

The following steps were used to independently confirm the official RCV tally for the 2018 Democratic Primaries for Maine Governor and Maine Congressional District 2 and for the General Election for Maine Congressional District 2. This process is intentionally not automated, using instead a series of sort-and-delete Excel tools, and can be replicated by anyone with a rudimentary understanding of the Excel software. Results of this analysis exactly match the results provided by the Secretary of State available on the “Tabulation for Elections held in 2018” web page (<https://www.maine.gov/sos/cec/elec/results/results18.html>).

1. Download the relevant spreadsheets from the SOS “Tabulation for Elections held in 2018” web page (<https://www.maine.gov/sos/cec/elec/results/results18.html>). I delete the first row (column headers) as well as the first three columns (ballot information) in order to simplify the sort-and-delete steps and to avoid accidentally counting the header as a vote. . . Confirm that the number of records matches both the sum of records in the original spreadsheets and also the total number of ballots reported by the SOS.

2. I add “zed” to the cell in Column A immediately following the final record to more easily search the end of the data after each sort step. I also used “Find and Replace” to remove the numbers in parentheses after candidate names, as these numbers are present only in Column A, which complicates further steps. (Type “(*)” in the “Find What:” box, leaving the “Replace with:” box blank. Hit “Replace All”.)

3. Apply the RCV rules, one round at a time.

a. Save the file! Copy the current sheet and rename the copy for the appropriate round.

b. Delete any eliminated candidate(s) from column A. (Candidates are never eliminated in Round 1. In this example, Bond and Hoar are batch eliminated in Round 2 because the sum of their votes is smaller than the vote count for Golden.)

i. Highlight Column A.

ii. Using the “Find and Replace” tool, enter the name of an eliminated candidate in the “Find what:” box, leaving the “Replace with:” box blank. Click “Replace All”. Repeat for each candidate eliminated in the round.

iii. Highlight all blank cells using the “Go To” tool, click “special”, choose blank.

iv. Delete highlighted cells, using “Shift cells left” to maintain the integrity of each record.

c. Multi-column sort (Sort by Column A, then by Column B, then by Column C. . .)

d. Highlight Column A. Use the search tool to find the first Column A "Undervote". Scroll down to identify and delete any rows in which both Column A and Column B read "Undervote". (Per Maine RCV rule.)

e. All other "undervote" lines should read "undervote" "candidate" or "undervote" "overvote". Highlight all examples of "undervote" in column A. Shift cells left.

f. Repeat multi-column sort.

g. Highlight Column A. Use the search tool to find the first Column A "Overvote". Delete all rows in which Column A reads "Overvote". (Per Maine RCV rule.)

h. Repeat steps b through g until the "Find and Replace" tool reports that "Microsoft Excel cannot find the data you're searching for" when you highlight Column A and search for "undervote", "overvote" or the name of any eliminated candidate.

i. Record the last incidence of each candidate's name in Column A by clicking on "Column A" and searching for each name in turn, followed by a search for "zed" to easily identify the final record. Subtract to determine the vote totals for each candidate in the current round and divide by the total number of records in this round to calculate percentages for each candidate. (Confirm that these percentages add up to 100.)

j. A candidate with more than 50% of the current round votes wins. If no candidate has more than 50% of the votes, identify the candidate(s) to be eliminated and return to the beginning of Step 3 to proceed with the next round of RCV.

(I'd initially used a shortcut in which I'd deleted Bond and Hoar from ALL cells in step 3.b, for round 2 rather than only in column A. The detailed protocol requires 5 passes through steps 3.b-3.g for Round 2. While this shortcut is significantly faster, there are three ballots which read "Bond-blank-Hoar-blank-vote," which by rule should go one each to Poliquin and Golden with the third exhausted by overvote at rank 5. Using the shortcut, these ballots read "blank-blank-vote" after step 3.b and are deleted in step 3.d with other double undervote ballots. With this in mind, the shortcut may be sufficient for your purposes.)

Feel free to contact me with questions or suggestion.

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