

Post-Election Audit Summary

November 6, 2018 General Election

Governor and Lieutenant Governor

Treasurer of State

Court of Common Pleas, General Division, FTC 1-7-2019

Beginning on December 6, 2018 we conducted a Risk-Limiting Post-Election Audit for the November 2018 General Election. There were 492,323 total ballots cast in the election. A total of 38 unique batches were audited, consisting of a hand count of 12,359 ballots from the audited contests. 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
Governor and Lieutenant Governor	492,323	10	3,150	975
Treasurer of State	492,323	9	2,764	975
Court of Common Pleas, General Division, FTC 1-7-2019	492,323	19	6,445	975

Our Risk-Limiting Audits are 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 utilize five batch types each consisting of one single ballot type category: Absentee, Election Day, Provisional, Post Absentee, and Post Election Day.

A master spreadsheet is 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 use a "Probability Proportional to Error Bound with Replacement" selection method. We assign numbers ranging from 000000 through 999,999 for each batch within each contest. Unique ranges of numbers are 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 are 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 needs to be audited only once. To obtain the precinct batch number we roll differently colored dice numbered 0 - 9, each one of the colored dice representing one digit of the batch number.

Governor and Lieutenant Governor

PRECINCT NAME	NUMBER OF TIMES SELECTED	SELECTED BATCH TYPE	OFFICIAL BALLOTS CAST	AUDIT HAND COUNT	DIFFERENCE / DISCREPANCY
BEDFORD HEIGHTS -01-C	1	Election Day	293	293	0
BROADVIEW HEIGHTS -02-C	1	Election Day	502	502	0
CLEVELAND -01-G	1	Election Day	233	233	0
CLEVELAND -03-E	1	Election Day	258	258	0
CLEVELAND -05-K	1	Absentee	42	42	0
CLEVELAND HEIGHTS -04-B	1	Election Day	333	333	0
FAIRVIEW PARK -03-B	1	Election Day	456	456	0
STRONGSVILLE -03-B	1	Election Day	439	439	0
UNIVERSITY HEIGHTS -00-E	1	Absentee	212	212	0
WARRENSVILLE HTS -06-A	1	Election Day	382	382	0
TOTAL		-	3,150	3,150	0

Treasurer of State

PRECINCT NAME	NUMBER OF TIMES SELECTED	SELECTED BATCH TYPE	OFFICIAL BALLOTS CAST	AUDIT HAND COUNT	DIFFERENCE / DISCREPANCY
CLEVELAND -15-B	1	Absentee	204	204	0
CLEVELAND -17-C	1	Election Day	329	329	0
EAST CLEVELAND -02-A	1	Absentee	106	106	0
EUCLID -07-C	1	Election Day	331	331	0
PARMA HEIGHTS -01-B	1	Election Day	418	418	0
ROCKY RIVER -03-D	1	Election Day	418	418	0
SHAKER HEIGHTS -00-L	1	Election Day	453	453	0
SOUTH EUCLID -04-B	1	Absentee	141	141	0
UNIVERSITY HEIGHTS -00-B	1	Election Day	364	364	0
TOTAL		-	2,764	2,764	0

Court of Common Pleas, General Division, FTC 1-7-2019

PRECINCT NAME	NUMBER OF TIMES SELECTED	SELECTED BATCH TYPE	OFFICIAL BALLOTS CAST	AUDIT HAND COUNT	DIFFERENCE / DISCREPANCY
BEDFORD -01-A	1	Election Day	301	301	0
BEDFORD -01-B	1	Election Day	209	209	0
BROADVIEW HEIGHTS -04-D	1	Election Day	381	381	0
CLEVELAND -03-E	1	Election Day	258	258	0
HUNTING VALLEY -00-A	1	Election Day	194	194	0
LAKEWOOD -01-A	1	Election Day	403	403	0
LAKEWOOD -01-H	1	Election Day	491	491	0
MAPLE HEIGHTS -03-B	1	Absentee	172	172	0
MIDDLEBURG HEIGHTS -01-B	1	Absentee	144	144	0
MORELAND HILLS -00-A	1	Absentee	336	336	0
MORELAND HILLS -00-B	1	Election Day	463	463	0
NORTH OLMSTED -03-F	1	Election Day	451	451	0
PARMA -02-E	1	Election Day	497	497	0
RICHMOND HEIGHTS -04-A	1	Election Day	520	520	0
ROCKY RIVER -03-C	1	Absentee	264	264	0
OLON -02-B	1	Absentee	206	206	0
STRONGSVILLE -04-C	1	Election Day	510	510	0
STRONGSVILLE -04-G	1	Election Day	410	410	0
WESTLAKE -05-D	1	Absentee	235	235	0
TOTAL		-	6,445	6,445	0

