

# Post-Election Audit Summary

## December 5, 2017 Run-Off Election

### *Mayor – City of Olmsted Falls*

On January 17, 2018 we conducted a Risk-Limiting Post-Election Audit for the December 2017 Run-Off election. There were 2,480 total ballots cast in the election. A hand count was conducted of 1,226 ballots cast. The accuracy rate for the post-election audit is 100%.

Audited contest and batch details are provided below:

RACE	TOTAL BALLOTS CAST	UNIQUE BATCHES AUDITED	TOTAL BALLOTS AUDITED	NUMBER OF PRECINCTS IN CONTEST
<b>Mayor – City of Olmsted Falls</b>	2,480	8	1,226	8

### *Mayor – City of Olmsted Falls*

PRECINCT NAME	NUMBER OF TIMES SELECTED	SELECTED BATCH TYPE	OFFICIAL BALLOTS CAST	AUDIT HAND COUNT	DIFFERENCE / DISCREPANCY
<b>OLMSTED FALLS -01-A</b>	1	Election Day	129	129	0
<b>OLMSTED FALLS -02-B</b>	2	Election Day	322	322	0
<b>OLMSTED FALLS -03-A</b>	2	Election Day	386	386	0
<b>OLMSTED FALLS -03-A</b>	1	Provisional	16	16	0
<b>OLMSTED FALLS -03-B</b>	1	Election Day	163	163	0
<b>OLMSTED FALLS -04-A</b>	2	Absentee	28	28	0
<b>OLMSTED FALLS -04-A</b>	3	Election Day	171	171	0
<b>OLMSTED FALLS -04-B</b>	1	Provisional	11	11	0
<b>TOTAL</b>		-	<b>1,226</b>	<b>1,226</b>	<b>0</b>

Our Risk-Limiting Audits were based upon the Kaplan-Markov method as explained by Philip B. Stark and Mark Lindeman. Auditing best practices recommend we split up the total ballots cast by precinct into multiple batch types. We utilized five batch types each consisting of one single ballot type category: Absentee, Election Day, Provisional, Post Absentee, and Post Election Day.

A master spreadsheet was created for each contest with statistical formulas to determine the number of batches that must be audited in order to reach a 90% confidence level. This confidence level means the audit has at least a 90% probability of leading to a full recount if the apparent outcome is incorrect.

We used a “Probability Proportional to Error Bound with Replacement” selection method. We assigned numbers ranging from 000000 through 999,999 for each batch within each contest. Unique ranges of numbers were allocated to specific batches based upon their error bound - i.e. the greater the possibility of a

miscount within a batch, the more numbers assigned, and the more likely it is to be selected. For example, if a single batch has a high probability of a miscount, multiple numbers would be assigned to that single batch, making the random selection of that batch more likely during the audit. Each of those individual numbers might be randomly selected and included in the overall batch audit requirement, but the single batch to which those numbers are assigned would need to be audited only once. To obtain the precinct batch number we rolled differently colored dice numbered 0 - 9, each one of the colored dice representing one digit of the batch number.

