

**Counting Our Votes on Paper and Electronically:
The League of Women Voters Observes the Election Process
In Alameda County in the November 2006 General Election**

June 26, 2007

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Executive Summary and Recommendations

Rating the Alameda County Registrar of Voters Office. Overall, League observers found that the Alameda County Registrar of Voters Office did an excellent job of running the November 7, 2006 General Election under very difficult conditions. The Office was conscientious and meticulous in carrying out its work, in preserving the security of election equipment and ballots, and in retraining its staff and poll workers.

New voting machines, using a system entirely new to the staff, were ordered late, because the Secretary of State only certified most systems in the spring and because of controversies surrounding electronic voting. The machines were delivered only at the beginning of September for an early November election. Then Acting Registrar Dave Macdonald, also the County Director of Information Technology, brought strong computer and organizational skills as well as the expertise of his IT staff to the Registrar's Office and significantly improved the efficiency of planning and carrying out the election.

New Equipment; Limited Time and Space. The new voting system from Sequoia Voting Systems installed both touch screen and ballot scanning voting machines at each polling place. Overall, the ROV de-emphasized use of touch screens, reserving their use largely for disabled voters and Early Voters at the ROV Office and other locations. This meant that most votes were cast on paper ballots made up of pairs of large cardstock ballot sheets printed on both sides. This method generated a huge volume of ballots to be handled and stored both at each polling place and at the ROV office. The volume of ballots put large demands on the limited and awkward work space at the ROV office and on the time available to the permanent and temporary staff to carry out election procedures.

The ROV Office has strictly limited time periods to do its work. It must count Absent Voter or Absentee ballots in the week before Election Day, totaling the votes just after 8 pm Election Day. It must carry out all other election processing and counting in the 28 days after Election Day. Twenty-eight days after Election Day the ROV reports its official Statement of Vote to the California Secretary of State.

Future Pressures on the Limited Time and Space. Because of recent changes in the California Election Code and the growing volume of paper ballots, the ROV will face extreme time and space pressures in future elections. In particular, all Registrars will apparently be required to physically sort all AV ballots [Absent Voter or Absentee ballots] into their 'home' precincts. At the last election, 415,638 voters cast votes in 1219 precincts. But only 202,307 voters actually voted in 825 physical polling places;

394 precincts had so few voters that they were treated as mail-in precincts, in which voters could only vote by mail, in effect, as absentees. The majority of voters, 212,847, voted absentee on paper ballots. Fewer than 4000 voted as Early Voters, on touch screen machines installed at the ROV Office and other locations or on touch screens at the polling places.

Currently, the ROV has attributed ballots to their home precincts only electronically, not sorted them physically. The ROV's Office will face a demanding challenge to sort paper ballots physically into their precincts in the available time, while still carrying out all the other specific and time-consuming tasks of processing, counting and checking all ballots and election records.

Three Elections Planned in 2008; Introduction of Instant Runoff Voting. The ROV is currently expecting to conduct three, rather than the usual two, county-wide major elections in 2008—a presidential primary in early February, a Primary in June and a presidential year General Election in November, as well as several local elections. The ROV has also instructed the vendor to make Instant Runoff Voting in the county available by November 2007, to enable Berkeley, Oakland and San Leandro, which have voted for IRV elections, to use the system in 2008. Use of two different voting systems within the same election will mean changes to ROV protocols and training and a significant public education effort.

Increasing Voter Registration and Turnout. As within the state and in the country as a whole, voter registration and turnout have been declining. In November 2006, the 415,154 voters represented 61.16% of registered voters, better than in many other counties, but still not as broadly inclusive of all eligible voters as we would like to see. The Secretary of State's report for October 23, 2006 shows Alameda County as having 962,114 people eligible to vote and 678,765 or 70.55% registered. Therefore only 43.2% of those eligible to vote actually voted. This percentage is slightly above the state average participation rate of 39.29%, but considerably less than the counties with the best participation rates.

Improving the Transparency of the Voting Process and the Completeness and Transparency of the 1% Sample Selection and Counting. Over the past several elections, the Registrar's Office has improved the public's ability to observe election processes, including the Canvass and the 1% Manual Audit. It has also improved the completeness and the transparency of the selection and hand counting of the 1% sample. With some additional improvements, the ROV could set the standard for how a good election audit should be carried out. It could also become a model for how to run a 1% manual audit so that the public could see, hear and fully understand the process. This in turn would improve voter confidence in the accuracy of the election.

Additional Election Costs. Upgrading its systems and expanding its staff to meet the challenges of new equipment, coping with limited space and time, running three major elections in 2008, introducing IRV, increasing voter registration and turnout and improving the 1% audit will require additional funds. Although the County will be able

to claim reimbursement from the state for some of the necessary work, state reimbursements are slow to arrive and may be only partial.

Planned Improvements to the Alameda County Election Process. We note with satisfaction that Registrar of Voters Dave Macdonald has planned and begun various renovations to the ROV offices and changes and improvements to election processes that address many of the limitations described in the following report.

Recommendations of the Alameda County Council of Leagues of Women Voters To Maintain and Further Improve the Election Process

1. We support the Registrar's Office in its current efforts to streamline and make more efficient its election protocols and to acquire any necessary equipment and software. The Office should make whatever changes are necessary to adapt to changing requirements of national and state legislation and regulations and of changing voting trends, for example, toward absentee voting.

2. We support the Registrar's Office in taking all steps necessary to improve the transparency and the execution of the election and the Canvass, particularly the 1% sample selection and count, so that voters will be able to observe and understand whether the election results were counted, reported and tested accurately and completely.

In particular, we urge the Registrar to institute immediately any possible and practical changes that would improve the public's access to and understanding of the process, without compromising security or efficiency.

3. We urge the Board of Supervisors to provide additional financial support in advance of the 2008 election year to enable the ROV to prepare in a timely manner for the demands of: running three major elections; undertaking broad community outreach and education to increase the numbers of citizens who register and vote; improving the transparency and execution of the 1% sample selection and manual count; and instituting IRV and doing adequate public education about IRV.

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June 2007

by Nancy Bickel, Past Chair, Alameda County Council of Leagues of Women Voters, Jane and Tom Coulter and Bill Chapman, League of Women Voters Berkeley, Albany, Emeryville

The League of Women Voters of the United States

- *believes that voting is a fundamental citizen right that must be guaranteed.*
- *believes that voting technologies must be secure, accurate, recountable and accessible.*
- *protects the citizen's right to know and facilitates citizen participation in government decision making.*
- *promotes an open governmental system that is representative, accountable and responsive.*

Preface

In keeping with these central League principles and sharing the intense public concern about the accuracy and security of the vote raised by the 2000 and 2004 national elections, members of the Alameda County Council of the League of Women Voters took advantage of the opportunities provided by the November 2006 General Election and the November 2005 Special Election to observe closely how ballots were handled and counted in the County. At intervals of between six and eight months, the County ran three elections using three different systems.

In November 2005 the County was relying mainly on the Diebold TS touch screen system and machine, which had no paper trail. [A full report of that election, **How Our Votes Get Counted: The League of Women Voters Observes Election Processes in Alameda County In November 2005**, may be found at http://www.lwvbae.org/acc_rov.htm.]

After January 1, 2006, new federal and state laws required important changes in election equipment and processes. California reacted very promptly to criticisms of electronic voting equipment and required all electronic voting equipment to have a “paper trail” or voter verified paper auditable trail [VVPAT] that can be counted if the electronic count is called into question. The Federal Help America Vote Act required election officials to provide disabled voters with voting systems capable of allowing them able to vote independently and privately.

Alameda County was not able to select, purchase and install new election equipment that would meet the new standards in time for the June election, because the Secretary of

State did not certify most of the systems that would comply with the standards in time. Acting ROV Elaine Ginnold put in place a temporary “all paper” ballot system, using the same ballots as for absentee voters. Disabled voters or others who wished to use touch screen machines were invited to vote early at the ROV office, local City Clerk’s office, or, on Election Day, at the ROV office, on borrowed touch screen machines with paper records. Dave Macdonald, Director of Information Technology for the County, took over as Acting ROV a few weeks before the June election.

A shift of emphasis from voting electronically to voting mostly on paper.

For the November 2006 election, Alameda County purchased a new system from Sequoia Voting Systems that met the new requirements. Two types of machines were installed at each polling place. Both types use paper records; both also record votes electronically. Most voters at each precinct polling place voted on paper ballots which they then fed into the optical scanner installed at each polling place. One touch screen machine was also available at each polling place which recorded each vote both electronically and on a paper record on an adding machine-type roll that the voter could see through a plastic window and check before casting his or her vote. Disabled voters could also vote by listening to an audio attachment to the touch screen machine, voting on a keypad and then, if they wished, replay an audio record of their vote before casting its.

Absentee voters used paper ballots similar to those used at the polling places, but these ballots were scanned by high speed machines at the ROV office before or after the election. Few voters at polls used the available touch screen machines. Early voters did use the touch screen machines and accounted for most of the approximately 4000 votes on touch screen machines, out of the total of 415,638 votes cast in this election.

The following report describes in detail how the Alameda County Registrar of Voters handled our ballots and applied procedures to protect the integrity of the vote during the November 2006 election.

Excellent staff and procedures

Overall, League observers found that the ACROV Office was as conscientious and meticulous in carrying out its work in November 2006 as it had been in November 2005 and June 2006. Many careful protocols were in place to ensure that every vote was counted accurately. Election equipment and software are only part of an election system. Well-trained staff and systematic procedures are essential parts of the election system and absolutely necessary to carry out a secure and accurate election. Because of its experienced staff and careful protocols, the ACROV adapted successfully to the new equipment. It also developed new protocols to improve the systems and to compensate for potential weaknesses of the new equipment and its software.

Challenges for Coming Elections

We would like to alert readers that because of recent changes in the California Election Code, as well as possible future improvements and changes in state and federal laws and regulations, Alameda County and all other Registrars of Voters in the state will face some further challenges in future elections. Because the descriptions which follow are quite detailed, we will discuss the potential impact of some of these changes briefly in our conclusion.

Note: The League of Women Voters of the United States has published excellent reports about election reform and has given testimony advocating for election reform and voting rights, including the need to ensure the development of voting technologies that fully meet these goals through a much more serious research and development commitment by public officials, as well as clear performance standards for election systems. League publications may be found under these topics on the LWVUS website <http://www.lwv.org>. The League of Women Voters of California is also active in public information and advocacy in the areas of voting rights, election systems and related topics. Information may be found at <http://ca.lwv.org>.

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1. Introduction

Public's Right to Observe

The public has the right to observe many election procedures. Members of the League of Women Voters [LWV] are sometimes the only members of the public observing these procedures, although in recent years other citizens and citizen watchdog groups have begun to observe these activities. Representatives of the political parties and of particular candidates observe on election night and, when races are close, throughout the Canvass. This description of the election process is intended to provide information to interested citizens who do not have time to observe the process themselves.

We found the Alameda County Registrar of Voters Office to be conscientious in enabling League members and other members of the public to view the activities we describe in this report and to answer questions about these activities. At the same time, observers were often not able to see or hear what was being done well enough to actually follow the process in detail. The Registrar Office's approach to public observers is due, at least in part, to the limitations of time and space described below and to its established institutional practices. In our view, the ACROV did not fully meet the goal of enabling observers to see, hear and understand the process adequately.

The citizen's right to know is a necessary element of an open governmental system that is representative, accountable and responsive. The League believes that our democracy is best preserved by making governmental processes transparent. An accurate and honest election is the foundation of such a democracy. The California Election Code specifies that many different aspects of election processes must be publicly noticed and open to public observation. Recent changes in the Election Code have extended these requirements to more activities of the post-election Canvass and, in particular, have emphasized their application to the selection and hand counting known as the 1% Manual Tally.

Limitations of Time, Space and Volume

Time pressure to prepare and conduct the election process. As described in more detail below, the new election equipment only arrived at the ACROV at the beginning of September for the November 7, 2006. More than 2000 pieces of equipment had to be checked. The 27 staff members, with some help from the IT staff, had to become familiar with the equipment and programs, modify and develop training materials and train about 4500 poll and other temporary workers. Remarkably, the ACROV succeeded in running a successful, relatively trouble-free election.

Volume of paper ballots; Nearly a million individual ballot sheets handled.

Because of previous concerns and controversies about electronic touch screen machines and perhaps also because of the difficulties in hand counting the paper records or VVPATs from the machines, the Registrar's Office identified the touch screen machines as intended primarily for disabled voters. Some voters mistrusted the touch screen machines, even though these new machines were equipped with paper records. The result was that the vast majority of voters used paper ballots; Of the 415,638 ballots cast, only about 4000 were cast electronically. Each paper ballot consisted of two large cardstock sheets, approximately 10" x 17" with races listed on all four pages. Therefore, the switch to paper ballots produced a large mass of materials to be handled at the polling places and at the ROV Office both before and after the election.

Space limitations. The physical layout of the ROV offices in the basement of the Alameda County Courthouse is crowded and cramped, although Acting ROV Dave Macdonald cleared out and rearranged the space and did noticeably improve workflow. Many different staffers carry out a multitude of different tasks at the same time.

Location of Observers. Public visitors were escorted through the office by staff and were generally confined by ropes to a small area where they could see, but not interfere with, the activities. From this area, visitors can look through a large glass window into the computer vote count room that houses the central election computer and other equipment. Visitors can look around the long back workroom where paper ballots are processed and prepared for counting and other tasks are carried out.

From the public observation area it is not always possible to see or to hear exactly what is happening, what is written on pieces of paper, or what is typed into or shown on scanner display screens or computer screens. Generally, visitors are not allowed in the computer vote count room when ballots are being counted or processed or machines are being tested.

Information provided to Observers. In the June 2006 Primary Election, the ROV Office had introduced an excellent improvement in public information to observers. It posted flow charts on the walls of the election workroom explaining the processes being observed. This was not done for the November 2006 election. The ROV Office has for its own use publications describing its processes and protocols and has at times provided them to interested citizens, for example, to members of the Registrar's Election Advisory Committee. These publications were not provided to observers at this election. Instructions for "Canvass Observers" and/or "Election Observer Ground Rules" were provided; these stressed the limits on observers, such as not talking with employees.

Public Notice. For this election, the ROV posted dates for many of its election activities on its website, all but one with fixed dates and time. Posted activities including the Logic and Accuracy Test, the Absentee Ballot Processing, the Election Night Ballot Counting, the Post Election Official Canvass, Signature Check of Absentee Ballots from Polls, the Check of Provisional Ballots and the 1% Manual Tally. This easily accessible posting

acknowledged the public's right to observe and enabled members of the public to know when and where to come to observe. The selection of the 1% of precincts, absentee voter ballots and provisional ballots was not announced on the website. However, interested citizens could give their names and contact information to the ROV staff; those requesting notice were telephoned 24 hours before the selection.

Adequacy of Public Access. As the following detailed accounts will make clear, the ROV Office complied well technically with the Election Code requirements that certain of its activities be open to public observation. However, we found that the Office did not fully comply with the spirit of the law. Observers were often not able to hear, see and understand the substance or the details of the activities being carried out. In comparison with the November 2005 Special Election, we found that the ROV had tightened its control and made it more difficult for observers to genuinely follow or assess the activities. For example, during the 1% hand count, staff members spoke very quietly to one another or whispered and did not post the results of the individual hand counts, so observers could not tell whether there were discrepancies, whether the discrepancies were resolved, or how they were resolved. These problems have been brought to Registrar Macdonald's attention and he has made specific plans to correct them in future elections.

In the following reports, we describe what we have seen and understood. For details that we could not observe directly, we rely on interviews with ROV staff and written materials from their office and other sources. Many of the procedures are mandated by the Secretary of State and/or the state Election Code, so procedures that take place in Alameda County should resemble what happens in many other California counties.

Special Requirements, Improved Procedures Added

In addition to the intense pressure due to a short preparation timeline, the Board of Supervisors requested that the ROV do two kinds of additional testing of the new systems. Because of concerns raised by citizens about the security of electronic systems, the Board required the ROV to add extraordinary safeguards for this election—including independent testing of the new equipment and a full hand recount of all votes cast on touch screen machines.

Independent Testing and Recount of Touch Screen Votes. In response to the Board of Supervisors' requirements, Acting Registrar Macdonald hired an independent firm to do a vulnerability assessment. The firm identified only a few weak points that the ROV needed to correct. [The report is posted on the web at http://accurate-voting.org/wp-content/uploads/2006/10/alameda_sequoia_vuln.pdf.] To comply with the request for a full recount of all touch screen votes, Macdonald arranged for barcode scanning of all touch screen VVPATs, as described later in the report.

Improvements to Systems and Training. Registrar Dave Macdonald, managed the timeline and other pressures of this election by expanding and improving the tracking and testing of equipment and systems, upgrading the training of the existing staff, and bringing in additional computer-savvy staff from his IT office.

2. Security of Election Equipment and Records; “Chain of Custody”

The Alameda County Registrar of Voters office continued and expanded its efforts to keep election equipment, records and materials secure and accounted for. Voting machinery, paper ballots, poll registers and more, were distributed to 825 polling places and then collected again without significant breaches of security being reported. To supplement the 27 permanent staff members, about 4500 temporary staffers were trained, sworn in and hired. They worked long hours for very modest pay to make the election possible. Given the challenges of the election, they made surprisingly few mistakes and, because of the elaborate record keeping and checking system, ROV staff is usually able to identify and correct these mistakes.

ACROV record keeping seems to be meticulous. The system provides checks and balances: records are double-checked and equipment is locked up, wrapped up in plastic, and sealed in ways that would reveal tampering. Voting machines, electronic memory devices, voter registers, and other items were labeled with barcodes, so they could be easily logged in and out.

From the distribution center to polling place. Each Poll Inspector (supervisor of an individual polling place) picked up and signed for the paper ballots, rosters, and other materials. The Poll Inspector is responsible for their security from the time he or she picks them up from a distribution center on the Saturday morning before the election to their final delivery at the end of Election Day. The Inspector brings the election materials to the polling place on Election Day. The Inspector and other poll workers sign in and out on Election Day.

At the polling place. Three or more poll workers are assigned to each polling place. They are on duty and responsible for the security of records, ballots, equipment and the voting process from about 6 am to close of polls at 8 pm; closing procedures and delivery of materials can keep them busy as late as 11:00 pm, as described later in this report.

From the polling place to the 27 return centers. The Inspector and a second poll worker deliver all the records of the ballots cast at their polling place to their assigned return center after they have closed the poll. These include: all paper ballots; the printer from the touch screen machine, which includes the paper roll that records the VVPATs (the voter verified paper auditable trail), and the electronic memory devices from all machines. Poll workers also deliver other vital election records and equipment to one of 27 return centers. They sign in and verify that they have delivered each required item. Electronic memory devices were then transported by County workers to the ROV office.

Return to the ROV Office; Election Night Vote Counts. All the electronic memory devices brought to the ROV office on election night are read electronically. This process takes some time. Therefore, the first Unofficial Results “Absentee + VBM” reported election night included the Absentee Voter ballots received and scanned before Election Day, ballots from Vote by Mail precincts and some Early Votes. Subsequent reports add

more Early Votes, possibly Absentee Ballots scanned on Election Day and the earliest precincts to report. The electronic returns from both the scanners and the touch screen machines at precincts were recorded, totaled and reported Election Night and early the next day. The paper ballots, registers and other materials from the 27 return centers were brought in to the ROV Office Election during the night or the day after the election by ROV staff or contractors.

Security of Voting Machines and Electronic Recording Devices

Touch screen machines and scanners were tested and prepared for the election at the ROV warehouse. The machines were delivered from the ROV warehouse to the 825 polling places on wheeled carts, attached to the cart with plastic strapping tape and wrapped in strong transparent shrink wrap and sealed with layers of tape. The barcode ID tag on each machine is scanned when it leaves and when it returns to ROV custody. The scanner and the touch screen machine are unwrapped and set up by the poll workers the morning of the election. The machines are checked to make sure that no votes have been cast on them and that no paper ballots are in the ballot bins. The first voter is shown the zero totals and the empty ballot bins and box.

In a change from the practices in November 2005, none of the electronic recording devices are in the hands of poll inspectors before the election. They are inside the tamper-proof sealed up packages of voting machines that are delivered to polling places in the days before the election.

At the end of the day, poll workers go through the closing routine to close each machine and total the votes cast. The machines are locked up, put back on the cart and locked to the cart. [See **What Happens When the Polls Are Closed.**] According to the ROV's protocols, the machines are picked up by a trucking company and delivered to the ROV warehouse as soon after the election as possible.

Independent Testing-- Security Evaluation/ Vulnerability Assessment and Recount of Touch Screen Votes

Because of many security issues raised about the Diebold election equipment used by the County for several earlier elections and concerns raised by some citizens about electronic counting of ballots in general or the Sequoia systems in particular, the Board of Supervisors had requested the ROV to add two additional checks to ensure that the Sequoia Systems equipment did not have security problems. The first of these was an independent security evaluation. Since the Sequoia equipment did not arrive at the ROV Office until early September, getting this done in the available time was a problem.

The independent security specialist hired by the ROV, Pacific Design Engineering, conducted a vulnerability assessment to assess the overall weaknesses of the system as a whole and propose "practical counter measures" that could be put in place before the November 2006 election. Acting ROV Dave Macdonald reported to the Board at its October 10, 2006 meeting that no other County has conducted a voting system assessment of this magnitude. He reported that the assessment revealed that the majority

of vulnerabilities were already being mitigated by procedures implemented by the Registrar of Voters and that any remaining vulnerabilities were low risk and readily remedied by network security and human process countermeasures. Specific weakness found and to be corrected included changing plain text passwords to encrypted passwords, guarding other encryption keys by maintaining strong chain of custody control of memory cards, upgrading to more secure software as soon as it is certified by the State, and checking the central computer software before, during and after the election in specified ways to make sure the equipment's security stayed intact. The consultant also pointed out that the manual recount of 1% of precincts provided a further check of the process. [The report is posted on the web at http://accurate-voting.org/wp-content/uploads/2006/10/alameda_sequoia_vuln.pdf.]

The Yellow Button. One potential weak point identified and publicized by two California citizens and then the press was apparently not spotted by the assessment. The Sequoia Edge touch screen machine has a yellow reset button which could potentially allow a polling official—or malicious person—to put the machines in manual voting mode—and then, in theory, cast many votes. Improper use of this button turned out to be highly unlikely since poll officials would almost certainly observe and then prevent or stop such an attempt. In addition, pressing the button causes a loud beeping noise and the button can only be reached by going behind the machine, a movement not likely by an unauthorized person because the machines were to be placed right next to and in view of the poll workers' table. The Secretary of State responded to the citizen alert and resulting press by contacting all Registrars with the Sequoia equipment. ACROV subsequently stressed this risk in poll worker instructions and training.

3. Logic and Accuracy Testing

The Logic and Accuracy Board. At each election the ROV appoints four citizens to a Logic and Accuracy Board—two from the Grand Jury and two from the League of Women Voters. The job of the Board is to observe the election vote count as representatives of the public at large. The Logic and Accuracy Test is the Board's first opportunity to carry out its task.

The Logic and Accuracy Test. During this test, which was announced on the ROV website to the public, the Board members, guided by ROV staff, run through the voting procedures. At this election, the test included: a “logic and accuracy test” of the touch screen voting equipment, the high speed scanners, and other procedures and equipment that together make up the voting system. This test familiarizes the Board with the vote casting and counting process that will be used at that election and enables them to observe whether the system is functioning properly. The test prepares Board members for their job when the ballots are counted.

On election night, the four Board members are authorized to observe the ballot count closely, to walk around the computer vote count room and processing areas, to ask staff questions and to get answers. Other members of the public may only watch the computer room through a glass window.

The Logic and Accuracy Test attended by the Board and open to the public was only a small part of the array of tests of the system carried out by the ROV staff. These tests cover both voting on touch screen machines and with paper ballots and scanners. Logic and Accuracy Tests have, in the past, caught problems that were then corrected before the election proper.

On Oct 19, 2006, Dave Macdonald, at the time the Acting ROV, several ROV staffers, and the four members of the Board of Logic and Accuracy met in the computer vote room at the ROV office. The Board members were sworn in, by vowing orally to uphold the Federal and State Constitutions and to faithfully discharge their offices, and then signed written copies of the oath that they had just sworn. One public observer was present.

Testing A High Speed Scanner. The ROV staff presented the Board a large cardboard box that contained bundles of test ballots organized by precinct. Each ballot in each precinct had been previously marked, that is, voted in such a way that counted results could be readily compared to the ballots and any discrepancies easily noted. The Board's first task was to select one bundle to use in the high speed scanner test. The Board members made a random choice and then proceeded with this bundle of ballots to the computer room. Then they made a second random choice, picking one of the four Sequoia scanners to use for the test.

Dave MacDonald ran a report that showed that the selected scanner's registers were zeroed out (no vote totals were stored in its memory) and ready to begin. Once the Board members accepted the report, Dave had an ROV staff member take the test ballots for the selected precinct and scan them as the Board looked on. The scanning took a few seconds, then the staffer removed the scanner's memory pack, on which the scanned results had been recorded, and took it to one of the laptops set up to read these packs on election night. Prior to reading the results from this memory pack, the staff member ran a system wide vote report – the same report that would be produced every hour or so on election night. The initial report showed zero votes for each race in the system, thereby proving that there were no recorded votes in the system. This assured the Board that the next report to be run, prepared after the test scanner's pack was read, would include only votes read from that pack.

The ROV staffer then ran the program that read the scanner pack. After doing that, he ran the Results report. He printed a copy for each member of the Board and for Dave MacDonald. The Board and Dave then took their reports and the ballot bundle that had been scanned, and returned to their worktable. There they compared the ballots to the report. The report accurately reported the votes that had been cast and scanned, thereby showing that this portion of the system was working properly.

Testing a Touch screen machine. The Board next turned its attention to testing a touch screen voting machine. Prior to the arrival of the Board, the ROV had one of the county's new Sequoia touch screen voting machines moved into the vote counting room. The

Board and Mr. MacDonald went over to it. As he had done with the high speed scanner earlier, Mr. MacDonald had an ROV staffer run and print a status report on the machine's registers. It showed that zero votes were recorded on its memory card. The staff also deleted the high speed scanner test votes from the results server, so that the results from the touch screen memory card would be the only ones to appear for the next part of the test.

The Board returned to its worktable, where each member was given a blank ballot from the test precinct that they had randomly selected from the cardstock box earlier. Mr. MacDonald instructed them to individually and privately vote it in any way they desired. When everyone had finished, one at a time each walked to the touch screen machine and voted the ballot s/he had marked. As an added precaution to ensure the ballot was voted as marked, an ROV staffer took the ballot of the "voter" and read each mark to him/her before s/he touched the screen. When all races and measures had been voted (or skipped if that was the "voter's" preference), the "voter" reviewed the VVPAT or paper trail printout visible through a plastic cover and cast the ballot.

Once all four Board members had cast their ballots, the ROV staffer removed the machine's memory card, inserted it into one of the laptops so it could be counted, ran the counting program, then initiated another Results report. Again, copies were printed for each of the Board members and for Mr. MacDonald. The Board members retained the paper ballot s/he had marked and returned with Mr. MacDonald to the worktable.

Race by race and measure by measure, each Board member reported his/her vote as Mr. MacDonald kept a manual tally. The Board then compared the totals from Mr. MacDonald's manual tally to that reported on the Results printout they had all received. The results matched, thereby showing that this portion of the system was working properly.

Saving the Test Materials. The paper results and memory cards (electronic memory devices) used for the test were sealed into an envelope and signed by the L&A Board members present. The envelope was put in a secure place. The public logic and accuracy test had been completed. If questions about the test arise, the contents of the envelope can be rechecked. If, during the election, the ROV office suspects problems with memory cards, the cards used in the test can be removed and checked, since the program was known to be functioning correctly at the time of the pre-election L&A test.

Importance of the Board of Logic and Accuracy. The Board of L & A plays a potentially significant role as citizen observers of vote counting on election night. They serve as witnesses of the activities of the staff and could alert the staff or the public if they observe problems. They can also observe whether staff seems to deal with problems appropriately as they come up. Sukey Wilder, a member of the League of Women Voters of Oakland and a computer systems manager, who served on the Board from the days of punch card voting through the period when the Diebold touch screen machines were used, reported that every election night is different. Unanticipated problems come up. Wilder found that experienced ROV staff who are familiar with the system and with

probable voting trends in their county are crucial to running an accurate and secure election, since they will be quick to observe unexpected patterns in vote results. She has also observed that problems that come up at one election have not reoccurred at the following election. The staff has taken action to make sure that problems they know about do not reoccur.

Adequacy of the Election Systems Tests & Significance of the Logic & Accuracy Test. How meaningful is the Logic and Accuracy Test as a test of the logic and accuracy of current voting methods? This is a modest test created for earlier days and simpler methods. David Wagner, Associate Professor of computer science at the University of California Berkeley and a member of the new national consortium ACCURATE, A Center for Correct, Usable, Reliable, Auditable and Transparent Elections, observes that L&A tests are not very meaningful when it comes to deliberate fraud. However, when it comes to unintentional errors, L&A tests can detect accidental errors pretty effectively. For instance, on optical scan machines, ballot position 17 might be printed on the paper ballot as a vote for candidate A, while the optical scanner's electronic configuration file tells it to count it as a vote for candidate B. L&A tests can detect such errors. Accidental errors are, Wagner suggests, probably more common than deliberate fraud.

Are our election systems tested well enough to insure an accurate and secure election? This is the question all citizens want answered. Election machines and programs are a key part of the election system; their accuracy and security cannot be established by visual observation alone. The League observers compiling this report do not, therefore, attempt to evaluate the testing or the election equipment itself in this report.

Responsibility for the accuracy and security of voting systems rests with the California Secretary of State and the Federal Election Assistance Commission. The Secretary of State's office has technical experts and has expanded its testing. Testing on the Federal level is carried out by independent testing companies paid by the manufacturers of the equipment. Testing is required to be done according to advisory standards set by the federal Election Assistance Commission.

The standards and the compliance of testing companies with those standards have been found to be inadequate; standards and companies are coming under increasing scrutiny. The EAC's technical advisory committee and the National Institute of Standards and Testing are increasingly active in revising and improving standards and testing. The work of ACCURATE, the new national consortium of university computer security experts, should provide further scrutiny and safeguards. Watchdog organizations with technical expertise have focused on the accuracy and security of elections. Public criticism of failures of the election system in recent elections has prompted changes. A variety of citizen groups and organizations have prompted citizens to monitor elections and to file telephone or e-mail reports of their observations. Observing, asking questions and urging improvement will ensure that public officials will continue to be vigilant and improve the systems.

4. What Happens to Your Absentee Ballots: Processing and Counting

Start of absentee ballot processing. The Registrar announced October 31, 2006, a week before the Election Day, as the start of the processing of absentee ballots. Absentee Ballots were continuing to pour into the Alameda Registrar of Voters Office throughout the pre-Election Day period.

Difficult Working Environment and Long Hours. All the election procedures combine hard tedious work by temporary and permanent staff and use of specialized machines. The awkward basement layout of the Registrar's office does not permit an easy logical flow of documents since many spaces must have multiple uses. In particular, absentee ballots at all stages of processing are loaded on big carts and wheeled into the computer room each night for security. They are returned to the appropriate work area the next morning. The carts and trays of ballots are moved often—to put them in the right place, to get them out of the way, to do the next step of the process, to bring them back to wait for the next step of the process, and so on. Trays of envelopes and ballots are labeled to indicate their stage of processing. When problems are spotted, supervisors make adjustments to the procedures and give new instructions.

Work hours during the pre- and post-election period are long and often include weekends. The work environment seemed pleasant, staff friendly, supervisors polite, patient and clear in their explanations. Workers concentrated on the rather repetitious work with relatively little chatting. Lighting is bright.

Improvements. Changes by Acting Registrar Dave Macdonald to clear out the work areas and rearrange the worktables and equipment did improve the efficiency of the work spaces. Acting Registrar Dave Macdonald had worked with staff before the election in order to develop a detailed work-flow plan, with responsibility and timing for each job clearly defined. All equipment and records were labeled and tracked carefully. The processing system seems well thought out and carefully implemented so as to avoid, as much as the situation permits, problems that might be created by the awkward back and forth movement of the ballots. In so far as occasional observers could determine, these changes seemed to improve efficiency.

Checking Signatures. The large yellow absentee ballot envelopes, signed by each voter on the outside and marked with a barcode showing the voter's ROV Office ID number, are delivered to the Registrar's Office. The ID number enables the Office to identify the voter as having cast his/her ballot, without violating the privacy of the ballot itself. The signatures are scanned; images are stored electronically and can be called up by staffers at a bank of computers in a different part of the office. A worker compares the scanned signature from the envelope with an electronic image of the voter's signature from his or her voter registration form. The staff member compares the two signatures and clicks to accept or to challenge. A series of three supervisors reviews challenged, that is, doubtful, signatures. They try to take into accounts that signatures change over time.

ROV policy is to count every vote, if possible. In cases where it appears that someone else has signed the ballot envelope, the appropriate envelope is removed from the tray and the vote is not counted. When the signature is rejected or has changed a great deal, the voter is sent a new registration form to get a current signature. If the voter has forgotten to sign the envelope and if there is time before Election Day, the ballot is returned to the voter for signature. The ROV hopes to acquire new machines that would enable up to 60% of signatures to be checked by computer; only about 40% would need to be checked by a human worker.

Opening Envelopes. Trays of envelopes with signatures that have been verified are labeled and carted to the back office. Batches of envelopes are lifted onto a tray on a machine that vibrates them to shake the ballot down so it won't be damaged when the envelope is opened. Trays of these envelopes go to workers at two machines. They put batches of envelopes in; the machine slits open each envelope and moves it to the worker who reaches in, takes the ballot, discards the envelope, opens, flattens and stacks ballots in empty trays. The whole process happens quickly; the workers did not and really would not be able connect the identity of the voter with the content of his or her vote. After this point, the ballot can no longer be identified as belonging to a particular voter.

Unfolding and Sorting Ballots. Clerks at worktables go through the trays; they unfold the two stiff four-fold ballots. If voters have failed to remove their stubs, workers remove them and clean the edge. These trays of processed ballots are put aside, ready for the computer reading and counting.

Reading and Counting Ballots. The Absentee Ballot Processing, that is scanning or reading and counting, may only begin a week before the election, Oct 31, for this election. Four new fast ballot reading machines (scanners) were lined up on one side of the computer room, just under large glass windows. Observers can watch through a window. The scanners resemble flatbed copiers with paper feeders at one end and trays to catch ballots underneath. The reader can "read" both sides of a ballot presented in any orientation. These new fast scanners sort the ballots into three categories. "Good" ballots are scanned and their votes recorded. Once counted, groups of 500 to 600 ballots are packed into cardboard boxes, each labeled with a unique identifying number. Each box is sealed with tape, signed, dated and put away, so that ballots will not be counted more than once. The other two categories "write-in ballots and "damaged" ballots are sorted automatically by the scanners into separate containers for later review and processing.

The scanners keep a count of the number of votes and of the votes themselves. The report of the votes on the ballot is not sent to the central computer until all individual ballots in the group are read or are put in the "damaged" ballot container.

Counted but not Totaled or Reported. The processing and scanning of Absentee Ballots continued during Election Day, so that the ROV was able to complete the scanning of all absentee ballots that had been received before Election Day. At 8 pm, the Registrar requests that absentee ballots be totaled and subsequently reports the totals.

Any absentee ballots not counted by that time are counted and reported after Election Day ends. At 8:19:27 pm on November 7, 2006, immediately after the close of the polls, the ROV reported the “Unofficial Results Absentee +VBM.” [VBM, or vote by mail precincts, were the 394 out of the 1219 precincts that had so few registered voters that registrars are authorized to require their voters to vote by mail.] Some Early Votes were also reported at this time.

5. At the Polls: Processes and Problems

Opening the Polls. Poll workers arrive early at about 6 am. Three to four poll workers or more staff each polling place. The Inspector lets the workers in and brings the election materials picked up before the election. The materials include clear instructions for the workers about opening, running and closing the polls, and quick reference booklets where they can find the answers to questions throughout the day. (The Inspector, as well as the other poll workers, will have taken the ROV training class before Election Day. Although many poll workers have done the job for years, the rapid changes in equipment and regulations in recent years make it essential to retrain workers each year.)

The workers sign in on the Roster and are sworn in. The voting machines seals are broken after seal verification forms are signed; the plastic wrapping is removed; the machines are set up and plugged in. The poll workers run the “zero” tests that show that no votes have been cast on the machines. The roster and packs of the two sheets of blank ballots are set out on the poll worktable. The flag and polling place signs are set outside the door; various instructions are posted in the room. At 7:00 am the poll workers open the doors to the polling place. The first voter is shown the evidence that no ballots have been cast.

Closing the Polls. When the last voter is gone, the polls are closed and the flags are taken down—though the day is not over for the poll workers. Following carefully written instructions and using training from the Registrar of Voters Office, the poll workers divide into two teams to carry out all the tasks of closing the poll.

Totaling the Numbers of Votes and Voters. Each polling place has one scanner and one touch screen machine. Each vote cast on each touch screen machine has been recorded on the VVPAT paper roll, (the Voter Verified Paper Auditable Trail), and on two electronic memory devices; one is removable. Totals for each candidate and ballot measure are printed on paper rolls from each machine. Two copies are printed of each roll. Scanner and Touch Screen rolls are handled slightly differently. The VVPAT roll of the Touch Screen machine remains in the printer. One copy of the scanner roll is placed in the red canvas returns bag and the other is posted outside at the polling place for the public to review.

The removable electronic memory devices are removed. The entire printer of the touch screen machine, with its VVPAT paper tape locked inside, is removed. Both are taken to the Return Center. The machines are locked; tamper proof seals attached; the machines are closed up. Everything put out in the morning has to be packed up and taken down. The excitement at the start of Election Day has been replaced by tiredness from the 14 or more hour day.

Reconciling the Votes and Voters. Poll workers fill out the Official Ballot Statement, which is on the cover of the Roster-Index and record pertinent totals including the following:

- The number of voters shown on the touch screen public counter.
- The number of voters who scanned their ballot in the scanner
- The number of voters who voted on the paper ballots but were unable to scan their ballots for some reason, including the breakdown of the scanner
- The number of provisional votes

The number of voters who signed the roster must equal the total number of voters who voted by touch screen or paper plus the provisional voters. Unused ballots are counted to make sure that none have disappeared. Voted ballots and spoiled paper ballots are subtracted from the total number of paper ballots present at the polls that morning.

Each and every ballot must be accounted for. Every poll worker hopes the ballot reconciliation balances the first time, but the system is relatively complicated, so voters and poll workers sometimes make mistakes. Any ballot accounts that do not balance at the end of the day will be carefully checked by the ROV staff to track down the source of the error and will be corrected appropriately.

Absentee Ballots that are simply delivered to the polls in their envelopes are not included in the count. A potential source of error is that sometimes voters bring their absentee ballots but not their absentee ballot envelopes to the polls. Poll workers provide provisional ballot envelopes as substitutes, but then have to remember not to include these envelopes or ballots in the Official Ballot Count.

Packing Up Electronic Memory Devices, Records and Supplies. The poll workers are supplied with a large red canvas returns bag, which is labeled with its precinct number. Poll workers pack and seal all the items in the appropriate box, plastic bag, envelope or case according to the instructions supplied with the polling materials and by their training.

The poll workers put the electronic memory devices and the paper tape reporting the vote totals taken from each machine into the pink, static free bag, the official returns pouch, and the Red Bag. Absentee ballots delivered to the polls, paper ballots cast at the polls, and provisional ballots go into their own envelopes and then into the red bag, along with

the index and all the rosters. The red bag was often not large enough to accommodate all the ballots without bending them. The miscellaneous items go into the big gray ballot case. Before leaving the site, poll workers post returns from that polling place on the outside of the polling place for review by members of the public.

Delivery to the Twenty-seven Return Centers. The Poll Inspector and one other poll worker drive to their assigned Return Center. They deliver the flag, grey ballot case, and printer. The contents of the red bag are checked against a check list by ROV personnel at the return center. The Poll Inspector and worker sign for the pouch with the memory cards, rosters and the other items and receive a receipt. County workers later drive the memory cards from all the polling places to the ROV office.

Problems at the Polls

No large scale or major problems were reported at the polling places. League members who worked at the polls, reporters for various publications and various voters did report a few issues.

Ballot Usability Problems

Tearing the ballots off pads. The two separate ballot sheets available at the polls were fastened on pads. Individual ballots had to be torn off each of the two pads before a voter could vote on them. The ROV training for Inspectors instructed poll workers to tear the ballots off the pads for the voters. In some polling places, voters themselves tore two ballots off the two pads. The ballots were difficult to remove from the pads. The perforations were not adequate to tear easily or to create a smooth edge. Whether done by a poll worker or a voter, this was a difficult task to do carefully and quickly and slowed down the voting process at the polls when they were busy.

Scanning the ballots. Voters had two large stiff cardstock ballots that they were asked to feed into the scanner one by one. They had to find a way to hold one ballot, as well as their belongings, while feeding in the first and then the second ballot sheet. Sometimes voters had trouble placing ballots in the scanner correctly using one hand. A larger feed tray or a place to rest belongings might help. The usability problems may have contributed to the scanner and privacy problems discussed below.

Mechanical Scanner Problems

Scanners refusing a ballot. If the voter failed to remove his receipt from the ballot or if the ballot had a rough edge, the scanner might not accept the ballot. The problem could usually be solved by having the voter tear off the receipt or by feeding the smooth end of the ballot into the machine instead of the rough edge.

Scanners failing to operate. Some scanners stopped working or jammed. The ROV training had instructed poll workers to follow one of the following procedures:

- 1) Stand behind the scanner and instruct voters how to feed in their own ballots. Training emphasized that poll workers should not handle voted ballots. When the scanner failed to operate, experienced Inspectors had voters place their voted ballots in the grey ballot boxes. County trouble-shooters also gave this instruction when they were telephoned to provide assistance with a scanner. This procedure should be clearly spelled out in written material for the next election.
- 2) Stack ballots on the table and either feed them in later or,
- 3) Deliver them unscanned to the ROV at the end of Election Day.

The second option potentially breaches voter privacy and also offers at least theoretical opportunities for losing or changing ballots or for confusing scanned and unscanned ballots. However, the presence of several poll workers at all times mitigated against tampering, because any misbehavior would require collusion, privacy, and a generous amount of time.

In future, unscanned ballots should be put in a secure container immediately for later scanning at the ROV. One trouble-shooter is reported as suggesting to one poll worker team that when they removed the ballots from the ballot box at the end of the day they could run them through the scanner. This would have delayed the closing process further and the workers did not do this since they knew they had been issued a bag to hold unscanned ballots. A line item on the Official Ballot Statement also provides for poll workers to list the number of unscanned official ballots.

Inadequate storage space for ballots at the polling places

Some poll workers reported that the bins, envelopes, and bags provided to the polling place were not big enough to store the ballots or transport them according to ROV instructions at the close of polling.

Potential Violations of Voter Privacy

When voters had difficulty feeding their ballots into the scanner or for others reasons, some poll workers regularly or occasionally took the ballot from the voter and fed it into the machine for the voter without the “secrecy sleeve” that the instructions and training instruct the poll worker to use. Voter privacy was, at least potentially, compromised. Procedures for assisting voters with the scanner should be improved in future instructions and training.

In some polling places, when ballots could not be scanned, poll workers followed step 2 above and stacked those ballots on the desk for later scanning or storage instead of placing them in the grey ballot box immediately. Sometimes the ballot box was not large enough to hold all the ballots.

Wrong ballots issued to polling places or voters

With 149 different ballot types, it is essential that each polling place and each voter gets the ballot type that is correct for the precinct and the voter and that each voter go to the correct polling place. The ROV office has occasionally reported that a polling place has received the wrong ballot type. In such a case, poll workers must telephone the ROV and the ROV must deliver the correct ballots.

6. Election Night At the ROV Office after 8 pm

Downloading and Totaling Electronic Results. In the Vote Count Room or computer room workers sat at laptop computers programmed to “accumulate” or total results from each precinct and from the high speed scanners in the ROV Office. Totals of absentee ballots scanned on the high speed scanners were transferred or uploaded to the laptops with small electronic memory devices called USB drives. The electronic memory devices or memory cards from each precinct were inserted and then removed from the laptop computers to transfer the vote counts from each scanner and touch screen voting machine. These electronic memory devices are kept in boxes labeled by precinct, so they can be re-read or tested if necessary. Information from the accumulating computers goes directly—on secure lines—to the central computer, also housed in the computer room. These laptops do not have wireless capabilities or wireless cards.

Counting and Reporting the Vote in the Vote Count Room. Counting of the votes is done on a separate machine using WINEDS [pronounced as win E.D.S.] software. Only staff and members of the Logic and Accuracy Board, the official observer panel, are usually allowed inside the central election computer room. On this Election evening, members of the L&A Board, including two members of the League of Women Voters and two members of the Grand Jury, observed the process, taking advantage of their right to see everything, ask questions of staff, and receive answers.

Representatives of parties and candidates and the press were able to watch the staff work through the windows between the computer room and the ROV offices.

Possible Problems Counting the Vote

Reporting the Vote by “Sneakernet” and Secure Line. From time to time, results from the central computer are recorded on a computer disk. The disk is hand carried, that is, taken by “sneakernet,” to another computer. The second computer connects to a secure

line linked to the Secretary of State's office—so results can be posted on the SoS website. At the same time, the staff posts the results on the ROV's website which can be viewed in the media center and public viewing area at the conference center across the street from the Courthouse where the ROV office is located. Public and press watch the returns as they are posted on the Registrar of Voters and Secretary of State websites either at this location or elsewhere. ROV staff answer questions from the press.

Reports of Early Results; Unofficial Results vs Final Results

Immediately after the polls closed, the Registrar of Voters and the Secretary of State begin to report results. The press also begins to announce winners and losers, getting the results from the Secretary of State or the local ROV websites or offices. Only when results are close does the press generally make clear that these totals are provisional and incomplete, that unofficial final results will only be available in a few days and that official results will only be announced 28 days after Election Day. This election saw several races in the County that were too close to call election night or for days afterwards.

The counts reported immediately or shortly after the 8 pm close of the polls on Election Day included only absentee and VBM or vote by mail ballots counted before 8 pm on Election Day and some Early Votes, that is, votes cast and counted electronically on or before Election Day. Returns from the November 7, 2006 Election Day began to be posted at 8:19 pm. By 1:41 am on the morning of November 8, 1201 of 1219 precincts had been reported. At this point, the Registrar sent his tired workers home. The unofficial electronic totals for the 1, 219 precincts were reported and printed early the following day.

Provisional ballots, absentee ballots (collected on Election Day at the polls, at the ROV office, or delivered by mail), ballots that were not scanned at the polls, and damaged ballots continued to be processed and scanned and added to the tally in the following days. The deadline for the official report is 28 days after Election Day.

Gathering All Election Materials. In the few days after the election, all the materials from the polls and the return centers are returned to the ROV office or to the warehouse. At these locations equipment is checked, records reviewed, reconciled, checked and cross-checked.

7. The Post Election Canvass: Post Election Counting and Double-checking

The "official canvass" is the public process of processing and tallying all ballots received in an election, including, but not limited to, provisional ballots and absentee ballots not included in the semifinal official canvass. The official canvass also includes the process of reconciling ballots, attempting to prohibit duplicate

voting by absentee and provisional voters, and performance of the **manual tally** of 1 **percent** of all precincts.

California Election Code 335.5

Are absentee, provisional or paper ballots voted at the polls always counted? Yes. They are counted in Alameda County and counted with great care. State law states they must be counted.

The count of all remaining ballots begins with the official post-election canvass, which was announced to begin on November 8 at 9 am, but, since the staff had been working through the early morning hours, the Canvass actually began later in the day.

The Public's Right to Observe the Canvass. Although the Election Code is clear that the canvass is to be a public process, Registrars interpret the general requirement with specific rules and practices. In Alameda County, observers generally must arrive to observe during regular office hours. They enter the door labeled "Registrar of Voters," sign in at the desk, receive a visitor's name tag, and wait to be escorted to the viewing area. After a short wait, observers are escorted through the front offices, across the internal driveway shared with the Sheriff's office and into the back offices adjacent to the central computer room.

Limitations on Observers. During the November 2006 canvass, observers were directed to a small enclosure defined by black chains. The location of the enclosure varied over the course of the Canvass and some locations were more limiting than others. When observers were close to the large windows, they were able to look into the computer vote count room and to look down the length of the workroom to see all or part of the activities of the various stages of the canvass. It is not always possible to discern and understand what workers are doing just by watching the process in this way. Consequently, this report supplements direct observations with details from the Registrar's detailed written instructions for the Canvass and information from ROV staff.

In Alameda County, votes cast were distributed as shown in the following chart. We will use this chart to provide rough estimates of the work required to process paper ballots before and after the election.

**Vote Reporting Election Day and Election Night vs Final Vote Tallies
As reported by the Alameda County Registrar of Voters**

Type	Time Reported	No. Precincts	Ballots Cast	% of Total
a. Absentee + VBM [Vote By Mail] <i>[also included some Early Votes]</i>	11/7/06 8:19:27 pm	394 of 1219	130,829	31%
b. Totals by End of Election Night	11/8/06 1:41:52 am	1201 of 1219*	300,286	72%
c. Totals in Final Statement of Vote [from ROV website]	12/05/06	1219 of 1219	415,638	100%
d. Number of Votes Counted after Election Night [c -b]			115,352	27%
e. Number of Ballots Processed in some way after Election Day [c-a]			284,809	69%

*Note: Essentially all precincts delivered their ballots and electronic recording devices promptly after the close of the polls. The ROV decided to stop issuing reports and send workers home after a very long day before all records had been publically reported. Thus item d. is an overestimate, because the electronic reports of the remaining precincts were added to the electronic total very quickly the following day and did not require physical recounting. On the other hand, provisional ballots, absentees delived on Election Day, damaged ballots and paper ballots that did not get scanned at the polls did need to be counted at the ROV. So for our purposes, we'll assume the numbers are roughly correct.

Overflow of Ballots; Limited Space; System Improvements

On the morning after Election Day, the tables, floors and closets of the ROV back workroom were heaped and stacked with ballots in various containers. Workers and observers could scarcely pass through the piles; staff were constantly handling and moving the ballots for various purposes.

After Election Day, about 115,352 pairs of large cardstock ballots, 27% of all ballots cast, [d above] still remained to be counted. Logistical challenges for the ACROV were great. But these ballots were only part of the mass of materials that arrived in the Office Election Night and the following days and had to be handled and processed in various ways during the Canvass. Using the chart above, we can see that 284,809 or 69% of the pairs of large cardstock ballots came into the ROV Office and had to be handled and dealt with in some way. In addition, all records, paper and electronic, of the votes and much of the paraphernalia of the 825 polling places were inspected, checked, processed, and prepared for filing or storage following a range of specific procedures.

Acting ROV Dave Macdonald had brought to the ROV office streamlined and improved systems for planning, coordinating and carrying out the 1% count and all aspects of the election. These improvements helped the ROV office deal with these challenges, as well as with the earlier challenges presented by the late purchase and arrival of brand new election equipment and software and the resulting tight pre-election schedule.

In addition, the awkward and limited back office space and computer room, where much of the election Canvass takes place, had been cleared out and reorganized to improve work conditions and efficiency. These improvements helped the ROV Office to deal effectively with handling and processing the heaps and sacks and boxes containing the very large number of large and heavy cardstock ballots and all the other records and materials delivered to the Office Election Night or on the days following the election.

Preparing Ballots; Checking Election Documents; Scanning Barcodes

Despite the apparent chaos, the Canvass is systematic. The large red duffels from each polling place are opened, the various categories of materials are sorted and dealt with appropriately. Exact records of all items are noted on tracking or tally forms. The purpose of the Canvass is to examine the ballots and the rosters to make sure they are accurate and authentic. This process included accounting for every ballot, including counting absentee and provisional ballots turned in at the polls, balancing the Roster from each polling place, and accounting for any discrepancies. As carried out in the crowded basement offices of the Alameda County Registrar of Voters, accounting involves painstaking recording, sorting and preparing of the different materials and reports from the polling places. The computer electronic memory devices from each polling place had already been read Election Night and, we assume, early the following morning, and their results reported on election night or the following morning. These devices had been packed in boxes according to precinct number and stored for security in the central computer room. Many of the items being recorded had been labeled with barcodes, so that memory devices, rosters, and equipment could be scanned to record the item's safe return.

Keeping track of who has voted. Every voter listed in a Roster for a polling place has a barcode by his or her name. At the Registrar's office, staffers scan the barcodes of all voters who have signed the Roster and voted. This information is entered into the ROV's records of registered voters. Absentee Voters have been similarly recorded as voting

before their ballot was removed from the envelope. In this way, the Registrar keeps track of who has voted, without, of course, knowing how that person voted.

Sorting Ballots

Once all the materials from the polling places had been brought in to the ROV office, the paper ballots had to be checked. The purpose of this process is make sure that every valid paper ballot is counted.

Types of Paper Ballots. Each polling place should have sent in all its paper ballots. These include all paper ballots issued to the polling place. **Unused ballots** are returned. **Ballots spoiled by the voter** are labeled as void and retained for return to the ROV. Poll workers do not issue the voter a new ballot until the spoiled ballot is turned in. Paper ballots scanned at the polls and paper ballots that could not be scanned at the polls should have been separately packaged at the polls. **Provisional ballots**, in signed provisional ballot envelopes, are returned. Provisional voters include people who are not listed on the roster of the polling place or people who had been identified on the roster as absentee voters and who did not bring in their absentee ballot and envelope to surrender. Provisional voters are issued paper ballots and provisional ballot envelopes. Absentee ballots returned to the polls are generally returned in absentee envelopes, but if the voter did not bring the envelope, these ballots were sometimes put into provisional ballot envelopes and marked as absentee.

Checking and Balancing the Records

The poll roster signed by voters, known as the Official Ballot Statement is the report filed by each polling place listing the number of voters and types of ballots cast and showing that the numbers of voters and ballots balance is reviewed. The paper tapes of totals voted on each machine will also be checked. The rosters must be balanced according to the Registrar's instructions. Any discrepancies will be examined until the supervisor understands what caused the discrepancy and finds an adequate explanation. Discrepancies and their causes are reported to the ROV so that these problems may be addressed and avoided in future elections.

Rosters. When rosters are reviewed during the Canvass, the time sheets signed by poll workers are removed and sent to the correct staffer, so that poll workers will be paid. The yellow roster sheets from each precinct reporting changes in voter information, for example, deaths and changes of address, are sent to the correct staffer, so that this updated information can be entered in ROV records.

Registration Forms turned in at the polls are routed to the appropriate staff for entry into the ROV database of voters.

Double-checking. All containers and envelopes in which ballots and materials were delivered are saved and checked again to make sure no ballots were overlooked, then

they are stored for the period required by law. During these checks, workers have sometimes found a few ballots misplaced by poll workers or overlooked by workers emptying ballot boxes and envelopes. These are verified and included in the final vote count.

The Scene at the Start of the Canvass

The back office was filled with clerks at long tables opening the bags and envelopes of materials that had come in from each precinct. Workers fill out a report form for each precinct envelope they open. As the workers open envelopes containing different types of ballots, they count them. All counts of all types of ballots are recorded in at least two places. Absentee and Provisional ballots are taken to a different part of the office where signatures are checked and workers verify that the each voter is registered and has not voted previously in this election. Observers generally do not see this process. [See **What Happens to Your Absentee Ballots.**]

Checking Provisional Ballot Envelopes. Since the ROV office computer has recorded voters whose absentee ballots have been received or who have voted early on touch screen machines, and since voters who voted at the polling places have signed the Rosters and the barcoded numbers of all voters who had signed on all the Rosters had been scanned to record all who voted, workers will be able to confirm whether the provisional voter has or has not voted. If a voter is registered, and if his vote has not been counted, the provisional ballot is accepted and the ballot is removed from the envelope, sorted and counted. Provisional voters include those who said they were registered in that precinct, but whose names were not on the roster, and voters who said they were registered at another precinct, but chose to vote at that precinct.

Missing Registration Records. A few voters find that the record of their registration is missing both from the polling place roster and from the ROV's complete list of registered voters. These voters have cast provisional ballots. They are contacted by the ROV Office. If these citizens state that they did register, the ROV Office has a procedure for allowing them to have their votes counted. The voters sign statements swearing that they did register; these statements are taken to a judge by the ROV staff. The judge then orders the ROV to count the ballots.

Counting Provisional Ballots, Paper Ballots Turned in at the Polls and Absentee Ballots. Paper Ballots voted at the polls do not need signatures checked, since the voters signed the roster and their identity is presumed to have been confirmed at the polls. Once the ROV office confirms that the registration information on the provisional ballot or absentee ballot envelope is correct, that the signatures on provisional ballot and absentee ballot envelopes are valid, and that the voter has not previously voted, the envelopes are opened. When provisional ballots are voted in the wrong precinct and therefore on the wrong ballot type, a blank ballot of the correct type must be identified and found, so that the provisional voter's votes on those races he was entitled to vote on can be transferred to the correct ballot.

After envelopes are opened, the identity of the voter is separated from his vote. The ballots are removed and sorted, combined in groups of about 600. Each batch is run through a scanner, the votes recorded electronically and reported to the central election computer. The groups of 600 are packed up in boxes, signed and sealed. [For a detailed description of this process, see **What Happens to Your Absentee Ballots.**]

Counting Write-In Votes. Electronically cast ballots allow the voter to type in the name of a write-in candidate, and regular paper ballots have a place to write in candidates' names for each race. The number of "write-ins" is initially reported on election night, but who the votes are for is not read or reported electronically. All ballots with write-in votes are separated out and examined by workers. A Board of workers sorts write-in ballots by precinct, sorts the candidates as qualified or unqualified, records the votes for qualified candidates and places the ballots in a labeled envelope. Most write-in votes are jokes or are for candidates who have not qualified before the election as write-in candidates by registering with the proper election officials. Votes for qualified candidates are counted and are hand-entered into the vote count computer. Consequently, the number of "write-in" votes is much smaller in the official Statement of Votes than in the unofficial tally.

Remaking Damaged Ballots. "Damaged" ballots are those that cannot be read by a scanner. Scanners at polling places generally reject such ballots immediately, so the voter can correct the error immediately and scan the corrected ballot. Absentee and Provisional ballots scanned at the ROV Office are thus more likely to be identified as "damaged." The scanners that count the ballots are programmed or adjusted to reject ballots for various reasons. The rejected ballots are examined. A board or team of staffers, in consultation with a supervisor, will try to determine the voter's intention. We observed that ROV staff was very careful to study problem ballots, determine the voter's intent and correct or "remake" a ballot so that the ballot reflected the voter's intent.

ROV staff worked during the post-election Canvass on what seemed to be a relatively large number of ballots rejected as damaged. The staffers looked for a variety of frequently occurring problems. They used white-out to hide accidental marks and to cover up areas on one side of the ballot where print from the other side showed through. Ballots so corrected were fed again into the scanner; the few that were still rejected were again reviewed by staff. Ultimately, "damaged" ballots, ballots rejected by the scanner for whatever reason, were "remade," that is, a board of staffers study the ballot then take an appropriate blank ballot and carefully copy the voter's choices on to the new ballot. The "remade" ballot then replaces the "damaged" one and is scanned and counted. Each remade ballot is stored with its original ballot, so they could be reviewed for accuracy if necessary. If the staff can not determine, for example, which of two choices the voter intended to make, no vote will be recorded for that contest.

Updating Vote Totals. The Canvass continues until all materials have been checked and all votes have been counted. The election computer is updated to get new vote totals from time to time. Revised vote totals are reported to the public on the ROV website and

to the Secretary of State for posting on the SoS website every few days in the 4 weeks following the elections.

8. The 1% Manual Tally At the Alameda County Registrar of Voters

California Election Code on the One Percent Tally

336.5. "One **percent manual tally**" is the public process of manually tallying votes in 1 **percent** of the precincts, selected at random by the **elections** official, and in one precinct for each race not included in the randomly selected precincts. This procedure is conducted during the official canvass to verify the accuracy of the automated count.

[Note: boldface type appears in the Election Code as downloaded from the Secretary of State website]

Changes in the Meaning and Application of the 1% Sample

The Election Code requires county registrars "to verify the accuracy of the automated counts" by hand counting votes cast at 1% of the precincts and "in one precinct for each race not included in the randomly selected precincts." Exactly what these Election Code requirements mean in practical terms has changed over time.

When most voting systems in California used punch cards, optically scanned paper ballots, or other methods with a paper or cardstock ballot, the Election Code provision cited above could be carried out in a straightforward way. The ballots were first read and tallied by machine. Then a sample of precincts was selected and counted by hand. The hand recount of the 1% sample could test whether the computers and machines that counted and reported the votes cast in the precincts had made systematic errors in counting.

In the past, testing 1% of precincts was essentially equivalent to testing about 1% of votes. Absentee ballots were only available to invalids or people who would be out of town on Election Day; nearly everyone actually voted in a precinct polling place. In recent years, changes in the Election Code have permitted anyone to sign up as a temporary or permanent absentee voter; the numbers of such voters has grown to more than half of all voters in Alameda County. Other innovations have included early electronic voting at the Registrar's Office or at other fixed or roving locations.

How the Election Code Requirement Was Carried Out in November 2006

Since November 2005, we have observed that the ACROV office has continuously expanded its 1% sampling to go beyond the sampling of the votes cast in precincts and to make its sampling of votes more and more comprehensive. It has done so to adapt to the ever-growing number of voters who vote absentee (51% in this election) and to other election changes.

Nine Categories of Ballot Samples. It is helpful to identify nine categories of ballots to be sampled, since each category has been or could be sampled separately. The categories help make clear which kinds of ballots are combined and counted and sampled together. In November 2006, the ACROV hand recounted a 1% sample that included all but one of these categories or types of ballots.

1. Sample of 1% of precincts. All ballots cast and recorded at the 825 precincts with polling places were part of the sample. Each polling place was equipped with one scanner for paper ballots and one touch screen machine designated primarily for use by disabled voters. Thus the 1% sample included both paper ballots scanned at the polls and the paper records of votes cast on touch screen machines at the poll. The paper records are printed on a roll, like a large adding machine paper roll. They are known as the VVPAT, the voter verified paper auditable trail. Nine of the 825 precincts were selected for hand counting.

2. Supplemental precinct sample or supplemental sample. In addition, the ROV did a hand count “in one precinct for each race not included in the randomly selected precincts,” as required by the Election Code. In these supplemental samples, the ROV is only required to hand count the race or races that did not happen to be included in the 1% sample of precincts. After the public selection of the 1% samples, ROV staff determined how many races had not been sampled at all and selected eleven supplemental precincts which included all the omitted races. The selection was not random.

3. AV or Absent Voter ballots and 4. Ballots from mail-in precincts. We list these separately because they have sometimes been treated differently. In the November 2006 Election, the ACROV treated these as a single group. It sampled 1% of boxes of paper ballots, including AV or absent voter ballots and ballots cast by voters in mail-in precincts, that is, precincts without polling places. There were 663 boxes, each holding about 600 ballots. Seven boxes were randomly selected for hand recounting. This sample was not required by the Election Code for this election.

In future elections, however, the Election Code requires that absentee ballots be sampled as part of the 1% sample of precincts, which may effectively require that absentee ballots be physically sorted into their precincts. The challenges of this requirement are discussed later in this report.

5. Provisional ballots were sampled separately. One of the twenty boxes of provisional ballots was randomly selected for hand recounting. In future elections, these ballots would have to be sampled with their precincts, we assume.

6. Paper ballots cast at the poll but not able to be scanned at the poll because of, for example, breakdown of the scanner at the polling place. These were scanned at the ROV Office, then counted and packaged with the precinct ballots and sampled with their precinct.

7. Damaged ballots are usually absentee ballots. They are often among the last to be processed. Damaged ballots are stored where the original ballots would have been stored, accompanied when necessary by the replacement or remade ballot, but separately marked and packaged within that category. For example, a damaged absentee ballot would be stored with absentee ballots.

8. Write-in ballots are also treated separately. Scanners and touch screen machines record the number of write-in votes, but not the candidates for whom they are cast. Ballots with write-in votes are sorted out for examination by staff, as discussed in the section below. Votes for qualified candidates are counted and are hand-entered into the vote count computer. Consequently, the number of “write-in” votes is much smaller in the official Statement of Vote than in the unofficial tally.

9. Early ballots. The ACROV did not take a 1% sample of votes cast on touch screen machines at the ROV Office or other mobile or fixed early voting locations. Those cast at polling places were sampled as described in 1 above. The Election Code will require a hand count of a 1% sample of early ballots in future elections, either as a separate sample or as part of the sample of precincts.

For the November 2006 election, the Board of Supervisors had instructed the ROV to do a recount of all electronic ballots. To carry out this task, the ROV used a scanner method to scan barcodes rather than hand counting. This method will be discussed below.

Drawing the 1% Samples

The 1% samples were drawn on Friday, 17 November, at 4:30 pm in Jury Assembly Room 100. About a dozen interested citizens and county staff members were present. A metal drum and ten ping pong balls, each marked with a numeral from 0 to 9 were the tools for the selection. Before each drawing of a ball, an ROV staffer rotated the drum by its handle a varying number of times to mix up the balls. A ball was selected. Each numeral was written down on a sheet, moving from left to right, to compose a three-digit precinct number. The drawn ball was replaced, so the next choice was also drawn from the pool of 0 to 9.

One percent of precincts was drawn as follows:

773 Fremont; 158, Oakland; 648 Pleasanton; 632, Livermore; 658 Pleasanton; 038 Berkeley; 228, Alameda; 116, Oakland; 138, Oakland. Twice in succession a “9” was drawn as the first numeral, and each time, the ball was replaced and a ball was drawn again, since no precincts began with 9.

One percent of boxed ballots was drawn as follows:

Observers were informed that there were 663 boxes of paper ballots, that each contained approximately 600 absentee and other paper ballots [representing the votes of about 300 voters], that counting of all ballots was almost complete and that the number of boxes in the draw would be sufficient to hold all as yet uncounted ballots.

Numbers drawn were as follows: 084, 252, 267, 109, 399, 663, 626. As in the earlier drawing, when a 9, an 8, or 7 were drawn as the first numeral, the ball was replaced and a new ball drawn.

One percent of the 20 boxes of Provisional ballots was drawn as follows:

Box 005 was selected.

Staff informed observers that counting would begin on Monday morning at 9. The Election Code requires that, for any race that is not represented among the initial 1% sample, additional precincts must be chosen to cover those missing ballot races. Observers were informed that staff would decide over the weekend which additional precincts would be added to ensure that all 113 races on the 149 different ballot types were represented. The selection of additional precincts was not random.

The Hand Count

Interested observers watched the hand count beginning Monday, November 20, at about 9:45 am. Observers were led into the back work room and watched from behind a barrier set up next to the glass windows of the vote count room. Instructions for observer behavior were distributed, but not descriptions of the Manual Tally process. Machine printouts of the totals for the precincts and boxes being hand counted were not distributed on Monday, although they were available to observers on request on Tuesday. Overall, observers could see, but could not hear nor follow the process adequately.

As the Alameda County Registrar of Voters' "Procedures for 1% Manual Tally" specifies, the workers were organized in recount boards, or teams, of three. In each recount board, one worker reads out a vote from a ballot; the two others each mark the vote on a tally sheet in the specified manner. They appeared to follow the "Alameda County Registrar of Voters procedures for 1% Manual Tally." When the two counters have completed recording votes for a candidate or a proposition race, they compare their totals. If they agree, the supervisor is called over to see whether the total matches that on the electronic print out. If it does not, the recount board redoes their count.

The procedures were very similar to those followed during the November 2005 election, but the process seems to have been further tightened up. Staff and handouts seemed to emphasize control and order, rather than making the process comprehensible in a meaningful way to observers. Supervisors did respond cheerfully and courteously to all questions from observers. At the same time, staff and supervisors communicated with each other in very low voices, so, although observers could see what was going on, they were not able to actually follow the content of the activity. This was the case even for tables close to the observers; activities at the far end of the room could not be followed at all. In particular, observers could not hear the totals that each counter announced for a particular candidate or race, could not hear whether the two counters agreed and could not hear whether the supervisor confirmed that the total arrived at by the counters matched the total from the electronic report of the vote for that precinct or box and that candidate.

In a later discussion, a staff supervisor said that, previously, the noise level of so many recount boards counting aloud had been so great that the members could not hear their own recount board member speaking. Consequently, the staff had been asked to keep their voices down.

9. Some Conclusions and Suggestions about the 1% Hand Tally

The Election Code states that the purpose of the hand tally of 1% of precincts is “to verify the accuracy of the automated count.” An automated count can fail to be accurate for two reasons—because of accidental errors by election workers, machines or software carrying out the count or because of deliberate cheating by election workers, machines or software. The 1% hand count is only one of many different kinds of checks and tests that Registrars of Voters, the Secretary of State and the federal Election Assistance Commission and other bodies do carry out and should carry out to ensure that every vote is counted and counted correctly.

The 1% sample and hand tally is and should be the most public check of the accuracy of the official vote count. It is the test that election officials and the public rely on to catch errors that have not been caught by other tests. For that reason it should be carried out with the highest standards and with as much transparency as possible. For that reason, we quote below the *Summary of Practices* recommended in a recent report.

Proposed Practices for the Post-Election One Percent Manual Tally in Alameda County was prepared for ROV Dave Macdonald by a subcommittee of the ROV’s Election Advisory Committee, including Nancy Bickel, Judy Bertelsen and David Wagner and published on June 26, 2007. The following summary includes the responses of Registrar Macdonald to each point of the recommendations. The full report, including Registrar Macdonald’s letter, is posted at lwvbae.org. [In the left hand column, under Alameda County Council LWV, click on *On Percent Manual Tally*.]

SUMMARY

WE RECOMMEND THE FOLLOWING PRACTICES FOR THE 1% MANUAL TALLY IN ALAMEDA COUNTY

Some of the practices described are currently required or will be required for future elections by the Election Code; others add to or amplify the Election Code requirements in 336.5 and in 15360 as amended and filed with Secretary of State, Sept. 30, 2006. Many of the Committee’s recommendations agree with those of other advocates of election reform. Since the draft version of this report of February 2006, the ACROV has adopted in whole or part many of its recommendations, as have Registrars in other counties.

Alameda County Registrar of Voters Dave Macdonald responded to these recommendations in a letter of April 18, 2007 and at a meeting with Nancy Bickel on April 23, 2007. Registrar Macdonald’s responses are directly cited or summarized after each recommended practice below. His letter appears as Appendix B [of the full report]. Where appropriate the committee includes a comment on the Registrar’s response.

1. Random. The precincts or other units should be chosen at random. Election Code 15360 (c) states that the Secretary of State specify approved methods for selecting the 1%, whether random number generator or other method. There are several methods that might meet this requirement, including drawing balls from a tumbler or metal drum (as was done in the November, 2006 election) and throwing special dice.

Any sampling method use should be tested for fairness before and/or after it is employed.

Response: “The Registrar will continue to use the metal drum method.” The Registrar writes that his office completed a comprehensive review of this method.

2. A genuine and independent test. The purpose of the hand count of the 1% sample is “to verify the accuracy of the automated count.” We understand this to mean that it should be a genuine and independent test or audit of the accuracy and completeness of the official Statement of the Vote.

Response: “The Registrar of Voters’ manual tally is a genuine and independent test of the accuracy and completeness of the Official Statement of Vote... The Registrar of Voters is committed to executing an efficient and orderly manual hand count of 1% the votes cast to ensure the accuracy of the automated count.”

3. A comprehensive test.

Every single vote cast and counted in the election should be included in the pool or pools of votes sampled. Every vote cast should thus have approximately a 1% chance of being drawn and hand counted in the sample.

Response: “It has been and will continue to be the practice of the Registrar of Voters Office to perform a 1% sampling of all ballots cast from the tallying types of Absentee, Polls, Provisional, Vote by Mail and Early Voting.”

4. 1% sample selected and counted after all ballots counted. To ensure a comprehensive test, the 1% sample should be selected and the audit carried out only after all ballot counting is completed.

Response: “Due to the 28 day election certification constraint, it may not always be feasible to count all ballots cast and select the precinct sample before performing the 1% Manual Tally.” In conversation Registrar Macdonald observed that his goal would be to follow recommendation 4.

5. The preliminary Statement of Vote published and printed before the 1% is selected. The SoV should be “frozen” before the random sample is selected and the audit is begun. No changes should be made to the Statement of Vote until the 1% audit is completed.

Response: “Printing and publishing of a Preliminary Statement of Vote prior to performing the 1% Manual Tally cannot be prepared for the reasons of misinterpretation and or misuse of an unofficial preliminary report. The Registrar of Voters will only print and publish the Official Statement of Votes cast for each election.”

Comment: The ROV does, however, publish unofficial reports of votes cast, beginning a few minutes after the close of the polls on Election Day. These reports are published on the ROV website, the Secretary of State website and in print every hour or two until all electronic votes are reported from all polling places and other sources, usually by the morning after Election Day. During the 28 days of the Canvass, revised reports are published every few days until the Registrar is ready to issue the Official Statement of Votes.

We therefore suggest that the ROV publish, print and “freeze” such a Report of all election results, giving results by precinct, immediately before drawing and hand counting the 1% sample. The Registrar could then treat this Report as the standard to which the hand count of each of the precincts is compared. Any discrepancies between the two would then be reported and explained as discussed below. This procedure would modify only slightly the past and current practice of the ACROV, which has been to print out individual reports for each precinct or category that has been selected for the 1% sample and use that as the standard to which the hand counts are compared.

6. Precincts and other units sampled must match those published in the preliminary and final Statement of Vote, so that the results of the hand count can be exactly compared to the preliminary results.

If the categories from which the 1% hand count are selected and counted are exactly the same as the categories reported by the Registrar of Voters in the Election Summary Report and in the preliminary Reports and final Official Statement of Vote, the ROV and public observers will be able to recognize any discrepancy between the hand and machine counts and seek and find its cause.

Response: “Our office will continue to perform a 1% sampling of all ballots cast.” In discussion, the Registrar said that he would consider and discuss with staff what categories of votes, for example, Early Votes, Absentee, Provisional etc., would be reported in the preliminary Reports and the final Statement of Vote.

Comment:

For future elections, new requirements in the Election Code will insure that recommendation 6 is completely or nearly completely met, since it requires that all or nearly all ballots be physically sorted into their ‘home’ precincts. The Election Code will require that **absent voter’s ballots** (absentee ballots) be included in the 1% sample of precincts and that **early votes** [cast on direct recording electronic voting systems at the ROV or satellite locations before Election Day] be sampled either as part of the 1%

sample of precincts or in a separately drawn 1% sample. The Registrar assumes that the precincts sampled would include all precincts, currently 1219, not just those with polling places, and that the 1% sample of precincts would also include provisional ballots, damaged ballots and other categories of ballots, even those that have been traditionally processed very late in the Canvass.

Since the Registrar will in future be physically sorting all or nearly all categories of ballots into their precincts, if the Registrar also continues to publish its preliminary Reports by precinct and if he “freezes” a Report right before doing the 1%, the Registrar and the public will be able to see that the categories reported for the sample exactly match the categories counted during the 1% tally. If the Registrar decides to sample the **early votes** separately from the consolidated 1% sample of precincts, then he should publish a separate preliminary Report of all Early Votes just before drawing and counting that sample.

7. The manual tally should be a public and transparent process. Members of the public observing the process should be able to follow it with complete comprehension; they should be able to hear, see and understand everything that is happening. The intent of the legislature to make this so is clear in the recent amendments to the Election Code. [Section 15360 (d) and (e)]

Response: “For a better understanding and observation of the 1% manual tally process, the viewing area will be extended so that the onlooker may follow the process with complete comprehension. In addition, a complete set of summary reports will be updated throughout the tally for easy review by the public.” In discussion, Registrar Macdonald and his staff explained that they plan to extend the physical area within which public observers can move and observe along two adjacent walls of the workroom, rather than limiting observers to a small area at one end of the room. When observers are able to walk along the area to get a better look at what various workers are doing, they will be able to see the activities in more detail. In addition, the ROV plans further improvements to the layout of the work area, which will make it easier to see what is going on.

The “complete set of summary reports” will be placed on a table accessible to observers. As soon as each recount board completes the hand counts of votes for a candidate, a race or an issue in the precinct and has checked the result with a supervisor, the supervisor will write down the result of the hand count beside the printed result on the preliminary or summary report. Observers will be able to look at the recent and all previous records of the hand count. Any discrepancies which are not the result of simple hand counting errors by the recount board members would therefore be recorded immediately.

Comment: The simple improvements described by the Registrar should improve the ability of public observers to see, hear and understand the 1% recount.

7a. Public notice of and public selection of the 1% sample. Five day public notice of the time and place of the selection will be required by the Election Code in future elections.

Response: “At least five days prior to the random drawing the ROV will post on the ACROV website the date, time and location of the precincts to be selected for the 1% tally [ie. the date, time and location of the precinct selection] and a schedule of other canvassing events will also be posted.”

7b. The selection method should be easy to understand. We further recommend that the method of selecting samples should be easy for the observing public to understand and verify. The physical selection method used by the ROV in the November 2006 election and described in this report is easy to understand. The ROV explained the process and provided a list of all precincts to observers so that they could see and understand which precincts were drawn.

Response: “Copies of the 1% [selection process and] manual tally procedures will be distributed to all observers and an over view of the [selection] process will be explained before the 1% [selection process and] manual tally process commences.”

7c. Public notice of and public counting of the 1% samples with procedures that the observing public can hear, see and understand. The Election Code will require five day public notice for the hand tally in future elections.

Response: Improvements to ensure that the public can hear, see and understand are described in the response given under 7 above. The Registrar response in 7a above is that he will meet the five day public notice requirement.

7d. The procedures for carrying out the sample and the count should be public and publicized in writing in advance of the election. The ACROV should review its written procedures governing these aspects of the audit and should make these procedures available to the public.

Response to 7c & 7d: “Copies of the 1% manual tally procedures will be distributed to all observers and an overview of the process will be explained before the 1% manual tally process commences.”

“All procedures for the random draw of precincts and the 1% Manual Tally will be posted on the ACROV website for public reference.”

7e. The preliminary Statement of Vote for each of the precincts or other units sampled during the 1% audit should be published and made available to the public before the sample is randomly drawn, so that the observing public can follow the process step by step.

Response: See the Registrar response above to Recommendation 5 above and our comment on his response.

8. Identify, resolve, explain, publish discrepancies. The Registrar of Voters should publish in advance its procedures for handle any discrepancies that may be discovered during the 1% audit. The Election Code requires that in future elections the ROV publish a report on the discrepancies found and an explanation of their resolution.

...include a report on the results of the 1 percent manual tally in the certification of the official Canvass of the vote. This report shall identify any discrepancies between the machine count and the manual tally and a description of how each of these discrepancies was resolved. In resolving any discrepancy involving a vote recorded by means of a punchcard voting system or by electronic or electromechanical vote tabulating devices, the voter verified paper audit trail shall govern if there is a discrepancy between it and the electronic record.

Election Code 15360 (e)

Response: “Pursuant to the California Elections Code, handling of any discrepancies will be researched and explained before the manual tally is completed. An accounting of any discrepancies will be recorded on a spreadsheet. The Spreadsheet will consist of 3 columns made up of the following: Precinct number, Balanced- Yes/No and Resolution of the discrepancy. A report of the results of the 1% manual tally will be prepared for inclusion into the official canvass.”

9. Reconsider whether a 1% sample is adequate to test the accuracy of the ballot.

This often-raised question could most effectively be considered by the ACROV as part of a statewide discussion among election officials, interested citizens and appropriate technical experts. The adequacy of a sample depends upon multiple factors, such as the number of precincts included in the sample, the total number of votes per race in the sample and the margins of victory in the races, not just the percentage of the sample (e.g., 1%). So although 1% might be more than adequate to test say, the accuracy of the vote in Alameda County for candidates for statewide or countywide office, it might not give a large enough sample to test the accuracy of a close vote in a small local election.

Response: “The Registrar of Voters will continue to select 1% of the precincts in an election to be recounted by hand. In addition to the precincts in the 1% count, supplementary precincts are selected for each contest not included in the original random sampling [as the Election Code continues to require].” In discussion, the Registrar observed that counting 1% of the ballots requires so many staffers and so much time that it has been a challenge to complete it within the strict limits of the 28 days allowed for the Canvass. We also observe and describe in this report the time pressures of the canvass. The new requirement to sort all ballots into their ‘home’ precincts will add to the difficulty of completing the hand count in time. Consequently, the Registrar is not interested in expanding the number of ballots to be hand counted.

LARGER CONTEXT OF 1% SAMPLE. Sample size needs to be considered in the larger context of the ultimate goal of the sample—to ensure an honest and accurate election. The goal is that every vote cast is counted accurately and that the candidates and measures that win in an election win honestly. Increasing sample size would be intended to increase the likelihood of discovering error or fraud. Preventing error and fraud from occurring might make larger sample sizes seem less necessary. Improvements have already been made and continue to be made in all aspects of prevention and should continue. They include tightening up all aspects of election management, designing and testing machines and software to prevent error and fraud, improving training of election officials, and increasing the security of the equipment and the process. Although much can be done at the local level--and is being done in Alameda County-- to ensure this goal, some of these improvements can only be carried out at the national or state level.

10. Challenges for Future Elections

Election Code changes as FILED WITH SECRETARY OF STATE, SEPTEMBER 30, 2006

SECTION 1. Section 15360 of the Elections Code is amended to read:

15360. (a) During the official canvass of every election in which a voting system is used, the official conducting the election shall conduct a public manual tally of the ballots tabulated by those devices, **including absent voters' ballots**, cast in 1 percent of the precincts chosen at random by the elections official. If 1 percent of the precincts is less than one whole precinct, the tally shall be conducted in one precinct chosen at random by the elections official. In addition to the 1 percent manual tally, the elections official shall, for each race not included in the initial group of precincts, count one additional precinct. The manual tally shall apply only to the race not previously counted.

Additional precincts for the manual tally may be selected at the discretion of the elections official.

(b) If absentee ballots are cast on a direct recording electronic voting system at the office of an elections official or at a satellite location of the office of an elections official pursuant to Section 3018, the official conducting the election shall either include those ballots in the manual tally conducted pursuant to subdivision (a) or conduct a public manual tally of those ballots cast on no fewer than 1 percent of all the direct recording electronic voting machines used in that election chosen at random by the elections official.

(c) The elections official shall use either a random number generator or other method specified in regulations that shall be adopted by the Secretary of State to randomly choose the initial precincts or direct recording electronic voting machines subject to the public manual tally.

(d) The manual tally shall be a public process, with the official conducting the election providing at least a five-day public notice of the time and place of the manual tally and of the time and place of the selection of the precincts to be tallied prior to conducting the tally and selection.

(e) The official conducting the election shall include a report on

the results of the 1 percent manual tally in the certification of the official canvass of the vote. **This report shall identify any discrepancies between the machine count and the manual tally** and a description of how each of these discrepancies was resolved. In resolving any discrepancy involving a vote recorded by means of a punchcard voting system or by electronic or electromechanical vote tabulating devices, the voter verified paper audit trail shall govern if there is a discrepancy between it and the electronic record.

SEC. 2. This bill shall become operative only if Senate Bill 1235 of the 2005-06 Regular Session is enacted and becomes effective on or before January 1, 2007.

SEC. 3. If the Commission on State Mandates determines that this act contains costs mandated by the state, reimbursement to local agencies and school districts for those costs shall be made pursuant to Part 7 (commencing with Section 17500) of Division 4 of Title 2 of the Government Code.

We quote the recently revised Election Code Section 15360 in its entirety, because it will require significant changes in the way Alameda County and many other counties carry out the post-election canvass and the 1% sample and manual tally. We have put the most pertinent phrases in boldface. The most significant change is that the Election Code now requires that absentee ballots be physically sorted into their home precincts, rather than just being electronically attributed to their home precincts as has been the Alameda County Registrar's practice. This seems to imply that the ACROV would have to sort ballots into 1219 precincts or however many precincts are defined for future elections. The ballots to be sorted would include absentees submitted before and after Election Day, provisional ballots, and damaged ballots. Using the rough estimates from our earlier chart of the November 2006 election, this would indicate that 248,181 of the 415,638 pairs of paper ballots would have to be physically sorted. This change to the Election Code will mean a huge increase in work and demand a greatly increased amount of work space and number of temporary staff or staff hours.

The pressures of the large increases in time, labor and needed space would, in turn, make it harder for the ROV to meet the recommendations for improving the 1% sample proposed by the advisory subcommittee and those mandated in the revised provisions of Election Code 15360.

We are particularly concerned that a greatly increased work and space burden might interfere with: recommendation 7, that the manual tally should be a public and transparent process, with provisions of Election Code 15360 and with recommendation 7d, that public counting of the 1% samples should be carried out so that the observing public can hear, see and understand what is happening. As we have pointed out earlier in this report, the Alameda County Registrar of Voters Office already needs to improve the transparency of the manual tally, so we are concerned about any impediments to such improvement.

In addition, we would like to be sure that recommendation 8 is fulfilled. This recommendation, which is also now required in Election Code 15360, states that all

discrepancies between the hand tally and the electronic count be identified and clearly accounted for. Under its current practices, the Alameda County Registrar of Voters finds few or no discrepancies. Its process and the results of its process should be open to public examination.

Editorial Note: This report includes contributions from Gen Katz and Sukey Wilder, LWV Oakland, and had the editorial assistance of Helen Hutchison, LWV Oakland and Lianne Campodonico, LWV Piedmont. The report has been reviewed by members of the Alameda County Council of Leagues of Women Voters. The League thanks Alameda County Registrar of Voters Dave Macdonald, his predecessor Acting Registrar of Voters Elaine Ginnold and the many ROV staff who have patiently answered our questions. Any errors are, of course, our responsibility.