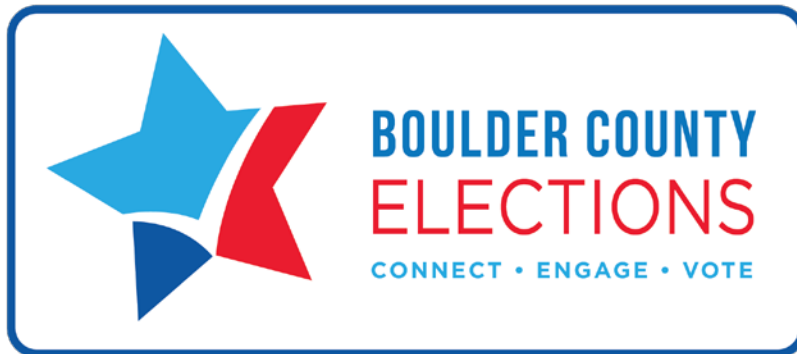




# **Logic and Accuracy Test Information Packet 2018 City of Longmont Special Election - Ward 1**

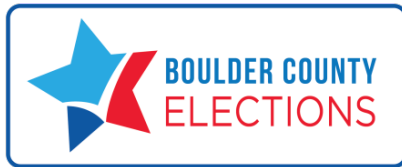
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**Boulder County Clerk & Recorder  
Elections Division**

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Boulder County Elections

## Boulder County Clerk and Recorder

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### **AGENDA**

### **LOGIC AND ACCURACY TEST (LAT)**

### **January 30, 2018**

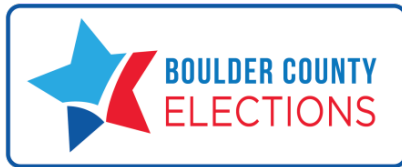
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#### **Planned Schedule:**

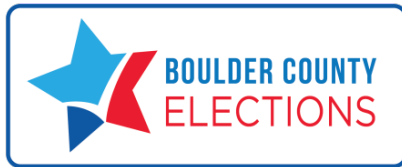
Please check in early at Elections Office front desk to obtain badge

- Tuesday, January 30 9:30am – 4:30pm (LAT and Board Sign-Off)
  - Wednesday, January 31 2:00pm – (Contingency Day)
- 

1. Storage of personal items (east wing lockers)
  - The following items are prohibited in the testing area:  
Personal belongings, cell phones, cameras, recording devices, memory devices, laptops, food or beverages
2. Welcome
  - Sign-In and complete name tags with affiliations
  - Review and sign oaths
  - Obtain Information Packet
  - Introduction and Overview
  - Testing Board equipment selection review
3. Information packet contents
  - Agenda
  - Guidelines for Observers (Page 3)
  - Requirements of the LAT (Page 4)
  - Test Board Procedures (Page 6)
  - Sample Manual Verification Worksheet (Page 14)
  - Statute and Rule references (Page 18)
4. Ballot marking and tally
  - One (1) packet of 25 ballots provided to each test board member
  - Vote the test ballots
  - Use Manual Verification Worksheet to create a team tally (2 person process)



5. ImageCast X (ICX) and Image Cast VoterActivation (ICVA) Test (Ballot Marking Device)
  - Testing Board shall validate contest titles and content
  - Cast all Testing Board ballots on ICX
  - Complete device qualification form for selected ICX and ICVA , Audio and printers
6. Tabulation Tasks
  - Take the voted mail ballots and the ICX voted ballots to be scanned and Adjudicated
  - Tabulate and verify results against team tally
7. Scanner Test (Mail and In-Person paper ballot counting device)
  - Inspect ballots for damage or improper markings
  - Process ballots on scanner
  - Adjudicate applicable ballots in Adjudication
  - Tabulate and verify results against team tally
8. Complete device qualification form for selected scanner, prepare Testing Results (optional attendance)
  - Tabulate scanned batches to create cumulative results for the LAT
  - Create cumulative result comparisons
  - Collect, organize and complete test documentation
9. Resetting and sealing of equipment
  - ICX and ICVA equipment reset and sealed
  - Scan Stations reset
  - Results Tally and Reporting (RTR) reset
10. Completion of testing
  - Review test information and results
  - Complete device qualification form for Tally
  - Complete Statement of Qualification
11. Secure storage of all LAT material and ballots



## **GUIDELINES FOR OBSERVERS AT THE LOGIC AND ACCURACY TEST**

- The following items are prohibited in the testing area:  
Personal belongings, cell phones, cameras, recording devices, memory devices, laptops, PDAs, food and beverages
- The LAT test shall be open to representatives of the political parties, the press, and the public to the extent allowable and pursuant to section 1-7-509(2)(b), C.R.S. The designated election official may limit the number of representatives from each group because of space limitations. (Rule 11.3.2(b))
- Each major political party, minor political party, ballot issue committee that has an issue on the ballot, and coordinating entity may designate one person, who shall be allowed to witness all public tests and the counting of pretest votes. (CRS 1-7-509(2)(b))
- If an observer or designee hinders or disturbs the test process, the designated election official may remove the person from the test area. An observer or designee who has been removed from a public test may be barred from future tests. (CRS 1-7-509(2)(b))
- The absence of observers or designees shall not delay or stop the public test. (CRS 1-7-509(2)(b))
- The election official will provide name tags and a sign-in sheet (everyone participating in or observing the test must wear a name tag and must sign-in). A copy of the LAT Information Packet and the Secretary of State LAT Rules will be available for watchers and observers.
- The Logic & Accuracy Testing will take substantially all of the Elections staff time and resources today. Therefore, any questions should be directed to Justine Vigil-Tapia, Elections Coordinator or her designee. At the conclusion of testing a representative of the Clerk's testing staff will be available for questions.



## **Requirements of the LAT**

### **Preparation:**

- The county has prepared a test deck that includes every ballot style and precinct in the election
- The county test deck includes a mark for every voting position for every contest candidate, situations where a voter may choose two or more options, and overvotes and undervotes for each contest
- Testing board is comprised of one registered elector from each major political party
- Test board members are registered in Boulder County
- 25 test ballots have been provided to each test board member
- All ballots are marked “TEST”
- Test ballots are marked using the instructions printed on the ballot
- Testing Board has retained a record of the tally (Manual Verification Worksheet)
- Each type of voting device and each type of ballot is represented in testing
- Appropriate number of devices were made available for the test
- Test board members have randomly selected the machines to test

### **ICX and ICVA Test (Ballot Marking Device)\*:**

Test Board members completed the following:

- Verified that the ICX public counter was reset to zero and confirmed that the View Session Report on the ICVA has no cards activated
- Separately cast member’s test board ballots on the selected ICXs
- Cast at least one ballot using audio ballot playback and accessible input devices
- Reviewed the ICX Public Counter after closing polls to verify machine count matched predetermined ballot count

### **Scanner Test (Mail and In-Person Paper Ballot counting device)\*:**

Test Board members completed the following:

- Verified the Total Ballots Scanned is reset to zero
- Observed the separate counting of county and member’s test ballots on at least one scanner
- Reviewed reports generated to verify machine count matched predetermined ballot count

### **Tabulation:**

Test Board members completed the following:

- Verified that the Election Summary Report showed the public counter was reset to zero
- Observed the separate tabulation of all test ballots from electronic and paper ballot testing
- Reviewed Election Summary Report to verify the machine count matched predetermined ballot count
- Obtained results report for comparison against the predetermined tally

### **Comparison:**

Test Board members completed the following:

- Verified that the results report generated from the scanner exactly corresponded to the Testing Board member’s predetermined tally of the votes.

*\*Scanner and ICX testing may be done in parallel, when applicable.*



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### **Storage of test material:**

- All test materials were secured in a sealed metal cage when not in use
- Each Test Board member verified the seals and initialed the chain-of-custody log
- If records were opened for inspection, at least two election officials verified the newly attached seals and initialed the chain-of-custody log

### **Cumulative Results of LAT:**

- All ICX and Mail Ballot results were tabulated together to create cumulative results
- Tabulation results have been saved for ENR (Election Night Reporting) testing

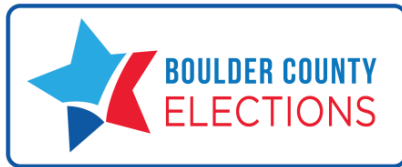
### **Resetting and sealing of equipment at the end of the test:**

- Testing Board watched the county reset and seal each voting device
- Testing Board and Clerk verified the documented seal number attached to each voting device

### **Statement of Qualification:**

Testing Board and Clerk signed a written statement attesting to:

- The qualification of each device successfully tested
- The serial number of the seal attached to the voting device at the end of the test
- Any problems discovered, and
- Any other documentation necessary to provide a full and accurate account of the condition of a given device



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### Logic and Accuracy Test (LAT) Test Board Procedures

#### Common acronyms:

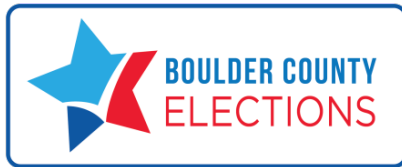
- **CVR:** Cast Vote Record
- **ICC:** Image Cast Central (Scan Station also referred to as Tabulator)
- **ICVA:** Image Cast Voter Activation laptop
- **ICX:** Image Cast X Ballot Marking Device (BMD)
- **MVW:** Manual Verification Worksheet (To create your record of tally)
- **RTR:** Results Tally and Reporting (Tabulates results and generates voting reports)

#### Purpose of LAT (CRS 1-7-509 and Rule 11):

The purpose of the LAT is to test the compatibility of the election ballots through the scanning and tabulation equipment to confirm that every voting position on the ballot is accurately counted where a properly marked selection is made. It also includes testing the ballot marking devices (ICX).

#### Test Board member responsibilities:

- You will be participating in all parts of the LAT, ensuring all requirements are met.
- You will attest to this at the end of the process and document the successful completion of testing.
- No process shall be delayed due to the absence of a test board member.



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### Ballot Marking:

The county provides a packet of test ballots to each test board member for use in testing. Test Board member packets include 25 unique precinct district style ballots. This is in addition to the ballots prepared to fulfill the county test deck requirements.

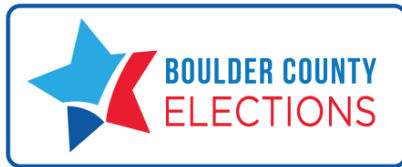
### Steps

1. Confirm the appropriate number of ballots is included, and that they are all labeled “TEST” and that they are numbered at the top, 1 through 25.
2. Mark your ballots following the instructions printed on the ballots.
  - Use black or blue ink pen and fill in the oval completely; no X or √.
  - Voting for more than the maximum number of allowed choices is considered an Overvote and will not be counted.
  - Voting for less than the maximum number of allowed choices is considered an Undervote.
3. Voter instructions for correcting a mistake:

*NOTE: Ballots that are damaged or improperly marked will be reviewed and/or rejected in the scanner portion of testing. Catching and correcting a mistake immediately prevents delays in testing later.*

Choice A	<input type="radio"/>	(Fill in the circle to the right of your choice)
<del>Choice B</del>	<input checked="" type="radio"/>	(Draw a line through the incorrect selection)

- If a mistake (wrong choice, stray mark, hesitant mark) is made in a contest that you did not intend to vote, make a written note in the contest area to clarify your voting intent and/or request a replacement ballot from staff.
4. Overvotes on ICX:
    - Test ballots are used for the electronic portion of voting, which does not allow for overvotes. Paper test ballot overvoted contests will be left blank on the ICX and reflect as blank contest on the printed ballot.
  5. When finished marking your paper ballots, verify the ballots are in sequential order (1-25 or 1-10 on top right corner) and alert staff that you are ready to create your tally.



### Creating the tally:

The county will pair up each member with another individual and provide you with a Manual Verification Worksheet (MVW). They will also assign you a team number.

Test Board members are then provided two sets of MVWs.

- Set 1 will include columns to capture votes for ballots 1 through 12, totals for Set 1, totals for Set 2, and the Grand Total (tally) for each contest option.
- Set 2 will include columns to capture votes for ballots 13 through 25, and totals for Set 2.

For each set of ballots, use the following procedure to create a tally for your test ballots:

1. Print both participant names on the first page of your MVW. This document will be available to the public; please do not add your signature.
2. Collect and organize the ballots in sequential order, confirm you have the appropriate number of ballots.
3. Starting with ballot #1, Person A reads aloud the ballot number recorded in the top right corner while Person B verifies this on the MVW.
4. Person A reads aloud each contest name and contest selection made, indicating any voting marks that are outside the prescribed voting instructions.
5. Person B will record the selections read aloud by Person A on the manual verification worksheet by making a slash mark for the appropriate contest option read, and will make notation of any abnormal markings as indicated.
  - If a contest has not been voted, a slash mark must be recorded in the Undervote category for that contest.
6. When all ballots have been recorded, team members trade roles to verify the accuracy of the MVW, noting and resolving any discrepancies found.
7. For each MVW set, the team then adds up the selections for each contest option and records this number in the applicable Total field.
  - It is extremely important to validate each other's calculations.
8. Testing Board Set 2 Totals are then transferred to the first set in the column labeled "Set 2 Total", and the team adds the totals from Set 1 and Set 2 to create the Grand Total (team tally). Calculators are provided.
9. After verification has been completed, teams will provide their MVW to an election support staff member.
10. The MVW is copied by support staff, initialed by the team members, and then entered into the electronic cumulative manual verification spreadsheet.
  - By initialing the first page of the MVW, teams are confirming they have verified it to be accurate and that all resolution issues have been identified and recorded.

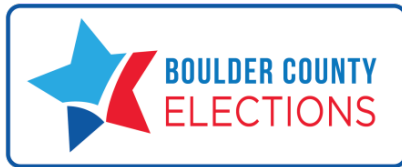


### **ICX and ICVA Test (Ballot Marking Device):**

The ICX is a Ballot Marking Device (BMD) that visually displays or audibly presents ballots and allows voters to print a paper ballot. An ICX BMD also provides voting accessibility to voters who may be otherwise unable to mark a paper ballot privately and independently. It includes an audio ballot playback feature with headphones, and can accept adaptive devices for voters with mobility impairments.

You cannot OVERVOTE on an ICX BMD. For ballots containing an OVERVOTE, the team should confirm that no OVERVOTE is possible, and then change the contest to a BLANK CONTEST for reconciliation purposes. Please consult with the election support staff to update your MVW accordingly.

1. At the start of ICX voting, a “zero” count is witnessed by the Testing Board for verification that the device has been reset and the public counter is at zero. The Testing Board will also confirm there are no voter activation cards reported in the View Session Report on the ICVA.
2. Team paper ballot(s) are brought to the selected device.
  - a. Testing Board is required to separately cast their full set of ballots (25).
    - ✓ Validate the audio and content using one applicable district ballot as their guide. They will also verify their selections on the completed ballot.
    - ✓ Using the ICX Review Screens the Board will confirm that the documented choices match the paper ballot (overvotes reflecting as undervote or blank contest).
    - ✓ The participant will then print all ballots from the ICX printer and confirm that the documented choices match the paper ballot (overvotes reflecting as a blank contest).
3. Organize the ballots so they are back in numeric order, matching the MVW. This helps members quickly resolve any discrepancies in reconciliation, if necessary.
4. Working with a partner, members then cast all their test ballots on the device. All ballots are cast visually and audibly, in order to verify accuracy of the audio, content, and titles. NOTE: Except for ballot instructions, the audio for the ICX ballot will be consistent with the paper ballot content
  - Person A
    - ✓ Compares audio against the paper ballot being voted
    - ✓ Makes the selection on ICX that matches the paper ballot selection once audio is verified
  - Person B
    - ✓ Compares audio against the ICX screen for the ballot being voted
    - ✓ Verifies that the ICX selection made matches the paper ballot selection



5. Test Board members must cast one ballot using audio ballot playback and accessible input devices.
  - Person A
    - ✓ Listens to audio instruction and use accessible input devices (paddles) to make ballot selections
  - Person B
    - ✓ Verifies that the ICX selection made matches the paper ballot selection
6. Before printing the ballot, the team must verify that the ICX Review Screen matches the paper ballot selections and MVW.
7. Team initials the paper ballot after the ICX printed ballot has been verified, attesting it matches with the paper ballot selections.
8. The participant puts a matching number in the upper right hand corner on the ICX ballot that coincides with the number of the paper ballot used.
9. When all ballots are cast, the team completes a device qualification form, confirming the content is accurate, and that the selected ICX, Audio, and associated ballot printer devices are functioning properly.

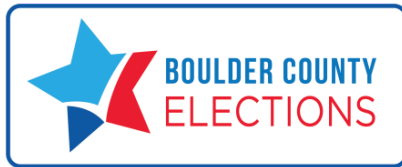
**Scanner Test (Mail and In-Person paper ballot counting device):**

The scan station is designed to capture an image of a voter's paper ballot, process the image of that ballot and capture the voter's choices. These are referred to as Cast Vote Records (CVRs).

This test ensures properly marked choices are being accurately captured and recorded; we want to make sure that a choice for Candidate A is being recorded as a vote for Candidate A, and not Candidate B and that there is compatibility between the ballots (proper printing and alignment), and the equipment.

The adjudication station provides for the resolution of voter intent as prescribed by the Colorado Secretary of State. Ballots that have been over voted and properly corrected will be flagged and adjudicated per state guidelines.

1. The ballots are reviewed by staff to look for damaged and improperly marked ballots that would require manual review or duplication during the election cycle.
  - Damaged ballot: A ballot that is torn, bent, or otherwise mutilated or rendered unreadable, so that it cannot be processed by the ballot scanner. (Rule 1.1.14)  
Damaged ballots include:
    - ✓ All ballots that contain a foreign substance that could interfere with the ballot scanner (e.g. food, drink, etc.)
    - ✓ Ballots that are marked in a medium or manner that cannot be detected by a ballot scanner
  - Improper markings include: X's or V's as well as obvious stray marks, hesitant marks, incomplete marks or parts of written notes that are within the target area of a contest option where no other choice has been made.



2. Team ballots (Mail Ballot and ICX printed) are brought to a selected scan station.
3. At the ICC, the Testing Board will confirm that the Total Ballots Accepted on the scan screen is at zero and that there are no batches listed in the Batch Reporting section of the Configuration screen.
4. Team ballots are processed on the scanner and votes captured.
  - Ballots are scanned in and saved, to capture and process ballot images
  - Scan count is validated by the team
  - Applicable ballots are adjudicated for voter intent following state rule and guidelines
  - The team will be provided a device qualification form to complete after tabulation

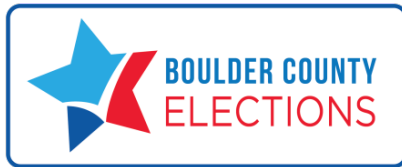
**Scanner results tabulated and verified:**

The RTR application in the Tally Room tabulates vote records to produce combined election results. This process confirms that votes are accurately tabulated and aggregated by the scanner and tabulation system.

1. Before beginning marking of ballots, the RTR Election Summary Report showing “0” votes cast will be presented to the Testing Board for verification that the system has been reset and no scan batches are showing in RTR Results.
  - Both team members print their name and date on the report, documenting that it has been verified.
2. After tabulation, an Election Summary Report by Tabulator (ICC) will be created for the isolated tabulation of the team’s ballots.
3. A separate Election Summary Report will be generated for paper ballots and ICX printed ballots.
4. The team compares the results report to their team tally (MVW) to confirm that the system has accurately captured their votes.
5. When the team concludes the counts to be accurate, both team members print their name and date on the results report along with the date, attesting to the accuracy of the count and machine.
6. Team members complete the device qualification forms for the ICC, attesting to the successful completion of testing for the scanner device.

**Discrepancy resolution (in order of escalation):**

1. Review for entry and recording errors
  - Review MVW for too few or too many votes captured
  - Review ballots with MVW for incorrect recording and recount if needed
  - Review Adjudication and Audit Marks for resolution differences (if applicable)
  - Review comparison and recount if needed (if applicable)
2. If error is identified as a hardware or software error on single device
  - Validate other tested equipment was not impacted
  - Mark device unsatisfactory, replace and test alternative/new device



3. If error is identified on more than one device and devices are failing in similar fashion
  - Test multiple devices that could reasonably have same error
  - Mark devices unsatisfactory, replace and test alternative/new devices
  - If enough resources are not available for replacement, error shall be corrected and retesting will be completed
4. If error is identified as a software or ballot programming error
  - Alert LAT DEO for correction
  - Correct software or ballot programming error and restart testing from beginning

#### **County Test Deck on Scanners:**

The county is required to prepare a test deck of ballots that includes every ballot style and, where applicable, precinct. The county test deck must include a sufficient number of ballots to:

- Mark every vote position for every contest
- Allow for situations where a contest permits an elector to vote for two or more positions
- Include overvotes and undervotes for each contest

In addition to the packets provided to the Testing Board, the county has prepared a deck and tally (MVW) that meets the above requirement.

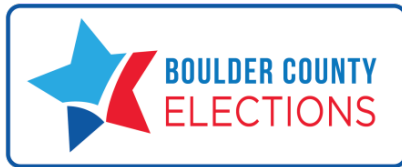
As is required for the Test Board member ballots, the county ballots are counted on one or more scanners, and then tabulated for comparison against the county tally (MVW). The Test Board will oversee this process, and verify the results for accuracy and completeness.

1. The County Test Deck is scanned in to an ICC reserved for the County Test Deck
2. After tabulation, an Election Summary Report by Tabulator (ICC) is created for the isolated tabulation of the County Test Deck
3. Result reports are generated and entered into the cumulative results spreadsheet

#### **Prepare Results (optional attendance):**

When all individual results have been verified, the county will create an Election Summary Report and Cumulative Result Report that includes all tested ballots. The reports will be reviewed with the Testing Board at the end of the LAT.

1. Cumulative Result reports are generated for comparison
2. Cumulative tally and result comparison summaries are created and checked for error
3. Testing documentation is collected and organized
4. Statement of Qualification document is drafted



### **Resetting and sealing of equipment:**

After testing, the Testing Board must watch the county reset and seal each voting device, as applicable. As part of the Statement of Qualification, the Testing Board and Clerk must attest to the seal number attached to the voting device at the end of testing.

1. Testing Board witnesses the resetting of scan stations and Results Tally and Reporting, verifying that the Total Ballots Accepted on the ICCs is “0” and that the Election Summary Report is regenerated and shows “0” votes cast.
2. Testing Board witnesses the resetting and sealing of the ICX and ICVA equipment, verifying the seals number attached to each device.

### **Completion of Testing:**

After the devices are reset and sealed, the results of all testing is reviewed with the Clerk and Testing Board, along with testing documentation. The Testing Board and the county clerk must sign a written statement attesting to the qualification of each device successfully tested, the number of the seal attached to the voting device at the end of the test, any problems discovered, and any other documentation necessary to provide a full and accurate account of the condition of a given device.

### **Steps**

1. Test information and results are reviewed with the Clerk and Testing Board
2. Cumulative results are verified by the Testing Board
3. Testing Board completes the device qualification form for Tally
4. Testing Board and Clerk completes the Statement of Qualification

### **Secure storage of all LAT materials and ballots:**

The county must keep all test materials, when not in use, in a durable, secure box. Each member of the Testing Board must verify the seals and initial the chain-of-custody log maintained by the county clerk. If the records are opened for inspection, at least two election officials must verify the seals and initial the chain-of-custody log.

Republican - Part 1 of 2

Contests and Options	Ballot 1	Ballot 2	Ballot 3	Ballot 4	Ballot 5	Ballot 6	Ballot 7	Ballot 8	Ballot 9	Ballot 10	Ballot 11	Ballot 12	Sheet 1 Total	Sheet 2 Total	Grand Total (tally)
<b>City Council Ward 1 (vote for one)</b>															
Russ Lyman	<del>1</del>	1	1	1	1	1	1	1	<del>1</del>	1	1	1	2	3	5
Tim Waters	1	<del>1</del>	<del>1</del>	1	1	1	1	1	1	<del>1</del>	<del>1</del>	1	4	4	8
Joshua Goldberg	1	1	1	<del>1</del>	<del>1</del>	<del>1</del>	1	1	1	1	1	<del>1</del>	4	6	10
Overvote	1	1	1	1	1	1	<del>1</del>	1	1	1	1	1	1	0	1
Undervote	1	1	1	1	1	1	1	<del>1</del>	1	1	1	1	1	0	1

SAMPLE

**1-7-509. Electronic and electromechanical vote counting - testing of equipment required - definition.** (1) (a) An electronic or electromechanical voting system shall be tested at the conclusion of maintenance and testing. The tests shall be sufficient to determine that the voting system is properly programmed, the election is correctly defined on the voting system, and all of the voting system's input, output, and communication devices are working properly.

(b) The designated election official shall conduct at least three tests on all electronic and electromagnetic voting equipment, including a hardware test, a public logic and accuracy test conducted in accordance with subsection (2) of this section, and a postelection test or audit conducted in accordance with rules promulgated by the secretary of state. Each type of ballot, including mail, provisional, and audio ballots, shall be tested in accordance with rules promulgated by the secretary of state. The tests must ensure that the equipment will correctly count the votes cast for all offices and on all ballot questions and ballot issues and that the voting system will accurately count ballots of all types.

(c) (I) For all partisan elections, the designated election official shall select a testing board comprising at least two persons, one from each major political party, from the list provided by the major political parties pursuant to section 1-6-102.

(II) For all nonpartisan elections, the designated election official or coordinated election official, as applicable, shall select a testing board comprising at least two persons who are registered electors.

(III) Repealed.

(2) (a) A public test of voting equipment shall be conducted prior to the commencement of voting in accordance with this section by processing a preaudited group of ballots produced so as to record a predetermined number of valid votes for each candidate and on each ballot question or ballot issue. The test shall ensure that the system accurately records votes when the elector has the option of voting for more than one candidate in a race. The test shall ensure that the voting system properly rejects and does not count overvotes and undervotes.

(b) The public test shall be open to representatives of the political parties, the press, and the public, subject to the rules promulgated by the secretary of state pursuant to subsection (6) of this section. Each major political party, minor political party, ballot issue committee that has an issue on the ballot, and coordinating entity may designate one person, who shall be allowed to witness all public tests and the counting of pretest votes. If an observer or designee hinders or disturbs the test process, the designated election official may remove the person from the test area. An observer or designee who has been removed from a public test may be barred from future tests. The absence of observers or designees shall not delay or stop the public test.

(c) The testing board shall convene and designate at least one member to represent the board during the testing, sign the necessary reports, and report to the board. The programs and

ballots used for testing shall be attested to and sealed by the board and retained in the custody of the designated election official. The absence of a member of the testing board shall not delay or stop the test.

(d) Upon completion of the testing conducted pursuant to this section, the testing board or its representative and the representatives of the political parties, ballot issue committees, and coordinating entities who attended the test may witness the resetting of each device that passed the test to a preelection state of readiness and the sealing of each such device in order to secure its state of readiness.

(e) The testing board or its representative shall sign a written statement indicating the devices tested, the results of the testing, the protective counter numbers of each device, if applicable, the number of the seal attached to each device upon completion of the testing, any problems reported to the designated election official as a result of the testing, and whether each device tested is satisfactory or unsatisfactory.

(3) Notice of the fact that the public test will take place shall be posted in the designated public place for posting notices in the county for at least seven days before the public test. The notice shall indicate the general time frame during which the test may take place and the manner in which members of the public may obtain specific information about the time and place of the test. Nothing in this subsection (3) shall preclude the use of additional methods of providing information about the public test to members of the public.

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(4) (a) If any tested device is found to have an error in tabulation, it shall be deemed unsatisfactory. For each device deemed unsatisfactory, the testing board shall attempt to determine the cause of the error, attempt to identify and test other devices that could reasonably be expected to have the same error, and test a number of additional devices sufficient to determine that all other devices are satisfactory. The cause of any error detected shall be corrected, and an errorless count shall be made before the voting equipment is approved. The test shall be repeated and errorless results achieved before official ballots are counted.

(b) If an error is detected in the operation or output of an electronic voting device, including an error in spelling or in the order of candidates on a ballot, the problem shall be reported to the testing board and the designated election official. The designated election official shall correct the error.

(c) A voting device deemed unsatisfactory shall be recoded, repaired, or replaced and shall be made available for retesting unless a sufficient number of tested backup devices is available to replace the unsatisfactory device. The backup device may not be used in the election unless the testing board or its representative determines that the device is satisfactory. The designated election official shall announce at the conclusion of the first testing the date, place, and time that an unsatisfactory device will be retested, or, at the option of the testing board, the designated election official shall notify by telephone each person who was present at the first testing of the date, place, and time of the retesting.

(5) The designated election official shall keep records of all previous testing of electronic and electromechanical tabulation devices used in any election. Such records shall be available for inspection and reference during public testing by any person in attendance. The need of the testing board for access to such records during the testing shall take precedence over the need of other attendees for access so that the work of the testing board will not be hindered. Records of testing shall include, for each device, the name of the person who tested the device and the date, place, time, and results of each test. Records of testing shall be retained as part of the official records of the election in which the device is used.

(6) The secretary of state shall promulgate rules in accordance with article 4 of title 24, C.R.S., prescribing the manner of performing the logic and accuracy testing required by this section.

**Rule 11. Voting Systems****11.1 Voting system access**

- 11.1.1 The designated election official must securely store election setup records. Only persons with the clerk's written authorization may access the records.
- 11.1.2 The county clerk must deputize employees who are authorized to prepare or maintain the voting system or election setup records before the election.
- 11.1.3 In accordance with section 24-72-305.6, C.R.S., all permanent and temporary county staff and all vendor staff who have access to the voting system or any voting or counting equipment must pass a criminal background check. A person convicted of an election offense or an offense containing an element of fraud may not have access to a code, combination, password, or encryption key for the voting equipment, ballot storage area, counting room, or tabulation workstation.

**11.2 Voting System Inventory**

- 11.2.1 The designated election official must maintain an inventory record for each electronic vote-tabulating device used in an election. The record must include the manufacturer, make, model, serial number, hardware/firmware/software version or release number, hash value documentation where applicable, date of acquisition, description of any services, repairs, maintenance, upkeep, and version upgrades, and the dates the services were performed.
- 11.2.2 If the inventory is in electronic format, it must be exportable to a comma separated (CSV), excel spreadsheet (XLS or XLSX), or quote or tab separated (TXT) file before delivery to the Secretary of State.
- 11.2.3 The designated election official must file the inventory with the Secretary of State no later than ten days before the election for use in the Logic and Accuracy Test and the Post-Election Audit.

**11.3 The clerk must perform a hardware diagnostic test and a logic and accuracy test.****11.3.1 Hardware Diagnostic Test**

- (a) The designated election official must perform the Hardware Diagnostic Test before the election on each device that the designated election official will use in the election, including spare or back up devices. The test must include the following devices and provide the following information:
  - (1) All input and output devices;
  - (2) Communications ports;
  - (3) System printers;
  - (4) System modems when applicable;
  - (5) System screen displays;
  - (6) Boot performance and initializations;

- (7) Firmware loads;
  - (8) Software loads;
  - (9) Display of firmware or software hash value (MD5 or SHA-1) when possible;
  - (10) Confirmation that screen displays are functioning; and
  - (11) Date, time and calibration of systems.
- (b) The designated election official must seal each device upon the successful completion of the test and retain documentation of the seal information and all records in accordance with section 1-7-802, C.R.S.

#### 11.3.2 Logic and Accuracy Test

- (a) The county clerk must conduct the public Logic and Accuracy Test no later than the 18<sup>th</sup> day before election day.
- (b) The county must ensure that the Logic and Accuracy Test is open to the extent allowable in accordance with section 1-7-509(2)(b), C.R.S. The county clerk may limit the number of representatives from each group because of space limitations.
- (c) Preparing for the Logic and Accuracy Test
  - (1) The county must prepare a test deck of ballots that includes every ballot style and, where applicable, precinct. The county test deck must include a sufficient number of ballots to mark every vote position for every contest including write-in candidates, allow for situations where a contest permits an elector to vote for two or more positions, and include overvotes and undervotes for each contest. The county test deck must include at least one write-in vote for each qualified write-in candidate so that all qualified write-in candidate names will appear in the LAT result uploaded to ENR as required by Rule 11.10.3.
  - (2) The county must convene a Testing Board of one registered elector from each of the major political parties. Testing Board members must be registered to vote in the county and be sworn in as election judges.
  - (3) The county must provide at least 25 ballots that are clearly marked as test ballots to each Testing Board member.
  - (4) Testing Board members must mark their test ballots following the instructions printed on the ballots and retain a record of the tally.
  - (5) The Testing Board must test the ballots on each type of voting device used in the election and each type of ballot including audio ballots.
- (d) Conducting the Test
  - (1) The county and Testing Board must observe the tabulation of all test ballots, compare the tabulation with the previously retained records of

the test vote count, and correct any discrepancies before the device is used in the election.

- (2) The county must reset the public counter to zero on all devices and present zero tapes to the Testing Board for verification.
- (3) The county must make an appropriate number of voting devices available and the Testing Board may witness the programming and/or downloading of memory devices necessary for the test.
- (4) The Testing Board and designated election official must count the test ballots as follows, if applicable:

(A) Optical Scanners:

- (i) The Testing Board must test at least one central count optical scanner and at least one optical scanner used at a voter service and polling center, if applicable.
- (ii) The Testing Board must randomly select the machines to test.
- (iii) The Testing Board must count the board and county's test ballot batches separately and generate reports to verify that the machine count is identical to the predetermined tally.

(B) DREs:

- (i) The Testing Board must test at least one DRE.
- (ii) The Testing Board must randomly select the machines to test.
- (iii) Each member of the Testing Board must separately cast his or her test ballots on the selected DREs. Each Testing Board member must cast at least one of his or her test ballots using the audio ballot playback and accessible input devices.
- (iv) Each Testing Board member must examine the tabulation tape or report and verify that the DRE results match what the Testing Board member manually marked on his or her test ballots.

(C) Ballot Marking Devices (BMDs):

- (i) The Testing Board must randomly select and test at least one BMD.
- (ii) At least two members of the Testing Board must use the selected BMD to mark and print at least 25 ballots in the same manner that the testing board member manually marked his or her test ballots. At least two members of the Testing Board must mark at least one of his or her

test ballots using the audio ballot playback and accessible input devices.

- (iii) A Testing Board member or county election official must separately scan and tabulate the test ballots marked with and printed from the BMD on one central count or polling location scanner, and generate a results report.
- (iv) Each Testing Board member must verify that the results report generated from the scanner exactly corresponds to the testing board member's tally of the votes on the manually marked paper ballots comprising his or her test ballots.

(e) Completing the test

- (1) The county must keep all test materials, when not in use, in a durable, secure box. Each member of the Testing Board must verify the seals and initial the chain-of-custody log maintained by the county clerk. If the records are opened for inspection, at least two election officials must verify the seals and initial the chain-of-custody log.
- (2) The county must upload the results from all tested scanners and DREs to the tabulation software, and save the tabulation results for the ENR test required under Rule 11.10.3.
- (3) After testing, the Testing Board must watch the county reset and seal each voting device.
- (4) The Testing Board and the county clerk must sign a written statement attesting to the qualification of each device successfully tested, the number of the seal attached to the voting device at the end of the test, any problems discovered, and any other documentation necessary to provide a full and accurate account of the condition of a given device.
- (5) The county may not change the programming of any voting device after completing the logic and accuracy test for an election, except as required to conduct a recount or as authorized by the Secretary of State.

11.4 The county must submit election setup records by regular mail no later than 5:00 p.m. on the seventh day before election day.

11.4.1 Jurisdictions that contract with either a software service bureau or an electronic vote counting equipment vendor may choose to have the vendor deliver the election setup records.

11.4.2 Election setup records must be in an electronic media format that is native to the jurisdiction's specific ballot creation and tabulation system. Acceptable media formats include tape, diskette, cartridge, CD-ROM, DVD-ROM, floppy, external hard drive, or flash media.

11.4.3 The designated election official must include a point of contact and method of contact (phone, fax, email, etc.).

- 11.4.4 Within 24 hours of receipt of the election setup records, the Secretary of State's office will contact the jurisdiction to confirm receipt.
- 11.4.5 The Secretary of State's office will store the election setup records in a secured, fire proof, limited-access location.
- 11.4.6 All parties must treat as confidential all escrowed materials and any other related information that comes into their possession, control, or custody.
- 11.5 The designated election official must retain all testing records and documentation for 25 months.
- 11.6 Methods of submission are:
  - 11.6.1 By regular mail to:

Colorado Secretary of State  
Attn: Voting Systems  
1700 Broadway – Suite 200  
Denver, CO 80290
  - 11.6.2 By email to:

voting.systems@sos.state.co.us
  - 11.6.3 By Fax to:

303-869-4861
- 11.7 Rules Concerning Accessible Voting Systems. A political subdivision may not purchase or lease voting systems for use by people with disabilities unless the system is certified in accordance with the 2002 Voting System Standards promulgated by the Federal Election Commission
- 11.8 Rules Concerning Notice of Voting System Malfunction
  - 11.8.1 The voting system provider must submit a software incident report to the Secretary of State no later than 72 hours after a software incident has occurred.
  - 11.8.2 A vendor or designated election official must notify the Secretary of State within 24 hours of a reported or actual malfunction of its voting system. The notice must include a description, date, and the names of those who witnessed the malfunction, as well as the procedures followed before the malfunction, and any error messages displayed. The notice may be verbal, but a written notice must follow.
  - 11.8.3 If the Secretary of State requires additional information the vendor or the designated election official must submit a report to the Secretary of State's office detailing the reprogramming or any other actions necessary to correct a voting system malfunction.
    - (a) The report must address whether permanent changes are necessary to prevent similar malfunctions in the future.
    - (b) If the malfunction requires a programming or election setup change to the database or other parts of the voting system, the designated election official must submit an updated election setup record to the Secretary of State's office as set forth in Rule 11.4.

- (c) The report must be submitted within 30 days after the date of the request by the Secretary of State. If an election is scheduled within 60 days of the date of request by the Secretary of State, the Secretary of State may set an emergency deadline for filing the report.
- (d) Failure to submit a report within the required period is grounds to decertify the system.
- (e) The political subdivision holding the election in which the voting system malfunction occurred may submit the report in lieu of a report from the system's vendor.
- (f) A copy of this report will be on file in the Secretary of State's office.
- (g) The Secretary of State's office will distribute a copy of this report to all counties using the voting system in question.

## 11.9 Purchases and Contracts

11.9.1 In accordance with sections 1-5-617(5) and 1-5-623(3), C.R.S., a political subdivision may not purchase, lease, transfer, or use a certified electromechanical or electronic voting system, device, or related component, unless the political subdivision first applies for and obtains approval from the Secretary of State.

11.9.2 In the case of electromechanical or electronic voting systems, devices, or related components certified for use in Colorado before January 1, 2016, the Secretary of State will approve a political subdivision's application to purchase, lease, or use the voting system, device, or related component, only if:

- (a) The political subdivision purchased, leased or used the same voting system, device, or related component, before January 1, 2016; and
- (b) The political subdivision's application for approval is limited to the acquisition or use of voting system applications, components or voting devices intended to replace the same or substantially similar applications, devices and components that are damaged, defective or inoperable; and
- (c) Approval of the application, and the political subdivision's purchase, lease or use of the voting system components or voting devices, will not materially impair the political subdivision's future fiscal ability to purchase or lease a voting system certified for use in Colorado on or after January 1, 2016.

11.9.3 In the case of electromechanical or electronic voting systems, devices or related components certified for use in Colorado on or after January 1, 2016, the Secretary of State will approve a political subdivision's application to purchase, lease, or use the voting system, device, or related component, after considering all relevant factors, including without limitation:

- (a) Evaluations of the voting system performed by public committees organized by the secretary of state, and any recommendations regarding the use of the voting system by any such public committee;
- (b) The voting system's ability to support the efficient and uniform conduct of elections under the uniform election code of 1992, as amended;

- (c) The voting system's utilization of commercial off-the-shelf hardware components, rather than proprietary, purpose-built hardware components;
- (d) The voting system's integration of its data management application, if any, with other components of its election management system, so that system users can operate or access all election management system components within a single interface on the same server or workstation;
- (e) The voting system's ability to support efficient risk-limiting audits, or the commitment of the voting system provider to develop such capability, in time for the 2017 coordinated election, as required by section 1-7-515.5, C.R.S.;
- (f) The voting system's compatibility, or the voting system provider's commitment to develop such compatibility on or before December 31, 2016, with dependent systems that are not directly related to the tabulation of votes and ballots, but are nevertheless utilized by designated election officials in conducting elections in Colorado, including:
  - (1) Ballot-on-demand systems,
  - (2) Election Night Reporting systems,
  - (3) Electronic ballot delivery systems, and
  - (4) Election definition data exported from SCORE;
- (g) The voting system's ability to efficiently support elections principally conducted by mail ballot, in all political subdivisions, regardless of their size, number of registered electors, or fiscal resources, including:
  - (1) The voting system's inclusion of applications enabling election judges to digitally, rather than manually, adjudicate, resolve, and duplicate ballots with marginal or ambiguous voter markings, and
  - (2) The voting system's use of ballot scanners equipped with automatic document feeders, enabling election judges to scan multiple ballots rather than a single ballot at a time;
- (h) The voting system's ability to enable voters with disabilities to vote independently and privately, and on the same or substantially similar devices throughout Colorado, without regard to their county of residence;
- (i) The voting system's scalability and affordability, enabling all political subdivisions to utilize the same or substantially similar equipment, regardless of their size, number of registered voters, or fiscal resources;
- (j) The voting system's portability as provided in the provider's hardware and software license agreements, enabling political subdivisions that purchase, lease, or use the system to loan or borrow voting devices and related components to or from one another without charge, as exigencies and other circumstances warrant, and as approved by the Secretary of State;
- (k) The voting system's ability to easily export images of voted ballots, in response to requests filed under section 24-72-205.5(3)-(4), C.R.S., of the Colorado Open Records Act;

- (l) The voting system provider's past performance of successfully implementing its voting system in multiple jurisdictions simultaneously;
- (m) The voting system provider's past performance of successfully training local election officials to use its voting system in multiple jurisdictions simultaneously;
- (n) The voting system provider's past performance of post-implementation customer and technical support for political subdivisions that acquire its voting system;
- (o) The voting system provider's past performance of compliance with Colorado law regarding voter anonymity, and responsiveness to other issues and concerns raised by designated election officials and Secretary of State staff members;
- (p) The voting system provider's financial stability and sustainability as an ongoing business concern; and
- (q) The extent to which the voting system provider's hardware and software license agreements permit the Secretary of State, or political subdivisions that license the hardware and software applications necessary to program elections and voting devices, to perform those services without charge for other political subdivisions that are licensed to use the voting system.

11.9.4 The Secretary of State will approve a county's application for the purchase, lease, or use of an electromechanical or electronic voting system, device, or related component, certified on or after January 1, 2016, only if:

- (a) The voting system includes, and the county acquires, digital ballot resolution and adjudication capability;
- (b) The voting system includes, and the county acquires, central count ballot scanners equipped with automatic document feeders capable of scanning multiple ballots rather than a single ballot at a time;
- (c) The voting system integrates all components of the election management system, including the data management application, if any, into a single user interface that is operable or accessible from the same server or workstation;
- (d) The voting system is capable of supporting efficient risk-limiting audits, or the commitment of the voting system provider to develop such capability, on or before December 31, 2016, in the manner required by Rule 21.4.14;
- (e) The voting system is compatible, or the voting system provider commits to develop such compatibility on or before December 31, 2016, with dependent systems that are not directly related to the tabulation of votes and ballots, but are nevertheless utilized by designated election officials in conducting elections in Colorado, including:
  - (1) Ballot-on-demand systems,
  - (2) Election Night Reporting systems,
  - (3) Electronic ballot delivery systems, and
  - (4) Election definition data exported from SCORE;;

- (f) The voting system provider's software and hardware license agreements expressly permit political subdivisions that purchase, lease, or use the system to loan or borrow voting devices and related components to or from one another, without charge, as exigencies and other circumstances warrant, and as approved by the Secretary of State; and
  - (h) The voting system provider's software and hardware license agreements expressly permit the Secretary of State, or political subdivisions that license the hardware and software applications necessary to program elections and voting devices, to perform those services without charge for other political subdivisions that are licensed to use the voting system.
- 11.9.5 Due to their unsuitability for risk-limiting audits, the Secretary of State will not approve a county's application to purchase, lease or use a ballot scanner certified for use on or after January 1, 2016, that is not equipped with an automatic document feeder, whether intended for use by voters at polling locations, or by election judges at central count locations.
- 11.9.6 A political subdivision's contract to purchase or lease a voting system under Rule 11.9.1 must provide for user training and preventative maintenance.
- 11.9.7 The Secretary of State will only approve a political subdivision's application to purchase or lease a voting system or component if the voting system or component allows the designated election official to conduct elections in accordance with Colorado law, as amended.
- 11.9.8 The Secretary of State will maintain a list of all certified electromechanical or electronic voting systems, devices and related components, purchased, leased, or used by Colorado political subdivisions. The list will include, at minimum, the name of the jurisdiction, the name and version of the voting system, the date of acquisition, and the serial number(s) of voting devices.
- 11.10 Election Night Reporting. The county must use the Secretary of State's Election Night Reporting (ENR) system to report results for all primary, general, coordinated, and recall elections in accordance with this Rule.
- 11.10.1 A data entry county must upload a results data file to ENR containing the election results on the dates and times specified in Rules 11.10.3 through 11.10.5. The county must program its election database so that the results file exported from the voting system is formatted in accordance with the following requirements:
- (a) Contest names: Except as otherwise provided in subsections (1) – (3) of this Rule, the results file must contain the contest names as they are certified for the ballot.
    - (1) For primary elections, the county must append to the end of the certified contest name the SCORE abbreviation of the political party affiliation of the candidates in the contest (e.g., "United States Senator – Dem," "State Senator – District 21 – REP," "County Treasurer – Lib,").
    - (2) For ballot measures other than judicial retention questions, the contest name must include the political subdivision that referred the measure to the ballot, the ballot measure type, and the number or letter as it appears on the ballot (e.g., "Adams County Ballot Issue 200," "City of Brighton Ballot Question 5A,").

- (3) For Judicial Retention Questions, the contest name must include the court and the title and last name of the justice or judge standing for retention (E.g., "Supreme Court – Justice Erickson," "Court of Appeals – Judge Jones," "1<sup>st</sup> Judicial District– Judge Smith," "Adams County Court – Judge Doe,").
- (b) Contest order: Except as otherwise provided in subsections (1) – (4) of this Rule, the results file must list the contests in the same order as they are certified for the ballot.
  - (1) For primary elections, the results file must list the contests in the order prescribed by section 1-5-403(5), C.R.S., grouped in ascending alphabetical order of the abbreviated names of the participating major political parties, followed by the abbreviated names of participating minor political parties and qualified political organizations (e.g., "United States Senator – DEM," "United States Senator – REP," "United States Senator – GRN," "United States Senator – LIB," "United States Senator – UNI,").
  - (2) The results file must list ballot measures in the order certified by the Secretary of State, followed by the ballot measures certified by other participating political subdivisions in the order and using the numbering conventions specified in Rule 4.5.2(e).
  - (3) A county using the Dominion, Hart, or Sequoia voting system must include and populate the contest sequence number field in its results files to define the order of contests on the ballot as required by this Rule.
  - (4) A county using the ES&S or Premier voting system must include and populate the contest ID field in its results file to define the order of contests as required by this Rule.
- (c) Candidate names: The results file must include candidates' names in proper case and include periods following initials (e.g., "John A. Smith"), and may not include the name or abbreviation of the candidate's political party.
- (d) Precinct names: If a county reports results by precinct, its results file may only include the ten-digit precinct number from SCORE.
- (e) Provisional results: The results file must include a "provisional" precinct or counting group as a placeholder for separately reported provisional ballot results if required by section 1-8.5-110(2), C.R.S.

11.10.2 No later than 21 days before the election, a county must provide the following information to the Secretary of State:

- (a) A data entry county must email a sample or "zero" file. Except in the case of withdrawn or deceased candidates, a data entry county may not change or alter the election database or export file after submitting its zero file.
- (b) A manual entry county must send a list of all ballot content.

11.10.3 No later than 14 days before the election, a data entry county must upload the LAT results file to ENR. At a minimum, the LAT results file must contain the results of the complete county test deck required under Rule 11.3.2(c)(1).

11.10.4 Election night uploads. Manual entry counties must produce preliminary election results and upload them to the ENR system once counting is completed. All other counties must export or produce preliminary election results and upload them to the ENR system a minimum of three times on election night:

- (a) After the close of polls but no later than 8:00 p.m.
- (b) At or around 9:00 p.m.
- (c) The county must indicate that election night reporting is complete in the ENR system after the county uploads the last results on election night.

11.10.5 Canvass upload. The county must export or produce official election results, and check the appropriate box in the ENR system to indicate that the canvass upload is complete, not later than close of business of the first business day after the statutory deadline for completing the canvass.

**Rule 18. Uniform Counting Standards for Paper Ballots**

- 18.1 In any election where a multiple page printed ballot is used, a voter must vote and return all pages of the ballot at the same time. Any voter who returns at least one page of a multiple page printed ballot will be considered to have voted and the county clerk or designated election official must count the votes on the submitted pages. The county clerk must not count votes on additional pages returned at a later time. The county clerk must appropriately mark, set aside, and preserve the ballots as election records in accordance with section 1-7-802, C.R.S.
- 18.2 Standards for hand counting paper ballots
- 18.2.1 In accordance with section 1-7-309, C.R.S., and Rule 18.5, judges counting ballots must consider the intent of the voter.
- 18.2.2 If a race or ballot measure is overvoted, the judges must not count any vote for that race or ballot measure.
- 18.2.3 If a race or ballot measure contains no markings by the voter, no tally will be made for that race or ballot measure. But all other candidate races or ballot measures properly marked by the voter on the ballot must be counted.
- 18.2.4 A ballot which has no markings for any candidate races or ballot measures must be tallied as a blank ballot.
- 18.3 Standards for counting paper ballots on ballot scanners
- 18.3.1 Procedures for counting paper ballots on ballot scanners at polling locations
- (a) To the extent permitted by its voting system, the county must program ballot scanners to sort ballots with write-in votes to a segregated bin of the ballot box or digital media and to initially reject blank ballots and ballots with overvotes.
  - (b) Voters whose ballots are initially rejected by a ballot scanner as a blank or overvoted ballot must be given the opportunity to review and correct their ballot. If after review, a voter requests to submit the blank or overvoted ballot as originally marked, an election judge must assist the voter by overriding the initial rejection setting on the ballot scanner.
  - (c) At the conclusion of voting, ballots with write-in votes must be delivered to the central count location in a secure container for resolution in accordance with Rule 18.5.3.
- 18.3.2 Procedures for counting paper ballots on ballot scanners at central count locations
- (a) Before tabulation, a resolution board must duplicate damaged ballots, and may duplicate ballots with marks that may identify the voter, in accordance with Rule 18.4. Election judges may visually inspect every ballot for the limited purpose of segregating damaged ballots and ballots with marks that may identify the voter.
  - (b) A county must sort ballots requiring resolution according to the capabilities of its voting system.
    - (1) If a county's voting system supports digital ballot resolution, the county must program the voting system to digitally queue for resolution blank

ballots, ballots with write-in votes, and ballots with overvotes. Ballots with marginal or ambiguous markings must be sorted according to the system provider's specifications, or, if different, the applicable Conditions of Use issued by the Secretary of State. The digitally queued ballots must be resolved by election judges in accordance with Rule 18.5.

- (2) If a county's voting system does not support digital ballot resolution, the county must program the central count ballot scanners to reject or sort blank ballots and ballots with overvotes, and to sort ballots with write-in votes. The resolution board must resolve all ballots initially rejected and sorted by the central count ballot scanners in accordance with Rule 18.5.
- (c) A resolution board must resolve ballots sorted or rejected for resolution.
  - (1) In partisan elections, a resolution board must consist of at least two election judges affiliated with different major political parties.
  - (2) In nonpartisan elections, a resolution board must consist of at least two election judges.
  - (3) In counties with a voting system that does not support digital resolution, the county must have at least one resolution board.
  - (4) In counties with a voting system that supports digital resolution, a resolution board must work at each resolution workstation.
  - (5) The members of a resolution board for an election may change, but all members of the resolution board at any particular time must satisfy the eligibility requirements specified in this Rule 18.3.2(c).

#### 18.4 Ballot Duplication

- 18.4.1 A resolution board must duplicate a voter's choices or selections on a damaged ballot onto a blank ballot of the same ballot style in accordance with Rule 18.4. During the duplication process, and to the extent necessary, the resolution board must also resolve overvotes, write-in votes, and ambiguous markings in accordance with Rule 18.5. During ballot duplication, two additional election judges must observe or review the work of each resolution board. In a partisan election, the observing election judges must be representatives of each major political party.
- 18.4.2 A resolution board must review the original ballot and the duplicated ballot, and consult the Voter Intent Guide if necessary, to ensure that each damaged ballot has been properly and accurately duplicated.
- 18.4.3 In order to match each damaged ballot to its corresponding duplicated ballot, the resolution board must identify and mark each damaged and duplicated ballot with the type of ballot and a unique number, similar to the following example: mark the damaged ballot "Orig 0001," and the counterpart duplicated ballot "Dupe 0001."
- 18.4.4 The resolution board must maintain a written log itemizing all damaged ballots that it duplicates. The duplication log must include at least each damaged and duplicated ballot's unique number, the date on which it was duplicated, the reason for duplication, and the printed names and signatures of the members of the resolution board.
- 18.4.5 A county clerk must count duplicated ballots in the same manner as all other paper ballots.

- 18.4.6 Before retention for storage, the resolution board must deposit all duplicated ballots and duplication logs in a sealable container that is clearly marked to identify its contents (e.g., “damaged ballots”). The county must maintain chain-of-custody and seal logs for the damaged ballot container at all times during the statutory election records retention period.

## 18.5 Ballot Resolution

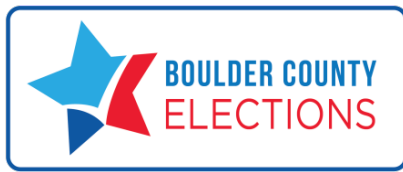
- 18.5.1 A resolution board must resolve all blank ballots and ballots with overvotes, write-in votes, and ambiguous markings in accordance with the Secretary of State’s Voter Intent Guide.

- 18.5.2 Resolution of blank ballots. A resolution board must examine blank ballots to determine if the ballot is a true blank ballot or one that has been marked in a manner or medium that was not detected by the voting system.

- (a) Counties without digital resolution capability. If the ballot is truly blank, the resolution board must re-scan the ballot and override the initial rejection setting. If the ballot is marked in a manner or medium that can be discerned by the resolution board but cannot be tabulated by the voting system, the resolution board must duplicate the ballot in accordance with Rule 18.4 and, to the extent necessary, resolve the ballot in accordance with Rule 18.5.
- (b) Counties with digital resolution capability. If the ballot is truly blank, the resolution board must record the ballot as a blank ballot in the voting system’s resolution application. If the ballot is marked in a manner or medium that can be discerned by the resolution board but cannot be tabulated by the voting system, the resolution board must resolve the ballot in the voting system’s resolution application in accordance with Rules 18.5.2(b) and 18.5.3.

### 18.5.3 Resolution of write-in votes

- (a) A resolution board must resolve all write-in votes in accordance with the Secretary of State’s Voter Intent Guide.
- (b) In counties using voting systems featuring digital resolution capable of detecting voter markings on or in a write-in line or area, and if the voter does not mark any of the target areas in a particular contest, the resolution board must resolve during initial adjudication the written name of an eligible write-in candidate as a valid vote for that candidate even if the voter fails to mark the corresponding target area.
- (c) In counties using voting systems that do not have digital resolution capability, or the digital resolution feature is not capable of detecting voter markings on or in a write-in line or area if the corresponding target area is not also marked, and if the voter does not mark any other target area in a particular contest, the resolution board must count as valid votes for eligible write-in candidates those instances in which the voter both marks the applicable target area and writes in the name of a certified write-in candidate. During any recount, if the number of undervotes in a ballot contest could change the outcome if attributed to an eligible write-in candidate, votes for that candidate must be counted whether or not the target area designating the selection of a write-in candidate has been marked, provided that the number of candidates chosen does not exceed the number permitted in that office.



# Boulder County Elections Boulder County Clerk and Recorder

1750 33rd Street, Suite 200 • Boulder, CO 80301  
www.BoulderCountyVotes.org • Phone: (303) 413-7740

## Logic and Accuracy Test Documentation

ICC and ICX Test Information

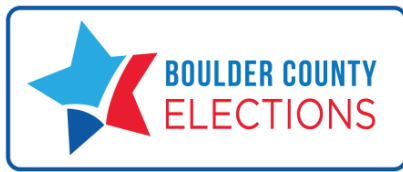
<b>Election Title:</b>	
<b>Longmont Special Election – Council Ward 1 – February 27, 2018</b>	
<b>Dominion Database ID:</b>	<b>Project Creation Date:</b>
01/17/2018 1:25PM	01/02/2018 11:31AM
<b>Test Date(s):</b>	<b>Test Location:</b>
January 30, 2018    Contingency Date: January 31, 2018	1750 33 <sup>rd</sup> St. Boulder, CO

Title	Printed Name (Team #)	ICC Scan Station	Satisfactory / Unsatisfactory	Initials	Seal # (Where applicable)
Board Member – City of Longmont Team #1A - Staff	Valeria Skitt - Republican	F, G, H & I	Satisfactory	On File	Not Applicable
Board Member – City of Longmont Team #2A - Staff	William E. Soule - Democrat	F, G, H & I	Satisfactory	On File	Not Applicable
Board Member – City of Longmont Team #1B - Support Staff	Kyle Alcorn - Democrat	F, G, H & I	Satisfactory	On File	Not Applicable
Board Member – City of Longmont Team #2B - Support Staff	Tricia Grossnickle - Republican	F, G, H & I	Satisfactory	On File	Not Applicable

## Logic and Accuracy Test Documentation

Image Cast Voter Authorization (ICVA) Image Cast X (ICX, BMD) Test Information

DEVICE DOCUMENTATION					
Device ID	Type of Device	Members Testing Device	Satisfactory / Unsatisfactory	Initials	Seal # (Where applicable)
ICVA-016 - Serial #2GB22Q1	Voter Activation Card Writer	William E. Soule Tricia Grossnickle	Satisfactory	On File	On File
ICX-029 - Serial #RF2GB01W0RR	Ballot Marking Device (BMD)	William E. Soule Tricia Grossnickle	Satisfactory	On File	On File
Printer #029	Ballot Printer	WES/TG	Satisfactory	On File	On File
ICVA-017 - Serial #F31Z1Q1	Voter Activation Card Writer	Valeria Skitt Kyle Alcorn	Satisfactory	On File	On File
ICX-006 - Serial #RF2GB01VY9X	Ballot Marking Device (BMD)	Valeria Skitt Kyle Alcorn	Satisfactory	On File	On File
Printer #006	Ballot Printer	VS/KA	Satisfactory	On File	On File



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**Logic and Accuracy Test**

**BOULDER COUNTY ELECTION SUPPORT STAFF**

Support Member	Patty Stahl
Support Member	Robb Menzies
Support Member	Justine Vigil-Tapia
Support Member	Kyle Alcorn
Support Member	Crystal Christman
Support Member	Brad Light
Support Member	Tricia Grossnickle
Support Member	Jacob Feinberg



**Boulder County Clerk & Recorder Elections Division**  
**Statement of Qualification of Election Devices**

I attest that, to the best of my knowledge, each election device used in the Logic and Accuracy Test (LAT) passed the requirements of the LAT and accurately tabulated all properly marked LAT ballots.

It is the determination of the Logic and Accuracy Testing Board that all devices tested are qualified to be used in the 2018 Longmont Special Election – Council Ward 1 on February 27, 2018.

[Redacted Signature]

Valeria Skitt, Republican Representative  
LAT Testing Board

[Redacted Signature]

William E. Soule, Democratic Representative  
LAT Testing Board

[Redacted Signature]

Hillary Hall  
Boulder County Clerk & Recorder

Any problems discovered during testing are described as follows. Additionally, I am reporting any other information or attaching any additional documentation that might be necessary to provide a full and accurate account of the condition of each piece of equipment:

Valeria Skitt, Republican Party Representative of LAT Testing Board:

N/A VRS

William E. Soule, Democratic Party Representative of LAT Testing Board:

N/A WES

Hillary Hall, Boulder County Clerk & Recorder:

N/A HH

# Election Summary Report

General Election

Boulder

February 27, 2018

Summary for: All Contests, All Districts, All Tabulators, All Counting Groups  
LAT - Cumulative

Registered Voters: 198 of 18,445 (1.07%)

Ballots Cast: 198

## City Council Ward 1 (Vote for 1)

		Total	
Times Cast		198 / 18,445	1.07%
Undervotes		44	
Overvotes		4	
Candidate	Party	Total	
Russ Lyman		44	29.33%
Tim Waters		46	30.67%
Joshua Goldberg		60	40.00%
Total Votes		150	
		Total	
Unresolved Write-In		0	

RS -

1/30/2018

Wes -

30 Jan 18

[Redacted]  
[Redacted]  
[Redacted]

Contests	Team #1: Republican			Team #1: Republican ICX			Team #2: Democrat			Team #2: Democrat ICX			County Test Deck			Grand Total		
	MVW Total	Machine Total	Difference	MVW Total	Machine Total	Difference	MVW Total	Machine Total	Difference	MVW Total	Machine Total	Difference	MVW Total	Machine Total	Difference	MVW Total	Machine Total	Difference
City Council Ward 1 (vote for one)																		
Russ Lyman	7	7	0	7	7	0	7	7	0	7	7	0	2	2	0	44	44	0
Tim Waters	7	7	0	7	7	0	7	7	0	7	7	0	4	4	0	46	46	0
Joshua Goldberg	9	9	0	9	9	0	9	9	0	9	9	0	6	6	0	60	60	0
Overvote	1	1	0	0	0	0	1	1	0	0	0	0	2	2	0	4	4	0
Undervote	1	1	0	2	2	0	1	1	0	2	2	0	34	34	0	44	44	0