

Procedures for California's 1% Manual Tally

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1 Purpose of This Document

For many California counties, the November 2006 General Election was one of the first elections in which they used Direct Recording Electronic (DRE) voting systems with Voter-Verified Paper Audit Trail (VVPAT) capabilities. In addition to the complexities of changing all or parts of their voting system, counties also had to include VVPAT records in the 1% manual tally (manual audit) mandated by law, in which tallies of paper records of ballots cast in polling places must be reconciled with the electronic tallies from the equipment on which the ballots were cast.¹ In an effort to help a number of California counties think about the proper process and necessary changes involved with this 1% manual tally, members of ACCURATE, the Verified Voting Foundation, and the California Voter Foundation have developed this policy document in direct consultation with the staff of these Counties.² We hope that this document will help other counties develop their own policies, processes and best practices going forward.

This document is structured as partially a narrative rationale with a set of procedures for conducting the 1% manual tally. Section 2 describes the nature of the manual tally in the larger canvass process. Section 3 covers the legal requirements for performing the manual tally, the random selection process and the role and responsibilities of observers. The procedures for the manual tally are presented in section 4. Finally, section 5 outlines the prerequisites for the final certification of the vote.

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[‡]The most current version of this document is available at: http://josephhall.org/procedures/ca_tally_procedures-2008.pdf. An editable version of this document is also available in Rich Text Format: http://josephhall.org/procedures/ca_tally_procedures-2008.rtf.

¹The "one percent manual tally" is defined in § 336.5 of the CA Elec. Code as: "[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.

Elections Code § 15360 states how to conduct the manual tally: "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 vote by mail 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. . . ."

²We worked closely with San Mateo and Yolo counties and more indirectly with Alameda and Marin Counties. See: Joseph Lorenzo Hall, *Improving the Security, Transparency and Efficiency of California's 1% Manual Tally Procedures* (unpublished). April 2008

2 Canvass

The 1% Manual Tally is one part of a more complicated post-election counting and reconciliation process called the Official Canvass of the Vote. The Official Canvass of the Vote is strictly governed by the California Elections Code.³ The canvass shall commence no later than the Thursday following the election, shall be open to the public, and, for state or statewide elections, shall result in a report of results to the Secretary of State. The canvass shall be continued daily, Saturdays, Sundays, and holidays excepted, for not less than six hours each day until completed, and it must be completed within 28 calendar days after the election.⁴ The components tasks of the official canvass are provided in the Code, and additional requirements are specified by guidelines from the Secretary of State. Tasks of the Official Canvass The official canvass shall include, but not be limited to, the following tasks (these apply to all votes, precincts, etc., not just the 1% sample):

- (a) An inspection of all materials and supplies returned by poll workers.
- (b) A reconciliation of the number of signatures on the roster with the number of ballots recorded on the ballot statement.
- (c) In the event of a discrepancy in the reconciliation required by subdivision (b), the number of ballots received from each polling place shall be reconciled with the number of ballots cast, as indicated on the ballot statement.
- (d) A reconciliation of the number of ballots counted, spoiled, canceled, or invalidated due to identifying marks, overvotes, or as otherwise provided by statute, with the number of votes recorded, including absentee and provisional ballots, by the vote counting system.
- (e) Processing and counting any valid absentee and provisional ballots not included in the semifinal official canvass.
- (f) Counting any valid write-in votes.
- (g) Reproducing any damaged ballots, if necessary.
- (h) Reporting final results to the governing board and the Secretary of State, as required.

3 One Percent Manual Count

When a voting system is used to count votes, the official canvass must also include a manual tally of a portion of the total votes cast, as a means of verifying the accuracy of the system count. The Elections Code specifies how the tally is performed:

Section 15360. Manual Tally When Using a Voting System

- (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 (vote by mail) voters' ballots, cast in one percent of the precincts chosen at random by the elections official. If one 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.

³CA Elec. Code § 15300 et seq.

⁴CA Elec. Code § 15302, § 15372

In addition to the one 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 absent (vote by mail) 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 CA Elec. Code § 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 one 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 one 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.

3.1 Random Selection of the Precincts for the Manual Tally

The random selection and manual tally *must* take place only after unofficial counting has been completed. This is important because attackers intent on hiding evidence of fraud (or simple error) will have the opportunity to change vote totals in precincts they know will not be audited, once the random selection is complete.⁵

The random selection of precincts for the Manual Tally shall be conducted in a publicly verifiable, random selection process. The date and time for the selection of precincts will be announced in advance via press release, or comparable methods.

The materials for the random selection include:

- **Master Selection Spreadsheet**—A spreadsheet of precinct numbers. This spreadsheet simply consists of two columns: one column listing integers from 0 to the number of precincts and another column listing each precinct’s identifier or precinct number.
- **Contest Selection Spreadsheets**—Spreadsheets listing an integer index and the precinct numbers for the precincts that are permitted to cast ballots in each race as a measure in the election.

⁵Large jurisdictions or jurisdictions that have very tight canvass timelines might not be able to wait until all unofficial counting is completed for all types of ballots. In these cases, we suggest using each ballot type as a sampling stratum and sampling ballot types as soon as unofficial counting is complete. See: Hall, Improving the Security, Transparency and Efficiency of California’s 1% Manual Tally Procedures (unpublished) (as in n. 2); Philip B. Stark, Conservative Statistical Post-Election Audits (in press). The Annals of Applied Statistics, 2008 (URL: <http://www.stat.berkeley.edu/~stark/Preprints/conservativeElectionAudits07.pdf>)

- A publicly verifiable random selection mechanism—We recommend using three clear, colored, 10-sided dice (red, white, and blue).⁶

The presiding election official should announce the number of precincts in the jurisdiction and the number of precincts that will be chosen for audit. To assure themselves of the legitimacy of the selection materials, the observers will be allowed to inspect the dice, the cup, and the box, (or similar items when using a different random selection mechanism) and to compare the observers' copies of the spreadsheets to the official copies.

The election official (or an observer) will roll all the dice once to select each precinct to be audited. If a precinct row number is chosen that doesn't exist, the dice will be rolled again.⁷ If a die falls off the table or otherwise misses the box or designated location, the dice will be rolled again. When a valid roll is made, the election official will read off the digits from the roll and record and witness the precinct row number in the master spreadsheet. The election official should then identify each precinct chosen on the contest spreadsheets to keep track of the contests included in the Manual Tally.⁸

After the initial one percent of precincts is chosen, additional precincts will be chosen so as to include all contests in the election.⁹

When finished with the random selection process, the presiding election official should publicly announce the precinct row numbers, precinct numbers and whether or not the selection of that precinct was off of the master spreadsheet or a contest spreadsheet. To preserve the chain of custody of materials to be tallied in the manual count, the retrieval of ballot materials for the tally should happen as quickly as possible after the random selection is complete.

3.2 Observers

The manual tally will be conducted in public view. All interested parties are welcome to observe.

Observers must sign in with the jurisdiction's reception desk. Each observer will receive a visitor's badge, to be worn by the observer at all times while in the elections facility—in order to distinguish them as observers to tally staffers—and the observer group shall be accompanied by at least one elections staff member at all times. No observer shall interfere with the orderly process of any phase of the canvass. Observers shall not touch ballots or interfere in any way with the counting, but observers will be permitted to watch the process in a manner that allows them to meaningfully verify the count. Before and during the process, observers may quietly ask questions of the attending supervisor or manager, but are prohibited from directly communicating with any member of the tally board.¹⁰ Once the tally is started, no disruptive conversation or comments are allowed in the observation area. Observers may submit questions or comments in writing to the Tally Supervisor throughout the counting process.

⁶Some jurisdictions would prefer a publicly verifiable selection method that does not use dice, for example using a rotating hopper and numbered balls. For more on methods of publicly verifiable random selection, see: Arel Cordero, David Wagner and David Dill, *The Role of Dice in Election Audits—Extended Abstract*. IAVoSS Workshop on Trustworthy Elections 2006 (WOTE 2006), June 2006 (URL: <http://www.cs.berkeley.edu/~daw/papers/dice-wote06.pdf>)

⁷In some cases, many rolls will not correspond to a valid precinct. We've developed a small computer program that can be used to "bin" the random numbers to maximize the chance of a good roll: Joseph Lorenzo Hall, *Dice Binning Calculator for Post-Election Audits*. March 2008 (URL: <http://www.josephhall.org/dicebins.php>)

⁸If using a selection method other than 10-sided dice, the jurisdiction will need to have procedural rules such as those in this paragraph to specify the exact rules for what does and does not count as a valid selection.

⁹Note that this isn't technically required by California law. That is, the law doesn't require jurisdictions to choose the additional precincts past the 1% selection in a random manner. However, we feel this is best practice and highly recommend it. For this process, the Dice Binning Calculator mentioned in n. 7 is highly recommended.

¹⁰This is very important. We have observed cases where observers communicated vote totals to the tally team, breaking the "blind count" rules for the tally.

4 Manual Tally Procedures

The members of the manual tally board are selected from elections office staff and poll workers, but no poll worker may serve on the board if the pollworker served at a precinct that has been randomly selected for the tally.

The manual count of paper records should be a blind count. Those doing the counting should be unaware of the “expected” result (i.e., of the electronic tallies) or they might have a conscious or unconscious incentive to arrive at the “expected” result. The tally board is kept “blind” to the preliminary results obtained in the voting system count until the tally process is complete; to ensure accuracy, the Tally Supervisor holds this information in private. The Tally Supervisor rules on any changes to be made to the preliminary system totals.

The tally board receives the list of randomly selected precincts that it will be tallying, from which it prepares the tally sheets.¹¹ An Adjustment Log is used to document the any necessary changes in the system count as a result of the manual tally.¹²

California law requires that vote-by-mail ballots be included in the manual tally. This requires the elections official to either sort vote-by-mail ballots by precinct or be able to quickly locate the vote-by-mail ballots for chosen precincts after the selection has been completed. For large counties, searching through batches of ballots for all vote-by-mail ballots corresponding to a list of a dozen or so chosen precincts is impractical, and these counties should sort their vote-by-mail ballots by precinct. For smaller counties, searching through batches of vote-by-mail ballots might be a viable option if they don’t find it to be too time-consuming or difficult.

The ballots and other paper records for the selected precincts are located and removed from storage areas. The storage seal is verified,¹³ broken and the ballots are removed, and, if the full ballot consists of more than one ballot card, the cards are separated. The board will count the number of ballot cards and the number of votes. Any discrepancies from the system count will be investigated and reconciled and logged.

One final note before we get into specific procedures. The following procedures assume a cut-sheet sort-and-stack counting methodology; that is, VVPATs are cut individually off of their rolls before counting in stacks. If the jurisdiction uses reel-to-reel VVPAT technology, it should consider cutting any VVPAT records off their rolls. This will make the VVPAT records much easier to recount. To do this, have one person on the tally team hold the paper roll, one person pull out one ballot on the VVPAT tape and another cut and stack the VVPAT records. The final tally team member should serve as an observer in order to make sure the process is witnessed and that no VVPAT records are misplaced, mis-cut, etc. Be careful to retain valid and voided VVPAT records but set the voided records aside. If the VVPAT roll cannot be sliced, the reader will have to roll and unroll the VVPAT tape. We strongly suggest that jurisdictions cut VVPATs off the roll, unless they are only counting one race per precinct and have past experience with rolling and unrolling VVPAT rolls during a recount and/or tally.

¹¹Some counties wisely choose to pre-fill electronic tally sheets so that the tally board doesn’t have to do this step by hand. We recommend this especially in large counties where this might consume a large amount of tally board staff time.

¹²Some counties do not change their totals based on the totals from the manual count. These counties stress that the manual tally is “not a recount” so vote totals should not change. Whatever the interpretation of the manual tally laws, the jurisdiction needs to, at a minimum, report discrepancies that they find.

¹³In order to preserve the chain of custody on the paper records, the reader in each tally team should check the tamper-evident seals on paper record containers, VVPAT canisters, etc. against the appropriate seal log in front of the rest of the tally team acting as witnesses, before beginning the tally. The reader should then break the seal and place the paper records on the tally table in full view of observers.

4.1 Preparation

A considerable amount of preparation is needed for a smooth and sound manual tally. The following steps take place anywhere from a few months to directly before the manual tally.

4.1.1 Review Last Tally Experience

1. Months before the next election, the Jurisdiction should review their experience tallying the last election:
 - (a) Identify any problems that resulted in discrepancies or inefficiencies and address them in procedural changes, poll worker training, revision of the technology, etc.
 - (b) Changes in procedures should be done carefully. Technical changes, such as to the method of random selection, should be reviewed by domain experts.¹⁴

4.1.2 Procedural Commitments

1. In election planning, many months before an election, special care should be taken to ensure that the voting system and poll workers are capable of keeping the evidence necessary for the 1% manual tally. The jurisdiction needs to design policies and procedures that ensure that a paper record that can be included in the manual tally is stored for each ballot that is cast.
 - (a) Ensure that their voting systems will not allow electronic ballots to be cast when the VVPAT subsystem is not operational or not recording VVPATs.
 - (b) Ensure that poll worker documentation and training emphasizes that the VVPAT records are equally as important as the memory card “ballot boxes” and that there are clear guidelines about what to do in case of a printer jam, failure or other contingency that might affect the paper record of a voter’s ballot.
2. At least one week before the selection and manual audit tally process, the jurisdiction should publish the policy and procedures that will govern the selection and audit tally process:
 - (a) The tally should be the very last step before certifying the vote.
 - (b) The jurisdiction should include all types of ballots in the manual tally.
 - (c) The selection of precincts for the manual audit and the manual audit tally for classes of ballots (precinct-machine, precinct-provisional and absentee) should only begin after those ballots have been counted.
 - (d) Precinct Totals Master List. The jurisdiction will need to publish electronic tallies for ballots being audited before the random selection of precincts is performed.
 - i. The jurisdiction could run an unofficial Statement of Vote (or other report that shows the totals for ballots by precinct in numbers that make sense for the tally) and make it available on their web site in both PDF and CSV formats. They could also hand it out on write-once media (CD-ROM or DVD-ROM) to observers.

¹⁴Note that we have observed cases in which very small changes in procedures resulted in drastic effects on the integrity of the process. See: Joseph Lorenzo Hall, *Research Memorandum: On Improving the Uniformity of Randomness with Alameda County’s Random Selection Process*. UC Berkeley School of Information, March 2008 (URL: http://josephhall.org/papers/alarand_memo.pdf)

- ii. This should be done before the start of the random selection, to make certain that the tally is committed to a single set of tallies and cannot be changed depending on which precincts are chosen.
- (e) The manual count of paper records should be a blind count:
 - i. Those doing the counting should be unaware of the “expected” result (i.e., of the electronic tallies) or they might have a conscious or unconscious incentive to arrive at the “expected” result.
 - ii. The reader during the manual tally process should not tell the recorders the expected result.

4.1.3 Personnel

1. Depending on the different paper records produced by a jurisdiction’s voting systems (e.g., precinct paper ballots, VVPATs, vote-by-mail), it should set up a series of tally areas. Each tally area is assigned two permanent employees from the County Elections Office. These staff will be appointed as the Canvass Board by the Chief Elections Official, and are responsible for decision-making and documentation.
2. Seasonal temporary workers or poll workers will be assigned to work in one of the three areas. Hours of counting will be within their scheduled workdays.
3. Each tally board will have four members:
 - (a) One **Reader** who calls out the voter’s choice in a given contest: “Yes”, “Yes.”, “Yes” or “Lincoln”, “Lincoln”, “Lincoln”
 - (b) One **Witness** who watches that the reader to confirm the voting choice as voted. The Witness also collates the ballots into groups of 10.¹⁵
 - (c) Two **Talliers**, who tally the votes being called out using tally sheets.¹⁶

4.1.4 Facilities

1. Each of the tally areas will have its own designated area. In the case of a small election, the tally may be consolidated into one room.
2. The areas will need to have enough room to accommodate two large tables for the supervisors, and a table and four chairs for each of the tally teams.
3. Elections Officials will need access to precinct paper ballots, VBM ballots, provisional ballots, spoiled ballots and remade ballots.
4. Boxes of ballots, VVPAT rolls and vote-by-mail mail trays will need to be staged on separate tables.

¹⁵The Witness has two other very important duties: 1) the witness must be comfortable enough to stop the tally when their reading of a ballot choice differs from what the reader calls out; and, 2) the witness must roll back the tally by 10 ballots if the two talliers fail to both call out a multiple of ten or begin to tally out of sync.

¹⁶To see examples of tally sheets used in San Mateo and Marin Counties, respectively, see: <http://www.flickr.com/photos/joebeone/2240342264/sizes/l/> and <http://www.flickr.com/photos/joebeone/2266221884/sizes/l/>.

5. Note that voting systems that print their totals tape on the VVPAT roll require additional processing to preserve the blind count of the tally team. In the case of the totals tape printed on the VVPAT roll—such as in the case of Sequoia’s AVC Edge DRE with VeriVote printer or ES&S’ iVotronic with RTAL—the VVPAT rolls should be removed from their canisters or printer housing in a separate staging area. This will preserve the blind counting rule.¹⁷
6. Provide a tally board schedule indicating actual counting hours, lunches and breaks.

4.1.5 Reports and Supplies

1. Staff is to be provided with print outs of the manual tally procedures and other instructions they may need (e.g., instructions for removing VVPAT rolls from their canister or printer housing).
2. Prepare and provide spreadsheets and reports to appropriate supervisors
 - (a) Reports to be printed from the vote count software system (the Election Management System)
 - i. Precinct Turn-out Report—a report listing the number of voters of each party that cast ballots in the election in the precinct.
 - ii. Precinct Totals Report—a report listing the totals for each option on the ballot, including undervotes and overvotes.
 - iii. Precinct Write-in Report—a report listing the results for write-ins cast in the precinct.
 - iv. Provisional Count/No Count Report—a report listing the number of provisional ballots cast in the precinct, their disposition and any identifying information needed to separate out anonymous, valid provisional records from invalid records.¹⁸
 - v. Precinct vote-by-mail Report—a results report for vote-by-mail ballots, including overvotes and undervotes.
 - vi. Precinct Canvass Report—a report listing the number of ballots of each type counted in the canvass.
 - vii. Others as necessary
 - (b) It can be helpful to create a spreadsheet that contains a number of different resources. A spreadsheet (e.g., called “1% Manual Precinct Reports”) could contain many of the checklists and reports required.
 - i. Adjustment Log Template—for any needed adjustments to the unofficial count after the tally, if applicable.
 - ii. VVPAT Summary Sheet—a log containing the list of VVPAT printer serial numbers, security seal serial numbers, security-tape-intact verification field.
 - iii. Precinct Selection List—list of selected precincts.
 - iv. Supply List—list of supplies needed per tally team.
 - v. Polling Location List with precinct numbers and consolidations.
 - vi. Tally team assignments and schedule.
 - vii. Linear Reports—lists showing which precincts vote for which contests on the ballot for this election.

¹⁷See section 4 for a discussion of blind counting.

¹⁸If the jurisdiction’s voting system allows casting provisional ballots on DREs in precincts other than the precinct the DRE is located, this provisionals report should be supplemented by a list of precincts in which DRE provisionals were cast so that those provisional ballot paper records can be located and included in the tally.

- viii. Precinct Summary Report—listing precinct number, number of physical ballot boxes (if applicable), VVPAT serial numbers, number of DRE ballots cast, number of paper ballots cast, number of vote-by-mail ballots cast, total number of ballots cast, notation or reference to spreadsheet with serial numbers of other voting system equipment that interacts with precinct equipment.

3. Supplies, additional to supply list above or in the Supply List

- (a) No ballot marking pens are to be in the immediate vicinity of the tally area.¹⁹
- (b) Mail trays for tally teams with all supplies such as adjustment logs, tally sheets, staplers, etc.
- (c) At the discretion of the supervisors: mail trays and file folders for required reports, observer guidelines, team lists, office cell phone, election code book.

4.2 The Tally

When preparations are completed and the random selection is finished, the tally begins.

1. Obtain ballots to be tallied:

- (a) Precinct paper ballots from both polling place and provisional.
- (b) VVPAT tape: (paper-trail) from each DRE.
- (c) Vote-by-mail ballots
- (d) Paper records from provisional ballots cast on DREs.²⁰

2. Prepare for the tally.

- (a) Obtain all ballots for that precinct.
- (b) Within each precinct, divide the ballots by ballot card if using a multi-page ballot.
- (c) Count quantity of voted ballots in that precinct and check the aggregate totals with the Tally Supervisor.
- (d) Within each contest, divide the ballots by candidate or option (for measures).
- (e) For each contest separate over-voted and under-voted/blank ballots. Set aside. These will not be a part of the tally but can be helpful during the tally process.

3. Begin the tally. Tally all ballots for one candidate/option before moving to the next candidate (or option).

- (a) On the tally sheet write the names of the candidates (or choices for measures) in the order in which they appear on the ballot.
- (b) The Reader calls out the name of the candidate/choice to be tallied.
- (c) The Witness watches to make sure the Reader reads correctly and collates the ballots, cross-stacked in groups of ten (10).²¹

¹⁹Pens that could indelibly mark ballots should never enter the tally area. Such marking instruments could be used, inadvertently or intentionally, to change voted ballots.

²⁰See discussion in n. 18.

²¹By “cross-stacking” we mean stacking groups of 10 ballots while changing the orientation of each group by 90 degrees (from portrait to landscape orientation and back again).

- (d) The two remaining team members mark their own tally sheets each time the name (or option) is called.
4. After every tenth tally mark, the two team members doing the tally will call out: “10”, “20”, etc. Switch the direction of the hash mark at every line.²²
- (a) If the team members are out of sync, go back to the last multiple of ten that was in sync, not to the beginning.
 - (b) Talliers announce and mark the last number tallied and line out the rest of the numbers on that line for that candidate (or option). ‘X’-out the rest of the tally box. Write the total in the column to the right—both in number and written form.
 - (c) Completion of that Contest: call a supervisor to verify totals tallied against the system results. Discrepancies shall be justified, resolved, and recorded on the Tally Summary Sheet. If no changes are made, record that as well. If necessary the race is manually re-tallied. (See 7b for more on resolving confirmed discrepancies.)
5. Moving to the Next Contest.
- (a) When each contest is complete, draw a line through the next “candidate” row. That will separate one contest from the next.
 - (b) Sign and certify the bottom of each tally sheet.
 - (c) The tally team may use many tally sheets for one precinct, depending on the number of contests and the number of candidates/options in the contest.
 - (d) Number the pages on the bottom right hand side. Do not commingle two sets of tally sheets.
 - (e) The tally board may not proceed with another precinct unless all required contests have been tallied and all discrepancies are resolved.
6. Tally Supervisor Duties
- (a) Review the certified tally sheets and placed them in a manila envelope. Once all precincts have been tallied for that contest, discrepancies will be noted on the Adjustment Log.
 - (b) Use the Adjustment Log as needed (e.g., voter’s intent clearly seen by tally board but not by system). Any ballot resulting in an adjustment will be kept separate from other ballots for that precinct. The log shall consist of:
 - i. The manual count procedure documentation.
 - ii. Results of each round of manual counting for each precinct in the sample.
 - iii. How discrepancies were resolved.
 - iv. A detailed account of any actions taken which are contrary to written protocols.
 - v. The log must be made available to the public.
 - (c) Tape the Summary Sheet to the front of the envelope.
7. Resolving or Justifying Discrepancies:

²²Talliers have tally sheets (see n. 16) with numbers written on them (1, 2, 3, . . .) in rows. The tallier draws a line through each number (a “hash mark”) when the reader reads a candidate choice or option. When the tallier has to move to the next line (after 50, for example), they should switch the direction of the hash mark for clarity.

- (a) Resources available to resolve discrepancies: Ballot Accountability Report,²³ Polling Place and Consolidation Lists, Spoiled and Surrendered Ballots, Official Rosters, Access to Provisional Envelopes (both Counted and Not Counted), Vote By Mail ballots.
 - i. Undervotes, overvotes, and canceled/voided DRE ballots must be tracked and reported as part of the manual count process. (Spoiled ballots are not included here, because they are not electronically tallied. However, since spoiled ballots are re-created and then electronically tallied, the re-created ballots become part of the manual count if they come from precincts in the manual count sample.)
- (b) If a discrepancy is confirmed by the supervisor, an additional re-count is conducted.
 - i. If the discrepancies between the final manual count and the electronic count still exist, election officials must take the following steps to resolve the discrepancies:²⁴
 - A. The percentage of discrepancies found in the manual count sample for a given race must be presumed to exist in the remaining ballots cast in the race.
 - B. Supervisor shall calculate the discrepancy percentage for each race by comparing the total number of discrepancies found in the manual count sample for the race to the total ballots cast for that race in the manual count sample.
 - C. If the discrepancy percentage represents 10% (one-tenth) of the margin of victory for that race, then additional precincts must be manually counted for that race. Additional precincts must be counted in randomly sampled blocks of 5% until the total number of discrepancies presumed to exist—re-calculated using the method above—is smaller than 10% of the overall margin of victory in that race tallied electronically.
 - D. If any discrepancy is found between manually counted VVPAT records and corresponding electronic vote counts that cannot be accounted for by some obvious mechanical problem, then all relevant VVPAT records, memory cards and devices, and DRE machines must be preserved and the Secretary of State must be notified in order to allow for a technical investigation to determine the cause of the problem.
 - E. For multi-winner elections, the margin of victory is the difference between the candidate (or option) who had just enough votes to win a seat and the next candidate below. For example, for a race with three open seats, the margin of victory would be the difference between the third and fourth place candidates.
 - ii. Prepare Discrepancy Reports according to the “Post-Election Manual Tally Log” from the Secretary of State.²⁵

5 Certification

The election is prepared to be certified upon completion of the following:

1. All rosters are reconciled with vote totals.²⁶

²³The Ballot Accountability Report is a spreadsheet reconciling the amount of ballot materials sent to each precinct, the amount returned, spoiled, etc.

²⁴These requirements are derived from the California Secretary of State’s post-TTBR post-election audit requirements. See: *Post-Election Manual Tally Requirements*. California Secretary of State, October 2007 (URL: http://www.sos.ca.gov/elections/voting_systems/ttbr/post_election_req.pdf)

²⁵*Post-Election Manual Tally Log: Suggested Instructions for Post-Election Manual Tally Requirements (CCROV-08048)*. California Secretary of State, 2008 (URL: <http://josephhall.org/ccrov/CCROV-08048.pdf>).

²⁶San Mateo uses a “Master Ballot Accountability Spreadsheet” to aid this reconciliation.

2. All votes are tallied in the EMS, including any manual adjustments as needed based on the manual tally, if applicable.
3. Canvass Report is printed and proof-read.
4. Statement of the Vote is printed and ready for certification by the Chief Elections Officer.
5. Official certified results are adopted by the governing bodies of the election, such as the County Board of Supervisors, City Councils, School Boards and other Special District governing boards.
6. In statewide elections, certified results are reported to the Secretary of State.

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