Boulder County 2011 Coordinated Election Post-Election Audit Report

December 13, 2011

This report summarizes the post-election audit of the 11/1/2011 Boulder County Coordinated Election. The audit comprised a manual tabulation of a statistical sample (roughly 3%) of the votes cast in the election followed by a comparison with the Election Day tally. Any discrepancies were investigated.

The 2011 Coordinated election comprised:

- 83,573 ballots
- 49 contests with an average of 10.76 contests per ballot. 24 contests were multi-county. Ten contests were uncontested.
- Although three contests had close margins, none were within the state-mandated recount threshold (margin < 0.5% of winner).

By statute, the audit was conducted before certification of the election. The audit was based on a snapshot of the election taken November 3rd, three days after Election Day. At that time 82,724 ballots had been verified and counted, representing 99% of the election's final 83,573 ballots. These ballots were grouped in 558 individually tallied batches, also referred to throughout this document as MBB. To ensure voter privacy, an MBB batch which contained only 1 ballot was combined with another MBB, leaving 557 MBBs available for the audit (min 0, avg 149, max 200 ballots per MBB).

Plans for the audit were detailed on November 4th and the public was encouraged to participate and observe. Press Releases were issued to alert the public.

- On November 4th, three days after the election, a press release was issued describing the audit process and inviting the public to attend the audit setup meeting to be held on November 7th at 8:30.
- On November 7th, the results of the setup meeting and contest selection were announced.

Due to a recent court ruling associated with inspection of ballot images, the office chose not to release the audit information at this time. To provide security & confidence that no changes were made after the batches were counted, all setup data was backed up to a non-rewriteable CD and retained for inspection.

Audit Setup Meeting

On November 7th, the Audit Board met to review the audit plan, select contests and select batches of ballots for the manual recount. Each jurisdiction participating in the election was invited to participate in the Canvass and Audit; two participants served as the Canvass and Audit Board.

The Audit Board:

- 1. Reviewed the techniques used for contest and MBB selection. The contest and MBB selection techniques were encapsulated in a parameterized spreadsheet:
 - **Contests**: selected randomly with probability proportional to margin

M = Margin = diff between winner & loser V = ballots voted in contest m = relative margin = M/V

Small relative margin \rightarrow more likely to select contest.

How many contests: select contests as long as there are resources to audit them.

• **MBBs**: selected randomly using the NegExp statistical technique¹. This selection technique promises improved efficiency when auditing multiple contests in a large election.

For each contest:

Which MBBs \rightarrow random with probability proportional to # contest ballots How many MBBs \rightarrow weighted by margin and two NegExp parameters

<u>wpm</u> = a bound on the miscount expected per MBB <u>confidence</u> = a measure of statistical effectiveness of the algorithm

- 2. Fine-tuned the MBB selection parameters. Each contest had tunable MBB selection parameters <u>wpm</u> and <u>confidence</u>, which are defined above.
 - Negexp parameter defaults were set as follows:

| Contest | wpm | Confidence |
|---------|------|------------|
| Federal | 0.20 | 99% |
| State | 0.20 | 99% |
| County | 0.20 | 99% |
| Local | 0.20 | 80% |

The value of <u>wpm</u> puts a ceiling on the amount of error (or miscount) anticipated in an MBB. This
error bound must be greater than the margin for each contest. When the default value of <u>wpm</u>=0.20
was used in the spreadsheet, the error bound turned out to be less than the contest margin for ten
contests. For these contests the Audit Board approved an increase of <u>wpm</u> until the error bound rose
above the margin. The following contests were impacted:

| Contest | wpm |
|--|-----------|
| City of Louisville Council Person Ward 1 | 0.20→0.25 |
| City of Boulder Ballot Issue No. 2A | 0.20→0.24 |
| City of Boulder Ballot Question No. 2D | 0.20→0.33 |
| City of Boulder Ballot Question No. 2F | 0.20→0.34 |
| City of Boulder Ballot Question No. 2G | 0.20→0.25 |
| City of Boulder Ballot Question No. 2H | 0.20→0.23 |
| City of Lafayette Question No. 2D | 0.20→0.36 |
| City of Lafayette Question No. 2E | 0.20→0.36 |
| Pine Brook Hills Issue 5A | 0.20→0.34 |
| Crestview Estates Issue 5B | 0.20→0.38 |

 To prevent the selection of any one contest from exhausting all audit resources, the Audit Board put a bound on the number of ballot-contests that would be audited per contest. These limits were implemented by artificially reducing the <u>confidence</u> level. The following contests were impacted:

| Contest | Confidence |
|---|------------|
| City of Boulder Council Candidates (Vote for 5) | 80%→75% |

¹ Aslam, Popa, Rivest, <u>http://www.usenix.org/event/evt08/tech/full_papers/aslam/aslam_html</u>

City of Boulder Ballot Issue No. 2B

Note that this was a compromise. One of our goals was to ensure that no contest dominated the audit. For example, prior to adjusting the City of Boulder Council Candidates percentage, the estimated number of ballots to be audited was approximately 13,000, which would have been almost half of the budgeted 3% of the ballot-contests (~26,700). Dropping the confidence level to 75% brought the number down to around 11,000, which was deemed reasonable by the audit board due to the closeness of the contest.

- 3. Selected MBBs to audit. The <u>wpm</u> and <u>confidence</u> parameters selected above combined with the contest margin determined a selection probability for each MBB for each contest. To determine if an MBB is selected in the audit of the contest, its probability is tested against a randomly generated number if the selection probability is greater than the random number then the MBB is tagged as an audit unit for the contest. Because a large number of random numbers were needed for this, the Audit Board used a pseudorandom number algorithm to generate a list of random numbers. The algorithm required a 15-digit seed, which itself was randomly built by combining 3 random digits from each of 5 people. The resulting seed was 246-625-122-642-148.
- 4. Selected contests. The final task during the Audit Setup Meeting was for the Audit Board to select contests. The first 7 selections, resulting in 5 selected contests, were done by rolling of 4 die. Subsequent selections were made using the same pseudorandom numbers generated above against contest probabilities weighted by margin. The random numbers and the contests selected are shown in Attachment 1. Seven total contests were selected, but because the Thompson School District G contest had 0 MBBs selected, and Boulder County did not have enough votes in this multi-county contest to influence the results, it was not audited.

Note: The Audit Board chose not to audit unopposed contests. There were ten in this election and they were excluded from selection by setting their contest probability to zero.

Attachment 2 summarizes the complete set of contests and MBBs that were selected. In total, 26,870 votes were to be manually verified for the 6 selected contests. These votes were contained within 29,741 ballots on 198 MBBs.

Before starting the manual verification process, a check was completed to ensure that the set of selected MBBs represented all hardware paths through the scanning/counting system in use on Election Day, which was confirmed. If all paths had not been included, additional MBBs/contests would have been manually added to ensure all paths were covered.

Manual Verification of Selected Contests on Selected MBBs

The manual verification process was organized by MBB and included: reviewing each ballot by hand to identify voting selections, recording selections on a Manual Verification Worksheet (MVW), tallying the selections recorded, and a comparison to Election Day result reports in order to verify machine count accuracy.

For each MBB selected, all associated ballots/batches were first gathered to create the auditable batch (an MBB may contain cast vote results for one or more scanned batches). Then, for all contests selected on the given MBB, each ballot was reviewed and contest choices manually tallied on the associated MVW. This reduced batch handling and associated wear and tear on ballots, a necessary precaution in the event of a recount. Voter Intent was also a key element of the manual verification and the teams were trained to use the same voter intent guidelines that were used on Election Day.

The manual tally was initially performed in four-person teams. The technique used was similar to that pioneered in several California counties² and used in Boulder County's 2010 General Election audit. Each four-person team consisted of

² See "Improving the Security, Transparency and Efficiency of California's 1% Manual Tally Procedures", J. L. Hall, US Berkeley, <u>http://josephhall.org/papers/jhall_evt08.pdf</u>.

- a Caller who handled the ballots, located the contest and called out the vote selection
- an Observer who watched the Caller and confirmed the accuracy of the spoken vote
- two Talliers who independently recorded what they heard

The teams used prepared tally sheets (MVWs) unique to the given MBB audit batch. Each MVW contained prefilled tally areas for each contest to be counted within the batch and included the ballot styles where each contest would be found. However it did not include either the number of ballots on the MBB or the number of ballots that contained the contest. An example is in Attachment 3.

The two Talliers were asked to independently record the spoken vote in groups of 10 stopping after each group to verify that their tallies matched before proceeding to the next grouping. This check was put in place to help reduce the number of total batch recounts required by catching any recording differences when the group of ballots just tallied is still on hand to verify against for correction. Due to multiple sorts required, once the batch MVWs are complete, there is almost zero ability to go back and verify and correct a mistake without full recount.

Manual Tally Throughput

We initially started the audit with 10 four-person teams but quickly identified that we were not on track to complete the audit in the one-week allotted time, and thus switched to a two-person team configuration. The main factor contributing to a significant reduction in throughput on the counting process was directly linked to the Boulder City Council "Vote for 5" contest. There was significant difficulty in calling and recording votes that spanned such a large number of candidates (rows) and ballots across the page (columns). There was additional struggle in identifying the appropriate number of undervotes to record. This issue had a significant impact on the number of calling and recording errors and resulted in an extremely high number of false mismatches between Election Day machine counts and the manual verification tally. In total, 63 of the 198 batches required recount including 101 contest recounts.

Audit Improvement Trials

The manual verification recording challenges encountered with the Boulder City Council "Vote for 5" contest prompted two audit technique improvements to be trialed, including the two-person team configuration mentioned above. The second technique trialed was a focused sort & stack count which will be described further below.

Two-person team configuration:

The two-person audit team technique, consisting of only a "Caller" and "Tallier", was inspired by the need for efficiency and counting improvements. It took away the role of the observer, requiring active participation by each team member and resulted in the production of a single tally sheet (MVW), increasing team member responsibility in result accuracy. With several adjustments made throughout the trial to accommodate a two-person process with only a single count, in the end this configuration provided improved accuracy and significantly greater efficiency in the counting process.

Sort & Stack Verification:

The sort & stack verification technique ("fourth count") was trialed as an improved method for resolving mismatched results. If the results didn't match up, the first course of action was to have a different team complete a second count (recount). This resolved the mismatch 50% of the time, but in some cases a third or fourth count was required to confirm an accurate recording. To confirm an accurate record/tally before escalating to investigating election night resolution logs, the fourth count was uniquely executed and labeled sort & stack verification count on the audit batch comparison sheet.

Using more experienced teams, all contest ballots were first pulled and accounted for. Then, for each candidate choice reflecting inconsistent and discrepant MVW results, each contest ballot was reviewed and any ballot with a mark in the box for the given candidate was pulled and placed into a unique pile. Finally, the ballots pulled for the given candidate were counted and the total captured, including identifying any ballot that could provide a difference in voter intent. If there was any question in the validity of count, the batch was re-verified separately to confirm. This resolved five out of fourteen differences.

Comparison with Election Day Results

Election Day results were prepared for the MBBs and compared with the hand tally. If there was a discrepancy, the contest in question was recounted (not necessarily by the original tally team). The tally teams were told which contest to recount but were not told what the discrepancy was.

For each batch included in the audit, the manual verification comparison was documented by combining the manual verification worksheet results (i.e., Attachment 3) with the Election Day results into a Comparison Worksheet. Attachment 4 shows the machine count source data, as well as the comparison worksheet.

Discrepancy Investigations

Initial comparisons of Election Day results against manual verification results, resulted in 63 audit batch discrepancies, roughly 32% of the total 198 batches audited. Up to four counts were required in order to get an accurate count, resolving the issue in 43 of the 63 discrepant batches. It is important to note that these discrepancies would be identified in a recount.

In the 20 remaining batches, 23 ballot contest discrepancies were identified; all associated with voter intent and affecting only the City of Boulder Council race. 17 were associated with a strike out of choice, where no overvote was created, and the remaining five were associated with incomplete, hesitant or stray markings. The results of the investigations are documented in the following attachments:

- Attachment 5 Summary of Differences, including sample images of ballots in question
- Attachment 6 Discrepancy Review Details
- Attachment 7 Discrepancy Impact Review, showing what impact the discrepancies had on the election results
- Attachment 8 Outcome Impact Review, showing adjusted recount threshold

In the near 185,000 contest choice boxes that were manually verified, the only audit discrepancies confirmed through the audit were associated with the Boulder City Council "Vote for 5" race and the trend in strike outs highlighted a pattern requiring additional investigation.

Due to the potential trend identified, the audit was then escalated and resulted in a visual inspection of more than 21,000 Boulder City Council contest ballots and included a sample set review of the Lafayette City Council "Vote for 6" race. The subsequent combined discrepancy rate identified and used for impact analysis was .000167569; derived by taking the sum of all discrepancies identified divided by the sum of all contest boxes audited & inspected for the City of Boulder race.

Through this escalation, it has been determined that the outcome of the Boulder City Council contest, as well as the Lafayette City Council contest was not affected by this trend.

Conclusions

No systemic errors were found in the voting equipment, and no trends or differences were identified across the various equipment paths. The audit did however identify a trend in voter intent and the correction of votes associated with the Boulder City Council "Vote for 5" race.

A total of 348,152 contest choice boxes were reviewed in this year's audit. 53 out of the 316,288 Boulder City Council contest choice boxes reviewed highlighted a voter intent trend to be addressed in future election processes. While a few are linked strictly to a difference in judgment on voter intent, the majority of these do not fall under this category and instead represent a true discrepancy rate.

For contests with close margins, the Audit or Canvass board may consider it important to include audit differences in any recount recommendation decisions.

The state mandated recount is required if:

| \\/ L < 0.005*\\/ | Where W and L are the Winner & Loser vote |
|-------------------|---|
| W – L < 0.005*W | totals |

Incorporating the discrepancy rate, assuming all discrepancies swing to reduce the margin, the worst-case recount decision becomes:

| W – L < 0.005*W | Where U is the discrepancy rate and V is the |
|-------------------|--|
| VV = L < 0.003 VV | number of votes cast in the contest, W + L |

For this year's election, we thought it was mandatory to consider and took it further to include evaluating the impact of incorporating the discrepancy rate associated with a single contest into the recount threshold, possible only because of the number of differences solely associated with the Boulder City Council race.

This inclusion reflects the assumption that this same trend could be randomly distributed through other contests and ballots and the worst-case recount decisions would be highlighted. Further research is needed to determine reasonable application in future elections.

This Impact Review was then completed for all contest outcomes and Attachment 8 shows the calculations for all contests. It is verified that no contest is close enough to trigger a recount, even when applying the discrepancy rate associated with the Boulder City Council race.

Based on the results of this year's audit, there are two areas that will be further analyzed for improvement in future elections. The first area will involve the training of the open and separating teams, with special emphasis provided for "vote for n" contests. Secondly, the counting process will be reviewed, both for the MVWs (tally sheets), which are currently too complex for large "vote for n" contests, as well as team structure and the future use of the two-person team.

The audit of the 2011 Coordinated Election was concluded on Nov 14, 2011. Attachment 9 contains the statement from the Audit Board.

Attachment 1: Contest Selection

| Random # | Contest | Already Selected? | Contest Ballots | Cumulative Ballots | Num Contests |
|----------|---|-------------------|--------------------|-----------------------|-----------------|
| 0.7667 | CITY OF BOULDER BALLOT ISSUE NO. 2B | | 6484 | 26870 | 7 |
| 0.4661 | City of Longmont Mayor | | 7445 | | |
| 0.2594 | City of Boulder Council Candidates (Vote for 5) | | 10938 | | |
| 0.5703 | Boulder Valley School District D | | 1306 | | |
| 0.6326 | Thompson School District G | | 0 | | |
| 0.1518 | City of Boulder Council Candidates (Vote for 5) | Already Picked | | | |
| 0.1308 | City of Boulder Council Candidates (Vote for 5) | Already Picked | | | |
| 0.9809 | Rocky Mountain Fire Ballot Question 5D | | 460 | | |
| 0.7534 | CITY OF BOULDER BALLOT ISSUE NO. 2B | Already Picked | | | |
| 0.7808 | CITY OF BOULDER BALLOT ISSUE NO. 2B | Already Picked | | | |
| 0.1104 | City of Boulder Council Candidates (Vote for 5) | Already Picked | | | |
| 0.7845 | CITY OF BOULDER BALLOT ISSUE NO. 2B | Already Picked | | | |
| 0.8416 | CITY OF BOULDER BALLOT ISSUE NO. 2B | Already Picked | | | |
| 0.3162 | City of Boulder Council Candidates (Vote for 5) | Already Picked | | | |
| 0.2401 | City of Boulder Council Candidates (Vote for 5) | Already Picked | | | |
| 0.6421 | Thompson School District G | Already Picked | | | |
| 0.5485 | City of Louisville City Council Person Ward I | | 237 | | |

| | City of Boulder Council Candidates (Vote for 5) | City of Longmont Mayor | | Boulder Valley School District D | Thompson School District G | CITY OF BOULDER BALLOT ISSUE NO. 2B | Rocky Mountain Fire Ballot Question 5D | | | |
|-----------------|---|------------------------------|----------|--|----------------------------------|--|---|-------------------|-----------|--|
| | Selected | Selected | Selected | Selected | Selected | Selected | Selected | 7 | Contests | selected |
| MBBs to Audit | 147 | 84 | 11 | 12 | 0 | 88 | 31 | 198 | MBBs sel | ected |
| Ballot-Contests | 10938 | 7445 | 237 | 1306 | 0 | 6484 | 460 | 26870 | | of ballot-contests |
| | | | | | | | | 94 | | ounts required |
| | | | | | | | | <u>292</u> | | • |
| | | | | | | | | Total | TOLAT COU | ints required |
| | | | | | | | | Ballots on MBB | | Num Manual Verification Counts Needed |
| p001_mb_267 | Audited | | | | | | | 150 | Selected | 2 |
| p003_mb_453 | Audited | | | | | | | 150 | Selected | 1 |
| p004_mb_452 | Audited | | | | | Audited | | 150 | Selected | 1 |
| p008_mb_293 | Audited | | | | | Audited | Audited | 150 | Selected | 1 |
| p009_mb_276 | Audited | Audited | | | | | | 150 | Selected | 1 |
| p010_mb_243 | Audited | | | | | Audited | | 150 | Selected | 1 |
| p011_mb_092 | Audited | | Audited | | | Audited | Audited | 150 | Selected | 2 |
| p014_mb_247 | Audited | | | | | Audited | | 150 | Selected | 1 |
| p015_mb_298 | Audited | | | | | Audited | | 149 | Selected | 3 |
| p017_mb_297 | Audited | | | | | Audited | | 150 | Selected | 3 |
| p024_mb_029 | Audited | | | | | | Audited | 150 | Selected | 2 |
| p042_mb_150 | Audited | Audited | Audited | | | Audited | Audited | 149 | Selected | 2 |
| p043_mb_081 | Audited | | | | | Audited | | 150 | Selected | 1 |
| p044_mb_304 | Audited | Audited | | Audited | | Audited | Audited | 150 | Selected | 1 |
| p047_mb_193 | Audited | Audited | | | | Audited | Audited | 150 | Selected | 1 |
| p051_mb_090 | Audited | Audited | Audited | Audited | | Audited | Audited | 150 | Selected | 1 |
| p059_mb_075 | Audited | Audited | | | | Audited | Audited | 150 | Selected | 3* |
| p065_mb_155 | Audited | | | | | Audited | | 150 | Selected | 1 |
| p068_mb_195 | Audited | Audited | | | | Audited | | 150 | Selected | 1 |
| p069_mb_196 | Audited | | | | | Audited | | 150 | Selected | 1 |
| p070_mb_197 | Audited | Audited | | | | Audited | | 150 | Selected | 3* |
| p073_mb_300 | Audited | Audited | | Audited | | Audited | Audited | 150 | Selected | 3 |
| p080_mb_175 | | Audited | | | | | | 150 | Selected | 1 |
| p085_mb_263 | Audited | Audited | | | | Audited | | 150 | Selected | 1 |
| p086_mb_125 | Audited | Audited | | | | Audited | | 150 | Selected | 1 |
| p087_mb_126 | Audited | Audited | | | | Audited | | 150 | Selected | 1 |
| p090_mb_301 | Audited | | | | | | | 149 | Selected | 2 |
| p094_mb_144 | | | | | | | Audited | 150 | Selected | 1 |
| p100_mb_254 | Audited | | | | | | | 150 | Selected | 1 |
| p102_mb_159 | Audited | Audited | Audited | Audited | | Audited | Audited | 150 | Selected | 1 |
| p105_mb_157 | Audited | | | | | | | 200 | Selected | 1 |

| | City of | | City of | | | | | | | |
|-----------------|--------------|----------|-----------------|-----------------------|-----------------|--------------|---------------|-------------------|-----------|--|
| | Boulder | | Louisville City | | | CITY OF | Rocky | | | |
| | Council | City of | Council | Boulder Valley | Thompson | BOULDER | Mountain Fire | | | |
| | Candidates | Longmont | Person Ward | School District | School District | BALLOT ISSUE | Ballot | | | |
| | (Vote for 5) | Mayor | I | D | G | NO. 2B | Question 5D | | | |
| | Selected | Selected | Selected | Selected | Selected | Selected | Selected | 7 | Contests | selected |
| MBBs to Audit | 147 | 84 | 11 | 12 | 0 | 88 | 31 | 198 | MBBs sel | ected |
| Ballot-Contests | 10938 | 7445 | 237 | 1306 | 0 | 6484 | 460 | 26870 | Number | of ballot-contests |
| | | | | | | | | 94 | Total rec | ounts required |
| | | | | | | | | <u>292</u> | Total cou | ints required |
| | | | | | | | | Total | | - |
| | | | | | | | | Ballots on MBB | | Num Manual Verification Counts Needed |
| p106_mb_256 | | Audited | | | | | | 150 | Selected | 1 |
| p107_mb_239 | Audited | | | | | | | 150 | Selected | 1 |
| p118_mb_235 | Audited | Audited | | | | | | 150 | Selected | 2 |
| p129_mb_043 | | Audited | | | | | | 150 | Selected | 1 |
| p130_mb_022 | Audited | Audited | | | | | | 150 | Selected | 1 |
| p133_mb_171 | Audited | Audited | | | | Audited | | 150 | Selected | 1 |
| p134_mb_274 | Audited | | | | | | | 150 | Selected | 1 |
| p138_mb_229 | Audited | Audited | | | | Audited | Audited | 150 | Selected | 2 |
| p140_mb_178 | Audited | | | | | | | 149 | Selected | 2 |
| p141_mb_059 | Audited | Audited | | | | | | 150 | Selected | 1 |
| p145_mb_029 | | Audited | | | | | | 150 | Selected | 1 |
| p149_mb_244 | Audited | Audited | | | | | | 150 | Selected | 1 |
| p153_mb_228 | Audited | | | | | | | 150 | Selected | 1 |
| p155_mb_091 | Audited | | | | | Audited | | 150 | Selected | 1 |
| p156_mb_088 | Audited | | | | | Audited | | 150 | Selected | 1 |
| p157_mb_085 | Audited | Audited | | | | | | 150 | Selected | 1 |
| p161_mb_176 | | Audited | | | | | | 150 | Selected | 1 |
| p162_mb_058 | Audited | | | | | | | 150 | Selected | 1 |
| p163_mb_060 | | Audited | | | | | | 150 | Selected | 1 |
| p164_mb_226 | Audited | | | | | Audited | | 150 | Selected | 1 |
| p166_mb_052 | | Audited | | | | | | 150 | Selected | 1 |
| p172_mb_224 | Audited | | | | | Audited | | 149 | Selected | 1 |
| p178_mb_050 | Audited | | | | | | | 150 | Selected | 3* |
| p179_mb_051 | | Audited | | | | | | 150 | Selected | 1 |
| p183_mb_148 | | Audited | | | | | | 150 | Selected | 1 |
| p189_mb_220 | | Audited | | | | | | 150 | Selected | 1 |
| p192_mb_121 | Audited | Audited | | Audited | | Audited | Audited | 150 | Selected | 1 |
| p196_mb_163 | Audited | Audited | | | | Audited | | 150 | Selected | 3* |
| p197_mb_083 | Audited | | | | | Audited | | 150 | Selected | 1 |
| p198_mb_082 | Audited | | | | | Audited | | 150 | Selected | 2 |
| p199_mb_314 | Audited | | Audited | | | Audited | Audited | 150 | Selected | 2 |

| | City of | | City of | | | | | | | |
|-----------------|-----------------|----------|-----------------|----------------|----------|----------|---------------|------------|-----------|-------------------------|
| | Boulder | ľ | Louisville City | | | CITY OF | Rocky | | | |
| | Council | City of | Council | Boulder Valley | Thompson | BOULDER | Mountain Fire | | | |
| | Candidates | Longmont | Person Ward | | • | | Ballot | | | |
| | (Vote for 5) | Mayor | | D | G | NO. 2B | Question 5D | | | |
| | Selected | Selected | Selected | Selected | Selected | Selected | Selected | 7 | Contests | selected |
| MBBs to Audit | 147 | 84 | 11 | 12 | 0 | 88 | 31 | 198 | MBBs sele | |
| Ballot-Contests | 10938 | 7445 | 237 | 1306 | 0 | 6484 | 460 | 26870 | | f ballot-contests |
| | + | [| | | | | | 94 | | ounts required |
| | | | | | | | | 292 | | - |
| | | [| | | | | | Total | Total cou | nts required |
| | | ľ | | | | | | Ballots on | | Num Manual Verification |
| | | ľ | | | | | | MBB | | Counts Needed |
| p201_mb_064 | Audited | | | | | | | 150 | Selected | 1 |
| p202_mb_310 | Audited | | | | | | | 150 | Selected | 1 |
| p203_mb_149 | Audited | | | | | | | 150 | Selected | 1 |
| p204_mb_311 | Audited | | | | | | | 150 | Selected | 2 |
| p210_mb_252 | Audited | Audited | | | | Audited | | 150 | Selected | 3 |
| p214_mb_191 | | Audited | | | | | | 150 | Selected | 1 |
| p215_mb_158 | Audited | | | | | Audited | | 150 | Selected | 1 |
| p217_mb_222 | Audited | | | | | | | 150 | Selected | 1 |
| p220_mb_162 | Audited | | | | | | | 150 | Selected | 1 |
| p224_mb_100 | Audited | Audited | | Audited | | Audited | Audited | 150 | Selected | 2 |
| p227_mb_206 | | Audited | | | | | | 150 | Selected | 1 |
| p228_mb_204 | Audited | | | | | Audited | | 150 | Selected | 3 |
| p243_mb_213 | Audited | Audited | | | | Audited | | 150 | Selected | 1 |
| p249_mb_108 | Audited | | | | | | | 150 | Selected | 1 |
| p254_mb_236 | Audited | | | | | Audited | | 149 | Selected | 1 |
| p265_mb_140 | Audited | Audited | | | | Audited | | 150 | Selected | 1 |
| p268_mb_318 | Audited | Audited | | | | Audited | Audited | 150 | Selected | 1 |
| p269_mb_134 | Audited | Audited | | | | Audited | | 150 | Selected | 1 |
| p274_mb_142 | Audited | | | | | | | 150 | Selected | 1 |
| p280_mb_232 | Audited | | | | | | | 150 | Selected | 1 |
| p282_mb_105 | | Audited | | | | | | 150 | Selected | 2 |
| p286_mb_223 | Audited | Audited | | Audited | | Audited | Audited | 150 | Selected | 1 |
| p292_mb_322 | Audited | | | | | | | 150 | Selected | 1 |
| p294_mb_319 | Audited | | | | | Audited | | 150 | Selected | 1 |
| p298_mb_420 | Audited | | | | | | | 150 | Selected | 1 |
| p306_mb_424 | | Audited | | | | | | 149 | Selected | 2 |
| p307_mb_261 | Audited | | | | | Audited | | 150 | Selected | 3* |
| p309_mb_390 | | Audited | | | | | | 150 | Selected | 1 |
| p310_mb_369, | Audited | | | | | Audited | | 150 | Selected | 2 |
| p308_mb_368 | ابر - با: امر ا | <u></u> | | | | | | 150 150 | Selected | |
| p312_mb_389 | Audited | <u> </u> | | | | | | 150 | Selected | 1 |

| | City of | | City of | | | | | | | |
|-----------------|-----------------|----------|-----------------|-----------------------|-----------------|--------------|---------------|-------------------|-----------|--|
| | Boulder | | Louisville City | | | CITY OF | Rocky | | | |
| | Council | City of | Council | Boulder Valley | Thompson | BOULDER | Mountain Fire | | | |
| | Candidates | Longmont | Person Ward | School District | School District | BALLOT ISSUE | Ballot | | | |
| | (Vote for 5) | Mayor | 1 | D | G | NO. 2B | Question 5D | | | |
| | Selected | Selected | Selected | Selected | Selected | Selected | Selected | 7 | Contests | selected |
| MBBs to Audit | 147 | 84 | 11 | 12 | 0 | 88 | 31 | 198 | MBBs se | ected |
| Ballot-Contests | 10938 | 7445 | 237 | 1306 | 0 | 6484 | 460 | 26870 | Number | of ballot-contests |
| | | | | | | | | 94 | Total rec | ounts required |
| | | | | | | | | <u>292</u> | Total cou | ints required |
| | | | | | | | | Total | | |
| | | | | | | | | Ballots on MBB | | Num Manual Verification Counts Needed |
| p313_mb_388 | Audited | | | | | | | 150 | Selected | 1 |
| p317_mb_248 | Audited | | | | | Audited | | 150 | Selected | 2 |
| p322_mb_245 | Audited | | | | | Audited | | 150 | Selected | 3* |
| p323_mb_392 | | Audited | | | | | | 150 | Selected | 1 |
| p324_mb_387 | | Audited | | | | | | 150 | Selected | 1 |
| p325_mb_417 | Audited | | | | | | | 150 | Selected | 3* |
| p326_mb_411 | | | Audited | | | | Audited | 150 | Selected | 1 |
| p327_mb_412 | Audited | | | | | | | 150 | Selected | 3* |
| p337_mb_451 | | | Audited | | | | Audited | 150 | Selected | 1 |
| p338_mb_434 | Audited | | | | | Audited | | 150 | Selected | 1 |
| p340_mb_447 | Audited | | | | | Audited | | 150 | Selected | 2 |
| p341_mb_419 | | Audited | | | | | | 150 | Selected | 1 |
| p343_mb_441 | | Audited | | | | | | 150 | Selected | 1 |
| p344_mb_450 | Audited | | | | | | | 150 | Selected | 1 |
| p347_mb_251 | | Audited | | | | | | 150 | Selected | 2 |
| p348_mb_377 | | Audited | | | | | | 150 | Selected | 2 |
| p349_mb_367 | Audited | | | | | Audited | | 150 | Selected | 3* |
| p351_mb_397 | | Audited | | | | | | 150 | Selected | 1 |
| p353_mb_456 | | Audited | | | | | | 150 | Selected | 1 |
| p357_mb_260 | Audited | Audited | | Audited | | Audited | Audited | 150 | Selected | 3 |
| p360_mb_399 | Audited | A 111 1 | | | | A 111 1 | | 150 | Selected | 1 |
| p362_mb_400 | Audited | Audited | | | | Audited | Audited | 150 | Selected | 1 |
| p363_mb_426 | Audited | Audited | | | | Audited | | 150 | Selected | 2 |
| p364_mb_427 | Audited | | | | | Audited | | 150 | Selected | 1 |
| p366_mb_385 | Audited | A | | | | | | 150 | Selected | 1 |
| p368_mb_386 | A | Audited | | | | | | 150 | Selected | 1 |
| p370_mb_362 | Audited | | | | | 0 | | 148 | Selected | 1 |
| p377_mb_257 | Audited | A | | | | Audited | | 150 | Selected | 3 |
| p378_mb_375 | A so al ta a st | Audited | | | | | | 150 | Selected | 1 |
| p382_mb_393 | Audited | Audited | | | | 0 | | 150 | Selected | 3* |
| p385_mb_407 | Audited | | | | | Audited | | 149 | Selected | 3 |

| | City of | | City of | | | | | | | |
|----------------------------|--------------------|----------|-----------------|-----------------------|-----------------|--------------------|---------------|-------------------|----------------------|--|
| | Boulder | | Louisville City | | | CITY OF | Rocky | | | |
| | Council | City of | Council | Boulder Valley | Thompson | BOULDER | Mountain Fire | | | |
| | Candidates | Longmont | Person Ward | School District | School District | BALLOT ISSUE | Ballot | | | |
| | (Vote for 5) | Mayor | I | D | G | NO. 2B | Question 5D | | | |
| | Selected | Selected | Selected | Selected | Selected | Selected | Selected | 7 | Contests | selected |
| MBBs to Audit | 147 | 84 | 11 | 12 | 0 | 88 | 31 | 198 | MBBs sel | ected |
| Ballot-Contests | 10938 | 7445 | 237 | 1306 | 0 | 6484 | 460 | 26870 | Number | of ballot-contests |
| | | | | | | | | 94 | Total rec | ounts required |
| | | | | | | | | <u>292</u> | Total cou | ints required |
| | | | | | | | | Total | | |
| | | | | | | | | Ballots on MBB | | Num Manual Verification Counts Needed |
| p388_mb_409 | Audited | | | | | | | 150 | Selected | 1 |
| p389_mb_446 | | Audited | | | | | | 150 | Selected | 1 |
| p390_mb_445 | Audited | | | | | Audited | Audited | 149 | Selected | 3 |
| p392_mb_268 | Audited | | | | | Audited | | 150 | Selected | 1 |
| p394_mb_352 | | Audited | | | | | | 150 | Selected | 1 |
| p401_mb_605 | Audited | | | | | Audited | Audited | 150 | Selected | 1 |
| p406_mb_327 | Audited | Audited | | | | Audited | | 150 | Selected | 2 |
| p407_mb_365 | Audited | | | | | Audited | | 150 | Selected | 3* |
| p409_mb_331 | Audited | | | | | | | 150 | Selected | 3* |
| p410_mb_330 | Audited | | | | | | | 150 | Selected | 3* |
| p413_mb_603 | | Audited | | | | | | 150 | Selected | 1 |
| p414_mb_351 | | Audited | | | | | | 150 | Selected | 1 |
| p417_mb_376 | Audited | A 111 1 | | | | | | 150 | Selected | 1 |
| p419_mb_342 | | Audited | | | | | | 150 | Selected | 1 |
| p420_mb_340 | Audited | | | | | | | 149 | Selected | 3 |
| p422_mb_380 | Audited | A | | | | | | 150 | Selected | 1 |
| p423_mb_344 | Accellated | Audited | | | | 0 | | 149 | Selected | 1 |
| p424_mb_355 | Audited Audited | | | | | Audited Audited | | 150 150 | Selected Selected | 3* |
| p426_mb_372 | Audited | | | | | Audited | | 150 | Selected | 2 |
| p427_mb_337 p430_mb_596 | Audited | | | | | Audited | Audited | 149 | Selected | 1 |
| p430_mb_396 | Audited | | | | | Auditeu | Audited | 149 | Selected | 3* |
| p435_mb_373 | Addited | Audited | | | | | | 150 | Selected | 1 |
| p435_mb_375 | | Audited | | | | | | 150 | Selected | 2 |
| p438_mb_611 | Audited | | | | | | | 150 | Selected | 1 |
| p430_mb_011 | Audited | | | | | | | 150 | Selected | 1 |
| p442_mb_325 | Audited | Audited | | Audited | | Audited | Audited | 150 | Selected | 1 |
| p446_mb_353 | Audited | Audited | Audited | Audited | | Audited | Audited | 150 | Selected | 1 |
| p447_mb_358 | Audited | | | | | | | 150 | Selected | 1 |
| p448_mb_614 | Audited | | | | | | | 150 | Selected | 2 |
| p449_mb_589 | | Audited | | | | | | 150 | Selected | 1 |

| | City of Boulder Council Candidates (Vote for 5) | City of Longmont Mayor | | Boulder Valley School District D | Thompson School District G | CITY OF BOULDER BALLOT ISSUE NO. 2B | Rocky Mountain Fire Ballot Question 5D | | | |
|-----------------|---|------------------------------|----------|--|----------------------------------|--|---|----------------------------|-----------|--|
| | Selected | Selected | Selected | Selected | Selected | Selected | Selected | 7 | Contests | selected |
| MBBs to Audit | 147 | 84 | 11 | 12 | 0 | 88 | 31 | 198 | MBBs sel | ected |
| Ballot-Contests | 10938 | 7445 | 237 | 1306 | 0 | 6484 | 460 | 26870 | Number | of ballot-contests |
| | | | | | | | | 94 | Total rec | ounts required |
| | | | | | | | | <u>292</u> | Total cou | ints required |
| | | | | | | | | Total Ballots on MBB | | Num Manual Verification Counts Needed |
| p453_mb_598 | Audited | | | | | | | 150 | Selected | 1 |
| p454_mb_341 | | | Audited | | | | Audited | 150 | Selected | 1 |
| p457_mb_323 | | Audited | | | | | | 150 | Selected | 1 |
| p458_mb_601 | Audited | | | | | Audited | | 150 | Selected | 1 |
| p460_mb_592 | Audited | | | | | | | 150 | Selected | 1 |
| p462_mb_616 | | Audited | | | | | | 150 | Selected | 1 |
| p463_mb_574 | Audited | | | | | Audited | | 150 | Selected | 1 |
| p464_mb_573 | | Audited | | | | | | 150 | Selected | 1 |
| p467_mb_575 | Audited | | Audited | Audited | | Audited | Audited | 150 | Selected | 3 |
| p468_mb_576 | | Audited | | | | | | 150 | Selected | 1 |
| p471_mb_600 | Audited | | | | | | | 150 | Selected | 1 |
| p472_mb_602 | Audited | | | | | Audited | | 150 | Selected | 1 |
| p476_mb_568 | | Audited | | | | | | 150 | Selected | 1 |
| p477_mb_604 | Audited | | | | | Audited | | 150 | Selected | 3 |
| p479_mb_569 | Audited | | | | | Audited | | 150 | Selected | 2 |
| p482_mb_554 | Audited | | | | | Audited | | 150 | Selected | 1 |
| p484_mb_572 | Audited | | | | | Audited | | 149 | Selected | 1 |
| p485_mb_582 | | Audited | | | | | | 150 | Selected | 3 |
| p488_mb_556 | Audited | | | | | | | 150 | Selected | 1 |
| p489_mb_590 | Audited | | | | | Audited | | 150 | Selected | 1 |
| p490_mb_545 | Audited | Audited | | | | Audited | | 150 | Selected | 1 |
| p492_mb_579 | Audited | | | | | | | 150 | Selected | 3* |
| p494_mb_577 | Audited | | | | | Audited | | 150 | Selected | 1 |
| p498_mb_551 | | Audited | | | | | | 150 | Selected | 1 |
| p502_mb_534 | Audited | | | | | | | 150 | Selected | 1 |
| p509_mb_458 | | Audited | | | | | | 150 | Selected | 2 |
| p510_mb_555 | Audited | | | | | Audited | | 150 | Selected | 1 |
| p511_mb_538 | Audited | | | | | | | 149 | Selected | 1 |
| p512_mb_539 | | Audited | | | | | | 150 | Selected | 2 |
| p513_mb_537 | Audited | Audited | Audited | Audited | | Audited | Audited | 150 | Selected | 2 |
| p515_mb_546 | Audited | | | | | | | 149 | Selected | 2* |

Contest and MBB Selection - 2011 Coordinated Election Audit

| | City of | | City of | | | | | | | |
|-----------------|--------------|----------|-----------------|-----------------|-----------------|--------------|---------------|-------------------|-----------|--|
| | Boulder | | Louisville City | | | CITY OF | Rocky | | | |
| | Council | City of | Council | Boulder Valley | Thompson | BOULDER | Mountain Fire | | | |
| | Candidates | Longmont | Person Ward | School District | School District | BALLOT ISSUE | Ballot | | | |
| | (Vote for 5) | Mayor | I | D | G | NO. 2B | Question 5D | | | |
| | Selected | Selected | Selected | Selected | Selected | Selected | Selected | 7 | Contests | selected |
| MBBs to Audit | 147 | 84 | 11 | 12 | 0 | 88 | 31 | 198 | MBBs se | lected |
| Ballot-Contests | 10938 | 7445 | 237 | 1306 | 0 | 6484 | 460 | 26870 | Number | of ballot-contests |
| | | | | | | | | 94 | Total rec | counts required |
| | | | | | | | | <u>292</u> | Total co | unts required |
| | | | | | | | | Total | | |
| | | | | | | | | Ballots on MBB | | Num Manual Verification Counts Needed |
| p520_mb_524 | | Audited | | | | | | 150 | Selected | 1 |
| p522_mb_530 | Audited | | | | | Audited | | 148 | Selected | 3* |
| p525_mb_514 | Audited | | | | | Audited | | 150 | Selected | 2 |
| p528_mb_547 | Audited | | | | | | | 149 | Selected | 2* |
| p529_mb_516 | Audited | | | | | | | 150 | Selected | 2 |
| p532_mb_622 | Audited | | | | | Audited | | 150 | Selected | 1 |
| p533_mb_519 | Audited | Audited | | | | Audited | | 150 | Selected | 1 |
| p543_mb_494 | Audited | | | | | Audited | | 150 | Selected | 1 |
| p544_mb_493 | Audited | | | | | Audited | | 150 | Selected | 3* |
| p547_mb_501 | | Audited | | | | | | 150 | Selected | 1 |
| p548_mb_525 | Audited | | | | | Audited | | 150 | Selected | 1 |
| p552_mb_518 | | | | | | | Audited | 150 | Selected | 1 |
| p553_mb_498 | | | | | | | Audited | 161 | Selected | 1 |

Attachment 3 - Sample Tally Sheet

| Contest | City of Boulder Council Candidates |
|-----------------|------------------------------------|
| District Styles | DS-17, 18 |

| Audit Batch SYS | Date | Page 1 |
|-----------------|------|--------|
| p178_mb_050 | | |
| | | SYS |

| | Print First and Last Name | Affiliation |
|-----------|---------------------------|-------------|
| Caller | | |
| Witness | | |
| Tallier 1 | | |
| Tallier 2 | | |
| | | |

| Option | Group 1 | Group 2 | Group 3 | Group 4 | Group 5 | Group 6 | Total |
|------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------|
| Ronald M. Chase | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | |
| Mark Gelband | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | |
| Fenno Hoffman | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | |
| Jonathan R. Hondorf | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | |
| Kevin Hotaling | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | |
| Tom Johnston | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | |
| Suzanne Jones | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | |
| George Karakehian | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | |
| Stephen F. Keenan | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | |
| Dan King | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | |
| Lisa Morzel | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | |
| Tim Plass | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | |
| Ken Wilson | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | |
| Daniel Ziskin | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | |
| Overvotes | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | |
| Undervotes | | | | | | | |
| Not On Ballot | | | | | | | |
| Group Total | | | | | | | |

Α Batch # 8 Count # 1

Attachment 3 - Sample Tally Sheet

| Contest | City of Boulder Council Candidates |
|-----------------|------------------------------------|
| District Styles | DS-17, 18 |

| Audit Batch SYS | Date | Page 2 | |
|-----------------|------|--------|--|
| p178_mb_050 | | | |
| | | SYS | |

A Batch # 8 Count # 1

| | Print First and Last Name | Affiliation |
|-----------|---------------------------|-------------|
| Caller | | |
| Witness | | |
| Tallier 1 | | |
| Tallier 2 | | |

| Option | Group 7 | Group 8 | Group 9 | Group 10 | Group 11 | Group 12 | Total |
|------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------|
| Ronald M. Chase | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | |
| Mark Gelband | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | |
| Fenno Hoffman | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | |
| Jonathan R. Hondorf | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | |
| Kevin Hotaling | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | |
| Tom Johnston | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | |
| Suzanne Jones | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | |
| George Karakehian | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | |
| Stephen F. Keenan | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | |
| Dan King | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | |
| Lisa Morzel | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | |
| Tim Plass | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | |
| Ken Wilson | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | |
| Daniel Ziskin | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | |
| Overvotes | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | |
| Undervotes | | | | | | | |
| Not On Ballot | | | | | | | |
| Group Total | | | | | | | |

Attachment 3 - Sample Tally Sheet

| Contest | City of Boulder Council Candidates |
|-----------------|------------------------------------|
| District Styles | DS-17, 18 |

| | Print First and Last Name | Affiliation |
|-----------|---------------------------|-------------|
| Caller | | |
| Witness | | |
| Tallier 1 | | |
| Tallier 2 | | |

| Option | Group 13 | Group 14 | Group 15 | Total |
|------------------------|-------------------------------|-------------------------------|-------------------------------|-------|
| Ronald M. Chase | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | |
| Mark Gelband | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | |
| Fenno Hoffman | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | |
| Jonathan R. Hondorf | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | |
| Kevin Hotaling | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | |
| Tom Johnston | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | |
| Suzanne Jones | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | |
| George Karakehian | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | |
| Stephen F. Keenan | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | |
| Dan King | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | |
| Lisa Morzel | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | |
| Tim Plass | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | |
| Ken Wilson | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | |
| Daniel Ziskin | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | |
| Overvotes | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | 01 02 03 04 05 06 07 08 09 10 | |
| Undervotes | | | | |
| Not On Ballot | | | | |
| Group Total | | | | |

| Audit Batch SYS | Date | Page 3 |
|-----------------|------|--------|
| p178_mb_050 | | |
| | | |

| SYS |
|---------|
| А |
| Batch # |
| 8 |
| Count # |
| 1 |

Machine Count:

| MBB Name | Contest Name | Contest Ballots | Cast Votes | Ronald M. Chase | Mark Gelband | Fenno Hoffman | Jonathan R. Hondorf | Kevin Hotaling | Tom Johnston | Suzanne Jones | George Karakehian | Stephen F. Keenan | Dan King | Lisa Morzel | Tim Plass | Ken Wilson | Daniel Ziskin | Over Votes | Under Votes |
|-------------|--|--------------------|---------------|--------------------|-----------------|------------------|------------------------|-------------------|-----------------|------------------|----------------------|----------------------|-------------|----------------|--------------|---------------|------------------|---------------|----------------|
| p000_mb_000 | Boulder Council Candidates Vote For 5 | 44 | 153 | 0 | 3 | 9 | 12 | 2 | 4 | 28 | 18 | 1 | 9 | 22 | 19 | 14 | 12 | 0 | 67 |

Comparison Worksheet:

Tallier 2

| Contest | City of Boulder Council Candidates | | | | | | |
|-----------------|------------------------------------|-------------|--|--|--|--|--|
| District Styles | DS-17, 18 | | | | | | |
| | | | | | | | |
| | Print First and Last Name | Affiliation | | | | | |
| Caller | Taylor O'Dell | | | | | | |
| Witness | | | | | | | |
| Tallier 1 | Will Deoreo | | | | | | |

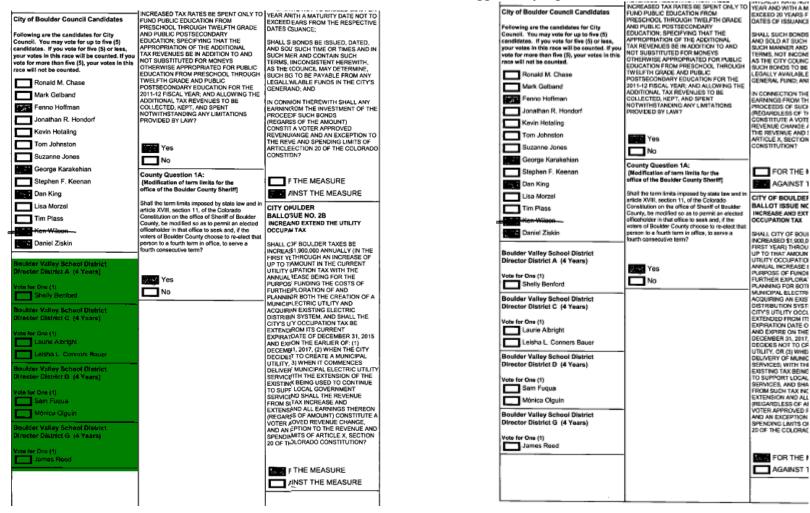
| Audit Batch MBB | Date | Page 1 |
|-----------------|------------|---------|
| ` | 11/11/2011 | |
| | | SYS |
| | | С |
| | | Batch # |
| | | 22,23 |
| | | Count # |
| | | 1 |

| Option | Count 1 | Count2 | MVW Count | Machine Count | Diff |
|---------------------|---------|--------|-----------|---------------|------|
| Ronald M. Chase | 0 | 0 | 0 | 0 | 0 |
| Mark Gelband | 5 | 3 | 3 | 3 | 0 |
| Fenno Hoffman | 10 | 9 | 9 | 9 | 0 |
| Jonathan R. Hondorf | 9 | 12 | 12 | 12 | 0 |
| Kevin Hotaling | 3 | 2 | 2 | 2 | 0 |
| Tom Johnston | 11 | 4 | 4 | 4 | 0 |
| Suzanne Jones | 27 | 28 | 28 | 28 | 0 |
| George Karakehian | 11 | 18 | 18 | 18 | 0 |
| Stephen F. Keenan | 4 | 1 | 1 | 1 | 0 |
| Dan King | 12 | 9 | 9 | 9 | 0 |
| Lisa Morzel | 20 | 22 | 22 | 22 | 0 |
| Tim Plass | 20 | 19 | 19 | 19 | 0 |
| Ken Wilson | 12 | 14 | 14 | 14 | 0 |
| Daniel Ziskin | 8 | 11 | 11 | 12 | 1 |
| Overvotes | 0 | 0 | 0 | 0 | 0 |
| Undervotes | 68 | 68 | 68 | 67 | -1 |
| Not On Ballot | 96 | 107 | | | |
| Group Total | 44 | | | | |

Summary of Differences

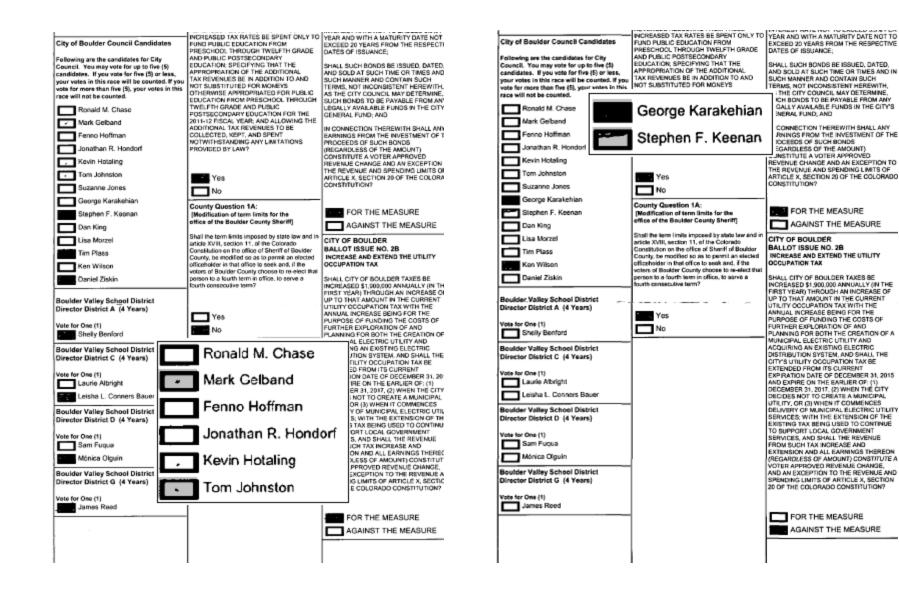
Out of 26,870 ballot contests audited, 23 highlighted differences between the audit team count and machine count. All were associated with voter intent and affected only the City of Boulder Council race. 17 were associated with a strike out of choice, where no overvote was created and the remaining five were associated with incomplete, hesitant or stray markings. Due to number of differences identified, a net of 11,654 additional Boulder City ballots were reviewed in Ballot Now (64,500 total reviewed), identifying 20 additional instances. Below are images reflecting the types of differences.

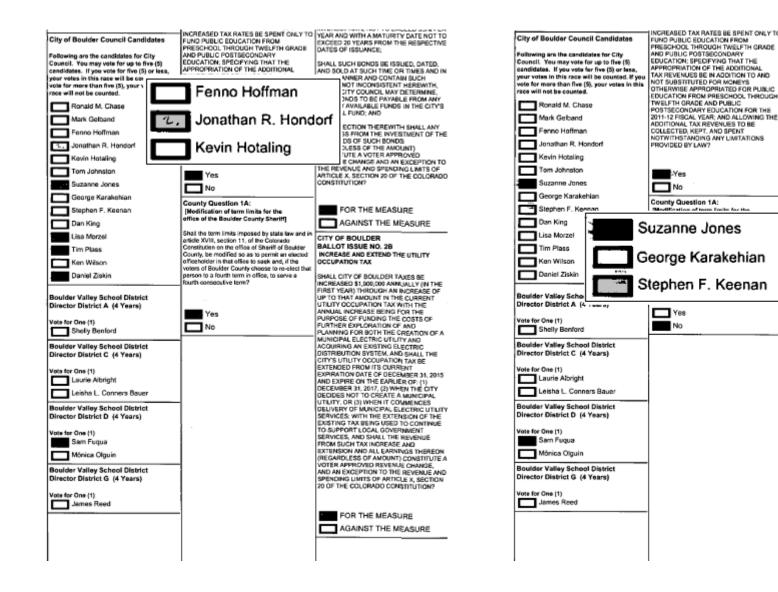
In this example, the candidate (Wilson) was struck out on Boulder City Council and no additional choice was made. Because no more than five boxes were filled in, no overvote was created and the contest was not flagged for judge resolution.



Below are examples of the incomplete, hesitant & stray marks that occurred. Because no more than five boxes were filled in, no overvote was created and the contest was not flagged for judge resolution.

| Following are the candidates for Gig Council. You may vets for sp to f candidates. If you vote for fre (5) peur votes in this race will be ose use for more than five (5), your v can will not be counted. Ronald M. Chase Mark Geband Fonto Hotiman | FUND PUBLIC EDUCATION FROM | YEAR AND WITH A MATURITY DATE NOT TO EXCEED 20 YEARS PROM THE RESPECTIVE DATES OF USUANCE: SHALL SUCH BONDS BE ISSUED, DATED, AND SOLD AT SUCH TIME ON TIMES AND IN SUCH MANNER AND CONTAN SUCH TO THE CONTROL VENT HERMITH, SUCH BONDS TO BE PAYABLE FROM ANY LEGALLY AVALABLE FLOOS IN THE CITY'S GENERAL FLOO, AND IN CONNECTION THERMISTIC THE EARINGS FROM THE INVESTIGENT OF THE EARINGS FROM THE INVESTIGENT OF THE EARINGS FROM THE INVESTIGENT OF THE EARINGS OF SUCH BONDS | Policeving are th Council. You m cendiciatos. H y your vates in th | e counted. I M. Chase Selband | ИСЛЕАНЕР ТАХ ПАТЕВ ВЕ ВРЕНТ ОК.У ТО FUND PUBLIC EDUCATION FROM MPESCHOOL THROUGH THE FUND AND PUBLIC POSTBECONDARY EDUCATION SECEPTING THAT THE APPROPRIATION OF THE ADDITIONAL TAX REVENUES BE IN ADDITION TO AND NOT SUBSTITUTED FOR MONEYS GIFLENVISE BE IN ADDITION TO FUND EDUCATION FROM PRESCHOOL THROUGH THEFT IN GRADE AND PUBLIC SUZZANDE ADDITION OF THE SUZZANDE JONES | EXCEED 20 YEARS FROM THE RESPECTIVE DATES OF INSUMACE; SHALL SUCH BONDS BE ISSUED, DATED. AND SOLD AT SUCH TIME OR TIMES AND IN SUCH WANNER AND CONTAINS SUCH TEIMS, NOT INCOMSSTENT HERREITH, AS THE GITY COUNCE, MAY DETERMINE, SUCH BONDS TO BE INVASUE FROM ANY LEGALLY WAILABLE FUNDS IN THE CITY'S TENERAL FUND, AND V CONNECTION THERREITH SHALL ANY V CONNECTION THE INVESTIGATION TO BE |
|---|--|---|--|---|--|---|
| Jonathan R. Hendorf Kavin Hotaling Tom Johnston Suzarne Jones George Karakehian Suzarne Jones George Karakehian Dan King Lisä Morzel Tim Plaes Ken Wilson Daniel Ziskin Boulder Valley School District Director District A (4 Years) Vate for One (1) Laurie Albright Leicha L. Conners Bauer Boulder Valley School District Director District O (4 Years) Vate for One (1) Sam Fuqua Ménica Olguín Boulder Valley School District Director District O (4 Years) Vate for One (1) Sam Fuqua Ménica Olguín Boulder Valley School District Director District O (4 Years) Vate for One (1) Sam Fuqua Ménica Olguín Boulder Valley School District Director District O (4 Years) Vate for One (1) Sam Fuqua Ménica Olguín Boulder Valley School District Director District O (4 Years) Vate for One (1) James Roed | Yes No County Question 1A: No County Question 1A: No County Question 1A: No County Question 1A: No County County ShertH County County ShertH County County County ShertH County C | PROCEEDS OF BUOLDER INFORMATION INFORMATI | Jonsthe Kevin H Suzann Suzann Sighter Dan kör Lisa Mo Tim Pla Danied J Boulder Valler Director Distri Vets far Gre (1) Boulder Valler Director Distri Vets far Gre (1) Director Distri Vets far Gre (1) Director Distri Vets far Gre (1) Director Distri Director Distri Director Distri Vets far Gre (1) Soulder Valler Director Distri Vets far Gre (1) Soulder Valler Director Distri Vets far Gre (1) Soulder Valler Director Distri | an R. Hondorf Hotaing phraton ne Jones s Karakehian nr F. Koenan rg orzei asa Tasin Ziskin ry School District rict C (4 Years)) Benford ry School District fet C (4 Years))) Ahright L. Corners Bauer ry School District fet C (4 Years))) uqua s Olguin ry School District | George Karakehian Stephen F. Keenan Dan King Lisa Morzel Costiliation on the office of Shertf of Bouder Cost, be modified to as be permit an elected officientider in the office to see and at the voters of Bouder County clocce to re-elect that patho is a low them office. To serve a fourth consecutive term? | PROCEEDS OF THE AND THE ON THE HEADNELDS OF THE AND CANT) CONSTITUTE A VOTER APPROVED INVESSION OF THE AND CANT) CONSTITUTE A VOTER APPROVED INVESSION OF THE ADD. INVESSION OF ADD. INVESSION ADD. INV |
| | | · | | | | |





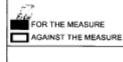
NCREASED TAX RATES BE SPENT ONLY TO FUND PUBLIC EDUCATION FROM Resochool Through Twelf The GRADE DATES OF ISSUANCE:

> SHALL SUCH BONDS BE ISSUED, DATED AND SOLD AT SUCH THE OR TIMES AND SUCH MANNER AND CONTAIN SUCH TERMS, NOT INCONSISTENT HEREWITH, AS THE CITY COUNCIL MAY DETERMINE. SUCH BONDS TO BE PAYABLE FROM AN LEGALLY AVAILABLE FUNDS IN THE CITY GENERAL FUND; AND

IN CONNECTION THEREWITH SHALL AN LARNINGS FROM THE INVESTMENT OF T PROCIEDS OF SUCH BONDS (REGARDLESS OF THE AMOUNT) CONSTITUTE A VOTER APPROVED REVIEW CHANGE AND AN EXCEPTION THE REVENUE AND SHO NO MINTS OF ARTICLE X, SECTION 20 OF THE COLORA CONSTITUTION?

FOR THE MEASURE

AGAINST THE MEASURE CITY OF BOULDER BALLOT ISSUE NO. 2B INCREASE AND EXTEND THE UTILITY OCCUPATION TAX SHALL CITY OF BOULDER TAXES BE INCREASED \$1,900,000 ANNUALLY (IN TH FIRST YEAR! THROUGH AN INCREASE OF UP TO THAT AMOUNT IN THE CURRENT JTILITY OCCUPATION TAX WITH THE ANNUAL INCREASE BEING FOR THE PURPOSE OF FUNDING THE COSTS OF FURTHER EXPLORATION OF AND PLANNING FOR BOTH THE CREATION OF MUNICIPAL ELECTRIC UTIL/ITY AND ACQUIRING AN EXISTING ELECTRIC DISTRIBUTION SYSTEM, AND SHALL THE CITY'S UTILITY OCCUPATION TAX BE EXTENDED FROM ITS CURRENT EXPIRATION DATE OF DECEMBER 31, 201 AND EXPIRE ON THE EARLIER OF: (1) DECEMBER 31, 2017, (2) WHEN THE CITY DECIDES NOT TO CREATE A MUNICIPAL UTILITY, OR (3) WHEN IT COMMENCES. DELIVERY OF MUNICIPAL ELECTRIC UTIL SERVICES: WITH THE EXTENSION OF TH EXISTING TAX BEING USED TO CONTINU TO SUPPORT LOCAL GOVERNMENT SERVICES, AND SHALL THE REVENUE FROM SUCH TAX INCREASE AND EXTENSION AND ALL EARNINGS THEREC (REGARDLESS OF AMOUNT) CONSTITUT VOTER APPROVED REVENUE CHANGE AND AN EXCEPTION TO THE REVENUE A SPENDING LIMITS OF ARTICLE X, SECTIC 20 OF THE COLORADO CONSTITUTION?



Discrepancy Review Details - 2011 Coordinated Election Audit

| Source | SYS | Batch | Candidate | Issue | Total |
|--------|-----|--------|------------|---|-------|
| Review | F | 43 | JONES | INCOMPLETE MARK (" ") | 4 |
| Audit | А | 41 | JONES | INCOMPLETE MARK (@ Partially filled in) | |
| Review | D | 17 | JONES | STRIKE OUT | |
| Review | D | 44 | JONES | STRIKE OUT | |
| Audit | А | 41 | MORZEL | INCOMPLETE MARK (@ Partially filled in) | 10 |
| Audit | A | 49 | MORZEL | STRIKE OUT | |
| Review | D | 21 | MORZEL | STRIKE OUT | |
| Review | D | 44 | MORZEL | STRIKE OUT | |
| Review | E | 48 | MORZEL | STRIKE OUT | |
| Audit | G | 51 | MORZEL | STRIKE OUT | |
| Audit | G | 51 | MORZEL | STRIKE OUT | |
| Review | G | 59 | MORZEL | STRIKE OUT | |
| Review | Н | 2 | MORZEL | STRIKE OUT | |
| Audit | Н | 64 | MORZEL | STRIKE OUT | |
| Audit | А | 8 | PLASS | STRAY MARK (X strayed into Plass target area) | 4 |
| Audit | D | 43 | PLASS | STRIKE OUT | |
| Review | D | 54 | PLASS | STRIKE OUT | |
| Audit | С | 44 | PLASS | STRIKE OUT (Only through box, not through choice) | |
| Audit | А | 41 | KARAKEHIAN | INCOMPLETE MARK (@ Partially filled in) | e |
| Review | С | 58 | KARAKEHIAN | HESITANT MARK (Pen rest) | |
| Review | А | 44 | KARAKEHIAN | STRIKE OUT | |
| Review | D | 16 | KARAKEHIAN | STRIKE OUT | |
| Audit | G | 62 | KARAKEHIAN | STRIKE OUT | |
| Review | Н | 35 | KARAKEHIAN | STRIKE OUT | |
| Review | С | 58 | WILSON | HESITANT MARK (Pen rest) | 3 |
| Review | С | 30 | WILSON | STRAY MARK | |
| Audit | А | 57 | WILSON | STRIKE OUT | |
| Review | А | 12 | KING | AMBIGUOUS POSSIBLE X OUT | 4 |
| Audit | А | 41 | KING | INCOMPLETE MARK (@ Partially filled in) | |
| Review | С | 58 | KING | HESITANT MARK (Pen rest) | |
| Review | G | 41 | KING | STRIKE OUT | |
| Audit | С | 22, 23 | ZISKIN | STRIKE OUT | 3 |
| Audit | G | 16 | ZISKIN | STRIKE OUT | |
| Audit | G | 51 | ZISKIN | STRIKE OUT | |
| Audit | G | 72 | HONDORF | HESITANT MARK ("?" in target area; other choices filled in) | 4 |
| Review | F | 43 | HONDORF | INCOMPLETE MARK (" ") | |
| Audit | D | 43 | HONDORF | STRIKE OUT | |
| Review | D | 50 | HONDORF | STRIKE OUT | |
| Audit | Е | 55 | HOFFMAN | STRIKE OUT | 3 |
| Audit | Н | 8 | HOFFMAN | STRIKE OUT | |
| Audit | Н | 67 | HOFFMAN | STRIKE OUT | |
| Audit | D | 38 | JOHNSTON | HESITANT MARK (Pen rest) | 2 |
| Review | F | 4 | JOHNSTON | STRIKE OUT | |
| Audit | D | 38 | GELBAND | HESITANT MARK (Pen rest) | 3 |
| Review | D | 22 | GELBAND | STRIKE OUT | |
| Audit | G | 75 | GELBAND | STRIKE OUT | |
| Review | Е | 48 | HOTALING | STRIKE OUT | 2 |
| Review | G | 33 | HOTALING | STRIKE OUT | |
| Audit | D | 42 | KEENAN | HESITANT MARK (Started to fill in) | 4 |
| Audit | G | 78 | KEENAN | STRAY MARK (Marker smudge in target area for Keenan) | |
| Audit | А | 47 | KEENAN | STRIKE OUT | |
| Review | D | 47 | KEENAN | STRIKE OUT | |
| Review | D | 13 | CHASE | STRIKE OUT | 1 |

| Batches | Ballots | Boulder | Already | Net |
|----------|----------|---------|---------|----------|
| Reviewed | Reviewed | City | Audited | Reviewed |
| A: 72-1 | 10,646 | 3,028 | 1,197 | 1,831 |
| B: 69-51 | 2,847 | 852 | 461 | 391 |
| C:68-27 | 6,298 | 2,377 | 1,121 | 1,256 |
| D: 58-1 | 8,247 | 2,920 | 1,331 | 1,589 |
| E: 79-32 | 6,350 | 1,875 | 836 | 1,039 |
| F: 75-1 | 11,101 | 3,352 | 1,321 | 2,031 |
| G: 83-28 | 8,717 | 3,062 | 1,652 | 1,410 |
| H: 76-1 | 10,328 | 3,844 | 1,737 | 2,107 |
| | 64,534 | 21,310 | 9,656 | |

Net additional ballots reviewed in Ballot Now 11,654

* Resolution discrepancy was attributed to a difference in opinion of voter intent

53

Total Discrepancies Identified

2011 Coordinated Election Audit Discrepancy Review

| Sorted winners | Candidate | Votes | Margin | Take away .005 from winner | Mandatory recount | What would margin need to be? | Net Change required | Resolution discrepancies | Discrepancy Rate | Adjusted Margin | Does it trigger recount? |
|----------------|------------|--------|--------|----------------------------------|----------------------|-------------------------------------|------------------------|--------------------------|---------------------|--------------------|--------------------------------|
| 1 | Jones | 12,993 | | 12,928.04 | | | | 4 | 0.000307858 | | |
| 2 | Morzel | 12,410 | 583 | 12,347.95 | No | 64.965 | 518.035 | 10 | 0.000805802 | 589 | No |
| 3 | Plass | 10,552 | 1858 | 10,499.24 | No | 62.05 | 1795.95 | 4 | 0.000379075 | 1852 | No |
| 4 | Karakehian | 10,066 | 486 | 10,015.67 | No | 52.76 | 433.24 | 6 | 0.000596066 | 488 | No |
| 5 | Wilson | 9,990 | 76 | 9,940.05 | No | 50.33 | 25.67 | 3 | 0.000300300 | 73 | No |
| 6 | King | 8,654 | 1336 | 8,610.73 | No | 49.95 | 1286.05 | 4 | 0.000462214 | 1337 | No |
| 7 | Ziskin | 7,129 | 1525 | 7,093.36 | No | 43.27 | 1481.73 | 3 | 0.000420816 | 1524 | No |
| 8 | Hondorf | 6,657 | 472 | 6,623.72 | No | 35.645 | 436.355 | 4 | 0.000600871 | 473 | No |
| 9 | Hoffman | 6,616 | 41 | 6,582.92 | No | 33.285 | 7.715 | 3 | 0.000453446 | 40 | No |
| 10 | Johnston | 3,778 | 2838 | 3,759.11 | No | 33.08 | 2804.92 | 2 | 0.000529381 | 2837 | No |
| 11 | Gelband | 3,551 | 227 | 3,533.25 | No | 18.89 | 208.11 | 3 | 0.000844832 | 228 | No |
| 12 | Hotaling | 1,897 | 1654 | 1,887.52 | No | 17.755 | 1636.245 | 2 | 0.001054296 | 1653 | No |
| 13 | Keenan | 640 | 1257 | 636.80 | No | 9.485 | 1247.515 | 4 | 0.006250000 | 1259 | No |
| | | 94,933 | | | | | | | | | |
| | | | | | | | | Discrepancy | Discrepancy | | |
| | | | | | | | Counts | Count | Rate | | |
| | | | | | | Ballots Audited | 26,870 | 27 | 0.001004838 | | |
| | | | | | Boulder (| City Ballots Audited | 10,938 | 27 | 0.002468459 | | |
| | | | | Boulde | r City Option | n Boxes Audited | 153,132 | 27 | 0.000176318 | | |
| | | | | Ballots | Visually Inspe | cted in Ballot Now | 64,534 | 26 | 0.000402888 | | |
| | | | | Boulder Cit | y Ballots Inspe | ected in Ballot Now | 21,310 | 26 | 0.001220084 | | |
| | | | I | Boulder City Option | on Boxes Insp | ected in Ballot Now | 298,340 | 26 | 0.000087149 | | |

| Boulder City Option Boxes inspected in Ballot Now | 290,340 | 20 | 0.000007 149 |
|---|---------|----|--|
| Net Boulder City Ballots Inspected w/ audited ballots excluded | 11,654 | 26 | 0.002230994 |
| Net Boulder City Option Boxes Inspected w/ audited ballots excluded | 163,156 | 26 | 0.000159357 |
| Totals: | 316,288 | 53 | 0.000167569 Boulder City Combined Error Rate |
| All Other Contests Audited | 15,932 | 0 | 0.00000000 |
| All Other Option Boxes Audited | 31864 | 0 | 0.00000000 |
| Totals: | 348,152 | 53 | 0.000152232 Combined Error Rate |
| | | | |

Outcome Impact Review - 2011 Coordinated Election Audit

| Contest | w | L | Margin W - L | V = W + L | Recount Threshold 0.005*W | Discrepancy Adjustment (1.995*U*V) | Recount Threshold with Discrepancy Adjustment Included | How close is margin to new threshold? M/threshold |
|---|--------|--------|-----------------|--------------|---------------------------------|--|--|--|
| Boulder Council Candidates (Vote for 5) | 9,961 | 9,883 | 78 | 19,844 | 49.805 | 6.6338 | 56.4388 | 1.3820 |
| Lafayette Council Candidates (Vote for 6) | 2,564 | 2,202 | 362 | 4,766 | 12.82 | 1.5933 | 14.4133 | 25,115 |
| Longmont Mayor | 10,559 | 10,393 | 166 | 20,952 | 52.795 | 7.0042 | 59.7992 | 2.776 |
| Longmont Council Member At-Large | 7,307 | 5,431 | 1,876 | 12.738 | 36.535 | 4.2583 | 40.7933 | 45.987 |
| Longmont Council Member Ward 1 | 2,585 | 1,706 | 879 | 4,291 | 12.925 | 1.4345 | 14.3595 | 61.213 |
| Longmont Council Member Ward 3 | 3,644 | 2,123 | 1,521 | 5,767 | 18.22 | 1.9279 | 20.1479 | 75.491 |
| Louisville Mayor At-Large | 3,015 | 2,806 | 209 | 5,821 | 15.075 | 1.9460 | 17.0210 | 12.279 |
| Louisville City Council Person Ward I | 1,059 | 863 | 196 | 1,922 | 5.295 | 0.6425 | 5.9375 | 33.010 |
| Louisville City Council Person Ward II | 1,452 | 419 | 1,033 | 1,871 | 7.26 | 0.6255 | 7.8855 | 131.000 |
| Louisville City Council Person Ward III UNOPPOSED | 1,416 | 0 | 1,416 | 1,416 | 7.08 | 0.4734 | 7.5534 | 187.466 |
| Boulder Valley School District A UNOPPOSED | 25,235 | 0 | 25,235 | 25,235 | 126.175 | 8.4361 | 134.6111 | 187.466 |
| Boulder Valley School District C | 21,199 | 8,362 | 12,837 | 29,561 | 105.995 | 9.8822 | 115.8772 | 110.781 |
| Boulder Valley School District D | 17,262 | 13,472 | 3,790 | 30,734 | 86.31 | 10.2744 | 96.5844 | 39.240 |
| Boulder Valley School District G UNOPPOSED | 24,953 | 0 | 24,953 | 24,953 | 124.765 | 8.3418 | 133.1068 | 187.466 |
| Park School At Large (Vote for 3) UNOPPOSED | 92 | 89 | 3 | 181 | 0.46 | 0.0605 | 0.5205 | 5.7630 |
| St. Vrain Valley School District A | 13,332 | 6,459 | 6,873 | 19,791 | 66.66 | 6.6161 | 73.2761 | 93.795 |
| St. Vrain Valley School District C UNOPPOSED | 16,325 | 0 | 16,325 | 16,325 | 81.625 | 5.4574 | 87.0824 | 187.466 |
| St. Vrain Valley School District E UNOPPOSED | 16,769 | 0 | 16,769 | 16,769 | 83.845 | 5.6059 | 89.4509 | 187.466 |
| St. Vrain Valley School District G UNOPPOSED | 16,166 | 0 | 16,166 | 16,166 | 80.83 | 5.4043 | 86.2343 | 187.466 |
| Fhompson School District A | 31 | 15 | 16 | 46 | 0.155 | 0.0154 | 0.1704 | 93.909 |
| Fhompson School District B UNOPPOSED | 37 | 0 | 37 | 37 | 0.185 | 0.0124 | 0.1974 | 187.466 |
| Fhompson School District C UNOPPOSED | 36 | 0 | 36 | 36 | 0.18 | 0.0120 | 0.1920 | 187.466 |
| Fhompson School District D UNOPPOSED | 36 | 0 | 36 | 36 | 0.18 | 0.0120 | 0.1920 | 187.466 |
| Fhompson School District G | 30 | 19 | 11 | 49 | 0.15 | 0.0164 | 0.1664 | 66.113 |
| Proposition 103 (STATUTORY) | 43,910 | 36,501 | 7,409 | 80,411 | 219.55 | 26.8814 | 246.4314 | 30.065 |
| County Question 1A: | 46,193 | 30,363 | 15,830 | 76,556 | 230.965 | 25.5927 | 256.5577 | 61.701 |
| BOULDER BALLOT ISSUE NO. 2A | 19,114 | 6,402 | 12,712 | 25,516 | 95.57 | 8.5300 | 104.1000 | 122.1134 |
| BOULDER BALLOT ISSUE NO. 2B | 13,143 | 12,997 | 146 | 26,140 | 65.715 | 8.7386 | 74.4536 | 1.9610 |
| Boulder Ballot Question No. 2C | 13,560 | 12,624 | 936 | 26,184 | 67.8 | 8.7533 | 76.5533 | 12.226 |
| Boulder Ballot Question No. 2D | 20,088 | 2,596 | 17,492 | 22,684 | 100.44 | 7.5833 | 108.0233 | 161.928 |
| Boulder Ballot Question No. 2E | 15,223 | 6,428 | 8,795 | 21,651 | 76.115 | 7.2379 | 83.3529 | 105.5152 |
| Boulder Ballot Question No. 2F | 20,235 | 2,164 | 18,071 | 22,399 | 101.175 | 7.4880 | 108.6630 | 166.303 |
| Boulder Ballot Question No. 2G | 17,490 | 4,703 | 12,787 | 22,193 | 87.45 | 7.4191 | 94.8691 | 134.785 |
| Boulder Ballot Question No. 2H | 18,397 | 6,557 | 11,840 | 24,954 | 91.985 | 8.3421 | 100.3271 | 118.014 |
| afayette Question No. 2A | 3,275 | 1,961 | 1,314 | 5,236 | 16.375 | 1.7504 | 18.1254 | 72.4950 |
| afayette Question No. 2B | 3,348 | 2,019 | 1,329 | 5,367 | 16.74 | 1.7942 | 18.5342 | 71.7053 |
| afayette Question No. 2C | 3,064 | 2,160 | 904 | 5,224 | 15.32 | 1.7464 | 17.0664 | 52.969 |
| afayette Question No. 2D | 4,596 | 602 | 3,994 | 5,198 | 22.98 | 1.7377 | 24.7177 | 161.584 |
| _afayette Question No. 2E | 4,676 | 574 | 4,102 | 5,250 | 23.38 | 1.7551 | 25.1351 | 163.198 |
| ongmont Ballot Question 2A | 13,239 | 8,531 | 4,708 | 21,770 | 66.195 | 7.2777 | 73.4727 | 64.078 |
| ongmont Ballot Question 2B | 12,168 | 6,282 | 5,886 | 18,450 | 60.84 | 6.1678 | 67.0078 | 87.840 |
| THOMPSON SCHOOL BALLOT ISSUE 3A | 51 | 20 | 31 | 71 | 0.255 | 0.0237 | 0.2787 | 111.216 |
| PARK SCHOOL BALLOT ISSUE 3B | 136 | 92 | 44 | 228 | 0.68 | 0.0762 | 0.7562 | 58.184 |
| COAL CREEK ISSUE NO. 4A | 188 | 152 | 36 | 340 | 0.94 | 0.1137 | 1.0537 | 34.166 |
| COAL CREEK ISSUE NO. 4B | 187 | 151 | 36 | 338 | 0.935 | 0.1130 | 1.0480 | 34.351 |
| PINE BROOK HILLS ISSUE 5A: | 420 | 84 | 336 | 504 | 2.1 | 0.1685 | 2.2685 | 148.116 |
| CRESTVIEW ESTATES ISSUE 5B: | 139 | 21 | 118 | 160 | 0.695 | 0.0535 | 0.7485 | 157.651 |
| Mountains Forest Question 5C: | 3,272 | 2,285 | 987 | 5,557 | 16.36 | 1.8577 | 18.2177 | 54.178 |
| Rocky Mountain Fire Ballot Question 5D | 2,107 | 2,009 | 98 | 4,116 | 10.535 | 1.3760 | 11.9110 | 8.227 |

U = Combined Discrepancy Rate Derived from City of Boulder Council Race 0.000167569

U=uncertainty as a % of V Assume worse-case and that all U is such to reduce M

Without uncertainty, the recount equation is M <= 0.005WWith worse-case uncertainty the ecount equation becomes (W-UV)-(L+UV) <= 0.005(W-UV) or W-UV-L-UV <= 0.005W - 0.005UV or M <= 0.005W + 1.995UV

For this year's audit we have chosen to apply the combined error rate derived from the Boulder City Council Race.



Office of the Clerk & Recorder

1750 33rd Street · Boulder, CO 80301 · www.BoulderCounty.org

Hillary Hall, Boulder County Clerk & Recorder

November 14, 2011

The 2011 Coordinated Election audit reviewed six races/issues. A total of 26,870 individual contests were audited. No issues were identified that impacted the outcome of any contest.

The only audit discrepancies identified were associated with the Boulder City Council race. In the Boulder City Council race, a few voters crossed out one or more candidates' names but undervoted the contest and therefore the system did not automatically detect and flag these ballots for resolution. This issue is applicable only in contests where voters can vote for more than one choice. In addition, there were unintentional and ambiguous marks that caused discrepancies. The error rate for the 10,938 Boulder City Council ballots audited was .000189. It is important to note that all discrepancies identified in the audit would be identified in a recount.

The information was presented to the audit board and it was decided that a minimum of 5,000 additional Boulder City Council ballots would be reviewed for the strikeout/undervote issue to verify the error rate. An additional 63,242 ballot images were reviewed and the audit board concluded that the discrepancies identified did not impact the outcome of the City of Boulder contest.

The only other contest in Boulder County that allowed voters to vote for more than one choice was the Lafayette City Council race. While this race was not initially selected as part of the audit, staff reviewed this race after discovering the Boulder City Council strike-out/undervote discrepancies. In reviewing the impact to the Lafayette City Council race, staff applied the error rate from the Boulder City Council race in conjunction with the wide margin and a sample set review of ballots. This issue had no impact on the outcome for the Lafayette City Council race and no additional audit was necessary.

The audit board concludes that the 2011 Coordinated Election Audit verifies no change in the election outcome and therefore does not recommend any recounts for the 2011 Coordinated Election.

The 2011 Coordinated Election audit board accepts the results of the audit, as presented by the Boulder County Clerk and Recorder's office.

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| Alisa Lewis | Canvass Board Representative | Date |
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| Valeria Skitt | Canvass Board Representative | Date |
| Hillowy Hell | 98) | 11-14-2011 |
| Hillary Hall | Boulder County Clerk & Recorder | Date |
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