



County of Santa Cruz

0045

COUNTY CLERK / ELECTIONS

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GAIL L. PELLERIN, COUNTY CLERK

October 11, 2005

AGENDA: October 18, 2005

BOARD OF SUPERVISORS
County of Santa Cruz
701 Ocean Street, 5th Floor
Santa Cruz, CA 95060

APPROVAL OF VOTING SYSTEMS MODERNIZATION PLAN

Dear Members of the Board:

For the last year, the County Clerk's office has been heavily involved with the implementation of the federal Help America Vote Act (HAVA) and California's Proposition 41, the Voting Modernization Act (Prop. 41). My staff and I have worked with a diverse group of stakeholders on the recommendations contained in this letter and detailed in Attachment A. The process has been difficult and confusing at times due to the myriad of changes from the Secretary of State's office. Certainly, the fact that the previous Secretary of State was forced to resign in March 2005 amid investigations into his office administration, his management of personnel, and his campaign activities has not prepared California well for the mandates imposed by the federal Help America Vote Act. And, while our new Secretary of State Bruce McPherson has done much to direct efforts to ensure compliance, California is not well prepared for the HAVA mandates.

The purpose of this letter is to provide your Board with information on the process this office used to evaluate the proposals, and requests your Board's approval to negotiate and enter into a contract with Sequoia Voting systems for the purchase and implementation of a new voting system as well as take related actions. At this time, I believe that a blended voting system, one that replaces our Mark-A-Vote voting system with a precinct-based optical scan paper ballot system combined with one HAVA-compliant touch screen machine at each polling site, is the best option for Santa Cruz County.

BACKGROUND

In July 2005, the General Services Department Purchasing Division, working in conjunction with the County Clerk/Elections Department, issued a Request for Qualifications (RFQ) for a new voting system to meet the HAVA requirements. HAVA, among other things, mandates that each polling place in the nation provide a voting system that is accessible for individuals with disabilities. The Act specifies that the accessibility requirement may be satisfied through the use of at least one touch screen or direct recording electronic (DRE) voting system or other voting

system equipped for individuals with disabilities at each polling place. The Act also specifies that each County satisfy this requirement no later than January 1, 2006. On August 23rd your Board approved the distribution of a Request for Proposals (RFP), which requested detailed project costs from the qualified vendors. This information has been compiled and reviewed extensively with the help of our consultants, Visionary Integration Professionals, LLC. The process utilized is described below:

EVALUATION AND SELECTION PROCESS

The process to select a new HAVA-compliant voting system is described in detail in the Attachment A. In summary, the process involved four major components.

- A Voting Systems Task Force was established to evaluate the RFQs and RFPs, to review public input, and to recommend a preferred voting system. The Task Force was comprised of the County's Treasurer-Tax Collector, the County Clerk, representatives from County departments, including the County Administrative Office, County Counsel, General Services, Information Services, and Elections, and our Voting System Project consultants.
- A Public Advisory Committee was established and invited to attend vendor demonstrations and to provide advice and counsel. This committee included representatives from the political parties, pollworkers, service groups, representatives from the disabled, Latino, student, and senior communities, and retired public officials.
- Vendor demonstrations of the various voting systems were open to the public in Watsonville, Santa Cruz, the Government Center and the County Fair and user surveys were taken throughout the public review periods.
- A comprehensive website was established that provided information on new voting systems and a dedicated e-mail address for public input at newsystem@votescount.com.

After a review of the RFQs and RFPs, public input, and taking into consideration a unanimous decision of the Voting System Task Force, I am recommending that the County establish a contract with Sequoia Voting Systems for the purchase and implementation of a blended voting system. This system would place one HAVA compliant DRE at each polling site while improving the existing Mark-A-Vote system.

The Voting System Task Force was unanimous in its recommendation regarding the preferred vendor, and it was unanimous in its recommendation to implement DREs with a Voter Verified Paper Audit Trail (WPAT) at all polling sites, reserving a paper ballot/optical scan system for absentee and all-mail ballots, and for those who expressed a preference to vote by paper ballot at the Government Center and at our satellite voting center at the Watsonville City Hall. At this time, it is my recommendation that the County implement a blended voting system that provides one accessible touch screen with an attached Voter Verified Paper Audit Trail (WPAT) device at each polling place, partnered with a precinct-based optical scan voting system with paper ballots. The recommended paper system provides for second chance voting to address voting system requirements in federal elections that must allow voters to correct over-votes (selecting more than specified number of candidates for a contest). My recommendations are based on the following considerations:

- Cost – In the short term, a full touch screen deployment will cost significantly more than deploying the blended option, which provides both paper ballots and touch screen options at each polling place. If the County were to install only touch screens with

WPAT, there would be insufficient funds remaining to address costs to retrofit a warehouse to maintain and store the devices, to conduct voter education programs and training programs for poll workers, support additional staff and to improve accessibility at polling places.

- Changing technology – Electronic voting is still an immature technology. To date, no California County has conducted an election using only HAVA-compliant electronic touch screen devices with WPAT. In addition, there are very real issues associated with the battery back-up systems required to keep these systems up during power failure. As you Board is aware, past Elections have been conducted during all-day power outages. While it is unfortunate that the federal and State mandates are ahead of the technology, our County still must meet the HAVA mandates as of January 1, 2006.
- Changing legal and legislative environment – As of today, the federal Elections Assistance Commission has not published standards for touch screen voting systems, and there continues to be uncertainty regarding the purpose and use of the WPAT. In this already changing atmosphere, the federally established Carter/Baker Commission has released a report suggesting additional changes to federal election law. This would suggest that it may be imprudent to invest heavily in a technology that may change dramatically over the very near term.
- Public Opinion – While over two-thirds of the members of the public that participated in the user survey indicated that they were “definitely” or “almost definitely” ready to vote on a new voting system, the public was nearly evenly split on their preference for a system that utilized a paper ballot, versus a system that utilized touch screens with WPAT.

I request the authority to negotiate and sign a contract an agreement with Sequoia Voting Systems in an amount not to exceed \$2.3 million.

PROJECT FINANCING

The state and federal government have made \$3,396,656 available to Santa Cruz County to procure a new voting system in the form of HAVA and Prop. 41 grant funding. Additional funds are also available through HAVA to conduct poll worker training, educate voters, and improve polling place accessibility. The state Proposition 41 grant funds require a 25% match of local funds; however, HAVA funds can be used to satisfy the local match.

A full deployment of touch screens at polling places and a new paper ballot/optical scan system for absentee and all mail voters is estimated to cost approximately \$3,350,000, leaving about \$150,000 for all remaining costs, such as warehouse retrofit, accessibility improvements at polling sites, staffing and public education and training. To complete this type of deployment in 2005-06 would put a burden on the General Fund and is not being recommended at this time.

In contrast, a blended system that provides only one touch screen with WPAT at each polling place, with additional devices available at the Santa Cruz County Government Center and at the Watsonville City Clerk's Office, and a paper ballot system with optical scan to tally votes at each polling place and for absentee and all-mail voters is estimated to cost approximately \$2.3 million. This would leave approximately \$1.1 million for warehousing improvements, additional staff, professional contract support, education and training, and other polling site accessibility work. Any remaining funds would be set aside to accommodate a more robust deployment of touch screen systems if desired at a later date, once the laws governing the touch screens and voter confidence in electronic voting is more fully resolved. While staff will make every effort to negotiate a provision in the contract negotiations to “trade in” optical scan equipment for

additional touch screens with WPAT, it is appropriate to recognize that additional resources up to \$1.8 million would be required to expand the availability of the touch screen option.

I recommend the Board approve the attached Resolution Accepting Unanticipated Revenue in the amount of \$2.3 million in HAVA and Prop 41 funds for the purchase of a new voting system and \$252,000 for extended maintenance and \$30,000 to continue the contract with Visionary Integration Professionals, LLC (project consultant). A more detailed presentation of projected costs is contained in Appendix F.

ON-GOING COSTS

HAVA and Prop. 41 funds are limited, one-time funding therefore requiring the General Fund to assume on-going costs in the future. In addition to costs associated with the purchase of a new voting system, the County will incur additional costs each year to maintain and warehouse the system as well as additional staffing necessary to operate the system after the initial first year funding.

In order to: warehouse the new devices; maintain the DRE technology, which will require staff resources to test, charge and maintain the systems; and manage the complexities of running a two part voting system, comprised of a paper ballot system with the second chance voting option, and the federally mandated accessible DRE machine. Our consultant team has recommended the addition of 1.0 FTE position to manage the DRE technology and the addition of 1.0 FTE position which will report directly to the County Clerk to help deploy the new system and manage public and media relations, pollworker training programs, and voter education. The DRE technologies are complex, requiring new testing, maintenance and security protocols, and the paper system requires more hands-on participation than the current system.

In order to insure the high level of integrity of the elections process, I recommend that the Personnel Director be directed to classify the requested new positions for 2005-06. One time grant funds are available to finance the first six months of salary and benefit costs and will need to be recognized at that time. Future funding for the 2.0 FTEs will be addressed as part of the County's budget process.

Finally, in June 2004 your Board approved a contract with Visionary Integration Professionals, LLC., who has provided invaluable expertise during the evaluation and selection process. This firm has assisted a number of other counties in this process. Staff believes that continued hands-on technical support of the new system set-up and logistical support is crucial to the success of the voting system implementation plan. I request that your Board approve an amendment to the current agreement to expand the scope of work to include logistical support and system set up activities and to include additional funds for these activities in the amount of \$30,000 for a new total of \$90,000. These costs are eligible for reimbursement under the State and federal grant guidelines and represent no new net county cost.

SUMMARY AND CONCLUSIONS

My office has developed a number of reports to your Board on efforts staff has undertaken to address the HAVA requirements of implementing at least one accessible voting device per polling place to allow voters with disabilities to vote privately, unassisted, to address federal legislation requiring second chance voting at the polls, and to improve the accessibility of polling places. The task of addressing the HAVA issues has clearly been compounded by the fact that California continues to have only two voting systems certified for use in the State. Sequoia

Voting Systems is one of the certified systems. For a number of years, this firm has provided the County with paper ballots and election materials in an exemplary fashion. Our two neighboring counties, Santa Clara and Monterey also utilize Sequoia's voting systems, which provide a strong Central Coast area user block that can be advantageous to new product development and deployment. And, as voting technologies and laws continue to evolve, I believe that Sequoia Voting Systems is the most promising vendor to partner with the County through this changing environment.

I would like to express my appreciation to members of the Voting System Task Force, to the Public Advisory Committee, and to the voting public who came out and tested the voting systems during this important selection process. I have relied greatly on their advice and counsel as I formulated my recommendations. The attached report provides additional detail on evaluation and selection process, the financing plan, project costs, and how other California counties have addressed the need to modernize.

It is therefore RECOMMENDED that your Board:

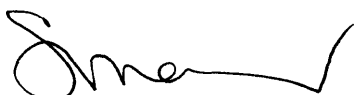
1. Accept and file this report on a Voting Modernization Plan for Santa Cruz County;
2. Authorize the County Clerk to negotiate an agreement with Sequoia Voting Systems in an amount not to exceed \$2.3 million and return back to the board for authorization to sign the final contract;
3. Adopt a resolution accepting and appropriating unanticipated federal and state grant funds in the amount of \$2.455 million;
4. Authorize the County Clerk to work with the appropriate County departments to identify warehouse space for equipment storage;
5. Request that the Personnel Director classify the 2.0 FTE positions by November 22, 2005, and open recruitments with the goal of hiring no later than January 1, 2006;
6. Authorize the County Clerk to negotiate and sign an amendment to the contract with Visionary Integration Professionals, LLC. to add additional duties and increase the contract by \$30,000; and
7. Request that the County Clerk return on or before November 22, 2005 with additional actions that are required to implement a new voting system, including a warehouse solution and staffing..

Sincerely,



Gail L. Pellerin
County Clerk

RECOMMENDED:



SUSAN A. MAURIELLO
County Administrative Officer

Attachment A

SANTA CRUZ COUNTY VOTING SYSTEM REPLACEMENT PROJECT

BACKGROUND

The Help America Vote Act (HAVA) was passed by Congress in 2002 to provide assistance with the administration of and establishment of election administration standards for federal elections. While the HAVA requirements only apply to federal elections, it is essential that these same procedures be followed for any local or state election as well. HAVA provides the states with funds, which, in part, are to be disseminated to the counties to meet the various provisions of the Act. Among other things, the Act requires:

- Nationwide implementation of provisional voting
- Voter ID requirements for new voters in federal elections
- Replacement of punch card and lever voting machines
- Voting system accessibility for voters with specific needs
- A centralized statewide voter registration database in each state and territory
- Specialized handling of absentee ballot applications for military and overseas voters
- Each state and territory to define what constitutes a valid vote

California had already implemented many of these requirements, including provisional voting, permanent absentee voting for military and overseas voters, and the establishment of voting systems standards defining a valid vote. With minor modifications to our existing systems and procedures, California counties have been able to meet these requirements with relative ease.

However, the current optical scan, Mark-A-Vote, voting system used in Santa Cruz County since 1995 does not allow voters with disabilities to vote a ballot in secret and is therefore not compliant with HAVA.

The HAVA requirements go into effect on January 1, 2006. Voting systems purchased by counties must be federally-qualified and state-certified. As of October 1, 2005, there are only two HAVA-compliant voting systems that have been conditionally certified by the state: Sequoia's Touch Screen with Voter Verified Paper Audit Trail (VVPAT) and ES&S's AutoMark

To meet these requirements, Santa Cruz County has a number of options, including:

1. Purchase a new voting system with optical scan paper ballots and accessible electronic component for use in June 2006 (abandoning the Mark-A-Vote voting system).

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2. Purchase a new voting system that provides touchscreens only at the polls with optical scan paper ballots for absentee and provisional voters for use in June 2006 (abandoning the Mark-A-Vote voting system).
3. Purchase an electronic accessible voting system to supplement the Mark-A-Vote voting system for use in June 2006 with plans to implement the optical scan paper ballots piece of the system for use in November 2006 (Touchscreens and precinct-based machines for optical scan).
4. Purchase an electronic accessible voting system that can be used with Mark-A-Vote (i.e., telephone voting) Keep Mark-A-Vote until some future date. Mark-A-Vote is a "grandfathered" voting system that is certified for use in California, although it has not been federally qualified. The SOS has determined that jurisdictions using a "grandfathered" voting system must combine its use with an additional accessible voting system so that accessibility requirements of HAVA are met. In the future, if there are changes or modifications to the grandfathered voting system, the SOS has determined that it may require examination of program source code, State certification testing, federal examination and qualification, or any combination thereof. The vendor has indicated that it would no longer support the system should it have to go through federal qualification. There is also question of whether Mark-A-Vote meets the HAVA requirement of "second-chance voting." (precinct-based count – machine at the polls to insert ballot from voter and alert voter to overvotes and undervotes and allow voter to correct before casting ballot). While some believe this can be accomplished through voter education, others disagree and believe this issue will be challenged if jurisdictions continue to use systems that do not offer this feature. Also, operating two different voting systems requires complete and separate handling, including separate ballot layout and ballot counting. It is uncertain whether a bridge could be developed to connect Mark-A-Vote with another voting system.
5. Do nothing at this time at the risk of being sued for failure to comply with HAVA.

Each of the above options have both pros and cons that have been thoroughly discussed by the Voting System Task Force.

VOTING SYSTEM TASK FORCE

A Voting Systems Task Force was selected to review the county's options and to develop consensus on a proposed course of action. The Task Force is comprised of:

- County Clerk and Elections Department staff
- County Administrative Office staff
- County Treasurer-Tax Collector
- Information Services Department Director and Assistant Director

- County Counsel staff
- General Services Department staff
- Visionary Integration Professionals, Project Planners

The Committee held its first formal meeting on July 8, 2005 to discuss HAVA, the project overview, the Request for Qualification process, and the critical milestones. The committee held its second formal meeting on July 19, 2005, to discuss roles and responsibilities, tasks, project calendar and the current vendors. The committee agreed to invite 6 vendors to make formal two-hour presentations and demonstrate voting systems.

The Committee held its third formal meeting on July 28, 2005 which included nearly two hours of education on voting systems, vendors, selection criteria, options, state and federal mandates, and funding availability.

The Committee held its fourth formal meeting on August 4, 2005. This meeting focused on a debriefing on the vendor demonstrations that took place during the prior week. In addition, the committee reviewed the results of the ratings of each vendor based on detailed criteria.

On August 16, 2005 the committee met and received a copy of each vendor's response to the Request for Qualifications (RFQ). The committee reviewed and finalized the system and vendor selection criteria. Each committee member took the responses with them for informal review.

Additional meetings held on August 24 and September 6 focused on reviewing the vendor's responses, the preliminary ratings and the vendor administrative scores. In addition, results and input from the public demonstrations were discussed.

On September 20, 2005 the committee met for the final meeting to discuss and reach a consensus recommendation for a voting system. After reviewing evaluation scores and input from the public, the task force voted unanimously to establish a contract with Sequoia Voting Systems to purchase and install a new voting system. The Voting System Task Force was also unanimous in its recommendation to implement all Touch Screens at the polling sites and reserve the paper-based optical scan voting for those who vote by mail, and those who request a paper ballot at the Government Center and at Watsonville City Hall.

VENDOR DEMONSTRATIONS FOR VOTING SYSTEMS TASK FORCE AND OTHERS

Four days were set aside for vendor demonstrations on July 28, August 1, 2 and 3. Presentations included extensive hands-on, technical review, and question and answer sessions, as well as hands on review from as many as 4 members of the disabled community (demonstration requirements are listed in Appendix A). The county's Voting System Task Force Committee was invited to attend these demonstrations along with

various county staff, city staff, and members of the County Clerks' Voting Accessibility Advisory Committee.

PUBLIC ADVISORY COMMITTEE

In addition to the Task Force's evaluation process, a public advisory committee was established to provide feedback from various members of the community. This committee included representatives from the following: political parties, poll workers, service groups/organizations, disability community, Latino community, student community, senior community, and retired officials from the county and cities. The committee was asked to reach out to each of their respective constituents to solicit feedback and encourage them to attend all four public vendor demonstrations.

The public advisory committee held its first formal meeting on August 23, 2005 which included nearly two hours of discussions on HAVA, voting systems, vendors and vendor products, as well as a question and answer and public comment period.

The public advisory committee held its second formal meeting on September 6, 2005, to discuss the previous week's public demonstrations and review the results of the public survey. The committee provided valuable feedback and input from their respective constituents on how the county should select a voting system.

VENDOR DEMONSTRATIONS OPEN TO THE PUBLIC

Four public vendor demonstrations were held throughout Santa Cruz County:

- Gottshalks - Watsonville (8/30)
- Santa Cruz Book Store - Santa Cruz (8/31)
- Elections Office - Santa Cruz (9/6 through 9/9)
- Santa Cruz County Fair - Watsonville (9/13 through 9/18)

Several types of equipment were available for public review, test drive and critique from a variety of vendors, along with brochures, video and DVD presentations.

Attendees were asked to complete a simple survey soliciting feedback on their readiness to move to a new system, the type of system they prefer, and ease of use of each type of system (key results of those surveys are attached as Appendix B).

REQUEST FOR QUALIFICATIONS (RFQ) PROCESS

Santa Cruz County Elections hired an election system consultant to prepare the RFQ, which matched the County's specific requirements. Working with Procurement and Contracts, RFQ 05X1-001 was completed and advertised in The Sentinel beginning July 25, 2005. The RFQ was then distributed to eight voting system vendors on July 26, 2005. The complete schedule, as listed in the RFQ, is below:

ACTIVITY	DATE
Advertise RFQ - Sentinel	July 25, 2005
Release RFQ	July 26, 2005
Written questions due to Purchasing Agent	July 29, 2005
Responses to questions issued	August 5, 2005
RFQ Due	August 12, 2005, 2:00 p.m.

The RFQ did not specify a type of voting system (there are two primary types available: Optical Scan, and DRE/Touchscreen), but it did specify that the system needed to be certified by the SOS by November 1, 2005. The County received six responses to the RFQ from the following vendors: Accupoll, Hart, Diebold, ES&S, IVS, and Sequoia.

On August 16, 2005, elections staff and the Voting System Task Force began evaluating the proposals using a detailed requirements matrix. Final results were compiled, summarized and distributed on September 14, 2005 for final review and evaluation.

The following is a summary of the RFQ review vendor scores:

TASK FORCE RFQ RATING						
Possible Points	Sequoia	HART	IVS	ES&S	Diebold	Accupoll
1600	1421	949	872	1299	1244	888

REQUEST FOR PROPOSAL (RFP) PROCESS

On August 24, 2005, an RFP was issued to each of the responding vendors soliciting additional information and a formal cost proposal.

The cost proposals ranged from \$214K to \$3.3M depending on the vendor and type of system proposed (the summary of these cost proposals can be found in Appendix E).

These costs were presented to the Voting System Task Force on September 20, 2005 for review and evaluation.

FUNDING

In conjunction with these mandates, the state and federal government have made \$3,396,656 available to Santa Cruz County to procure a new voting system in the form

of HAVA and Prop. 41 grant funding. Additional funds are also available through HAVA to conduct poll worker training, educate voters, and improve polling place accessibility.

The funding to replace or supplement the current voting system is available from two different sources: Proposition 41 Bond Act passed by voters in March 2002 and HAVA. To receive Proposition 41 funds, counties must submit a project documentation plan to the Voting Modernization Board by January 1, 2006 along with a signed contract with a certified vendor. The Voting Modernization Board voted September 23 to extend the deadline to January 1, 2007. The staff also recommended that quarterly status reports be required of counties that will not have submitted Project Documentation Plans by December 31, 2005. The staff report goes on to acknowledge that HAVA requires that voting equipment be accessible by January 1, 2006; the first statewide federal election in which such equipment would be used is the June 6, 2006 Primary Election.

A deadline for spending HAVA funds has not been announced, although, each round of funding prior to this time have had deadlines for spending.

Funding Source	Total Amount California	Santa Cruz County Share	Amount received as of 6/1/05	Purpose of funds - Restrictions
Proposition 41	\$195,000,000	\$1,698,328	0	Modernization of Voting System - 3:1 match, \$3000 cap state funding per DRE
HAVA Sec. 301	\$195,000,000	\$1,698,328	0	Purchase of Accessible Voting Equipment - can be used for County's Prop. 41 match.
HAVA- Title III distributed over next 3 fiscal years: 04-05 / 05-06 106-07	\$19,409,000	\$167,000	\$61,689	Voter Education and Poll worker Training - spread over 3 years
DHHS Sec. 261 EAID	\$2,357,711	\$29,138	0	Election Assistance for Individuals with Disabilities - Polling Place survey and retrofit
Total	\$412,066,711 *	\$3,592,794	\$61,689	

* The State of California has received other HAVA funds related to the punch-card buyout, development of the Statewide, revision of Voter Registration Forms, Voter Education, Adherence to Voting Systems Guidelines, Source Code Review, Poll Monitoring, Federal Auditing and a Reserve Fund.

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SYSTEM AND VENDOR SELECTION CRITERIA

The process included extensive and thorough selection Criteria. Below are the selection criteria for each phase of the selection:

The *type* of system selected was based on the following criteria:

- Ease of transition from current system for Santa Cruz County Voters
- Ease of transition for county election staff
- Lowest training cost
- Lowest ongoing maintenance cost
- Public Comments and feedback

The **vendor** was selected based on the following criteria

- Compliance with RFP Administrative Requirements
- RFP requirements response and presentation
- Experience and Qualifications
- Proposed Solution Cost
- Ongoing Cost (maintenance, upgrades, staffing, etc.)
- User interface, and overall vendor demonstration

The complete score for each type of system and vendor is available in Appendix D.

CONCLUSION

The Santa Cruz County Clerk, with input from the Voting System Task Force, is recommending that Santa Cruz County negotiate and contract with Sequoia Voting Systems, Inc. to purchase a blended voting system which provides one HAVA ADA accessible touch screen unit at each polling place, along with a precinct-based optical scan voting system that utilizes paper ballots.

The major differentiating factors for selecting the Optical Scan system with on HAVA ADA accessible touch screen are:

- The Optical Scan ballot most closely resembles the current Mark-A-Vote voting process, reducing the transition time and increasing voter acceptance of a new system;
- Optical Scan systems are not “new” technology, they have a long, proven track record as a voting system;
- Optical Scan systems are less controversial because there is always the voters actual “voted” ballot for recounts or manual tallies;
- The transition time and learning curve for election staff and temporary election help will be shorter;

- The cost of an Optical Scan system is significantly less than a full touch screen solution;
- Santa Cruz County currently has close to 40 percent registered permanent absentees who receive a paper ballot. That number is growing every year, and the trend is toward absentee voting. It makes more fiscal sense to purchase a system that is already closely aligned with that trend;
- Touch screen voting systems by law must have a voter verified paper audit trail (WPAT). The purpose and use of the WPAT is still being debated in the Legislature and could significantly change over the next couple years. It is the County Clerk's plan to wait to see how this issue is resolved before embarking on a plan for full Touch Screen deployment as recommended by the Voting Systems Task Force.

The major differentiating factors for selecting Sequoia Voting Systems are:

- Sequoia has been providing election support services to Santa Cruz County for more than 25 years,
- Sequoia Voting Systems had the highest rating of customer satisfaction in the reference checks,
- There are currently 13 California counties using a Sequoia voting system, including our neighboring counties of Monterey and Santa Clara (see appendix F),
- The cost of the Sequoia system is comparable with the other proposing vendors (see Appendix E),
- The Sequoia touch screen system with Voter Verified Paper Audit trail is both Federally qualified and State certified.
- Sequoia is currently developing Instant Run Off voting technology.
- Sequoia scored the highest in the overall analysis.

REMAINING CONCERNS

Sequoia has completed 2002 certification on the Edge and VeriVote (the Touch Screen machine and VVPAT). The Optical Scan products, Insight (precinct based) and 400-C (central system) will be completed in October 2005. The WinEDS software, which has many improvements including the Declined to State reporting issue for the California Primary is expected to be completed December 1. Sequoia will enter California Certification soon there after, but at this time they remain conditionally certified by the State.

Santa Cruz County has diligently pursued and followed all County procedures regarding the procurement of a new voting system. However, uncertainty at the State remains regarding many aspects of this project including:

- there are only two vendors conditionally certified in California;
- definitive guidelines on reimbursable expenditures for HAVA 301 funding;
- development of DRE and WPAT technology;

- uncertainty in the laws and regulation concerning the use of VVPAT;
- full State certification of voting system vendors.

Most troubling for Santa Cruz County is the fact that Sequoia is conditionally qualified and has yet to receive full State certification, something we anticipate happening in December of this year. The Secretary of State continues to negotiate language with the vendors to ensure they will make their voting systems HAVA-compliant should the system be challenged or determined not to meet the accessibility requirements. Moreover, legislation continues to be debated regarding the Touch Screen Voting technology, as is evidence by the Governor's signing into law on October 7, 2005, SB 370 which will require the WPAT to be used in the 1% manual recount and any voter-requested recount.

Certainly, through no fault of Santa Cruz County, we may find ourselves having to maintain our current voting system in the event Sequoia is not able to obtain the necessary certification to obtain the Proposition **41** bond funds or other developments arise that would prohibit us from moving forward with the selected vendor.

Appendix A Vendor Demonstration Requirements

Proposers must demonstrate their product as described in their proposal. The Proposer will include their project team as proposed in the demonstration.

The minimum demonstration for each system will consist of:

- Opening and closing the polls
- Logic and accuracy testing
- Processing several voters including provisional voters, voters with specific needs and write-in votes
- Curbside voting
- Troubleshooting
- System security
- A separate demonstration of your absentee voting system
- Election day set-up
- Overall operation of multiple voting stations.
- Use of Spanish language translations of the demonstrated ballot.
- Counting several ballots of multiple ballot types and reporting the count of each contest on each ballot type and as a total for the election.
- Handicapped accessibility in accordance with the California Secretary of State's current standards.
- Demonstrate central and/or precinct ballot counting
- Demonstrate remote vote tally counting and upload to the central counting system
- Recounts, including the 1% manual recount

The Proposer will supply several ballots and ballot types and data representative of Santa Cruz County Elections data through the DIMS system.

Any Proposer who is unable to complete the demonstration may be disqualified from further consideration.

In addition, Proposers demonstrating DRE or electronic accessible systems will be required to demonstrate the following functionality:

- Unassisted accessibility for voters with special needs (e.g., limited visual acuity, limited mobility, wheel chair) in accordance with the California Secretary of State's current standards.
- Accessing multiple ballot types from a single voting unit.
- Printed audit trail of voter's printed record as specified in the Secretary of State's draft guidelines for a voter-verified paper audit trail.
- A printed activity log.

Proposers may also be asked to demonstrate any other special features or functions of their system that are included in the RFP (e.g., electronic roster). Please refer to Section 8 of this RFP.

Selected proposers will be required to provide a detailed technical demonstration to County IT staff including:

- Import of DIMS ballot information into vendor system
- Ballot layout and production
- Election coding
- Ballot counting using proposed equipment (central and precinct counting equipment)
- Ballot tally using central count and reporting system
- **L&A** of central and precinct counters
- Export of ballot tally data for SoS, etc.

Appendix B Public Vendor Demonstration Survey Results and Comments

Survey Results

Are you ready to vote on a new system? (Circle your choice) 1- definitely, 5 - no way

	1	2	3	4	5
New Voting System	135	35	31	19	32
	54%	14%	12%	8%	13%

How important are these features of a voting system? (Circle your choice)

	1-essential		3-important		5-not important
--	-------------	--	-------------	--	-----------------

A) A system that is based on utilizing paper ballots.

	1	2	3	4	5
	61	13	15	9	17
	53%	11%	13%	8%	15%

Percent of total respondents from important to essential = 49.2%

B) A system that is based on utilizing electronic ballots.

	1	2	3	4	5
	40	18	34	8	16
	34%	16%	29%	7%	14%

Percent of total respondents from important to essential = 50.8%

1047

Appendix C Complete Score of each Vendor

Selection Criteria Summarization Optical Scan

Category	Sequoia	Hart	ES&S	Diebold	Max Points
RFQ/RFP					
Compliance with Administrative Requirements	PASS	PASS	PASS	PASS	Pass/Fail
Proposal Content and Presentation, Requirments etc	1421	949	1299	1244	1600
Experience, qualifications and references					
-County Calls/questions	A		C	B	A,B,C,D
Proposed Solution Cost	325	400	350	310	400
Ongoing Cost (maintenance, upgrades, staff, etc)	290	275	250	300	300
Demonstration					
User Interface/Ballot Design/Ease of use/Storage etc	311	337	302	318	400
TOTALS	2347	1961	2201	2172	2700

0%

Selection Criteria Summarization Full DRE

Category	Sequoia	Hart	IVS	Diebold	Accupoll	Max Points
RFQ/RFP						
Compliance with Administrative Requirements	PASS	PASS	FAIL	PASS	PASS	Pass/Fail
Proposal Content and Presentation, Requirments etc	1421	949	872	1244	888	1600
Experience, qualifications and references						
-County Calls/questions	A			B		A,B,C,D
Proposed Solution Cost	210	275	400	250	350	400
Ongoing Cost (maintenance, upgrades, staff, etc)	225	50	250	235	300	300
Demonstration						
User Interface/Ballot Design/Ease of use/Storage etc	311	337	307	318	282	400
TOTALS	2167	1611	1828	2047	1820	2700

Appendix D
Cost Comparison of each vendor

	Option 1 - DRE			Option 2 - Blend		
	Initial Cost	Ongoing	Remaining Funds	Initial Cost	Ongoing	Remaining Funds
Sequoia	\$3,347,942	\$104,650	\$48,714	\$2,263,621	\$69,500	\$1,133,035
ES&S	n/a	n/a	n/a	\$2,092,277	\$115,740	\$1,304,379
Diebold	\$2,960,299	\$90,900	\$436,357	\$2,401,585	\$62,025	\$995,071
Hart	\$2,750,736	\$261,225	\$645,920	\$1,280,651	\$91,575	\$2,116,005
Accupoll	\$1,661,102	\$51,040	\$1,735,554	n/a	n/a	n/a
IVS	\$214,500	\$82,500	\$3,182,156	n/a	n/a	n/a

1047

Appendix E

Other Counties in California that Use Sequoia Voting Systems

County	# of Registered Voters	Type of System to be used in the Polls by January 1, 2006 (Blended Optical Scan with 1 DRE or full DRE)
Glen	12,049	Blended
Imperial	54,780	Blended
Inyo	10,709	Blended
Kings	51,709	Blended
Mariposa	10,680	Blended
Mono	9,457	Blended
Monterey	156,233	Full DRE
Napa	69,251	Full DRE
Riverside	769,328	Full DRE
San Bernardino	773,125	Full DRE
Santa Clara	865,271	Full DRE
Shasta	94,718	Full DRE
Tehama	30,310	Full DRE
Ventura	377,616	Considering Blended System

In addition, Sequoia is the selected vendor for the following states, counties or cities outside of California

Outside California	# of Registered Voters	Type of System to be used in the Polls by January 1, 2006 (Blended Optical Scan with 1 DRE or full DRE)
State of Nevada	1,094,276	DRE
Cook County, Ill	53,393	Blended
City of Chicago, Ill	1,334,909	Blended

178

New Voting System Costs

Appendix F

	Status	FY 05-06			FY 06-07		
		HAVA	Prop. 41	Total Grant	HAVA	Prop. 41	Total Grant
Balance		\$ 1,698,328	\$ 1,698,328	\$ 3,396,656	\$ 396,578	-	\$ 396,578
Costs							
VIP Contract	one-time	\$ 90,000		\$ 90,000			-
Implementation Contract	one-time	\$ 183,078					-
Sequoia Contract	one-time	\$ 601,672	\$ 1,698,328	\$ 2,300,000	\$ 156,924		\$ 156,924
Extended Maint.	one-time	\$ 252,000		\$ 252,000			-
Warehouse							-
Racking	one-time	\$ 45,000		\$ 45,000			-
T.I.	one-time	\$ 75,000		\$ 75,000			-
Electrical	one-time	\$ 20,000		\$ 20,000			-
Reserve	one-time	\$ 15,000		\$ 15,000			-
Security	one-time	\$ 20,000		\$ 20,000			-
Lease*	ongoing			\$ 22,000			\$ 44,000
Staffing*	ongoing			\$ 75,000			\$ 150,000
Subtotal		\$ 1,301,750	\$ 1,698,328	\$ 2,817,000	\$ 156,924	-	\$ 156,924
Total		\$ 396,578	\$ 1,698,328	\$ 2,094,906	\$ 239,654	-	\$ 239,654
							\$ 194,000

* Costs may be covered by HAVA funding in 05-06 and be determined in 12/05.

0066

**BEFORE THE BOARD OF SUPERVISORS
OF THE COUNTY OF SANTA CRUZ, STATE OF CALIFORNIA**

Resolution No. _____

On the motion of Supervisor _____
duly seconded by Supervisor _____
the following resolution is adopted:

RESOLUTION ACCEPTING UNANTICIPATED REVENUE

Whereas, the County of Santa Cruz is a recipient of funds from Prop 41 funds (State) and HAVA funds (federal) for a Voting Modernization program; and

WHEREAS, the County is recipient of funds in the amount of \$ 2,582,000 which are either in excess of those anticipated or are not specifically set forth in the current fiscal year budget of the County; and

WHEREAS, pursuant to Government Code Section 29130(c) / 29064(b), such funds may be made available for specific appropriation by four-fifths vote of the Board of Supervisors;

NOW, THEREFORE, BE IT RESOLVED AND ORDERED that the Santa Cruz County Auditor-Controller accept funds in the amount of \$ 2,582,000 into Department County Clerk - Elections

T/C	Index Number	Revenue Subobject Number	Account Name	Amount
	214000	0894	State - Other	\$1,698,328
	214000	1096	Federal - Other	\$ 883,672

and that such funds be and are hereby appropriated as follows:

T/C	Index Number	Expenditure Subobject Number	PRJ/UCD	Account Name	Amount
	214000	3665		Prof Services	\$ 30,000
	214000	8404		Equipment	\$2,552,000

DEPARTMENT HEAD I hereby certifi that the fiscal provisions have been researched and that the Revenue(s) (has been) (will be) recieved within the current fiscal year.

By Gail D. Pelletier
Department Head

Date 10/11/05

COUNTY ADMINISTRATIVE OFFICER

/ / Recommended to Board

/ / Not recommended to Board

PASSED AND ADOPTED by the Board of Supervisors of the County of Santa Cruz, State of California, this _____ day of _____, 19____ by the following vote (requires four-fifths vote for approval):

AYES: SUPERVISORS

NOES: SUPERVISORS

ABSENT: SUPERVISORS

 Chairperson of the Board

ATTEST:

 Clerk of the Board

APPROVED AS TO FORM:

Henry A. Oberhelman III
 County Counsel 12/16/97

APPROVED AS TO ACCOUNTING DETAIL

Martine Elie 10/11/05
 Auditor-Controller

Distribution:

Auditor-Controller
 County Counsel
 County Administrative Officer
 Originating Department

AUD60 (REV 12/97)

c:\audit\aud60.wpc

16 47

102

**COUNTY OF SANTA CRUZ
REQUEST FOR APPROVAL OF AGREEMENT**

TO: Board of Supervisors
County Administrative Office
Auditor Controller

FROM: County Clerk (Elections) (Department)
BY: Daryl L. Pelletier (Signature) 9/27/05 (Date)
Signature certifies that appropriations/revenues are available

AGREEMENT TYPE (Check One)

Expenditure Agreement ☐

Revenue Agreement ☐

The Board of Supervisors is hereby requested to approve the attached agreement and authorize the execution of same.

1. Said agreement is between the County Clerk - Elections (Department/Agency)
and Visionary Integration Professionals, Inc. 80 Iron Point Cr. #100, Folsom (Name/Address)
2. The agreement will provide provide hands-on technical support to set up new voting system,
assist with developing election night security system, assist with voter outreach program
3. Period of the agreement is from July 1, 2005 to June 30, 2006
4. Anticipated Cost is \$30,000.00 for new total of \$90,000 ☐ Fixed ☐ Monthly Rate ☐ Annual Rate ☒ Not to Exceed
Remarks: BOS Agenda 10/18/05 Amendment to contract CO 53380
5. Detail: ☐ On Continuing Agreements List for FY - . Page CC- - Contract No: - OK ☐ 1st Time Agreement
☐ Section II No Board letter required, will be listed under Item 8
☐ Section III Board letter required
☐ Section IV Revenue Agreement
6. Appropriations/Revenues are available and are budgeted in 214000 (Index) 3665 (Sub object)

NOTE: IF APPROPRIATIONS ARE INSUFFICIENT, ATTACHED COMPLETED AUD-74 OR AUD-60

Appropriations are available and will be encumbered.
are not

Contract No: CO 53380

By: Marianne Ellis Date: 10/11/05
Auditor-Controller Deputy

Proposal and accounting detail reviewed and approved. It is recommended that the Board of Supervisors approve the agreement and authorize

- (Dept/Agency Head) to execute on behalf of the -

- (Department/Agency)

Date: 10/11/05

By: W. M. Pelletier
County Administrative Office

Distribution:

Board of Supervisors - White
Auditor Controller - Canary
Auditor-Controller - Pink
Department - Gold

State of California
County of Santa Cruz

I - ex-officio Clerk of the Board of Supervisors of the County of Santa Cruz, State of California, do hereby certify that the foregoing request for approval of agreement was approved by said Board of Supervisors as recommended by the County Administrative Office by an order duly entered in the minutes of said Board on - 20-

ADM - 29 (8/01)
Title I, Section 300 Proc Man

By: Deputy Clerk

AUDITOR-CONTROLLER USE ONLY

CO <u>-</u>	\$ <u>-</u>	JE Amount	Lines	H/TL	Keyed By	Date <u>47</u> <u>16</u>
Document No.						
TC110 <u>-</u>	8 <u>-</u>					
Auditor Description	Amount	Index	Sub object	User Code		

AMENDMENT TO AGREEMENT

The parties hereto agree to amend that certain Agreement dated June 1, 2005, by and between the COUNTY OF SANTA CRUZ and Visionary Integration Professionals, Inc. (CO 53380) by :

1. Amending the amount for an additional \$30,000 for a new not-to-exceed amount of \$90,000 at contract amount of \$150.00 per hour for professional services.
2. Amending the scope of work to include hands-on technical support with new voting system set-up, application development, logistical support, etc.; assist with the development of comprehensive security plan for Election Day; provide printing mailing and automation consulting; assist with developing, planning, and executing a post-decision Voter Outreach and Education Plan, and other duties as assigned.

All other provisions of said Agreement shall remain the same.

Dated: October 4, 2005

COUNTY OF SANTA CRUZ

By: 
County Clerk

CONTRACTOR

By: 

Address: 80 Iron Point Circle #100

Folsom, CA 95630

Telephone: 916/985-962

Approved as to form:


Assistant County Counsel

1647

October 11, 2005

Copy to Mr. Supervisor

Santa Cruz County Government
Board of Supervisors
701 Ocean Street
Santa Cruz, CA 95060

Dear Supervisor Tony Campos:

We believe that at the October 18th Board meeting, you and the other Board members will be asked to approve the acquisition of a voting system that meets the disability access requirements of the Help America Vote Act (HAVA) and which must be in place for federal elections by January 1, 2006.

At a very minimum, this would require the acquisition of at least one voting system per precinct.

For over three years we have attended meetings of the Voting Systems and Procedures Panel at the Secretary of States office in Sacramento; attended many meeting and lectures by computer science experts and others regarding electronic voting machines; read extensive information, both pro and con about DRE voting machines and their performance in elections throughout the country; and operated various DRE's and Optical Scan systems demonstrated recently at Bookshop Santa Cruz. We were also asked to be on, and participated in an advisory committee formed by Gail Pellerin, County Clerk.

We believe that the paramount issues in selecting any voting system are security and accuracy, not the ease and convenience of the system.

We ask you to consider the following issues and recommendations before making your decision.

1. Santa Cruz County currently the DFM Mark-A-Vote system in which voters vote on a paper ballot, the ballot is tallied by and central optical scan device, and is then stored for the required period of time in case a recount is required. This voting system has been widely accepted by voters in this county for at least a decade.

We ask that you approve a voting system that both complies with the HAVA requirements and also presents the least change from the current system. One ballot marking device per precinct and a central optical scan device would meet both criteria and would appear to the least costly.

2. Whatever voting system is selected, we recommend one that is fully federally and state certified, not one awaiting certification which might not meet the

deadline, and not one that is conditionally certified since full certification may not take place.

3. Despite the claims by some individuals that DREs are less costly than ballot printing and optical scan devices, there is solid evidence that hidden costs involving security, vulnerability to hacking and manipulation, storage, recharging of batteries, replacement and/or repair of units, performing logic and accuracy tests, analyzing and correcting equipment malfunction – only to mention a few – makes DREs significantly more expensive than ballot printing and optical scan voting systems.
4. Increasingly, the public is also learning that DRE touch screen voting machines are not the “trouble free” devices that some Registrars of Voters would have us believe. **We** have sufficient documentation disclosing problems with machines by various vendors, and will provide you with copies if you wish.
5. There is no validity to the claims by some persons, particularly Jim Dickson, American Association of People With Disabilities, that neither ballot printing devices nor optical scan devices meet the disability requirements of HAVA. At least two federal court decisions have ruled that both systems **do** meet the requirements, and Section 301 of the HAVA document presents the option of using these devices.

Recommendations:

With the grave concern by more and more voters over the vulnerabilities of DRE Touch screen voting machines, we **ask** the Board of Supervisors to select a ballot printing and optical scan voting system.

We also ask the Board to meet only the minimum HAVA requirement of one voting system per precinct, and provide funds for necessary storage and staffing.

Finally, we suggest that whichever vendor is chosen, there must be assurance to the Board that the vendor can supply the number of voting machines ordered, by the January 1, **2006** deadline, and that certain conditions insuring security and accuracy, such as those ordered by former Secretary of State Kevin Shelley, be ordered by the Board.

Respectfully yours,

Michael J. Smith
Margaret M. Smith
 Michael J. and Margaret M. Smith
 564 Santa Margurita Drive
 Aptos, CA 95003
 (831) 688-4268 (phone & fax)

Report on a Survey of Changes in Total Annual Expenditures for Florida Counties Before and After Purchase of Touch Screens. A Comparison of Total Annual Expenditures for Touch Screens and Optical Scanners.

By Dr. Rosemarie Myerson and Richard Myerson

PURPOSE

This project was undertaken to study the changes in total expenditures by Florida's 68 Supervisor of Elections offices before and after electronic touchscreen voting was instituted and to compare the effect of the type voting system on costs.

BACKGROUND

Florida mandated that all counties replace punch cards and other systems with either electronic optical scanners or touchscreen voting machines prior to the 2002 elections. The purchase costs *for* the new voting equipment was reimbursed to the Supervisor of Elections' office by the county's commissioners so that the machine purchasing expenditures were never included in the Supervisor of Election's annual expenditures. Counties that already owned optical scanners before 2001 did not have to change systems. There were 12 counties that responded completely *to* this **survey** that did not need to change their voting machines since they were already using optical scanners

METHOD

We requested data from the **68** counties in Florida (see enclosed copy of request letter). Despite the fact that 50 counties responded, we were limited to analyzing the data of 32 counties because the other counties could not provide full data on the number of registered voters and /or total expenditures *for* the years selected. To **compare** changes in the costs for each county for touchscreens versus optical scanners, total annual expenditures from the immediate pre- touchscreen period (2000 and 2001) were compared with the post- touch screen data (2003 and 2004). These four years were used *in* order to include in each period one presidential election **year** and one with no federal elections. Data from 2002 was excluded because in 2002 **all** but 12 of the 32 counties changed their voting systems which probably engendered special expenditures for education, training, special handling and storage. Also many counties did not include 1999 data *so* we could not compare three years pre- to three years post-touch screen purchase.

ANALYSIS

A comparison of the difference *in* expenditures per 1000 voters of the 11 counties with touchscreen **systems** versus those 21 counties with optical scanning systems for the 2003/2004 period could not **be** meaningful for the following reasons:

1) County size had a large effect on the cost, Chart 1 shows a scatter plot of the 2003/2004 data for each county's costs **per** thousand voters versus the number of registered voters. Note that the **small** counties had higher costs **per 1000** voters than the larger counties. Virtually all the small counties were optical scanners and **all of** the very large counties were touchscreen. This implies some minimum costs for all counties independent of size of voting population.

2) There are also many unknown expenditure variables in county to county data such as what functions are included in each county's annual expenditures, counties use different accounting protocols, some show debt service as an expense and the uncertainty as to what special services any county provides. These variables makes conclusions regarding total expected annual cost differences between optical scan ownership and touchscreen ownership difficult and uncertain.

The final analysis looked at the changes for each county in expenditures per 1000 registered voters from the pre touch screen period to the post period . We elected to use the average of 2003 and 2004 expenditures per 1000 registered voters divided by the average of the 2000 and 2001 expenditures per 1000 registered voters to determine the percentage change for **each** county. We then took the average of the percentage change for each of the 11 touchscreen counties and compared these to the average of the percentage change for each of the 21 optical scan counties. The statistical analysis showed that touchscreen counties had an average increase of 57.4% in per-capita cost versus a value of 16.9% as the average of per-capita increase among counties with optical scanners. The difference between these two averages is 40.4% (57.3% minus 16.9%). This indicates a 40.4% higher increase in expenses for touchscreen counties than for optical scanner counties. This ~~is~~ significant at a 95% confidence level. Chart 2 is a scatter plot of the percent change of the expenditures in each county per 1000 registered voters before and after purchase of touchscreens.

CONCLUSION

The annual increase for optical scanner cost may be due partly to inflation and partly to special demands by the State. One Supervisor of Elections stated that since 2002 the State mandated special things every year. For example prior to 2002, he programmed his own machines; after 2002 every year the State required that the county buy new software from the manufacturer to program their optical scanners.

The results from this study show that a county's buying touchscreens **will** increase their annual expenditures by 57.3%. Owning optical scanners should increase their expected annual costs 16.9%. Optical scanners have the further advantage of providing a voter verified paper ballot that can be used to audit the machine's data and for any needed independent recount. To match this auditing advantage of optical scanners, the present touch screen systems would require the county to purchase and maintain a large number of printers, an additional set of **costs** that would significantly increase the county's annual expenses.

One factor that may explain why having touchscreens cost so much more than optical scanners is because the county has to own and maintain so many more machines. We estimate that one optical scanner can count handle six voter's votes a minute (or 360 per hour) as they are cast but because it takes a voter at least three minutes to vote with touchscreens, it would take 20 touchscreens to perform per hour as well as optical scanners. In order not to have huge waiting lines on election day, most counties buy 10 touchscreens per precinct. Thus while one optical scanner adequately serves a precinct, the precinct needs approximately ten times as many touchscreens in order not to have huge lines of voters waiting to vote.

		A	B	C	D	E	F	G	H	I	J	K	
1	2	Analsis of Data for Florida Election Expenditures Study										Section 1 Complete Data	
County	1999 System	Type*	2002 System	Ave. '03-'04 # voters	Ave. '03-'04 Expenditures	Exp. '03-'04/ 1,000 Vtrs in \$	Ave. Exp./1000 voters change 03-'04/00-'01	Ave. '00-'01 # voters	Ave. '00-'01 Expenditures	Exp. '00-'01/ 1,000 Vtrs in \$			
3 Jefferson	Punch card	P/O	Optical scan	8,937	157,589	17,633	-7.04%	7,961	150,998	18,968	18.96%		
4 Gulf	Punch card	P/O	Optical scan	9,356	199,438	21,318	20.70%	9,862	174,176	17,661	17.66%		
5 Walton	Lever machines	P/O	Optical scan	30,991	441,805	14,256	-29.30%	28,814	581,029	20,168	20.16%		
7 Columbia	Punch card	P/O	Optical scan	33,541	436,368	13,010	12.74%	31,674	365,506	11,544	11.54%		
8 Flagler	Optical scan	O/O	Optical scan	43,118	436,713	10,128	-1.71%	34,240	352,836	10,300	10.30%		
9 Highlands	punch card	P/O	Optical scan	59,247	481,839	8,133	19.88%	53,394	362,233	6,789	6.78%		
10 Citrus	Optical scan	O/O	Optical scan	86,409	794,123	9,190	20.63%	80,592	613,974	7,618	7.61%		
11 Bay	Optical scan	O/O	Optical scan	93,799	817,695	8,718	18.76%	95,846	703,542	7,340	7.34%		
12 Clay	Optical scan	O/O	Optical scan	96,408	1,152,973	11,959	27.03%	84,361	794,214	9,415	9.41%		
13 St. John	Optical scan	O/O	Optical scan	101,816	1,041,702	10,231	17.19%	88,258	770,522	8,730	8.73%		
14 Hernando	Punch card	P/O	Optical scan	107,772	832,271	7,723	30.69%	97,372	575,354	5,908	5.90%		
15 Osceola	Punch card	P/O	Optical scan	117,108	1,798,435	15,357	7.12%	90,538	1,297,933	14,336	14.33%		
16 Okaloosa	Optical scan	O/O	Optical scan	120,674	1,121,262	9,292	16.75%	113,616	904,208	7,956	7.95%		
17 Alachua	Optical scan	O/O	Optical scan	129,170	1,178,672	9,125	18.38%	120,005	925,039	7,706	7.70%		
18 Leon	Optical scan	O/O	Optical scan	151,506	1,796,887	11,860	57.56%	147,451	1,109,945	7,528	7.52%		
19 Marion	Punch card	P/O	Optical scan	175,683	1,308,219	7,446	64.08%	146,312	864,026	4,538	4.53%		
20 Escambia	Optical scan	O/O	Optical scan	176,817	1,740,157	9,842	13.36%	173,129	1,503,043	8,682	8.68%		
21 Manatee	Optical scan	O/O	Optical scan	185,033	1,455,652	7,867	9.87%	159,408	1,141,420	7,160	7.16%		
22 Polk	Punch card	P/O	Optical scan	283,032	2,335,256	8,251	-5.92%	244,414	2,143,605	8,770	8.77%		
23 Volusia	Optical scan	O/O	Optical scan	288,805	2,525,418	8,744	25.53%	254,065	1,769,823	6,966	6.96%		
24 Orange	Optical scan	O/O	Optical scan	432,945	5,692,856	13,149	19.11%	382,138	4,218,509	11,039	11.03%		
25 Sumter	Punch card	P/T	Touchscreen	38,023	947,370	24,916	55.72%	32,009	512,169	16,001	16.00%		
26 Indian river	Punch card	P/T	Touchscreen	77,468	999,450	12,902	39.82%	71,868	663,132	9,227	9.22%		
27 Charlotte	Punch card	P/T	Touchscreen	108,821	1,251,019	11,496	54.33%	99,256	739,344	7,449	7.44%		
28 Lake	Optical scan	O/T	Touchscreen	148,945	1,147,552	7,705	20.24%	134,007	858,702	6,408	6.40%		
29 Sarasota	punch card	P/T	Touchscreen	233,005	2,929,420	12,572	57.97%	220,246	1,752,829	7,959	7.95%		
30 Lee	Punch card	P/T	Touchscreen	291,948	3,440,887	11,786	45.53%	248,847	2,015,284	8,098	8.09%		
31 Hillsborough	Punch card	P/T	Touchscreen	569,575	5,137,388	9,020	61.97%	503,939	2,806,250	5,569	5.56%		
32 Pinellas	Punch card	P/T	Touchscreen	572,858	5,129,234	8,954	33.83%	570,970	3,820,141	6,691	6.69%		
33 Palm Beach	Punch card	P/T	Touchscreen	722,820	6,202,863	8,581	100.97%	663,036	2,831,115	4,270	4.27%		
34 Miami-Dade	Punch card	P/T	Touchscreen	968,296	15,040,000	15,532	94.00%	892,174	7,143,000	8,006	8.00%		
35 Broward	Punch card	P/T	Touchscreen	979,747	8,423,192	8,597	66.45%	903,452	4,666,420	5,165	5.16%		
36													
37													
38													
39													
40													

* O/O=Optical Scan before 2002 and After 2002

* P/O=Punch Card before 2002 and Optical Scan after 2002

* P/T=Punch Card before 2002 and Touchscreen after 2002

Average Change in Expenditures per 1000 voters

16.9% Post 2002 Optical Scan Counties

57.3% Post 2002 Touchscreen Counties

* O/O=Optical Scan before 2002 and After 2002

* P/O=Punch Card before 2002 and Optical Scan after 2002

* P/T=Punch Card before 2002 and Touchscreen after 2002

Average Change in Expenditures per 1000 voters

16.9% Post 2002 Optical Scan Counties

57.3% Post 2002 Touchscreen Counties

76

77

Comparing Annual Costs of DRE and Optical Scan systems

When comparisons of annual maintenance costs of touch-screen/pushbutton direct recording electronic (DRE) devices and paper ballot/precinct based optical scanner (PBOS) systems are made, critics of PBOS systems typically point to increased ballot printing costs as evidence that these systems have higher annual per election expenses. But critics leave some other ongoing costs out of the equation, and often misstate the variables involved in estimating printing costs for each system. This brief analysis evaluates in more detail the ballot printing cost argument, and adds storage and transportation costs to the picture.

✓ **Ballot Printing Costs**

When comparing annual ballot **printing** costs for DRE and PBOS systems, many PBOS critics assume that PBOS systems require sufficient ballots be printed for greater than 100% of registered voters. They also incorrectly assume that no traditional paper ballots at all must be printed with DREs. To do an accurate comparison however, several questions about each system must be answered:

1) How many ballots must be printed ~~for~~ each type of system?

❖ How many traditional paper ballots must be printed **with** DREs?

- Absentee ballots.
- Affidavit (provisional) ballots.
- Sufficient emergency ballots in case of DRE failure.
- DREs could require ballots printed for **33%** or more of registered voters.
- Per ballot printing costs are higher than PBOS due to smaller quantities.

❖ How many ballots must be printed **with** PBOS?

- Practices of states currently using PBOS should be analyzed.
 - Oklahoma prints ballots for only 90% of registered voters.

2) What is the per ballot printing cost?

- ❖ In states using precinct based optical scan, printing costs are .20/ballot to .50/ballot.
- ❖ Large volume discount costs are negotiated by state or counties.
 - Print shops ~~commonly~~ charge a small up-charge for local, down ballot difference and **will** give volume pricing ~~for~~ large batches that are substantially similar.
 - Modern print shops use computer typesetting so small layout changes are less expensive.
 - Competitive bidding process **will** guarantee lower per ballot prices.
 - New York State has over 11 million registered voters.

✓ **Lifetime of the System**

The lifetime of the voting equipment must also be considered. Optical scanners have been used ~~for~~ 20 years in many precincts around the United States and have proven to be very robust and long lasting. DREs have not been used long enough to know their anticipated lifetime, but no touch screen device is warranted for more than 5 years, due to the high failure rate of touch screens. Also, the DREs with voter verified paper ballots are untested and their useful lifespan is still unknown.

❖ Optical Scanner lifetime – minimum 15 Years

- In Oklahoma, existing optical scanners have been in use ~~for~~ 14 years and are still going strong.

❖ DRE lifetime – 5 Years?

- Unknown, but touch screen are notoriously fragile components and are not warranted longer than 5 years.
- If 50% or more of DREs must be replaced within 5 years, this is a huge cost to counties that **will** not be covered by HAVA funds.

Comparing Annual Costs of DRE and Optical Scan systems, Page 2

✓ **Storage Costs**

Full face DREs are large and heavy and require much greater storage and transportation costs compared to PBOS systems. Also, due to their greater number and size, DREs require a great deal more climate controlled storage space than is needed for PBOS systems.

❖ Full face ballot DREs

- Weigh over 200 pounds and take **up** 28 cubic feet when stored.
- At least one or more DREs are required for each existing lever machine.
- Full face ballot DRE *Size* and weight
 - 3.5 Ft. wide x 4 Ft. high x 2 Ft. deep
 - 28 Cubic Feet
 - Weight – app. 225 pounds

❖ Optical scanners

- Weigh 19-39 pounds and take up less than 4 cubic feet per device.
- They can be stacked up in storage, requiring far less space.
- Only one scanner and ballot marker **is** needed per **polling** place, except in the largest precincts.
- Optical Scanner *Size* and weight
 - 2 Ft. wide x .75 Ft. high x 2.5 Ft deep
 - 3.75 Cubic Feet
 - Weight – app. 19 - 39 pounds.

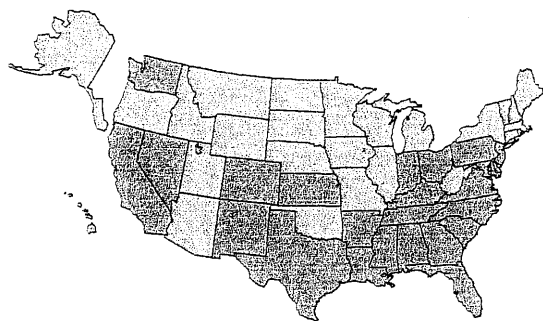
✓ **Transportation Costs**

Moving the large, heavy, full face DREs **is** going to take a lot of **time**, and require a lot of space. Since DREs are quite sensitive, very heavy, and must be **handled carefully**, it is unlikely that election workers **will** be able to move the DREs to and from polling places during elections. Professional movers **will** need to be hired, a huge hidden expense.

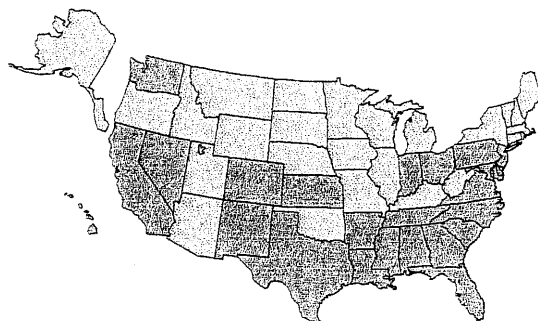
- ❖ DREs are large, heavy, and extremely delicate. At least one DRE, perhaps more, is required for each existing lever machine.
 - DREs may require professional movers to move to and from polls on Election Day.
- ❖ PBOS systems are smaller and lighter, and fewer **machines** are required.
 - In states currently using PBOS, election workers move the scanners.

Direct Record Electronic (DRE) Voting Machines

States with significant numbers
of DREs



States reporting serious DRE malfunctions
since 2000



- ◆ DREs are about twice as expensive to purchase as optical scan systems
- ◆ DREs are more expensive to maintain than optical scan systems
- ◆ DREs have a shorter life span than optical scan systems
- ◆ DREs are not as well tested in pre-election testing as optical scan systems
- ◆ DREs have more hidden costs than optical scan systems
- ◆ DREs' batteries must be recharged continually between elections
- ◆ DREs serve few voters **per** machine, creating a bottleneck and long lines
- ◆ DRE breakdowns cause long lines at the polls
- ◆ DREs lose votes, which cannot be recovered
- ◆ DREs add votes, which cannot be explained
- ◆ DREs heat up and break down during elections
- ◆ DREs have votes jump to the opposite candidate on the screen
- ◆ DREs are confusing to voters, poll workers, and election officials
- ◆ DREs require more intensive poll worker training, more technical poll workers
- ◆ **DREs prevent voters from seeing their own ballots**
- ◆ **DREs prevent ordinary citizens from observing the counting of votes**

Cost Information about Voting Systems

Experience and evidence show that Direct Record Electronic (DRE) voting machines are more expensive than paper-based systems, such as optical scanners:

- ◆ Acquisition costs of DREs are higher than paper-based systems.
- ◆ Operating costs of DREs are higher.
- ◆ Hidden costs of DREs are higher and often unexpected by counties.

Acquisition Costs

One DRE can serve about 150 voters during a 12-hour election day, so most polling places that use DREs require multiple units. Most modern DREs either have options or standard features that allow disabled individuals to vote independently.

One precinct optical scanner can serve as many as 3000 voters. Since optical scanners, like DREs, can handle multiple ballot styles and multiple languages, most polling places require only one optical scanner. To provide accessibility for the disabled, each polling place using optical scanners also needs one method, such as a tactile ballot template system¹ or a computerized ballot-marking device, by which disabled individuals can vote independently.

The following table compares the approximate acquisition costs of the major equipment needed for five different types of voting systems that could be used in a polling place expecting 750 voters.

System Type	5-Booth Polling Place ²
5 DREs with integrated VVPAT Printer	\$20,000
5 Paperless DREs	\$17,500
1 Optical Scanner + 1 Ballot-Marking Device	\$11,150
1 Optical Scanner + Tactile Ballots	\$5,750
Paper Ballots + Tactile Ballots	\$750

Operating Costs

A recent study by Rosemarie Myerson³ compared six years of operating expenses of the election offices of two Florida counties: Sarasota with punch cards for 3 years and then DREs for 3 years to Manatee with optical scanners for 3 years. The results show that the operating costs for DREs were about 1.5 times as much as the operating costs for the other two types of voting systems.

County	Year	Total Costs	Reg Yoters	Cost/Voter
Sarasota County, FL (punch cards)	'99-'01 Average	\$1,776,736	216,228	\$8.22
Sarasota County, FL (DREs)	'02-'04 Average	\$2,883,658	232,360	\$12.41
Manatee County, FL (optical scanners)	'02-'04 Average	\$1,379,405	182,399	\$7.56

¹ http://www.electionaccess.org/Bp/Ballot_Templates.htm

² One DRE costs about \$3,500. An attached VVPAT printer costs about \$500. A precinct optical scanner costs about \$5,000. A ballot-marking device costs about \$5,400. A simple voting booth costs about \$150.

³ Myerson's complete study is posted at <http://www.votersunite.org/info/costcoinparison.asp>

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The significantly greater cost of operating DREs has also become apparent in Miami-Dade county, Florida. A recent analysis by the Supervisor of Elections, Lester Sola, shows that election costs — expected to decrease with the use of DREs — have instead soared since the county purchased ES&S iVotronic DREs in 2000 to replace its punch card system.

Mr. Sola says, "Countywide elections through 2000 had generally cost approximately \$1.5 million." He points out that, in contrast, the November 2002 election cost about \$8 million, and the November 2004 election cost about \$7.27 million.⁴

Mr. Sola compared the operating costs of the county's touch screen system to the costs of optical scan systems. He found that the operating costs of optical scanners were so much lower than DREs that the county would save over \$13 million in the next five years if they purchased optical scanners and removed the touch screens from service, even while paying off the \$20 million outstanding debts for the touch screens.⁵

Hidden Costs of DREs

In Mr. Sola's report to the county manager, he recommended replacing the DREs with optical scanners. Among his reasons, he details some of the hidden costs of DREs:

Instead of yielding future savings, as was reasonably expected, the \$24.5 million expenditure led to more required expenditures. Indications are that still more expenditures, never envisioned when the equipment was purchased, are impending. For example, ES&S has informed me that we must replace the back-up batteries in our 7,200 iVotronic terminals at a cost of \$147.50 per unit, or approximately \$1 million, and the batteries in our 7,688 Personal Electronic Ballot (PEB) cartridges at a cost of \$8.00 per unit, or \$61,504.⁶

In contrast to those who claim that the use of DREs reduces election costs by eliminating the cost of printing paper ballots, Mr. Sola estimates **lower** costs for printing, postage, and office supplies when optical scanners are used.⁷

Some of the other costs of DREs, often not anticipated by county officials, include:

- ♦ Secure, environmentally-controlled storage for the machines when they are not in use.
- ♦ Energy costs for keeping the backup batteries charged between elections.
- ♦ Labor costs for security when machines are stored at polling places before an election.
- ♦ Hardware maintenance and repairs and software upgrades for each of the machines. (Optical scanners require much less maintenance and fewer repairs.)
- ♦ Labor costs for **hiring** additional poll workers (San Diego doubled the number of poll workers when it switched to DREs).
- ♦ Poll worker training, both for longer **training** sessions and larger number of poll workers to train on using a much more complicated system.
- ♦ Massive costs for replacing the machines when they age and the technology they employ is no longer maintainable or supported by the vendor. (Historically, optical scanners have a useful life of 15 years or longer.)

⁴ <http://www.votersunite.org/info/MiamiInitialReportfromSoE.pdf>, page 4.

⁵ <http://www.votersunite.org/info/MiamiInitialReportfromSoE.pdf>, page 12.

⁶ <http://www.votersunite.org/info/MiamiInitialReportfromSoE.pdf>, page 4.

⁷ <http://www.votersunite.org/info/MiamiInitialReportfromSoE.pdf>, page 22.

VOTER VERIFIED PAPER BALLOTS ARE COST-EFFECTIVE

Operating Cost Comparison for Different Types of Voting Systems

Optical Scanners in Wake and Durham Counties, and Direct Record Electronic Voting Machines in Mecklenburg and Guilford Counties

By Joyce McCloy, www.ncvoter.net

This is an analysis of the annual expenditures of the Directors of Elections Offices of four large North Carolina Counties for the fiscal years 1999 through 2004. The analysis compared the expenditures of counties using Optical Scan equipment to counties using Direct Record Electronic (DRE) equipment.

We studied two optical scan counties, Durham and Wake, and compared them to two counties that use DRE equipment, Guilford and Mecklenburg. This report shows the annual cost that these counties spent per registered voter in each of the six years.

The comparison shows that the counties using DREs spent approximately 1.5 times as much per voter each year as those using optical scanners. Remarkably, a similar study by Rosemarie Myerson, comparing two Florida counties, found that the annual expenditures used to operate DREs were about 1.5 times as much as the operating expenses for paper-based systems. [1]

The expenditure data for Durham, Guilford, Mecklenburg, and Wake Counties were provided by their county finance departments. For the counties other than Mecklenburg, the net expenditures were determined by subtracting the annual revenue from the annual expenditures. The information for number of registered voters was supplied by each county's Director of Election.

[1] <http://www.votersunite.org/info/costcomparison.asp>

Additional notes:


If in 2004 Guilford spent the same per voter as Wake County, (optical scanners), then Guilford would have saved

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\$653,667 The ***2001** costs for Guilford would be significantly higher if the county had not received **an unexplained \$2.9Mill** in revenue, perhaps from a grant.

If in 2004 Mecklenburg County had used optical scan voting systems, instead of the Direct Record Electronic (DREs) they would have saved **\$917,359** in annual operating expenses

Cost to upgrade Mecklenburg to the optical scan/ballot marking solution: with 190 regular precincts, and **10** one stop precincts, at \$9,200 per precinct = \$1,840,000

Estimated purchase cost per county to Upgrade to VVPB  (if you have trouble opening this file, try right clicking on it and opening in new window) Does not include service contracts, whch all voting systems will require. State grant will pay \$1.00 per registered voter up to \$100,000 for election management software.

Purchase Price Comparison for voting systems for NC

There are 2,752 regular precincts and 128 one-stop precincts, = total of 2,880 precincts in North Carolina

Let's allow for growth and figure costs for 3,000 precincts and add in backups, allowing for 3,500 precincts just to be safe.

Optical Scan/Ballot Marking Device Solution - State grant will completely pay for. Each precinct would need one optical scan system plus one automark ballot marking device for disabled for a cost of \$10,000 per precinct.

Total cost for new voting equipment that is disabled accessible and has Voter Verified Paper Ballots: **\$45 million**

Direct Record Electronic (Touchscreen or pushbutton digital voting machines) **\$145 million**

financial analysis from the state government – using data supplied by the State Board of Elections – <http://www.ncleg.net/Sessions/2005/FiscalNotes/Senate/PDF/SFN0223v4n1.pdf>

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Appendix A Vendor Demonstration Requirements

Proposers must demonstrate their product as described in their proposal. The Proposer will include their project team as proposed in the demonstration.

The minimum demonstration for each system will consist of:

- Opening and closing the polls
- Logic and accuracy testing
- Processing several voters including provisional voters, voters with specific needs and write-in votes
- Curbside voting
- Troubleshooting
- System security
- A separate demonstration of your absentee voting system
- Election day set-up
- Overall operation of multiple voting stations.
- Use of Spanish language translations of the demonstrated ballot.
- Counting several ballots of multiple ballot types and reporting the count of each contest on each ballot type and as a total for the election.
- Handicapped accessibility in accordance with the California Secretary of State's current standards.
- Demonstrate central and/or precinct ballot counting
- Demonstrate remote vote tally counting and upload to the central counting system
- Recounts, including the 1% manual recount

The Proposer will supply several ballots and ballot types and data representative of Santa Cruz County Elections data through the ~~DIMS~~ system.

Any Proposer who is unable to complete the demonstration may be disqualified from further consideration.

In addition, Proposers demonstrating DRE or electronic accessible systems will be required to demonstrate the following functionality:

- Unassisted accessibility for voters with special needs (e.g., limited visual acuity, limited mobility, wheel chair) in accordance with the California Secretary of State's current standards.
- Accessing multiple ballot types from a single voting unit.
- Printed audit trail of voter's printed record as specified in the Secretary of State's draft guidelines for a voter-verified paper audit trail.
- A printed activity log.

Appendix A

Vendor Demonstration Requirements

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The minimum demonstration for each system will consist of:

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- Demonstrate central and/or precinct ballot counting
- Demonstrate remote vote tally counting and upload to the central counting system
- Recounts, including the 1% manual recount

The Proposer will supply several ballots and ballot types and data representative of Santa Cruz County Elections data through the DFM system.

Any Proposer who is unable to complete the demonstration may be disqualified from further consideration.

In addition, Proposers demonstrating DRE or electronic accessible systems will be required to demonstrate the following functionality:

- Unassisted accessibility for voters with special needs (e.g., limited visual acuity, limited mobility, wheel chair) in accordance with the California Secretary of State's current standards.
- Accessing multiple ballot types from a single voting unit.
- Printed audit trail of voter's printed record as specified in the Secretary of State's draft guidelines for a voter-verified paper audit trail.
- A printed activity log.

October 15, 2005

Supervisor Tony Campos
701 Ocean Street, Room 500
Santa Cruz, CA 95060

Re: Voting Systems
Modernization Plan

Dear Supervisor Campos,

This letter is in regard to item 47 ("Consider report on the Voting Modernization Plan for Santa Cruz County") on the agenda for the October 18 meeting of the Santa Cruz County Board of Supervisors. It is also a follow-up to my October 10, 2005 letter to Supervisor Wormhoudt regarding the voting systems RFP.

The agenda packet for item 47 contained a number of items, beginning with a 5 page cover letter (dated October 11, 2005) to the Board of Supervisors from Santa Cruz County Clerk Gail Pellerin in which she states:

"At this time, I believe that a blended voting system, one that replaces our Mark-A-Vote voting system with a precinct-based optical scan paper ballot system combined with one HAVA-compliant touch screen machine at each polling site, is the best option for Santa Cruz County..."

I strongly concur that the county will benefit most from a precinct-based optical scan paper ballot system with one HAVA-compliant device at each polling site. The cost advantage of this system over an all-DRE system make it a very compelling choice.

In my letter to Supervisor Wormhoudt of October 10 (excerpts of which are attached to this letter), I recommended that the County continue to use optical scan voting technology, but that it replace its existing Mark-A-Vote central-count optical scan system with a precinct-count optical scan system. On this point, Ms. Pellerin and I are in complete agreement. However, I also recommended in that letter that the County deploy one electronic ballot marking device (rather than one DRE) per polling place in order to meet the accessibility requirements mandated by HAVA §301(a)(3); such marking devices enable voters with special needs to privately and independently mark and verify the exact same type of optical scan ballots used by other voters. I still contend that such a solution has significant advantages over using DRE voting machines to meet accessibility requirements, and that it would simplify the county's overall voting system by ensuring that every ballot -- whether cast by voters with disabilities, different language abilities, absentee voters, provisional voters or any other voters -- would be the exact same type of ballot. This would avoid the complexity of having to merge the results of two different types of ballots (paper ballots and electronic ones.) The board must determine whether those advantages outweigh other factors that must also be considered when selecting a voting system.

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In addition, I support and endorse Ms. Pellerin's additional 7 recommendations as enumerated on page 5 of that cover letter, subject to several questions and concerns (elaborated below) regarding the second recommendation on that list: negotiating an agreement with Sequoia Voting Systems.

I especially urge the Board of Supervisors to approve the 2.0 FTE positions Ms. Pellerin has requested, since it is essential that the Elections Department have the needed staff to properly implement the new voting systems for our County; doing so is vital to ensuring a smooth transition to the new system.

I endorse Ms. Pellerin's recommendation as:

- 1) an individual who has voted in Santa Cruz County for over 30 years, and
- 2) a member of the Public Advisory Committee that was established to provide advice and counsel to the current voting systems evaluation and selection process.

Selecting what combination of voting systems will work best for our county is a complex and difficult task, and Ms. Pellerin and her staff, the Voting Systems Task Force, and the Public Advisory Committee are all to be commended for their respective contributions to the evaluation and selection process. In developing her recommendations, Ms. Pellerin has done an outstanding job of trying to reconcile a large and complex list of requirements and constraints, and to do so in an open, objective, and fair manner that respects the views and the needs of voters, poll workers, and elections department staff.

I will not reiterate here all of the various advantages provided by electronic ballot marking devices (please refer to my October 10 letter for such details), but will instead focus only on two specific concerns that Ms. Pellerin's raised in her analysis (see "Remaining Concerns", Pages 8 and 9 of Attachment A), in which she writes:

Sequoia will enter California Certification soon there after [December 1], but at this time they remain conditionally certified by the State.

Santa Cruz County has diligently pursued and followed all County procedures regarding the procurement of a new voting system. However, uncertainty at the State remains regarding many aspects of this project including:

- there are only two vendors conditionally certified in California;*
- definitive guidelines on reimbursable expenditures for HA VA 301 funding;*
- development of DRE and WPAT technology;*
- uncertainty in the laws and regulation concerning the use of WPAT;*
- full State certification of voting system vendors*

Most troubling for Santa Cruz County is the fact that Sequoia is conditionally qualified and has yet to receive full State certification, something we anticipate happening in December of this year. The Secretary of State continues to negotiate language with the vendors to ensure they will make their voting systems HAVA-compliant should the system be challenged or determined not to meet the accessibility requirements. Moreover, legislation continues to be debated regarding the TouchScreen Voting technology, as is evidenced by the Governor's signing into law on October 7, 2005, SB 370 which will require the VVPAT to be used in the 1% manual recount and any voter-requested recount.

Certainly, through no fault of Santa Cruz County, we may find ourselves having to maintain our current voting system in the event Sequoia is not able to obtain the necessary certification to obtain the Proposition 41 bond funds or other developments arise that would prohibit us from moving forward with the selected vendor.

With respect to “uncertainty in the laws and regulation concerning the use of WPAT”, a solution employing electronic ballot marking (EBM) devices rather than DRE + VVPAT is immune to such uncertainties, because rather than generate a VVPAT printout, an EBM marks a standard optical scan paper ballot whose legal properties have been well established for decades, and for which recount and audit procedures are well defined. Thus, the counting of such optical scan ballots in a manual audit or recount is unlikely to be subjected to legal challenges that some groups have suggested they might bring against the counting of VVPAT printouts for such purposes.

With respect to the conditional certification of the Sequoia voting system, Bruce McDannold of the California Secretary of State's office stated to me (via telephone) on October 14 that Sequoia's California certification was conditional because:

1. It is not yet certified to support all of the seven languages that a voting system might be called upon to support in some California counties, and
2. While it properly records votes cast in partisan primary races by voters who are registered as “decline to state”, it does not yet provide the required breakdown of such votes on the election reports. While Sequoia has a utility program that does provide the required breakdown, that utility has not yet received federal certification, which is prerequisite to California certification. As such, the Sequoia system is not currently certified for use in the California primary election.

While Sequoia has indicated to the County that it expects both of these conditions will be resolved later this year and that their system will receive full State certification shortly thereafter, other counties (e.g., San Diego) have received similar assurances from other voting system vendors (e.g., Diebold), only to find themselves with warehouses full of voting systems (e.g., AccuVote TSx) that they were not permitted to use because of unexpected snags in the completion of the federal and/or state certification processes. While I have no reason to believe

that Sequoia will not be able to eventually resolve both of these conditions, there is clearly uncertainty as to just how soon that will occur, and as Ms. Pellerin notes, any unexpected, lengthy delays could put the County in a difficult situation.

Mr. McDannold also indicated that no abnormal or significant conditions are currently attached to California's certification of the ES&S AutoMark electronic ballot marking device, and that the only condition imposed was that privacy sleeves must be provided to voters using that device. Accordingly, were the County to deploy the AutoMark electronic ballot marking device rather than Sequoia's DRE voting system, the risks associated with the lack of full certification for the Sequoia system would be eliminated.

As noted in Appendix E of Ms. Pellerin's report, a number of other California counties have chosen the Sequoia system and have thus decided to assume those risks. In fairness, it is also worth noting that some California counties (e.g., Sacramento and Tuolumne) have chosen the ES&S AutoMark solution, and that a very significant number of jurisdictions outside California have also chosen it, including counties in Florida, Idaho (statewide), Iowa, Michigan, North Dakota (statewide), South Dakota (statewide), West Virginia, and Wyoming (20 of 23 counties).

While one disability group claims that the AutoMark is not HAVA-compliant and has threatened legal action against some jurisdictions that are considering the purchase of these systems, other disability advocacy groups do not agree and have decried such misleading and hypocritical tactics (see: <http://www.verifiedvotingfoundation.org/napas>). Furthermore, these claims of noncompliance are completely without legal merit and have been uniformly rejected by the numerous jurisdictions, including California, that have all certified the AutoMark for use in spite of these threats.

In the end, each jurisdiction needs to carefully weigh the advantages and disadvantages of these competing voting systems in the context of their community and the needs of its voters, and different jurisdictions have clearly reached different conclusions as to which overall system best addresses those needs. In this process, we must be certain to properly address the concerns of voters with disabilities and other special needs. Although the Governor's recent signing of SB 370 has resolved much of the legal uncertainty pertaining to the use of VVPATs in audits and recounts, in the message he issued on signing that bill, he reiterated a serious and outstanding concern regarding VVPATs, namely, the need to develop, certify, and deploy voting technologies that enable voters with disabilities (including voters who are blind or who suffer other vision impairments) to be able to verify that the selections printed on the VVPAT accurately reflect their intended selections:

I signed Senate Bill 1438 last year, which required direct recording electronic voting machines to include an accessible voter verified paper audit trail because I believed that it would contribute greatly to voter confidence and the integrity of the election system. I am signing Senate Bill 370 this year that allows the voter verified paper audit trail to be used for a recount and requires they be used for the 1-percent manual tally.

The Secretary of State has expressed concerns about this measure, which I share. The most notable of these concerns is raised by the disability community on whether the voter verified paper audit trail can be adequately confirmed by sight-impaired voters. I urge the legislature, the local elections officials, and other interested parties to work with the Secretary of State to perfect a comprehensive solution for electronic voting system verification. In the meantime, I am signing this measure because I believe that using the voter verified paper audit trails to audit the accuracy of overall election results will provide confidence in the accuracy and integrity of votes cast on these machines to California voters.

Sincerely,

Arnold Schwarzenegger

With respect to this concern raised by the Governor and the Secretary of State, it is worth noting that the ES&S AutoMark already provides the capability for blind and sight-impaired voters to confirm (by non-visual / audio means) that the device has accurately marked their selections on the printed paper ballot; such voters can insert their marked paper ballots into the AutoMark, and it will scan their ballot and read back to them via the audio interface the contests that have been selected. The Sequoia DRE + VVPAT system currently provides no comparable capability, so blind voters have no way to confirm that the selections printed on the VVPAT accurately reflect their intentions; neither has Sequoia demonstrated any prototype solution for this problem.

In summary, while the ES&S AutoMark does provide some very significant advantages over the Sequoia DRE + VVPAT system in terms of meeting the disability access mandates of HAVA §301(a)(3), I also agree that good arguments can be made for both systems. Experts may disagree as to which system best meets the needs of Santa Cruz County voters and as well as the county's fiscal constraints over the long term. For example (see Appendix D), while the initial cost of the blended system from ES&S is over \$170,000 less than the initial cost of the Sequoia blended system, the anticipated ongoing costs for the ES&S system is over \$45,000 more per year than the corresponding costs for the Sequoia system. If those costs are accurate, the ES&S system could prove more costly to operate over time.

In conclusion, as Ms. Pellerin states:

“At this time, I believe that a blended voting system, one that replaces our Mark-A-Vote voting system with a precinct-based optical scan paper ballot system combined with one HAVA-compliant touch screen machine at each polling site, is the best option for Santa Cruz County...”

Both the ES&S AutoMark and the Sequoia DRE + VVPAT are “HAVA-compliant touch screen machines”, and either one can enable the County to meet HAVA's accessibility requirements. While I prefer the former because of the very significant advantages it provides, I also respect and accept the preference of Ms. Pellerin and the Voting Systems Task Force for the latter.

Accordingly, I urge the Board of Supervisorsto approve Ms. Pellerin's recommendation for a precinct-count optical scan paper ballot voting system with one HAVA-compliant voting system per polling place.

Should the Board also decide to approve further contract negotiations with Sequoia, I recommend that any such contract contain language that:

1. Protects and indemnifiesthe County in case of any significant delays in the full certification of that system, including the provision of alternative, fully-certified voting systems (as needed) at no cost to the County until such time as full state-certificationis achieved,
2. Establishes a payment schedule such that full payment to the vendor is not made until all promised voting system features are delivered, including the promised hardware and software to provide support for dual switch inputs (e.g., sip-and-puff switches, foot pedal switches, jelly switches, etc.) as are needed to meet the needs of voters with manual dexterity disabilities,
3. Urges the vendor, in the strongest possible terms, to develop and implement technology that will provide to voters who are blind (or who suffer from visual impairments) a non-visual (e.g., audio) means for verifying that the selectionsprinted on the VVPAT accurately reflect their intent.

Respectfully,



Robert Kibrick
 208 Archer Drive
 Santa Cruz, CA 95064
 Email: bob@verifiedvoting.org
 web: <http://www.verifiedvotingfoundation.org/article.php?id=5602#kibrick>

cc: Members of the Santa Cruz County Board of Supervisors
 Santa Cruz County Clerk Gail Pellerin
 Santa Cruz County Treasurer-Tax Collector Fred Kelley

attachments:

excerpts from Kibrick letter of October 10,2005 to Santa Cruz County Supervisor Wormhoudt

(Excerpts of letter to Supervisor Wormhoudt on 10/10/2005, plus addenda added 10/16/2005)

October 10, 2005

Supervisor Mardi Wormhoudt
701 Ocean Street, Room 500
Santa Cruz, CA 95060

Re: Voting Systems RFP

Dear Supervisor Wormhoudt,

I have been a voter in Santa Cruz County for over 30 years. I **am** currently a member of the citizen's committee assembled by the County Elections Department to help investigate alternative voting systems that could enable Santa Cruz County to meet the new federal requirements mandated by the Help America to Vote Act (HAVA) of 2002. I **am** writing to you about the decision that the County Board of Supervisors will soon need to make regarding what type of new voting system should be acquired to enable our county to meet those requirements.

I have significant experience in terms of state and federal legislation pertaining to voting systems. For the last 18 months, I have served as the volunteer legislative analyst for VerifiedVoting.org (<http://www.verifiedvoting.org>) and the Verified Voting Foundation (<http://www.verifiedvotingfoundation.org>), both of which are nonpartisan, nonprofit organizations dedicated towards the establishment of voting systems that are open, transparent, accurate, accessible, reliable, and above all, verifiable. In that capacity, I have studied the requirements of HAVA in considerable detail, and have assisted legislative staff in developing voter-verified paper trail legislation that has been enacted in over a dozen states as well as portions of several bills that are currently pending in the U.S. Congress. I have also been called to testify in person before committees of both the California and West Virginia legislatures regarding paper trail legislation in those States.

I also have considerable experience involving electronic and computer technologies, including nearly 30 years experience in the development of computer software and hardware. I graduated with honors from U.C. Santa Cruz in 1974 with a degree in Information and Computer Science. I have been on research staff of UCO/Lick Observatory since 1976, and have served as its Director of Scientific Computing since 1998. From 1998 to 2003, I served on a national advisory board for the University Corporation for Advanced Internet Development, the entity responsible for coordinating the development of the Internet-2 high speed network that now links the nation's top universities and research institutions. I **am** also the principal inventor or co-inventor for three U.S. patents involving optical position encoding systems.

After reviewing the various alternative voting systems that were recently demonstrated in Santa Cruz County, I strongly recommend that the County continue to use optical scan voting technology (as it has successfully done for the last decade), and that it not acquire any direct recording electronic (DRE) voting systems. With regard to meeting HAVA's disability access requirements (HAVA §301(a)(3)), I also recommend the use of accessible ballot marking

technologies that enable voters with disabilities to privately and independently mark and verify the same type of paper ballots as used by other voters. I make these technology recommendations both as a private citizen and registered voter in Santa Cruz County, and also in my capacity as volunteer legislative analyst for Verified Voting.

Verified Voting and I make these recommendations for the following reasons:

1. Optical scan paper ballots provide a single, tangible, permanent, and voter-verifiable ballot of record whose legal properties are clear, unambiguous, well defined, and widely accepted.
2. Optical scan paper ballots provide a consistent ballot of record that can be used for all purposes: initial counts, manual audits, recounts, and final canvass. With an optical scan paper ballot system, there is no confusion, ambiguity, or uncertainty as to what constitutes the ballot of record.
3. Optical scan paper ballots can be scanned and counted by machines, or they can be counted by hand, as may be needed to comply with California's 1% mandatory manual audit requirement or for recounts. There is no legal uncertainty regarding how to conduct manual audits or recounts using optical scan paper ballots, because the procedures for conducting such manual counts of these types of ballots are well established. Santa Cruz County has repeatedly demonstrated its ability to use such ballots to conduct audits and recounts, and those audits and recounts have withstood legal scrutiny.
4. With an optical scan paper ballot, there is no uncertainty as to whether or not the voter-verified paper record of a voter's vote will ever be counted, because the optical scan paper ballot is that voter-verified paper record, and it is that ballot that will be counted for all purposes.
5. Optical scan paper ballots enable all voters in Santa Cruz County, including both those who vote in the polling place and those who vote absentee, to vote using an identical type of ballot. With the use of ballot marking devices, voters with disabilities can also use the identical type of ballot. This makes life simpler for voters and for election workers as well.
6. Optical scan paper ballots are already familiar to all Santa Cruz County voters. Such ballots have been used by the County with great success to conduct elections for the last decade. With the advent of precinct-count optical scanners, the existing system can be made even better and can meet the voting systems standards mandated by HAVA §301(a).
7. Optical scan technology is a mature and stable technology that has been used extensively for decades, not only in voting systems, but in other domains, such as educational testing. Its properties are very well understood, and optical scanners have been demonstrated to have operational lifetimes of 20 years.

8. Optical scan technology is a scalable technology. Each polling place requires only one precinct-count optical scanner and one ballot marking device (or, in a central count system, only a single ballot marking device at each polling place). If the number of voters at a polling place increases, you only need able more voting booths, which are relatively inexpensive, rather than more electronic equipment.

9. Optical scan technology is more cost-effective than DRE voting technology, when all relevant costs are included. This has been born out by comparative studies of actual acquisition and operational costs (including the costs of paper ballots) of these competing technologies as deployed in similar counties. See <http://www.verifiedvoting.org/costs>

By contrast, DRE voting systems do not provide these advantages. Rather, here is how DRE voting systems compare with respect to each of these 9 points:

1. DRE voting machines provide two different flavors of records: an intangible, impermanent, invisible, and non-verifiable electronic record AND a tangible, semi-permanent, visible, and voter-verifiable paper audit trail (VVPAT) record. The non-verifiable electronic record (i.e., a record that the voter has NO way to verify that it correctly reflects that voter's intentions) will be the ballot of record in all cases, EXCEPT in the case of the 1% mandatory manual audit or a recount. Or, to put it another way, nearly 99% of the time, the voter-verifiable paper audit trail (VVPAT) record (which is the only record that the voter has had the opportunity to verify), will never be examined nor counted. Accordingly, when a voter votes on a DRE, not only do they have no way of determining whether or not their intentions have been accurately recorded in that DRE's electronic ballot record, but they also have no way of knowing (at the time they vote) which record (the electronic record or the VVPAT) will end up being used as the ballot of record.

2. DRE voting systems provide two different types of records which might or not be used under different circumstances and which may conflict, leading to various legal challenges. This creates unnecessary complexity and uncertainty.

3. The non-verifiable electronic records recorded by DREs cannot be counted by hand, because they are effectively invisible (i.e., humans can't count electrons). While the VVPAT records printed by DREs can be counted by hand, those VVPAT records that are printed on rolls of paper will be considerably more difficult to hand count than optical scan paper ballots. And while optical scan paper ballots can easily be re-scanned using a different scanner than the one used for the initial count, there is currently no machine available for mechanized scanning of the VVPAT records recorded on paper rolls. Currently, the only DRE systems with VVPAT printers that have been certified for use in California print the VVPAT records onto paper rolls.

4. With a DRE voting machine that prints a voter-verified paper audit trail (VVPAT) record, the voter can have no certainty whatsoever that that VVPAT record will ever be examined by an election official or used in any count, even though it is the only permanent record of the voter's vote that the voter has been able to verify.

5. DRE voting systems make it impossible for all Santa Cruz County voters to use an identical ballot, since absentee voters can't vote on DRE voting machines. The County will still have to print optical scan paper ballots for absentee voters, and will incur all of the same costs for laying out those ballots and for printer setup charges. Since those fixed costs will be amortized over fewer total ballots, the cost per printed paper ballot will be higher. County election workers will have to maintain two different systems of ballots (DRE for voters in polling places and optical scan paper ballots for those who vote absentee), leading to greater complexity and expense. Voters who sometimes vote absentee and sometimes vote in the polling place will also have to cope with two different systems, and sample ballots will have to provide instructions for two different types of systems.

6. Neither voters nor poll workers in Santa Cruz County have any prior experience with DRE voting machines. There will be significant training and education costs for both. For many elderly poll workers and voters, DRE systems are complex and non-intuitive.

7. DRE voting technology is relatively immature, not fully debugged, and fraught with a variety of problems, that have been well documented in nearly every election in which they have been used to date. DRE voting systems are the most complex voting system known to mankind, and in any system, with increased complexity comes increased possibilities for problems.

Every DRE voting system requires an extra piece of equipment (e.g., a voter card encoder in the case of a Sequoia DRE, or a Judge's Booth Controller, or JBC, in the case of the Hart system) to authenticate the voter to the DRE voting machine; that is yet another piece of equipment that needs to be stored, maintained, transported, and programmed, and it is also one more piece of equipment that can malfunction. For example, such ancillary equipment was a significant source of problems during the March 2004 primary elections in those counties that used DREs, [and caused hundreds of polling places in San Diego County to open late, causing thousands of voters to be turned away from the polls.] In contrast, an optical scan paper ballot voting system requires no such ancillary equipment, because it is the optical scan paper ballot itself which authenticates the voter to the ballot marking device, and there is no need for SmartCards or SmartCard encoders.

8. DRE voting technology is not a scalable technology. Each DRE can only accommodate a certain number of voters (typically 150 to 250, depending on ballot complexity). As the number of voters increases, the more machines you need to add, and that gets expensive. And the more DRE machines you buy, the more you need to maintain, store, program, test, transport, etc.

Furthermore, logic and accuracy testing on DREs is a much more labor intensive process than logic and accuracy testing with optical scan ballots, since if the DRE is to be fully tested, the test ballots must be entered by hand via the touch screen. And since DREs require more machines per polling places, there are more machines for which logic and accuracy testing needs to be performed. [See

http://www.washburnresearch.org/ComparatisonOfTestingCosts_PBOS_to_DRE.htm]

9. Because of the lack of scalability, and the increased complexity involved in operating DRE systems, they are not a cost effective solution as compared to optical scan technology. Miami-Dade County Florida has learned this the hard way, and it has been an expensive lesson. After 3 years of using DREs, elections officials there are recommending that they scrap their investment of \$24.5 million in DREs and switch to a precinct-count optical scan system that will be less expensive to operate and maintain, even when factoring in the costs of printing optical scan paper ballots.

For all of these reasons, I believe that DRE voting systems are not a good choice for Santa Cruz County. They are fraught with legal, technical, and economic uncertainties, and will result in a more complicated voting system which will require significant retraining of both voters and election workers. Accordingly, VerifiedVoting and I both recommend that the County continue using optical scan voting technology, augmented with precinct-count optical scanners and ballot marking devices in order to meet the various HAVA mandates that take effect in 2006.

As to specific vendors, I am submitting the following comments strictly as a private citizen and registered voter of Santa Cruz County, and not in my capacity as legislative analyst for VerifiedVoting.org and The Verified Voting Foundation. Those two organizations (for which I work as a volunteer), are vendor-neutral, and neither provides any endorsement whatsoever for any voting system vendors or their products. (Neither of those organizations accepts any funds or compensation whatsoever from any voting systems vendor or its agents or representatives, nor does either organization have any financial stake or interest in any voting systems vendor.)

Two different voting technologies (optical scan / ballot marking devices and DRE voting machines), represented by several different voting system vendors (Sequoia, Hart, ES&S, and IVS), were recently demonstrated in Santa Cruz County. Presumably, all four of these vendors responded to the voting systems RFP issued by the County. I do not know if there were other voting systems vendors who responded to the RFP, *so* absent that knowledge, I must confine my comments to those 4 vendors.

My personal recommendation is that Santa Cruz select the optical scan voting solution offered by ES&S (i.e., the ES&S M-100 precinct-count optical scanner and the AutoMark ballot marking device), for the following reasons:

1. ES&S is currently the only vendor providing a ballot marking device that is certified for use by the State of California.
2. The ES&S AutoMark is the only device currently certified for use in California that enables a blind voter to verify that the voter-verified paper record (which in this case is the optical scan ballot itself) correctly reflects that voter's intent. By reinserting a marked optical scan paper ballot into the AutoMark, a blind voter can have the marked selections on that ballot read back via the audio interface, thus confirming that the ballot has indeed been marked as intended.

Currently, none of the VVPAT printouts produced by California-certified DRE voting systems (not Sequoia, not Hart, not Diebold, etc.) provide any mechanism that enables a blind voter to verify that what is printed on the **VVPAT** correctly reflects that voter's intent.

3. As shown on the accessibility charts prepared by the Verified Voting Foundation (see <http://www.verifiedvotingfoundation.org/accesscharts>), the AutoMark is one of the most accessible voting systems currently on the market in terms of the range of disabilities that it can accommodate. Unlike most DRE voting systems, the AutoMark accepts input from and has the necessary software to utilize binary or dual switches (i.e., sip-and-puff interfaces, foot pedal switches, jelly switches, and joysticks). This enables voters with various manual dexterity impairments (and who depend on such switches) to make their selections privately and independently on the AutoMark.

The DREs made by most major voting system vendors (i.e., Sequoia DREs, Diebold AccuVote TS and TSx, ES&S iVotronic) do not provide any input for binary switches, and voters who depend on such devices simply cannot vote privately on those DREs. (NOTE: the Hart DRE is the exception, in that it does accept input from binary switches.) The AutoMark also has a number of other unique accessibility features, such as synchronized audio and video, which is important to voters with various cognitive impairments. In a recent survey of over 100 disabled voters that was conducted by the Oregon Secretary of State's office, the AutoMark was the top-rated voting system in terms of accessibility. (See http://www.uhavavote.org/vendorfair/survey_results/vendor_fair_summary.pdf)

4. In the two demonstrations that I witnessed (one at Book Shop Santa Cruz and one at the Santa Cruz County Fair), the ES&S M-100 precinct-count optical scanner appeared to perform quite reliably, and the messages that it provided (e.g., messages about overvotes) were easy to read on its LCD display screen.

By comparison, the Sequoia precinct-count optical scanner jammed on multiple occasions during the demonstration at the Bookstore, and required frequent intervention by the vendor. During the night that I volunteered to help man the Elections Department booth at the County Fair, the Sequoia scanner malfunctioned and refused to accept any ballots. Brian Fitzgerald (the voting systems consultant hired by the County) and I both tried to figure out what the problem was but were unable to find or fix the problem, despite the fact that both of us have a considerable amount of technical experience. I suspect the average poll worker would be even more frustrated by such a malfunction. In addition to refusing to accept ballots, earlier in the evening the Sequoia scanner's printer (the one that prints messages about rejected ballots) malfunctioned and required significant intervention to get it working again. Such problematic mechanisms could lead to significant delays at the polling place on election day.

In fairness, I did not have an opportunity to give the Hart Intercivic optical scanner equal scrutiny, since it was not part of the demonstration at the County Fair.

5. The "fill-in-the-bubble" format of the ES&S optical scan paper ballot is the one most similar to the format of the existing DFM Mark-a-Vote optical scan paper ballots that Santa Cruz voters have used for the last decade, thus making it a relatively easy transition for voters to switch to using the ES&S optical scan paper ballot. The "connect-the-arrow" format of the Sequoia ballot is less intuitive, and is not consistent to what individuals are accustomed to from other types of optical scan systems (e.g., educational testing forms). Also, the Sequoia optical scan paper ballots appear to be printed on an excessively heavy weight of paper, which may make them more expensive to mail to absentee voters than the ES&S optical scan paper ballots.

6. I found the contrast and readability of the ES&S AutoMark's screen much superior to that of either the Sequoia or Hart systems. Even under comparable lighting conditions, the material used for the surface of Sequoia's screen suffered much worse glare and was much more difficult to read. The Hart eSlate screen was somewhere in between the Sequoia and AutoMark in terms of readability and contrast.

7. While the rotary knob mechanism on the Hart Intercivic eSlate is probably more mechanically robust and more immune to sensor calibration errors than the touch screen interfaces used by the Sequoia touch screen DRE and the AutoMark, I found it much less intuitive and less efficient for making selections on the ballot. Accordingly, I think it will take most voters longer to vote on the eSlate than on other DREs. Also, the need to dial in a 4 digit code prior to voting may prove problematic for some voters, especially those with cognitive impairments. Neither was it clear how a blind voter was supposed to be able to read the 4 digit code from the piece of paper printed out by the eSlate's "judge's booth controller" (JBC).

8. I found the metal ballot box provided with the ES&S M-100 precinct-count optical scan more solid and secure than the comparable ballot box demonstrated with the Sequoia scanner. Hart did not provide any ballot box with their scanner, so I can't provide any judgment of it relative to the other two ballot boxes.

....

Furthermore, the use of optical scan voting systems and ballot marking devices is widely accepted as being HAVA compliant and of being a technology on which HAVA funds can be legally expended. That is reflected by the large number of counties (and in some cases, entire states) that have decided to use this technology: So far, counties in California, Florida, Idaho (statewide), Iowa, Michigan, South Dakota (statewide), West Virginia, and Wyoming (20 out of 23 counties) have decided to deploy the AutoMark to meet HAVA's disability access requirements.

.....

Finally, this section of the report [of the Carter-Baker Commission on Federal Electoral Reform] also clearly lists in Table 2 (on page 27) that as of 2004, optical scan was still the dominant voting technology in use in the United States. In 2004, more counties used optical scan voting technology than any other technology, and more ballots were cast using that technology than any other.

For all of the above reasons, I believe that there is a clear and compelling case for continuing Santa Cruz's tradition of using optical scan paper ballots, and for selecting the ES&S M-100 scanner and AutoMark ballot marking device. That choice will provide an optical scan solution that will comply with the **HAVA** §301(a) mandates in a manner that is not only cost effective but one which ensures that all voters in Santa Cruz will be able to vote using an identical type of voter-verified paper ballot, i.e., one that gives all voters (including voters who are blind or visually disabled) the opportunity to verify that their intentions have been accurately recorded on a tangible and permanent paper ballot that is the one and only ballot of record.

Finally, I want to make absolutely clear that I do not work for or on behalf of any voting systems vendor or vendors' agent or representatives, and that I have no financial interest in nor receive any compensation whatsoever from any such vendor, agent, or representative. The recommendations I make above are based on what I consider to be the relevant technical, legal, and economic issues, and the respective merits of each system.

Respectfully,



Robert Kibrick
208 Archer Drive
Santa Cruz, CA 95060

attachments

ADDENDUM TO ORIGINAL LETTER, ADDED OCTOBER 16, 2005

1. At a meeting on October 14, 2005, County Clerk Gail Pellerin announced that Sequoia has promised to add support for dual switch inputs (e.g., sip-and-puff switches, foot pedal switches, etc.) to the Sequoia DREs. However, at this point, that is only a promise, and such a capability was not demonstrated at any of the demos conducted in this county nor is it currently certified.

2. The audio interface that the Sequoia DRE provides to blind voters has been roundly criticized by a number of blind voters and disability groups. Despite earlier promises (2004) to correct most of these problems, the Sequoia DREs demonstrated in Santa Cruz still suffer from many of the same problems:

<http://www.verifiedvoting.org/article.php?id=2117>

<http://www.verifiedvotingfoundation.org/article.php?id=2102>

<http://www.votersunite.org/info/KellyPierceReviewofSequoia-2005.pdf>

<http://www.votersunite.org/info/RunyanOnSequoia.htm>

October 18, 2005

Board of Supervisors
County of Santa Cruz
701 Ocean Street, Room 500
Santa Cruz, CA 95060

Attention: Supervisor Mark W. Stone

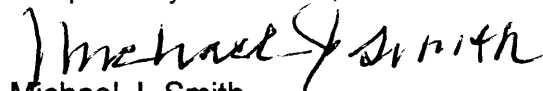
Re: Voting System Modernization Plan

Using the October 11, 2005 Report to the Board from County Clerk Gail Pellerin, and numerous other documents and reports I am making the following requests of the Board:

1. Approve a complete change in our current voting system to an optical scan technology.
 - a. At least one vendor has both federal and state qualified optical scan technology that will satisfy the HAVA requirement for the disabled voters by which they can vote privately and independently and can be informed audibly the result of the vote.
 - b. This technology will allow the printed ballot to be used as the primary system for the count, recount, audit and record of the vote.
 - c. The electronic record and be used as the secondary system.
2. Approve the **FEC** positions and storage funding requested by **Ms.** Pellerin. Require that the vendor furnish us with a diagram of storage needed for all machines requested.
3. Change the current random precinct manual count required by law from **1%** to **10%**. Connecticut and Hawaii currently use **10%** which allows them far better chance of discovering accidental and/or intentional voting error.
4. Approve the necessary security standards in the storage, logic and accuracy testing, test decks of ballots used in **L&A**, and in the operation and servicing of the voting machines. Elections staff must be thoroughly trained in these and other functions **so** they do not have to depend on the vendor if a problem arises.

Enclosed are documents supporting these requests. Please enter this letter and attached documents in their entirety into the record.

Respectfully submitted,



Michael J. Smith
P.O. Box 2325
Aptos, CA 95001

Sequoia in the News — A Partial List of Documented Failures

"A common practice for local election officials is to let election companies run their election — make up their ballot, set up their machines, and even count their tallies. This is a dangerous practice." ~ *Ted Selker, Cal Tech/MIT Voting Technology Project*.¹

Date	Machine	Place/Description
July 1996	AVC Edge	<p>Clark County, Nevada. Malfunctions during the state certification test don't prevent officials from approving the system.²</p> <p>In July, 1996 a public test to certify Clark County's Sequoia Pacific machine for early voting was conducted. During the test, a cartridge malfunctioned: also the examiner (selected by the state) had difficulty casting his vote. He had to vote 51 times rather than the designated 50, an option not afforded the voter should the machine malfunction in an actual election. In spite of these malfunctions, the machine was given certification — the equivalent of declaring it accurate, reliable and secure.</p> <p>Seventy-five people witnessed this test from a cordoned-off position approximately 20 feet away. Election officials removed cartridges from the SP machine for future verification but shortly thereafter the cartridges disappeared. Registrar Kathryn Ferguson, immediately notified the FBI. To date, neither the FBI nor Ms. Ferguson will comment on the disappearance.</p>
1996	AVC Edge	<p>New Orleans, Louisiana. Evidence of fraudulent programming was filmed by one of the candidates.²</p> <p>According to Voting Integrity Project (VIP) based in Arlington, Virginia, there have been instances, especially in 1996's hotly contested U.S. Senate race in Louisiana, where the program governing the operation of the Sequoia Pacific machine was altered before the election. Tests performed and videotaped by candidate Susan Barnecker in New Orleans in 1994 demonstrated that votes she cast for herself were electronically recorded for her opponent. This test was repeated multiple times with the same result thus confirming that the machine had been fraudulently altered to influence the outcome of the election.</p>
November 2000	AVC Edge	<p>Riverside County, California.</p> <p>...during the 2000 presidential election, a computer from Sequoia began dropping touch-screen ballots from the vote tally. A Sequoia salesman who was on hand intervened and fixed the problem.³</p>

¹ Touch to Vote: More Americans to Vote on Electronic, Touch-Screen Systems in November. ABC News. July 18, 2004. http://www.abcnnews.go.com/sections/WNT/Politics/e-voting_040718-2.html

² Clark County's Vote: How Secure Is It? Nevada Journal. August, 1998. By Lois Gross. <http://nj.nprl.org/nj98/08/democracy.htm>

³ Electronic voting's hidden perils. Mercury News. February 1, 2004. By Elise Ackerman. http://www.mercurynews.com/nld/mercurynews/news/special_packages/election2004/7849090.htm

Sequoia in the News — A Partial List of Documented Failures

Date	Machine	Place/Description
January 2001	Sequoia executive	<p>Phil Foster, regional sales vice president of Sequoia, was indicted for an elections kickback scheme in Louisiana. He was allegedly involved in a conspiracy and money-laundering scheme that involved the sale of machine parts at inflated prices and kickbacks of nearly \$600,000. Sequoia was not involved, nor was the company charged.⁴</p> <p>In April 2002, a Louisiana state judge dismissed the charges against Foster, ruling that the prosecutors' case depended upon Foster's grand jury testimony against others involved. Foster was granted immunity for his testimony.⁵</p>
March 2002	AVC Edge (DRE)	<p>Palm Beach County, Florida. Touch screens froze up, registered incorrect vote.</p> <p>Touch screen machines sometimes froze up when voters selected which language to use. Phil Foster from Sequoia Voting Systems said that was a software programming error. Elections Supervisor Theresa LePore also said she heard that some people touched one candidate's circle on the screen, only to see an X appear by another candidate's name.⁶</p>

⁴ Out of Touch: You press the screen. The machine tells you that your vote has been counted. But how can you be sure? New Times; April 24, 2003; By Wyatt Olson. <http://www.newtimespb.com/issues/2003-04-24/feature.html/2/index.html>

⁵ Out of Touch. <http://www.newtimespb.com/issues/2003-04-24/feature.html/3/index.html>, and Exec's indictment hits Oakland vote firm. Ballotpaper.org. July 12, 2004. <http://www.ballotpaper.org/archives/000525.html>

⁶ Human goofs, not machines, drag vote tally into next day
The Palm Beach Post, 14 March 2002; reported in "Black Box Voting" Chapter 2 by Bev Harris

Sequoia in the News – A Partial List of Documented Failures

Date	Machine	Place/Description
March 2002	AVC Edge	<p>Palm Beach County, Florida. Former Boca Raton Emil Danciu was ahead by 17 points in a poll conducted by the opposition. Exit polling indicated an overwhelming win for Danciu, but he received only 19% of the votes, even losing in his home precinct. Voters report that their votes appeared to be registered for his opponent.</p> <p>"What really alarmed us was the next day when we started getting phone calls from voters who had gone into the voting places -- people we didn't even know -- and pushed Emil Danciu's name only to end up with a check mark by Susan Haynie's name. They repeatedly tried to vote for him, but another name, particularly Haynie's, came up. They couldn't get their vote registered. They were telling wild stories about poll workers plugging and to vote again."⁷</p> <p>In addition, the results were delayed because, according to the election supervisor's office, 15 cartridges had been lost, and the system won't give a final tally until it has read all the cartridges. The office said that a poll worker had taken them home, and then they found them.</p> <p>With no paper ballots to check the accuracy of the machine, Danciu sued for the right to look at Sequoia source code. The county attorney argued that it would be a felony to disclose the source because it is a trade secret. The judge denied Danciu's request for the software code.⁸</p>
March 2002	AVC Edge	<p>Palm Beach County, Florida. Councilman Al Paglia lost by 4 votes on a one-race ballot, but 78 ballots registered as blank. Voters also reported erratic behavior of the touch screens.</p> <p>Councilman Al Paglia lost his seat by four votes to Lizbeth Benacquisto during a runoff contest held March 26 in Wellington, a town of 42,000 in central Palm Beach County. Although Paglia and Benacquisto were the sole candidates on the ballot, 78 so-called undervotes were registered, meaning 78 voters used the machine but did not cast a ballot. That struck Paglia as odd because he'd garnered 45 percent of the votes during the primary run against three challengers. And then, he too began hearing stories from voters that the Sequoia touch screens had acted erratically.⁹</p>

⁷ Out of Touch: You press the screen. The machine tells you that your vote has been counted. But how can you be sure? New Times; April 24, 2003; By Wyatt Olson. <http://www.newtimesbpb.com/issues/2003-04-24/feature.html/1/index.html>

⁸ Electronic voting's hidden perils. Mercury News. February 1, 2004. By Elise Ackerman. http://www.mercurynews.com/mld/mercurynews/news/special_packages/election2004/7849090.htm

⁹ Out of Touch: You press the screen. The machine tells you that your vote has been counted. But how can you be sure? New Times; April 24, 2003; By Wyatt Olson. <http://www.newtimesbpb.com/issues/2003-04-24/feature.html/1/index.html>

Sequoia in the News -- A Partial List of Documented Failures

Date	Machine	Place/Description
April 2002	AVC Edge (DRE)	<p>Hillsborough County, Florida.¹⁰ Vote data could not be transferred from 24 of the 26 data cartridges to the readers that would transmit the totals to the central office to be tallied. Precinct totals were faxed over and entered by hand.</p> <p>"As of today, we still have not pinpointed the problem," Elections Supervisor Pam Iorio said Friday. "We have had three Sequoia employees looking at it, but they have not gotten to the bottom of it."</p>
November 2002	AVC Edge (DRE)	<p>Bernalillo County, New Mexico.¹¹</p> <p>Although about 48,000 people had voted early on 212 Sequoia-supplied touch-screen computers at six sites in the county, the initial figures given to the commissioners indicated that no race - not even for governor - showed a total of more than about 36,000 votes.</p> <p>The error went undetected for 10 days, when it was noticed by an attorney who had been monitoring the election for one of the candidates. Sequoia admitted that the same error had been encountered in Clark County, Nevada, several weeks earlier, but Sequoia had not informed the election officials in Bernalillo County.</p> <p>Commissioner Tom Rutherford accused Cramer [Howard Cramer, vice president and Western regional manager of Sequoia Voting Systems] of a "cover-up," and said Cramer had never intended to tell officials here about the problem.</p> <p>... "We did not anticipate it would occur anywhere but in the Nevada election," he [Howard Cramer, vice president and Western regional manager of Sequoia Voting Systems] said. Sequoia's people here were not aware of the Nevada glitch, had not been alerted to watch for it, and had not been told how to fix it, he said.</p> <p>... Upon learning Friday of the 12,000-vote gap, he said, Sequoia employees worked through the weekend in Denver to re-run the data - using the software patch this time - and make a new report that included the "missing" ballots.</p>

¹⁰ Officials still searching for election glitch: The new system could not send the tabulations to the elections office.

St. Petersburg Times; April 6, 2002; By Jeff Testerman, Times Staff Writer

http://www.sptimes.com/2002/04/06/Hillsborough/Officials_still_searc.shtml

¹¹ Election results certified after software blamed. Albuquerque Tribune; November 19, 2002; By Frank Zoretich, Tribune Reporter

http://www.abqtrib.com/archives/news02/111902_news_vote.shtml

Sequoia in the News – A Partial List of Documented Failures

Date	Machine	Place/Description
November 2002	Optech optical scanner	Taos, New Mexico. A ballot programming error caused the Sequoia Optech optical scanner to assign votes to the wrong candidates. Just 25 votes separated the candidates in one race; another race had a 79-vote margin. After noticing that the computer was counting votes under the wrong names, Taos County Clerk Jeannette Rael contacted the programmer of the optical machine and was told it was a programming error. ¹²
March 2003	AVC Edge (DRE)	Hillsborough County, Florida. Vote data could not be transferred from 2 of the 678 data cartridges to the computers that would tally the votes. Precinct totals were faxed over and entered by hand. The only glitch occurred when two of the 678 cartridges containing voting results registered as non-formatted when they were downloaded at the elections service center. Those results were faxed from the downtown library and put into the database by hand. ¹³
October 2003	AVC Edge	Riverside County, California. Source code for the Sequoia tabulation system was found on an unprotected Internet site. Software used by an electronic voting system manufactured by Sequoia Voting Systems has been left unprotected on a publicly available server, raising concerns about the possibility of vote tampering in future elections. The software, made available at ftp.jaguar.net, is stored on an FTP server owned by Jaguar Computer Systems, a firm that provides election support to a California county. The software is used for placing ballots on voting kiosks and for storing and tabulating results for the Sequoia AVC Edge touch-screen system. ¹⁴

¹² 06/03/04. Conversation with a woman at the Elections Division of New Mexico. She told me Taos used the Sequoia Optech and confirmed that it was a programming error by the local programmer. New Mexico does not have their ballot programming done by the vendor. Original reference from *Black Box Voting*, Chapter 2.

Albuquerque Journal, 7 November 2002; "Taos To Recount Absentee Ballots"

¹³ Elections Chief Sees Nearly Flawless Vote. St. Petersburg Times. March 5, 2003. By Kathryn Wexler, Staff Writer. <http://www.sequoiavote.com/article.php?id=43>

¹⁴ E-Vote Software Leaked Online. Wired News; October 29, 2003; By Kim Zetter. <http://www.wired.com/news/privacy/0,1848,61014,00.html>

Sequoia in the News – A Partial List of Documented Failures

Date	Machine	Place/Description
November 2003	AVC (DRE)	<p>Santa Clara County, California. After a battery problem occurred during the election, anonymous Sequoia technicians worked on the machines without any oversight from county officials.</p> <p>Following November's election in Santa Clara County, Sequoia sent over a group of blue-coated technicians to make adjustments to voting machines that experienced battery problems. For three weeks, the workers, employed by a Sequoia subcontractor, took apart the machines, removing their circuit boards and making adjustments.</p> <p>Nevertheless, Santa Clara County officials didn't know the name of the subcontractor and hadn't verified the identities of the workers it hired when the Mercury News made an inquiry. They also hadn't documented the changes being made to the machines.</p> <p>To find out such information, "you'd have to contact Sequoia," said Assistant Registrar of Voters Elaine Larson.¹⁵</p>
November 2003	Optech 4C-400	<p>Snohomish County, Washington. Optical scanners failed to read 21,000 votes on absentee ballots because two lights that read the ballots were worn out.¹⁶</p> <p>When the lights wear out, Sequoia determined, they stop reading some types of ink.</p> <p>... Snohomish County was the first jurisdiction to catch the problem, said Sheree Noell, a sales executive for Sequoia.</p> <p>The problem came to light this winter when the Snohomish County Republican Party pointed out that up to 25 percent fewer votes than voters were counted in some county legislative races. Two recounts showed more than 21,000 votes were missed in the county's legislative races alone, although none of the corrected counts changed the election results.</p> <p>The Snohomish County Auditor's Office called Sequoia to analyze the machines.</p> <p>How long have they been failing to detect votes?</p> <p>"It's just something that we've been observing, and we've been thinking for a while that the undercounts were getting too high," said Frauna Høglund, chairwoman of the Snohomish County GOP.</p>

¹⁵ Electronic voting's hidden perils. Mercury News. February 1, 2004. By Elise Ackerman.

http://www.mercurynews.com/mld/mercurynews/news/special_packages/election2004/7849090.htm

¹⁶ County's voting troubles spur changes nationwide. Seattle Times. January 29, 2003 by Emily Heffter, Times Snohomish County bureau. Archived at <http://www.votersunite.org/article.asp?id=5276>

Sequoia in the News — A Partial List of Documented Failures

Date	Machine	Place/Description
November 2002	AVC Edge	<p>Santa Clara County, California. County selected Sequoia Voting Systems as the most qualified company to provide electronic voting equipment to Silicon Valley.</p> <p>The county incorporated extensive technical reviews and considerable input from the public in their 100-page report detailing their recommendation. In addition to the technical review, the county summarized user surveys completed by more than 5,000 voters who tested the systems, including more than 300 voters with disabilities.</p> <p>... In addition to the county's technical review, the report included a summary of responses from surveys completed by voters. According to the surveys, voters were extremely pleased with Sequoia's ability to accommodate voters with special needs. Sequoia was the first choice of voters with disabilities as well as non-English-speaking voters.¹⁷</p> <p>Follow-up article next.</p>

¹⁷ <http://www.sequoiavote.com/article.php?id=44>

Sequoia in the News — A Partial List of Documented Failures

Date	Machine	Place/Description
March 2004	AVC Edge	<p>Santa Clara County, California.¹⁸ Blind voters find the machines unacceptable and complain that Sequoia didn't listen to their suggestions.</p> <p>Disabled-rights groups have been some of the strongest supporters of electronic voting, but blind voters in Santa Clara County said the machines performed poorly and were anything but user-friendly in the March election.</p> <p>"Very few of our members were able to vote privately, independently, despite Santa Clara County's supposed 'accessible' touch screens," Dawn Wilcox, president of the Silicon Valley Council of the Blind, wrote in a letter to the registrar of voters after the March primary. "I feel this is an unacceptable state of affairs."</p> <p>... Wilcox said in an interview that she surveyed more than 50 members of her group after hearing anecdotal accounts of Election Day snafus. Only two members said the machines had functioned smoothly. About a dozen provided detailed descriptions of the problems they experienced using the audio technology that was supposed to guide them through the ballot and help them cast a vote in secret.</p> <p>Four voters said the audio function did not appear to work at all. Others waited up to half an hour for poll workers to trouble-shoot the devices. Sam Chen, a retired college professor, said he was happy to finally hear an initial message, but then the machine balked. After struggling for an hour, Chen asked a poll worker to cast a ballot on his behalf. "I wish I had voted on my own," he said.</p> <p>... Noel Runyan, a blind voter and computer scientist who is an expert in designing accessible systems, said touch screens are a good idea in theory, but they need a thorough redesign to work in practice. He said the voting companies appeared to have ignored feedback they solicited from groups of blind voters as they were developing their systems.</p> <p>Among the criticism provided by voters was poor sound quality, delayed response time and braille that was positioned so awkwardly it could only be read upside down. Chen, the college professor, also said the audio message required blind voters to press a yellow button. "Yellow means nothing to me," Chen said.</p> <p>"I personally want them to be decertified for this election," Runyan said. "We need to make a strong statement that all these machines need to be redesigned on the user interface side. We've got a mistake here."</p>

¹⁸ Blind voters rip e-machines: They say defects thwart goal of enfranchising sight-impaired
 Mercury News; May 15, 2004; By Elise Ackerman. Archived at <http://www.verifiedvotingfoundation.org/article.php?id=2102>

Sequoia in the News -- A Partial List of Documented Failures

Date	Machine	Place/Description
March 2004	Optech optical scan	<p>Napa County, California. The machines failed to record votes marked with dye-based ink. The error was found during a manual recount used to verify accuracy. After counting 60 ballots, officials discovered that the number of votes didn't match the votes recorded by the machines.</p> <p>Prior to the election, a Sequoia technician ran test ballots through the machine to calibrate its reading sensitivity, but failed to test for gel ink.¹⁹</p> <p>[Napa Registrar of Voters John] Tuteur said the machine dropped 6,692 votes out of a total of 468,001 votes cast on the more than 13,000 absentee ballots. He added that there was no pattern to the dropped votes: They spanned federal, state and county races and affected various candidates and ballot measures.²⁰</p>
June 2004	AVC Edge	<p>Sequoia Software Source Code. Evidence of serious security problems shows up in source code left on an unsecured site by Sequoia.</p> <p>A team of university computer security scientists is currently studying the "WinEds" central tabulator produced by Sequoia Voting Systems. Preliminary work indicates that Spanish language ballots can be tampered with using this software, and that an unauthorized, uncertified program called "reverse.exe" resides on a very unusual location for a voting system (and one that most certifiers would never think to examine) -- the results cartridge itself. The "reverse.exe" program is used for ballots for the visually impaired, but researchers are concerned that it could open up back doors into manipulating the vote process for all voters. This program is referenced in Sequoia user manuals, but has never received a NASED number and has never been certified at all.²¹</p>

¹⁹ Lost E-Votes Could Flip Napa Race. Wired News; March 15, 2004; By Kim Zetter. <http://www.wired.com/news/evote/0,2645,62655,00.html>

²⁰ E-Vote Snafu in California County. Wired News; March 18, 2004; By Kim Zetter. <http://www.wired.com/news/evote/0,2645,62721,00.html>

²¹ <http://www.blackboxvoting.org/>

Sequoia in the News – A Partial List of Documented Failures

Date	Machine	Place/Description
June 2004	Insight (optical scan)	<p>Dona Ana County, New Mexico. Machines failed the pre-election testing and were used in early voting. In pre-election testing, counters that track the total number of ballots passed through the machine showed incorrect numbers. The counters in four out of five machines were incorrect, showing as many as 20 or 30 votes more than the actual number of ballots tested. Yet the machines were used in early-voting anyway.</p> <p>State Bureau of Elections computer specialist Steve Fresquez said Wednesday his director, Denise Lamb, briefed him on a problem with Insight machines before she went home for the day. "The machines have a protective counter that records all the votes cast on them. That counter was reading transactions incorrectly and advancing extra numbers," he said.</p> <p>The super-precinct feature, which totals the votes by Legislative district, gave incorrect totals, as they did in Curry County.</p> <p>Chief Deputy Clerk Coni Jo Lyman said officials at Ink Impressions, the Rio Rancho-based company that provided the Insight machines, told her the machines were capable of counting both ways [by precinct and canvassed]. But when county personnel attempted to get the super-precinct totals from the machines, the numbers were wrong. Election workers wound up counting the vote by precinct, which took extra time and labor.</p> <p>Ink Impressions president Terry Rainey denied Wednesday there is any problem with the machines or the "super-precincting" process.²²</p>
June 2004	AVC Edge TM (DRE)	<p>Morris County, New Jersey. The tabulation system was unable to read the data from the touch screen machines.</p> <p>Morris County's computerized voting tabulation system malfunctioned last night, forcing elections officials and computer experts to work feverishly late into the night to correct the problems. "Nothing has ever happened like this," said County Clerk Joan Bramhall. "There's data on the (computer) cartridge, but it's just not reading it. It shows zeroes."²³</p> <p>VotersUnite! followed up with Ms. Bramhall. The problems was that the C drive was full. The vice-president of Sequoia, who led her technicians through a process that deleted unnecessary information on the drive and "refreshed" the computer. Then they were able to read the cartridges.</p>

²² Company denies problem with voting program. Clovis News Journal. June 3, 2004. By Jack King: CNJ Staff Writer
<http://cnjonline.com/engine.pl?station=clovis&template=storyfull.html&id=6358>

²³ Montville and Chatham mayors ousted. Star-Ledger. June 9, 2004. By Lawrence Ragonese and Kristen Alloway.
<http://www.nj.com/elections/ledger/index.ssf?base/news-3/10867655355551.xml> (paid archives)

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Date	Machine	Place/Description
August 2004	Sequoia Veri-Vote	<p>Sacramento, California. In a demonstration of its Direct Recording Electronic voting machine with a paper trail, Sequoia demonstrated that its machine failed to report four votes in Spanish.²⁴</p> <p>Last week, Sequoia vice president and former California assistant secretary of state Alfie Charles was showing off the new Veri- Vote printer that his firm is supplying to Nevada when an astute legislative aide in Johnson's office noticed two votes were missing.</p> <p>Charles tried again to vote in Spanish with the same result: He cast votes on two mock ballot initiatives, but they were absent from the electronic summary screen and the paper trail.</p> <p>"The paper trail itself seemed to work fine but what it revealed was when he demonstrated voting in Spanish, the machine itself did not record his vote," Chesin said. "Programming errors can occur and the paper trail was the way we caught it."</p> <p>Charles said his company's touch-screen actually did record the electronic votes in its memory but through an oversight failed to reflect the votes on its electronic display and printout.</p> <p>"There's no problem with the way the equipment worked. It was a problem in the ballot setup," Charles said. "People do make mistakes and that's why you have ballot proofing. Because it was for demonstration purposes, we didn't put all the attention into it that we should have. That would never have occurred in a regular election."</p> <p>Another journalist reports:²⁵</p> <p>Charles said the machine did record the votes accurately in its memory, but failed to record them on the paper trail and on the review screen that voters examine before casting their ballot. Swatt and Chesin could not confirm this, however, because the company did not show them evidence of the digital votes stored on the machine's internal memory.</p>

²⁴ Lawmakers cut e-voting's paper trail: Manufacturers demonstrating new printers in Nevada were embarrassed when machine failed to recognize votes. Tri-Valley Herald. August 13, 2004. By Ian Hoffman, Staff Writer. Reproduced at: <http://www.votersunite.org/article.asp?id=2512>

²⁵ Wrong Time for an E-Vote Glitch. Wired News. August 12, 2004. By Kim Zetter. http://www.wired.com/news/evote/0,2645,64569,00.html?tw=wn_tophead_2

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Date	Machine	Place/Description
August 2004	WinEDS election management system	<p>Hillsborough County, Florida. The computer indexing system malfunctioned.²⁶</p> <p>After the polls closed Aug. 31, [County Registrar Buddy] Johnson's computer servers mysteriously slowed to a snail's pace, and the vote was not totally counted until 5:10 a.m. the day after the election.</p> <p>After a diagnosis by Sequoia Voting Systems, the vendor that sold Hillsborough its \$12-million package of touch screen voting machines, Johnson announced that a computer indexing system had malfunctioned, causing the server to repeatedly search through its entire data base before recording any single vote.</p> <p>A few days later, Johnson said he wasn't sure why the computer indexing hadn't worked properly but declared it "now fixed."</p>
September 2004	AVC Edge	<p>Hillsborough County, Florida. One early-voting touch-screen machine was left in test mode during the early voting period. It reported zero votes, since all the votes cast were recorded as test votes. Seventeen days after the primary, the error was caught and the 245 "test" votes were added into the results.²⁷</p> <p>They brought the machine's results cartridge in for its results to be counted. And the machine reported zero votes. I talked to [County Registrar] Buddy Johnson on Monday. He was frank about what happened. The machine was left in test mode; his procedures had not contemplated such a possibility.</p> <p>"It would not leap out at you," he said, "that this was in test mode." The printout the machine produces indicated a test, Johnson said. But the poll workers had not been trained to look for it.</p> <p>From another article:²⁸</p> <p>Early voting began Aug. 16, and on the three machines at Westgate, a total of 1,050 votes were recorded even though about 1,300 people had signed in during the two weeks.</p> <p>The match between sign-ins and ballots cast is rarely 100 percent. Some people bail out without voting, and others don't complete the ballots. Those are called undervotes. "It didn't make a lot of sense that there was that many undervotes," Johnson said of the library situation. So officials began looking for other explanations.</p> <p>They found the answer Friday. On the machine mistakenly left in test mode, the votes were collected in a way that wouldn't be read later when the machine's data cartridge was fed into a tabulating computer.</p>

²⁶ 245 Hillsborough primary votes go uncounted. St. Petersburg Times. September 18, 2004. By Jeff Testerman, Times Staff Writer.

http://www.sptimes.com/2004/09/18/Hillsborough/245_Hillsborough_prim.shtml

²⁷ Reminder on Election Day - this is not a test. St. Petersburg Times. September 21, 2004. By Howard Troxler, Times Columnist.

http://www.sptimes.com/2004/09/21/Columns/Reminder_on_Election_.shtml

²⁸ 245 Votes In Primary Originally Uncounted. Tampa Tribune. September 18, 2004. By Ted Byrd. <http://www.tampatrib.com/FloridaMetro/MGBVTP089ZD.html>

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Date	Machine	Place/Description
September 2004	Veri-Vote	<p>Clark County, Nevada. Las Vegas voters used the new electronic voting machines that produce a voter-verifiable paper ballot. A malfunction in the new software delayed tabulation of the votes.²⁹</p> <p>Larry Lomax said, "I wasn't happy. I am always surprised when something doesn't work" Lomax, the Registrar of Voters, is talking about the software glitch that delayed the release of results Tuesday night.</p> <p>"They had to create new software that would support this printer and both voting machines we have. My guess -- in the process of getting it developed and federally certified, a bug that was there in 2002 must have crept back in. This has nothing to do with tabulating the results. It's the ability to tell the number of precincts reporting."</p>
September 2004	AVC Edge	<p>Snohomish County, Washington. As yet unexplained problems caused sixty-five touch screen voting machines to crash and smart cards to jam in the primary election.³⁰</p> <p>The biggest problem the county encountered was the disabling of 65 of 860 e-voting machines because of a software crash and jamming of the smart cards. Although affected voters managed to use alternate machines and no previously tallied votes were lost, "we can't afford to have a repeat" of the breakdown during the November election, Terwilliger said.</p> <p>He has asked Sequoia Voting Systems, the machine vendor, to investigate the problem.</p> <p>McLain's confidence is further undermined by the absence of federal certification of software devised for the new primary voting system (King, Pierce and three other counties also lacked certification due to the change). Because of the relatively late primary-ballot change, Terwilliger said, only provisional certification through the Secretary of State's Office could be obtained. Federal certification will be done, but not till next year, Terwilliger added.</p>

²⁹ Software Glitch Delayed Release of Results. Eyewitness News. KLAS-TV. September 8. Colleen May, Anchor.
<http://www.klas-tv.com/Global/story.asp?S=2276229&nav=168XQj9D>

³⁰ E-voting vent: You can't tell if it worked. Seattle Times. September 20, 2004. By Paul Andrews.
http://seattletimes.nwsource.com/html/business/technology/2002040563_paul20.html

Sequoia in the News -- A Partial List of Documented Failures

Date	Machine	Place/Description
September 2004	AVC Edge	<p>Hillsborough County, Florida. High percentages of undervotes in the primary election present the county with an unanswerable question since the paperless machines provide no method of doing an audit.³¹</p> <p>Hillsborough's undervote on countywide contests ranged from 9 percent in the race that re-elected State Attorney Mark Ober, to a whopping 17.5 percent in the race in which Charles "Ed" Bergmann was elected circuit judge.</p> <p>In Pinellas County, which uses Sequoia machines, the undervote on countywide contests ranged from 9.1 percent in a School Board race to 13 percent in a judicial contest.</p> <p>The question is: Why?</p> <p>Are voters refusing to vote? Or are votes not registering on electronic machines?</p> <p>... People just undervote," [Hillsborough Supervisor of Elections Buddy] Johnson said.</p> <p>Rob MacKenna, an Eckerd Corp. computer programmer who is the Democratic challenger to Johnson, strongly disagrees. ... MacKenna's skepticism about the cause of the undervote stems from the presidential preference primary last March, where a single question was listed on the ballot but where 255 Hillsborough voters, or 0.76 percent of the turnout, had no vote tabulated. Had 255 residents driven to the polls, signed in, walked to the touch screen machine, then decided to abandon the whole idea?</p> <p>MacKenna refuses to believe it.</p>

³¹ Voting mystery stirs call for paper trail. St. Petersburg Times. October 4, 2004. By Jeff Testerman, Times Staff Writer.
http://www.sptimes.com/2004/10/04/Tampabay/Voting_mystery_stirs_shtml

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Date	Machine	Place/Description
October 2004	AVC Edge	<p>Snohomish County, Washington. County officials admit that 20 machines broke down during the primary. The machines have malfunctioned before, and they have no idea what the cause of the problem was ... but no votes were lost.³²</p> <p>Twenty touch-screen voting machines broke down on Sept. 14 in Snohomish County, but officials said Tuesday that no votes were lost and no voter was prevented from casting a ballot.</p> <p>County elections manager Carolyn Diepenbrock said mechanical failures rendered the machines inoperable for the primary election. Some simply froze, while the viewing screens on others went blank.</p> <p>"We're still trying to figure out what triggered the mechanical failures," she said. "We don't have that answer yet."</p> <p>... On the day of the primary, 20 of the 886 machines deployed in polling places had to be shut down after activation cards got stuck. While the problem has occurred in previous elections, it has never occurred on that many machines, Diepenbrock said.</p> <p>Sequoia technicians spent last week in Everett testing the machines that broke down, as well as and the ones that did not. They did not uncover the cause of the problem.</p>

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Date	Machine	Place/Description
October 2004	AVC Edge	<p>Palm Beach County, Florida. In the second day of early voting, touch screen machines failed and had to be replaced. Voters quickly lost confidence in the election process.³³</p> <p>At Palm Beach County's West Boca branch library, voters were turned away Tuesday morning after touch-screen voting machines failed to work properly. Voting finally got underway at midday, after five new units were delivered.</p> <p>Lines snaked out from the library's small windowless conference room, which doubled as a makeshift precinct. Waits of two or three hours were not uncommon at many of the county's eight early voting sites.</p> <p>... Seeing all this, Jane Weidman of Boca Raton said she had lost confidence in the system. "We are all here because we're afraid our vote is not going to count on Nov. 2," she said. "We can't vote. It's like Afghanistan. We're all in a long line. What's going on here?"</p> <p>... Democratic poll watcher Rhoda Stern-Moss cleared up the mystery. "They tried to boot up the machines this morning and they wouldn't go, so they ordered new ones," she said. "No big deal."</p> <p>It was a big deal if you had waited a total of five hours in line Monday and left without voting, then spent three more hours in line Tuesday — Boca Raton resident Ann Dean's complaint.</p> <p>And the failure to boot up wasn't the only problem.</p> <p>Morris Jay of Boca Raton came Monday but left without voting. He was one of the first in line Tuesday and was not inspired by his voting experience.</p> <p>"I voted, but my machine froze," he said. "They fiddled around with it, then they closed it up. They gave me another card and I went to another machine."</p>

³³ Glitches, lines hamper early voting. Palm Beach Post. October 19, 2004. By John Murawski, Palm Beach Post Staff Writer.
<http://www.palmbeachpost.com/business/content/news/feeds/1019vote.html>

Sequoia in the News — A Partial List of Documented Failures

Date	Machine	Place/Description
October 2004	AVC Page	<p>Palm Beach County, Florida. User-unfriendly design of e-voting machines caused poll workers to err. The first day of early voting, poll workers in one location closed the election on early voting touch-screen machines, rather than just shutting down for the night. Now, the machines can't be used again in the election.³⁴</p> <p>Voting scheduled to start at 9 a.m. Tuesday at the county library branch west of Boca Raton didn't begin until about noon.</p> <p>Describing the poll workers as embarrassed by the mistake, LePore said they were so frazzled by the onslaught of voters and criticism on Monday that that they made a mistake.</p> <p>For regular elections, workers turn two knobs, one to turn off the power and the other to close the polls. For early voting, they're only supposed to turn off the power. They did both Monday night, which meant the machines couldn't be activated Tuesday.</p> <p>So all the machines at that location had to be taken back to the elections office to be counted on elections night, then replacements sent to be started for Tuesday's voting.</p>
October 2004	Printer y	<p>Adams County, Colorado. Sequoia Voting Systems failed to print 13,000 absentee ballots ordered for Denver voters.³⁵</p> <p>Residents wanted to know where their absentee ballots were. Election officials explained the delay with the Nader lawsuit and Columbus Day.</p> <p>But the phones kept ringing.</p> <p>Officials got suspicious, investigated, and discovered Monday that the California printer never printed the first batch of ballots, election commissioner Susan Rogers said.</p> <p>They are being printed now, though, and will be on their way to voters soon.</p> <p>"If people are leaving town or need one right away, they need to contact us," Rogers said.</p> <p>A phone call to Sequoia Voting Systems, the Oakland-based contractor that handles the printing, was not returned Tuesday afternoon.</p>

³⁴ Early balloting continues in Palm Beach County, and so do voters' gripes. South Florida Sun-Sentinel. October 20, 2004. By Anthony Man. <http://www.votersunite.org/article.asp?id=3298>; http://www.sun-sentinel.com/news/local/palmbeach/sfi-pvoter20oct20,0,7789937_story?coll=sfla-news-palm

³⁵ Absentee ballots 'lost' at printer. Rocky Mountain News. October 20, 2004. By Gabrielle Crist. http://rockymountainnews.com/drmn/election/article/0,1299,DRMN_36_3267080,00.html

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Date	Machine	Place/Description
October 2004	AVC Edge	<p>Bernalillo and Sandoval Counties, New Mexico. Votes change on the screen and are resistant to voter's attempt to vote for their choice.³⁶</p> <p>Kim Griffith voted on Thursday — over and over and over. She's among the people in Bernalillo and Sandoval counties who say they have had trouble with early voting equipment. When they have tried to vote for a particular candidate, the touch-screen system has said they voted for somebody else.</p> <p>It's a problem that can be fixed by the voters themselves — people can alter the selections on their ballots, up to the point when they indicate they are finished and officially cast the ballot.</p> <p>For Griffith, it took a lot of altering.</p> <p>She went to Valle Del Norte Community Center in Albuquerque, planning to vote for John Kerry. "I pushed his name, but a green check mark appeared before President Bush's name," she said.</p> <p>Griffith erased the vote by touching the check mark at Bush's name. That's how a voter can alter a touch-screen ballot. She again tried to vote for Kerry, but the screen again said she had voted for Bush. The third time, the screen agreed that her vote should go to Kerry.</p> <p>... In Sandoval County, three Rio Rancho residents said they had a similar problem, with opposite results. They said a touch-screen machine switched their presidential votes from Bush to Kerry.</p> <p>... [Bernalillo County Clerk Mary] Herrera said she's heard stories from Democrats and Republicans. In some cases, when people have tried to vote a straight ticket, the screen has given their votes to every candidate in the opposite political party, she said.</p>

³⁶ Some Voters Say Machines Failed, Incorrect Choices Appear on Screens. Albuquerque Journal. October 22, 2004. By Jim Ludwick, Journal Staff Writer.
<http://www.abqjournal.com/alex/246845alex10-22-04.htm>



This survey ~~reports~~ problems that disabled voters have ~~had~~ with the Sequoia electronic voting machines ~~used~~ in **Santa Clara County, CA**. It is important because some disabled ~~rights~~ advocates claim that electronic voting machines ~~are more~~ reliable and ~~easier~~ to use for disabled ~~persons~~ than voting machines that have a paper trail. Media coverage about this survey ~~appears at:~~

http://www.mercurynews.com/mld/mercurynews/news/breaking_news/8673336.htm

and

<http://www.contracostatimes.com/mld/cctimes/news/politics/8680106.htm?1c>

Silicon Valley Council of the Blind (SVCB) Voting Machine Problems Survey

March 4-18, 2004

This is a compilation of the responses I got to a request for ~~SVCB members'~~ experiences in the ~~March~~ election using the Sequoia machine in **Santa Clara County**. I have the original messages but here have changed member ~~names~~ to ~~initials~~. I Hope this helps in ~~your~~ efforts to improve the ~~situation~~ - very few ~~of our~~ members were able to vote privately/ independently despite **Santa Clara County's** supposed 'accessible' touch ~~screen~~ machines. I feel this is an unacceptable state of affairs. ~~Several of our~~ members have specific ~~suggestions~~ for improvement. Please ~~see~~ the comment at ~~.~~ * X1 has ~~offered~~ to help and we have other blind, tech savvy members who will assist with information. ~~Many of us were~~ involved in ~~tests of~~ various ~~units~~ over the past couple of ~~years~~ and were surprised the Sequoia ~~was~~ chosen.

Dawn Wilcox
President **SVCB**
March 20, 2004

1. X2 **After** verifying my CAL photo I.D., a lady **directed** me to the **audio** voting machine. A man **named** Craig came over to help me. He tried to the ~~card~~ to initiate the machine and **had** no success whatsoever. He **tried** the second **and then** the third card, **and** still had **no luck**. The machine did not **announce** any audio message at all. I **then suggested** to **Craig** to call some experts to solicit help. Craig **called** the manufacturer, and in about 30 minutes, i heard the ~~initial~~ **audio message**. I **then tried** to follow the **audio** message to proceed, **and** the machine kept **repeating** the initial messages and did not allow me to the language ~~(Wanted English)~~. I then **asked Craig** to help me **again**. Craig **tried himself** for 10 to 15 minutes, and had no success at all. Craig **then** called the ~~n~~manufacturer **again**, but the person there **could** not help us resolve the problem. At the **end**, I could not but ask **Craig** to vote for me. I was ~~at~~ the polling place for over one **hour**. X2

Date Sat, 6 ~~Mar~~ 2004 [also from X2] Below **are** the conclusion **that** I drew from my experience on **Mar. 2nd**

1. The voting machine does not work for the blind or visually impaired. **The** machine **has** too many problems. The machine does not do what the audio message **instructs**.
2. People at the polling **station** **are** not well **trained** to use the machine, **or to** solve the problems. They tend to believe (or **are** taught **by the** manufacturer) that the machine will **work** if they follow the "Instructional **Manual**".
3. **The supporting staff** at the manufacturer side are not knowledgeable or experienced enough to

resolve problems arising on site.

4. The "Instructional Manual" is not clear, nor is it **thorough enough** for any polling **station** staff to follow. X2

2. X3- by phone A summary

The Polling **officer** said **they** had **an** accessible machine but **they** **hadn't** been **trained** to use it. Earlier **at a SVCB meeting where the Registrar** of Voters had brought **the** Sequoia **to** demonstrate, **?** **asked** for the large print overlay which was not available and she **was** told to **sign** up for a **absentee** ballot.

3. X4 - phone *summary* - The machine **was** available but **the** program **started** up in some language **other than English**, she eventually got to **English** and discovered **she** **was** in the **propositions** and **that** **the** program **read every word** of it; **she** backed up to the **first** proposition **and** voted **only** to hear **that** it had **previously** been voted for. **At that point** **she** **had** a volunteer vote for her.

4. X5; used the machine successfully.

5. X6 Mar 2004 I'm **glad** to say **that** I **was** able to cast my ballot **using the** accessible voting machine. It took them about **twenty minutes** to **get it started** and They needed to **call headquarters for setup instructions**. *Also, they didn't seem* to realize **that** the machine **could still** be used by sighted voters **once the** accessible voting feature **was operational**. I **was also** disappointed in **the** audio quality of the machine. The **recorded** voice **was** of poor quality (**very narrow band width**), and it sometimes **sounded** **very** **fuzzy**. **Other than that**, it was a very positive **experience** to vote in **secret**. Cheers X6

6. X7 Regarding voting, I did have a problem **trying** to vote **on** the touch screen Sequoia systems. Although **the folks that ran** the polling place, **at** Hazelwood Elementary School, **were** very pleasant and helpful, the **accessibility** feature would not **work**. **They tried** plugging the **key pad unit** into more than one of the systems and called the tech **support** desk for help. The **"support desk"** just asked if **they** had **checked to make sure** the cable was plugged in **and then** said to give up and have **someone** assist me in voting. Since the **key pads were** not connected with USB cables, I suspect that the **systems were supposed to be turned off**, before the **key pads were** plugged in, and **then** rebooted. **Our** poll workers did not feel that **they should** reset or turn off the units. After I found the button, I **was** sorely tempted to just **go ahead and** force a reset myself. Judging by the **shoddy** design of the **systems**, I **was** worried **that** I might end up clobbering **other voters'** data. **They never** did **get** the **"accessible key pad"** **working**, while I **was** there. Therefore, I don't currently have much to say about the function of **the** access software. There **were** a few other **points** I should mention. **Originally they** tried to plug the access **key pad unit** into a **voting machine** that **was right** under a very noisy Ceiling fan. I think **we need to make sure** that polling workers are sensitive to **environmental** distractions, such as noise and **sun glare**. Second, the **key pad on the Sequoia machine** had terrible braille labeling. Not only **were the** dots **too shallow**, they were about 1 and a half times further apart than standard **dots**. Thirdly, the labels were **jammed** so close to the top **edge** of some of the **buttons** that you could not feel the dots. The **key pad cable** was looped **back** and **restrained** by a cheap cable tie. This looks and feels shoddy, like a **flimsy** afterthought (as I imagine it **was**). The wide Velcro **restraining** strap **on the bottom** of the **key pad** **makes** it awkward to hold in your hand **and also makes** it **unstable to rest on a flat surface!**, for operation. I noticed **several other** general design problems. Some **were** as simple as the Velcro claw patches **on the** inside of the **security** panels, right at sleeve

level, where **they would grab** the sweaters of voters. **This** might seem trivial, but not after **a few** units **get** accidentally **jerked** onto the floor. It **should** have been **a** simple design change to reverse **the** Velcro **patches**, to have the **soft** cloth patch portion exposed on the inside of the panels.

Another problem **was** the over all depth (front-to-back) of the **units**. **Traditional** polling booths and stands **are** not **very** deep. The Sequoia systems sprawled **back so far** that the poll workers had to **get** **separate** tables to hold **the units**. At **our** polling place, **the** tables were too big to fit in the **areas** **they** used to put the voting booths. **This meant** that **they** had to use tables in the **cafeteria/gym**. When I arrived to vote, **there were kids** yelling and **pounding** on the piano, right next to the voting booths. **Maybe these kids were** just being creative about **making** sure the polling **would** not crowd **into** their lunch and play **areas** next time. **Certainly**, the **sprawling** design of these **voting machines** can be accommodated, but why should **tax** payers be **wasting** money on such poorly designed and inflexible voting machines. I am particularly bothered that Sequoia **seems** to have ignored the **suggestions** that **we** and **several others** gave **them**, when we **reviewed** and tested **their** systems at PCBVI and the SVCB meetings, some time **ago**, when they were "**seeking** design input". I am glad to hear that some visually impaired **folks** were able to **vote** successfully **with** some of the touch screen systems. I applaud **your** effort in trying to **evaluate** and improve access to voting systems. Please let **me** know how I can help.

Best regards, X7 [note a computer professional]

6b. Additional comments from X7 Date: Sat, 13 Mar 2004

From reading the **stories of others**, it is obvious that the touch screen, when in audio mode, should have **a** message to poll workers or assistants. This **message** should inform them that **they** shouldn't worry that the screen **will not** be **reflecting** any changes. Even my computer savvy wife **was** confused by the **total** lack of screen response to **keypad** button presses. The screen message could also give a **brief summary** of **other** helpful tips, such as **where** the volume control is located, how it works, etc. **Yes**, the poll workers should be **trained** better, and the audio module should be **set** up at the **start** of the polling day and tested. **However**, appropriate help screens would help to augment the **training** of the poll workers or make up for their **lack** of **training** or **poor memories**.

*Frankly, I think the Sequoia voting machines are **so** poorly designed and **hard** to **access** that the counties **should** not **buy** **any more** of **this** version. Also, the government **should** **refuse** to **buy** any **more** systems, **unless they are** completely redesigned and **made** reasonably useable. I don't think that the **answer** is to try to **just** train poll workers better! Clearly, Sequoia ignored **our** recommendations, **before**, when **we were** asked to evaluate **their** design in the past. I don't **mean** to sound negative, but I really **don't** expect Sequoia to **change** their design or **their** poor **excuse** for tech support, **unless** the local **and** countrywide governments **refuse** to buy **their** **current** product. SVCB is in a unique position to influence accessible voting machines for the whole country. We have a responsibility to stand up **now** and demand **truly** accessible voting machines. If we **don't**, **more** of these farcical "accessible voting machines" will be pushed **onto** counties and visually impaired **folks** all across the country. **Again**, thanks for addressing this issue. Regards, X7

7. X8 I did manage to **vote** using the new accessible voting technology, but it **was** a frustrating experience. First of all, **when** I arrived at the polls **at** around 4 o'clock in the **afternoon**, I was the first person to request the **audio** software, and my voting machine **was** not **set** up and ready to **go**. A poll worker had to load **in** the **audio** software, and it probably took about **fifteen** minutes. I asked **why** there wasn't a machine already **set** up, and the **answer** **was** that, if they kept one **set** up with the audio

software all the time, it would take too much time to reload the regular software when other people needed to vote. Next, I thought I'd never be able to vote because I wasn't sure what to do once I had ~~ed~~ English as my language. Nothing in the instructions at the beginning told me how to get from that part of the recording to the next part where the races were. I tried HELP, but it just gave me the very beginning instructions describing which button was which, what shapes the buttons were, and how to my candidate once I decided who to vote for. It also took me right back to my language of choice, (which I had already done)! After attempting to figure things out for quite a while longer, and getting nowhere fast, I decided to try the SELECT button (which is supposed to be for voting), and I managed to get to the first race!

Then I listened to the category of the race, which was the Presidency, and suddenly the recording just stopped. So now what could I do? The recording didn't tell me what button to press to get into the list of candidates. So I pressed the NEXT key, thinking maybe that would take me to the actual list, but it took me instead to language again! So I had to (for the third time) what language I wanted. Now I knew to press SELECT to get to the race category. But I also knew NOT to press HELP because it WOULDN'T HELP me. So I figured that, by process of elimination, it must be SELECT I needed to press. So I did, and FINALLY I got to the candidate list.

I heard the candidate list, picked my candidate, and tried to vote by pressing SELECT, but the recording never told me if I had actually voted or not, leaving me uncertain as to whether my vote had registered. I tried SELECT again, and it took me to the next race, without my knowing if I had cast a vote on the previous one.

After that, it got a bit easier. I figured out that SELECT was used for many things voting, getting into a race, getting out of a race, and so on: in other words, when in doubt, try SELECT. Fortunately, from then on the recording did tell me when I had voted, so I knew I was safe to continue the procedure.

Finally, I got to the end of the ballot, and there was a REVIEW CHOICE option. So I started listening, and the first thing I found out was that there was no vote registered for my Presidential candidate, just as I had suspected. So now how was I to get back into that particular race to hear that particular candidate, so that I could vote for him? Did HELP tell me how to do that? It did not! HELP took me back to the language option for the fourth time!!! So I had to figure out how to get back to the REVIEW CHOICES option, which I finally did. Eventually, I also managed to find the candidate I wanted to vote for, and was able to cast my vote, but I don't know exactly how I did it. After fixing that vote, I went back to the REVIEW CHOICES option, finished listening to my choices, and pressed SELECT to cast my vote and nothing happened! Nobody said "Vote cast", or anything else of that nature. Don't panic, I breathed through clenched teeth! Just press SELECT again and see what happens. Bingo! There was this funny little series of tones, and the recording informed me that I was fully voted! In short, what took my sighted husband about one minute on the regular touch screen took me probably forty-five minutes or more. The only thing I can say about the whole experience is that I DID manage to vote secretly. And if I can remember how the machine works by the time the next election rolls around, voting should be easier. I AM grateful that there is now a way for a blind person to vote independently, but I think Santa Clara County made a VERY poor choice when it picked this particular vendor. You'd think that, with only four buttons on the keypad to choose from, the voting process would be made simple. You'd also think that the recording could tell you what you needed to do as you went along, the way it did on that easy-to-use and well-thought-out voting machine with the telephone keypad which Santa Clara County DIDN'T choose. Instead, all of the

instructions (such as they were) came at the beginning of the recording, and there was no context-sensitive **HELP** when you needed it. Last, I must add that the clarity of the female voice reading the candidate lists and propositions was very bad, and there was a hum behind it which made it difficult to hear. I found out after a while that there was a volume control on the little handset, but I had to ask my husband to find it for me so I could turn the volume up, because neither the poll worker nor the instructions on the recording told me where it was.

8. X10

When I first attempted to vote, there was no sound at all, not even a hissing, coming through the ear phones. The Inspector at my precinct, precinct number 2475, called in for assistance. They figured out that first, he needed to remove the card (you know, the little credit card sized card that you put in the machine so you can vote), and then load in the program that allows it to do the audio version of voting. From what the Inspector said, "They" [whom I took to mean the precinct workers] didn't realize that they needed to run this module before I could use the audio voting option. So I had to wait for them to load this program before I could vote (this probably took at least 10 minutes just to load certainly an unwieldy process if the polling place is busy at the time). But I did finally get to vote. Also, once it was working properly, I had to let him know that the screen was not going to change. He was waiting to be sure it was working right, but then after I said it was, he then said something about waiting to see what the screen changed to. If he hadn't said anything, who knows how long he would have stayed and continued to talk to me. So, I would conclude that better training is needed for precinct workers. Poll workers must currently attend a training session to learn what they are to do on Election Day. But it is obvious to me that they are not being shown how these machines work for blind and visually impaired voters who must use the audio option to vote. Poll workers at my precinct both at the November 2003 and at this last March election did not seem to know what to expect the machine to do. The workers in November did have the machine set up correctly, but my husband D informed me later that while I was voting, they were discussing amongst themselves whether or not the machine was working properly since the screen was blank except for perhaps a note indicating the mode it was currently using. The workers this March, or at least the Inspector, seemed equally uninformed. But all workers were quip curious to how how it worked. So, I'd suggest they cover this in the training session. It wouldn't take much time, but I think would make things go much more smoothly. It would also serve to further reinforce what steps must be taken to properly set up the machine so when someone who is visually impaired comes into the polling place, things are ready to go. D noted that after I finished voting in this last election, the screen went back into visual mode. The Inspector at my precinct had indicated that he planned to just keep the machine set up with the audio program installed in case others came in to use it, but since it went back into visual mode, I don't know if the audio program would have needed to be reloaded again or not. So I don't know what would have happened if mother blind person had gone to vote after I did. Dawn, in the past when I've gone through the poll worker training I have received a bunch of printed materials to read through after the training session. It is possible that this information was included in such materials this time (I don't know for sure since I did not work at the polls this time), but it is clear that if this is the case, the information was not read. It was summed up nicely by a comment the Inspector made, namely that he wasn't expecting a blind person to come in to vote there. So, therefore, the machine did not get set up ahead of time. I informed him that I had also voted there in November. So, in light of my experiences, I believe it is not sufficient to just let people read about it. It really must be demonstrated. It would also be good to have the poll workers tell us where to place headphones and such after we have finished voting since they do not stay at the machine (and well they shouldn't stay). I managed to find some little spot to prop the headphones, but if there was a hook somehow attached to the machine that we could find, or even a little table or shelf or an extra

chair next to the voting machine, it would be clearer as to what to do with them. The Inspector did tell me that I could just let the keypad hang down, so I knew that was not a problem to just let go of it when I was done voting. Poll workers also need to know where the volume control is so they can let us know where it is if asked. I asked about it before my first attempt to vote, but was told by the Inspector that he didn't know where it was. He later found it when troubleshooting to figure out why things were not working, so I did eventually find out. I believe that the headphones I used in November had a volume control on the cord, but this time I had to use a slider switch on the keypad box to control the volume. But I do not believe that this slider switch was marked with any braille, and I'm not in the habit of trying out switches on machines I'm not familiar with to see if that's the volume. And, if the November set up was the same as at this last election, then I had forgotten and needed a reminder. I would also add that I found the process both in November and at this last election a bit frustrating. In previous elections, when I used to use the punch cards to vote, I could just go directly to a polling booth after getting my ballot and start voting. But now, when I go to vote, I typically have to wait until machines are set up before I can vote, and how long this takes seems to greatly vary. In November, D was either not voting or nearly done voting before I even got started, and in the last election, he was done voting long before I could begin. Since we often go to vote together before D goes to work, this means that he must wait some undetermined amount of extra time while I vote. . . So, it seems to me that there needs to be a way to streamline this process so voters do not have to wait so long before they can vote. This is important, too, because people who are not used to going to their polling precinct might conclude that it is more hassle than it is worth and therefore be discouraged from voting. And, yes, I do realize that the machines are being used by people with a variety of needs, but this process really does need to be streamlined. One other concern I just thought of is that if polling workers do not understand how the audio program works, if someone using it has a problem, the workers would have no clue how to help. They wouldn't even know what to tell them to listen for. Anyway, I hope these comments help. Let me know if you have any additional questions. MM

9. X11

Thank you very much for the Voting Machine Problems' information. I prefer and use the Absentee Ballot system to vote by mail.

10. X12 I went on Tuesday to vote and the talking machine was there. no one knew how to use it. It was not even plug up. There needs to be 1 person who is in charge of it. They need to be trained. My mom had to vote for me and I told her who I wanted. I wanted to use the talking one. I went to the one in San Jose on Braham and Capitol and they had old men there. I thought how do they know how to use computer and they did not. They wanted me to show them, how to set up the talking computer. I had no clue. Nor was it my job. I would hope in November they will be fixed. Thank you, I would like to here other on the issue. Did anyone have a Positive situation. Thanks, X12

11. X13 non member - LB forwarded your message to her to me. The voting machine in Santa Clara County at Green Valley Christian Church didn't work. The people working there didn't bother to test the machine to make sure it was working. I believe the woman actually said, "I guess we should have tested it." I was the one to use it when I got there around 5:30ish, so probably the only blind person they had. I didn't have a spare set of headphones with me to see if it was a headphone problem. No one offered to call anyone to see if they could find any way to solve the problem. They all seemed to have an "Oh, well." kind of attitude. My husband ended up voting for me. It was very

disappointing. X13

13. X14 phone; used touch screen, ~~was~~ concerned re lack of privacy as screen was visible to others.

14. X15 7 Mar 2004 Since I'm a High Partial, I had no problems with the voting machine. X15

15. 6 Mar 2004 X17 I am an Absentee Ballot user. I have registered my dislike of the current ballot and hope they will *figure* out a way to make it private. If anyone wants to express their opinion about Absentee Ballots just write/call the following: (d)

16. X17 Fri, 5 Mar 2004 (sighted but mobility impaired) I used the touch screen with only a minor problem. I ~~was~~ a little unsteady as I tried to touch the circle and unconsciously touched the screen with another part of my hand to steady it. I found that the system did not like two different parts of the screen touched at the same time. Evidently it got confused as to which touch ~~was~~ my valid intent, and so did nothing. I realized what I ~~was~~ doing, corrected my error, and continued successfully to the end. Sorry that some had problems.

end

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Posted on Sat, May. 15, 2004

Blind voters rip e-machines

THEY SAY DEFECTS THWART GOAL OF ENFRANCHISING

SIGHT-IMPAIRED

By Elise Ackerman
Mercury News

Disabled-rights groups have been some of the strongest supporters of electronic voting, but blind voters in Santa Clara County said the machines performed poorly and were anything but user-friendly in the March election.

“Very few of our members were able to vote privately, independently, despite Santa Clara County's supposed ‘accessible’ touch screens,” Dawn Wilcox, president of the Silicon Valley Council of the Blind, wrote in a letter to the registrar of voters after the March primary. “I feel this is an unacceptable state of affairs.”

Concern about the security of electronic voting machines has set off a national debate about the benefits of digital ballots. They were supposed to enfranchise 10 million blind Americans who have never cast a ballot without assistance. But computer scientists have warned that the machines' software code is uniquely vulnerable to error **and** fraud. The machines' reliability also has been questioned after a range of reports of mechanical glitches during the California primary and elsewhere.

Wilcox said in an interview that she surveyed more than 50 members of her group after hearing anecdotal accounts of Election Day snafus. Only two members said the machines had functioned smoothly. About a dozen provided detailed descriptions of the problems they experienced using the audio technology that was supposed to guide them through the ballot and help them cast a vote in secret.

Four voters said the audio function did not appear to work at all. Others waited up to half an hour for poll workers to trouble-shoot the devices. Sam Chen, a retired college professor, said he was happy to finally hear an initial message, but then the machine balked. After struggling for an **hour**, Chen asked a poll worker to cast a **ballot** on his behalf. “I wish I had voted on my own,” he said.

Elaine Larson, assistant registrar of voters in Santa Clara County, said **poll** workers were given extensive training and written materials but many still had trouble activating the audio equipment on the Sequoia Voting Systems machines. “It was a new system that had not been used before,” she **said**.

Larson said she did not believe the machines malfunctioned and said the county would try to give poll workers more hands-on experience before

the November election. She said the county also would instruct poll workers to set up the audio equipment before voters arrived.

Modifications due

Sequoia spokesman Alfie Charles said the company would factor the comments into future design enhancements. He said some earlier modifications already had been submitted for approval by federal and state certifying bodies. "We want to continue to make our products as user-friendly as possible," he said.

Wilcox's survey of blind voters has roiled the disabled-rights community, which lobbied heavily for a federal law requiring every polling place in every state to provide at least one electronic voting machine equipped for disabled voters by 2006.

Last week, three disabled-rights organizations sued California Secretary of State Kevin Shelley for prohibiting the use of electronic machines unless they meet stringent security requirements.

"The secretary's decertification orders will deny voters with disabilities the right to vote independently, in secret and without third-party assistance," the lawsuit stated.

Shelley has said he is concerned that electronic machines, which record votes digitally, "are not 'stable, reliable and secure enough' to be used until they produce paper receipts of ballots cast."

The report by the **Silicon** Valley Council of the Blind shows "the gap between the advertised accessibility of these machines and the reality," said Will Doherty, an executive director of the Verified Voting Foundation, an advocacy group that supports Shelley's directive.

Survey questioned

John McDermott, an attorney representing the American Association of People With Disabilities, the California Council of the Blind, the California Foundation for Independent Living Centers and 12 disabled voters in the suit against Shelley, said he did not believe the Silicon Valley survey was representative.

Only one of the plaintiffs suing Shelley had used an accessible voting machine, also known as touch screens. However, McDermott said he was confident "most disabled individuals with visual and manual disabilities are totally in favor of touch screens."

Noel Runyan, a blind voter and computer scientist who is an expert in designing accessible systems, said touch screens are a good idea in theory, but they need a thorough redesign to work in practice. He said the voting companies appeared to have ignored feedback they solicited from groups of blind voters as they were developing their systems.

Voters' complaints

Among the criticism provided by voters was poor sound quality, delayed response time and braille that was positioned so awkwardly it could only be read upside down. Chen, the college professor, also said the audio

message required blind voters to press a yellow button. "Yellow means nothing to me," Chen said.

"I personally want them to be decertified for this election," Runyan said. "We need to make a strong statement that all these machines need to be redesigned on the user interface side. We've got a mistake here."

Contact Elise Ackerman at eackerman@mercurynews.com or (408) 271-3774.

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Corporate Control of Voting Equipment Certification

| Print |

By John Gideon
June 02, 2005

How Did The Sequoia VeriVote Printer System Get Qualified And Then Certified In California?

The voting systems qualification and certification process is broken. The vendors appear to manipulate the system in order to be certified by an Independent Testing Authority (ITA). A quick look at the voting systems that have been qualified this year shows that a vast majority of the hardware and firmware is only certified to the 1990 standards; while some of the software has been qualified to the newer and more stringent 2002 standards. This process of qualification seems to be almost capricious, as though it is done to the benefit of the vendors.

A good example of this broken process is seen in the events surrounding the qualification and certification of the new Sequoia VeriVote wpat printer. Sequoia developed this new add-on to their Sequoia AVC Edge electronic voting machine under pressure from the state of Nevada. The new printer was qualified, as part of a complete system, by an ITA, and the National Association of State Elections Directors (NASED) gave Sequoia its "System ID Number" on October 24, 2004. The problem is that there are not now, and never have been, any standards developed by the Federal Elections Commission or the Technical Guidelines Development Committee for qualifying a wpat printer. And, instead of turning to the newer, more stringent, 2002 standards, Sequoia chose to qualify their printer system hardware and firmware to the older 1990 standards.

Below is a snapshot of the NASED qualification details for the Sequoia voting system that includes the VeriVote Printer. Notice that the WinEDS software is qualified to 2002 standards but the voting system itself is only qualified to the 1990 standards.

Sequoia	WinEDS version 3.0.134	WinEDS version 3.0.134 (2002)	Sequoia (Optech) 400C Scanner/Tabulator, Firmware version 1.02b Sequoia AVC Edge Model II version 4.2a, & 4.3.320 w. VeriVote Printer# Sequoia AVC Edge Model I version 4.10, 4.2a, & 4.3.307 Sequoia AVC Advantage, version 9.00G Sequoia AVC Advantage, version 8.00B	N-1-07-22-11-006 (1990)	10/20/2004
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n the snap-

Mr. Hancock responded to my email with the following:

"NASED Qualified the Sequoia voting system containing the VeriVote printer to the 1990 VSS. As you can see in your snapshot, some portions of the system (such as the software) were tested to the 2002 VSS, but until all portions of a system are fully 2002 compliant, the system retains a 1990 qualification. As you know, the 2002 VSS contained no requirements for WPAT devices. The test labs could therefore only test these products against the manufacturers specifications, and to make sure the product interfaced properly with the rest of the voting system."

So, the vendor, the ITA hired by the vendor, and NASED have all qualified a new wpat printer that will be used on voting machines across the country — without testing it against any standards designed for

vpat printers. The VeriVote printer is being regarded as a valid method of providing a voter verified paper ballot for voters who vote on the Sequoia AVC Edge voting machine. This printer is also now the big selling point for Sequoia as they attempt to satisfy the states that require a vvpap.

But wait! There is more. Remember that the EAC is the keeper of the Help America Vote Act of 2002 (HAVA). They have overall responsibility, via NASED, for ensuring systems meet the federal standards as well as ensuring that all systems comply with HAVA.

HAVA Section 301(a)(3) states that "the voting system shall be accessible for individuals with disabilities, including nonvisual accessibility for the blind and visually impaired, in a manner that provides the same opportunity for access and participation (including privacy and independence) as for other voters."

In a **Department of Justice finding**, Sheldon Bradshaw, a Deputy Assistant Attorney General in the Office of Legal Counsel, found that (highlighting added):

"A direct recording electronic voting system that produces a contemporaneous paper record, which is not accessible to sight-impaired voters but which allows sighted voters to **confirm** that their ballots accurately reflect their choices before the system officially records their votes, would be consistent with the Help America Vote Act and with Title II of the Americans with Disabilities Act, **so long as the voting system provides a similar opportunity for sight-impaired voters to verify their ballots before those ballots are finally cast.**"

So, we know that disabled voters must have the same ability to verify their votes as non-disabled voters. This is law in HAVA and is agreed to by the Attorney General of the United States.

Why is this important? On January 14, 2005 the state of California refused to immediately certify the Sequoia VeriVote printer for use. Why? The Secretary of State's Elections Division found that the Sequoia VeriVote printer did not meet the state's "Accessible Voter Verified Paper Audit Trail" standards, and **stated the following** (highlighting added):

"There are still two issues where state testing of the VeriVote found that the system failed to meet California's AWPAT standards.

"1. Section 2.4.3.1.2 requires that "The data relayed to the audio device must come either directly from the data sent to the printer or directly from the paper record copy." However, the audio stream used by the AVC Edge with the VeriVote comes directly from the DRE and is the same data stream used during the rest of the audio voting. Therefore, under this configuration, **voters using the audio function would still be dependant on federal, state and local testing to verify whether their vote was recorded accurately.**

"... The Voting Systems and Procedures Panel would have to modify the standards or grant an exemption on these items prior to a staff recommendation that the system be **certified.**"

There are two shocking issues here. First, and most important, the Secretary of State's Elections Division clearly found that because the audio feed for blind voters does not come from the printer, or directly from the feed to the printer, blind voters do not have the same opportunity to verify their votes as do sighted voters. This is a clear violation of HAVA and does not meet the requirements stated in the Department of Justice finding. How did this printer get qualified by NASED if it violates the law? Simple. **The vvpap capabilities weren't tested against any vvpap standards.**

Second, and nearly as important, within one week the California Election Division did exactly what they suggested they might. They modified their standards and certified the Sequoia VeriVote printer. Essentially they turned their backs on federal law in order to allow Sequoia to sell its system in the state.

Presently a committee chartered and sponsored by the EAC and under the auspices of NIST is finalizing a new set of federal guidelines that will include standards for a vvpap printer. We should not expect that these new standards will be any more comprehensive or stringent than the 1990 and 2002 standards. In fact the **vendors have had a hand in writing those standards.**

What is clear is that the testing and certification system is set up in the interest of the vendors, and the public interest takes a backseat. It is even to the point where federal and state governments are willing to allow the vendors to violate the law just so they can sell their wares. The Sequoia VeriVote printer system is clearly in violation of the law and should not be used until the source of the audio ballot-verification is taken from the printer itself.

Instead of forcing the vendor to make a good product, those who are supposed to be ensuring the public interest, are turning their backs on the public. The vendors are being allowed to sell voting systems that clearly do not meet the law and they are being allowed to do this by all of those who are supposed to be ensuring that the public interest is protected -- the ITAs, NASED, the EAC, and the state.

John Gideon is the Information Manager for VoteTrustUSA and for VotersUnite.Org.

Comment on This Article

You must login to leave comments...

Other Visitors Comments

Name: Bob.P. - 2005-06-02 21:07:46

Comment: The certification process is such a mess that it is more a political game than a technical certification. But the game is being played with our votes and our money.



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Is HAVA Being Abused?

[Print]

By John Gideon and Ellen Theisen

June 02, 2005

The 1990 Voting System Standards are Certainly Outdated. Are They Illegal, Too?

Section 222(e) of the Help America Vote Act of 2002 (HAVA) provides that the 2002 Voting System Standards adopted by the Federal Election Commission are deemed to be adopted by the Election Assistance Commission (EAC) as the first set of voluntary voting system guidelines adopted under HAVA. [See the [EAC website](#).]

HAVA was enacted on October 29, 2002. So why has the National Association of State Election Directors (NASED) continued to use the 1990 standards as the basis for qualifying some voting systems AFTER federal law declared the 2002 standards to be the official guidelines?

Before HAVA, NASED was in charge of the qualification process. HAVA gave the EAC responsibility for administering the qualification process, but since the Administration was nearly 10 months late appointing the commission members, the qualification process remained in the hands of NASED, and little changed.

In this process, voting systems are tested by Independent Testing Authorities (ITA) against federal Voting System Standards (VSS). Once the system passes the testing, NASED reviews the report from the ITA and if all is in order, NASED assigns the system an official ID# indicating that it met the federal standards. State election officials consider NASED-qualification an important factor when they are certifying systems for use in the state, and in some states, qualification is required by law.

Recently, when we saw a news article referencing a rule that requires all voting systems to meet the 2002 standards after January 2005, we were surprised. We contacted Brian Hancock, the ITA Secretariat appointed by the EAC, and asked him about it. In response, he wrote that, "NASED has incorporated testing to the 2002 VSS in several stages since these Standards were implemented. The attached NASED advisories explain this process."

The advisories explained a lot.

Early in 2003, shortly after HAVA was enacted, NASED adopted "Voting System Testing Updates" to the qualification procedure. An advisory of these updates was distributed to voting machine manufacturers, state election directors, and local election officials. The updated rules address the transition to the 2002 standards adopted by HAVA.

They appear to be phasing in new standards by indicating that:

- after January 8, 2003, revisions to previously qualified systems and systems entering testing must meet the 2002 standards,
- until January 1, 2005, if modifications are made to a component of a system, it is not necessary for the entire system to meet the 2002 standards, but will continue to be recognized as a qualified 1990 system.
- after January 1, 2005, all system revisions must meet the 2002 standards.
- after January 1, 2005, if modifications are made to a component of a system, the entire system must meet the 2002 standards to retain its qualification status.

This sounds like a reasonable plan. However, the information in the [list of systems qualified between December 2003 and March 2005](#) seems to indicate that NASED didn't follow its plan. For example:

- AccuPoll Version 2.3.14, with a host of software and hardware, was qualified to the 1990 standards in February 2004, Diebold GEMS Version 1-18-18 was qualified to the 1990 standards in July of 2003; GEMS 1-18-19, in February 2004; and GEMS 1-18-22G, in January 2005.

- ES&S Unity Version 2.4.2 was qualified to the 1990 standards in February 2004, along with a long list of components including the IVotronic touch screen version 8.0.
- Hart Interclave eSlate Systems 3.0, 3.1, 3.2, 3.3, and 3.4 (Including the Ballot Now scanner, a couple of versions of the Judges Booth Controller, and other components) were all qualified to the 1990 standards during the period from September 2003 to August 2004.
- Sequoia WinEDS 3.0 and 3.0.134, along with quite a few new renditions of the AVC Edge touch screen and AVC Advantage push button DRE, were qualified to the 1990 standards during the last half of 2003 and throughout 2004.

In fact many of the voting systems that we've seen malfunction, heat up, break down, switch votes, and record high undervote rates were qualified by **NASED** to the 1990 standards after federal law made the 2002 standards the official guidelines — and after **NASED** itself adopted rules prohibiting both changed and new systems from being tested to the 1990 standards.

On April 18, 2005, the **NASED** Voting Systems Board adopted an addendum to its testing update. The new advisory points to two of the **rules** in the update and states:

This addendum serves only as clarification of these procedures and in no way diminishes or negates the effect of any procedure adopted in February 2003.

Here are the two rules the addendum **doesn't** diminish or negate:

- After January 1, 2005, **NASED** will no longer offer **ITA** testing for revisions to any voting system approved prior to the use 2002 Voting Systems Standards.
- After January 1, 2005, any revisions which **do** not make the voting system totally compliant with the 2002 VSS become non-qualified under the national testing program.

Now here's the clarification that doesn't diminish or negate those rules in any way:

In order to accommodate new devices which may interface with either 2002 **or** 1990 qualified voting systems with the goal of making those systems HAVA compliant, **NASED** adds the following statement to the 2003 Testing Update document:

- After January 1, 2005, only those new devices not currently a part, package or upgrade to an existing 1990 qualified voting system may be tested for qualification **with such** voting system. These devices must be tested and meet the 2002 Voting Systems Standards and no other portion of a previously 1990 qualified system may be altered or upgraded to accept this device.

Exactly four weeks after the addendum was adopted, **NASED** assigned a qualification ID number to the Diebold AccuView, the touch screen DRE with a voter-verifiable paper audit trail printer. The new system was qualified to the 1990 standards.

We asked Brian Hancock about this apparent contradiction of the rules, and he responded, "As for the Diebold system with **AVPM**, it will still technically be **1990**. All hardware is **2002** tested, but there are **still** portions of the software not fully 2002. "

We replied with questions asking how the Diebold AccuView could be qualified, partly to the 2002 standards and partly to the 1990 standards, given the rules in the **NASED** advisories. Mr. Hancock referred us to Tom Wilkey: "As for the **NASED** decision process on the 2003 and 2005 guides, you will need to speak with Tom Wilkey as Voting Systems Board Chairman. Tom can most easily be reached via email."

Unfortunately, Mr. Wilkey has not responded to our emails, and we are left with quite a few questions:

- How **does** a rule allowing new components to bypass the 2002 standards NOT negate a rule that requires the entire voting system to comply with 2002 **standards**?
- **When** the **newly** developed printer was **added** to the **Diebold** system, **did** it really **NOT** require any portion of the Diebold touch screen to "be altered or upgraded to accept this device"?
- Why were so many new and revised voting systems qualified to the 1990 standards after HAVA made those standards **obsolete**?
- Why did NASED break its own testing rules **consistently** throughout 2003 **and** 2004, **and then** adopt a procedural "clarification" to avoid breaking them **in 2005**?
- Are the voting **machine** manufacturers making false **claims** when they tell their customers that their products meet federal standards, or is NASED violating Section 222(e) of HAVA by qualifying systems **that** don't meet the standards HAVA established?
- **Or** both?

These questions demand an immediate response.

[1] The four update statements are paraphrased here according to our understanding of their intent. When we asked for **clarification**, Brian Hancock, the ITA Secretariat appointed by the EAC, referred us to Tom Wilkey, Chairman of the NASEO Voting Systems Board. Mr. Wilkey has not responded to our **questions**, The two advisories are here: **2003 Advisory**; **2005 Advisory**

Comment on This Article

You must **login** to **leave** comments.. .

Other Visitors Comments

Name: Lynn S. - 2005-06-02 16:40:47

Comment: Thanks for unravelling the certification mess. I knew it was bad but **had no idea** how much **they** are still **getting away** with. **Now** what?



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CBD BOSMAIL

From: CBD BOSMAIL
Sent: Monday, October 17, 2005 12:44 PM
To: CBD BOSMAIL
Subject: Agenda Comments

Meeting Date : 10/18/2005

Item Number : 16

Name : theodora kerry

Email : thekerry@comcast.net

Address : 150 canfield ave. #2
santa cruz, 95060

Phone : 458-1734

Comments :

Having followed this issue for several years now, and having witnessed the stolen elections of 2000 and 2004, I am deeply disturbed that our county is about to throw caution to the wind, and jump on board the "Touch Screen Voting Machine" bandwagon just because there's federal money to do so. I do believe our paper ballots and opti-scan system has served us quite well and does not need to be replaced. Instead, I support the following:

1. A paper ballot system which means that election results will be arrived at by actually counting paper ballots. Any recounts will also be done with paper ballots, as will be all audits and record keeping.
2. More staffing made available to the Elections Dept. so that all work will be done by county workers, not by staff from outside corporations, who may have conflicting loyalties.
3. Random recounts done on 10% of ballots cast, not the current 1%, to ensure that we are getting accurate results.

Since the validity of government rests on the public perceiving that the elections of that government were valid, it is imperative that you err on the side of choosing electoral procedures that are safe and secure. Touch screen voting machines have yet to prove themselves as such, despite the best assurances of election officials who are often persuaded more by issues of convenience rather than transparency.

Please proceed carefully. Your legitimacy in the eyes of the voters depend on it.

Sincerely, Theodora Kerry

10/18/2005

47
16

CBD BOSMAIL

From: CBD BOSMAIL
Sent: Tuesday, October 18, 2005 7:32 AM
To: CBD BOSMAIL
Subject: Agenda Comments

Meeting Date : 10/18/2005

Item Number : 16

Name : Ronald E. Crane

Email : voting@lastland.net

Address : 300 8th Ave.
Santa Cruz, CA. 95062-4613

Phone : 831-462-6965

Comments :

My name is Ronald Crane. I'm a software engineer and a lawyer. My background is in computer security, operating systems, device drivers, and embedded systems. I was an engineer in Digital Equipment's Secure Systems Group, which was tasked with developing an operating system to the Department of Defense's highest security standards. I have also designed and implemented security software for use in nuclear power plants, and have worked on a variety of more conventional projects such as cable TV systems, teleconferencing systems, and measurement instruments.

While I support Ms. Pellerin's system recommendation, I also want to urge the Board to adopt as little e-voting technology as possible. My reasons are threefold:

1. E-voting systems lack transparency;
2. They're insecure; and
3. They provide little benefit to non-disabled voters.

First, transparency. What is it? Basically it's citizens' ability effectively to supervise a system's operation. **As** the Brown Act notes:

The people of this State do not yield their sovereignty to the agencies which serve them. The people, in delegating authority, do not give their public servants the right to decide what is good for the people to know and what is not good for them to know. The people insist on remaining informed so that they may retain control over the instruments they have created.

While the Brown Act concerns mainly meetings of public bodies such as this one, the principle of openness and citizen control that it establishes applies equally to voting systems. In fact, it applies much more so to them, since voting is the chief means for citizens to direct their governments, and voting systems assist that direction. Or, they ought to.

10/18/2005

But that's the rub. E-voting systems are based upon general-purpose computers like the PCs in your offices, and contain undisclosed (secret) software, firmware, and hardware. When we use such systems, we implicitly delegate the solicitation and counting of our votes (and thus the means of deciding our governments' direction) to the vendors who design and implement that software, firmware, and hardware. And, further, we make it impossible for the general citizenry - or even for computer security professionals - effectively to supervise what these systems do.

The peril is that we preserve the form of elections, but let dishonest vendors (or dishonest employees of honest vendors) - instead of voters - determine their outcomes. And that citizens have no good way to determine whether this is happening.

Ms. Pellerin's report says that DRE-based systems are more "controversial" than optical-scan systems. Their lack of transparency is one reason. But their lack of security is another, and goes hand-in-hand with their poor transparency. I mentioned "secret software", etc. No one looks at this but the vendors, who control it jealously. Even under the newly-proposed EAC "Voluntary Voting System Guidelines", only the test labs will have access to this software, and even they won't get to see all of it. And remember that these are the same test labs that have certified all the existing **DRE** systems, even the one on which 600 voters somehow "cast" 4,000 votes for President Bush in Gahanna, Ohio, just this past November.

Many DRE supporters argue that DREs are just like ATMs, and that since we trust the banking system, we should trust DREs, too. But there are several critical differences between voting and the banking system. First, bank customers receive periodic statements describing their transactions. I'm not talking "receipts" here, but monthly statements. Because of the need to preserve ballot secrecy, we can't give voters similar statements, so a voter can never directly know whether her vote was included in the final tally. Second, there is strong and effective recourse for financial fraud. If your statement shows a transaction you didn't authorize, you can make the bank fix it. Election challenges, by contrast, are extraordinarily difficult and expensive to mount, must be made within very strict deadlines, and almost always fail. Third, money can be replaced, but elections can't. Once a fraudulent election is certified, citizens have no recourse or protection against being represented or led by the wrong person. And the consequences of the wrong person's leadership can be devastating.

I'd argue that DREs are actually much more like electronic slot machines than they are like ATMs. Both the gambler and the voter get no periodic statements. And both must simply trust that the machine does the right thing, since neither has any way personally to verify its proper operation. You pay your money and you take your chances.

But there is one difference. Nevada, which is home to the vast majority of e-gambling machines, strictly supervises their construction and operation. The Nevada Gaming Control Board even goes so far as to visit casinos, randomly select machines, and rip them to shreds to determine what software, firmware, and hardware they're using, and thus whether they're cheating. The machines' vendors have a difficult time keeping secrets from the Gaming Control Board.

Unfortunately, no remotely similar supervision exists for, or has even been proposed for, DREs.

That's transparency and security. Now for DREs' lack of benefit. They simply don't do much

for non-disabled voters. Yes, they can help reduce over- and under-voting, but well-designed paper ballots can also do this, as can "second chance" machines. And DREs speed up vote counting. But so? Do we really need to know who the next President is (or who the machines tell us it is) 2 hours after the polls close? Why can't we wait a few days, as we did for most of our nation's history? And are these minor benefits worth sacrificing basically all transparency and security? I don't think so. And neither, I suspect, would the authors of the Brown Act, or the founders of our nation.

Thank you for the opportunity to tell you why Santa Cruz County should minimize its use of e-voting technology. I'm happy to talk in more depth with anyone who's interested. Please contact me at voting@lastland.net or at 831/462-6965.

Sincerely,

Ronald E. Crane

Suggested Reading:

Theisen, "Myth Breakers: Facts About Electronic Elections", VotersUnite.org, <http://www.votersunite.org/MB2.pdf> gives good background on e-voting issues and dispels many common misunderstandings.

Crane, Keller, Dechert, Cherlin & Mertz, "A Deeper Look: Rebutting Shamos on e-Voting", May 2005, <http://www.verifiedvoting.org/downloads/shamos-rebuttal.pdf> refutes the arguments of the most prominent DRE advocate, Prof. Michael I. Shamos.

Crane, "WSG Comments of Ronald E. Crane, J.D., B.S.C.S.", <http://www.lastland.net/voting/vvsg-notes-final.pdf> are my comments on the EAC's proposed "Voluntary Voting System Guidelines" ("VVSG").

LIST OF CALLERS REGARDING ITEM 47

Name: May Ray
P.O. Box 1543
Aptos, CA 95003

Comment: In favor of paper ballots

Name: Marcia Zigman
222 Arroyo Seco
Santa Cruz, CA 95060

Comment: In favor of paper ballots

3520C6

Jean Olson
Santa Cruz

Regarding Paper Ballots. Please vote "no." Voting machines are a waste of money because there is no paper trail.

#47