



Colorado

Key References:

- Prior to any recount, canvass board MUST compare manual count of cast ballots counted on randomly-selected tabulators with the machine count from those tabulators. Machine recount may ONLY proceed if manual and machine counts match.** CRS § 1-10.5-102. Recounts for congressional, state, and district offices, state ballot questions, and state ballot issues. "...(3)(a) Prior to any recount, the canvass board shall choose at random and test voting devices used in the candidate race, ballot issue, or ballot question that is the subject of the recount. ?The board shall use the voting devices it has selected to conduct a comparison of the machine count of the ballots counted on each such voting device for the candidate race, ballot issue, or ballot question to the corresponding manual count of: (I) In the case of an election taking place in a county prior to the date the county has satisfied the requirements of section 1-5-802, the ballots; or (II) For an election taking place in a county on or after the date the county has satisfied the requirements of section 1-5-802, the voter-verified paper records. (b) If the results of the comparison of the machine count and the manual count in accordance with the requirements of subparagraph (I) or (II) of paragraph (a) of this subsection (3) are identical, or if any discrepancy is able to be accounted for by voter error, then the recount may be conducted in the same manner as the original ballot count. If the results of the comparison of the machine count and the manual count in accordance with the requirements of subparagraph (I) or (II) of paragraph (a) of this subsection (3) are not identical, or if any discrepancy is not able to be accounted for by voter error, a presumption shall be created that the voter-verified paper records will be used for a final determination unless evidence exists that the integrity of the voter-verified paper records has been irrevocably compromised."
- Canvass board conducts recount, canvass board may employ assistants, canvass board may require ANY documentary evidence re: votes cast or counted.** CRS § 1-10.5-107. Canvass board to conduct recount. "(1) Any county clerk and recorder or governing body required to conduct a recount shall arrange to have the recount made by the canvass board who officiated in certifying the official abstract of votes cast. If any member of the canvass board cannot participate in the recount, another person shall be appointed in the manner provided by law for appointment of the members of the original board. (2) Any canvass board making a recount under the provisions of this section may employ assistants and clerks as necessary for the conduct of the recount. (3) The canvass board may require the production of any documentary evidence regarding any vote cast or counted and may correct the abstract of votes cast in accordance with its findings based on the evidence presented."

Objectives of Recount

- Transparency.** Since CO's Constitution is clear that all government is founded upon the will of the People, and that all political power is vested in and derived from the People, and since elections are the mechanism by which citizens convey their will and consent, then the People and their representatives have inalienable right to full transparency in all aspects of election conduct, from the identity and eligibility of voters, through the authenticity of cast and counted ballots as originating from an eligible voter, through the accurate tabulation of all those authentic cast ballots originating from eligible voters. CO's citizens do NOT currently have that



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transparency, in practice. The canvass board, through its statutory authority to require any documentary evidence, can rectify that defect in administration and execution of elections, by seeking and examining all evidence required to ensure 100% transparency.

2. **Truth.** Under the current regime of election and voting systems, rules, and procedures, public officials' assurances are the only guarantee to citizens that, e.g. voter rolls are accurate, ballots are authentic, voter identity is confirmed before accepting ballots, and that tabulation of cast ballots is accurate in Colorado. Door-to-door canvassing by CO citizens, as well as analysis supporting a current lawsuit against CO's Secretary of State, have revealed that CO voter rolls and history are not accurate. And no election official reviews the approximately 200 thousand hours of ballot drop box video which should be available in CO each election, meaning that the video is no safeguard. Nor do election officials review other chain of custody evidence, such as USPS records of ballot receipt, processing, and delivery. Voter identity confirmation requirements, including the use of non-government, non-photo ID, and uncertified, untested, opaque signature verification (or unqualified amateur signature verification without instruments) in CO are so weak they provide no safeguard. Ballots bear no serial numbering and are not examined to ensure authenticity. Tabulation of cast ballots occurs on opaque, poorly tested, insecure, improperly certified voting systems, from which election officials do not preserve many statutorily-required records, which are never (let alone each election) examined by qualified cyber experts and, the purported safeguard of Risk-Limiting Audits (RLA) is conducted on uncertified, opaque hardware, with uncertified, opaque software, "randomly" seeded in a process the Secretary of State has failed to conduct according to her own rules (8 CCR 1505-1) for the last four years. Citizens have no obligation to trust public officials' assurances, and they have a right to verify the truth for themselves.
3. **Restoration of Trust.** A recount conducted in the public view, with examination of all evidence to confirm or refute the authenticity and accuracy of voters, ballots, and counts, can restore public trust in our elections, not on the basis of regurgitated messaging, nor narrative propaganda, but because citizens will be able to see what is true for themselves. This should happen by default in each and every election, and the suggestion that any state of affairs in which all citizens do not have unfettered, immediate, free access to all evidence for that self-verification of election process and results is normal is an affront to our Constitution and citizens sovereignty.

Method of Recount

According to CRS § 1-10.5-102(3)(a), prior to any recount, the canvass board must choose at random and test voting devices used for the race, ballot issue, or ballot question subject to recount, and must compare the machine count obtained during the election on those machines to "the corresponding manual count" of the ballots or voter-verified paper records.¹ "Manual count" has the same meaning as

¹ A "voter-verified/voter-verifiable paper record (VVPR) is the name for the record of voter ballot choices printed out by the voter as part of the process of casting their vote on the Ballot Marking Device (BMD) of a voting system, such as the Dominion Voting System Democracy Suite 5.13 ImageCast X or the Clear Ballot Group ClearVote 2.1.5 Voting System ClearAccess systems.



“hand-count,” which is not the counting of the ballots,² themselves, but the counting of the votes for each ballot choice, from those ballots. Several primary methods and multiple variations of hand-counting votes from ballots are known, have been demonstrated to be effective for the purpose, and have been evaluated by various researchers. The two primary methods of hand-counting ballots are known and referred to as

- 1) “read-and-mark,” where some number of individual “counters” either read the marks on the actual paper ballot themselves, or listen to someone reading the ballot marks out loud, then mark a tally sheet to indicate each vote, such that after all ballots have been read, the marks they have made may be added to confirm the number of votes cast by the respective electors for each choice in question.
- 2) “sort-and-stack,” where some number of individuals read the marks on the actual paper ballot themselves and then place each paper ballot in a corresponding stack, wherein every ballot in each stack has been read and confirmed to reflect a vote for the same ballot choice on the race or issue being counted/recounted, and then the number of ballots in each stack are counted to determine the counts for each choice in question.

There are many variations possible, such as:

- Having each counter independently read the ballot marks themselves, vs. having someone read the ballot marks out loud for all counters
- Having two or more independent counters each separately tallying marks
- Having video recording for real-time or auditing purposes which allows the viewing of the ballots and tally sheets such that the viewer of the video could effectively verify all ballot marks and tallies for themselves

There are also hybrid methods, such as “Sort and Stack, THEN Read and Mark,” where ballots are first read and sorted, then read either aloud or by each counter, with the counters keeping tally of the marks read from the ballots.

A 2012 study by Rice and Clemson University researchers, which has been repeatedly misrepresented as having established a “two percent” base error rate for hand-counting, actually showed a total mean error of between .48% and .96% for read-and-mark, and 1.47% to 2.13% for sort-and-stack methods. This is despite the fact that the materials being hand counted included both ballots for optical scanning (typical paper ballots and BMD-printed ballots/VVPR) as well as Voter-Verifiable Paper Audit Trail (VVPAT) printouts from both thermal printers and the “Prime III” ballot printer, the latter two (VVPAT) being more difficult to accurately read. This is also despite the fact that all of those ballots or VVPAT were not designed for ease and accuracy of human reading, but instead had as a primary purpose either that the ballots be machine-scannable (confining voter marks to a tiny, tiny fraction of total ballot page area) or that they are a record of the machine count, but one as difficult to read as a cash-register receipt, and for the exact same reason (the narrow, thermal, non-prose print). Furthermore, the Rice/Clemson study did not employ known techniques such batch-level reconciliation of the tallies from independent counters, or video recording of all ballots/tallies, either or both of which are likely to

² Counting the ballots, themselves, is part of the process of “balancing,” the term of practice for election officials with respect to the requirements of CRS § 1-7-307, which requires confirmation that the number of ballots to be counted from each ballot box not exceed the number of names entered on pollbooks as having voted.



reduce effective error rates to zero, and the latter of which provides an auditable, reviewable record as a safeguard, so that voters are not compelled to rely upon the ability or assurance of counters or officials, but can see the basis, tally, and count for themselves.

CRS § 1-7-307 prescribes some aspects of any hand-count (manual) method which must be observed. It states

"(1) The election judges shall first count the number of ballots in the box. If the ballots are found to exceed the number of names entered on each of the pollbooks, the election judges shall then examine the official endorsements. If, in the unanimous opinion of the judges, any of the ballots in excess of the number on the pollbooks are deemed not to bear the proper official endorsement, they shall be put into a separate pile and into a separate record, and a return of the votes in those ballots shall be made under the heading excess ballots. When the ballots and the pollbooks agree, the judges shall proceed to count the votes.

(2) Each ballot shall be read and counted separately. Every name and all names of joint candidates separately marked as voted for on the ballot shall be read and an entry made on each of two accounting forms before any other ballot is counted. The entire number of ballots, excepting excess ballots, shall be read, counted, and placed on the accounting forms in like manner. When all of the ballots, except excess ballots, have been counted, the election judges shall post the votes from the accounting forms.

(3) When all the votes have been read and counted, the ballots shall be returned to the ballot box, the opening shall be carefully sealed, and the election judges shall place their initials on the seal. The cover shall then be locked and the ballot box delivered to the designated election official, as provided in section 1-7-701.

(4) All persons, except election judges and watchers, shall be excluded from the place where the ballot counting is being held until the count has been completed."

The statute clearly requires that the read-and-mark method be used, and that two separate tally or "accounting forms" be used, but the statute does not prohibit use of sort-and-stack prior to read-and-mark, nor does the statute prohibit the use of two separate counters, each with an accounting form, nor the use of batch-level reconciliation between the counters independent "accounting forms," nor the use of video recording to enable voters to see for themselves, in real-time and as a permanent, auditable, archived election record, the ballots being counted and the tally or count from those ballots.

The attached precinct hand-count guide describes an approach to hand-counting which may be adopted in whole or in part to satisfy the requirements of CRS § 1-7-701 in conducting the manual count for comparison required by CRS § 1-10.5-102, and in conducting a full manual recount, should some factor prevent a machine recount (e.g. discrepancies from the comparison required by CRS § 1-10.5-102, or a court order or administrative order related to certification or suitability of voting equipment).

Documentary Evidence and Assistants

Canvass boards in CO have the statutory authority to "require the production of any documentary evidence regarding any vote cast or counted," "and may correct the abstract of votes cast in accordance with its findings based on the evidence presented," and should exercise that authority to obtain all



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documentary evidence related to the election races or issues they are recounting. A legitimate vote cast is necessarily the product of an eligible voter, an authentic cast ballot, and an accurate count of the voters' individual and aggregate vote choices from authentic cast ballots. The table below is not exhaustive, but details some of the documentary evidence canvass boards might request, the purpose or utility of the evidence in confirming the accurate election result, and the assistants which might be required to properly evaluate the evidence.³

DOCUMENTARY EVIDENCE	PURPOSE	ASSISTANTS
From the Secretary of State: EX-002 (Master Voter History List), EX-003 (Statewide Registered Voter List), CE-036 (Statewide UOCAVA Voter List), CE-068 (Voters with a Ballot), CE-077 (Rejected Cure Ballots), Rejected Ballots (from all days in the election), communication to/from the Electronic Registration Information Center (ERIC) or any other agency or organization or private party which identified names/person to be added/deleted/modified in CO voter rolls, records of requests and other communication sent to ballot printers, all signature files in SCORE for all voters reported by the SecState as having voted in the subject election	Confirm both voters' eligibility, status, and method of return (e.g. the EX-002 should show whether a voter returned their ballot via drop-box/USPS or voted in-person; the EX-003 should show whether voters were registered to vote in the jurisdiction in which they voted, and when that registration and residency occurred, etc).	Data analytics professionals to review data files. Canvassers to visit all or a sample of voters shown as having voted in the recount race/issue, to confirm data accuracy.
USPS IV-MTR data/records for all election materials mailed to/from any individual purported to be registered in and/or having voted in the subject election	Confirm that all ballots indicated by SecState data as having been either mailed to or received from registered voters are correlated with USPS data and images confirming those facts	Data analytics professionals.
SCORE/webSCORE Log files, records, and reports (e.g. security, vulnerability, penetration assessments).	Confirm the source and time-frame for all additions, changes, and deletions to SCORE records for voters, as well as for those	Cyber forensic professionals.

³ The scope and breadth of assistants required to evaluate all evidence necessary to actually verify the authenticity and accuracy of voters, ballots, and counts under the current regime of election and voting systems and procedures should be instructive: there is no way under the current system for a canvass board to satisfy their sworn obligation to verify the accuracy of election results without this evidence and assistance to evaluate it, which they should require and undertake for every single election, but canvass boards are asked (if not expected and compelled) to do precisely this certification-without-evidence, repeatedly.



	individuals purported to be/have been registered in and/or purported to have voted/not voted in the election subject to recount, and to confirm whether security, vulnerability, and penetration assessments for SCORE indicate potential for compromise or alteration of SCORE data	
Ballot Drop-Box Video, logs, manifests	Confirm that, e.g. no individual trafficked ballots (deposited more than 10 ballots), and that the number of ballots observable as having been deposited in each ballot drop box for a given period (e.g. a ~24 hour period between ballot drop-box pick-ups by election workers) corresponds to the number ballots recorded in logs and manifests as having been picked up from that drop-box, during that period, and that no unrecorded, unlogged, uncorrelated ballot deposits or pick-ups occurred, and to confirm that all required ballot drop-box video and logs exist	Volunteers/professional accountants to observe video and correlate observations with logs and manifests and other records
Cross-Shipment Records	Confirm that all ballots indicated as received from other counties are correlated to records at each end, and to identify origin and method of return so that all required USPS IV-MTR data and drop-box and other records may be obtained for review by the canvass board	Volunteers/professional accountants to observe video and correlate observations with logs and manifests and other records
Ballot printer records (both records of invoices, contracts, payments, and deliveries from commercial ballot printers and all records (paper consumed, pages printed, electronic log files) from any devices used to print ballots	Confirm that the provenance of all ballots cast is correlated to records of ballot printing, and that no excess ballots were produced or circulated or delivered which might facilitate the introduction of fraudulent ballots	Accountants



Automatic Signature Verification records, including all agreements, contracts, logs, configuration guidance and records, and communication related to ASV provider/vendor/machine access to or communication with or file/data provisions to/from SCORE or third-parties maintaining	Confirm that ASV use and configuration is/was secure, consistent with Federal and State statutory requirements, ensured or enabled the ensurance of authenticity for all affidavit signatures and their correlation to the respective registered voter.	Accountants Data analytics professionals Cyber forensic professionals Questioned Document Examiners
BallotTrax data and records, including all information, data, files, or communication with SCORE, intermediary services (e.g. proxy or direct access to IV-MTR data and communications).	Correlation of BallotTrax data and notifications to the requests of CCRs and the communications between SCORE and ballot printers, and the executed actions of ballot printers, and the	Data analytics professionals
Paper ballots and all returned ballot envelopes	Examination of paper ballots to confirm that, e.g. no ballot other than those identified as duplicates (duplicated on machines) bears machine vote marks, and that all ballots (or the number of ballots, from the total) indicated as having been sent out and/or received through USPS or drop-box bear physical indicators of having been folded, and that ballot paper and print is consistent with the source (either the official, contracted ballot printer, or the BMD or other machines present in the counties/VSPCs in question). Examination of ballot envelopes to confirm that all affidavit signatures were made by hand in ink, and none were printed by machines. Examination of all or a sample of signatures to compare Correlation to examine bar codes on all returned ballot envelopes for the purpose of correlating that information	Questioned Document Examiners (professional document examiners, trained/educated, equipped, and certified to the same standard required for documentary testimony in courts of law). Cyber forensic professionals



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	with USPS IV-MTR data and SecState records	
Voting system log files specified in the 2002 Voting System Standards for all components of any voting system used (mandatory under Colorado statute and asserted to be generated, preserved, and thus available by the SecState's certification of any voting system). E.g. all Windows logs and Applications and Services Logs from components using a Windows (Server, 10, 11) operating system, and all Application, System, Event, and Radio logs from components using an Android operating system, and all log files from any router or other communication device connected to any voting system component, and all log files from any radio device (e.g. a wireless or Internet-of-Things (IoT) router) operating within the vicinity of any voting system component 	Confirm that voting systems operated in compliance with their certifications and Colorado law, with no unauthorized access or operation taking place. 	Cyber forensic professionals 

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