Meeting Date: April 22, 2025

From: **MOA Elections Team**

Subject: **Risk Limiting Audit for the April 1, 2025 Regular Municipal Election**

I. Executive Summary

The MOA Elections Team conducted a post-election audit that contained three areas of focus.

1. ***Hand-Count.*** A pre-determined percentage of ballots in randomly specified contests was selected and the actual random ballots for those specified races were hand counted.
2. ***Machine Review.*** Cast Vote Records were produced from the tabulation system and tallied for the ballots selected.
3. ***Comparison of Hand-Count and Machine Review.*** The totals from the hand-count, detailed in paragraph 1, and the totals from the machine count, detailed in paragraph 2, were compared.

The results of the MOA post-election Risk Limiting Audit are that the scanning, adjudication, and tabulation system performed as expected and the results reflect the will of the voters. All ballots were adjudicated and tabulated as expected. The results of the hand-count and the machine tabulation were identical.[1]

II. Implementation of the Risk Limiting Audit at the MOA

The MOA Elections Team conducted a practice audit after the 2021 Regular Municipal election in preparation for implementation of post-election audit in 2022. The practice was worthwhile: The Elections Team determined it tested too many ballots in one race and too few in another; the Elections Team pulled individual ballots which was incredibly time consuming. To address this shortcoming, the 2022 audits tested “batches” of ballots, which was more efficient to select and re-file rather than randomly selecting individual ballots and having to refile those.

Now, the Elections Team is happy to provide the results of the Risk Limiting Audit at certification.

III. PROCEDURES FOR THE RISK LIMITING AUDIT

A. Selection of Races and Measure to be audited.

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[1] For more detailed information on the results of the audit, see Item G. Comparison of the Hand-Count to the Machine Count, Results of the Risk Limiting Audit, and Exhibit A – RLA Worksheet

1. ***Selection of Race and Measure.*** The MOA Risk Limiting Audit Procedures requires the Elections Team to identify the races and measures to be audited by rolling a 6-sided die. In years where there is no Mayor's race, the MOA Elections Team is to randomly select one Assembly race and one proposition to audit. The Elections Team first rolled the 6-sided die and the result was a 1, therefore the Assembly District 2 race was randomly selected to be audited. The Elections Team rolled the die again and the result was a 6. Proposition 6 was an area-wide race therefore, Proposition 6 was also randomly selected to be audited.

2. ***Target Number of Ballots.*** The target number of ballots per race or measure was calculated. 5% of the ballots cast in the proposition, or 3,023, were selected for the audit. 3% of the total ballots cast in the race, or 290, were selected for the audit.

   The exact calculations for target number of ballots are as follows:

   - Calculate 5% of ballots cast in the in the Proposition selected, regardless of the number of votes cast or spread. Round down to nearest 1,000. E.g., change 60,455 to 60,000 for ease of count:
     - In 2025, total ballots cast = 60,000 x .05 = 3,000

   - Calculate 3% of total votes cast in the Assembly race:
     - In District 2, total votes cast (note, this is different that total ballots cast used for areawide races) 9,660 x .03 = 290

   The audit actually reviewed 3,132 ballots in the areawide measure and 350 in the district-wide race because we count entire batches.

3. ***Random Selection of Batches.*** To reach the 3,020 ballots targeted for review in the Municipal-wide Proposition 6 ballot measure, the MOA Elections Team estimated a minimum of 40 batches would be required to be audited since during the processing of the election, approximately 100 ballots were scanned per batch. (3,000/100 = 30.)

   Then, staff calculated the percentage of total ballots processed in the election on ICC 1 (scanner 1), ICC 2 (scanner 2), and ICC 3 (scanner 3) The result is that 2 batches from ICC1, 27 batches from ICC2 and 11 batches from ICC3 would be pulled for audit.

   The exact calculations for the number of batches selected from each scanner are as follows:

   1. Determine the total number of batches scanned by each selected ICC:
      - ICC 1= 45 batches

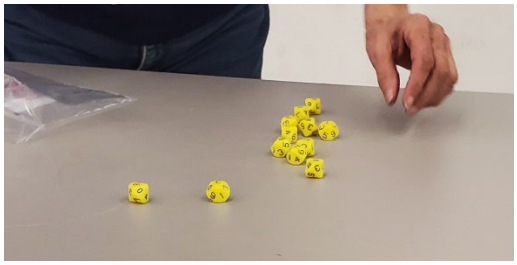
- ICC 2 = 517 batches
- ICC 3 = 229 batches
- 791 total batches to possibly be verified

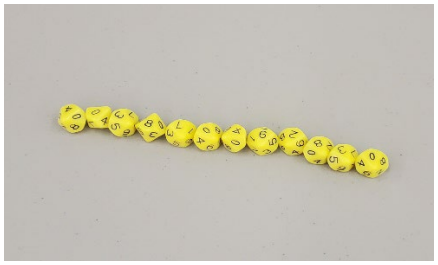
2. Determine the percentage of total batches each ICC scanned:
   - ICC 1 = 45/1,957 = 6%
   - ICC 2 = 611/1,957 = 65%
   - ICC 3 = 433/1,957 = 29%
3. For each ICC selected, use the percentage of total batches each ICC scanned to determine the random number of batches needed from each ICC, and then to determine which batch numbers for each ICC to pull. Since 40 batches were selected for verification, the total number of batches for verification from each ICC is as follows:
   - ICC 1 = 6% of total batches x 40 batches for verification = 2
   - ICC 2 = 65% of total batches x 40 batches for verification = 26
   - ICC 3 = 29% of total batches x 40 batches for verification = 11

B. Use Pseudo-Random Number Generator for Random Selection of Batches.

The staff then used the Pseudo-Random Number generator at https://www.stat.berkeley.edu/~stark/Java/Html/sha256Rand.htm to randomly select the batches of ballots from each ICC. Following the instructions on the Pseudo-Random Number Generator, the selected were as follows:

(1) Roll the ten, ten-sided dice one time, and then a second time and input all twenty numbers into the "Seed". "Seed," is the starting point of a random number generator.





(2) Enter the "Seed" and other information into the random number generator and press "Draw Sample." The result is the list of randomly selected items.

The batches were pulled and delivered to counting teams. We did not reach the target number with the 40 batches, so we ran the pseudo-random generator again and pulled an additional 5 batches.

C. Hand-Count Results.

Assembly District 2 – Only the top two candidates in the batches were hand-counted. The ballots were sorted by Candidate A, Candidate B, and other. The results of the hand-count are as follows:

Category	Hand-Count
Candidate 1	204
Candidate 2	146
Total	**350**

Proposition 6 – The ballots were sorted by Yes, No, and other. The results of the hand-count are as follows:

Category	Hand-Count
Yes	1,733
No	1,399
Total	**3,132**

Machine Count Verification. After the batches of ballots were hand-counted, the Cast Vote Records for the selected batches of ballots were produced and tallied. The batch totals were transferred to the RLA Worksheet[2] and are as follows:

Assembly District 2

Category	Machine-Count Total
Candidate 1	204
Candidate 2	146
Total	**350**

Proposition 6

Category	Machine-Count Total
Yes	1,733
No	1,399
Total	**3,132**

[2] See Exhibit A – RLA Worksheet

Comparison of the Hand-Count to the Machine Count. The third and final step in the post-election audit was to compare the hand-count to the machine count. The comparison is as follows:

Assembly District 2

Category	Hand-Count	Machine-Count Total
Candidate 1	204	204
Candidate 2	146	146
Total	**350**	**350**

Proposition 6

Category	Hand-Count	Machine-Count Total
Yes	1,733	1,733
No	1,399	1,399
Total	**3,132**	**3,132**

The result of the post-election audit are that of 3,132 randomly selected ballots, the hand count and machine count of those ballots was identical. The conclusion is that the scanning, adjudication, and tabulation system performed as expected and the results of the election demonstrated the will of the voters.

Respectfully Submitted:
MOA Elections Team
Liz Edwards, Deputy Election Administrator
Jamie Heinz, Municipal Clerk

Exhibit A

Scanner & Batch #	Handcount Column A Yes	Handcount Column B No	N=3023	Machine Batch Level Results Prop Yes	Machine Batch Level Results Prop No	Total Proposition	Handcount Column D Candidate 1	Handcount Column E Candidate 2	n=290	Machine Batch Level Results Candidate 1	Machine Batch Level Results Candidate 2	Total Race
1-9	23	34		23	34		40	13		40	13	
1-35	30	33		30	33		34	20		34	20	
2-373	49	37		49	37		30	22		30	22	
2-402	47	46		47	46		0	0		0	0	
2-242	38	55		38	55		0	0		0	0	
2-221	51	35		51	35		0	0		0	0	
2-243	52	48		52	48		0	0		0	0	
2-260	43	56		43	56		0	0		0	0	
2-371	35	30		35	30		30	27		30	27	
2-188	47	48		47	48		0	0		0	0	
2-282	40	19		40	19		0	0		0	0	
2-397	51	34		51	34		0	0		0	0	
2-81	49	14		49	14		14	26		14	26	
2-218	27	45		27	45		40	26		40	26	
2-25	67	51		67	51		0	0		0	0	
2-109	64	27		64	27		0	0		0	0	
2-389	53	44		53	44		0	0		0	0	
2-43	49	18		49	18		0	0		0	0	
2-375	56	20		56	20		0	0		0	0	
2-97	33	19		33	19		0	0		0	0	
2-249	51	16		51	16		0	0		0	0	
2-40	21	24		21	24		0	0		0	0	
2-463	0	1		0	1		0	0		0	0	
2-418	36	39		36	39		0	0		0	0	
2-357	0	1		0	1		0	0		0	0	
2-205	46	46		46	46		0	0		0	0	
2-250	38	19		38	19		0	0		0	0	
2-459	27	22		27	22		0	0		0	0	
2-124	41	51		41	51		0	0		0	0	
2-392	20	20		20	20		0	0		0	0	
2-453	6	3		6	3		0	0		0	0	
2-114	49	21		49	21		0	0		0	0	
3-99	25	9		25	9		0	0		0	0	
3-29	60	18		60	18		0	0		0	0	
3-136	39	21		39	21		0	0		0	0	
3-174	34	37		34	37		0	0		0	0	
3-162	41	64		41	64		0	0		0	0	
3-122	55	28		55	28		0	0		0	0	
3-30	42	16		42	16		0	0		0	0	
3-12	50	31		50	31		0	0		0	0	
3-161	49	55		49	55		0	0		0	0	
3-16	42	51		42	51		0	0		0	0	
3-10	57	33		57	33		16	32		16	32	
	1733	1399	3132	1733	1399	3132	204	146	350	204	146	350