



Dr. David Jefferson
Chair, Post-Election Audit Standards Working Group
California Secretary of State

by email: d_jefferson@yahoo.com

July 3, 2007

Dear Dr. Jefferson,

I am writing to you to follow-up on my comments at the first Public Meeting of the Post-Election Audit Standards Working Group yesterday in Sacramento. I am very pleased that Secretary of State Bowen has convened this immensely important panel, and the presentations made by the various experts and election officials yesterday were informative and interesting. I am delighted to have this opportunity to address you, and the entire Working Group, now that I have a better understanding of what role you are undertaking.

The following is an expansion of my comments at yesterday's meeting, with particular emphasis on the auditing principles TrueBallot's auditing application addresses. It is my belief that an awareness of what we do can and should inform the Working Group's sense of what is possible.

TrueBallot

TrueBallot is an Election Services company founded in 1995 that administers 40-60 elections per year, including approximately 15 per year in California. About two-thirds of our clients are Labor Unions, but we also work on behalf of Homeowner's Associations and Cooperatives, Professional Associations, and others. In California, we administer approximately eight Public Elections per year on behalf of San Bernardino County's Office of Special Districts. These are Proposition 218 (Special Tax District) elections, and are subject to Proposition 218 rules rather than the Election Code.

Our elections vary in size from under 1000 voters to over 200,000 voters – much like public elections in all but the very largest jurisdictions. A typical union election might have six or eight ballot types (corresponding to crafts or districts within the union) and as many as 15 ballot questions governing the election of 25 or more office holders. Occasionally I have administered elections with 18 ballot types and three dozen separate races. Our balloting conditions are therefore comparable to those in most California Counties, though not, of course, those in the very largest Counties.

Our elections are performed according to Department of Labor regulations, California Civil Code 1363.03-.09 (which governs association elections in California), and/or Proposition 218.

TrueReview

Our auditing application, TrueReview, is a tool that improves the **accuracy, transparency, and efficiency** of the ballot auditing process. TrueReview allows the user to perform a **computer-assisted hand count** – that is, a ballot by ballot manual count using scanned images on a computer screen rather than the original paper ballots. In the following



paragraphs I will remark only about those aspects of TrueReview which directly address the charge of this Working Group.

1. **Time Crunch.** One of the major tensions your committee will be addressing is the balance between the necessity for larger audits to create confidence in the results of contested elections with the time crunch large counties experience certifying their elections. TrueReview is a tool that can help.

It is considerably faster to page through ballots by clicking a mouse than it is shuffling paper. Additionally, because TrueReview highlights the responses that the computer has counted (and, in the case of overvoted ballots, the responses that the computer has not counted because of the overvote), it allows the auditor to determine much more quickly where the ballot is marked than would be possible in a manual count, as well as whether the computer has counted the ballot correctly.

Overall, an election can be audited using TrueReview many times faster than through a manual count.

2. **Transparency.** Because TrueReview is used on a computer, the audit process can be projected onto a large screen in a count room. In principle, the review process could also be streamed live on the internet. Since much of the purpose of an excellent set of election audit procedures is to demonstrate to the public that the vote totals that have been announced are accurate, nothing could accomplish this goal more directly than making it possible for the public to view the ballot images themselves as they are being audited.
3. **Which ballots to audit.** With TrueReview, there is no need to sort ballots into piles by precinct or any other category. As long as the ballot has a barcoded ballot type on it, the computer does the sorting. Likewise, a larger set of sort criteria are possible to employ. You can ask the computer to search for only blank and/or only overvoted ballots. Likewise, you can search only for ballots with a particular race on them, regardless of precinct or ballot type. Any sort criteria desired may be represented on the ballot image and then searched for.

As a result, TrueReview makes it possible to come up with truly random ballots to audit across categories. It is no longer a separate problem to choose a precinct at random and then find precincts for each race, nor to find the right number of absentee ballots, provisional ballots, or other categories for the audit. As Joseph Hill put it in his presentation to the Working Group, TrueReview can audit batches of one.

4. **Transparency, again.** Ultimately, the public will not be confident in TrueReview any more than any other software unless it is confident that the software images being audited really are pictures of the original ballots. TrueReview automatically generates a control number for all ballots as they are scanned, making it possible to relate the ballot image to the original paper any time. One part of auditing with TrueReview, therefore, is demonstrating that the ballot images being displayed on screen really do correspond to the batches of ballots that have been banded and set aside.

Current California law

In the press release announcing yesterday's forum, Secretary Bowen states that "California's 1% audit law is 40 years old, and I want to know how effective it is and whether there are better models for auditing election results and maximizing voters' confidence in the electoral process." This implies a willingness to revisit not only standards and procedures, but the Election Code itself.



I am offering, right now, a better model for auditing results and maximizing voter confidence. There is no difference between reviewing ballots and reviewing scanned pictures of those ballots, but reviewing scanned images is faster, more transparent, and more accurate.

At present, it is obviously not legal to replace a hand audit with the use of TrueReview. However, with no change in the law, TrueReview could be used to augment the mandated 1% hand count wherever necessary – for example, in a close race in a large jurisdiction. If the functions performed by TrueReview were seen to be beneficial in general, it would become desirable to change the audit laws to allow a software application such as TrueReview to be used instead of the slower, less accurate hand count.

Demonstration

I would like to have the opportunity to present a demonstration of TrueReview to the Post-Election Audit Standards Working Group. I believe that seeing our software will help you to expand your sense of what is possible in making standards for the state.

I invite you to call me at (209) 725-3379 at any point with further questions, or to make an appointment. Thank you very much for your consideration.

Sincerely,

Kenneth Mostern, Ph.D.
Vice President for Western US Operations

From: "Richard Tamm"

Date: July 2, 2007 10:10:37 PM PDT

Subject: Additional Public Comments

I spoke today for three minutes during the Public Comment period at your Post-Election Audit Standards Working Group public meeting. I was the man who had been a computer programmer for over 30 years. I would like to re-iterate the points I had made at today's meeting plus add some additional suggestions. Thank you and all the members of this working group for devoting the time and energy to work on guaranteeing that our elections are, as much as possible, free from corruption, fraud, and simple programming errors, etc., while also being sensitive to the burdens of our ROVs (Registrars of Voters).

1. In large software projects, the testing of the software is done by a team of testers who are separate from the programmers who developed the software. This is because the programmers are reticent to find errors in their own work while the testers are rewarded for finding as many errors as possible. In like manner:

A. The auditing should be done by a different, independent group of people from the ROV, possibly from a county's audit department (IA - Independent Auditor).

B. When discrepancies are found, they should be investigated, resolved, and made public by the ROV in cooperation with the IA.

C. If the discrepancies are such that they require a wider recount by the ROV, this additional work should be compensated for in full by the state, plus some additional amount for "pain and suffering".

D. If the auditing reveals any significant discovery such as fraud, programming errors, etc., some additional recognition should be paid to the ROV and IA.

2. As in programming, where extremes of situations are tested, any election which is "certified" cannot have impossible numbers (for ex., there were reports of precincts/counties in Ohio in 2004 where "certified" elections had more votes than registered voters in that precinct/county). All such impossible numbers and procedures for dealing with them must be codified.

3. The randomly selected precincts to be hand-recounted after the election cannot be picked till after the totals for all precincts have been made public.

4. Very clear procedures on what to do if there are discrepancies between the machine and hand-recounted totals must be devised, published, made public, and strictly enforced.

5. The hand-recounted totals from the VVPAT's of DRE's must match the machine totals exactly. And, although outside the purview of this working group, the accuracy of the VVPAT's can be further insured by emphasizing the importance of the VVPAT's in the ROV's training of poll workers, including training the poll workers to remind the people who choose to vote on the DRE's to verify the correctness of their vote on the VVPAT's.

6. Since our votes are more important than money, the audit or manual tally needs to be, at every step and as much as possible, as strict as bank audits.

7. Every step of the audit process must be observable by the public, including

easy viewing of the main tabulator throughout the election, and detailed explanations of any work done on the main tabulator machine during the election.

8. All totals by precinct, of mail-in ballots, provisional ballots, etc., should be available to the citizenry via data files on the internet. This would facilitate independent verification by citizens and news media as well as sociological and political studies of the data by researchers.

9. All groups involved in manual tallies must be four people, not three. There must be a person verifying the accuracy of the numbers being read.

10. To insure that all VVPAT's will be available for manual tallies,

A. all DRE's to be used in an election must be pre-tested with their VVPAT's to insure that they work properly, and

B. there must be detailed procedures in place on how to handle any DRE whose VVPAT stops working properly during an election. This should include: stopping further use of that DRE, reporting it immediately to the ROV, and getting a replacement DRE from the ROV ASAP.

11. It is generally accepted that "tiered audits" (the closer the race, the larger percentage is hand-counted) are more accurate than low fixed percentage ones. If the manual tally is to be anything close to an audit, a tiered audit is the ideal and must be provided for.

12. For long-range planning, consider reducing manual tally costs while also involving the general citizenry more in our election process by instituting "election duty" similar to "jury duty".

Thanks again for your time and consideration.

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