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COVID-19 and the Surge of Mail Ballots

Managing an Unprecedented Volume in the November 2020 Election

VerifiedVoting

⩔ Introduction

In response to the coronavirus pandemic, election administrators across the country are taking steps to expand mail ballot[1] options for the November general election. Even without the passage of new federal or state mandates for all mail ballot or no excuse absentee voting,[2] jurisdictions have seen and will likely continue to see a significant increase in the number of mail ballots they are required to process. This has led to concern regarding the potential need for high capacity "batch-fed" scanners (traditionally referred to as "central count" scanners) to handle the anticipated increased volume of mail ballots.[3]

Currently, more than three quarters of jurisdictions in the United States tabulate mail ballots using hand-fed scanners (traditionally referred to as "precinct count" scanners) or by hand counting. The remaining jurisdictions already have batch-fed scanners and are therefore more prepared to handle a significant increase in mail ballots. Batch-fed scanners are primarily purchased by larger jurisdictions, so while 77% of jurisdictions count mail ballots with hand-fed scanners or by hand, those jurisdictions represent only 22% of registered voters. By contrast, the approximately 23% of jurisdictions using batch-fed scanners to count mail ballots represent approximately 79% of registered voters.

Using data from the Election Administration and Voting Survey (EAVS),[4] we determined the largest volume of mail ballots processed by a single jurisdiction in the last presidential general election (2016) counted using hand-fed scanners or by hand to establish a high-end benchmark volume for mail ballots that have been processed without the use of batch-fed scanners. We then used this benchmark to identify the jurisdictions that may exceed that benchmark in the event of a significant increase in volume of mail ballots in November 2020.

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1. For the purpose of this assessment, mail ballots include the total number of absentee ballots, ballots returned by Uniformed and Overseas Citizens Absentee Voting Act (UOCAVA) voters and ballots returned in all vote-by-mail jurisdictions. It includes absentee ballots returned directly by the voter or deposited in drop boxes. It does not include ballots marked and cast at "in-person absentee" voting locations. Prior to 2018, Virginia reported such "in-person absentee" ballots together with all absentee ballots in response to the U.S. Election Assistance Commission's Election Administration and Voting Survey (*infra*, note 4). In 2018, the state began separating these into "early voting" (in-person absentee) and absentee ballots. We have projected the ratio of early voting to absentee for each Virginia locality in 2018 onto the reported data for 2016 to estimate the number of mail ballots in Virginia localities.
2. See e.g. H.R. 6800 "Health and Economic Recovery Omnibus Emergency Solutions Act" (introduced May 12, 2020), available at https://docs.house.gov/billsthisweek/20200511/BILLS-116hr6800ih.pdf.
3. According to the New York University Law School's Brennan Center for Justice, batch-fed scanners cost in the range of $50,000 to $100,000 per unit, with high-speed automated mail sorting equipment costing approximately the same and being needed only in jurisdictions with more than 25,000 voters. Norden, et al., "Estimated Costs of COVID-19 Election Resiliency Measures," Brennan Center for Justice (March 19, 2020, updated April 18, 2020) https://www.brennancenter.org/our-work/research-reports/estimated-costs-covid-19-election-resiliency-measures.
4. U.S. Election Assistance Commission, 2018 Election Administration and Voting Survey (2019), available at https://www.eac.gov/research-and-data/datasets-codebooks-and-surveys.

⩗ Methodology

To determine the number of jurisdictions using hand-fed scanners or hand counting mail ballots that may face an unprecedented volume of mail ballots for this technology in the 2020 general election, we

- Leveraged our **Verifier** database[5] to determine the absentee ballot tabulation equipment currently in use in each jurisdiction.
- Categorized jurisdictions by method used to process mail ballots (batch-fed scanners, hand-fed scanners or hand count).
- Reviewed the volume of mail ballots each jurisdiction processed using hand-fed scanners or by hand[6] in the 2016 general election to determine a high-end benchmark volume of mail ballots processed without batch-fed scanners.
- Reviewed the total voter turnout from each jurisdiction in the 2016 presidential election to establish a hypothetical maximum volume of mail ballots for the 2020 presidential election.
- Determined the number of jurisdictions currently counting mail ballots with hand-fed scanners or by hand that would be in the position of processing more than the 2016 high-end benchmark volume of mail ballots if they were required to handle a volume of mail ballots equal to 100% of their total 2016 turnout.[7]

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5. Verified Voting organizes and synthesizes data in the Verifier database from various sources: our voter turnout data is based on the Election Administration and Voting Survey (EAVS); voting equipment usage data is derived from information provided by state election administrators, through personal conversations with local election officials, as well as media reports and other public information sources. While we have used 2016 data for calculating mail ballot volume and total voter turnout, voting equipment usage reflects equipment that will be used by jurisdictions in November 2020, reflecting any changes in equipment since 2016.
6. We also reviewed the volume of mail ballots counted on batch-fed scanners, although these figures are omitted from our calculations, because these scanners can process hundreds of ballots per minute and thus those jurisdictions' scanning equipment is able to handle even a significant increase in mail ballots.
7. We selected 22,000 mail ballots as the high-end benchmark for how many mail ballots any one jurisdiction can process on a precinct scanner because it is approximately the greatest number of absentee ballots counted on a single precinct scanner during the 2016 presidential election.

W Results & Discussion

Approximately 21% of all precincts in the United States count their absentee ballots using hand-fed scanners, approximately 2% count mail ballots by hand and approximately 77% use batch-fed scanners. During the 2016 presidential election, the jurisdictions that counted mail ballots using hand-fed scanners or by hand count processed an average of 524 ballots, with 1 being the smallest number and 21,939 the maximum.[8] Eleven of these jurisdictions counted more than 10,000 mail ballots on hand-fed scanners.[9] Verified Voting spoke with a sampling of election officials who processed 10,000 or more ballots on hand-fed scanners and they noted that it was manageable owing to their particular structures, which include housing several hand-fed scanners in their offices and beginning to count absentee ballots early, when possible.

If the jurisdictions currently counting mail ballots on hand-fed scanners or by hand were required to handle the equivalent of 100% of their 2016 voter turnout by mail in the 2020 presidential election, approximately 17% of these jurisdictions would be required to count more than 10,000 mail ballots on hand-fed scanners or by hand, while approximately 6% would be above the 21,939 high-end benchmark. Compared to all jurisdictions, including those counting mail ballots on batch-fed scanners, about 13% of jurisdictions would have to count more than 10,000 mail ballots on hand-fed scanners or by hand and only 5% would be over the 21,939 high-end benchmark.

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8. In 2016, St. Charles County, MO counted 21,939 absentee ballots with hand-fed scanners (Unisyn OVO). According to our data, no other jurisdiction in 2016 counted more than 20,000 ballots on hand-fed scanners.
9. Our calculations do not take into account the number of hand-fed scanners each jurisdiction used to count mail ballots.

₩ Conclusion

From our estimates, only approximately 5% of all jurisdictions in the United States would need to count more than the 2016 high-end mail ballot benchmark of 21,939 ballots using hand-fed scanners or counting by hand if they were required to handle a volume of mail ballots equal to 100% of their 2016 total voter turnout.

Because most jurisdictions will not be moving to all mail ballot voting systems for the 2020 general election, it is likely that most *could* manage the increase of mail ballots for one election using their current equipment *if* **they have the additional staff,[10] extended canvassing time, and ability to reallocate hand-fed scanners to process the ballots.** Even jurisdictions that currently use batch-fed scanners to count mail ballots, like Philadelphia, should consider lessons learned from their primaries about scanning capacity, staffing needs, and canvassing timelines as they anticipate mail ballot volume ahead of November.

Election officials across the country are aware of the likely increase in mail ballots and are already putting appropriate plans into place. As limited resources are starting to be allocated, it is important to understand whether or not it will be necessary for new tabulation equipment to be purchased or leased and where this may occur, especially given the short time frame and limited resources available to prepare for the general election.

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10. The Brennan Center for Justice has estimated that staff increases to support mail ballot processing could cost upwards of $164,640,000 nationwide, assuming ten additional staff for jurisdictions under 25,000 voters and 25 additional staff for larger jurisdictions, at a cost of at least $15 per hour for eight hours per day. Brennan Center for Justice, *supra*, note 3.

Mail Ballot Tabulation Systems

Make	Model	States	Jurisdictions	% Jurisdictions	Precincts	% Precincts	Registered Voters	% Registered Voters
Hand-Fed Optical Scanners								
Clear Ballot	ClearCast	1	59	0.93%	105	0.06%	101,918	0.05%
Dominion	ImageCast Precinct	6	238	3.73%	2,306	1.29%	3,929,620	1.85%
Dominion	ImageCast Evolution	4	312	4.90%	1,361	0.76%	1,311,674	0.62%
Diebold (Dominion)	AccuVote OS	11	646	10.14%	5,038	2.83%	7,533,296	3.55%
Sequoia (Dominion)	Optech Insight	2	141	2.21%	216	0.12%	210,220	0.10%
ES&S	DS200	32	1,587	24.90%	18,324	10.29%	19,264,976	9.08%
ES&S	Model 100	15	226	3.55%	3,239	1.82%	2,249,582	1.06%
Hart	eScan	5	148	2.32%	3,580	2.01%	3,498,260	1.65%
Hart	Verity Scan	5	58	0.91%	1,055	0.59%	1,932,915	0.91%
Unisyn	OpenElect OVO	7	172	2.70%	2,735	1.54%	3,569,138	1.68%
Subtotal Hand-Fed Scanners		35	3,587	56.28%	37,959	21.31%	43,601,599	20.55%
Batch-Fed Optical Scanners								
Clear Ballot	ClearCount	6	75	1.18%	17,200	9.66%	15,490,052	7.30%
Dominion	ImageCast Central	19	496	7.78%	45,005	25.27%	50,912,156	24.00%
Diebold (Dominion)	AccuVote OS Central	5	5	0.08%	2,544	1.43%	2,223,663	1.05%
Dominion (Sequoia)	NCS OpScan 5	2	2	0.03%	1,214	0.68%	860,226	0.41%
ES&S	DS450	25	226	3.55%	10,042	5.64%	12,119,699	5.71%
ES&S	DS850	34	256	4.02%	33,563	18.85%	49,400,719	23.29%
ES&S	Model 650	12	86	1.35%	3,013	1.69%	2,976,361	1.40%
Hart	Ballot Now	7	99	1.55%	4,351	2.44%	6,546,351	3.09%
Hart	Verity Central	15	99	1.55%	10,974	6.16%	14,878,916	7.01%
MicoVote	MicroVote/ Chatsworth	2	88	1.38%	3,279	1.84%	3,282,776	1.55%
Smartmatic	VSAP Tally	1	1	0.02%	4,164	2.34%	6,858,459	3.23%
Unisyn	OpenElect OVCS	11	64	1.00%	2,681	1.51%	2,795,270	1.32%
Subtotal Batch-Fed Optical Scanners		46	1,497	23.49%	138,030	77.51%	168,344,648	79.35%
Hand Count		16	1,291	20.26%	3,231	1.81%	1,951,208	0.92%
Hand-Fed Scanners + Hand Count		16	4,878	76.54%	41,190	23.13%	45,552,807	21.47%
Optical Scanners + Hand Count		51	6,375	100.03%	179,220	100.64%	213,897,455	100.82%

Table current as of July 30, 2020

Additional Resources

Vote at Home: [2020 Mail Ballot Use So Far](#)
Ballotpedia: [Changes to absentee/mail-in voting procedures in response to the coronavirus (COVID-19) pandemic, 2020](#)
Washington Post: [At least 76% of American voters can cast ballots by mail in the fall](#)