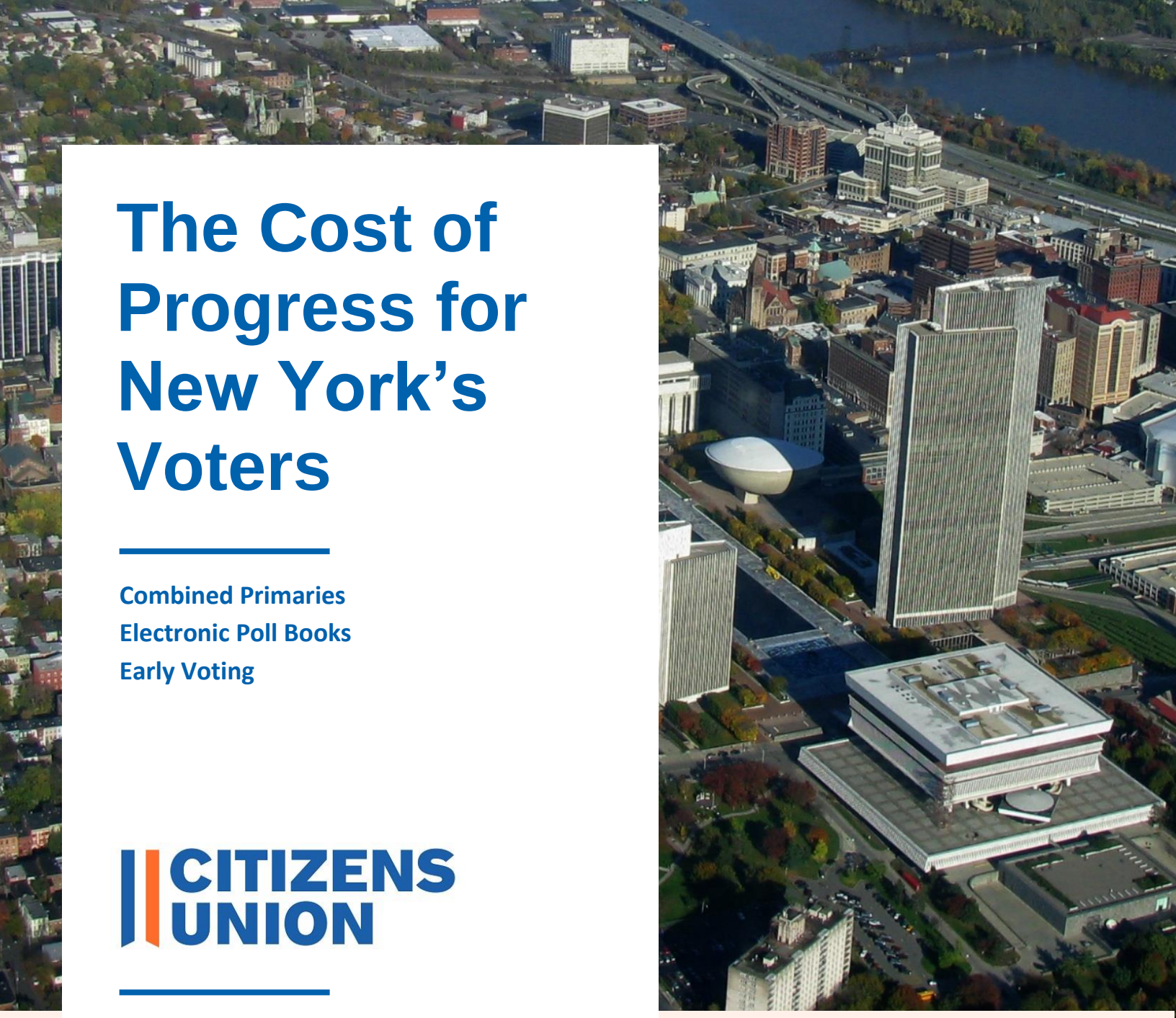

The Cost of Progress for New York's Voters

Combined Primaries
Electronic Poll Books
Early Voting

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Executive Summary

New York State's voting laws and policies are restrictive. Voter turnout in the state has consistently ranked near the bottom nationally over the last twenty years.[i] This analysis estimates the costs and savings associated with three reforms across New York State: combining the state and federal primaries, allowing electronic poll books, and instituting early voting. Collectively, these reforms could decrease the burden on voters and decrease poll site wait times, without substantial costs.

Citizens Union – a leading good government group in New York – enlisted this NYU Capstone team to conduct a cost analysis of these reforms to add clarity and data to the debate. This analysis is based on data from nine states, as well as New York elections officials of both political parties. Together, this data was used to develop estimates of the costs and savings associated with each reform. The estimates were then applied to counties across New York State.

Combining the state and federal primaries would save $36.2 million over ten years.

A combined state and federal primary would save approximately $7.2 million statewide every two years, or roughly $0.93 cents per voter. After a 2012 federal court case, the state and federal primary was split to accommodate voting for federal offices by active duty military personnel deployed overseas. Separate primaries force counties to operate and pay for an additional election. Merging the two would result in substantial savings. New York State elections officials did not indicate cost differences between a June and an August primary, the two months debated by the legislature.

Table 1: Estimated savings for a combined state and federal primary in a typical county.

County	Biannual Savings
Small Rural	($25,000)
Rural	($56,000)
Urban/Suburban	($354,000)
New York City	($2.3 million)
Statewide	**($7.2 million)**

A caveat about the tables:
Unless otherwise noted, the tables share costs or savings for an average-sized small rural, rural, or urban/suburban county. The New York City estimate is a true citywide estimate, and the statewide estimate is the cumulative total for all 62 counties.

The upfront costs of implementing EPBs statewide would be returned through savings in ten years.

A statewide rollout of electronic poll books (EPBs) would cost $14.9 million initially but would save money over time, especially for larger counties. EPBs generate cost savings by reducing the need for poll workers and reducing staff time necessary for closing elections. On an annual basis, urban and suburban counties would save roughly $144,000, breaking even after approximately eight years. Rural counties would see ongoing costs roughly on par with current spending, while counties with the fewest voters would see a minor increase in costs of around $4,300 per year. Smaller counties would experience gains in efficiency but not cost recovery for EPBs because software and other costs would outweigh gains. The most substantial costs for EPBs are software and hardware purchases, along with poll worker training. These costs decreased after the first election.

Table 2: Estimated costs and savings for EPBs in a typical county.

County	Implementation	Ongoing (Per Election)
Small Rural	$18,000	$1,800
Rural	$31,000	$2,200
Urban/Suburban	$1 million	($60,000)
New York City	$6.9 million	($398,000)
Statewide	**$14.9 million**	**($685,000)**

Early voting would cost New York $85.4 million over ten years.

In the first year, instituting early voting in every county would cost $12.5 million statewide. This estimate uses Governor Cuomo's 2018 early voting bill which required a minimum of one to seven poll sites per county, each open for twelve days before an election. Costs vary by county size with larger counties experiencing higher costs per voter due to the need to operate additional sites.

Table 3: Estimated costs and savings for early voting in a typical county.

County	Implementation	Ongoing (Per Election)
Small Rural	$21,000	$2,600
Rural	$17,000	$9,400
Urban/Suburban	$895,000	$234,000
New York City	$5.9 million	$1.5 million
Statewide	**$12.5 million**	**$3.4 million**

The most substantial costs identified in early voting from other states were ballot printing, poll worker staffing, and hardware. Given relatively recent investments in voting machines in New York, the hardware cost may be less of a concern here, lowering costs by as much as 46 percent statewide. Ballot printing and poll worker staffing costs occurred in perpetuity, while states with hardware and software purchases tended to have higher up-front costs.

Enacting all three reforms would result in lower costs per election in most counties.

Together, these reforms would cost $49.5 million statewide over ten years, but would result in ongoing savings in small rural and rural counties. Implementation costs for all counties would be reduced as a result of combining primaries, which would effectively subsidize the other reforms. Implementation statewide would total $22.1 million. Rural counties would actually see a savings in implementation that other county types would not. This results from having EPB and early voting costs similar to smaller counties but substantially higher savings from combined primaries.

Both rural and small rural counties would see marginal ongoing savings as a result of these reforms,

while urban/suburban counties would experience higher ongoing costs. The higher ongoing costs would primarily be driven by higher costs per voter for early voting in larger counties. For all counties, combining the primaries is the biggest driver of savings. While these would occur only every other year, for the purposes of simplicity, this analysis spreads those savings evenly over each election.

Table 4: Estimated costs and savings of all three reforms in a typical county.

County	Implementation	Ongoing (Per Election)
Small Rural	$14,000	($818)
Rural	($8,000)	($172)
Urban/Suburban	$1.6 million	$99,000
New York City	$10.5 million	$651,000
Statewide	**$22.1 million**	**$1.2 million**

Analyzing the Costs

The following report provides additional context and background on these reforms, and insights from other states on their execution. Deeper information on the estimates includes an explanation of key factors in costs and savings identified by other states, and more data on county-specific costs and savings.

This report lends much needed data to the election reform debate in New York. Decisions about where to invest limited state resources are challenging, and even more so without clarity on costs.

Based on the findings of this report, we support a combined state and federal primary. The substantial savings counties would realize would partially cover the costs of EPBs and early voting.

The experience of other states suggests that if early voting is passed, it should be done in conjunction with EPBs. Without EPBs, counties with multiple early voting sites may find the process of guarding against election fraud (i.e., voting twice) challenging as records will be difficult to transfer quickly. In addition, the volume of paper poll books needed to list all voters in a county or early voting zone could be substantial and costly even for small and mid-size counties.

For larger counties especially, EPBs would save time and resources making them a worthwhile investment. Discussions with local elections officials in other states suggested that EPBs were popular among poll site staff and the elections officials themselves. Reports and interviews suggest that early voting is popular with voters as well and helped build trust.

Introduction

New York State has some of the most restrictive voting laws in the country, with the Center for American Progress giving the state a D- for accessibility to the ballot in their latest Health of State Democracies Index.[ii] New York's challenges include low turnout, hard to access polls, long lines, antiquated voter check-in, and voter fatigue from extra elections. There has been little bipartisan support for solutions to increase access and efficiency in New York's elections.[iii] As a leading good government group in New York, Citizens Union seeks to remove barriers to the voting booth through a series of voting reforms that have been effective in other states. As part of this effort, Citizens Union enlisted this Capstone group to conduct a cost analysis of the following reforms:

Combined Primaries: As a result of a federal court case in 2012, New York is one of only two states that separate the state and non-presidential federal primaries. The court moved the federal primary from September to June to accommodate requirements to mail ballots to overseas military members but did not have authority to move the state primary. Both political parties agree that the two dates should be combined which would eliminate the need for an additional election and result in substantial cost savings. Unfortunately, neither party can agree on a date, with Republicans favoring August when schools are not in session and after the state legislature's budget deadlines, and Democrats favoring June to allow more time for overseas military ballots. Legislation merging the primaries would take effect statewide.

Electronic Poll Books (EPBs): EPBs are software that facilitate check-in at a poll site electronically and update voter history automatically, rather than using cumbersome paper poll books that must be manually reviewed after each election. The software has gained popularity in recent years with counties in 33 states using EPBs.[iv] EPBs verify that a voter is registered and at the correct precinct, assign them the proper ballot, and update their voter history. EPBs are seen as a time saver for voters and poll workers. EPBs are currently not allowed in New York State, though several counties have received waivers to pilot them. Proposed legislation would allow, but not mandate, their use by counties. Generally, larger counties are more likely to implement EPBs than smaller counties.

Early Voting: Early voting legislation would permit voters to cast their ballots in-person at poll sites before election day. This reform has the potential to make voting easier and more accessible for residents. Currently, 37 states have some form of early voting. Various forms of early voting include no-excuse absentee voting, vote by mail, and in-person early voting poll sites. Several bills have been proposed in the New York legislature by both parties, and in January 2018, Governor Cuomo proposed in-person early voting as part of his 2019 fiscal year budget. The governor's legislation would have required statewide early voting implementation. Notably, in all states that allow early voting except Alabama, EPBs are required to ensure that individuals do not vote multiple times. The New York proposal does not utilize EPBs which could add significant cost and complication to the process.

In New York, the State Board of Elections assumes a lead role in drafting regulations on policies passed by the governor and state legislature, but it assumes a relatively small role in the actual operation of elections. Individual counties (and New York City) assume the full cost of elections. Because of this cost structure, New York counties lack opportunities for reimbursement by the state as well as cost-sharing opportunities with other local governments. This puts New York municipalities

at a disadvantage compared to most other states, where the state itself assumes a larger cost-sharing role in election implementation.

Whereas early voting and combined primaries, if passed, would necessarily be a statewide mandate, it is likely that individual counties would independently make the decision to enact EPBs. Each county has a County Board of Elections with two appointed commissioners (one Democrat and one Republican) who would have to agree to implement EPBs in their given county. Previous early voting proposals have stalled, in part, because they were unfunded mandates. At time of print, there is no indication that the state legislature will address this reality. Federal policy and funding have prompted the implementation of other reforms in the past, like the overhaul of the state's voting machines, but they are not likely an option for these particular reforms.

Despite Citizens Union's notable strengths as an advocacy organization, the potential magnitude and uncertainty of cost is consistently brought up as an impediment to implementing voting reforms in New York State. This report presents the results of an analysis of data provided by New York state and county elections officials, as well as data from other states where reforms have already been enacted.

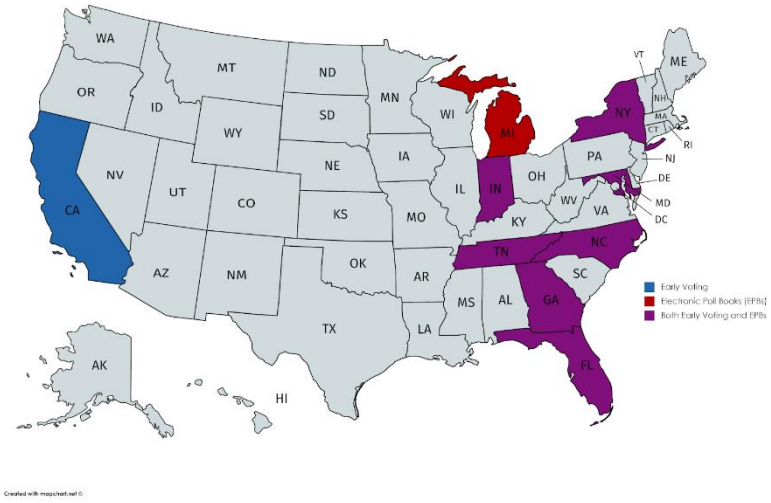
Methodology

This study provides an estimate of costs and savings associated with three election reforms: electronic poll books, early voting, and a combined state and federal primary. For each reform, we provide estimates of the up-front implementation and ongoing costs and savings. EPB and early voting estimates are based on the experience of other states that have undertaken the reforms with some added insights from New York counties. The combined primary estimates come from research conducted specifically with New York counties.

Analysis of Early Voting and Electronic Poll Books

The estimates of costs and savings for in-person early voting and EPBs are based on 967 data points from 64 counties, cities, and townships across nine states. These states were selected because their implementation of one or both reforms was structured similarly to existing and past proposals in New York.

Figure 1: Map of states contributing cost data to this analysis. Officials in multiple other states were consulted.



Data was collected from these locations through interviews and surveys. Initially, we conducted interviews to a select group of local officials in four states.[1] Interviewees shared their experience with the reforms and provided the costs and savings they realized over time. Local officials were selected for an interview either based on having a population similar to a New York county of interest or because the team was able to obtain a referral. After the initial round of interviews, the team crafted a survey that was sent to additional local officials in the states interviewed and those in five more states.[2] This survey reached all counties in the targeted states. After reviewing responses to the survey, the team reached out to elections officials to seek clarification when necessary. For a complete list of respondents, see Appendix E.

[1] California, Maryland, Michigan, and Texas. Texas is not highlighted in the map because they provided context but not cost data.

[2] Florida, Georgia, Indiana, North Carolina and Tennessee were added based on the similarity of their reforms. Michigan and California were dropped because implementation of the reforms did not match New York as closely as originally perceived. The data interviewees provided is still included where relevant.

Both the surveys and interviews gathered specific implementation costs and ongoing costs or

savings, which were broken into a series of budget categories (e.g., software, poll worker training, printing) associated with each reform. The survey also measured the effect of each reform on staff time (e.g., initial time spent preparing for implementation, reductions in time closing elections). Finally, the survey and team collected information on the number of regular and early voting poll sites, the year of implementation, the number of registered voters, and the number of voters in the 2016 presidential election for each county.

We defined implementation costs as those that are necessary for only the initial election when the reform was implemented. These were the upfront costs of the reform and would include costs like hardware purchases or the creation of training materials.[3] Ongoing costs and savings were the change in expenditure for each budget category that occurred for each election as a result of the reform, which could be positive or negative.[4]

Cost estimates referred to in this report reflect the median cost per voter calculated from the national data.[5] Using median cost per voter allows us to account for differences in county size and reduces interference from outlier counties.[6] We then multiple the median cost per voter estimate by the voter population of the geography of interest. For early voting, an additional calculation was needed to make estimates to accommodate differences in the hours, days, and number of sites for early voting.[7] When estimating costs or savings that resulted from changes in staff time, we use a standardized hourly rate for all counties.[8] The model also accounts for inflation, and all figures are provided in 2018 dollars.

Our median estimates are presented by county type to account for the changes that occur due to economies of scale (e.g., buying in bulk) or as a result of changes in cost due to geography (e.g., costs are higher in New York City than they are in Hamilton County). For each location where we received data, we assigned one of three designations, small rural, rural, or urban/suburban, based on the number of voters in that location.[9] Each New York county is assigned one of these categories.[10] The estimates provided for each county type are derived from costs and savings from counties within that size category, unless otherwise noted. When statewide estimates are provided, they are adjusted to account for variations in costs by county category.

An additional survey and set of interviews were conducted in New York and sent to each county elections commission. Counties were asked to provide estimates of the cost of an early voting site, a

[3] For recurring, but not annual costs (such as laptop replacement), we insert an annual depreciation amount into ongoing cost.
[4] Some data from other states and parts of our analysis use the cost per year instead of the cost per election. Annual numbers assume 2.375 elections per year, which is the average number of elections across the previous eight years in New York with one added to account for the 2012 primary court case.
[5] There are a small number of instances where the report references an *average* cost per voter for comparison. It is always noted.
[6] Specifically, we use the cost per voter in the 2016 presidential election as this figure was widely available for all locations.
[7] In our calculations, cost per voter for early voting is actually cost per voter per hour that an early voting site is open. For example, if a county had two early voting sites open for ten hours per day for ten days, we would divide the cost per voter by 200 (2x10x10). Our estimates for New York multiply that new cost per voter by the most recent proposal for early voting here which would include 84 hours and one to seven poll sites per county.
[8] For county elections officials, we use calculated an average of $28.28, which is the annual hourly rate for an individual employed by a county in New York. For tech support staff, we use $25.21, the hourly rate for an individual employed in a tech position in a county in New York.
[9] Small Rural = Fewer than 30,000 voters; Rural = 30,000 to 150,000 voters; and Urban/Suburban = More than 150,000 voters.
[10] For the purposes of our calculations, we break New York City into the five borough counties in our data analysis so as not to inflate the average county size. When presented in this report, the New York City estimate includes all five boroughs.

cost of an additional hour of operation of the early voting site, and an estimate of the time spent updating voter histories after an election. These estimates are not factored into our official cost estimate but are discussed in the EPB and early voting findings sections of the report.[11]

Analysis of the Combined Primaries

New York is one of two states without a combined federal and state primary. As such, New York was our only potential data source. The team created and sent a survey to each county elections commission in the state to seek the cost of combining the state and federal primary. Eleven responded to the survey with an estimate of their current costs for running the additional direction. These were added to five additional data points found through media sources and through the interviews described in the EPB and early voting section. As with the other reforms, we calculated a cost per voter that we could apply across small rural, rural, and urban/suburban counties.

Limitations

This methodology was designed to obtains a reasonable estimate for New York on each of the reforms. There are, however, several limitations to the analysis.

- Costs vary based on the structure of the reforms. Each state implemented early voting and EPBs with different requirements and cost-sharing arrangements between counties and the state. We have taken steps to address the differences that occurred by selecting states with the most similarities, incorporating early voting length and sites into our calculations, and removing costs that would not apply in New York. Still, some variation is to be expected. More detail on specific legislation used to develop estimates may be found in Appendix C.
- Survey and interview data could be inconsistent at times. Because of differences in how elections officials tracked costs and responded to the survey, the team was forced to use its discretion in interpreting or removing cost data in a small number of cases. While this does reduce the replicability of the study, based on interviews and conversations with elections officials across the country, the team is confident that this increased the accuracy and usability of the estimates.
- We cannot independently verify the data provided by elections officials. Support for these reforms often falls along party lines. At the encouragement of key informants early in the process, the team solicited data from both Democrat and Republicans. The team routinely shared that it was conducting a non-partisan analysis and has no reason to believe that data was compromised in any way along party lines.
- Sample size, particularly for larger cities and counties, is a limiting factor. Most of our data comes from rural and small rural counties, which constitute the majority of counties in New York. Only six counties from the urban/suburban category provided data, and none provided data for every cost category. As a result, our estimates for larger counties, and especially New York City are likely underestimated. We account for holes by substituting rural data where necessary.
- Multiple attempts were made to meet with New York City elections officials, but a meeting never came to fruition. The only county of New York's scale included in our estimate is Los

[11] One exception to this is Onondaga County. Onondaga was one of several counties to receive permission to pilot EPBs. Their cost data is incorporated into our estimate, where appropriate, as if it were received from another state.

Angeles, which provided limited data. We emailed New York City Board of Elections officials (both commissioners and executive management) a total of six times and attended a board meeting but were unable to secure their participation.

- Finally, the divisions between county types are rigid and substantial cost per voter differences exist between them. For counties on the cusp of one category or another this could be problematic. Estimates for these counties may be more accurate if averaged using both the provided cost per voter and the cost per voter of the adjacent category.

Findings

Combined Primaries

Combining the state and federal primaries would save $36.2 million over the next ten years.

A combined state and federal primary would save $7.2 million statewide every two years, or $0.93 per voter. These cost savings would result from eliminating a primary election every two years. New York is one of only two states that separate state and federal primaries. Minimal to no cost is expected from combining them.

The total amount saved by individual counties depends on the size of the county. In general, smaller counties incur greater costs per voter than larger counties because they do not benefit from economies of scales, such as bulk discounts. As a result, smaller counties would see larger savings on a per voter basis when combining primaries.

Table 5: Estimated savings per combined state and federal primary in a typical county.

County	Biannual Savings	Biannual Savings (Per Voter)
Small Rural	($25,000)	($1.67)
Rural	($56,000)	($1.13)
Urban/Suburban	($354,000)	($0.85)
New York City	($2.3 million)	($0.85)
Statewide	**($7.2 million)**	**($0.93)**

Savings would be the same, regardless of the combined primary date.

Legislators have proposed several recent bills to combine the primary dates. The only difference in the various pieces of legislation are the dates of the combined primary – June or August. The month chosen would not affect cost or savings estimates.

Electronic Poll Books

The upfront costs of implementing EPBs statewide would be returned through savings in ten years.

Statewide implementation would cost $14.9 million in the first year assuming all counties opt to use EPBs. The major costs associated with implementing EPBs are the initial hardware and software purchases, initial staff time necessary to prepare for implementation, poll worker training, and tech support. Hardware and software costs are the biggest contributors to these upfront expenditures. The costs of software testing, poll worker recruitment, office worker training, and voter education were negligible in most counties.

In subsequent elections, savings resulting from a reduction in poll workers and from staff time dedicated to closing elections would generate net cost savings in many counties, particularly larger counties. The statewide savings would be approximately $685,000 per election. After ten years, total expenditures statewide would hit a break-even point.

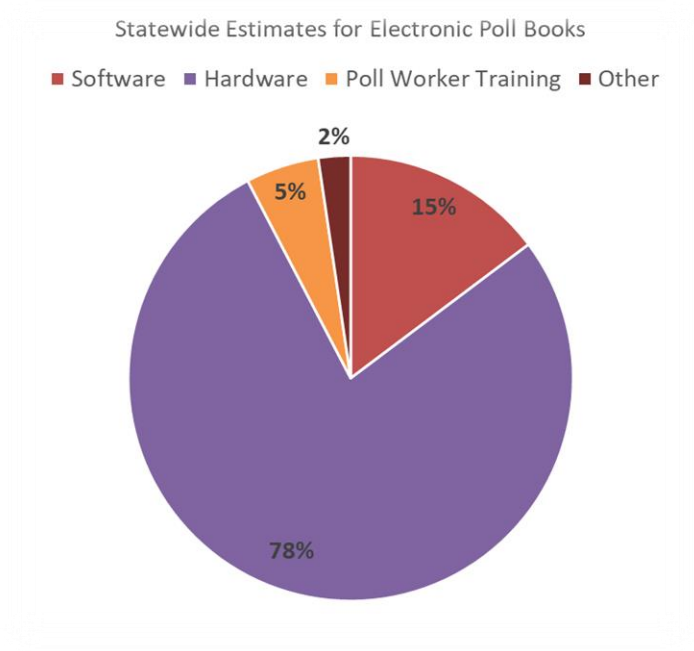
Table 6: Implementation and ongoing cost/savings estimates in a typical county.

County	Implementation	Ongoing (Per Election)
Small Rural	$18,000	$1,800
Rural	$31,000	$2,200
Urban/Suburban	$1 million	($60,000)
New York City	$6.9 million	($398,000)
Statewide	**$14.9 million**	**($685,000)**

Larger counties would see the highest costs and the highest savings.

Larger counties are the most likely to see ongoing savings but have higher upfront costs. As counties get larger, they have increased efficiencies in their operations and receive bulk purchasing discounts that reduce the per voter price of software and hardware. A typical urban/suburban county would spend $1 million in upfront implementation costs but would save $60,000 per election on an ongoing basis. New York City would spend $6.9 million in implementation and save $398,000 per election. If EPBs were only implemented in the 10 largest counties, the cost would total $14.6 million and ongoing savings per election would total $846,000.

A rural county would have much lower implementation costs – $31,000 – and would continue spending $2,200 on EPBs per election. While $2,200 per election was the median cost for a county of this type, an average of the same data provided a *savings* of $1,400 per year. This suggests that across the spectrum of rural counties, some would see marginal increases in costs per election, some would break-even, and others would see savings, with counties at the larger end more likely to experience savings. Small rural counties would spend $18,000 in implementing EPBs, and EPBs would add $1,800 per election in subsequent years. These costs are lower because smaller counties would need to buy less hardware for their fewer number of poll sites. Small counties also would realize fewer savings from the decrease in time spent closing elections and balancing ballots.



Major Savings from EPBs

Major EPB costs come from hardware purchases, software purchases and license renewals, initial staff time necessary to prepare for implementation, poll worker training, and tech support. The costs of software testing, poll worker recruitment, office worker training, and voter education were negligible in many counties. Statewide, the implementation costs of hardware would be $11.8 million, and software would cost $2.3 million. Poll worker training would cost $813,000. Other costs total $348,000.

Figure 2: Statewide implementation cost categories.

Hardware would cost $11.8 million in implementation and $102,000 per election statewide.

EPBs are typically run on off-the-shelf laptops or tablets. Urban/suburban counties can expect to pay $846,000 for initial hardware costs, while small rural counties would pay $8,900, and rural counties would pay $21,000. Ongoing costs were often substantially lower and usually just replacement costs for aging hardware. For urban/suburban counties, hardware costs decreased to $7,800 per election. Both rural and small rural counties would see no ongoing hardware costs.

The long lifespan of the technology used generates the minimal ongoing hardware costs for rural and small rural counties. Many counties reported that hardware purchased for EPBs was only used on election days and stored the rest of the year, adding to longevity and decreasing ongoing costs. The costs outlined here reflect all hardware necessary for use of the poll book. In some states this included a standard thumb drive (to transfer data offline) and a card reader to swipe drivers' licenses. A jurisdiction in Michigan reported the cost of an EPB tablet and accessory package to be $600, while one in Florida paid $468. Maryland paid $1,000 per laptop and $600 per printer. Some counties indicated that software and hardware were purchased directly from the EPB software provider as a package, while others installed the technology on standard laptops and tablets. Two major voting technology companies, KnowInk and Electronic Systems & Software (ES&S), shared EPB hardware costs ranging from $350 to $5000 per unit depending on storage capacity of hardware and county size, as well as if the hardware was bought commercially or custom built.

Software would cost $2.3 million in implementation and $203,000 per election statewide.

Software expenditures generated significant implementation costs, but ongoing fees are much less, especially in larger counties. Ongoing fees represent only five percent of the initial cost in urban/suburban counties, while representing around 30 percent for all other counties. The implementation costs for urban/suburban counties would be $146,000 and ongoing costs would total $7,200. Rural and small rural counties would see very similar costs: roughly $7,300 for

implementation and $2,000 to $2,300 per subsequent elections.

The estimates above project data from only those states in which counties were responsible for acquiring their own software. In other states like North Carolina and Michigan, the state purchased or developed their own software to share with local elections offices resulting in substantial cost savings overall. The state of Maryland reported spending approximately $300,000 on a statewide software license. Michigan used a private contractor to develop a custom program for only $35,000 in 2010. Generally, software testing and some tech support were included in the contracts.

Poll worker training would cost $813,000 in implementation and $180,000 per election statewide.

Poll worker training would cost urban/suburban counties $57,000 to implement EPBs and would add $12,000 to each ongoing election. Training costs for rural counties are much lower – just $1,400 during implementation and $334 for each ensuing election. Small rural counties would also see lower costs, though slightly higher than rural counties – $1,700 to implement and $1,000 for subsequent elections.

In some jurisdictions, training on EPBs was built into the existing training times at no additional cost; while in others, additional training time was added. Most locations chose not to train all poll workers on EPBs, instead relying on those who could demonstrate computer literacy or had an interest in using the system. Training did not generally last more than one hour and built on the existing training for poll workers. In some cases, the vendor provided initial training to poll workers at no cost. Training costs were highest in the first election but tended to lessen as counties found efficiencies and poll workers became more familiar with the technology.

Tech support would cost $104,000 in implementation and $105,000 per election statewide.

Tech support costs are seen in the initial installation of the software and in preparation for and execution of elections. Initial tech support typically consists of software installation, removing non-essential programs from the computer, and disconnecting them from the internet. Ongoing costs include annual security checks and on-call tech support during an election day to troubleshoot issues. Larger counties typically were able to use county IT departments to perform tech support functions, the costs for which we calculated based on an average hourly rate. Smaller counties appeared more likely to use outside entities. It is likely that a combination of external support and economies of scale make small rural costs per voter substantially higher than their larger counterparts.

In total, urban/suburban counties would pay between $5,500 and $5,100 for implementation and for ongoing costs per election, respectively. Tech support would cost rural counties around $625 for implementation and ongoing costs, and small rural counties would pay between $730 and $1,200 for tech support during implementation and per subsequent elections, respectively. Not all local officials operating EPBs had tech support costs because many elections officials, particularly in smaller counties, were able to run the security checks themselves.

Staff Time for Implementation

Elections officials estimated that their staffs spent between 1.5 and 160 hours preparing for the launch of EPBs, with a median of 16 hours. This equates to approximately $450 in staff time based on

average statewide wages. This time was spent preparing training manuals, designing training, rewriting instructions, and testing new processes. High-caliber customer service from the EPB software provider could eliminate some of these costs by providing useful materials and training, which would alleviate some of the burden on the elections commission staff.

Additional Costs

The team examined four additional categories of costs that county officials and cost data deemed negligible: poll worker recruitment, EPB testing, office staff training, and voter education. Despite concerns from local officials in New York and elsewhere, poll worker recruitment was not an issue and most jurisdictions did not see an increase in poll worker recruitment costs as a result of EPB implementation. In our analysis, only three counties signaled any increase. Others remarked that it became easier to recruit younger poll workers as result of the change. EPB testing and office staff training both had costs associated with them, but they made up a minor percentage of the cost and effort of implementing EPBs and were often included in tech support and other training categories. Maryland reported that local board of election trainings on EPBs took about seven hours and cost around $15,000. Finally, only four of twenty-two counties reporting voter education costs showed an increase as a result of EPBs. The others were able to build in any necessary information into their existing efforts.

Major Savings Associated with EPBs

Decreases in election closing costs would save New York counties $329,000 during implementation and $308,000 per each subsequent election.

Urban/suburban counties would see cost-savings of around $20,000 in each election, while rural and small rural counties would see $1,000 in savings.

A significant area of cost-savings is found in the reduction of staff time costs when updating voter histories after elections. EPBs eliminate the slow process of scanning signatures into the voter history database, substantially reducing the staff time dedicated to it. Counties saved a median of 32 hours each in staff time by eliminating this process. In New York, county officials estimated an even higher median of 75 hours, suggesting that New York's signature process is more time intensive than the processes of other states. Notably, all counties in our dataset identified at least some time savings as a result of this process.

Decreases in poll worker salaries would save $529,000 per election statewide.

Roughly one-third of counties reported a decrease in salary expenditures as a result of EPBs, with larger counties seeing more substantial reductions. Urban/suburban counties would save $39,000 per election. Rural and small rural counties would save between zero and $1,400 per election.

Many jurisdictions were able to hire fewer poll workers as a result of the efficiency that EPBs brought to the check-in process. As a result, counties spent less on poll worker salaries, especially after the first year once poll workers are comfortable with the process. Data from county officials suggest that larger poll sites (not necessarily just larger counties) are more likely to eliminate poll workers. In Michigan, for example, the 25 largest poll sites (out of 87) in one county eliminated one to two workers each. In another county, the number of poll workers per site dropped from six to ten

workers to four to seven workers. At least one county we spoke to did not see a decrease in poll worker costs because they used savings from reducing the number of poll staff to increase hourly wages for others. This suggests that reductions in poll workers may be more common than reported.

Printing would cost New York counties $2,400 during implementation and save $495,000 per each subsequent election.

Reductions in the printing costs of poll books is a presumed area of high savings; however, results are mixed. Some counties saved money by reducing the number of poll books they printed after implementing EPBs. Some, however, incurred new costs due to printing voting receipts. With EPBs, jurisdictions would not legally be required to print paper poll books, though every elections official we interviewed informed us that they always print at least one poll book per poll site. Overall, we do not expect that New York counties would see substantial reductions in printing costs.

Urban/suburban counties would save $38,000 per election, and rural counties would save around $114 per election. Small rural counties with only one poll book per poll site may not see a change in costs.

Lessons from Other States

Unanimously, local officials that participated in this study appreciated the efficiency and accuracy of electronic poll books. Though they recognized the added implementation costs, officials were won over by the time savings, and ease and confidence of correctly uploading voter histories. Before the implementation of this reform, clerks and election staff spent days scanning in signatures. This time-consuming process was often rife with errors as staff worked through hundreds of poll books and thousands of signatures. Indeed, a former state elections official in Michigan suggested that accuracy was "through the roof," noting that suspected cases of fraud from data entry errors dropped from 1,200 for a presidential election to fewer than five.

Discussions with clerks also made it clear that concerns about more challenging poll worker recruitment were unfounded. On the whole, poll workers adapted fairly painlessly to the new technology. An elections clerk in Michigan noted that some older poll workers are now so used to EPBs and so appreciative of their efficiency that they "would never go back" to paper poll books. Interviewees suggested that while recruitment tactics have evolved to unearth more tech-literate workers, recruitment costs have not changed. Further, because not all poll workers are trained on EPBs, those uncomfortable with the technology can simply be reassigned to other tasks.

Early Voting

Statewide implementation of early voting would cost an estimated $85.4 million over ten years.

Statewide early voting implementation would cost $12.5 million in the first year, assuming early voting sites operate the minimum number of hours dictated by Governor Cuomo's 2018 early voting legislative proposal.[12] Similar to election day voting, counties implementing early voting can anticipate expenses related to typical poll site operations and voting system infrastructure. The major costs associated with implementing early voting statewide are the initial hardware and software purchases (i.e., extra voting machines), poll worker staffing, initial staff time necessary to prepare for implementation, poll worker training, and voter education. Hardware and poll worker staffing are the biggest contributors to these upfront expenditures.

Notably, as the data we used to estimate costs for New York was collected from outside states and New York has relatively new voting machines, this hardware estimate is likely inflated. Removing hardware costs reduces overall costs significantly; implementation costs per voter decrease by approximately 46 percent. However, as there will inevitably still be some hardware costs, the hardware cost data collected from other states is included in this report to maintain data integrity.

After the initial implementation, early voting would cost an estimated $3.4 million statewide per election. While early voting presents an ongoing expense, it would increase access to the polls and result in higher levels of voter satisfaction and voter confidence across all demographics, as expanded upon in Appendix B.

Table 7: Implementation and ongoing costs for early voting in a typical county.

County	Implementation	Ongoing (Per Election)
Small Rural	$21,000	$2,600
Rural	$17,000	$9,400
Urban/Suburban	$895,000	$234,000
New York City	$5.9 million	$1.5 million
Statewide	**$12.5 million**	**$3.4 million**

[12] These costs assume at least one early voting site per county with an additional site for every 50,000 registered voters. These costs also assume early voting poll sites would be in operation for 12 days leading up to each election, open eight hours a day on weekdays and five hours a day on weekends.

The largest counties would see the highest costs.

As more early voting sites are necessary for larger populations, costs for New York City and other urban and suburban counties would generally be higher, as they require an average of 6.58 early voting sites per county. This is directly reflected in the data, which shows that urban and suburban counties would see an implementation cost of $895,000 with an ongoing per election cost of $234,000. New York City would have a $5.9 million implementation cost with a $1.5 million ongoing cost per election.

In contrast, rural counties only require an average of 1.5 early voting sites per county and small rural counties only require an average of one early voting site per county, resulting in dramatically lower implementation and ongoing costs per election. Interestingly, the implementation cost of $21,000 is higher in small rural counties than the $17,000 implementation cost for rural counties. This discrepancy is likely due to small rural counties having nearly identical costs but smaller voting populations, which inflates the cost per voter in our analysis. This discrepancy disappears after factoring ongoing costs, where small rural counties have a cost of just $2,600 per election, which is less than a third of the $9,400 per election cost incurred by rural counties.

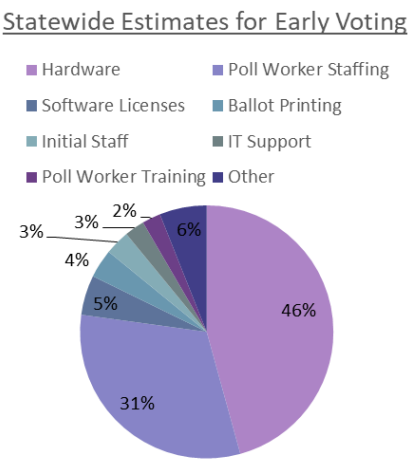


Figure 3: Statewide implementation cost categories.

Hardware purchases and poll worker staffing comprise 77 percent of all early voting costs.

Of the $12.5 million statewide implementation cost, $9.7 million is the result of hardware purchases and poll worker staffing. Other major early voting costs accrue from software licenses, ballot printing, initial staff time, tech support, and poll worker training. The costs of hardware and software testing, poll worker recruitment, office staff training, election auditing, space rental, and equipment and supply transportation were negligible for many cc

Hardware would cost $5.7 million in implementation, but ongoing costs are negligible statewide.

For early voting, hardware costs are almost exclusively associated with the purchase of additional voting machines and equipment (i.e., ballot scanners and tabulators). Urban/suburban counties can expect to pay $425,000 for initial hardware costs, while small rural counties would pay $12,000 and rural counties would spend just $700. Ongoing costs are negligible and, long-term, would just consist of replacement costs for voting machines that are no longer functional. The team believes that the difference between small rural and rural counties for New York would not be as wide as the data provided by other states indicates. Small rural counties self-reported substantially higher software costs (nearly $31,000 on average) than rural counties ($1,700). This discrepancy is most likely a result of a small sample size, particularly in rural counties in this category and would not likely be replicated in an early voting roll out in New York.

Because of the long lifespan of voting machines, ongoing hardware costs are minimal. Many counties

reported that voting machines are leased with maintenance and upgrades being covered by the vendor, thus further limiting ongoing hardware costs. As discussed above, we expect these initial hardware implementation cost findings to be inflated in comparison to actual final implementation costs.

Poll worker staffing would cost $3.9 million in implementation and $2.5 million per election statewide.

Poll worker staffing would cost urban/suburban counties $282,000 to implement and an additional $182,000 per each ongoing election. Staffing costs in rural counties is much lower, amounting to just $7,600 in implementation costs and $4,900 in ongoing costs per election. Staffing costs are even lower still in small rural counties with just $400 in both implementation costs and ongoing costs per election.

In small counties with fewer required voting sites, early voting may be facilitated by election commission staff, reducing the expenditures for poll workers. In larger counties where multiple sites may be required, dedicated poll workers must be hired resulting in higher costs. This was found to be the case in other states and would likely apply to New York as well where counties with a single early voting site could operate it out of the election commission office.

Software licenses would cost $637,000 in implementation and $28,000 per election statewide.

The cost of software licenses, due to the additional voting machines necessary for early voting, were significant—comprising about five percent of early voting implementation costs statewide. Software licenses would cost urban and suburban counties $45,000 to implement and an additional $2,000 per election. Rural and small rural costs are again much lower, with rural counties spending just $235 in implementation costs and an additional $53 per election, and small rural counties spending $3,400 in implementation costs but experiencing negligible ongoing costs.

Similar to the projected hardware costs, we anticipate these numbers to be slightly inflated given the recent purchase of voting machines in New York. Additionally, New York State has a variety of different voting machines, each of which ostensibly operates with different software — this could lead to significant variance in software costs by location, depending on the types of voting machines used in each county.

Ballot printing would cost $459,000 in implementation and $375,000 per election statewide.

Ballot printing comprises roughly four percent of implementation costs statewide. Ballot printing would cost urban/suburban counties $19,000 in implementation costs with an additional $17,000 in ongoing costs per election. As with previous cost categories, these costs are drastically reduced in smaller counties, with rural counties spending $5,100 in implementation costs and $3,600 in ongoing costs per election, and small rural counties spending $2,500 in implementation costs and $1,700 in ongoing costs per election.

Ballot printing tends to be significantly more complicated for early voting sites than for election day poll sites, as early voting sites are required to maintain copies of several different ballots in order to

cater to voters in different local districts and even different villages or cities. This is a result of there being fewer total early voting sites than election day voting sites, meaning that each site must cater to a wider geographical area. Notably, printing costs per voter decrease as population size increases; this is likely because printing costs are lower for bulk orders.

Tech support would cost $319,000 in implementation and $92,000 per election statewide.

Tech support costs are seen in installing and maintaining voting machines and election equipment. In total, urban/suburban counties would see implementation costs of $23,000 with an ongoing per election cost of $6,200. Rural and small rural costs, however, are drastically lower, with rural counties seeing an implementation cost of $201 and an ongoing per election cost of $169, and small rural counties seeing implementation costs of $878 and an ongoing cost of $355.

The significantly lower costs associated with tech support in rural and small rural counties are due to only needing to maintain one or two early voting sites (thus requiring fewer voting machines). Alternatively, in urban and suburban counties where several early voting sites would be needed, tech costs increase with each necessary voting machine and early voting site. Additionally, not all jurisdictions had tech support costs because certain vendors include maintenance and support with the initial purchasing or leasing cost of the voting machine.

Poll worker training would cost $296,000 in implementation and $99,000 per election statewide.

As with poll worker staffing, poll worker training costs are much higher in urban and suburban counties due to the necessity of operating several voting sites. These counties rely on poll workers as opposed to commission staff to operate each early voting site. As such, poll worker training would cost urban/suburban counties $21,000 to implement and an additional $6,900 per election. However, poll worker training would cost rural counties $570 in implementation and $189 per election and small rural counties $135 in both implementation and ongoing per election costs.

Staff Time for Implementation

Elections officials estimated that their staffs spent between 12 and 96 hours preparing for the launch of early voting. This equates to between $340 and $2,700 in staff time per county or about $410,000 in statewide costs. This time was spent preparing voter education campaigns, managing poll site logistics, and developing processes for county-wide implementation.

Additional Costs

The team examined seven additional categories of costs that county officials and cost data deemed negligible: poll worker recruitment, voter education, poll space rental, hardware testing, software testing, office staff training, and equipment transportation. Despite concerns from local officials in New York and elsewhere, poll worker recruitment was not an issue and no additional costs arose from instituting early voting. While there are some initial costs associated with voter education campaigns, ongoing costs are significantly reduced as voters become aware of the new reform. Over time, voter education costs diminish and can be covered by existing voter outreach budgets. Regarding space for early voting sites, small rural and rural counties would need only one or two

early voting poll sites, which interviews with election officials have indicated can be operated out of existing elections buildings with no additional space costs. In urban/suburban counties, where additional poll space outside of elections offices may need to be procured, there are marginal costs associated with space rental, amounting to roughly $7,600 in total implementation. Hardware and software testing, office staff training, and equipment transportation each had costs associated with them, but they made up a minor percentage of the cost and effort of implementing early voting and were often included in tech support and initial staff time. Maryland reported that all costs that would fall under project management and local board of elections training were done almost "entirely in house," thus this cost was accounted for in the initial staff time estimate.

Cost Estimates from NY Elections Officials

In addition to the cost data collected from states that had already implemented early voting, the team also requested cost estimates from New York state election officials. With results from six counties, all categorized as rural or small rural, New York election officials predicted an average cost of $12,500 per early voting site. Our analysis suggests that the cost for rural and small rural counties would in fact be much lower than this prediction, with a cost of $6,400 per poll site for small rural counties and a cost of just $7,100 per poll site for rural counties. Based on their assessment, these same New York state officials also estimated an average cost of $634 for each additional hour of early voting.

Lessons from Other States

Electronic poll books make early voting far easier.

Elections officials in states with early voting consistently questioned the feasibility of New York's early voting proposals without electronic poll books. With early voting, poll sites are centralized to a small number of locations that must accommodate voters from multiple precincts. This puts a strain on the usefulness of paper poll books. Brooklyn, as an example, could be required to have as many as 223,000 registered voters listed at a single poll site. Without EPBs, election officials would have to comb through all these names to check in the voter. One rural county election commissioner suggested that the paper poll book for his county's registered voters would be over four feet high. This is both expensive from a printing perspective and could substantially slow the voting process at these sites. EPBs would expedite the process and reduce costs by eliminating the need for such large paper poll books.

[13] This assumes that all 1.5 million registered voters were evenly divided among the seven early voting sites required by recent legislation.

EPBs would also minimize voter fraud concerns and reduce time spent updating voter histories during early voting. Ensuring that people do not vote multiple times in an election becomes costlier to manage with early voting, particularly if they can vote at any site in the county. Updating voter histories, whether on a nightly basis or after the conclusion of early voting, is a critical but time-consuming effort made more complicated without EPBs. Other states seamlessly update histories and check for duplicate voters on a nightly basis during early voting but doing so in New York would require substantial staff hours to hand inspect check-in sheets in a limited window of time. EPBs would simultaneously increase election security and decrease the cost.

Finally, many counties would likely establish early voting sites to serve a specific set of precincts, rather than allow any registered voter in the county to vote at any of the early voting sites. This would require a significant voter education campaign, but even with an effective campaign, some voters would still show up at the incorrect early voting poll site. Normally, identifying the correct precinct can be time-consuming and hold up registration while their address is searched. EPBs would allow election officials to instantly see the correct poll site for anybody attempting to vote, providing better customer service to the voter.

Early voting lines can be long, but voters do not mind.

Several variations of early voting systems have already been implemented in the majority of municipalities throughout the United States, including no-excuse absentee voting, vote by mail, and in-person early voting poll sites. Nearly all states pair in-person early voting with electronic poll books (EPBs). A common refrain amongst elections administrators interviewed for this study is that, when first implementing in-person early voting, the general variability around elections turnout combined with the initially uncertain early voting patterns can make it difficult to ensure that early voting sites are adequately staffed. Underestimating proper staffing and resources can result in long voting lines and frustrated voters. Despite these warnings, research suggests that that early voters have a higher tolerance for wait times as they are able to vote on their own schedule as opposed to being beholden to election day polling hours.[v]

Conclusions and Next Steps

In an ongoing debate about the merits and feasibility of election reforms advocates are often stymied by how opaque and unexplored costs of various reforms are. This capstone project sought to shed light on potential costs and savings for three reforms: combined federal and state primary, EPBs, and early voting. With the information outlined in this report, we hope that Citizens Union can more effectively make the case for aligning New York State's election infrastructure with its commitment to democratic values. As this infrastructure stands now, New York State is one of the most inconvenient states to vote in – a disconcerting state of affairs.

Costs and Savings

A combined state and federal primary would generate enormous savings without additional upfront costs. By taking one primary off the election calendar, jurisdictions would save money by not running an entire election, saving New York counties $7.2 million, or $0.93 per voter every two years.

Statewide implementation of EPBs would cost approximately $14.9 million in the first year, but would result in savings of nearly $700,000 per election or $1.6 million per year. The ongoing savings would exceed the implementation costs in just ten years. Major costs associated with this reform are software, hardware, poll worker training, and tech support. Major savings are seen in the elimination of staff-time to scan voter signatures after elections, minor printing savings, and reduced poll worker staffing.

Early voting would cost approximately $12.5 million statewide to implement and an additional $3.4 million per election, for a ten-year total of $85.4 million. Major costs include poll sites and poll workers, voter education, and voting system infrastructure. This reform does not save jurisdictions money, though evidence shows that it improves voter experience and trust in the voting process.

If all three reforms were implemented at the same time, it would cost $22.1 million statewide. Over ten years, the reforms would cost $49.5 million. Though combined primaries generate cost savings and the costs of EPBs decline from year to year, early voting continues to cost millions into perpetuity. The savings generated from a combined primary could cover the costs of the other reforms for rural counties and cover them on a per election basis for small rural counties. Furthermore, rural counties would see savings from implementing early voting and EPBs with combined primaries because the early voting cost per voter is low and the savings from a combined primary so significant. High early voting costs for large counties drive up the statewide costs and prevent combined primaries from eliminating substantial net costs.

Recommendations

Push for a Combined Primary.

From a fiscal perspective, Citizens Union should work to include a combined primary in the next legislative agenda. There are no costs associated with implementing this reform and an average of $0.93 per voter in savings.

Early Voting and EPBs should be implemented together.

While the attention that early voting is getting from Governor Cuomo and other legislators is exciting, the omission of EPBs from the conversation is glaring. Early voting should not be implemented without EPBs because paper poll books cannot be updated in real time as people vote early at the specified poll sites. Further, early voting poll sites must have lists of every registered voter; this is infeasible or at least tremendously expensive in paper form, especially for larger counties. Citizens Union should push legislators to pass language allowing EPBs alongside or in conjunction with an early voting bill.

Next Steps for Research

Citizens Union can enhance the analysis presented in this report with additional data points from states and counties not included in our surveys and interviews. Furthermore, by engaging more closely with local county officials who are charged with implementing these reforms, Citizens Union could garner a deeper understanding on the nuances that affect cost variables.

Appendices

Appendix A: Ranked Choice Voting (RCV)

Ranked choice voting, also known as instant runoff elections, aims to eliminate costly runoff elections when no candidate wins the necessary percentage of the vote. Instead of voting for just one candidate on election day, a voter ranks candidates. Ballot machine-integrated RCV software easily discerns a winner. Although not-US Election Assistance Commission certified, both Dominion and Electronic Systems & Software (ES&S) offer RCV software.

As RCV is intended for jurisdictions with occasional runoff elections, only a handful of urban municipalities conduct ranked choice elections for local races, including Berkeley, California; Minneapolis, Minnesota; Oakland, California; San Francisco, California; and Takoma Park, Maryland. Due to the limited use of RCV, specific RCV costs could not be determined; however, information from Minneapolis and Alameda County (Berkeley and Oakland) gives some insight into what a New York city or county could expect.

Jurisdictions could potentially save more than they spend on RCV in the long-term.

Jurisdictions would accrue new costs from software licenses and voter education. In 2011, Alameda County spent $87,000 on software implementation and currently spends $34,000 per year on software license renewal. During RCV implementation in 2011 and 2009 respectively, Alameda County spent $52,000 and Minneapolis spent $60,000 in voter education. Neither jurisdiction incurred voter education costs due to RCV in following years.

Jurisdictions could eventually save money by avoiding the cost of runoff elections. In 2016, Berkeley, CA saved $759,000 by avoiding a mayoral and a city council seat runoff. Even though RCV costs Berkeley approximately $190,000 per election, Berkeley has seen a net savings. In 2013, New York City spent $13 million on the Democratic Public Advocate primary runoff – an expense that ranked choice voting could have easily avoided.

The New York State Senate and Assembly introduced RCV bills in recent years.

Assembly Bill A8613 and Senate Bill S5616, sponsored by Assemblymember Kavanagh (D-New York City) and Senator Krueger (D-New York City) respectively, proposed a RCV pilot program for local elections across the state (e.g., board of education, county executive, mayor). The bills require a permissive referendum after local governments adopt RCV implementation resolutions. The bills praise a voter's ability to indicate both a favorite candidate preference – regardless of that candidate's chance of winning – and a more practical second candidate choice under RCV.

RCV not only solves traditional runoff voter participation problems but enhances participation.

RCV avoids any potential drop in voter participation by eliminating traditional runoff elections. A drop in voter participation is expected for a traditional runoff election. For instance, voter participation dropped sixty-two percent between the 2013 New York City Public Advocate Democratic Party primary and its runoff. Additionally, federal primary runoffs have a median thirty-

eight percent drop in voter turnout according to FairVote.[vi]

RCV enhances participation in three ways according to a comparison study between the (pre-RCV) 2006 and (post-RCV) 2010 mayoral election in Oakland, CA. Forty-two percent more citizens vote when RCV is offered. Voter turnout increases by 14 percent. Twenty-eight percent more citizens vote for the winning candidate due to subsequent ranked choices.[vii]

New York City should be a leader in implementing RCV across the country.

New York City is expected to be an early adopter of ranked choice voting due to the 2013 Democratic Public Advocate primary runoff. Considering the limited available RCV cost information from other jurisdictions, New York City should track RCV costs for the benefit of other cities in New York State and across the country. Special attention should be given to the number of avoided runoffs needed before RCV becomes a cost saving reform. Tracking this information and sharing it with reform-minded advocates could make implementing this reform easier across the country.

Appendix B: Voter Participation

EPBs do not increase voter participation.

Increases in voter participation were negligible, if evident at all, due to electronic poll books. None of the counties surveyed had collected information related to this, though several shared anecdotes. According to Saginaw County's Chief Deputy Clerk, participation seemed to increase because voters knew that they would not have to give up an hour of their time to vote – EPBs made the process fast and efficient.

Early Voting does not increase voter participation.

Despite the convenience of early voting, New York State election officials should not expect an increase in voter participation. Studies have consistently shown that any initial increase, around 1.5 percent, in turnout upon implementing early voting is generally short lived, leaving it to be taken advantage of by those who would have voted regardless.[viii] The first presidential election in New York State with early voting would potentially see an increase in 117,000 voters throughout the state. Surprisingly, there is some evidence to suggest that for the second election with early voting, turnout may decrease by two percent, as early voting dilutes the "stimulating effect" of the social activities and concentration of activity around election day itself. The second presidential election in New York State with early voting would potentially see a decrease of 158,000 voters throughout the state.

National Election Data Shows that in-person early voting increases voter satisfaction and voter confidence across all demographics.

This increase in voter satisfaction and voter confidence as a result of early voting is particularly prominent amongst African American voters, who exhibit a higher than average early voting participation rate. The reasons behind this effect are myriad including that early voting sites are more likely to be staffed by permanent elections staff – as opposed to temporary poll workers – and are therefore more professional, better run, and provide the opportunity to address any problems in a timely manner. In municipalities that allow for same day registration, early voters also report fewer problems with voter registration, one of the most prominent issues that inhibit the ability of voters to cast their ballots and disproportionately affects minority voters.

Appendix C: New York State Legislation

While proposed legislation will continue to change, our analysis is largely based on recent legislation regarding combining the state and federal primary, electronic poll books, and early voting.

Proposed New York State bills differ on a combined primary date and seek reimbursements.

The Democratic Assembly favors a June combined primary date; the Republican Senate an August date. Assembly Bill A3052, sponsored by Michael Cusick (D-Staten Island), would have combined the state primary with the federal primary on the fourth Tuesday in June. Senate Bill S6604, sponsored by Fred Akshar (R-Binghamton), would have combined the state with the federal primary on the third Tuesday in August. The Assembly Bill passed the Assembly in May 2017. The Senate Bill passed the Senate in March 2016.

Senate Bill S3700, sponsored by Leroy Comrie (D-Queens), sought reimbursement from the state for the cost of September primaries in even-numbered election years. Counties would have been reimbursed for election administration costs including clerical, maintenance, operation, elections personnel wages, poll inspector wages, and ballot and sample ballot production. The bill was not passed during the 2017 session.

Proposed New York State bills would allow, but not mandate, electronic poll books.

The most recent bill at the time of publishing was Assembly Bill A5547, sponsored by Assemblymember Michael Cusick (D-New York City). It passed the Assembly in March 2017, but a similar Senate bill, S2788 never passed. Assembly Bill A5547 would authorize computer generated registration lists during election day check-in throughout New York State. Election officials would locate the individual's registration on a laptop computer or tablet, rather than in a paper poll book.

If such a bill is passed and signed into law by the governor, the State Board of Elections would draft regulations, update processes for EPB implementation, and certify EPB software. The state board would certify software based on defined security and state registration system compatibility criteria. A number of certifiable EPB products are available according to county and state officials.

The structure of this bill, and previous bills like it, match the structures of Florida and Indiana in this report, where costs and decision-making fall at the county level. Because the decision to introduce EPBs would be made by each county's Board of Elections, not all counties would be likely to implement them. Interviews and data suggest that the largest counties would be most likely to use them and would see the most substantial gains.

Funds from the 2002 Help America Vote Act (HAVA) are cited by some advocates as a potential source of funding to help counties implement EPBs, but those funds are designated for polling place accessibility and voting machine costs. Further, regardless of the legality of using HAVA funds for implementation, there is little momentum in Albany for appropriating the funds for this purpose.

New York State legislation would mandate at least one early voting site per county.

In December 2017, Governor Cuomo proposed mandating at least one early voting poll site per county, regardless of population, with an additional site for every 50,000 registered voters. Early voting sites would be required to operate for the 12 days before each election. Each site would be open for at least eight hours per day during the week and five hours per day on weekends. Each county's bipartisan Board of Elections would determine the location of early voting poll sites, subject to existing standards for voter access.

If such an early voting bill is passed and signed into law by the governor, the State Board of Elections would revise regulations and processes for early voting implementation. The State Board of Elections would also provide resources to ensure early voting wait times do not exceed thirty minutes.

Prior criticisms of early voting being an unfunded mandate on county election boards have been the main hindrance to passing early voting legislation. Despite Assembly Bill A2064, sponsored by Assemblymember Brian Kavanagh (D-New York City), passage, Senate Bill S2950, sponsored by Senator Andrea Stewart-Cousins (D-Yonkers), never passed due to such criticisms.

Appendix D: EPB Costs and Savings for a Typical County by Category

EPB HARDWARE		Total for a Typical County	Cost per Voter
Small Rural	**Implementation:**	$8,900	$0.59
	Ongoing (Per Election):	$0	$0.00
Rural	**Implementation:**	$21,000	$0.42
	Ongoing (Per Election):	$0	$0.00
Urban/Suburban	**Implementation:**	$846,000	$2.02
	Ongoing (Per Election):	$7,800	$0.02
New York City	**Implementation:**	$5.6 million	$2.02
	Ongoing (Per Election):	$52,000	$0.02
Statewide Total	**Implementation:**	$11.9 million	$1.52
	Ongoing (Per Election):	$102,000	$0.01

EPB SOFTWARE		Total for a Typical County	Cost per Voter
Small Rural	**Implementation:**	$7,200	$0.48
	Ongoing (Per Election):	$2,000	$0.13
Rural	**Implementation:**	$7,400	$0.15
	Ongoing (Per Election):	$2,300	$0.05
Urban/Suburban	**Implementation:**	$146,000	$0.35
	Ongoing (Per Election):	$7,300	$0.02
New York City	**Implementation:**	$962,000	$0.35
	Ongoing (Per Election):	$48,000	$0.02
Statewide Total	**Implementation:**	$2.3 million	$0.29
	Ongoing (Per Election):	$203,000	$0.03

EPB TECH SUPPORT		Total for a Typical County	Cost per Voter
Small Rural	Implementation:	$732	$0.05
	Ongoing (Per Election):	$1,200	$0.08
Rural	Implementation:	$651	$0.01
	Ongoing (Per Election):	$605	$0.01
Urban/Suburban	Implementation:	$5,500	$0.01
	Ongoing (Per Election):	$5,100	$0.01
New York City	Implementation:	$36,000	$0.01
	Ongoing (Per Election):	$34,000	$0.01
Statewide Total	Implementation:	$104,000	$0.01
	Ongoing (Per Election):	$105,000	$0.01

EPB ELECTION CLOSING		Total for a Typical County	Cost per Voter
Small Rural	Implementation:	($1,100)	($0.08)
	Ongoing (Per Election):	($1,000)	($0.07)
Rural	Implementation:	($1,100)	($0.02)
	Ongoing (Per Election):	($1,000)	($0.02)
Urban/Suburban	Implementation:	($21,000)	($0.05)
	Ongoing (Per Election):	(20,000)	($0.05)
New York City	Implementation:	($139,000)	($0.05)
	Ongoing (Per Election):	($132,000)	($0.05)
Statewide Total	Implementation:	($329,000)	($0.04)
	Ongoing (Per Election):	($308,000)	($0.04)

EPB POLL WORKER SALARIES		Total for a Typical County	Cost per Voter
Small Rural	Implementation:	$0	$0.00
	Ongoing (Per Election):	($1,400)	($0.09)
Rural	Implementation:	$0	$0.00
	Ongoing (Per Election):	$0	$0.00
Urban/Suburban	Implementation:	$0	$0.00
	Ongoing (Per Election):	($39,000)	($0.09)
New York City	Implementation:	$0	$0.00
	Ongoing (Per Election):	($258,000)	($0.09)
Statewide Total	Implementation:	$0	$0.00
	Ongoing (Per Election):	($529,000)	($0.07)

EPB POLL BOOK PRINTING		Total for a Typical County	Cost per Voter
Small Rural	Implementation:	$0	$0.00
	Ongoing (Per Election):	$0	$0.00
Rural	Implementation:	$69	$0.00
	Ongoing (Per Election):	($114)	$0.00
Urban/Suburban	Implementation:	$0	$0.00
	Ongoing (Per Election):	($38,000)	($0.09)
New York City	Implementation:	$0	$0.00
	Ongoing (Per Election):	($249,000)	($0.09)
Statewide Total	Implementation:	$2,400	$0.00
	Ongoing (Per Election):	($495,000)	($0.06)

Appendix E: Early Voting Costs for a Typical County by Category

EARLY VOTING HARDWARE		Total for a Typical County	Cost per Voter
Small Rural	**Implementation:**	$12,000	$0.82
	Ongoing (Per Election):	$0	$0
Rural	**Implementation:**	$697	$0.01
	Ongoing (Per Election):	$0	$0
Urban/Suburban	**Implementation:**	$425,000	$1.02
	Ongoing (Per Election):	$0	$0
New York City	**Implementation:**	$2.8 Million	$1.02
	Ongoing (Per Election):	$0	$0
Statewide Total	**Implementation:**	$5.7 Million	$0.73
	Ongoing (Per Election):	$0	$0

EARLY VOTING POLL WORKER STAFFING		Total for a Typical County	Cost per Voter
Small Rural	**Implementation:**	$424	$0.03
	Ongoing (Per Election):	$403	$0.03
Rural	**Implementation:**	$7,600	$0.15
	Ongoing (Per Election):	$4,900	$0.10
Urban/Suburban	**Implementation:**	$282,000	$0.67
	Ongoing (Per Election):	$182,000	$0.44
New York City	**Implementation:**	$1.9 Million	$0.67
	Ongoing (Per Election):	$1.2 Million	$0.44
Statewide Total	**Implementation:**	$3.9 Million	$0.51
	Ongoing (Per Election):	$2.5 Million	$0.33

EARLY VOTING SOFTWARE		Total for a Typical County	Cost per Voter
Small Rural	Implementation:	$3,400	$0.23
	Ongoing (Per Election):	$0	$0
Rural	Implementation:	$235	$0
	Ongoing (Per Election):	$53	$0
Urban/Suburban	Implementation:	$45,000	$0.11
	Ongoing (Per Election):	$2,000	$0
New York City	Implementation:	$294,000	$0.11
	Ongoing (Per Election):	$13,000	$0
Statewide Total	Implementation:	$637,000	$0.08
	Ongoing (Per Election):	$28,000	$0

EARLY VOTING BALLOT PRINTING		Total for a Typical County	Cost per Voter
Small Rural	Implementation:	$2,500	$0.17
	Ongoing (Per Election):	$1,700	$0.11
Rural	Implementation:	$5,100	$0.10
	Ongoing (Per Election):	$3,600	$0.07
Urban/Suburban	Implementation:	$19,000	$0.05
	Ongoing (Per Election):	$17,000	$0.04
New York City	Implementation:	$125,000	$0.05
	Ongoing (Per Election):	$115,000	$0.04
Statewide Total	Implementation:	$459,000	$0.06
	Ongoing (Per Election):	$375,000	$0.05

EARLY VOTING INITIAL STAFF TIME		Total for a Typical County	Cost per Voter
Small Rural	**Implementation:**	$754	$0.05
	Ongoing (Per Election):	$0	$0
Rural	**Implementation:**	$1,300	$0.03
	Ongoing (Per Election):	$0	$0
Urban/Suburban	**Implementation:**	$26,000	$0.06
	Ongoing (Per Election):	$0	$0
New York City	**Implementation:**	$171,000	$0.06
	Ongoing (Per Election):	$0	$0
Statewide Total	**Implementation:**	$396,000	$0.04
	Ongoing (Per Election):	$0	$0

EARLY VOTING IT SUPPORT		Total for a Typical County	Cost per Voter
Small Rural	**Implementation:**	$878	$0.06
	Ongoing (Per Election):	$355	$0.02
Rural	**Implementation:**	$201	$0
	Ongoing (Per Election):	$169	$0
Urban/Suburban	**Implementation:**	$23,000	$0.06
	Ongoing (Per Election):	$6,200	$0.01
New York City	**Implementation:**	$152,000	$0.06
	Ongoing (Per Election):	$41,000	$0.01
Statewide Total	**Implementation:**	$319,000	$0.04
	Ongoing (Per Election):	$92,000	$0.01

EARLY VOTING POLL WORKER TRAINING		Total for a Typical County	Cost per Voter
Small Rural	**Implementation:**	$132	$0.01
	Ongoing (Per Election):	$140	$0.01
Rural	**Implementation:**	$570	$0.01
	Ongoing (Per Election):	$188	$0
Urban/Suburban	**Implementation:**	$21,000	$0.05
	Ongoing (Per Election):	$6,900	$0.02
New York City	**Implementation:**	$139,000	$0.05
	Ongoing (Per Election):	$46,000	$0.02
Statewide Total	**Implementation:**	$296,000	$0.04
	Ongoing (Per Election):	$99,000	$0.01

Appendix F: Cost Estimates by County

Implementation Costs and Savings per Election

Urban / Suburban Counties			
County	Electronic Poll Books	Early Voting	Combined Primaries
Albany County	$ 353,230	$ 301,892	$ (119,524)
Erie County	$ 1,078,682	$ 921,907	$ (364,997)
Monroe County	$ 877,290	$ 749,785	$ (296,851)
Nassau County	$ 1,633,947	$ 1,396,470	$ (552,884)
Onondaga County	$ 532,081	$ 454,748	$ (180,042)
Rockland County	$ 345,071	$ 294,919	$ (116,763)
Schenectady County	$ 169,737	$ 145,068	$ (57,435)
Suffolk County	$ 1,715,970	$ 1,466,571	$ (580,639)
Westchester County	$ 1,059,980	$ 905,923	$ (358,669)
New York City	$ 6,898,782	$ 5,896,115	$ (2,334,364)
Bronx County	*$ 1,007,293*	*$ 860,893*	*$ (340,841)*
Kings County	*$ 2,025,961*	*$ 1,731,509*	*$ (685,531)*
New York County	*$ 1,682,530*	*$ 1,437,992*	*$ (569,323)*
Queens County	*$ 1,727,766*	*$ 1,476,653*	*$ (584,630)*
Richmond County	*$ 455,232*	*$ 389,069*	*$ (154,039)*

Rural Counties			
County	Electronic Poll Books	Early Voting	Combined Primaries
Broome County	$ 53,936	$ 30,145	$ (98,083)
Cattaraugus County	$ 19,522	$ 10,911	$ (35,500)
Cayuga County	$ 20,693	$ 11,566	$ (37,631)
Chautauqua County	$ 33,911	$ 18,953	$ (61,667)
Chemung County	$ 22,591	$ 12,626	$ (41,082)
Chenango County	$ 12,571	$ 7,026	$ (22,861)
Clinton County	$ 21,367	$ 11,942	$ (38,856)
Columbia County	$ 19,274	$ 10,772	$ (35,049)
Dutchess County	$ 81,812	$ 45,725	$ (148,776)
Franklin County	$ 10,635	$ 5,944	$ (19,339)
Fulton County	$ 13,280	$ 7,422	$ (24,149)
Genesee County	$ 16,504	$ 9,224	$ (30,013)
Herkimer County	$ 16,517	$ 9,232	$ (30,037)
Jefferson County	$ 23,890	$ 13,352	$ (43,443)
Livingston County	$ 18,754	$ 10,482	$ (34,105)
Madison County	$ 18,779	$ 10,496	$ (34,150)
Montgomery County	$ 11,925	$ 6,665	$ (21,685)
Niagara County	$ 58,339	$ 32,606	$ (106,089)
Oneida County	$ 56,865	$ 31,782	$ (103,410)
Ontario County	$ 32,600	$ 18,220	$ (59,283)
Orange County	$ 96,928	$ 54,174	$ (176,265)
Oswego County	$ 30,036	$ 16,787	$ (54,620)
Otsego County	$ 16,047	$ 8,969	$ (29,182)
Putnam County	$ 30,232	$ 16,897	$ (54,978)
Rensselaer County	$ 44,630	$ 24,944	$ (81,159)
Saratoga County	$ 71,223	$ 39,807	$ (129,519)
St. Lawrence County	$ 24,520	$ 13,704	$ (44,590)
Steuben County	$ 26,192	$ 14,639	$ (47,630)
Sullivan County	$ 18,860	$ 10,541	$ (34,298)
Tioga County	$ 13,955	$ 7,799	$ (25,377)
Tompkins County	$ 26,628	$ 14,883	$ (48,423)
Ulster County	$ 53,841	$ 30,092	$ (97,910)
Warren County	$ 19,623	$ 10,967	$ (35,684)
Washington County	$ 15,327	$ 8,566	$ (27,872)
Wayne County	$ 24,753	$ 13,835	$ (45,014)

Small Rural Counties			
County	Electronic Poll Books	Early Voting	Combined Primaries
Allegany County	$ 22,817	$ 25,846	$ (31,490)
Cortland County	$ 24,728	$ 28,011	$ (34,128)
Delaware County	$ 24,098	$ 27,298	$ (33,259)
Essex County	$ 21,112	$ 23,915	$ (29,137)
Greene County	$ 26,992	$ 30,575	$ (37,252)
Hamilton County	$ 3,962	$ 4,488	$ (5,468)
Lewis County	$ 13,849	$ 15,688	$ (19,114)
Orleans County	$ 20,033	$ 22,692	$ (27,647)
Schoharie County	$ 17,126	$ 19,400	$ (23,636)
Schuyler County	$ 10,679	$ 12,097	$ (14,739)
Seneca County	$ 17,035	$ 19,297	$ (23,511)
Wyoming County	$ 21,159	$ 23,968	$ (29,202)
Yates County	$ 12,358	$ 13,998	$ (17,055)

Ongoing Costs and Savings per Election

Urban / Suburban Counties			
County	Electronic Poll Books	Early Voting	Combines Primaries
Albany County	$ (20,395)	$ 78,914	$ (119,524)
Erie County	$ (62,281)	$ 240,986	$ (364,997)
Monroe County	$ (50,653)	$ 195,993	$ (296,851)
Nassau County	$ (94,341)	$ 365,037	$ (552,884)
Onondaga County	$ (30,721)	$ 118,871	$ (180,042)
Rockland County	$ (19,924)	$ 77,092	$ (116,763)
Schenectady County	$ (9,800)	$ 37,921	$ (57,435)
Suffolk County	$ (99,077)	$ 383,361	$ (580,639)
Westchester County	$ (61,201)	$ 236,808	$ (358,669)
New York City	$ (398,324)	$ 1,541,242	$ (2,334,364)
Bronx County	*$ (58,159)*	*$ 225,037*	*$ (340,841)*
Kings County	*$ (116,975)*	*$ 452,616*	*$ (685,531)*
New York County	*$ (97,146)*	*$ 375,890*	*$ (569,323)*
Queens County	*$ (99,758)*	*$ 385,996*	*$ (584,630)*
Richmond County	*$ (26,284)*	*$ 101,702*	*$ (154,039)*

Rural Counties			
County	Electronic Poll Books	Early Voting	Combined Primaries
Broome County	$ 3,812	$ 16,535	$ (98,083)
Cattaraugus County	$ 1,380	$ 5,985	$ (35,500)
Cayuga County	$ 1,463	$ 6,344	$ (37,631)
Chautauqua County	$ 2,397	$ 10,396	$ (61,667)
Chemung County	$ 1,597	$ 6,926	$ (41,082)
Chenango County	$ 889	$ 3,854	$ (22,861)
Clinton County	$ 1,510	$ 6,551	$ (38,856)
Columbia County	$ 1,362	$ 5,909	$ (35,049)
Dutchess County	$ 5,783	$ 25,081	$ (148,776)
Franklin County	$ 752	$ 3,260	$ (19,339)
Fulton County	$ 939	$ 4,071	$ (24,149)
Genesee County	$ 1,167	$ 5,060	$ (30,013)
Herkimer County	$ 1,168	$ 5,064	$ (30,037)
Jefferson County	$ 1,689	$ 7,324	$ (43,443)
Livingston County	$ 1,326	$ 5,750	$ (34,105)
Madison County	$ 1,327	$ 5,757	$ (34,150)
Montgomery County	$ 843	$ 3,656	$ (21,685)
Niagara County	$ 4,124	$ 17,885	$ (106,089)
Oneida County	$ 4,019	$ 17,433	$ (103,410)
Ontario County	$ 2,304	$ 9,994	$ (59,283)
Orange County	$ 6,851	$ 29,715	$ (176,265)
Oswego County	$ 2,123	$ 9,208	$ (54,620)
Otsego County	$ 1,134	$ 4,920	$ (29,182)
Putnam County	$ 2,137	$ 9,268	$ (54,978)
Rensselaer County	$ 3,155	$ 13,682	$ (81,159)
Saratoga County	$ 5,034	$ 21,835	$ (129,519)
St. Lawrence County	$ 1,733	$ 7,517	$ (44,590)
Steuben County	$ 1,851	$ 8,030	$ (47,630)
Sullivan County	$ 1,333	$ 5,782	$ (34,298)
Tioga County	$ 986	$ 4,278	$ (25,377)
Tompkins County	$ 1,882	$ 8,163	$ (48,423)
Ulster County	$ 3,806	$ 16,506	$ (97,910)
Warren County	$ 1,387	$ 6,016	$ (35,684)
Washington County	$ 1,083	$ 4,699	$ (27,872)
Wayne County	$ 1,750	$ 7,589	$ (45,014)

Small Rural Counties			
County	Electronic Poll Books	Early Voting	Combined Primaries
Allegany County	$ 2,285	$ 3,317	$ (31,490)
Cortland County	$ 2,476	$ 3,595	$ (34,128)
Delaware County	$ 2,413	$ 3,504	$ (33,259)
Essex County	$ 2,114	$ 3,069	$ (29,137)
Greene County	$ 2,703	$ 3,924	$ (37,252)
Hamilton County	$ 397	$ 576	$ (5,468)
Lewis County	$ 1,387	$ 2,014	$ (19,114)
Orleans County	$ 2,006	$ 2,912	$ (27,647)
Schoharie County	$ 1,715	$ 2,490	$ (23,636)
Schuyler County	$ 1,070	$ 1,553	$ (14,739)
Seneca County	$ 1,706	$ 2,477	$ (23,511)
Wyoming County	$ 2,119	$ 3,076	$ (29,202)
Yates County	$ 1,238	$ 1,797	$ (17,055)

Ten-Year Cost and Savings Estimates

Urban / Suburban Counties			
County	Electronic Poll Books	Early Voting	Combined Primaries
Albany County	$ (82,711)	$ 1,988,685	$ (119,524)
Erie County	$ (252,579)	$ 6,072,982	$ (364,997)
Monroe County	$ (205,422)	$ 4,939,142	$ (296,851)
Nassau County	$ (382,597)	$ 9,199,125	$ (552,884)
Onondaga County	$ (124,590)	$ 2,995,616	$ (180,042)
Rockland County	$ (80,800)	$ 1,942,751	$ (116,763)
Schenectady County	$ (39,745)	$ 955,621	$ (57,435)
Suffolk County	$ (401,803)	$ 9,660,914	$ (580,639)
Westchester County	$ (248,200)	$ 5,967,689	$ (358,669)
New York City	$ (1,615,386)	$ 38,840,155	$ (2,334,364)
Bronx County	*$ (235,863)*	*$ 5,671,060*	*$ (340,841)*
Kings County	*$ (474,389)*	*$ 11,406,166*	*$ (685,531)*
New York County	*$ (393,973)*	*$ 9,472,646*	*$ (569,323)*
Queens County	*$ (404,565)*	*$ 9,727,324*	*$ (584,630)*
Richmond County	*$ (106,595)*	*$ 2,562,959*	*$ (154,039)*

Rural Counties			
County	Electronic Poll Books	Early Voting	Combined Primaries
Broome County	$ 135,426	$ 383,582	$ (98,083)
Cattaraugus County	$ 49,016	$ 138,834	$ (35,500)
Cayuga County	$ 51,959	$ 147,168	$ (37,631)
Chautauqua County	$ 85,145	$ 241,166	$ (61,667)
Chemung County	$ 56,723	$ 160,663	$ (41,082)
Chenango County	$ 31,565	$ 89,404	$ (22,861)
Clinton County	$ 53,650	$ 151,960	$ (38,856)
Columbia County	$ 48,393	$ 137,070	$ (35,049)
Dutchess County	$ 205,420	$ 581,834	$ (148,776)
Franklin County	$ 26,702	$ 75,632	$ (19,339)
Fulton County	$ 33,343	$ 94,442	$ (24,149)
Genesee County	$ 41,440	$ 117,375	$ (30,013)
Herkimer County	$ 41,473	$ 117,468	$ (30,037)
Jefferson County	$ 59,984	$ 169,899	$ (43,443)
Livingston County	$ 47,090	$ 133,378	$ (34,105)
Madison County	$ 47,152	$ 133,554	$ (34,150)
Montgomery County	$ 29,941	$ 84,806	$ (21,685)
Niagara County	$ 146,480	$ 414,893	$ (106,089)
Oneida County	$ 142,781	$ 404,416	$ (103,410)
Ontario County	$ 81,853	$ 231,842	$ (59,283)
Orange County	$ 243,374	$ 689,336	$ (176,265)
Oswego County	$ 75,416	$ 213,609	$ (54,620)
Otsego County	$ 40,292	$ 114,124	$ (29,182)
Putnam County	$ 75,910	$ 215,008	$ (54,978)
Rensselaer County	$ 112,059	$ 317,397	$ (81,159)
Saratoga County	$ 178,831	$ 506,523	$ (129,519)
St. Lawrence County	$ 61,567	$ 174,382	$ (44,590)
Steuben County	$ 65,764	$ 186,271	$ (47,630)
Sullivan County	$ 47,356	$ 134,131	$ (34,298)
Tioga County	$ 35,038	$ 99,243	$ (25,377)
Tompkins County	$ 66,859	$ 189,373	$ (48,423)
Ulster County	$ 135,187	$ 382,904	$ (97,910)
Warren County	$ 49,269	$ 139,552	$ (35,684)
Washington County	$ 38,484	$ 109,002	$ (27,872)
Wayne County	$ 62,152	$ 176,041	$ (45,014)

Small Rural Counties			
County	Electronic Poll Books	Early Voting	Combined Primaries
Allegany County	$ 71,660	$ 96,753	$ (31,490)
Cortland County	$ 77,663	$ 104,858	$ (34,128)
Delaware County	$ 75,685	$ 102,187	$ (33,259)
Essex County	$ 66,306	$ 89,524	$ (29,137)
Greene County	$ 84,771	$ 114,455	$ (37,252)
Hamilton County	$ 12,443	$ 16,800	$ (5,468)
Lewis County	$ 43,496	$ 58,727	$ (19,114)
Orleans County	$ 62,915	$ 84,946	$ (27,647)
Schoharie County	$ 53,787	$ 72,621	$ (23,636)
Schuyler County	$ 33,540	$ 45,285	$ (14,739)
Seneca County	$ 53,502	$ 72,236	$ (23,511)
Wyoming County	$ 66,454	$ 89,724	$ (29,202)
Yates County	$ 38,811	$ 52,401	$ (17,055)

Appendix G: Agencies and Organizations Interviewed

Interviews

Alameda County, CA

Anne Arundel, MD

Berkeley, CA

Bloomfield Township, MI

Center for Local, State, and Urban Policy University of Michigan

Citizens Union

Election Law Committee - New York State Assembly

Eureka Township, MI

Farmington Hills, MI

Ingham County, MI

League of Women Voters of New York State

Los Angeles County Election Operations Bureau

Maryland State Board of Elections

Maryland Department of Legislative Services

Michigan Bureau of Elections

Minneapolis, MN

MIT Election Data and Science Lab (MEDSL)

MIT Voting Technology Project

National Conference of State Legislatures

New York State Board of Elections, Democratic Co-Chair*

New York State Board of Elections, Democratic Co-Executive Director*

New York State Senate

Saginaw County, MI

The Pew Charitable Trusts

Texas Secretary of State – Elections Division

***The team was unable to secure an interview with the NYS Board of Elections' Republican leadership.**

Survey Respondents

Alexander County, NC

Allen County, IN

Bradford County, FL

Carroll County, IN

Chautauqua County, NY

Chemung County, NY

Chenango County, NY

Citrus County, FL

Clay County, IN

Craven County, NC

Davidson County, NC

Davie County, NC

Delaware County, NY

Elkhart County, IN

Escambia County, FL

Farmington Hills, MI

Forsyth County, GA

Franklin County, FL

Franklin County, TN

Gaston County, NC

Gilchrist County, FL

Humphreys County, TN

Lafayette County, FL

Lee County, FL

Madison County, IN

Marshall County, TN

Martin County, FL

Maury County, TN

Minneapolis, MN

Monroe County, NY

Montgomery County, NY

Onondaga County

Orange County, FL

Osceola County, FL

Oswego County, NY

Randolph County, IN

Rush County, IN

Rutherford County, NC

Santa Rosa County, FL

Schenectady County, NY

Surry County, NC

Swain County, NC

Transylvania County, NC

Ulster County, NY

Vanderburgh County, IN

Walton County, FL

Warren County, IN

Warren County, NC

Warren County, NY

Wells County, IN

Washington County, NY

Yates County, NY

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