

July 5, 2023

The Honorable Shirley N. Weber
California Secretary of State
1500 11th Street
Sacramento, CA 95814

Via email to Ddawson@sos.ca.gov, nrobinson@sos.ca.gov

Dear Secretary Weber:

The people signing below have these joint comments on California's proposed rules for election hand counts. <https://www.sos.ca.gov/administration/regulations/proposed-regulations>

Some of our main points are:

- There are differences without apparent reason, in the proposed rules for initial counts, recounts and 1% manual counts.
- The requirement to machine-audit initial hand counts contrasts with rules for 1% manual tallies and recounts, and with the opinion of some experts, that hand counts are the gold standard and are more reliable than machine counts.
- The cumulation of thousands of tally sheets needs more detail, which we suggest.
- Ballot images are effective to check the chain of custody and recover from problems.
- Proposed rules for recounts “by means of the voting system used originally,” unnecessarily restrict a helpful approach used in other states.

The [Notice](#) cited only three reports as a basis for the rules, two by Ansolabehere *et al.* on New Hampshire and Wisconsin, and an interview in Nevada. These do not provide justification for most of the rules. The footnotes below cite several other reports with helpful information.

We would appreciate a chance to meet with the staff while these rules are being finalized, to answer any questions and discuss ways to make hand counts better, for election workers, observers and the general public.

Verified Voting lists 648 jurisdictions in the US using hand counts in 2022.¹ 41 entire counties use hand counts, including 11 each in Idaho and Montana with a total population of 84,000. Columbia County, NY, with 40,000 voters, has hand counted most contests for years.² There were four problematic hand counted elections from 2020-2023 identified in comments from the California Voter Foundation, Verified Voting, California Common Cause and Brennan Center.³ This is a very small number of problems among 648 hand-counting jurisdictions. In the same period there were at least 11 problematic machine counted elections.⁴

¹ The Verifier — Election Day Equipment — November 2022, Excel download (under Alaska on page).

<https://verifiedvoting.org/verifier/#mode/navigate/map/ppEquip/mapType/normal/year/2022>

² “They keep voting honest, one ballot at a time,” *UpStater*, 2012.

<https://theupstater.com/news/by-debora-gilbert-196/> and Richey, Warren, “Securing the vote: How 'paper' can protect US elections from foreign invaders,” *Christian Science Monitor*, 2017.

<https://www.csmonitor.com/USA/Politics/2017/1107/Securing-the-vote-How-paper-can-protect-US-elections-from-foreign-invaders>

³ <https://www.calvoter.org/sites/default/files/comments-regs-cvf-bc-ccc-vv-june302023.pdf>

⁴ https://en.wikipedia.org/wiki/Electronic_voting_in_the_United_States#Errors_in_optical_scans

Hand counts in a wide range of studies take about 0.1 minutes (6 seconds) per vote tallied, for single sheets tallied in sequence.⁵ Time is higher for random single ballots in RLAs. A team can tally 1,800 ballot sheets per week (averaging 10 votes/sheet, 6 hours/day to allow time for setup and adjustments each day). 30 teams can tally 50,000 ballot sheets per week. A team of 5 at \$20/hour costs \$4,000/week, or \$2.20/ballot sheet.

AMBIGUOUS MARKS

Proposed rules [20281-20283](#) were the subject of comments some of us made in 2022, when the rules were numbered 20981-20983. We reiterate those [comments](#).

REQUIRING AND REVISING A MANUAL TALLY PLAN

Proposed rule [20299](#)(a) requires each hand-count county to create a Manual Tally Plan. Manual counts are explicitly allowed by Election Law [15270-15290](#), without requiring a plan. The Secretary's authority to require or disapprove the Plan seems unclear. A similar plan, the Election Administration Plan, is only required because Election Law [4005](#)(a)(10) requires it.

If there is a Plan, proposed rules 20299(a) and (e) need to require each draft Manual Tally Plan and status update to be posted on the County and Secretary of State websites when submitted. Other rules recognize that all counties have websites.

Proposed rules 20299(b) and (d) arbitrarily let the Secretary of State wait until 90 days before election day to approve or reject the county's plan, even if the plan is submitted far in advance. Then there is an arbitrary rule that the county has only one chance to revise the plan within 10 days and the Secretary has 10 days to approve or reject. It would be more reasonable for the Secretary to approve or reject the plan within 30 days after submission, and let the county revise any time before the original deadline of 120 days before election day, with a 10-day review by the Secretary for each revision. This gives plenty of time for multiple revisions, especially until there is precedent for what each Secretary will accept.

MANUAL TALLY PLAN CONTENT

Proposed rule 20299(c)(2) is unreasonably vague, "sufficient detail to fully describe each element, and could be void for vagueness. It would take many precedents for counties to know what each Secretary will accept.

According to proposed rules 20299(f)(6) and (14), "use of cell phones, cameras, and audio or video recording devices in the location where the manual tally is conducted shall be restricted." During counting, ballots are not identified with any voter. Election law [15272](#) says "the ballot read and the tally sheet kept shall be within the clear view of watchers." Since these anonymous marks are public, there is no basis to restrict phones or recordings, which can dispel misinformation. Webcams for people with disabilities to observe the public count are needed.

Proposed rules 20299(f)(8) and [20303](#)(a) require numbering and imaging each ballot. Machine-counted ballots are not required to be numbered, so it is not clear that the law requires numbering hand-counted ballots. Capturing ballot images seems to be make-work unless the rules are amended to say how they will be used. Electronic ballot images are valuable for machine recounts, in the approach recommended in our comments on [20370](#)(b) below. If that approach is adopted, it will provide a use for the images. Otherwise, other uses need to be identified to justify imposing this cost on counties, and this delay on public results.

Proposed rule 20299(f)(13) requires daily changes of pen colors. If this is needed, it would also be needed for 1% manual tallies and recounts.

⁵ Staff time per vote divided by team size. commons.wikimedia.org/wiki/File:Time_for_hand_counts.png

Proposed rule [20301\(a\)\(11\)](#) requires tally sheets to have a different color watermark each day, so the county would need to print many new tally sheets, for each type of ballot, for each day, which is more security risk than not changing colors and not printing so many excess copies. If changing colors is required, it would also be needed for 1% manual tallies and recounts.

AUDITS OF FULL HAND COUNTS

According to proposed rules 20299(f)(11) and (15) and [20305\(a\)\(3\)](#), “manual tally results will be verified and audited using a certified voting system tabulator,” and “All ballots shall be audited using the certified voting system tabulator.” Only 1% of machine-counted ballots are audited, and the hand counts are the standard of accuracy, so it is not clear that the law requires machine auditing any hand-counted ballots, let alone 100%.

The reason hand count results can audit machine counts is that machine counts can and do make big systematic errors.⁶ Hand counts typically make small errors, and, people are “able to discern and agree on the voter’s intent, which, beyond a certain point, a machine cannot.”⁷

It seems clear that in any significant difference between a machine count and a manual count, the manual count will be believed, so the machine count is a costly distraction.

RECONCILIATION

Reconciliation provides a more believable and wide-ranging check on manual counts than machine retabulations do. Much of the reconciliation process outlined below should be similarly required for machine counts.

1. The two talliers check each other after every 25 ballot sheets. (Approved machine voting systems do not generally have similar independent tallies to check each other.)
2. Total of each contest - Another check is possible when tally sheets show for each contest: total overvotes,⁸ undervotes and valid votes for each candidate. Machine counts should also show the number of undervotes and overvotes and have the same checks listed here, to enable this level of rigor:
 - a. Total tallies (**overvotes+undervotes+candidate_votes**) in all 1-winner contests on a sheet should be the same and equal to the number of ballot sheets containing the target contest. Checking this provides another check on accuracy of the hand tally. In hand counts, summing tallies within each contest should be a required step before accepting a tally sheet.
 - b. In multi-winner contests, **number** of undervotes needs to be tallied, and each overvote tally needs to be multiplied by the number of winners. Then **contest_total = #winners x #sheets**.
 - c. In **RCV**, each rank needs to be checked separately.
3. A very important audit step which the rules need to require is to check that **independent counts** (voters signing in, number of ballots collected from mailboxes and drop boxes) match the total

⁶ Theisen, Ellen, “Ballot-Scanner Voting System Failures in the News — A Partial List” 2009. www.votersunite.org/info/opscansinthenews.pdf

Norden, Lawrence. “[Voting system failures: a database solution](https://www.brennancenter.org/sites/default/files/2019-08/Report_Voting_Machine_Failures_Database-Solution.pdf)”. Brennan Center, 2010. https://www.brennancenter.org/sites/default/files/2019-08/Report_Voting_Machine_Failures_Database-Solution.pdf

https://en.wikipedia.org/wiki/Electronic_voting_in_the_United_States#Errors_in_optical_scans

⁷ <https://www.timesunion.com/opinion/article/Hand-count-votes-to-reduce-errors-977654.php>

⁸ When a voter selects three candidates in a 1-winner or 2-winner contest, that is “An overvote” in the contest, as defined in [20281\(g\)](#), not three overvotes.

ballot sheets tallied. Keeping subtotals by type of ballot, date received, etc. will break up these comparison totals to isolate issues. This step is the only step which ensures all ballots have been included in the cumulation. Lack of this step was the flaw in erroneous results from Indiana, Scotland and Austria.⁹ Lack of good data entry was the flaw in Arizona.¹⁰ The cumulating boards can do this reconciliation step, as suggested below, or it can be a separate task.

4. The independent counts show the number of ballots. Tallies (manual or machine) show number of ballot sheets. Voters are most likely to return the first sheet, i.e., the sheet with the highest-profile contests. So the number of first sheets should be a high percent of the number of ballots. The number of second and third sheets will be some percent of first sheets. It would be helpful for the Secretary to collect and provide these percentages, for all counties, to give a frame of reference.
5. After the cumulating boards or auditors enter all data, they need to sum the **total of each contest in the final cumulative data**, to be sure contest totals (overvotes+undervotes+candidate_votes) for contests on the same sheets still match after cumulating, as they did on each tally sheet in step 2.

PARTISANSHIP

Proposed rule [20300\(c\)](#) needs to require that the 4-person counting boards have no more than 2 members with the same party preference, to decrease public suspicions, rather than being silent on party composition. It also needs to require that teams be randomly mixed and rotated, so two friends are not consistently in position to have doubts cast about their work together.

FULL COUNT METHOD

Proposed rule [20301\(a\)\(7\)](#) calls for tally sheets designed for 25 ballots. Having few ballots per tally sheet is a good approach, since it lets [30 or more](#) contests be on the same tally sheet to avoid flipping pages when tallying. It raises the question why the approach is not required for 1% manual tallies, which similarly cover all contests, and for recounts. These sub-batches are even more important when there is already a machine count, as in 1% manual tallies and recounts, so the counting team cannot force the result to match a known total.

Proposed rule [20301\(a\)\(8\)](#) requires tallies of “[overvotes cast for each candidate](#)”. This is a good concept, which will help show when overvotes affect outcomes and need review. However it seems hard to avoid mistakes when tallying single votes for each candidate and overvotes for each candidate on the same sheet. It would be important to identify jurisdictions which have tallied overvotes for each candidate and their tally sheet designs before imposing this rule statewide. It also raises the question why overvotes for each candidate are not required for 1% manual tallies, recounts, and machine counts.

Proposed rule [20303\(d\)](#) requires “[medical style exam gloves](#)”. This may be a useful worker protection measure, and raises the question why they are not required for 1% manual tallies and recounts.

Proposed rule [20303\(i\)](#) requires a re-tally if there is any discrepancy between two talliers. More reasonably, [20372\(g\)](#) and [20373\(g\)](#) allow recount boards to correct simple mistakes without a re-tally, and that is needed here.

⁹ Beilman, Elizabeth, ["Jeffersonville City Council At-large recount tally sheets show vote differences"](#). *News and Tribune (Jeffersonville, IN)*.

Open Rights Group. [May 2007 Election Report](#). pp.51-52 which are 55-56 of pdf

Currie, Richard, “Election Excel blunder declared a 'low point' for Austrian social democracy,” 2023. https://www.theregister.com/2023/06/06/austria_election_excel_blunder/

¹⁰ Anglen, Robert, “Why what happened in 2021 Arizona election 'audit' still matters,” *USAToday* 2023. <https://www.usatoday.com/story/news/local/arizona-investigations/2023/06/12/new-cyber-ninjas-text-2021-arizona-audit/70299020007/> and <https://docs.real-audits.org/s/smdKQGmkR9ik9f3>

Proposed rule 20303(m)(2) requires five or one tally mark per numbered box. Five marks in one space leads to error-prone reporting if there is a number centered at the top of each column, showing the count if the column is full (as in [Los Angeles](#) and [Indiana](#)). That centered number is easy to misinterpret as the beginning of the column, to which people mistakenly add the tally marks in the column.¹¹ The number needs to be [right-justified](#) or above the line dividing two adjacent columns instead of in the space. One tally mark per box is one good approach. Crossing out numbers, as in [San Diego](#), should also be allowed. It similarly avoids misinterpretation. There is no research cited for the methods allowed, or for disallowing the San Diego approach of crossing out numbers. The rule also needs to apply equally to 1% manual tallies and recounts.

A different format needs to be allowed for ranked choice voting. A [Wisconsin](#) format allows tallying or recording first and second choices on one tally sheet.

Proposed rule 20303(m)(3) should not require “tally keepers shall verify that the total number of votes for each candidate or ballot measure match, prior to moving onto the next contest.” Tallying one contest at a time before moving to the next contest is rarely done, since it takes more time and puts far more wear and tear on the ballots and staff than tallying all contests before moving on to the next ballot sheet, which is the common approach, and is allowed by proposed rule 20303(g), “a different method or process is authorized by the elections official.”

SUPERVISORS

Proposed rule 20303(j) requires supervisors to distribute materials to counting teams. 20303(m)(6)(B) requires a supervisor to drop all other responsibilities and join a counting board after two discrepancies. These tasks need to be done by others. They would distract supervisors from other duties in (m)(4) and [20302](#)(a), and the combination of duties would delay the distribution of materials, and therefore delay the count.

Proposed rule [20358](#)(b) has a similar diversion of recount supervisors into transporting, instead of supervising. On the other hand proposed rule 20358(c) allows for additional recount staff to produce and retrieve material, which is a flexibility needed on all hand counts, especially when ballots are stored and counted in different locations.

CUMULATING BOARD

Proposed rule [20304](#)(a) requires “a board” to accumulate tally sheets. All but the smallest counties need many boards, not “a board.” Every 25,000 ballots will have 1,000 tally sheets. Compiling election totals, from all the individual tally sheet totals, is the weakest point in hand counts, because large errors can enter, as they have in other places from Austria to Arizona, as noted above. Entering data from all the tally sheets needs great care, to check & recheck it and make it observable.

Rules need to provide for checking of cumulating boards. Traditionally accountants and bookkeepers key in columns of numbers so fast that they check their own work by keying the same column of numbers twice, and checking for a match in the data file or adding machine tape. While cumulating boards are not as experienced, they can benefit from a similar approach:

1. Cumulating boards need to enter tally sheets **twice**, independently, in multi-viewer software (like google sheets or MS sharepoint), with overhead webcams recording, so observers can watch any time, staff won't know if there are observers, and the two entries can be compared. The line-by-line data entries and tally sheets need to be public afterwards, so the public can see they match.

¹¹ Beilman, Elizabeth, ["Jeffersonville City Council At-large recount tally sheets show vote differences"](#). *News and Tribune (Jeffersonville, IN)*.

2. These boards or someone needs to check that **independent counts** (voters signing in, number of ballots collected from mailboxes and drop boxes) match the total ballot sheets tallied, as described above in Reconciliation.
3. After data entry, these boards or someone needs to check that contest totals (**candidates+undervotes+overvotes**) from a ballot sheet are consistent, as described above in Reconciliation.
4. Tally sheets need to be scanned into electronic images, digitally signed and published online with the cumulated results, same day, so errors appear quickly. A way to check the images is to scan before data entry, and have one of the independent data entry teams work from paper sheets and one from the scanned image, so they will catch any errors in the image as well as their own data entry errors.

Proposed rule 20304(b) requires either adding numbers on paper, or using a machine “approved or certified by the Secretary of State pursuant to Elections Code sections 362 and 19202.” These Code sections of law don't provide for certification of machines or software to total tally sheets, so compliance is not possible for most jurisdictions. Election Law 15270-15290 does not seem to give authority to the Secretary to control the totalling process.

1% MANUAL TALLY

Proposed rule 20310 allows sample selection after the close of the polls on election day. This is too early. Sample selection needs to wait until contest totals are published for every precinct and batch subject to sampling, so the public knows it was not possible to choose the audit sample, then change numbers in the other batches, which will never be audited, before publishing final numbers. California audits are poor enough, because they omit later ballots, but they are a pretense if the sample is selected before all data are published.

Proposed rule 20315(b)(12) requires counties to report discrepancies. This is a good requirement. We call on the Secretary to stop accepting incredible reports from big counties that all hand counts perfectly matched machine counts. While good hand counts are close to accurate and show if machine counts have significant problems, hand counts do not always exactly match machine counts, and claims of perfection deserve investigation. Besides the occurrence of random errors, people are “able to discern and agree on the voter's intent, which, beyond a certain point, a machine cannot.”¹²

PUBLIC NOTICE

Proposed rule 20311(f) allows “public” notices to be posted only on an obscure wall and an obscure social media account. Rules need to require the current first & third options (website & email list that people can sign up for), not any 2 of 5 options.

OBSERVATION

Proposed rule 20312(a)(4) requires the public to be able to “observe the voters' marks on every tallied ballot” Election Law 15004(c) authorizes 10 non-party observers plus 2 per party. It is hard for this many, to crowd behind the team, to see voters' marks well. The rules need to allow or require webcams focused on the ballots, with a small number of the observers rotating to positions to watch directly so all can trust the webcams. The webcams also give needed access for observers with disabilities. Besides the marks, observers and webcams need to be able to see the ballot sequence number, if that isn't dropped from the rules, so when observers disagree with a reader, they can seek correction later. Observers and webcams also need to see the tally sheet & cumulation process. The cumulation process is the step in manual

¹² <https://www.timesunion.com/opinion/article/Hand-count-votes-to-reduce-errors-977654.php>

counts where the biggest problems can be seen or hidden. This rule needs to apply also to complete counts and recounts.

Proposed rule 20312(b) implements the law that observers may ask questions, ELEC 2300(a)(9)(B) also says observers have the right to get answers, which needs to be in the rules.

RANDOM SELECTION

Proposed rules 20313(b)(2)(A) and (D) let counties use a random number generator or spreadsheet to choose samples. Spreadsheets depend on software in a computer, and random number generators usually do. The Secretary of State, county officials and the public don't know when a computer's random number generator or spreadsheet is hacked to omit any tampered precincts or batches of ballots. These two approaches should not be allowed.

Proposed rules 20313(b)(2)(B) and (C) let counties roll dice or draw lots to choose each digit separately for a list of precincts or batches. This gives very uneven probabilities. In the rules' example of 123 precincts, there is a $\frac{1}{2}$ chance the first digit is 1, and

- There are 24 precincts from 100-123, so each has around $\frac{1}{2} \times \frac{1}{24} = \frac{1}{48}$ chance of selection
- There are 99 precincts from 001-099, so each has around $\frac{1}{2} \times \frac{1}{99} = \frac{1}{198}$ chance of selection.
- Actually #120-123 have highest chances, multiplying the chances for each of the 3 digits: $\frac{1}{2} \times \frac{1}{3} \times \frac{1}{4} = \frac{1}{24}$ chance of selection. Let's hope those precincts were accurate.

There are better ways,¹³ which the comments from California Voter Foundation, Verified Voting, California Common Cause and Brennan Center explain at length.

CHAIN OF CUSTODY

Proposed rule 20314(c) calls for seals, without recognizing their unreliability. Professor Appel a decade ago evaluated seals,¹⁴ and they can still be breached by children.¹⁵

Proposed rule 20314(d) calls for "procedures to ensure the security..." This over-promises. Procedures can address security, not ensure it, since bad actors bypass procedures. The rule needs to require that paper ballots in the 1% sample, before or after the 1% sample is tallied, must be compared publicly to the election machines' original ballot images, which Secretary Weber requires to be kept.¹⁶ The ballot images themselves need to be secured by using the scanners' digital signatures for each set of ballot images.¹⁷ Unlike seals and locks, checking against ballot images, and using images if paper has changed, does "ensure the security" of the chain of custody. Comments from the California Voter Foundation, Verified Voting, Common Cause and Brennan Center said ballot images "enable the election official to rely on the captured ballot image for counting." Image accuracy can be checked by comparing a sample of ballots and images when they are scanned.¹⁸

¹³ Cordero, Wagner & Dill, "The Role of Dice in Election Audits," 2006 <https://people.eecs.berkeley.edu/~daw/papers/dice-wote06.pdf>

¹⁴ <https://www.cs.princeton.edu/~appel/voting/SealsOnVotingMachines.pdf> "I demonstrated for the judge the complete removal and replacement of all seals with no visible evidence of tampering... The tamper evident seals are inspected and removed—but by whom?... the public must be able to receive training on detection of tampering of those particular seals."

¹⁵ <https://www.youtube.com/watch?v=vaOVIFnoljo> and http://www.votewell.net/locks.html#_Toc130299073

¹⁶ <https://elections.cdn.sos.ca.gov/ccrov/2021/may/21059sl.pdf>

¹⁷ Dominion: p.4 of https://files7.philadelphiavotes.com/announcements/Dominion_-_Redacted.pdf ES&S: Pp.27-28 of <https://sos.nh.gov/media/2wvdqgkb/es-and-s-response-to-nh-questionnaire.pdf>

¹⁸ Burke, Paul, "Count Votes; Check," 2022. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4178650

RECOUNTS

Proposed rule [20353](#)(c) changes *shall* to *may* for copies of relevant materials. This should change back to require copies, so requestors can be convinced and convince others about the results.

Proposed rules [20354](#)(a) and (b) let the initial request specify the order of batches, and any later changes are subject to approval. The rules need to let the requestor know reported vote totals by batch before the initial choice of batches, or allow changes without approval. All parties are served if the requestor can start with random or outlier batches and stop when convinced.

Proposed rule [20358](#) requires there be only 4 members in a recount board. This is an arbitrary limit on local discretion. A Connecticut citizen group has found it helpful to have a 5th member checking and encouraging other members to complete work accurately.¹⁹

Proposed rule [20361](#) authorizes each county to have its own policy for recording devices used by media, interested parties and observers. This authority will lead to needless argument and unequal access in different counties. Limiting interested parties and observers to the recording limits desired by media is unreasonable and arbitrary. Media usually want short recordings. Interested parties and observers benefit from recording at length. Recording devices protect elections from false accusations and poorly remembered incidents. The rule needs to allow interested parties and observers to record continuously, with the specific exceptions listed.

OPTIONAL RECOUNTS BY MEANS OF THE VOTING SYSTEM

Proposed rule [20370](#)(b) provides an option to recount with the “same methods used to tabulate the ballots originally.” This “same methods” unduly restricts the authority in Election law [15627](#)(a) for recounts “by means of the voting system used originally.” A more meaningful way to recount “by means of the voting system used originally” is to take advantage of all the procedures the voting system used to create, organize and digitally sign ballot images and cast vote records. The recount can analyze these images with independent software, compare to the original cast vote records, and provide fine-grained information on the sources of any differences. This re-use of the “voting system used originally” is more convincing than simply re-using the “same methods used to tabulate the ballots originally.” The independent analysis can be by a contractor paid by the requestor, and chosen by the requestor, subject to state rules, or by election officials, as Maryland²⁰ and South Carolina²¹ do statewide. This way of recounting saves the election office a large amount of work at a busy time, since they only need to turn over the image files to a qualified contractor, and do not need to re-feed thousands of ballots into the scanners.

Comments from the California Voter Foundation, Verified Voting, California Common Cause and Brennan Center said ballot images “enable the election official to rely on the captured ballot image for counting.” Image accuracy can be checked by comparing a sample of ballots and images when they are scanned.

¹⁹ Connecticut Citizen Election Audit Coalition (2011-01-12). [Report and Feedback December 2010 Bridgeport Connecticut Coalition Recount.](#)

²⁰ Maryland State Board of Elections, “Automated Ballot Tabulation Audit,” 2020. https://elections.maryland.gov/voting_system/ballot_audit_plan_automated_2020.html

²¹ South Carolina Election Commission, “Results Verification Audits,” 2023. <https://web.archive.org/web/20230404015235/https://scvotes.gov/elections-statistics/election-audits/>

SORTING IN MANUAL RECOUNTS

Proposed rule [20372\(a\)](#) requires sorting ballots by precincts and candidates and counting the stacks. Research shows that sort and stack is less accurate than read and tally.²² It is also less observable, which is especially sensitive in a recount. The rule should drop the high unnecessary and arbitrary cost, risk to ballots, and privacy risk to sort absentee and vote center ballots by precinct. If a recount applies to all or most precincts, teams can simply start tallying the unsorted batches from absentee voting and vote centers, without sorting by precinct. Tallying from the original batches lets the hand count for each batch be compared to the machine count, to isolate errors in each count. In fact proposed rule [20362](#) envisions totals by batch as an alternative to precincts. However, each team needs to have less than a full batch, so they cannot force the hand count to match a known machine count. Comparison of hand and machine batch totals is inherent in the 1% manual tally.

If a recount only applies in some precincts or styles, machine sorters can set them aside from the rest in a single tray, but do not need to sort by precinct.

Thank you for considering our comments.

Sincerely,

Note: All affiliations are for reference only and do not constitute an endorsement

Paul Burke - admin@VoteWell.net, California voter, poll worker in California, West Virginia, and Bosnia

Ian S. Patton - *Long Beach Reform Coalition*

Celeste Landry - poll worker (CA and CO), election canvass board member (CO), registered volunteer lobbyist on election bills (CO), helped to craft election bills(CO)

Ray Lutz - CitizensOversight.org, creator of AuditEngine.org, a ballot image auditing platform.

Mimi Kennedy - Election Issues Team, Progressive Democrats of America

Tim White, pollworker & election watcher, WA State

²²Goggin, Byrne & Gilbert, "Post-Election Auditing: Effects of Procedure and BallotType on Manual Counting Accuracy, Efficiency, and Auditor Satisfaction and Confidence," *ELECTION LAW JOURNAL* v.11, no.1, 2012. <https://www.liebertpub.com/doi/10.1089/elj.2010.0098>