mail signature verification/sorter/opener/extractor to process their approximately 600,000 Vote-by-Mail ballots. This frees up the staff who would have had to do these tasks manually and all the floor and desk space these staff previously used. The staff resources can then be redirected to other tasks such as preLAT testing, canvassing the voted ballots, maintaining equipment, etc.

Santa Cruz County

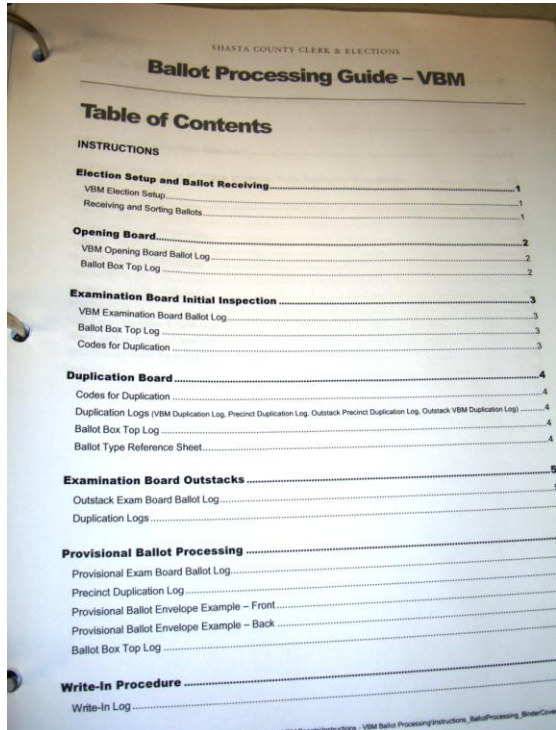
Santa Cruz County is a medium sized county with approximately 140,000 registered voters. It is located along the northernmost portion of the Monterey Bay to the Santa Cruz Mountains, spanning from the Pajaro River in the south and just beyond Castle Rock State Park in the north. We use Edge touch screens at the polls for accessible voting, Insight Scanners for paper ballots at the polls, and count Vote-by-Mail ballots on the 400-C ballot scanners. We produce our materials in English.

Documentation is our greatest strength in Santa Cruz. We have a variety of manuals, checklists, and instructional sheets for nearly every process we conduct. These documents help to ensure uniformity between elections and conformity to requirements by all staff members. The best documented areas of the election are preLAT testing on the Edges and Insights and the audits conducted during the canvass. These documents are posted to the document library on CACEO website as seed documents to start the library growing. This is further discussed later in this report.

Shasta County

Shasta County is a medium sized county with approximately 96,000 registered voters. It is located in the northern third of the state from the Sacramento Valley at the south to the Cascade Range at the North, straddling Hwy 5. They use Edge touch screens for accessible voting at the polls and centrally count their ballots on 400-C ballot scanners. They produce their materials in English only.

Shasta has developed excellent staff training manuals for the various activities of the election. The manuals are strategically placed in the areas of the office where the activities will take place. They are full of diagrams/screenshots/pictures to help illustrate concepts and instructions. The language is clear and simple. Because of the manuals, staff errors have decreased and productivity increased since staff had to spend less time hunting for answers to questions or receiving retraining.



SHASTA COUNTY CLERK & ELECTIONS
Ballot Processing Guide – VBM

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Figure 13 – Shasta County’s Vote By Mail Manual Table Of Contents



Figure 14 – Shasta County’s Manuals (Stationed Between The Monitors)

Sutter County

Sutter County is a small sized county with approximately 40,000 registered voters. It is located north of the State Capitol between the Sacramento River and the Feather River. They use Edge touch screens for accessible voting at the polls and centrally count their ballots on a 400-C ballot scanner. They

produce their materials in English only.



Figure 15 – Sutter County’s Multi Use Room. Used for Equipment Storage, Equipment Testing, Vote Tallying, etc.

Sutter County makes excellent use of their space. Each area of the office has restricted levels of access and strictly designated purposes. The work flow for the different functions is clearly thought out. For example, the room that is used to store the voting equipment is also used for testing that equipment and receiving the equipment back on Election Day. Additionally, the tally room is located off of this space. To accommodate this variety of functions, the room is set up for observation with a path of travel that allows you to see all the areas that might be of interest without compromising security or space needs to any of the areas. This is true of all the spaces in their office.

Tehama County

Tehama County is a small county with approximately 30,000 registered voters. They are located directly south of Shasta County and north of Glenn County as well as being bisected by the Sacramento River. They use Edge touch screens for accessible voting at the polls and centrally count on 400-C ballot scanners. They produce their materials in English only.

Tehama, like many others, has a very small staff and limited office space. They have maximized their opportunities by using space wherever it may be available. For example, voting equipment and supplies are stored and prepared off-site at another county facility. Polling place supplies are also delivered by the County Facilities Maintenance Department.

Tulare County

Tulare County is a medium sized county with approximately 140,000 registered voters. It is located in the Central Valley bordered on the east by the Sierra Nevada Mountains and roughly by Hwy 99 on the west and Hwy 65 on the south. They use Edge touch screens for



Figure 16 – Observer Area. Note The Table Line Beneath the Table.

accessible voting in the polls, Insights for paper ballots at the polls, and count Vote-by-Mails on 400-C ballot scanners. They produce their materials in English and Spanish.



Figure 17 – Warehouse Space Attached to Office. Tally Room Visible Via Window On Far Left.

Unlike many other counties, Tulare is lucky enough to have all their materials at their central office. This helps to promote transparency by reducing areas that observers may need to travel to during election prep or during the canvass. In the office they have cordoned off areas

where observers are not permitted to allow restricted information, like driver's license numbers or social security numbers to not be observed. These spaces (usually about 1'-2' aisles around work stations) also give workers a buffer of breathing room which helps keep stress down while under the scrutiny of observers.

Ventura County

Ventura County is a large county with approximately 407,000 registered voters. It is located on the coast in southern California bordered on the east by Los Angeles and on the west by Santa Barbara and Kern to the north. They use Edge touch screens for accessible voting at the polls and Insight scanners for paper ballots at the polls and counts Vote-by-Mail on 400-C ballot scanners. They produce their materials in English and Spanish.

For the size of the county and amount of equipment that needs to be stored and tested, Ventura has a very small warehouse space. To fully maximize their space, Ventura has purchased fixed shelving on tracks that can be moved via crank which greatly increases their storage capacity. Furthermore, the shelves are very clearly marked and this helps improve efficiency in locating equipment in the tight quarters.



Figure 18 – Moving Shelves (Tracks On The Floor) With Clear Signage



Figure 19 – Clearly Labeled Contents

Yuba County

Yuba County is a small sized county with approximately 29,000 registered voters. It is located in the northern third of the state. They use Edge touch screens for accessible voting at the polls and centrally count on 400-C ballot scanners. They produce their materials in English and Spanish. Yuba is one of three “preclearance” counties in California. This means they have to seek “preclearance” from the USDOJ before making any changes to their program.



Figure 20 – Yuba County Clerk, Record and Registrar of Voters Office Space



Figure 21 – Yuba County Elections Warehouse

Yuba County has one of the smallest offices visited. Their warehouse facility and office total no more than 2,500 square feet and is shared with the County Clerk and Recorder as well. Additionally, nearly all that space is visible to the public from the front counter. This greatly reduces the usable space to program, test and use voting equipment. Yuba has come to an agreement with their General Services Department to assume control of a large conference room for the month before and month following the election. During this time they change the door locks and fully restrict access to the space to authorized personnel from their department and escorted observers only. This arrangement allows them to leverage required space only when necessary and yet have sufficient space to program, test, tally and audit.

Los Angeles County

Los Angeles County does not use the voting system covered in our study. However, due to its extreme size, Los Angeles has a lot to offer in regards to being efficient. We observed a small election and portions of the subsequent canvass. We were most struck by the way in which Los Angeles worked through problems they encountered during canvass activities. They used a series of escalations to keep everyone moving forward while “problematic” precincts were reviewed and problems were resolved. For example, if during the roster review where voters are given credit for voting, a roster comes in with missing portions of pages, the roster would be escalated to a review team, keeping the line staff moving through the easily processed rosters. This means staff require less training as they only need to know what is required to do the step at hand and who to escalate the materials to if there are further issues. The levels of escalation can be as simple as line staff and one level up or many levels deep, where each level is capable of increasingly difficult or complete analysis.

Orange County

Orange County does not use the voting system covered in our study. During our travels to visit other sites, we were passing through Orange and stopped in to compare notes on the canvass dash board system they were designing as part of their grant from the EAC to see if there were elements of it that might be transferable to the canvass tracking work we were designing. Unfortunately, the trip occurred too early in the design phases to yield much in the way of collaboration, but we were able to tour their space and talk about their participation in the SOS Risk Limiting Audit grant from the EAC which we would also be participating in. This helped us in our planning for the Risk Limiting Audit.

Solano County

Solano County does not use the voting system covered in our study. However, they have developed work flows that help ensure ballots remain segregated as they move through a small shared space. Additionally, Solano has perfected their Election Officer

training program to include targeted training video “shorts” that allow Election Officers to brush up on areas they are unsure of quickly and easily.

Solano’s ballot processing room is set up in such a way as to force a one-direction flow of ballots. Ballots enter through the main door and travel counterclockwise through the stations before exiting via the same door. Later, after tally, the ballots are transported through the same space again but do not enter the work flow.

Solano’s video shorts are a simple and easy way to provide targeted Election Officer training. The videos are produced on a wide variety of election processes and are usually one minute in length. The video demonstrates the voting process in action so people with different learning styles have opportunities to get the information they need.

Nobody Has Enough Space, Staff Or Time

With continuing budget and staff cuts, but increasing statutory and regulatory requirements for deployment, the spaces that were designed for the equipment and ballot processes pre-recertification (where many counties were all touchscreen), now must accommodate an entirely different and more space intensive workflow (with the use of both paper ballots and touchscreens as well as the storage of the already purchased machines.

With staff cuts and the continuing budget situation, departments are without the staff or the ability to hire new or temporary staff to comply with the increased procedures. This in turn creates a situation where counties must prioritize what processes they focus on, reducing some programs, such as touchscreen voting, to a very low priority given the requirements to provide paper ballots to the majority of their voters and the intensive nature of the touchscreen programming, testing and auditing. This problem flies in the face of the intent of HAVA and California’s Proposition 41 Voting Modernization Bond Act, which helped fund the purchase of the touchscreen equipment. Yet these new barriers are the reality for many counties.

As requirements become more cumbersome and numerous, the deadline to complete them has not changed. When this is coupled with the lack of resources, staff and space, the ability to complete all the testing, auditing and canvassing processes are further challenged.

When considered together, the reality is rather grim. Counties have to cut services to the bare bones and provide them with record low staff in space that is not designed to accommodate what must be done in the time that is overtaxed. Mistakes are inevitable, given enough time and the increasing complex California ballots.

Nobody Has Enough Money

The one time funding via HAVA has created a problem where there is no replacement money and the technology is aging at the same time. Parts are scarce or not available and counties are stuck with equipment they can't repurpose without losing the money back to the federal or state government. Equipment integrity is compromised by having to use the equipment past its normal shelf life. When considered in conjunction with the other challenges faced, the likelihood of a major failure in the next several years is a real threat.

Goals Remaining

Produce Improved Manuals

Simply put, the way which California regulates the use of the voting systems used within the state must be overhauled, and soon. In our travels, we found an alarming trend of fear and a relatively new culture of secrecy. This is alarming on many levels.

First, many counties were frightened to share their processes and procedures, even to the point of not wanting to provide tours of their office space and warning us that undertaking this sort of project would lead to “problems the likes of which we can not comprehend”. Their warnings and fears were earnest, dire, and whole-heartedly sincere. The feeling that we would somehow expose them to liability or censure from the Secretary of State’s Office was palpable and genuine creating substantial and often times insurmountable barriers to completing our task.

Second, elections must be transparent in all aspects. The lack of transparency was evident by the very small number of responses to our survey and even for the surveys that were completed, many questions were skipped. When taking office tours, some counties would not discuss how they conducted certain activities, even when we walked through the spaces in the office where they were conducted.

Third, when election officials stop sharing best practices and responses to challenges, innovation stops and known issues do not get addressed. This problem became increasingly evident during our travels. One county would talk about a problem they had and it would be a problem that we too had faced, but since neither county shared their experiences, both counties were left to work their way to a solution without the benefit of shared knowledge. This increases the divide between the ways the counties operate and leaves room for election challenges based on those discrepancies. Additionally, vendors did not share the challenges they faced with all the counties that used their

products, their assumption being that the counties discuss these issues between themselves.

Based on the challenges addressed above, we were unable to complete the documents we hoped to produce in our exercise.

While the end product is far less substantial than we hoped, the work was certainly not in vain. Stemming in part from our work on this grant project, we are seeing significant discussions at the state level on voting system use and issues. These discussions had largely stalled since the “Top to Bottom” Review in 2007. Previous efforts to bridge the trust gap had met with limited success.

As we worked on this project, we were also active in the CACEO Legislative Subcommittee on HAVA and Voting Systems. Discussions in those meetings showed that these issues were not limited to our voting system, indeed our system had some of the best communication in this regard, and that the issues at hand are systemic of three current problems in election administration in CA at the present time. These issues are:

- How work-arounds and problem fixes are vetted at the SOS Office
- The availability of replacement parts for aging voting equipment and certified replacement systems for purchase
- The state of the Use Procedure Documentation and how it is crafted and executed statewide.

The HAVA subcommittee, along with the SOS and vendors have agreed at a recent meeting to begin addressing these issues and come to a new level of participation and openness. These efforts have already begun to bear fruit. At the latest HAVA and Voting Systems Subcommittee meeting, the SOS unveiled a new report that they intend to share monthly. To help keep counties informed on national and state testing of voting equipment, problems with voting equipment reported to them, work arounds and modifications under consideration as well as ballot printing production updates. This is an important leap forward in this process.

We are very pleased to see the changes taking shape and intend on participating heavily in them in the future. Due to the efforts of this grant project, we are able to provide a unique understanding of how proposed processes or changes would perhaps affect the counties we have visited. At the meeting referenced above, efforts began to address rewriting not just our Use Procedures, but the Use Procedures for the four vendors that participated in the Top to Bottom Review. With the information gathered and the relationships built, we will be heavily involved in the redrafting of the California Use Procedures. This project will be even more productive than we originally set out to accomplish under this grant as it now encompasses the procedures used by 57 of the 58 counties in the state. Los Angeles is the only county unaffected, but the chair person on the HAVA and Voting Systems Subcommittee is from Los Angeles County and has been a driving force behind these reforms.

Marketing the Document Library

As part of this grant we created the document library wherein we posted our procedures. We intend to work on “marketing” the document library for other counties to add their documents to. This should facilitate a free-flowing sharing of ideas regarding “on the ground” implementation of the various requirements.

SOS Procedures Regarding Part Replacements And Work Arounds

At the above referenced HAVA and Voting Systems Subcommittee meeting, the SOS stated they have begun a review of their administrative approval process documentation. They are committed to making the process as easy and efficient as possible while still providing adequate review and testing. This is another critical piece in the coming reforms.

Budget Summary

Below is a summary of our expenditures.

	Actual as of 5/30/2012
Supplies	930.38
Travel	3611.46
Staffing	
Site Visits	9484.37
Conference Calls	716.46
Draft/Redraft Procedures	1777.84
Implementation/Testing	1767.84
Total Grant Request	18288.35

Supplies:

Through the course of the grant, we only purchased a few supplies.

- 4' x 6' White Board
- 2' x 3' White Board
- White Board Pens and Erasers
- Legal Sized Plastic Folders

We also spent some money on paper and copies, as we reworked several of our Canvass documents.

Travel/Site Visits: We found that visiting each county was the most effective way to gather data for our survey and project. We were able to visit 21 counties that use Dominion voting equipment. During these visits we were able to talk with the personnel involved in testing and auditing, tour their warehouse and office spaces, and learn about their processes. We also had the opportunity to visit 3 other counties (Los Angeles, Orange and Solano) who use a different voting system than Dominion. Again we were able to talk with personnel, tour the facilities and learn about their processes. Though the “lingo” was different, we were able to glean many things from seeing something different.

Draft/Redraft: We were able to draft some new procedures in the area of the Canvass. We radically changed how we conduct our 1% Manual Tally and reworked the traffic flow through our Receiving Centers. After testing some of these new procedures in the June 2012 election, we are in the process of simplifying the closing procedures at the polls in order to help get the ballots to our office for more timely election results.

Implementation/Testing: We tested most of our changes to procedures during the June 2012 election. We will be implementing more changes in the November 2012 election as well.

Appendices

Appendix A – Survey To Counties

Appendix B – Santa Cruz County Modified Procedures

- 1% Manual Tally
- Audit Checks and Balances
- Audit Log Review
- Canvass Activities
- Canvass Task Management
- Chain of Custody
- Envelope 3 Processing
- Envelope 6 Processing
- Escalations During the Canvass
- Keyed vs. Run
- Precinct Audit
- Tallying on the 400-C
- Vote By Mail Processing
- Warehouse Canvass Activities