



Ensuring Safe Elections

Federal Funding Needs for State and Local Governments During the Pandemic

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The coronavirus pandemic has changed voting behavior and poses an extraordinary challenge to state and local officials as they seek to ensure that elections in 2020 are fair, safe, and secure. As national policymakers consider how people should vote in light of the pandemic, elections themselves have already changed. Millions of voters are requesting mail ballots, far more than would have been the case otherwise. Many fewer are updating their registrations at government offices. Instead, they register online or find other ways to sign up. Governments face the unforeseen cost of investing in personal protective equipment (PPE) and sanitation supplies to reduce the risk of illness and even death to their workers and voters.¹ Even if no rules change, the 2020 election will be costly.

Congress has already provided some help. On March 27, President Trump signed into law a \$2 trillion economic relief package that included \$400 million in grants to help states run their elections during the coronavirus disease 2019 (Covid-19) pandemic. This was an important first step. Unfortunately, we now know this is not enough.²

In this document we examine the difference between the March 27 federal investment in the electoral process and what will be needed to ensure safe and healthy elections for 2020. We focus on Georgia, Michigan, Missouri,

Ohio, and Pennsylvania. These five states have diverging election administration systems and needs, from the number of elections each will hold this cycle to their requirements for absentee voting. Two common themes stand out.

First, what Congress has provided so far is not enough to run safe and secure elections in 2020. Our review shows that the March 27 grants will likely cover anywhere from less than 10 percent of what Georgia officials need to around 18 percent of what Ohio officials need.

Second, local election jurisdictions bear the heaviest burden of protecting voters and workers during the election. In two of the states we examined, local governments must cover over 90 percent of the costs needed to ensure safe and secure elections this year. In all five states, they will bear the overwhelming share of such expenses.

The measures that we appraise in this document are critical. They come from our discussions with numerous election officials in each of the five states we examined. States need help

- developing the infrastructure necessary to support changed voter behavior (e.g., more voters choosing to register online or to vote by mail);

- protecting voters and election workers during elections (e.g., giving poll workers PPE, allowing curbside voting, cleaning polling places, and ensuring that election staff can work off-site as needed without exposing election offices to cyberattacks); and
- educating the public about changes made to election procedures and polling locations (including notice of changed elections, moved polling sites, and new voting options to reduce density at in-person locations).

This report represents the consensus of an ideologically diverse group of organizations: the Alliance for Securing Democracy, the Brennan Center for Justice, Pitt Cyber, and R Street Institute. From interviews with election officials and the vendors who must supply most of the products and services these officials need, it is clear that additional appropriations are necessary to fulfill the goal of free, fair, and safe elections in 2020. Without funding from the federal government, there is little chance that state and local governments can shoulder the financial burden. Indeed, nearly every state and local government in the country faces severe budget challenges this year.³

Without congressional leadership, the risk of repeating the problems experienced in recent primaries will increase dramatically. These problems include an inability to timely process ballot applications, closed polling places, and unnecessary sickness and even death for voters and election workers performing their civic duties.⁴ Facing an economic downturn, states may soon tighten their belts further on many services. The federal government has the resources to ensure that state and local governments can run free, fair, and safe elections this fall. We urge them to do so as soon as possible.

How We Arrived at Our Estimates

Our estimates of the expenses state and local jurisdictions will incur come from

- interviews with election officials in each of these five states about the costs they have already incurred;
- interviews with vendors and service providers on the costs of other needed products and services that election officials identified, as well as publicly available information about these costs; and
- projections of voter behavior, based on history as well as changes we have seen in elections that have already been held this year.

In all cases, we have documented the sources and assumptions behind our estimates, which are described and discussed in detail in the methodology section found in the appendix.⁵

Georgia

Total registered voters: 6.9 million active voters⁶

2020 cycle elections: primary (June 9), state/federal/local runoff (August 11), general (November 3), state runoff (December 1), federal runoff (January 5)

Total costs: \$110.7–\$124.4 million

State costs: \$42.4–\$49 million

Local costs: \$68.3–\$75.4 million

Federal grant: \$10.8 million⁷ (9–10 percent)

In response to ongoing warnings by federal and state health officials, Georgia recently delayed its primary election, originally scheduled for March 24, for the second time. The primary is currently scheduled for June 9.⁸

State election officials have taken a leading role during this unprecedented situation. While Georgia was already a no-excuse state, absentee voting was not heavily used by Georgians in the past; during the 2018 general election, 3 percent of registered voters cast their vote by mail.⁹ That is almost certain to change. In response, Secretary of State Brad Raffensperger’s office has stressed the importance of mail voting, which relieves crowding on Election Day, for public safety reasons: “With social distancing as one of the most important tools for limiting the spread of coronavirus, providing alternatives to voting in person is crucial.”¹⁰

To alleviate the resource burden on county election officials caused by absentee voting spikes during the primary, state officials have taken on some of the costs and election administration duties that would normally be the responsibility of local officials in the primary. Specifically, the state is paying for the printing, packing, and postage costs to send prepopulated¹¹ absentee ballot applications to every active voter and absentee ballots to every voter whose application is approved by local officials.¹²

These proactive steps have been well received by local election officials,¹³ many of whom are faced with staffing stresses¹⁴ or much worse (a Fulton County elections employee died of Covid-19),¹⁵ and government office closures.¹⁶ However, county officials remain primarily responsible for the majority of increased costs associated with administering elections during a pandemic and its aftermath. These increased costs may be a bigger concern in Georgia than in any other state, because Georgia could hold up to five elections this cycle.¹⁷

Georgia election officials need additional federal funding now to help cover increased election administration costs related to the coronavirus. Multiple local Georgia officials, who are primarily responsible for these costs, joined others from around the country in stating that federal funding provided by the Coronavirus Aid, Relief, and Economic Security (CARES) Act is “simply not enough” and that additional federal funding is critical as they prepare for the elections ahead.¹⁸

State costs: \$42.4–\$49 million

- Printing and mailing absentee ballot applications to all registered voters
- Packing and mailing absentee ballots to all voters approved by local officials
- Purchasing and deploying centralized vote-tabulation machines (high-speed scanners)
- Investing in state election infrastructure

Georgia officials have already made significant investments to increase the adoption rate of absentee voting to help minimize the spread of the coronavirus, promote poll worker and voter safety, and minimize the issues voters could encounter on Election Day due to a potential lack of poll workers causing polling place closures and consolidations. For example, at a cost of \$3.1 million, state officials are sending absentee voting applications to every active voter in the state.¹⁹ The state is also paying the \$1.88–\$2.38 in postage and handling costs per absentee ballot mailed to approved absentee ballot applicants.²⁰ For the primary election, we estimate the cost of mailing absentee ballots will be \$3.1–\$3.9 million.²¹

State officials are committed to serving Georgia voters and working in conjunction with local election officials through these unprecedented circumstances.²² They are planning ahead to ensure that all upcoming elections are safe and secure and that Georgia has a resilient election infrastructure that can withstand attack or major spikes in absentee voting.²³ State officials are prepared to continue their voter outreach and absentee ballot distribution efforts if necessary.²⁴ Assuming Georgia has five elections this cycle, it is estimated that the absentee ballot application printing and mailing costs will be \$15.5 million and the printing, packing, and mailing of absentee ballots will be \$16–\$22.4 million.²⁵

In Georgia, the state is responsible for some infrastructure costs and decisions, including voting equipment selection and procurement. However, state officials have worked closely with local officials over the past two years to make key infrastructure improvements across the state.²⁶ When making these investment decisions, it was reasonable for election officials to assume that absentee voting turnout would remain relatively stable, as no-excuse absentee voting has been available in Georgia over 10 years.²⁷ For example, 3 percent of registered voters voted absentee by mail in 2018 and 2016.²⁸

Current infrastructure is not sufficient for the needs of election officials who are “bracing for the flood of absentee ballots.”²⁹ Local election officials will need additional

machinery and equipment, including absentee ballot tabulation machines, to assist with managing the significant spike in absentee voting. The state has already invested approximately \$2.1 million in the equipment necessary for county officials to centrally tabulate a significant percentage of total votes cast.³⁰ With additional federal funding, additional centralized tabulation equipment, to be distributed to county officials across the state, would be a priority.³¹ We estimate the total vote-tabulation equipment costs will be \$10.3 million.³²

Additional infrastructure investments, including an online absentee ballot application tool to increase absentee voting security and election integrity, improved absentee ballot tracking systems, and additional load and vulnerability testing for current online systems (which we expect will experience significant spikes in usage rates) will cost an estimated \$640,000–\$890,000.³³

Local costs: \$68.3–\$75.4 million

While state officials are playing an important role in the current crisis, local election officials retain primary responsibility for the majority of election administration costs and responsibilities. Local officials are preparing for a surge in absentee voting with a populace that has historically voted in person and infrastructure that was geared toward this preference lasting for years to come. For example, in 2016 and 2018, around 95 percent of voters cast their ballots in person.³⁴ Local election officials we interviewed know these numbers are likely to be much lower in the primary election and believe that Covid-19 will likely continue to impact voting preferences in the general election, even if the virus has been contained.³⁵ Additional infrastructure investments, described below, will be required to accommodate the expected surge in absentee voting.

Conducting absentee ballot education and outreach: \$21.3 million

While the state is mailing important information to all voters in the primary, some county officials may decide to supplement these educational outreach efforts at the local level, as some local officials are doing in Iowa, where state officials have also proactively distributed absentee ballot applications to eligible voters.³⁶ We estimate that reasonable media outreach would cost \$5.1 million for the year and that sending informational mailers to all voters would cost \$3.2 million per election.³⁷

Processing absentee ballot applications and providing prepaid return postage: \$4–\$5.4 million

Although the state has assumed responsibility for sending

prepopulated absentee ballot applications to all voters, voters remain responsible for the postage required to return the absentee ballot application to the appropriate local official. However, local election officials we interviewed would support paying these postage costs if they received assistance from the federal government to do so.³⁸ We estimate that prepaid return postage for applications would cost \$1.6–\$3 million for the general election and \$2.4 million in total for the runoff elections. While not included in our estimates as voters did not receive postage prepaid envelopes to return absentee ballot applications for the primaries, we estimate that the return postage costs would have been approximately \$1.1 million.³⁹

Local officials are currently tackling the deluge of incoming paper applications.⁴⁰ Georgia state officials played an important role in minimizing the time required for local officials to process these applications when it voluntarily centralized absentee ballot application printing and mailing by prepopulating the forms with voters' information and, importantly, including a bar code that local officials can scan to greatly expedite processing times.⁴¹

However, between office closures, the spread of the coronavirus, and an infrastructure built for the state's traditionally low absentee-by-mail turnout, there may be application processing backlogs across the state. "The courthouse may be closed, but I'm at the office and my staff must keep working," said Deidre Holden, Paulding County supervisor of elections and voting.⁴²

Processing and tabulating absentee ballots: \$28.5–\$34.2 million

Once local election officials approve an absentee ballot application, the state's vendor mails absentee ballot packages to the individual voter. In Georgia, absentee ballot packages will include one privacy sleeve, instructions for voting, the paper ballot, and an (outer) envelope in which to return all required materials.⁴³ The package will be mailed to the voter in one large envelope.⁴⁴

Currently, as with ballot applications, Georgia voters are responsible for the postage costs to return their absentee ballots.⁴⁵ Local officials we interviewed would also support providing absentee voters with postage-prepaid envelopes to return their ballots if they received assistance from the federal government to do so.⁴⁶ We estimate that the total postage costs to return absentee ballots in the primary will be approximately \$2.3 million but did not include this cost in these estimates even though local officials will be responsible for some postage costs as the U.S. Postal Service (USPS) delivers absentee ballots marked as official election mail even if the enve-

lope does not include sufficient postage and subsequently bills the local official recipient.⁴⁷ We estimate that return postage could cost \$6.9–\$11.6 million for the remainder of the cycle.⁴⁸

Ballot drop boxes, which allow voters to securely and conveniently return their voted absentee ballots without incurring postage costs, are standard in almost all states with a high percentage of mail ballots.⁴⁹ On April 15, the State Election Board voted unanimously to allow drop boxes, "an option that [allows voters to avoid] human contact during the coronavirus pandemic."⁵⁰ In addition, drop boxes will lead to decreased long-term absentee ballot postage return costs and ensure that voters can return their ballot by the deadline, even if the post office experiences service interruptions or the voter does not receive the ballot in sufficient time to return it via USPS under normal delivery circumstances. Drop boxes have proven exceptionally popular in other several other states, including Colorado, where approximately 75 percent of ballots are returned to drop boxes.⁵¹ With sufficient funding, Georgia election officials we interviewed would consider widespread deployment of ballot drop boxes.⁵² Statewide secure ballot drop boxes will cost approximately \$3–\$4 million to purchase, install, and maintain.⁵³ For these estimates, we assume that drop boxes will be deployed prior to the general election and the percentage of voters who return their ballot by mail may be much lower in the general election than in the primary. The estimated return postage for absentee ballots costs reflect this assumption.

Once an absentee ballot is received, local officials must sort, process, and verify the voter's signature on the outer envelope. To manage the expected significant spike in incoming mail, local election officials will need equipment to assist with this process. The equipment needs, which will vary based on the size of the locality, may include mail-sorting equipment and automated letter openers. After election officials open outer envelopes on Election Day, ballots are removed from their privacy sleeves and then aggregated and tabulated. While the significant spike in the number of ballots to be counted centrally means that many local officials will need additional centralized absentee ballot tabulators (i.e., high-speed scanners), in Georgia these costs are generally paid by the state. Some counties will also need additional space for secure ballot processing and storage.⁵⁴ Statewide, the staffing, facilities, non-tabulation equipment, and software that will likely be needed to process returned absentee ballots will cost approximately \$18.6 million for the year, including one-time equipment costs.⁵⁵

Building secure remote, offsite, or additional infrastructure: \$1.7 million

Election officials' work must continue despite stay-at-home (SAH) orders, social distancing recommendations, limits on nonessential travel, building closures, and public health concerns. To do so, many local election officials may have staff who need to work at home or in temporary office space for periods of time throughout the election cycle. Working remotely can present significant security risks as malicious actors seek to exploit weaker networks and general disruption in routine.⁵⁶ Officials may need additional secure workstations to accommodate processing associated with the spike in absentee voting. We estimate that it will cost local election authorities \$1.7 million to purchase secure devices and to implement proper cybersecurity protections.⁵⁷

Ensuring healthy and secure in-person voting options: \$12.8 million

State and local officials are committed to offering in-person voting options to voters.⁵⁸ Local election officials we interviewed are also committed to protecting their poll workers and their voters on Election Day.⁵⁹ Reasonable measures to ensure a healthy and safe polling place in a pandemic include sufficient PPE for poll workers, hand sanitizer, gloves, and other cleaning supplies.⁶⁰ These measures also include providing plexiglass sneeze guards for poll workers and thoroughly cleaning all polling locations after use.⁶¹ Statewide, these materials will cost approximately \$3.8 million total for all elections this cycle.⁶²

In addition, local election officials must be prepared for significant poll worker attrition and voter demand for curbside voting options on Election Day. State officials in Alabama have already announced poll worker pay raises, and if they received assistance from the federal government to do so, local Georgia officials we interviewed would also support poll worker pay raises.⁶³ The total cost for these measures will be approximately \$8.9 million total for all elections this cycle.⁶⁴

Michigan

Registered voters: 7.7 million⁶⁵

2020 cycle elections: municipal (May 5), primary (August 4), general (November 3)

Total costs: \$94.9–\$103.8 million

State costs: \$13.5–\$17.6 million

Local costs: \$81.4–\$86.2 million

Federal grant: \$11.2 million⁶⁶ (11–12 percent)

Michigan's presidential primary was held on March 10. Less than two weeks later, Governor Gretchen Whitmer issued an SAH order,⁶⁷ which was recently extended

through May 1, 2020.⁶⁸

Secretary of State Jocelyn Benson acted quickly in the wake of the SAH order to address issues associated with the state's upcoming local elections on May 5.⁶⁹ First, the secretary encouraged local communities to delay tax and bond proposals until the August election, unless such a move would cause existing critical funds to expire.⁷⁰ Next, she took several steps to promote absentee voting for the local elections, including mailing voters an absentee ballot application with a postage-prepaid envelope.⁷¹

Over the past year, Michigan officials have upgraded key infrastructure in response to the successful 2018 ballot initiative that authorized no-excuse absentee voting starting in 2019. However, consistent with trends in other states that have made this transition,⁷² election officials made infrastructure investments assuming only a modest uptick from prior absentee turnout, which was approximately 14 percent of registered voters in 2018.⁷³

These recent improvements are not sufficient to meet election officials' needs associated with the expected massive spike in absentee voting due to Covid-19.⁷⁴ As Michigan election officials prepare for a surge in absentee voting in 2020,⁷⁵ it needs prompt and significant federal investment to ensure that the state's election infrastructure is sufficiently resilient against pandemics or other disruptions.

Michigan election officials need additional federal funding now to help cover increased election administration costs related to the coronavirus. More than a dozen local Michigan election officials, who will be primarily responsible for these additional costs, joined others from around the country in stating that the federal funding provided in the CARES Act is "simply not enough" and that additional federal funding is critical as they prepare for the elections ahead.⁷⁶

State costs: \$13.5–\$17.6 million

- Printing and mailing absentee ballot applications to eligible voters
- Providing postage-prepaid envelopes for absentee ballot application return
- Assisting with prepaid postage for voters to return absentee ballots
- Investing in state election infrastructure

State officials quickly identified absentee voting as an important component of safely managing the May local elections.⁷⁷ "To help ensure both public health and democratic rights are protected" in jurisdictions that go forward

with these elections, state officials “will mail absent voter ballot applications to all [May 5 election eligible] voters with postage-paid return envelope.”⁷⁸ In addition, the state will assist counties with providing postage-prepaid envelopes in which to return their absentee ballot.⁷⁹

State officials continue to coordinate with state executive and health officials and are exploring options for launching similar efforts in all subsequent elections this year if necessary,⁸⁰ which will cost an estimated \$6 million in the primary and \$6.9–\$10.8 million in the general.⁸¹

Additional infrastructure investments to make absentee voting easier for eligible voters and more secure, including an online absentee ballot application tool to increase absentee voting security and election integrity, improved absentee ballot tracking systems, and additional load and vulnerability testing for current online systems (which we expect will experience significant spikes in usage rates) will cost an estimated \$590,000–\$790,000.⁸²

Local costs: \$81.4–\$86.2 million

While state officials play an important role in the current crisis, local election officials retain primary responsibility for administering and paying for Michigan elections. With over 1,600 jurisdictions, elections are highly decentralized and resource needs, and concerns, vary across the state. The uncertainty facing election officials is a significant concern. For many local clerks, this will be the very first cycle with no-excuse absentee voting. And, for all clerks, “this is the very first cycle in a pandemic.”⁸³ What election officials do understand is that mail ballot turnout is likely to be dramatically higher than 14 percent for the upcoming elections; those we interviewed believe that Covid-19 will likely continue to impact voting preferences in the primary and general elections, even if the virus has been contained.⁸⁴ Election officials across the state need additional infrastructure and other resources to manage the expected surge in absentee voting.

Conducting absentee ballot education and outreach: \$9 million

While the state is mailing important information to all May voters, some local officials may decide to supplement these educational outreach efforts. Separately, local officials will need to continue these educational outreach efforts ahead of the primary and the general election through informational mailers and media outreach. We estimate that sending informational mailers to all voters will cost \$3.4 million per election and that reasonable media outreach will cost \$2.1 million for the year.⁸⁵

Processing absentee ballot applications

Once an application is received, local officials must sort, open, and process the paper applications. As in Georgia, the processing time in Michigan will vary based on whether the application was prepopulated and included a bar code programmed with the applicant’s information. While new to Georgia, local Michigan officials we interviewed have sent prepopulated applications, with a bar code, to voters on the permanent absentee ballot application list for several years.⁸⁶

Even with the increased efficiencies associated with prepopulated absentee ballot applications, “you can’t undercount the resource needs associated with the absentee ballot applications,” warned Tina Barton, Rochester Hills clerk.⁸⁷ In Michigan, where officials conduct signature verification not only on the returned absentee ballot envelopes but also on the absentee ballot applications, and file and store individual paper applications, the additional workload is especially challenging as “there’s a lot of work required.”⁸⁸ Also important, this responsibility comes on top of the local official’s other ongoing duties. In Michigan, that list is long.⁸⁹

Processing and tabulating absentee ballots: \$45–\$49.8 million

Once an absentee ballot application is approved, officials mail an absentee ballot package to individual voters. In Michigan, absentee ballot packages include one privacy (inner) envelope, instructions for voting, the paper ballot, and an (outer) envelope in which to return all required materials, as is standard in the remainder of the states we profile. We estimate that associated printing, packing, and mailing costs would be \$7–\$11.3 million for the year.⁹⁰ Michigan voters are currently responsible for the return postage on voted absentee ballots. However, state officials expect to continue assisting locals with providing postage-prepaid envelopes for returned ballots; these postage costs are included in the state cost section above.

As in Georgia and other states, Michigan municipalities and townships will also want to deploy drop boxes for several reasons, including to reduce their long-term postage costs (accounted for in these estimates) and increasing voter convenience. With sufficient funding, local Michigan election officials we interviewed would consider widespread deployment of ballot drop boxes.⁹¹ Statewide secure ballot drop boxes will cost approximately \$1.6–\$2.1 million to purchase, install, and maintain.⁹²

Absentee ballot processing and tabulation requires multiple steps, and officials will need additional resources to handle the expected spike in incoming mail. As Tina Barton notes, “While I consider our office lucky because we have four high-speed tabulators, I still need a long list of supplies, additional equipment, and other resources, from additional crates for absentee ballot and absentee ballot applications storage, ballot bags, storage space,

envelope openers to election officials who are willing to potentially work overnight to assist with absentee ballot tabulation.”⁹³

Election officials may also need to review the basic logistics of their absentee processing and tabulating plans due to the current social distancing requirements. “We normally have teams of five people at one six-foot table who process absentee ballots. If I can only have two people at a table, then we’ll have to set up an assembly line with multiple tables, so instead of six tables, I’ll easily need 20. But if this will give my staff and workers the space they need to stay safe, we’ll find a way.”⁹⁴

Statewide, the staffing, facilities, equipment, and software that will likely be needed to process and tabulate returned absentee ballots amounts to approximately \$36.5 million, including one-time equipment purchase costs.⁹⁵

Building secure remote, offsite, or additional infrastructure: \$10 million

Election officials’ work must continue despite SAH orders, social distancing recommendations, limits on nonessential travel, building closures, and public health concerns. To do so, many local election officials may have staff who need to work at home or in temporary office space for periods of time throughout the election cycle. Working remotely can present significant security risks as malicious actors seek to exploit weaker networks and general disruption in routine.⁹⁶ In addition, officials may need additional secure workstations to accommodate processing associated with the spike in absentee voting. We estimate that it will cost local election authorities \$10 million to purchase secure devices and to implement proper cybersecurity protections.⁹⁷

Ensuring healthy and secure in-person voting options: \$17.3 million

Local officials “are committed to protecting every voter and every vote” and every poll worker.⁹⁸ Although local election authorities are facing poll worker attrition, polling location site issues, and other challenges, local officials we interviewed believe it is critical to offer safe in-person voting options.⁹⁹ Reasonable measures to ensure a healthy and safe polling place in a pandemic include sufficient PPE for poll workers, hand sanitizer, gloves, single-use pens, and other cleaning supplies (collectively, “healthy polling location materials,” or HPLM).¹⁰⁰ These measures also include providing plexiglass sneeze guards for poll workers and thoroughly cleaning all polling locations after use.¹⁰¹ In addition to these health and safety needs, local officials support increasing the number of poll workers and their pay as a way to support increased demand for Michigan’s limited curbside voting assistance services and mitigate the impacts of attrition due to Covid-19 we have seen in other

states, but they say they can only do so with sufficient federal support.¹⁰² Statewide, these materials will cost approximately \$17.3 million across all elections this year.

Missouri

Total registered voters: 4.2 million¹⁰³

2020 cycle elections: municipal (June 2), primary (August 4), general (November 3)

Total costs: \$59.4–\$67 million

State costs: \$590,000–\$790,000

Local costs: \$58.8–\$66.2 million

Federal grant: 7.6 million¹⁰⁴ (11–13 percent)

On March 18, Governor Michael L. Parson postponed Missouri’s municipal elections, originally scheduled for April 7, until June 2, 2020. “Postponing an election is not easy, but we are all in this together. We are thankful to Secretary [of State Jay] Ashcroft and our 116 election authorities for their leadership, cooperation, and commitment to doing what is best for their communities during this time,” Parson said.¹⁰⁵

Ashcroft requested this postponement after working closely with local election officials who expressed concerns about poll worker attrition, the number of sites no longer willing to serve as polling locations, and voter safety.¹⁰⁶ As some local election officials had petitioned the court for individual county election extensions prior to the executive order, the postponement will ensure that all municipal elections will be held on the same day across the state.

Although Missouri is one of a small number of states that require voters to meet certain qualifications to cast an absentee ballot, voters want the option,¹⁰⁷ and many believe that voters concerned about the coronavirus qualify under current law.¹⁰⁸ With multiple local officials now promoting absentee voting as a safety measure,¹⁰⁹ absentee voting is expected to be much greater than in past elections, such as the November 2018 general election, in which 5 percent of registered voters cast an absentee ballot by mail.¹¹⁰

Missouri election officials need additional federal funding now to help cover increased election administration costs related to the coronavirus. Multiple local Missouri election authorities across the state, who will be primarily responsible for these additional costs, joined others from around the country in stating that federal funding provided in the CARES Act is “simply not enough” and that additional federal funding is critical as they prepare for the elections ahead.¹¹¹

State costs: \$590,00–\$790,000

- Investing in state election infrastructure

State officials have already initiated contingency planning to ensure the safe and secure administration of elections in Missouri and are planning to conduct elections even if the situation is “worse than it is now.”¹¹² In fact, Secretary Ashcroft believes that his “job is to make [Missouri elections] happen and make [Missouri elections] happen safely under whatever circumstances we have.” As part of these efforts, state officials are having discussions with local election authorities weekly, “if not more often.”

Additional infrastructure investments, including an online absentee ballot application tool¹¹³ to increase absentee voting security and election integrity, improved absentee ballot tracking systems, and additional load and vulnerability testing for current online systems (which we expect are likely to experience significant spikes in usage rates), will cost an estimated \$590,000–\$790,000.¹¹⁴

Local costs: \$58.8–\$66.2 million

In Missouri, local election authorities will be responsible for the majority of coronavirus-related election administration cost increases. The majority of these costs, as well as administration challenges, stem from an infrastructure that was built for the state’s historically low absentee voting turnout. Missouri local officials we interviewed expect that absentee voting turnout will be much higher in the primary election than in the past and believe that Covid-19 will likely continue to impact voting preferences in the general, even if the virus has been contained.¹¹⁵ Additional infrastructure investments will be required to accommodate the expected surge in absentee voting during the entire election cycle.

Conducting voter education and outreach: \$7.3 million

Election officials will need to engage in a variety of forms of voter education and outreach. The state has not committed to conducting such outreach, so local educational efforts will be critical. Voters with questions about absentee voting are already inundating local officials with questions about absentee voting. One employee at the St. Louis County Board of Elections received over 100 voice-mails in a single day from voters, and local officials are now implementing a plan to distribute the additional voter response workload across the office.¹¹⁶ We estimate that reasonable media outreach will cost \$1.7 million for

the year and that sending informational mailers to all voters will cost \$1.9 million per election.¹¹⁷

Mailing and processing absentee ballot applications: \$8.7–\$9.6 million

Since Missouri is not adopting an all vote-by-mail model,¹¹⁸ all voters who qualify and wish to vote absentee must submit an application for an absentee ballot. If Missouri were to follow other states and mail absentee ballot applications to all voters, printing, postage, envelopes, and other needs associated with distributing these applications would cost approximately \$2.4 million for each election. If Missouri election authorities were to provide prepaid postage for absentee application returns,¹¹⁹ as they currently do for absentee ballot returns, the return postage would be approximately \$686,000 for the municipal and primary elections, combined, and an additional \$900,000–\$1.7 million for the general election.¹²⁰

Mailing, processing, and tabulating absentee ballots: \$28.6–\$35.2 million

Once an absentee ballot application is approved, officials must prepare a standard absentee ballot package for each individual voter.¹²¹ Sufficient and well-trained staff, or experienced contractors, are essential to ensuring that every approved applicant receives all the necessary materials and the correct ballot.¹²² The estimated cost of necessary materials, staffing, postage out, and return postage for all upcoming elections is \$9.7–\$15.8 million,¹²³ which includes \$338,000 in the municipal election, \$812,000 in the primary, and \$756,000–\$1.2 million in the general for return postage.

As in Georgia and other states, Missouri election authorities will also want to deploy drop boxes for several reasons, including to reduce their return postage costs (accounted for in our cost estimates) and increase voter convenience. Missouri election authorities we interviewed would consider widespread deployment of ballot drop boxes if they received assistance from the federal government to do so.¹²⁴ Statewide secure ballot drop boxes will cost approximately \$1.6–\$2.1 million to purchase, install, and maintain.¹²⁵

Once an absentee ballot is returned, local Missouri officials undertake a multistep process to ensure election integrity and accurate tabulation, similar to the process we see in other states. As in Georgia and all other states we interviewed, while the specific needs will vary by county, local officials will need additional equipment, office or warehouse space, staff, and other resources to manage the surge in incoming absentee ballots and applications.¹²⁶ We estimate these costs will be approximately \$17.3 million, including one-time equipment purchase costs.¹²⁷

Building secure remote, offsite, or additional infrastructure: \$1.2 million

Election officials' work must continue despite SAH orders, social distancing recommendations, limits on nonessential travel, building closures, and public health concerns. To do so, many local election officials may have staff who need to work at home or in temporary office space for periods of time throughout the election cycle. Working remotely can present significant security risks as malicious actors seek to exploit weaker networks and general disruption in routine.¹²⁸ In addition, officials may need additional secure workstations to accommodate processing associated with the spike in absentee voting. We estimate that it will cost local election authorities \$1.2 million to purchase secure devices and to implement proper cybersecurity protections.¹²⁹

Ensuring healthy and secure in-person voting options: \$12.9 million

Although local election authorities are facing poll worker attrition, polling location site issues, and other challenges, those we interviewed believe that it is essential to offer their voters safe in-person voting opportunities.¹³⁰ Several have signed a letter that asks Congress to ensure they have the resources to protect all of their voters, votes, and poll workers.¹³¹

They also agree that reasonable measures include HPLM and support increasing the number of poll workers and their pay as a way to support increased demand for curbside voting and mitigate the impacts of attrition due to Covid-19 that we have seen in other states, but they say they can only do so with sufficient federal support.¹³² Statewide, we estimate that the total cost for these measures will be approximately \$12.9 million total for all elections this cycle.¹³³

Ohio

Total registered voters: 7.8 million¹³⁴

2020 cycle elections: primary (April 28),¹³⁵ special (August 4), general (November 3)

Total costs: \$70–\$82.2 million

State costs: \$4.2–\$4.4 million

Local costs: \$65.8–\$77.8 million

Federal grant: \$12.8 million¹³⁶ (16–18 percent)

State grant: \$7 million

Ohio voters and election officials faced exceptionally challenging circumstances in the lead-up to the primary, originally scheduled for March 17. After a brief legal battle, and hours before the polls were slated to open, Dr. Amy Acton, director of the Ohio Department of Health, ordered all polling locations closed¹³⁷ to “avoid the imminent threat with a high probability of widespread exposure to Covid-

19.”¹³⁸ Ohio lawmakers subsequently rejected Governor Mike DeWine and Secretary of State Frank LaRose’s legislative proposal calling for a new election day with “limited in person voting” and decided to only “extend[] mail voting in the state’s primaries until April 28.”¹³⁹

As only voters who require assistance or do not have a mailing address were able to vote in person in April, most voters who were planning to vote in person on primary day had to vote absentee by mail.¹⁴⁰ In light of the public health concerns associated with Covid-19, LaRose promoted many common-sense and innovative measures and tools to make absentee voting more secure and to increase its voter adoption rate.¹⁴¹ For example, he worked with newspapers across the state to print absentee ballot applications, which voters can “cut out of the newspaper, fill[] in and mail[].”¹⁴² As part of these efforts, he announced partnerships with dozens of public and private companies, including the Ohio Grocers Association, the AFL-CIO, and Cox Inc., that are “stepping up” to promote absentee voting.¹⁴³

These are important steps, but there is much more to do as local election officials work to manage the huge spike in absentee voting.¹⁴⁴ In Ohio, as in most states across the country, the costs associated with coronavirus-related changes in voting preferences will primarily be the responsibility of local election officials. And officials believe that Covid-19 will likely continue to impact voting preferences in the general election, even if it has been contained.¹⁴⁵

LaRose has predicted that the 2020 election will see “the highest turnout in our state’s history.”¹⁴⁶ Although the state legislature appropriated \$7 million for costs associated with extending the primary,¹⁴⁷ Ohio election officials still need additional federal funding to help cover increased election administration costs related to the coronavirus. Several local Ohio election officials, including the president and vice president of the Ohio Association of Election Officials, joined others from around the country in stating that funding provided by the CARES Act is “simply not enough” and that additional federal funding is critical as they prepare for the elections ahead.¹⁴⁸

State costs: \$4.2–\$4.4 million

- Printing and mailing voter informational postcards for the primary
- Investing in state election infrastructure

Working closely with local officials, state officials have led a significant election infrastructure investment program over the past year and a half. Many of these elec-

tion security improvements will be critical as Ohio voters are more likely to take advantage of online election services, such as online voter registration, over the coming months.

State officials have recommended various additional infrastructure investments aimed at making absentee voting more secure, cheaper to administer, and easier for eligible voters. For example, LaRose has proposed an online absentee ballot application tool, which would allow for Ohioans to request absentee ballots online, with no paper form involved.¹⁴⁹ We estimate that this tool will cost approximately \$360,000–\$470,000 to develop and maintain, and additional state-level infrastructure investments, including improved absentee ballot tracking systems and additional load and vulnerability testing on online systems, will cost approximately \$210,000–\$300,000.¹⁵⁰

Voter education and outreach efforts will also be critical over the coming months. To ensure that voters are aware of the extended absentee voting period for the primary, state officials are planning to “design, print and mail approximately 7.8 million informational postcards to every registered Ohioan that explains to them how to obtain the form necessary to request an absentee ballot.”¹⁵¹ We estimate the associated costs to be \$3.6 million.¹⁵²

Local costs: \$65.8–\$77.8 million

In Ohio, local election authorities will be responsible for the majority of coronavirus-related election administration cost increases. The majority of these costs, as well as administration challenges, stem from an infrastructure that was built for the state’s current absentee-by-mail voting turnout.¹⁵³ Ohio local officials we interviewed know the level of absentee voting will be much higher in the primary and believe that Covid-19 will likely continue to impact voting preferences in the general, even if it has been contained.¹⁵⁴ Additional infrastructure investments will be required to accommodate the expected surge in absentee voting during the entire election cycle.

Conducting voter education and outreach: \$4.8 million

While the state is mailing important information to all voters before the primary, local election officials are usually responsible for the costs associated with mailings and voter education outreach. They will need to engage in a variety of forms of voter education and outreach for the general at minimum. For the general election, we estimate that reasonable media outreach will cost \$1.1 million, and individual voter outreach through information mailers will cost \$3.6 million.¹⁵⁵

Mailing and processing absentee ballot application requests and applications: \$6.6–\$8.3 million

As Ohio is not adopting an all vote-by-mail model,¹⁵⁶ all voters who qualify and wish to vote absentee must submit an application for an absentee ballot. If local Ohio officials follow other states and mail absentee ballot applications to all voters,¹⁵⁷ printing, postage, return postage, envelopes and other needs associated with distributing these applications will cost approximately \$6.6–\$8.3 million for the general election.¹⁵⁸

Although Governor DeWine and Secretary LaRose supported a proposal to provide all voters with postage-prepaid envelopes to return absentee ballot applications, the legislature refused to fund this request. If they received assistance from the federal government to do so, local officials we interviewed would also support providing voters with postage-prepaid envelopes to return absentee ballot applications, and these costs are included in the above total.¹⁵⁹

Mailing, processing, and tabulating absentee ballots: \$40.4–\$50.7 million

Once an absentee ballot application is approved, officials must prepare a standard absentee ballot package for each individual voter.¹⁶⁰ Sufficient and well-trained staff, or experienced contractors, are essential to ensuring that every approved applicant receives all the necessary materials and the correct ballot.¹⁶¹ The estimated cost for necessary materials, staffing, and postage is \$5.9 million in the primary election and \$6.7–\$12.8 million in the general.¹⁶²

In Ohio, voters will receive a postage-prepaid envelope in which to return their ballot for the primary, but local officials are not required to provide postage-prepaid envelopes for absentee ballot return in the general. In fact, under current state law, locals are prohibited from providing postage.¹⁶³ However, if they received assistance from the federal government to do so and if another exemption were granted for the general, local election officials we interviewed would support providing postage-prepaid envelopes to voters.¹⁶⁴ For the primary, we estimate that local officials will incur an additional \$1.8 million in return postage costs for the April 28 primary and an additional \$1–\$3.9 million for the general.¹⁶⁵

As in Georgia and other states, Ohio counties will also want to deploy drop boxes for several reasons, including to reduce their postage costs (accounted for in these estimates) and increase voter convenience. If they received assistance from the federal government to do so, Ohio election authorities we interviewed would consider widespread deployment of ballot drop boxes.¹⁶⁶ Statewide secure ballot drop boxes will cost approximately \$4.5–\$5.9 million to purchase, install, and maintain.¹⁶⁷

Once an absentee ballot is returned, local Ohio officials

undertake a multistep process to ensure election integrity and vote-tabulation accuracy. As in other states we interviewed, local officials will need additional equipment, office or warehouse space, staff, and other resources to manage the surge in incoming absentee ballots and applications.¹⁶⁸ We estimate these costs will be approximately \$20.5 million, including one-time equipment purchase costs.¹⁶⁹

Building secure remote, offsite, or additional infrastructure: \$1.2 million

Election officials we interviewed in Ohio are considering various options to immediately expand the capacity of their infrastructure in order to continue their vital work as absentee ballot applications and returned ballots continue to pour into their offices.¹⁷⁰ Kim Smith, the deputy director of elections in Defiance County, is considering increasing the number of workstations at her office by 50 percent so temporary staffers can assist with the processing. New workstations cost approximately \$2,000, including the licensing fees for the state absentee ballot processing software and equipment costs.¹⁷¹

Ensuring healthy and secure in-person voting options: \$12.7 million

Several local election officials have joined together to argue that more federal funds are needed to ensure the safety and security of all voters, poll workers, and votes.¹⁷² Although local election authorities are facing poll worker attrition, polling location site issues, and other challenges, those we interviewed are committed to offering in-person voting in subsequent 2020 elections and agree that HPLM are reasonable measures.¹⁷³

Keeping poll workers safe is of particular importance to Defiance County's director of elections, Tonya Wichman, who relies on many friends and family members to serve as poll workers.¹⁷⁴ She explained, "[Poll workers] make my job possible, they make democracy possible, and work from 5:30 in the morning until at least 8:00 at night for not what they deserve but what we can offer them as a paycheck."

For reasons similar to those described by local officials in Michigan and Georgia, local Ohio officials we interviewed would support increasing the number of poll workers and their pay, but they say they can only do so with sufficient federal support.¹⁷⁵ The total cost to locals for these changes is estimated at \$12.7 million for the general election.¹⁷⁶

Pennsylvania

Registered voters: 8.5 million¹⁷⁷

2020 cycle elections: primary (June 2), general (November 3)

Total costs: \$79.1–\$90.1 million

State costs: \$17.5–\$17.9 million

Local costs: \$61.6–\$72.2 million

Federal grant: \$14.2 million¹⁷⁸ (16–18 percent)

On March 25, Pennsylvania Governor Tom Wolf and the state legislature agreed to postpone the state's primary election, which was originally scheduled for April 28, to June 2. In response to local election officials who were "pulling fire alarms all over the place"¹⁷⁹ about the election administration challenges facing their offices, such as government office closures and poll worker attrition, the legislation postponing the election also provided local officials with decision-making authority over several election administration matters, such as the establishment of vote centers and polling location consolidation, in the primary.¹⁸⁰

In the wake of the postponement, Wolf issued a state-wide SAH order through April 30;¹⁸¹ it has since been extended through May 8.¹⁸² Voter registration and absentee ballot¹⁸³ application windows are currently open for the primary, but in the last month, with some local offices still closed and others facing residual staffing effects, furloughs, or other challenges,¹⁸⁴ "that means voters aren't being registered, absentee ballot applications aren't being processed, and other election preparations aren't moving forward."¹⁸⁵ Only with sufficient resources will election officials be able to manage the backlog that is likely being created.¹⁸⁶

In the past year, Pennsylvania upgraded key infrastructure to accommodate the change in the state law in 2019 to allow no-excuse vote by mail. However, consistent with trends in other states,¹⁸⁷ election officials made infrastructure investments assuming only a modest uptick from prior absentee-by-mail turnout, which was 2 percent of registered voters in 2018.¹⁸⁸ These recent improvements alone are not sufficient to meet election officials' needs, or voters' expectations, associated with the expected massive spike in absentee voting due to Covid-19.¹⁸⁹ Without immediate additional resources, one local official we interviewed expressed concerns that the primary could be a "catastrophe."¹⁹⁰ Given the fundamental shift in voting preferences in 2020 expected by the Pennsylvania officials we interviewed¹⁹¹ and the likelihood of unprecedented turnout in November, there must be prompt and significant federal investment in the state's election infrastructure to ensure a system that is sufficiently resilient against pandemics or other emergencies.¹⁹²

State costs: \$17.5–\$17.9 million

- Mailing voter information notices
- Launching voter education efforts
- Investing in state election infrastructure
- Purchasing Covid-19 precinct protection kits
- Implementing accessible ballot-marking tool so that voters with disabilities can utilize mail-in voting

Working closely with local officials, state officials have led a significant election infrastructure investment program over the past year and a half. Many of these election security improvements will be critical to safely and securely administering upcoming elections as Pennsylvania voters are more likely to take advantage of online election services, such as online voter registration, over the coming months.

Most importantly, in September of 2019, the Pennsylvania Department of State deployed a new online absentee ballot application tool, the OABAT. Not only does the OABAT make the absentee voting process more secure through an indirect connection with the state voter registration database, but it also significantly reduces the county staff time required to process applications. A paper absentee ballot application takes approximately 7–10 times longer to process than a paperless application.¹⁹³

However, state officials have much work to do to prepare for elections in a pandemic. First, Pennsylvania officials are planning to invest in substantive voter education and outreach efforts. These efforts are of particular importance in Pennsylvania, given that no-excuse voting by mail was only introduced recently and, historically, only a small percentage of Pennsylvania voters have cast their votes by mail.¹⁹⁴

These efforts are also important to public — and poll worker — safety on election day.¹⁹⁵ With state and local election officials bracing for polling location consolidations and closures across the commonwealth,¹⁹⁶ those who vote by mail or absentee will decrease in-person Election Day turnout and thereby make it easier to conduct in-person voting in compliance with health officials' social distancing recommendations. Due to limited resources, state officials plan to spend in advance of the primary election approximately \$1 million on modest but critical educational outreach efforts and an additional \$1.3 million to send informational mailers to every eligible-voter household in the commonwealth.¹⁹⁷ In addition, state officials plan to provide Covid-19 precinct protection

kits to the counties at a cost of approximately \$1.2 million.¹⁹⁸ For these estimates, we assume that the state will also provide these kits to local election officials in the general election.

Additional outreach will be required before the general election and, with sufficient federal resources, state officials would likely double or triple those efforts.¹⁹⁹ Reasonable media outreach for the general election will cost at least \$1.5 million and informational mailers will cost another \$1.3 million.²⁰⁰ State officials will continue to monitor public health conditions in conjunction with health-care experts in the coming months and, if necessary, would consider mailing vote-by-mail applications with postage-prepaid envelopes to voters in the fall at an estimated cost of \$8 million.²⁰¹ State officials would also need at least \$780,000–\$1.2 million to obtain absentee ballot tracking software, enhanced voter lookup tools, additional load and vulnerability testing for the state's online voter registration database, and upgrades to its online absentee ballot application.²⁰² They are also working to implement an accessible remote ballot-marking tool so that voters with disabilities can utilize mail-in voting, which will cost approximately \$1.2 million.²⁰³ Given the limited time to develop and deploy these tools and the difficulty of integrating them with existing legacy systems, these costs could be as high as \$2.5 million.²⁰⁴

Local costs: \$61.6–\$72.2 million

In Pennsylvania, local election authorities will be responsible for the majority of coronavirus-related election administration cost increases. While they are appreciative of the recent federal financial assistance, multiple local Pennsylvania officials joined others from around the country in stating that it was “simply not enough.”²⁰⁵ The majority of these costs, as well as administration challenges, stem from an infrastructure that was built for the state's historically low absentee-by-mail voting turnout;²⁰⁶ officials reasonably assumed that the state's move to no-excuse absentee voting would result in a gradual increase in its use, as we have seen in states across the country.²⁰⁷ Pennsylvania has seen a vast increase in absentee applications — already more than six times those from the previous presidential primary, in 2016.²⁰⁸ Officials we interviewed know the level of absentee voting will continue to grow in the primary and believe that Covid-19 will likely continue to impact voting preferences in the general, even if it has been contained.²⁰⁹ Additional infrastructure investments will be required to accommodate the expected surge in absentee voting during the entire election cycle.

Mailing and processing absentee ballot applications

Although the state sent informational postcards to all eligible-voter households with important information about the primary election, including how to apply for an absentee ballot, it is possible that local election officials are printing and mailing absentee-by-mail applications to voters before the primary. However, we are not including estimated costs for doing so in the primary as, due to the availability of the online absentee ballot application tool in Pennsylvania, some localities may decide against mailing out applications to all voters, or decide to only mail paper applications to universes of voters that might not be eligible to use the OABAT.²¹⁰

Mailing, processing, and tabulating absentee ballots: \$36.3–\$47 million

Once an absentee ballot application is approved, officials must prepare a standard absentee ballot package for each individual voter.²¹¹ Sufficient and well-trained staff, or experienced contractors, are essential to ensuring that every approved applicant receives all the necessary materials and the correct ballot.²¹² The estimated cost for necessary materials, staffing, postage out, and return postage is \$7.3 million for the primary election and \$7.9–\$17 million for the general.²¹³

As with the other states we profile, localities will also want to deploy drop boxes for several reasons, including to reduce their postage costs (accounted for in these estimates) and increase voter convenience. If they received assistance from the federal government to do so, Pennsylvania officials we interviewed would consider widespread deployment of ballot drop boxes.²¹⁴ Statewide secure ballot drop boxes will cost approximately \$5.1–\$6.6 million to purchase, install, and maintain.²¹⁵

Once an absentee ballot is returned, local officials undertake a multistep process to ensure election integrity and accurate vote tabulation, similar to the process we see in many other states that face similar struggles. In Pennsylvania, as in every state we interviewed, while the specific needs will vary by county, local officials will need additional equipment, office or warehouse space, staff, and other resources to manage the surge in incoming absentee ballots and applications.²¹⁶ Statewide, the staffing, facilities, equipment, and software that will likely be needed to process and tabulate returned absentee ballots is approximately \$16.1 million, including one-time equipment purchase costs.²¹⁷

Building secure remote, offsite or additional infrastructure: \$1.1 million

Election officials' work must continue despite SAH orders, social distancing recommendations, limits on nonessential travel, building closures, and public health concerns. To do so, many local election officials may have staff who need to work at home or in temporary office space for periods of time throughout the election cycle. Working remotely can present significant security risks as malicious actors seek to exploit weaker networks and general disruption in routine.²¹⁸ In addition, officials may need additional secure workstations to accommodate processing associated with the spike in absentee voting. We estimate that it will cost local election authorities \$1.1 million to purchase secure devices and to implement proper cybersecurity protections.²¹⁹

Ensuring healthy and secure in-person voting options: \$24.2 million

While local officials are authorized to consolidate up to 60 percent of existing polling places in the primary due to the pandemic — or further, if approved by the Department of State²²⁰ — every locality is still required to conduct in-person voting. State and local election officials we interviewed are dedicated to protecting their poll workers and their voters on Election Day and agree that HPLM are reasonable measures.²²¹ For these estimates, we assume that the state is taking on the costs associated with these materials for both the primary and general elections.

For reasons similar to those of their colleagues in other states, local Pennsylvania officials we interviewed support increasing the number of poll workers and their pay but say they can only do so with sufficient federal support.²²² And Berks, Lehigh, and Philadelphia Counties, which are required to provide language assistance at the polls,²²³ may need to contract for remote interpreter services to ensure compliance on Election Day. The state also provides remote interpreter services to improve language access on Election Day.²²⁴ The total cost to locals for these changes is estimated at \$24.2 million for both elections.²²⁵

TABLE 1

Estimated Costs for Georgia

	LOW-END ESTIMATE	HIGH-END ESTIMATE
State total	\$110,741,555	\$124,430,160
State costs	\$42,403,860	\$49,034,290
Local costs	\$68,337,695	\$75,395,870
Secure online systems		
Online absentee request systems (development and maintenance)	\$360,000	\$470,000
Ballot-tracking systems and voter notification	\$100,000	\$200,000
Online voter registration capacity and testing	\$150,000	\$170,000
Voter lookup tools and vulnerability testing	\$30,000	\$50,000
Mail ballot distribution		
Mailing absentee applications		
Absentee ballot applications (November)	\$3,102,000	\$3,102,000
Return postage (November)	\$1,569,750	\$2,982,525
Absentee ballot applications (other elections)	\$12,408,000	\$12,408,000
Return postage (other elections)	\$2,421,900	\$2,421,900
Mailing absentee ballots		
Absentee ballots (November)	\$4,540,200	\$10,920,630
Return postage (November)	\$1,690,500	\$6,423,900
Absentee ballots (Other elections)	\$11,463,660	\$11,463,660
Return postage (Other elections)	\$5,216,400	\$5,216,400
Drop boxes	\$2,128,000	\$3,040,000
Drop box maintenance	\$912,000	\$912,000

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Mail ballot processing and tabulation

Automated letter openers	\$138,000	\$138,000
Mail-sorting equipment	\$4,600,000	\$4,600,000
High-speed scanners	\$10,250,000	\$10,250,000
Processing and storage facilities	\$2,050,000	\$2,050,000
Processing staff (all elections)	\$11,491,200	\$11,491,200
Computers and technology	\$326,300	\$326,300

In-person voting

PPE and health (all elections)	\$2,256,750	\$2,256,750
Plexiglass sneeze guards (one-time expenditure)	\$796,500	\$796,500
Postelection cleaning services (all elections)	\$796,500	\$796,500
Single-use pens (all elections)	\$0	\$0
Poll worker pay increase (all elections)	\$5,073,300	\$5,073,300
Interpreter services (all elections)	\$327,600	\$327,600
Expanded curbside voting (all elections)	\$3,547,500	\$3,547,500

Public education

Informational mailers to all voters (all elections)	\$16,200,000	\$16,200,000
Media outreach (all elections)	\$5,059,952	\$5,059,952

Secure remote working and off-site infrastructure

Remote-working devices, security protections, and maintenance	\$1,735,543	\$1,735,543
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Note: The cost of return postage during the primary election is not included.

TABLE 2

Estimated Costs for Michigan

	LOW-END ESTIMATE	HIGH-END ESTIMATE
State total	\$94,945,253	\$103,778,403
State costs	\$13,540,937	\$17,595,693
Local costs	\$81,404,316	\$86,182,710
Secure online systems		
Online absentee request systems (development and maintenance)	\$360,000	\$470,000
Ballot-tracking systems and voter notification	\$50,000	\$100,000
Online voter registration capacity and testing	\$150,000	\$170,000
Voter lookup tools and vulnerability testing	\$30,000	\$50,000
Mail ballot distribution		
Mailing absentee applications		
Absentee ballot applications (November)	\$4,481,580	\$4,481,580
Return postage (November)	\$1,615,366	\$3,069,195
Absentee ballot applications (other elections)	\$4,481,580	\$4,481,580
Return postage (other elections)	\$745,554	\$745,554
Mailing absentee ballots		
Absentee ballots (November)	\$4,782,639	\$9,087,013
Return postage (November)	\$839,668	\$3,240,595
Absentee ballots (other elections)	\$2,207,372	\$2,207,372
Return postage (other elections)	\$787,189	\$787,189
Drop boxes	\$1,106,000	\$1,580,000
Drop box maintenance	\$474,000	\$474,000

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Mail ballot processing and tabulation

Automated letter openers	\$293,000	\$293,000
Mail-sorting equipment	\$5,400,000	\$5,400,000
High-speed scanners	\$17,350,000	\$17,350,000
Processing and storage facilities	\$3,470,000	\$3,470,000
Processing staff (all elections)	\$9,424,800	\$9,424,800
Computers and technology	\$521,300	\$521,300

In-person voting

PPE and health (all elections)	\$1,630,980	\$1,630,980
Plexiglass sneeze guards (one-time expenditure)	\$1,439,100	\$1,439,100
Postelection cleaning services (all elections)	\$575,640	\$575,640
Single-use pens (all elections)	\$5,735,777	\$5,735,777
Poll worker pay increase (all elections)	\$5,373,750	\$5,373,750
Interpreter services (all elections)	\$9,450	\$9,450
Expanded curbside voting (all elections)	\$2,578,500	\$2,578,500

Public education

Informational mailers to all voters (all elections)	\$6,882,033	\$6,882,033
Media outreach (all elections)	\$2,149,533	\$2,149,553

Secure remote and off-site infrastructure

Remote-working devices, security protections, and maintenance	\$10,000,442	\$10,000,442
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TABLE 3

Estimated Costs for Missouri

	LOW-END ESTIMATE	HIGH-END ESTIMATE
State total	\$59,412,659	\$67,013,321
State costs	\$590,000	\$790,000
Local costs	\$58,822,659	\$66,223,321
Secure online systems		
Online absentee request systems (development and maintenance)	\$360,000	\$470,000
Ballot-tracking systems and voter notification	\$50,000	\$100,000
Online voter registration capacity and testing	\$150,000	\$170,000
Voter lookup tools and vulnerability testing	\$30,000	\$50,000
Mail ballot distribution		
Mailing absentee applications		
Absentee ballot applications (November)	\$2,385,217	\$2,385,217
Return postage (November)	\$901,578	\$1,712,998
Absentee ballot applications (other elections)	\$4,770,434	\$4,770,434
Return postage (other elections)	\$686,276	\$686,276
Mailing absentee ballots		
Absentee ballots (November)	\$4,439,896	\$8,435,803
Return postage (November)	\$755,834	\$2,872,169
Absentee ballots (other elections)	\$3,379,623	\$3,379,623
Return postage (other elections)	\$1,150,672	\$1,150,672
Drop boxes	\$1,113,000	\$1,590,000
Drop box maintenance	\$477,000	\$477,000

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Mail ballot processing and tabulation

Automated letter openers	\$102,000	\$102,000
Mail-sorting equipment	\$2,900,000	\$2,900,000
High-speed scanners	\$7,250,000	\$7,250,000
Processing and storage facilities	\$1,450,000	\$1,450,000
Processing staff (all elections)	\$5,359,200	\$5,359,200
Computers and technology	\$226,200	\$226,200

In-person voting

PPE and health (all elections)	\$1,908,420	\$1,908,420
Plexiglass sneeze guards (one-time expenditure)	\$1,122,600	\$1,122,600
Postelection cleaning services (all elections)	\$673,560	\$673,560
Single-use pens (all elections)	\$3,105,320	\$3,105,320
Poll worker pay increase (all elections)	\$3,315,400	\$3,315,400
Interpreter services (all elections)	\$0	\$0
Expanded curbside voting (all elections)	\$2,806,500	\$2,806,500

Public education

Informational mailers to all voters (all elections)	\$5,589,575	\$5,589,575
Media outreach (all elections)	\$1,745,863	\$1,745,863

Secure remote and off-site infrastructure

Remote-working devices, security protections, and maintenance	\$1,208,491	\$1,208,491
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TABLE 4

Estimated Costs for Ohio

	LOW-END ESTIMATE	HIGH-END ESTIMATE
State total	\$70,001,871	\$82,166,652
State costs	\$4,201,913	\$4,401,913
Local costs	\$65,799,959	\$77,764,740
Secure online systems		
Online absentee request systems (development and maintenance)	\$360,000	\$470,000
Ballot-tracking systems and voter notification	\$50,000	\$100,000
Online voter registration capacity and testing	\$130,000	\$150,000
Voter lookup tools and vulnerability testing	\$30,000	\$50,000
Mail ballot distribution		
Mailing absentee applications		
Absentee ballot applications (November)	\$4,730,203	\$4,730,203
Return postage (November)	\$1,888,595	\$3,588,330
Absentee ballot applications (other elections)		
Return postage (other elections)		
Mailing absentee ballots		
Absentee ballots (November)	\$6,711,603	\$12,752,047
Return postage (November)	\$1,026,644	\$3,901,246
Absentee ballots (other elections)	\$5,872,653	\$5,872,653
Return postage (other elections)	\$1,796,626	\$1,796,626
Drop boxes	\$3,150,000	\$4,500,000
Drop box maintenance	\$1,350,000	\$1,350,000

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Mail ballot processing and tabulation

Automated letter openers	\$88,000	\$88,000
Mail-sorting equipment	\$6,400,000	\$6,400,000
High-speed scanners	\$7,600,000	\$7,600,000
Processing and storage facilities	\$1,520,000	\$1,520,000
Processing staff (all elections)	\$4,636,800	\$4,636,800
Computers and technology	\$280,800	\$280,800

In-person voting

PPE and health (all elections)	\$1,513,680	\$1,513,680
Plexiglass sneeze guards (one-time expenditure)	\$2,671,200	\$2,671,200
Postelection cleaning services (all elections)	\$534,240	\$534,240
Single-use pens (all elections)	\$2,103,441	\$2,103,441
Poll worker pay increase (all elections)	\$3,886,700	\$3,886,700
Interpreter services (all elections)	\$0	\$0
Expanded curbside voting (all elections)	\$2,028,500	\$2,028,500

Public education

Informational mailers to all voters (all elections)	\$7,263,825	\$7,263,825
Media outreach (all elections)	\$1,134,401	\$1,134,401

Secure remote and off-site infrastructure

Remote-working devices, security protections, and maintenance	\$1,243,960	\$1,243,960
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Note: Estimates do not include costs associated with absentee applications and in-person voting for the April 28 primary election.

TABLE 5

Estimated Costs for Pennsylvania

	LOW-END ESTIMATE	HIGH-END ESTIMATE
State total	\$79,054,774	\$90,104,119
State costs	\$17,480,000	\$17,870,000
Local costs	\$61,574,774	\$72,234,119
Secure online systems		
Online absentee request systems (development and maintenance)	\$500,000	\$750,000
Ballot-tracking systems and voter notification	\$100,000	\$200,000
Online voter registration capacity and testing	\$150,000	\$170,000
Voter lookup tools and vulnerability testing	\$30,000	\$50,000
Mail ballot distribution		
Mailing absentee applications		
Absentee ballot applications (November)	\$3,300,000	\$3,300,000
Return postage (November)	\$4,700,000	\$4,700,000
Absentee ballot applications (other elections)		
Return postage (other elections)		
Mailing absentee ballots		
Absentee ballots (November)	\$6,802,425	\$12,924,608
Return postage (November)	\$1,077,201	\$4,093,363
Absentee ballots (other elections)	\$5,539,118	\$5,539,118
Return postage (other elections)	\$1,754,298	\$1,754,298
Drop boxes	\$3,549,000	\$5,070,000
Drop box maintenance	\$1,521,000	\$1,521,000

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Mail ballot processing and tabulation

Automated letter openers	\$64,000	\$64,000
Mail-sorting equipment	\$5,100,000	\$5,100,000
High-speed scanners	\$5,900,000	\$5,900,000
Processing and storage facilities	\$1,180,000	\$1,180,000
Processing staff (all elections)	\$3,616,200	\$3,616,200
Computers and technology	\$219,700	\$219,700

In-person voting

PPE and health (all elections)	\$2,400,000	\$2,400,000
Plexiglass sneeze guards (one-time expenditure)	\$2,746,800	\$2,746,800
Postelection cleaning services (all elections)	\$1,098,720	\$1,098,720
Single-use pens (all elections)	\$4,444,606	\$4,444,606
Poll worker pay increase (all elections)	\$6,842,700	\$6,842,700
Interpreter services (all elections)	\$2,157,750	\$2,157,750
Expanded curbside voting (all elections)	\$6,865,500	\$6,865,500

Public education

Informational mailers to all voters (all elections)	\$2,600,000	\$2,600,000
Media outreach (all elections)	\$2,500,000	\$2,500,000

Secure remote and off-site infrastructure

Remote-working devices, security protections, and maintenance	\$1,095,756	\$1,095,756
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Note: Total and state costs include implementing a remote ballot marking tool at a cost of \$1.2 million.

Appendix: Methodology

Our estimates of the expenses state and local jurisdictions confront come from (1) interviews with election officials in each of these states about the costs they have already incurred; (2) interviews with vendors and service providers about the costs of other needed products and services that election officials identified, as well as publicly available information about these costs; and (3) projections of voter behavior, based on prior history, as well as changes we have already seen in recent elections. Below are the assumptions and sources of our cost estimates.

Securing Online Systems

Costs included: online absentee ballot request systems, ballot-tracking systems, and added capacity, vulnerability testing, and maintenance for all online election systems.

Based on interviews with state election officials, we determined whether each state currently has all of the necessary systems for online absentee ballot requests and ballot tracking. When unable to obtain confirmation from state election officials, we used publicly available information about state systems to make our assumptions.²²⁶ Even where these systems are already in place in some form, additional resources for vulnerability testing will be needed given the importance of these remote tools if in-person interaction becomes difficult or impossible. Existing systems will also need upgrades to meet the increased demand for mail voting, and states will require additional server space and IT support. Cost estimates were based on interviews with election officials and information from technology vendors.

We estimate that secure online absentee ballot request systems will cost each state \$300,000–\$350,000 to develop and another \$60,000–\$120,000 to maintain.²²⁷ Of the states that we analyzed in this report, only Pennsylvania has an online absentee ballot request system already.²²⁸ However, Pennsylvania officials plan to spend \$500,000–\$750,000 on needed upgrades and enhancements to this system before November.²²⁹

For Georgia and Pennsylvania, we estimate that it will cost \$100,000–\$200,000 to purchase and improve absentee ballot tracking systems that notify voters when their ballot has cleared each step in the delivery and counting process.²³⁰ Because Michigan, Missouri, and Ohio have more extensive ballot-tracking systems in place already,²³¹ we estimate that they will each need only \$50,000–\$100,000 to add additional notification features and prepare these systems for increased use.

Online voter registration (OVR) capacity and vulnerability testing costs generally depend on whether the state’s voter registration database is a “top-down” or “bottom-up” system. Georgia, Michigan, Missouri, and Pennsylvania all have “top-down” systems and Ohio has

a “bottom-up” system.²³² We estimate that capacity and vulnerability testing will cost \$150,000–\$170,000 for each “top-down” state and \$130,000–\$150,000 for each “bottom-up” state.²³³

Finally, we estimate that vulnerability testing for voter lookup tools — including for registration status and polling place location — will cost \$30,000–\$50,000 for each state.²³⁴

Mail Ballot Distribution

Costs included: mailing absentee applications and absentee ballots (including materials, envelopes, postage, and staffing) and additional drop boxes for ballot return.

Mailing Absentee Applications We estimated how much it would cost each state to mail an absentee ballot application with prepaid return postage to every voter for each election. For the cost of return postage, we assumed that election officials would pay only for applications actually returned by mail.

Where available, we used 2020 voter registration statistics for each state to determine the number of voters that would receive an absentee application. In Ohio, where we could not find publicly available voter registration numbers for 2020, we used 2018 voter registration numbers from the Election Administration and Voting Survey (EAVS).²³⁵ Because Georgia has already committed to sending absentee applications to all active registered voters for the primary election, we used active registered voters as the baseline for this state rather than total registered voters.

For most states, we assumed that the number of applications returned by mail would be equal to the number of mail ballots cast in each election. We assumed that turnout in each election would be consistent with corresponding elections in 2016. For Georgia, we assumed turnout would be 32 percent in the primary, 10 percent in the primary runoff, 70 percent in the general, 22 percent in the state runoff, and 40 percent in the federal runoff. For Michigan, we assumed turnout would be 20 percent in the primary and 65 percent in the general. For Missouri, we assumed turnout would be 10 percent in the

municipal, 24 percent in the primary, and 67 percent in the general. For Ohio, we assumed turnout would be 42 percent in the primary and 72 percent in the general. For Pennsylvania we assumed turnout would be 38 percent in the primary and 70 percent in the general. We also assumed that mail ballots would make up 75 percent of votes cast in primary, runoff, and local elections, and 50–95 percent of votes cast in the November general election. This range reflects how much uncertainty there is regarding what the public health threat will be this fall.

Based on interviews with election officials, we estimated that the cost of printing and sending out absentee ballot requests ranges from \$0.45 to \$0.60 per voter.²³⁶ The cost of prepaid return postage was estimated at \$0.65 per voter, which includes an estimate of the processing and handling fee charged by USPS.²³⁷ Where states have already committed to certain practices or funds associated with mailing absentee applications or ballots for an upcoming election, we used those available cost estimates. For Pennsylvania, we used an \$8 million estimate for mailing applications with return postage that was provided by state officials.²³⁸

Mailing Absentee Ballots For the cost of mailing absentee ballots, we first set projected baselines for the amount of resources each state would need in an election under “normal” circumstances — that is, with no public health crisis. We determined the number of absentee ballots cast as a percentage of registered voters using 2018 EAVS data and used this to determine the number of absentee ballots that would be cast in 2020 with similar absentee ballot use patterns. For Pennsylvania, which recently adopted no-excuse absentee voting, we used a 10 percent absentee vote rate. We then subtracted this number from the total number of registered voters to determine the supply of additional absentee ballot materials that would be needed to have enough for all voters.²³⁹ These numbers were then multiplied by absentee ballot material costs per voter and reduced by expected turnout, as explained below.

We also set projected baselines for the number of paper ballots that would be printed under normal circumstances. These baselines were set according to the number of ballots that would be printed for absentee voting (using the same methodology as described above for absentee ballot materials) and for in-person voting. To determine the number of ballots that would be printed for in-person voting, we used the number of voters in jurisdictions that use hand-marked paper ballots as their primary voting system²⁴⁰ and the minimum number of ballots that these jurisdictions must print under state law.²⁴¹ We then subtracted this number from the total number of registered voters to determine the supply of additional absentee ballot materials that would be needed to have enough for all voters.²⁴² These numbers were then

multiplied by absentee ballot costs per voter and reduced by expected turnout, as explained below.

We then estimated the costs associated with the measures, equipment, and other accommodations state and local officials will need to best manage the expected significant increase in mail voting due to Covid-19. We conducted interviews with local election officials to obtain estimates for many of the discrete costs we relied on to create these estimates. When necessary and possible, we used averages drawn from multiple election officials.

Based on interviews from election officials and publicly available sources, we estimate the cost of materials for absentee ballots (ballots, envelopes, instructions, etc.) will range from \$1.25 to \$1.89 per voter.²⁴³ To estimate the additional staffing costs needed to address the spike in absentee voting, we assumed that jurisdictions with fewer than 25,000 voters would need one additional temporary worker (\$1,200) and jurisdictions with 25,000 or more voters would need three additional temporary workers (\$3,600) for a period of approximately two weeks to assist with assembling absentee ballot packets.

For the cost of mailing absentee ballots, we assumed that turnout for each election would be consistent with recent corresponding elections. For Georgia, we assumed turnout would be 32 percent in the primary, 10 percent in the primary runoff, 70 percent in the general, 22 percent in the state runoff, and 40 percent in the federal runoff. For Michigan, we assumed turnout would be 20 percent in the primary and 65 percent in the general. For Missouri, we assumed turnout would be 10 percent in the municipal, 24 percent in the primary, and 67 percent in the general. For Ohio, we assumed turnout would be 42 percent in the primary and 72 percent in the general. For Pennsylvania we assumed turnout would be 38 percent in the primary and 70 percent in the general.

We also assumed that mail ballots would make up 75 percent of votes cast in primary, runoff, and local elections, and 50–95 percent of votes cast in the November general election. This range reflects how much uncertainty there is regarding what the public health threat will be this fall.

Election officials we interviewed emphasized that postage costs vary based on several variables, including the length of the ballot. For these estimates, we assume that postage costs for sending absentee ballots ranged from \$1.15 to \$2.38 per voter for each ballot sent, and \$0.80 to \$1.40 per voter for each ballot returned.²⁴⁴ When estimating the cost of return postage for the November general election, our lower-range estimates assume that half of voters who vote by mail return their ballot using a drop box. Specifically, we assumed that 50–95 percent of the total number of estimated voters will cast an absentee ballot, but to determine our estimated postage costs for the November, we assumed that only half of this popula-

tion, or as few as 25 percent, will return their ballot by mail.

Ballot Drop Boxes For ballot drop boxes, we estimate that each election jurisdiction will need one drop box for every 15,000 voters.²⁴⁵ We assume that the county (or jurisdiction) office can operate as one secure drop-off site for each of these jurisdictions at minimal cost, and determined the number of drop boxes that would be needed in addition to the county office to meet the ratio of one drop-off site per 15,000 voters. Drop boxes were estimated at \$7,000–\$10,000 to purchase and install, plus another \$3,000 to maintain. These estimates are taken from costs associated with drop boxes in Washington State, where their use is widespread.²⁴⁶ While some drop boxes can be found at lower costs, we chose this price point because these drop boxes offer structural protection against physical damage, fires, ballot theft, and tampering.²⁴⁷

Mail Ballot Processing and Tabulation

Costs included: automated letter openers, mail-sorting equipment, high-speed scanners, additional processing and storage facilities, and additional processing staff.

Local jurisdictions will need more equipment, space, and staff to handle a substantial increase in absentee ballot use. We determined the estimated cost for each jurisdiction based on the number of voters.²⁴⁸

We estimate that automated letter openers will cost \$1,000 per unit²⁴⁹ and that every jurisdiction with more than 5,000 voters will need one. We estimate that mail-sorting equipment will cost \$100,000 per jurisdiction and will be needed by every jurisdiction with more than 25,000 voters.²⁵⁰ We estimate that high-speed scanners will cost \$50,000 for every jurisdiction with 5,000 to 25,000 voters and \$100,000 for every jurisdiction with more than 25,000 voters.²⁵¹ We estimate that expanded facilities will cost \$10,000²⁵² for every jurisdiction with 5,000 to 25,000 voters and \$20,000²⁵³ for every jurisdiction with more than 25,000 voters. We estimate that additional processing staff will cost \$16,800²⁵⁴ for every jurisdiction with 5,000 to 25,000 voters and \$42,000²⁵⁵ for every jurisdiction with more than 25,000 voters. Finally, we estimate that additional computers for processing will cost \$1,300 for every jurisdiction with 5,000 to 25,000 voters and \$3,900 for every jurisdiction with more than 25,000 voters.

Even in jurisdictions that have some of this technology, such as high-speed scanners, in place, election officials will likely need to purchase additional units or units that can handle higher capacity, given that each of these states has had relatively low rates of mail voting in the past.

In-Person Voting

Costs included: PPE for poll workers, cleaning supplies, plexiglass sneeze guards, postelection cleaning services, single-use pens, poll worker pay increases, remote interpreter services, and expanded curbside voting.

We determined cost estimates for a set of polling place cleaning and health supplies recommended by health professionals, and estimated costs for each state based on their numbers of precincts and poll workers in recent elections.²⁵⁶ Based on interviews with election officials, information from vendors, and publicly available information, we estimate that personal protective equipment (PPE) and cleaning supplies would cost an additional \$170 per precinct, that plexiglass sneeze guards would cost an additional \$300 per precinct, and that postelection cleaning services would cost an additional \$60 per precinct. The cost of PPE and cleaning supplies is set to the amount that Pennsylvania officials will spend per “kit” that includes various PPE supplies and other cleaning products,²⁵⁷ and the estimated costs of plexiglass sneeze guards²⁵⁸ and postelection cleaning services²⁵⁹ were determined from a sample of prices from vendors of these services and equipment as well as guidance from health experts. We estimate the cost of single-use pens for all voters using hand-marked paper ballots to cast their vote at a rate of \$0.50 each.²⁶⁰ This estimate was also determined based on a sample of prices from election supply vendors. We used the estimated number of voters in jurisdictions that use hand-marked paper ballots as the baseline for single-use pen estimates.²⁶¹

For the cost of PPE and cleaning supplies in Pennsylvania, we use a \$1.2 million per election estimate that was provided to us by state officials.²⁶²

We assumed a \$100 pay increase for every poll worker in order to help with recruitment. We relied on 2018 EAVS data to determine the estimated number of poll workers in each state.²⁶³ Election officials we interviewed expressed broad agreement that poll workers are currently underpaid, that pay increases would be helpful for recruitment, and that \$100 pay increases would reasonably further these efforts.

We also determined the cost of providing language interpretation services by phone to every precinct covered under section 203 of the Voting Rights Act. We estimated that these services would cost \$700 per precinct, based on information from vendors. This estimate was determined by looking at a sample of rates from professional interpreter services.²⁶⁴

Finally, we estimated costs associated with expanded curbside voting at an additional \$500 per polling location, which would cover two additional poll workers and needed materials.²⁶⁵ This estimate takes into account best practice, which requires a bipartisan team of two poll workers to meet voters outside of polling locations for

curbside voting. While poll worker pay varies considerably from state to state and sometimes even from county to county, \$200 per poll worker represents an approximate nationwide average when taking into account desired pay increases.²⁶⁶

Public Education

Costs included: informational mailers to all voters and media outreach.

We estimate the costs of sending every registered voter an informational mailer for each election at a rate of \$0.45 per voter,²⁶⁷ and the costs of general media outreach for the election cycle at a rate of \$0.14 per voter. The costs were determined from interviews with election officials, as well as comparable outreach efforts, such as for the 2020 census.²⁶⁸

For Pennsylvania, we used total cost estimates for informational mailers and media outreach that were provided to us by state officials.²⁶⁹

We recognize that voter education and outreach costs used for the purpose of this analysis are conservative estimates.²⁷⁰ Election procedures are likely to undergo

substantial changes over the year due to the evolving and unprecedented public health crisis. Given the low rates of absentee use in these states, many voters will be voting by mail for the first time. We fully support a robust education campaign to ensure that all voters understand how to safely cast their vote in 2020.

Secure Remote and Offsite Infrastructure

Costs included: computers, endpoint protection, multifactor authentication, VPN, and tech maintenance.

These estimates include the costs of setting up and maintaining a virtual private network (VPN) in each election jurisdiction, as well as the cost of providing secure devices with endpoint protection and multifactor authentication to access state election networks.

We estimate that these purchases and upgrades will cost \$4,733 for jurisdictions with fewer than 3,500 voters, \$8,870 for jurisdictions with 3,500 to 100,000 voters, and \$32,040 for jurisdictions with more than 100,000 voters. Costs were determined based on interviews with state cybersecurity staff and technology vendors.²⁷¹

Endnotes

- 1** There have been several instances of poll workers testing positive for Covid-19 soon after elections. See e.g., John Keilman, “After Chicago poll worker dies from COVID-19 and others test positive, city warns voters they might have been exposed to virus at polling places,” *Chicago Tribune*, Apr. 13, <https://www.chicagotribune.com/coronavirus/ct-chicago-poll-worker-dies-covid-cornavirus-20200413-rz-55vqpo6jfbxn7e4i6vkj6n2y-story.html>; Gary Fineout, “2 Florida primary poll workers test positive for coronavirus,” *Politico*, Mar. 26, 2020, <https://www.politico.com/states/florida/story/2020/03/26/2-florida-primary-poll-workers-test-positive-for-coronavirus-1269261>.
- 2** Moreover, some states are concerned that they will not be able to access the federal funds because of constraints put on the money. National Association of Secretaries of State, “NASS President Paul Pate & President-elect Maggie Toulouse Oliver Open Letter to Congress and American Voters on COVID-19 Election Preparations,” Mar. 25, 2020, <https://www.nass.org/node/1824>.
- 3** Stateline Article, “‘We Have No Money’: Coronavirus Slams State Taxes,” *Pew Charitable Trusts*, Apr. 2, 2020, <https://www.pewtrusts.org/en/research-and-analysis/blogs/stateline/2020/04/02/we-have-no-money-coronavirus-slams-state-taxes> (“Few state economists and budget analysts have calculated the fiscal impact of the pandemic so far, and it’s hard at this early stage to say how big the drop off in tax collections will be, said Brian Sigriz, director of state fiscal studies for the National Association of State Budget Officers, a Washington, D.C.-based membership organization. But the early estimates don’t look good, he said. ‘It looks like the drop-off that states could be facing this time could be more severe than the Great Recession.’”).
- 4** See, e.g., Keilman, “After Chicago poll worker dies from COVID-19 and others test positive, city warns voters they might have been exposed to virus at polling places”; Fineout, “2 Florida primary poll workers test positive for coronavirus.”
- 5** All totals and subtotals listed in state profiles reflect cost estimates in the state estimate chart. Because of rounding, estimates listed in state profiles may not add up to the subtotals listed in state profiles.
- 6** Georgia Secretary of State, “Active Voters by Race and Gender as of April 1, 2020 (By County with Statewide Totals),” accessed Apr. 16, 2020, https://sos.ga.gov/index.php/Elections/voter_registration_statistics.
- 7** U.S. Election Assistance Commission, “2020 Cares Act Grants,” accessed Apr. 16, 2020, <https://www.eac.gov/payments-and-grants/2020-cares-act-grants>.
- 8** Georgia Secretary of State, “Raffensperger Announces Postponement of Primary Election Until June 9,” Apr. 9, 2020, https://sos.ga.gov/index.php/elections/raffensperger_announces_postponement_of_primary_election_until_june_9.
- 9** U.S. Election Assistance Commission, *Election Administration And Voting Survey 2018 Comprehensive Report: A Report to the 116th Congress*, June 2019, 29 and 55, https://www.eac.gov/sites/default/files/eac_assets/1/6/2018_EAVS_Report.pdf; see also Mark Niesse, “Voters mailed absentee ballot request forms for May 19 Georgia primary,” *Atlanta Journal Constitution*, Apr. 10, 2020, <https://www.ajc.com/news/state--regional-govt--politics/voters-mailed-absentee-ballot-request-forms-for-may-georgia-primary/hcOFkOo85uVCALb-WvQUo9L>.
- 10** Georgia Secretary of State, “Raffensperger Takes Unprecedented Steps to Protect Safety and Voter Integrity in Georgia,” Mar. 24, 2020, https://sos.ga.gov/index.php/elections/raffensperger_takes_unprecedented_steps_to_protect_safety_and_voter_integrity_in_georgia.
- 11** Janine Eveler (Director of Elections, Cobb County, Georgia), interview by Brennan Center for Justice, Apr. 14, 2020; Deidre Holden (Elections Supervisor, Paulding County, Georgia), interview by Brennan Center for Justice, Apr. 14, 2020; Joseph Kirk (Elections Supervisor, Bartow County, Georgia), interview by Brennan Center for Justice, Apr. 2, 2020.
- 12** Georgia Secretary of State, “Raffensperger Takes Unprecedented Steps to Protect Safety and Voter Integrity in Georgia”; Niesse, “Voters mailed absentee ballot request forms for May 19 Georgia primary.”
- 13** Janine Eveler (Director of Elections, Cobb County, Georgia), interview by Brennan Center for Justice, Apr. 14, 2020; Deidre Holden (Elections Supervisor, Paulding County, Georgia), interview by Brennan Center for Justice, Apr. 14, 2020; Joseph Kirk (Elections Supervisor, Bartow County, Georgia), interview by Brennan Center for Justice, Apr. 2, 2020.
- 14** Janine Eveler (Director of Elections, Cobb County, Georgia), interview by Brennan Center for Justice, Apr. 14, 2020; Deidre Holden (Elections Supervisor, Paulding County, Georgia), interview by Brennan Center for Justice, Apr. 14, 2020; Joseph Kirk (Elections Supervisor, Bartow County, Georgia), interview by Brennan Center for Justice, Apr. 2, 2020.
- 15** Mark Niesse, “Elections employee dies of COVID-19 ahead of Georgia primary,” *Atlanta Journal-Constitution*, Apr. 23, 2020, <https://www.ajc.com/news/state--regional-govt--politics/elections-employee-dies-covid-ahead-georgia-primary/tCXDJ2abT6QTqu6r1qEv8L>.
- 16** Camden County, Georgia, Alert Center, “County Office Buildings Temporarily Closed,” Mar. 20, 2020, <https://www.co.camden.ga.us/AlertCenter.aspx?AID=County-Office-Buildings-Temporarily-Clos-101>.
- 17** Georgia Secretary of State, “2020 State Elections and Voter Registration Calendar,” accessed Apr. 13, 2020, https://sos.ga.gov/admin/uploads/2020_Short_Calendar.pdf; Isaac Sabatei, “Election 2020: Inside Georgia’s Senate Races,” *Atlanta Journal Constitution*, Apr. 9, 2020, <https://www.ajc.com/news/state--regional-govt--politics/election-2020-inside-georgia-senate-races/O0Ik28vHPPHaN-JglEAznDL> (noting “7 Democrats qualified to run” in the Democratic primary for U.S. Senate); Jessica Taylor, “Georgia Senate Special Election Moves From Likely to Lean Republican,” *Cook Political Report*, Jan. 31, 2020, <https://cookpolitical.com/analysis/senate/georgia-senate/georgia-senate-special-election-moves-likely-lean-republican> (“If no candidate receives a majority (which seems all but certain), the top two finishers will advance to a runoff on January 5, 2021.”).
- 18** Georgia election officials have signed a letter in support of additional federal elections funding: Deidre B. Holden (Supervisor of Elections and Registration, Paulding County), Joseph Kirk (Director of Elections, Bartow County). See Brennan Center for Justice, “Election Officials Call for More Election Funding in Next Stimulus Bill,” last updated Apr. 16, 2020, <https://www.brennancenter.org/our-work/research-reports/election-officials-call-more-election-funding-next-stimulus-bill>.
- 19** Niesse, “Voters mailed absentee ballot request forms for May 19 Georgia primary.”
- 20** Niesse, “Voters mailed absentee ballot request forms for May 19 Georgia primary”; Kevin Rayburn (Deputy Elections Director and Deputy General Counsel, Georgia Secretary of State), Gabriel Sterling (Voting System Implementation Manager, Georgia Secretary of State), Chris Harvey (Elections Director, Georgia Secretary of State), interview with Brennan Center for Justice, Apr. 17, 2020.
- 21** See attached state estimate chart and methodology section for detailed calculations.

- 22** Kevin Rayburn (Deputy Elections Director and Deputy General Counsel, Georgia Secretary of State), Gabriel Sterling (Voting System Implementation Manager, Georgia Secretary of State), Chris Harvey (Elections Director, Georgia Secretary of State), interview with Brennan Center for Justice, Apr. 17, 2020.
- 23** Kevin Rayburn (Deputy Elections Director and Deputy General Counsel, Georgia Secretary of State), Gabriel Sterling (Voting System Implementation Manager, Georgia Secretary of State), Chris Harvey (Elections Director, Georgia Secretary of State), interview with Brennan Center for Justice, Apr. 17, 2020.
- 24** Kevin Rayburn (Deputy Elections Director and Deputy General Counsel, Georgia Secretary of State), Gabriel Sterling (Voting System Implementation Manager, Georgia Secretary of State), Chris Harvey (Elections Director, Georgia Secretary of State), interview with Brennan Center for Justice, Apr. 17, 2020.
- 25** See attached state estimate chart and methodology section for detailed calculations.
- 26** Brad Raffensperger (Georgia Secretary of State), Jordan Fuchs (Deputy Secretary of State, Georgia Secretary of State), Ryan Germany (General Counsel, Georgia Secretary of State), Kevin Hamilton (Deputy Elections Director, Georgia Secretary of State), Kelvin Williams (Elections Coordinator, Gwinnett County), Joseph Kirk (Elections Supervisor, Bartow County), Deb Cox (Supervisor of Elections, Lowndes County), Georgia Election Cybersecurity Roundtable, Georgia Secretary of State, Feb. 19, 2020.
- 27** 2005 Georgia Laws Act 53 (H.B. 244).
- 28** See U.S. Election Assistance Commission, "2016 EAVS Data Brief: Georgia," accessed Apr. 13, 2020, https://www.eac.gov/sites/default/files/eac_assets/1/6/Georgia_-_EAVS_2016_Data_Brief_-_508.pdf; U.S. Election Assistance Commission, "2018 EAVS Data Brief: Georgia," accessed Apr. 13, 2020, https://www.eac.gov/sites/default/files/eac_assets/1/6/EAVS_2018_Data_Brief_GA.pdf.
- 29** Mark Niese, "Georgia elections chief launches effort against mail-in voting fraud," *Atlanta Journal Constitution*, Apr. 6, 2020, <https://www.ajc.com/news/state--regional-govt--politics/georgia-elections-chief-launches-effort-against-mail-voting-fraud/uKcFoPb-bLnFCOA4nXihaiL>.
- 30** Kevin Rayburn (Deputy Elections Director and Deputy General Counsel, Georgia Secretary of State), Gabriel Sterling (Voting System Implementation Manager, Georgia Secretary of State), Chris Harvey (Elections Director, Georgia Secretary of State), interview with Brennan Center for Justice, Apr. 17, 2020.
- 31** Kevin Rayburn (Deputy Elections Director and Deputy General Counsel, Georgia Secretary of State), Gabriel Sterling (Voting System Implementation Manager, Georgia Secretary of State), Chris Harvey (Elections Director, Georgia Secretary of State), interview with Brennan Center for Justice, Apr. 17, 2020.
- 32** See attached state estimate chart and methodology section for detailed calculations.
- 33** See attached state estimate chart and methodology section for detailed calculations.
- 34** Around 95 percent of overall turnout was in person. See "2016 EAVS Data Brief: Georgia"; "2018 EAVS Data Brief: Georgia".
- 35** Janine Eveler (Director of Elections, Cobb County, Georgia), interview by Brennan Center for Justice, Apr. 14, 2020; Deidre Holden (Elections Supervisor, Paulding County, Georgia), interview by Brennan Center for Justice, Apr. 14, 2020; Joseph Kirk (Elections Supervisor, Bartow County, Georgia), interview by Brennan Center for Justice, Apr. 2, 2020.
- 36** Paul Pate (Iowa Secretary of State), "Paul Pate on States Considering Voting Changes Amid Coronavirus Pandemic," interview by Steve Scully, *Washington Journal*, C-SPAN, Apr. 5, 2020, <https://www.c-span.org/video/?470912-3/washington-journal-paul-pate-discusses-potential-voting-amid-coronavirus-pandemic>.
- 37** See attached state estimate chart and methodology section for detailed calculations.
- 38** Janine Eveler (Director of Elections, Cobb County, Georgia), interview by Brennan Center for Justice, Apr. 14, 2020; Deidre Holden (Elections Supervisor, Paulding County, Georgia), interview by Brennan Center for Justice, Apr. 14, 2020; Joseph Kirk (Elections Supervisor, Bartow County, Georgia), interview by Brennan Center for Justice, Apr. 2, 2020.
- 39** Although USPS has agreed to deliver voted absentee ballots to election officials if the voter failed to provide sufficient postage, "the Postal Service didn't answer questions about whether it would deliver absentee request forms without postage." See Mark Niese, "Mailed ballots in Georgia will be counted, even without a stamp," *Atlanta Journal-Constitution*, Apr. 14, 2020, <https://www.ajc.com/news/state--regional-govt--politics/mailed-ballots-georgia-will-counted-even-without-stamp/4P04UcxpZuJ1jZVXgDbixO>.
- 40** Joseph Kirk (Elections Supervisor, Bartow County, Georgia), interview by Brennan Center for Justice, Apr. 2, 2020.
- 41** Joseph Kirk (Elections Supervisor, Bartow County, Georgia), interview by Brennan Center for Justice, Apr. 2, 2020.
- 42** Deidre Holden (Elections Supervisor, Paulding County, Georgia), interview by Brennan Center for Justice, Apr. 14, 2020.
- 43** Mark Niese, "Georgia absentee ballots changed to remove inner envelope," *Atlanta Journal-Constitution*, Apr. 27, 2020, <https://www.ajc.com/news/state--regional-govt--politics/georgia-absentee-ballots-changed-remove-inner-envelope/5VCLguuvNOR2qb4z-TctOLK/>.
- 44** Janine Eveler (Director of Elections, Cobb County, Georgia), interview by Brennan Center for Justice, Apr. 14, 2020; Deidre Holden (Elections Supervisor, Paulding County, Georgia), interview by Brennan Center for Justice, Apr. 14, 2020; Joseph Kirk (Elections Supervisor, Bartow County, Georgia), interview by Brennan Center for Justice, Apr. 2, 2020.
- 45** Although voters are asked to pay postage to return their absentee ballot, USPS "mail carriers are told to deliver ballot envelopes labeled as 'official election mail'" even if they don't have sufficient postage. USPS will subsequently bill county officials for the postage costs. See Niese, "Mailed ballots in Georgia will be counted, even without a stamp."
- 46** Janine Eveler (Director of Elections, Cobb County, Georgia), interview by Brennan Center for Justice, Apr. 14, 2020; Deidre Holden (Elections Supervisor, Paulding County, Georgia), interview by Brennan Center for Justice, Apr. 14, 2020; Joseph Kirk (Elections Supervisor, Bartow County, Georgia), interview by Brennan Center for Justice, Apr. 2, 2020.
- 47** Niese, "Mailed ballots in Georgia will be counted, even without a stamp."
- 48** See attached state estimate chart and methodology section for detailed calculations.
- 49** Ten states provide ballot drop boxes in some or all counties: Arizona, California, Colorado, Kansas, Montana, Nebraska, New Mexico, Oregon, Utah, and Washington. See National Conference of State Legislatures, "Voting Outside the Polling Place: Absentee, All-Mail and other Voting at Home Options," last updated Apr. 14, 2020, <https://www.ncsl.org/research/elections-and-campaigns/absentee-and-early-voting.aspx#provide>.
- 50** Mark Niese, "Ballot drop boxes approved for Georgia voters during coronavirus," *Atlanta Journal-Constitution*, Apr. 15, 2020, <https://www.ajc.com/news/state--regional-govt--politics/ballot-drop-boxes-approved-for-georgia-voters-during-coronavirus/4Bir3Ymx1zL0ZOGsXMazEQ>.
- 51** Judd Choate (Director of Elections, Colorado Department of State), interview by Brennan Center for Justice, Mar. 31, 2020; see also Charles Stewart III, *2016 Survey of the Performance of American Elections: Final Report*, Massachusetts Institute of Technology, 2016.

- <https://dataverse.harvard.edu/file.xhtml?persistentId=doi:10.7910/DVN/Y38VIQ/2NJDL9&version=1.0> (according to 2016 survey data, 73 percent of Colorado voters returned their ballots to some physical location, such as a drop box or local election office; moreover, according to Choate, Colorado has over 400 drop boxes statewide and has dedicated another \$125,000 in 2018 Help America Vote Act funds to more boxes).
- 52** Janine Eveler (Director of Elections, Cobb County, Georgia), interview by Brennan Center for Justice, Apr. 14, 2020; Deidre Holden (Elections Supervisor, Paulding County, Georgia), interview by Brennan Center for Justice, Apr. 14, 2020; Joseph Kirk (Elections Supervisor, Bartow County, Georgia), interview by Brennan Center for Justice, Apr. 2, 2020.
- 53** See attached state estimate chart and methodology section for detailed calculations.
- 54** Janine Eveler (Director of Elections, Cobb County, Georgia), interview by Brennan Center for Justice, Apr. 14, 2020; Deidre Holden (Elections Supervisor, Paulding County, Georgia), interview by Brennan Center for Justice, Apr. 14, 2020; Joseph Kirk (Elections Supervisor, Bartow County, Georgia), interview by Brennan Center for Justice, Apr. 2, 2020.
- 55** See attached state estimate chart and methodology section for detailed calculations.
- 56** Cybersecurity and Infrastructure Security Agency, "UK and US Security Agencies Issue Covid-19 Cyber Threat Update," Apr. 8, 2020, <https://www.cisa.gov/news/2020/04/08/uk-and-us-security-agencies-issue-covid-19-cyber-threat-update>.
- 57** See attached state estimate chart and methodology section for detailed calculations.
- 58** See, e.g., Georgia Secretary of State, "Raffensperger Takes Unprecedented Steps to Protect Safety and Voter Integrity in Georgia."
- 59** Janine Eveler (Director of Elections, Cobb County, Georgia), interview by Brennan Center for Justice, Apr. 14, 2020; Deidre Holden (Elections Supervisor, Paulding County, Georgia), interview by Brennan Center for Justice, Apr. 14, 2020; Joseph Kirk (Elections Supervisor, Bartow County, Georgia), interview by Brennan Center for Justice, Apr. 2, 2020.
- 60** Janine Eveler (Director of Elections, Cobb County, Georgia), interview by Brennan Center for Justice, Apr. 14, 2020; Deidre Holden (Elections Supervisor, Paulding County, Georgia), interview by Brennan Center for Justice, Apr. 14, 2020; Joseph Kirk (Elections Supervisor, Bartow County, Georgia), interview by Brennan Center for Justice, Apr. 2, 2020.
- 61** Alabama Secretary of State, "Congress Appropriates \$400 Million to Prepare States for Election Day amid Coronavirus Concerns," Mar. 30, 2020, <https://www.sos.alabama.gov/newsroom/congress-appropriates-400-million-prepare-states-election-day-amid-coronavirus-concerns>; City of Madison Clerk's Office, "Twelve Things for Voters to Know on Election Day," Apr. 5, 2020, <https://www.cityofmadison.com/news/twelve-things-for-voters-to-know-on-election-day>.
- 62** See attached state estimate chart and methodology section for detailed calculations.
- 63** Janine Eveler (Director of Elections, Cobb County, Georgia), interview by Brennan Center for Justice, Apr. 14, 2020; Deidre Holden (Elections Supervisor, Paulding County, Georgia), interview by Brennan Center for Justice, Apr. 14, 2020; Joseph Kirk (Elections Supervisor, Bartow County, Georgia), interview by Brennan Center for Justice, Apr. 2, 2020.
- 64** See attached state estimate chart and methodology section for detailed calculations.
- 65** "Registered Voter Count by County," Michigan Voter Information Center, Department of State, accessed Apr. 13, 2020, <https://mivc.sos.state.mi.us/VoterCount>.
- 66** U.S. Election Assistance Commission, "2020 Cares Act Grants," <https://www.eac.gov/payments-and-grants/2020-cares-act-grants>.
- 67** Eric Lloyd, "Breaking: Gov. Whitmer Issues Stay-at-Home Order," *9&10 News*, Mar. 23, 2020, <https://www.9and10news.com/2020/03/23/breaking-gov-whitmer-issues-stay-at-home-order>.
- 68** "Gov. Whitmer extends Michigan's stay-at-home order until May 1," WXYZ, Apr. 13, 2020, <https://www.wxyz.com/news/coronavirus/gov-whitmer-extends-stay-at-home-order-until-may-1>.
- 69** Office of Secretary of State Jocelyn Benson, "Secretary of State to mail absent voter ballot applications to all May 5 voters," Mar. 23, 2020, <https://www.michigan.gov/sos/0,4670,7-127-93094-522761--00.html>.
- 70** Gus Burns, "Michigan sending absentee ballot applications to all May 5 election voters because of coronavirus outbreak," *MLive*, Mar. 23, 2020, <https://www.mlive.com/public-interest/2020/03/michigan-sending-absentee-ballots-to-all-voters-for-may-5-election-because-of-coronavirus-outbreak.html>.
- 71** Office of Secretary of State Jocelyn Benson, "Secretary of State to mail absent voter ballot applications to all May 5 voters"; see also Gus Burns, "Michigan sending absentee ballot applications to all May 5 election voters because of coronavirus outbreak," *MLive*, Mar. 23, 2020, <https://www.mlive.com/public-interest/2020/03/michigan-sending-absentee-ballots-to-all-voters-for-may-5-election-because-of-coronavirus-outbreak.html> ("Voting by mail protects public health, is highly accessible, and was clearly mandated by Michiganders when they overwhelmingly voted in 2018 to amend our state constitution and afford everyone this right.").
- 72** See, e.g., Katie Galoto, "1.1 million Illinois voters have cast ballots so far, surpassing 2014 early vote counts," *Chicago Tribune*, Nov. 5, 2018, <https://www.chicagotribune.com/politics/elections/ct-met-illinois-early-voting-20181018-story.html> ("There was a slight increase in the rate of people voting early in 2014 compared with 2010. This could be a product of the state's efforts to make voting more convenient. . . . The state also introduced 'no-excuse' mail voting in 2010 to give residents the chance to vote from the comfort of their own home without specifying a reason for being absent from the polls.").
- 73** 14 percent of registered voters in Michigan voted by mail in 2018. See U.S. Election Assistance Commission, *Election Administration And Voting Survey 2018 Comprehensive Report: A Report to the 116th Congress*, June 2019, 29 and 55, https://www.eac.gov/sites/default/files/eac_assets/1/6/2018_EAVS_Report.pdf.
- 74** Ronald Brownstein, "The Most Important 2020 States Already Have Vote by Mail," *Atlantic*, Apr. 11, 2020, <https://www.theatlantic.com/politics/archive/2020/04/voting-mail-2020-race-between-biden-and-trump/609799> ("Jocelyn Benson, Michigan's secretary of state and a Democrat, expressed a broad consensus among local officials when she told me, 'We will certainly see people voting by mail more than ever before in our state.'").
- 75** Tina Barton, (City Clerk, Rochester Hills, Michigan), interview by Brennan Center for Justice, Mar. 27, 2020; Chris Swope (City Clerk, Lansing, Michigan), interview by Brennan Center for Justice, Apr. 13, 2020.
- 76** Many Michigan election officials have signed a letter in support of additional federal elections funding, including Michelle L. Anzaldi (Clerk, Pittsfield Charter Township), Erica Armstrong (City Clerk, City of Midland), Tina Barton (City Clerk, Rochester Hills), Judy A. Bigney (Clerk, Algoma Township), Lisa Borgacz (City Clerk, City of Mount Clemens), Cynthia A. Bower (City Clerk, Taylor), Louise D. Burke (Deputy Clerk, Charter Township of York Washtenaw County), Sarah J. Bydalek (City Clerk, City of Walker), Jill A. Domingo (City Clerk, City of Albion), Kathy Funk (Clerk, Charter Township of Flint), Mary Gillis (Deputy Clerk, Scio Township), Lisa Kay Hathaway (City Clerk, City of Grosse Pointe Woods), Evan Hope (Clerk, Delhi Township), Cathy Lane (Township Clerk, Charter Township of Grand Blanc), Lisa Lawitzke (Deputy Clerk, Bellevue Township), Richard LeBlanc (City

Clerk, City of Westland), Janice Pockrandt (Deputy City Clerk, Center Line), Sheila Reitz (Clerk, Township of Buchanan, Berrien County), Melanie D. Ryska (City Clerk, Sterling Heights), Lawrence S. Stec (City Clerk, City of Wyandotte), Julia K. Stonestreet (Clerk, Spring Arbor Township), Chris Swope (Clerk, Lansing), Elizabeth Whitt (Township Clerk, Conway Township), Sandy Winans (Clerk, Woodhull Township). See Brennan Center for Justice, "Election Officials Call for More Election Funding in Next Stimulus Bill," last updated Apr. 16, 2020, <https://www.brennancenter.org/our-work/research-reports/election-officials-call-more-election-funding-next-stimulus-bill>.

77 Office of Secretary of State Jocelyn Benson, "Secretary of State to mail absent voter ballot applications to all May 5 voters."

78 Office of Secretary of State Jocelyn Benson, "Secretary of State to mail absent voter ballot applications to all May 5 voters."

79 Office of Secretary of State Jocelyn Benson, "Secretary of State to mail absent voter ballot applications to all May 5 voters."

80 Jonathan Brater (Director of Elections, Michigan Secretary of State), interview by Brennan Center for Justice, Apr. 17, 2020.

81 See attached state estimate chart and methodology section for detailed calculations.

82 See attached state estimate chart and methodology section for detailed calculations.

83 Chris Swope (City Clerk, Lansing, Michigan), interview by Brennan Center for Justice, Apr. 13, 2020.

84 Tina Barton, (City Clerk, Rochester Hills, Michigan), interview by Brennan Center for Justice, Mar. 27, 2020; Chris Swope (City Clerk, Lansing, Michigan), interview by Brennan Center for Justice, Apr. 13, 2020.

85 See attached state estimate chart and methodology section for detailed calculations.

86 Chris Swope (City Clerk, Lansing, Michigan), interview by Brennan Center for Justice, Apr. 13, 2020; Tina Barton, (City Clerk, Rochester Hills, Michigan), interview by Brennan Center for Justice, Mar. 27, 2020.

87 Tina Barton, (City Clerk, Rochester Hills, Michigan), interview by Brennan Center for Justice, Mar. 27, 2020.

88 Tina Barton, (City Clerk, Rochester Hills, Michigan), interview by Brennan Center for Justice, Mar. 27, 2020.

89 Tina Barton (City Clerk, Rochester Hills, Michigan), "Interview 5: Handling Absentee Ballot Requests for Increased Voting by Mail," interview by Ben Hovland (Commissioner, U.S. Election Assistance Commission), Apr. 15, 2020, <https://www.youtube.com/watch?v=CvbP7K4-VoE&feature=youtu.be> ("My current staff isn't going to be able to handle 30,000 absentee ballot applications all coming back at the same time. We're also issuing death certificates, (currently at a higher than usual rate), providing administrative support for city council and boards and commissions, overseeing and managing all city FOIAs (Freedom of Information Act), issuing liquor licenses after reviewing applications, managing local cemeteries, issuing passports, and this year, I'm in charge of the census. . . . [And] in some smaller communities, the local clerks also have municipal or township accounting responsibilities.").

90 See attached state estimate chart and methodology section for detailed calculations.

91 Tina Barton, (City Clerk, Rochester Hills, Michigan), interview by Brennan Center for Justice, Mar. 27, 2020; Chris Swope (City Clerk, Lansing, Michigan), interview by Brennan Center for Justice, Apr. 13, 2020.

92 See attached state estimate chart and methodology section for detailed calculations.

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94 Tina Barton, (City Clerk, Rochester Hills, Michigan), interview by Brennan Center for Justice, Mar. 27, 2020.

95 See attached state estimate chart and methodology section for

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96 Cybersecurity and Infrastructure Security Agency, "UK and US Security Agencies Issue Covid-19 Cyber Threat Update," Apr. 8, 2020, <https://www.cisa.gov/news/2020/04/08/uk-and-us-security-agencies-issue-covid-19-cyber-threat-update>.

97 See attached state estimate chart and methodology section for detailed calculations.

98 See Brennan Center for Justice, "Election Officials Call for More Election Funding in Next Stimulus Bill," last updated Apr. 16, 2020, <https://www.brennancenter.org/our-work/research-reports/election-officials-call-more-election-funding-next-stimulus-bill>.

99 Tina Barton, (City Clerk, Rochester Hills, Michigan), interview by Brennan Center for Justice, Mar. 27, 2020; Chris Swope (City Clerk, Lansing, Michigan), interview by Brennan Center for Justice, Apr. 13, 2020.

100 Tina Barton, (City Clerk, Rochester Hills, Michigan), interview by Brennan Center for Justice, Mar. 27, 2020; Chris Swope (City Clerk, Lansing, Michigan), interview by Brennan Center for Justice, Apr. 13, 2020.

101 Alabama Secretary of State, "Congress Appropriates \$400 Million to Prepare States for Election Day amid Coronavirus Concerns"; City of Madison Clerk's Office, "Twelve Things for Voters to Know on Election Day."

102 Tina Barton, (City Clerk, Rochester Hills, Michigan), interview by Brennan Center for Justice, Mar. 27, 2020; Chris Swope (City Clerk, Lansing, Michigan), interview by Brennan Center for Justice, Apr. 13, 2020.

103 See Missouri Secretary of State, "Registered Voters in Missouri," accessed Apr. 13, 2020, <https://www.sos.mo.gov/elections/registeredvoters/2018>.

104 U.S. Election Assistance Commission, "2020 Cares Act Grants," <https://www.eac.gov/payments-and-grants/2020-cares-act-grants>.

105 Missouri Governor, "Governor Parson Announces April 7 Municipal Elections Postponed Until June 2 in Response to Covid-19," Mar. 18, 2020, <https://governor.mo.gov/press-releases/archive/governor-parson-announces-april-7-municipal-elections-postponed-until-june-2>.

106 Secretary of State Jay Ashcroft, "This Week in Missouri Politics Coronavirus Update with Secretary of State Jay Ashcroft," interview by Scott Faughn, *Missouri Times*, Mar. 31, 2020, <https://www.facebook.com/themissouritimes/videos/290768858576590>.

107 Eric Fey (Democratic Director of Elections, St. Louis County, Missouri), interview by Brennan Center for Justice, Apr. 13, 2020; Brianna Lennon (County Clerk, Boone County, Missouri), interview by Brennan Center for Justice, Apr. 13, 2020. Shane Schoeller (County Clerk, Greene County, Missouri), Madison McFarland (Elections Coordinator, Greene County, Missouri), interview by Brennan Center for Justice, Mar. 30, 2020.

108 See, e.g., Jason Hancock, "Will coronavirus outbreak mean more Missourians can cast absentee ballots?," *Kansas City Star*, Mar. 17, 2020, <https://www.kansascity.com/news/politics-government/article241275436.html>; Missouri State Conference of the National Association for the Advancement of Colored People et al. v. State of Missouri et al., <https://www.aclu.org/legal-document/missouri-naacp-v-missouri-complaint-0>; see also Mo. Code § 115.294 ("Other provisions of law to the contrary notwithstanding, no absentee ballot shall be rejected for failure of the voter to state on the ballot envelope his reason for voting an absentee ballot.").

109 See, e.g., Kevin Jenkins, "County clerk says 'vote absentee,'" *Daily Journal Online*, Mar. 30, 2020, https://dailyjournalonline.com/news/local/county-clerk-says-vote-absentee/article_7e3b74e2-fb-dc-52bc-b610-9e8c2219fb7e.html (St. Francois County); Rudi Keller, "Missouri municipal elections delayed to June 2," *Examiner*, Mar. 18, 2020, <https://www.examiner.net/news/20200318/missouri-municipal-elections-delayed-to-june-2> (Boone County).

110 U.S. Election Assistance Commission, *Election Administration*

And Voting Survey 2018 Comprehensive Report: A Report to the 116th Congress, June 2019, 29 and 55. https://www.eac.gov/sites/default/files/eac_assets/1/6/2018_EAVS_Report.pdf.

111 Many Missouri election officials have signed a letter in support of additional federal elections funding, including Kay Brown (Clerk/Election Authority, Christian County), Christina Buie (Clerk, Monroe County), Batina Dodge (Clerk, Scotland County), Lauri Ealom (Director, Kansas City Board of Elections), Eric Fey (Director of Elections, St. Louis County), Jared W. Kutz (Clerk/Election Authority, Perry County), Stephanie Lebron (Clerk, Iron County), Brianna Lennon (Clerk, Boone County), Jackie Morris (Clerk, Sullivan County), Shane Schoeller (Clerk, Greene County), Susette M. Taylor (Clerk, Atchison County; President-Elect, Missouri Association of Counties), and Diane Thompson (Clerk and Election Authority, Johnson County). See Brennan Center for Justice, "Election Officials Call for More Election Funding in Next Stimulus Bill," Mar. 31, 2020, <https://www.brennancenter.org/our-work/research-reports/election-officials-call-more-election-funding-next-stimulus-bill>.

112 Ashcroft, "This Week in Missouri Politics," interview by Faughn.

113 At least one Missouri county has already developed an online absentee ballot application that enables voters to securely apply for an absentee ballot paperlessly. Brianna Lennon (Clerk, Boone County, Missouri), interview by Brennan Center for Justice, Apr. 13, 2020.

114 See attached state estimate chart and methodology section for detailed calculations.

115 Eric Fey (Democratic Director of Elections, St. Louis County, Missouri), interview by Brennan Center for Justice, Apr. 13, 2020; Brianna Lennon (County Clerk, Boone County, Missouri), interview by Brennan Center for Justice, Apr. 13, 2020; Shane Schoeller (County Clerk, Greene County, Missouri), Madison McFarland (Elections Coordinator, Greene County, Missouri), interview by Brennan Center for Justice, Mar. 30, 2020. The potential impact in Missouri could be greater than in other states because the deadline to request an absentee ballot is two weeks prior to the election (compared to one week in many other states). Voters are now aware of how fast the health environment can change and may opt to request an absentee ballot in higher percentages in Missouri because of the longer period during which circumstances could change drastically.

116 Eric Fey (Democratic Director of Elections, St. Louis County, Missouri), interview by Brennan Center for Justice, Apr. 18, 2020.

117 See attached state estimate chart and methodology section for detailed calculations.

118 Ashcroft, "This Week in Missouri Politics," interview by Faughn.

119 Although some counties currently provide voters with postage-prepaid envelopes to return their absentee ballot applications, county budget-makers did not assume that there would be a significant spike in absentee voting, as is expected due to the coronavirus. Eric Fey (Democratic Director of Elections, St. Louis County, Missouri), interview by Brennan Center for Justice, Apr. 13, 2020.

120 See attached state estimate chart and methodology section for detailed calculations.

121 Eric Fey (Democratic Director of Elections, St. Louis County, Missouri), interview by Brennan Center for Justice, Apr. 13, 2020; Brianna Lennon (County Clerk, Boone County, Missouri), interview by Brennan Center for Justice, Apr. 13, 2020; Shane Schoeller (County Clerk, Greene County, Missouri), Madison McFarland (Elections Coordinator, Greene County, Missouri), interview by Brennan Center for Justice, Mar. 30, 2020; Cameron Gerber, "Missouri elections during the coronavirus pandemic: Q&A with a county clerk," *Missouri Times*, Apr. 9, 2020, <https://themissouritimes.com/missouri-elections-during-the-coronavirus-pandemic-qa-with-a-county-clerk>.

122 Eric Fey (Democratic Director of Elections, St. Louis County, Missouri), interview by Brennan Center for Justice, Apr. 13, 2020; Brianna Lennon (County Clerk, Boone County, Missouri), interview

by Brennan Center for Justice, Apr. 13, 2020. Shane Schoeller (County Clerk, Greene County, Missouri), Madison McFarland (Elections Coordinator, Greene County, Missouri), interview by Brennan Center for Justice, Mar. 30, 2020.

123 Although state law requires local officials to provide return postage for absentee ballots (Mo. Stat. § 115.285), local appropriators did not plan for a significant spike in absentee voting and associated local costs due to the coronavirus. Eric Fey (Democratic Director of Elections, St. Louis County, Missouri), interview by Brennan Center for Justice, Apr. 13, 2020; Brianna Lennon (County Clerk, Boone County, Missouri), interview by Brennan Center for Justice, Apr. 13, 2020. Shane Schoeller (County Clerk, Greene County, Missouri), Madison McFarland (Elections Coordinator, Greene County, Missouri), interview by Brennan Center for Justice, Mar. 30, 2020. As Missouri's absentee turnout is traditionally low, our estimates include the total expected costs and do not subtract what we expect will be the small amount local officials have allocated for return postage. See attached state estimate chart and methodology section for detailed information.

124 Eric Fey (Democratic Director of Elections, St. Louis County, Missouri), interview by Brennan Center for Justice, Apr. 13, 2020; Brianna Lennon (County Clerk, Boone County, Missouri), interview by Brennan Center for Justice, Apr. 13, 2020. Shane Schoeller (County Clerk, Greene County, Missouri), Madison McFarland (Elections Coordinator, Greene County, Missouri), interview by Brennan Center for Justice, Mar. 30, 2020.

125 See attached state estimate chart and methodology section for detailed calculations.

126 Eric Fey (Democratic Director of Elections, St. Louis County, Missouri), interview by Brennan Center for Justice, Apr. 13, 2020; Brianna Lennon (County Clerk, Boone County, Missouri), interview by Brennan Center for Justice, Apr. 13, 2020. Shane Schoeller (County Clerk, Greene County, Missouri), Madison McFarland (Elections Coordinator, Greene County, Missouri), interview by Brennan Center for Justice, Mar. 30, 2020.

127 See attached state estimate chart and methodology section for detailed calculations.

128 Cybersecurity and Infrastructure Security Agency, "UK and US Security Agencies Issue Covid-19 Cyber Threat Update," Apr. 8, 2020, <https://www.cisa.gov/news/2020/04/08/uk-and-us-security-agencies-issue-covid-19-cyber-threat-update>.

129 See attached state estimate chart and methodology section for detailed calculations.

130 Eric Fey (Democratic Director of Elections, St. Louis County, Missouri), interview by Brennan Center for Justice, Apr. 13, 2020; Brianna Lennon (County Clerk, Boone County, Missouri), interview by Brennan Center for Justice, Apr. 13, 2020; Shane Schoeller (County Clerk, Greene County, Missouri), Madison McFarland (Elections Coordinator, Greene County, Missouri), interview by Brennan Center for Justice, Mar. 30, 2020.

131 Many Missouri election officials have signed a letter in support of additional federal elections funding, including Kay Brown (Clerk/Election Authority, Christian County), Christina Buie (Clerk, Monroe County), Batina Dodge (Clerk, Scotland County), Lauri Ealom (Director, Kansas City Board of Elections), Eric Fey (Director of Elections, St. Louis County), Jared W. Kutz (Clerk/Election Authority, Perry County), Stephanie Lebron (Clerk, Iron County), Brianna Lennon (Clerk, Boone County), Jackie Morris (Clerk, Sullivan County), Shane Schoeller (Clerk, Greene County), Susette M. Taylor (Clerk, Atchison County; President-Elect, Missouri Association of Counties), Diane Thompson (Clerk and Election Authority, Johnson County). See Brennan Center for Justice, "Election Officials Call for More Election Funding in Next Stimulus Bill," Mar. 31, 2020, <https://www.brennancenter.org/our-work/research-reports/election-officials-call-more-election-funding-next-stimulus-bill>.

132 Eric Fey (Democratic Director of Elections, St. Louis County, Missouri), interview by Brennan Center for Justice, Apr. 13, 2020;

Brianna Lennon (County Clerk, Boone County, Missouri), interview by Brennan Center for Justice, Apr. 13, 2020; Shane Schoeller (County Clerk, Greene County, Missouri), Madison McFarland (Elections Coordinator, Greene County, Missouri), interview by Brennan Center for Justice, Mar. 30, 2020.

133 See attached state estimate chart and methodology section for detailed calculations.

134 Ohio Secretary of State, "Larose Announces Latest Early Voting Numbers of the 2020 Primary," Mar. 3, 2020, <https://www.ohiosos.gov/media-center/press-releases/2020/2020-03-03>.

135 Zach Montallero, "Ohio to run all-mail primary through April 28," *Politico*, Mar. 25, 2020, <https://www.politico.com/news/2020/03/25/ohio-vote-by-mail-primary-election-149012> (Ohio lawmakers "have extended mail voting in the state's primaries until April 28").

136 U.S. Election Assistance Commission, "2020 Cares Act Grants," <https://www.eac.gov/payments-and-grants/2020-cares-act-grants>.

137 Dan Merica, "Ohio governor announces polls will be closed Tuesday over coronavirus," CNN, Mar. 17, 2020, <https://www.cnn.com/2020/03/16/politics/ohio-primary/index.html>.

138 Veronica Stracqualursi, "Ohio secretary of state: 'It was simply untenable' to tell Ohioans go to the polls amid coronavirus," CNN, Mar. 17, 2020, <https://www.cnn.com/2020/03/17/politics/ohio-secretary-of-state-primary-polls-close-cnnv/index.html>.

139 Montallero, "Ohio to run all-mail primary through April 28" (Ohio lawmakers "have extended mail voting in the state's primaries until April 28").

140 See 2020 Ohio Laws File 30 (Am. Sub. H.B. 197); see also Gannett Ohio, "Action required: Ohio voters must take the first step to obtain mail-in ballot for primary," *Daily Record*, Apr. 4, 2020, <https://www.the-daily-record.com/news/20200404/action-required-ohio-voters-must-take-first-step-to-obtain-mail-in-ballot-for-primary>.

141 See, e.g., Ohio Secretary of State, "Larose Announces Latest Early Voting Numbers of the 2020 Primary,"

(LaRose promotes providing voters with postage pre-paid envelopes to return their absentee ballot applications).

142 Josh Sweigart, "Absentee ballot request forms to be printed in local newspapers," *Dayton Daily News*, Apr. 2, 2020, <https://www.daytondailynews.com/news/absentee-ballot-request-forms-printed-local-newspapers/Nw8P1F5Fm7pnKADDaHDeoL>.

143 Frank LaRose (@FrankLaRose), "Throughout this crisis, Ohio has once again cemented its place as a national leader. We're at our best when we work together, and these organizations have stepped up to make sure Ohioans will have their voice heard," Twitter, Apr. 9, 2020, 5:11 p.m., <https://twitter.com/FrankLaRose/status/1248357961682092037?s=20>.

144 Megan Alley, "Ohio's primary election moves to April 28 all-mail vote amid COVID-19 pandemic," *Clermont Sun*, Apr. 4, 2020, <https://www.clermontsun.com/2020/04/04/ohios-primary-election-moves-to-april-28-all-mail-vote-amid-covid-19-pandemic>.

145 Kimberly Smith (Deputy Director, Defiance County Board of Elections, Ohio), interview by Brennan Center for Justice, Mar. 29, 2020; Amber Lopez (Deputy Director, Clark County, Ohio), interview by Brennan Center for Justice, Apr. 14, 2020.

146 Bonnie Meibers, "Is your vote safe? Secretary of State says Ohio is 'best prepared' state in nation," *Dayton Daily News*, Jan. 14, 2020, <https://www.daytondailynews.com/news/local-govt-politics/your-vote-safe-secretary-state-says-ohio-best-prepared-state-nation/84XTxXzEd1L5zxcNslhY1>.

147 See 2020 Ohio Laws File 30 (Am. Sub. H.B. 197).

148 Many Ohio election officials have signed a letter in support of additional federal elections funding, including Jason Baker (Director, Clark County Board of Elections), Sally Krisel (Deputy Director, Hamilton County Board of Elections), Amber Lopez (Deputy Director,

Clark County Board of Elections), Sherry Poland (Director, Hamilton County Board of Elections), Kimberly Smith (Deputy Elections Director, Defiance County), Tonya Wichman (Elections Director, Defiance County), Michelle L. Wilcox (President, Ohio Association of Election Officials; Director, County Board of Elections, Auglaize County). See Brennan Center for Justice, "Election Officials Call for More Election Funding in Next Stimulus Bill," Mar. 31, 2020, <https://www.brennancenter.org/our-work/research-reports/election-officials-call-more-election-funding-next-stimulus-bill>.

149 See S.B. 318, 133rd Gen. Assemb., Reg. Sess. (Ohio 2018).

150 See attached state estimate chart and methodology section for detailed calculations.

151 See, e.g., Ohio Secretary of State, "Larose Announces Latest Early Voting Numbers of the 2020 Primary."

152 See attached state estimate chart and methodology section for detailed calculations.

153 In Ohio, 11 percent of registered voters voted by mail in 2018. See U.S. Election Assistance Commission, *Election Administration And Voting Survey 2018 Comprehensive Report: A Report to the 116th Congress*, June 2019, 29 and 55, https://www.eac.gov/sites/default/files/eac_assets/1/6/2018_EAVS_Report.pdf.

154 Kimberly Smith (Deputy Director, Defiance County Board of Elections, Ohio), interview by Brennan Center for Justice, Mar. 29, 2020; Amber Lopez (Deputy Director, Clark County, Ohio), interview by Brennan Center for Justice, Apr. 14, 2020.

155 See attached state estimate chart and methodology section for detailed calculations.

156 Ohio, "Action required: Ohio voters must take the first step to obtain mail-in ballot for primary".

157 Ohio Rev. Code Ann. § 3501.05 (Westlaw through File 30 of the 133rd General Assembly 2019-2020) ("The secretary of state may mail unsolicited applications for absent voter's ballots to individuals only for a general election and only if the general assembly has made an appropriation for that particular mailing. Under no other circumstance shall a public office, or a public official or employee who is acting in an official capacity, mail unsolicited applications for absent voter's ballots to any individuals.").

158 See attached state estimate chart and methodology section for detailed calculations.

159 Kimberly Smith (Deputy Director, Defiance County Board of Elections, Ohio), interview by Brennan Center for Justice, Mar. 29, 2020; Amber Lopez (Deputy Director, Clark County, Ohio), interview by Brennan Center for Justice, Apr. 14, 2020.

160 Kimberly Smith (Deputy Director, Defiance County Board of Elections, Ohio), interview by Brennan Center for Justice, Mar. 29, 2020; Amber Lopez (Deputy Director, Clark County, Ohio), interview by Brennan Center for Justice, Apr. 14, 2020.

161 Kimberly Smith (Deputy Director, Defiance County Board of Elections, Ohio), interview by Brennan Center for Justice, Mar. 29, 2020; Amber Lopez (Deputy Director, Clark County, Ohio), interview by Brennan Center for Justice, Apr. 14, 2020.

162 See attached state estimate chart and methodology section for detailed calculations.

163 Ohio Rev. Code Ann. § 3509.03 (Westlaw through File 30 of the 133rd General Assembly 2019-2020); Ohio Rev. Code Ann. § 3511.02 (Westlaw through File 30 of the 133rd General Assembly 2019-2020); Ohio Secretary of State, *Election Official Manual*, 2019, 194, https://www.ohiosos.gov/globalassets/elections/directives/2019/dir2019-11_eom.pdf ("No board is permitted to pre-pay return postage for any type of absentee ballot application.").

164 Kimberly Smith (Deputy Director, Defiance County Board of Elections, Ohio), interview by Brennan Center for Justice, Mar. 29, 2020; Amber Lopez (Deputy Director, Clark County, Ohio), interview by Brennan Center for Justice, Apr. 14, 2020.

165 See attached state estimate chart and methodology section

for detailed calculations.

166 Kimberly Smith (Deputy Director, Defiance County Board of Elections, Ohio), interview by Brennan Center for Justice, Mar. 29, 2020; Amber Lopez (Deputy Director, Clark County, Ohio), interview by Brennan Center for Justice, Apr. 14, 2020.

167 See attached state estimate chart and methodology section for detailed calculations.

168 Kimberly Smith (Deputy Director, Defiance County Board of Elections, Ohio), interview by Brennan Center for Justice, Mar. 29, 2020; Amber Lopez (Deputy Director, Clark County, Ohio), interview by Brennan Center for Justice, Apr. 14, 2020.

169 See attached state estimate chart and methodology section for detailed calculations.

170 Kimberly Smith (Deputy Director, Defiance County Board of Elections, Ohio), interview by Brennan Center for Justice, Mar. 29, 2020; Amber Lopez (Deputy Director, Clark County, Ohio), interview by Brennan Center for Justice, Apr. 14, 2020.

171 Kimberly Smith (Deputy Director, Defiance County Board of Elections, Ohio), email message to Derek Tisler, Apr. 2, 2020.

172 Many Ohio election officials have signed a letter in support of additional federal elections funding, including Jason Baker (Director, Clark County Board of Elections), Sally Krisel (Deputy Director, Hamilton County Board of Elections), Amber Lopez (Deputy Director, Clark County Board of Elections), Sherry Poland (Director, Hamilton County Board of Elections), Kim Smith (Deputy Elections Director, Defiance County), Lisa Welch (Director, Holmes County Board of Elections), Tonya Wichman (Elections Director, Defiance County), Michelle L. Wilcox (President, Ohio Association of Election Officials; Director, County Board of Elections, Auglaize County). See Brennan Center for Justice, "Election Officials Call for More Election Funding in Next Stimulus Bill," last updated Apr. 21, 2020, <https://www.brennancenter.org/our-work/research-reports/election-officials-call-more-election-funding-next-stimulus-bill>.

173 Kimberly Smith (Deputy Director, Defiance County Board of Elections, Ohio), interview by Brennan Center for Justice, Mar. 29, 2020; Amber Lopez (Deputy Director, Clark County, Ohio), interview by Brennan Center for Justice, Apr. 14, 2020.

174 Tonya Wichman (Director, Defiance County Board of Elections, Ohio), letter emailed to Dr. Amy Acton (Director of Health, Ohio Department of Health), Mar. 27, 2020 (forwarded to Liz Howard on Mar. 17, 2020), (noting Defiance County poll workers include "my father with a heart condition, my mother with respiratory issues, my aunt/godmother with health issues, my boss from my part time job I work on the side with heart issues, my son who [has to take] a vacation day from his job to help me before he [goes] home to his wife and one year old son, our choir accompanist from my church, three of my former teachers from school, a high school student I work with at the local dairy bar, two former teammates of my college daughter, friends from outside of work and an entire group of people that I truly consider to be friends not just people who work at the polls. These people make my job possible, they make democracy possible and work from 5:30 am in the morning until at least 8:00 at night for not what they deserve but what we can offer them as a paycheck.").

175 Kimberly Smith (Deputy Director, Defiance County Board of Elections, Ohio), interview by Brennan Center for Justice, Mar. 29, 2020; Amber Lopez (Deputy Director, Clark County, Ohio), interview by Brennan Center for Justice, Apr. 14, 2020.

176 See attached state estimate chart and methodology section for detailed calculations.

177 Pennsylvania Department of State, "Voter registration statistics by county," last updated on Mar. 14, 2020, <https://www.dos.pa.gov/VotingElections/OtherServicesEvents/VotingElectionStatistics/Pages/VotingElectionStatistics.aspx>.

178 U.S. Election Assistance Commission, "2020 Cares Act Grants," <https://www.eac.gov/payments-and-grants/2020-cares-act-grants>.

179 Jonathan Lai, "Pennsylvania elections officials are pleading with the state to move the primary: 'We're pulling fire alarms all over the place,'" *Philadelphia Inquirer*, Mar. 17, 2020, <https://www.inquirer.com/health/coronavirus/postpone-pa-primary-election-coronavirus-20200317.html>.

180 2020 Pa. Legis. Serv. Act 2020-12 (S.B. 422).

181 Pennsylvania Governor Tom Wolf, "Order for Individuals of the Commonwealth to Stay at Home," Apr. 1, 2020, <https://www.governor.pa.gov/wp-content/uploads/2020/04/20200401-GOV-Statewide-Stay-at-Home-Order.pdf>; see also Office of Governor Tom Wolf, "Gov. Wolf, Sec. of Health: Pennsylvania on Statewide Stay-at-Home Order Beginning at 8 PM Tonight," Apr. 1, 2020, <https://www.governor.pa.gov/newsroom/gov-wolf-sec-of-health-pennsylvania-on-statewide-stay-at-home-order-beginning-at-8-pm-tonight-most-prudent-option-to-stop-the-spread>.

182 Ron Southwick, "Gov. Tom Wolf extends Pa. stay-at-home order to May 8 but plans to ease some restrictions," *Penn Live*, Apr. 20, 2020, <https://www.pennlive.com/coronavirus/2020/04/update-on-coronavirus-in-pa-watch-gov-tom-wolf-and-secretary-of-health-live.html>.

183 Pennsylvania uses two distinct types of mail voting: absentee ballots and mail-in ballots. Voters with a qualified excuse may use absentee ballots, while voters without a qualifying excuse use mail-in ballots. This report uses the term "absentee ballot" to refer to both types of ballots.

184 Lai, "Pennsylvania elections officials are pleading with the state to move the primary"; Nick Custodio (Deputy Commissioner, Office of Philadelphia City Commissioner Lisa Deeley, Chairwoman), interview by Brennan Center for Justice, Apr. 3, 2020; Kathy Boockvar (Pennsylvania Secretary of State), Jonathan Marks (Deputy Secretary of Elections, Pennsylvania Department of State), Michael Moser (Director of Election Security and Technology, Pennsylvania Department of State), interview by Brennan Center for Justice, Apr. 10, 2020.

185 Lai, "Pennsylvania elections officials are pleading with the state to move the primary."

186 Jonathan Lai (Journalist, *Philadelphia Inquirer*), "Something I'm watching: More than 1/3 of Philly absentee ballot applications have not yet been processed. 23,888 processed. 12,909 pending. Elections staff might have to work the weekend to keep processing ballots, executive director Joe Lynch said at meeting today," Twitter, Apr. 15, 2020, 12:31 p.m., <https://twitter.com/Elaijuh/status/1250461783392956417>.

187 See, e.g., Katie Galioto, "1.1 million Illinois voters have cast ballots so far, surpassing 2014 early vote counts," *Chicago Tribune*, Nov. 5, 2018, <https://www.chicagotribune.com/politics/elections/ct-met-illinois-early-voting-20181018-story.html> ("There was a slight increase in the rate of people voting early in 2014 compared with 2010. This could be a product of the state's efforts to make voting more convenient. . . . The state also introduced 'no-excuse' mail voting in 2010 to give residents the chance to vote from the comfort of their own home without specifying a reason for being absent from the polls.").

188 U.S. Election Assistance Commission, *Election Administration And Voting Survey 2018 Comprehensive Report: A Report to the 116th Congress*, June 2019, 29, https://www.eac.gov/sites/default/files/eac_assets/1/6/2018_EAVS_Report.pdf.

189 Kathy Boockvar (Pennsylvania Secretary of State), Jonathan Marks (Deputy Secretary of Elections, Pennsylvania Department of State), Michael Moser (Director of Election Security and Technology, Pennsylvania Department of State), interview by Brennan Center for Justice, Apr. 10, 2020; Nick Custodio (Deputy Commissioner, Office of Philadelphia City Commissioner Lisa Deeley, Chairwoman), interview by Brennan Center for Justice, Apr. 3, 2020; Jeff Greenburg (Director of Elections, Mercer County, Pennsylvania), interview by Brennan Center for Justice, Apr. 2, 2020.

190 Jeff Greenburg (Director of Elections, Mercer County,

Pennsylvania), interview by Brennan Center for Justice, Apr. 2, 2020.

191 Kathy Boockvar (Pennsylvania Secretary of State), Jonathan Marks (Deputy Secretary of Elections, Pennsylvania Department of State), Michael Moser (Director of Election Security and Technology, Pennsylvania Department of State), interview by Brennan Center for Justice, Apr. 10, 2020; Nick Custodio (Deputy Commissioner, Office of Philadelphia City Commissioner Lisa Deeley, Chairwoman), interview by Brennan Center for Justice, Apr. 3, 2020; Jeff Greenburg (Director of Election Security and Technology, Mercer County, Pennsylvania), interview by Brennan Center for Justice, Apr. 2, 2020.

192 Kathy Boockvar (Pennsylvania Secretary of State), Jonathan Marks (Deputy Secretary of Elections, Pennsylvania Department of State), Michael Moser (Director of Election Security and Technology, Pennsylvania Department of State), interview by Brennan Center for Justice, Apr. 10, 2020.

193 Nick Custodio (Deputy Commissioner, Office of Philadelphia City Commissioner Lisa Deeley, Chairwoman), interview by Brennan Center for Justice, Apr. 3, 2020.

194 Jonathan Lai and Julia Terruso, "Voting by mail is a safe option during coronavirus. Here's what you need to know about absentee ballots in Pennsylvania and New Jersey," *Philadelphia Inquirer*, updated Apr. 1, 2020, <https://www.inquirer.com/politics/election/coronavirus-vote-by-mail-absentee-ballots-pennsylvania-new-jersey-20200401.html> ("most voters have never [cast an absentee by mail ballot]").

195 Jonathan Marks (Deputy Secretary of Elections, Pennsylvania Department of State), interview by Brennan Center for Justice, Apr. 10, 2020; Nick Custodio (Deputy Commissioner, Office of Philadelphia City Commissioner Lisa Deeley, Chairwoman), interview by Brennan Center for Justice, Apr. 3, 2020; Jeff Greenburg (Director of Elections, Mercer County, Pennsylvania), interview by Brennan Center for Justice, Apr. 2, 2020.

196 See 2020 Pa. Legis. Serv. Act 2020-12 (S.B. 422) (authorizing polling location consolidation during the primary); Jonathan Marks (Deputy Secretary of Elections, Pennsylvania Department of State), interview by Brennan Center for Justice, Apr. 10, 2020; Nick Custodio (Deputy Commissioner, Office of Philadelphia City Commissioner Lisa Deeley, Chairwoman), interview by Brennan Center for Justice, Apr. 3, 2020; Jeff Greenburg (Director of Elections, Mercer County, Pennsylvania), interview by Brennan Center for Justice, Apr. 2, 2020.

197 Kathy Boockvar (Pennsylvania Secretary of State), Jonathan Marks (Deputy Secretary of Elections, Pennsylvania Department of State), Michael Moser (Director of Election Security and Technology, Pennsylvania Department of State), interview by Brennan Center for Justice, Apr. 10, 2020 (noting that voter education and outreach are an important priority, and that if they received assistance from the federal government to do so, they would supplement these voter education and outreach efforts).

198 Kathy Boockvar (Pennsylvania Secretary of State), Jonathan Marks (Deputy Secretary of Elections, Pennsylvania Department of State), Michael Moser (Director of Election Security and Technology, Pennsylvania Department of State), interview by Brennan Center for Justice, Apr. 10, 2020.

199 Kathy Boockvar (Pennsylvania Secretary of State), Jonathan Marks (Deputy Secretary of Elections, Pennsylvania Department of State), Michael Moser (Director of Election Security and Technology, Pennsylvania Department of State), interview by Brennan Center for Justice, Apr. 10, 2020.

200 See attached state estimate chart and methodology section for detailed calculations.

201 Kathy Boockvar (Pennsylvania Secretary of State), Jonathan Marks (Deputy Secretary of Elections, Pennsylvania Department of State), Michael Moser (Director of Election Security and Technology, Pennsylvania Department of State), interview by Brennan Center for Justice, Apr. 23, 2020.

202 Kathy Boockvar (Pennsylvania Secretary of State), Jonathan Marks (Deputy Secretary of Elections, Pennsylvania Department of

State), Michael Moser (Director of Election Security and Technology, Pennsylvania Department of State), interview by Brennan Center for Justice, Apr. 10, 2020.

203 Kathy Boockvar (Pennsylvania Secretary of State), Jonathan Marks (Deputy Secretary of Elections, Pennsylvania Department of State), Michael Moser (Director of Election Security and Technology, Pennsylvania Department of State), interview by Brennan Center for Justice, Apr. 10, 2020.

204 Kathy Boockvar (Pennsylvania Secretary of State), Jonathan Marks (Deputy Secretary of Elections, Pennsylvania Department of State), Michael Moser (Director of Election Security and Technology, Pennsylvania Department of State), interview by Brennan Center for Justice, Apr. 10, 2020.

205 Nick Custodio (Deputy Commissioner, Office of Philadelphia City Commissioner Lisa Deeley, Chairwoman), interview by Brennan Center for Justice, Apr. 3, 2020; Jeff Greenburg (Director of Elections, Mercer County, Pennsylvania), interview by Brennan Center for Justice, Apr. 2, 2020; see also Brennan Center for Justice, "Election Officials Call for More Election Funding in Next Stimulus Bill," last updated Apr. 21, 2020, <https://www.brennancenter.org/our-work/research-reports/election-officials-call-more-election-funding-next-stimulus-bill>.

206 Absentee by mail turnout accounted for just 2 percent of overall turnout in Pennsylvania in 2018. See U.S. Election Assistance Commission, *Election Administration and Voting Survey 2018 Comprehensive Report: A Report to the 116th Congress*, June 2019, 29 and 55, https://www.eac.gov/sites/default/files/eac-assets/1/6/2018_EAVS_Report.pdf.

207 See, e.g., Katie Galioto, "1.1 million Illinois voters have cast ballots so far, surpassing 2014 early vote counts," *Chicago Tribune*, Nov. 5, 2018, <https://www.chicagotribune.com/politics/elections/ct-met-illinois-early-voting-20181018-story.html> ("There was a slight increase in the rate of people voting early in 2014 compared with 2010. This could be a product of the state's efforts to make voting more convenient. . . . The state also introduced 'no-excuse' mail voting in 2010 to give residents the chance to vote from the comfort of their own home without specifying a reason for being absent from the polls.").

208 Kathy Boockvar (Pennsylvania Secretary of State), Jonathan Marks (Deputy Secretary of Elections, Pennsylvania Department of State), Michael Moser (Director of Election Security and Technology, Pennsylvania Department of State), interview by Brennan Center for Justice, Apr. 10, 2020 (supplemental information provided April 24, 2020).

209 Kathy Boockvar (Pennsylvania Secretary of State), Jonathan Marks (Deputy Secretary of Elections, Pennsylvania Department of State), Michael Moser (Director of Election Security and Technology, Pennsylvania Department of State), interview by Brennan Center for Justice, Apr. 10, 2020; Nick Custodio (Deputy Commissioner, Office of Philadelphia City Commissioner Lisa Deeley, Chairwoman), interview by Brennan Center for Justice, Apr. 3, 2020; Jeff Greenburg (Director of Elections, Mercer County, Pennsylvania), interview by Brennan Center for Justice, Apr. 2, 2020. Some Pennsylvania local officials have even pushed for the June primary to be conducted entirely by mail. Emily Previti, "Counties home to more than a third of Pennsylvania voters calling for mail-only primary," *PA Post*, Apr. 17, 2020, <https://papost.org/2020/04/17/counties-home-to-more-than-a-third-of-pennsylvania-voters-calling-for-mail-only-primary>.

210 See attached state estimate chart and methodology section. Because Pennsylvania has an online absentee ballot request system, low-end estimates assume that only voters without a PennDOT ID return their applications by mail. High-end estimates assume that all voters return their applications by mail. Low-end estimates provided by Kathy Boockvar (Pennsylvania Secretary of State), Jonathan Marks (Deputy Secretary of Elections, Pennsylvania Department of State), Michael Moser (Director of Election Security and Technology, Pennsylvania Department of State), interview by Brennan Center for Justice, Apr. 10, 2020.

- 211** Nick Custodio (Deputy Commissioner, Office of Philadelphia City Commissioner Lisa Deeley, Chairwoman), interview by Brennan Center for Justice, Apr. 3, 2020; Jeff Greenburg (Director of Elections, Mercer County, Pennsylvania), interview by Brennan Center for Justice, Apr. 2, 2020.
- 212** Nick Custodio (Deputy Commissioner, Office of Philadelphia City Commissioner Lisa Deeley, Chairwoman), interview by Brennan Center for Justice, Apr. 3, 2020; Jeff Greenburg (Director of Elections, Mercer County, Pennsylvania), interview by Brennan Center for Justice, Apr. 2, 2020.
- 213** See attached state estimate chart and methodology section for detailed calculations.
- 214** Nick Custodio (Deputy Commissioner, Office of Philadelphia City Commissioner Lisa Deeley, Chairwoman), interview by Brennan Center for Justice, Apr. 3, 2020; Jeff Greenburg (Director of Elections, Mercer County, Pennsylvania), interview by Brennan Center for Justice, Apr. 2, 2020.
- 215** See attached state estimate chart and methodology section for detailed calculations.
- 216** Kathy Boockvar (Pennsylvania Secretary of State), Jonathan Marks (Deputy Secretary of Elections, Pennsylvania Department of State), Michael Moser (Director of Election Security and Technology, Pennsylvania Department of State), interview by Brennan Center for Justice, Apr. 10, 2020; Nick Custodio (Deputy Commissioner, Office of Philadelphia City Commissioner Lisa Deeley, Chairwoman), interview by Brennan Center for Justice, Apr. 3, 2020; Jeff Greenburg (Director of Elections, Mercer County, Pennsylvania), interview by Brennan Center for Justice, Apr. 2, 2020.
- 217** See attached state estimate chart and methodology section for detailed calculations.
- 218** Cybersecurity and Infrastructure Security Agency, "UK and US Security Agencies Issue Covid-19 Cyber Threat Update," Apr. 8, 2020, <https://www.cisa.gov/news/2020/04/08/uk-and-us-security-agencies-issue-covid-19-cyber-threat-update>.
- 219** See attached state estimate chart and methodology section for detailed calculations.
- 220** 2020 Pa. Legis. Serv. Act 2020-12 (S.B. 422).
- 221** Kathy Boockvar (Pennsylvania Secretary of State), Jonathan Marks (Deputy Secretary of Elections, Pennsylvania Department of State), Michael Moser (Director of Election Security and Technology, Pennsylvania Department of State), interview by Brennan Center for Justice, Apr. 10, 2020; Nick Custodio (Deputy Commissioner, Office of Philadelphia City Commissioner Lisa Deeley, Chairwoman), interview by Brennan Center for Justice, Apr. 3, 2020.
- 222** Kathy Boockvar (Pennsylvania Secretary of State), Jonathan Marks (Deputy Secretary of Elections, Pennsylvania Department of State), Michael Moser (Director of Election Security and Technology, Pennsylvania Department of State), interview by Brennan Center for Justice, Apr. 10, 2020; Nick Custodio (Deputy Commissioner, Office of Philadelphia City Commissioner Lisa Deeley, Chairwoman), interview by Brennan Center for Justice, Apr. 3, 2020.
- 223** U.S. Department of Justice, "About Language Minority Voting Rights," accessed Apr. 17, 2020, <https://www.justice.gov/crt/about-language-minority-voting-rights>.
- 224** Kathy Boockvar (Pennsylvania Secretary of State), Jonathan Marks (Deputy Secretary of Elections, Pennsylvania Department of State), Michael Moser (Director of Election Security and Technology, Pennsylvania Department of State), interview by Brennan Center for Justice, Apr. 10, 2020.
- 225** See attached state estimate chart and methodology section for detailed calculations.
- 226** For an overview of which states have online absentee ballot request systems, see "Preparing for an Election Under Pandemic Conditions," Brennan Center for Justice, last updated Apr. 23, 2020, <https://www.brennancenter.org/our-work/research-reports/preparing-election-under-pandemic-conditions>. For more information on available methods for requesting absentee ballots in each state analyzed in this report, see Georgia Secretary of State, "Absentee Voting in Georgia," accessed Apr. 22, 2020, https://sos.ga.gov/index.php/Elections/absentee_voting_in_georgia; Michigan Secretary of State, "Absentee Voting," accessed Apr. 22, 2020, https://www.michigan.gov/sos/0,4670,7-127-1633_8716_8728-21037--,00.html; Missouri Secretary of State, "Absentee Voting," accessed Apr. 22, 2020, <https://www.sos.mo.gov/elections/goVoteMissouri/howtovote#absentee>; Ohio Secretary of State, "Absentee Voting," accessed Apr. 22, 2020, <https://www.ohiosos.gov/elections/voters/absentee-voting>; Pennsylvania Voter Services, "Ballot Request Application," accessed Apr. 22, 2020, <https://www.pavoterservices.pa.gov/OnlineAbsenteeApplication/#/OnlineAbsenteeBegin>. For an overview of which states have online systems for tracking absentee ballots, see National Conference of State Legislatures, "Voting Outside the Polling Place: Absentee, All-Mail and other Voting at Home Options," last updated Apr. 14, 2020, <https://www.ncsl.org/research/elections-and-campaigns/absentee-and-early-voting.aspx#systems>.
- 227** Dave Leichtman (Director, Program Strategy, Defending Democracy at Microsoft), interview by Brennan Center for Justice, Apr. 15, 2020; Matt Davis (former Chief Information Officer, Virginia Department of Elections), interview by Brennan Center for Justice, Mar. 27, 2020. Our estimates assume that higher costs may be faced by states to develop and implement these tools given the short time frame before the general election and the anticipated high use of these systems.
- 228** Pennsylvania Voter Services, "Ballot Request Application," <https://www.pavoterservices.pa.gov/OnlineAbsenteeApplication/#/OnlineAbsenteeBegin>.
- 229** Kathy Boockvar (Pennsylvania Secretary of State), Jonathan Marks (Deputy Secretary of Elections, Pennsylvania Department of State), Michael Moser (Director of Election Security and Technology, Pennsylvania Department of State), interview by Brennan Center for Justice, Apr. 10, 2020.
- 230** Matt Davis (former Chief Information Officer, Virginia Department of Elections), interview by Brennan Center for Justice, Mar. 27, 2020.
- 231** See "Voting Outside the Polling Place: Absentee, All-Mail and other Voting at Home Options" (absentee ballot tracking systems are mandated by state law in Michigan and Missouri); Ohio Secretary of State, "Track Your Ballot," accessed Apr. 23, 2020, <https://www.ohiosos.gov/elections/voters/toolkit/ballot-tracking/>.
- 232** U.S. Election Assistance Commission, "Statewide Voter Registration Systems," Aug. 31, 2017, <https://www.eac.gov/state-wide-voter-registration-systems>.
- 233** Matt Davis (former Chief Information Officer, Virginia Department of Elections), interview by Brennan Center for Justice, Mar. 27, 2020.
- 234** Matt Davis (former Chief Information Officer, Virginia Department of Elections), interview by Brennan Center for Justice, Mar. 27, 2020.
- 235** U.S. Election Assistance Commission, *Election Administration And Voting Survey 2018 Comprehensive Report: A Report to the 116th Congress*, June 2019, 55, https://www.eac.gov/sites/default/files/eac_assets/1/6/2018_EAVS_Report.pdf.
- 236** The State of Georgia is spending \$480,000 to print absentee ballot requests and \$2.6 million to mail absentee ballots to 6.9 million active voters. Niese, "Voters mailed absentee ballot request forms for May 19 Georgia primary"; Kevin Rayburn (Deputy Elections Director and Deputy General Counsel, Georgia Secretary of State), Gabriel Sterling (Voting System Implementation Manager, Georgia Secretary of State), Chris Harvey (Elections Director, Georgia Secretary of State), interview with Brennan Center for Justice, Apr. 17, 2020. Green County, Missouri, estimates that it will cost \$0.56 per voter to print and mail absentee applications. Shane Schoeller (County Clerk, Greene County, Missouri), interview by Brennan

Center for Justice, Mar. 30, 2020. Defiance County, Ohio, estimates that it will cost \$0.50 per voter to print and mail absentee applications. Kimberly Smith (Deputy Director, Defiance County Board of Elections, Ohio), interview by Brennan Center for Justice, Mar. 29, 2020.

237 Eric Fey (Democratic Director of Elections, St. Louis County, Missouri), interview by Brennan Center for Justice, Apr. 13, 2020.

238 Kathy Boockvar (Pennsylvania Secretary of State), Jonathan Marks (Deputy Secretary of Elections, Pennsylvania Department of State), Michael Moser (Director of Election Security and Technology, Pennsylvania Department of State), interview by Brennan Center for Justice, Apr. 10, 2020.

239 Using this methodology, we determined the following baselines for absentee ballot materials and postage: 6,559,909 (Michigan); 3,923,862 (Missouri); 7,129,470 (Ohio); 7,694,291 (Pennsylvania). For Georgia, we used the full number of active registered voters (6.9 million), so that total estimated costs would be consistent with estimates publicly released by the state.

240 Verified Voting, "The Verifier – Polling Place Equipment – November 2020," <https://www.verifiedvoting.org/verifier>.

241 Mich. Admin. Code R 168.774 (Michigan); V.A.M.S. 115.247 (Missouri); Directive 2016-22, Election Official Manual 4-14, https://www.sos.state.oh.us/globalassets/elections/directives/2016/dir2016-22_eom-ch_04.pdf (Ohio); 2019 Pa. Laws 77 (Pennsylvania).

242 Using this methodology, we determined the following baselines for absentee ballot materials and postage: 1,559,341 (Michigan); 1,007,141 (Missouri); 3,653,556 (Ohio); 1,846,807 (Pennsylvania). These numbers represent the additional ballots that would be needed for a total supply equal to 120 percent of registered voters, to account for ballot spoilage and the need to allocate resources between mail and in-person voting.

243 Rochester Hills, Michigan, spends \$0.30 per voter for ballots and \$0.85 per voter on envelopes. Tina Barton (City Clerk, Rochester Hills, Michigan), interview by Brennan Center for Justice, Mar. 27, 2020. Greene County, Missouri, spends \$1.50 per voter on envelopes and \$0.10 per voter to print absentee ballot instructions. Shane Schoeller (County Clerk, Greene County, Missouri), interview by Brennan Center for Justice, Mar. 30, 2020. Defiance County, Ohio, spends \$1.70 per voter to outsource ballot printing and absentee packet assembly. Kimberly Smith (Deputy Director, Defiance County Board of Elections, Ohio), interview by Brennan Center for Justice, Mar. 29, 2020.

244 The State of Georgia is spending \$1.88–\$2.38 per absentee ballot sent in postage and handling costs, and officials estimate that return postage could cost up to \$1.40 per ballot. Niesse, "Voters mailed absentee ballot request forms for May 19 Georgia primary"; Kevin Rayburn (Deputy Elections Director and Deputy General Counsel, Georgia Secretary of State), Gabriel Sterling (Voting System Implementation Manager, Georgia Secretary of State), Chris Harvey (Elections Director, Georgia Secretary of State), interview with Brennan Center for Justice, Apr. 17, 2020. Boone County, Missouri, spends about \$1.15 per ballot in return postage. Brianna Lennon (County Clerk, Boone County, Missouri), interview by Brennan Center for Justice, Apr. 13, 2020. Defiance County, Ohio, estimates that each ballot sent costs \$1.20 in postage. Kimberly Smith (Deputy Director, Defiance County Board of Elections, Ohio), interview by Brennan Center for Justice, Mar. 29, 2020.

245 The Cybersecurity and Infrastructure Security Agency (CISA) Elections Infrastructure Government Coordinating Council and Sector Coordinating Council's Joint COVID Working Group recommends that jurisdictions have one drop box for every 15,000–20,000 registered voters. Cybersecurity and Infrastructure Security Agency, "Ballot Drop Box," https://www.cisa.gov/sites/default/files/publications/ballot_drop_box_final-508.pdf. The State of Washington, where drop boxes are widely used, requires one drop box per 15,000 registered voters. Washington Secretary of State, *Ballot Drop Boxes in All Communities*, May 19, 2017, <https://www.sos.wa.gov/assets/>

[elections/auditorsctp/17-01%20ballot%20drop%20boxes%20in%20all%20communities.pdf](https://www.sos.wa.gov/assets/elections/auditorsctp/17-01%20ballot%20drop%20boxes%20in%20all%20communities.pdf).

246 Washington State Association

of Counties et al. v. State of Washington, <https://wsac.org/wp-content/uploads/2019/12/WSAC-et-al-v-State-of-Washington.pdf>.

247 See, e.g., Melissa Santos, "These ballot boxes keep your vote safe from fire, rain and rampaging SUVs," *Crosscut*, Oct. 17, 2019, <https://crosscut.com/2019/10/these-ballot-boxes-keep-your-vote-safe-fire-rain-and-rampaging-suvs>.

248 2018 EAVS data was used to determine the number of voters in each county for Georgia, Missouri, Ohio, and Pennsylvania. In Michigan, where elections are administered at the city and township level, we used data from the Michigan Department of State, Michigan Department of State, Bureau of Elections, *2020 Biennial Precinct Report*, https://www.michigan.gov/documents/sos/Biennial_Precinct_Report_for_2020_683154_7.pdf.

249 Automated letter openers sold by Pitney Bowes range from \$400 to \$2700. State of Ohio Procurement, *State of Ohio Equipment Catalog*, Sept. 9, 2015, <https://procure.ohio.gov/pricelist/800051revpricelist.pdf>; Pitney Bowes, *State of New Jersey Catalog*, updated Jan. 15, 2014, <https://www.pb.com/docs/us/pdf/microsite/state-and-local-government-solutions/new-jersey/nj-2014-price-book.pdf>.

250 The cost of mail-sorting equipment varies considerably depending on the capacity and speed needed. For example, when Hawaii switched to a vote-by-mail system, counties spent between \$50,000 and \$250,000 on mail-sorting equipment. Hawaii Office of Elections, "Implementing Elections by Mail," Nov. 6, 2019, <https://elections.hawaii.gov/wp-content/uploads/Report-to-Legislature-20191104.pdf>.

251 State of Ohio Procurement, *Election Systems & Software Price Sheet*, https://procure.ohio.gov/pdf/OT902619_MAC113_ESSPrice-Sheet.pdf (costs of high-speed scanners range from \$44,925 to \$108,270); Aquene Freechild and Hamdi Soysal, *Cost of Counting the Vote: The Price of Upgrading Voting Systems in 43 U.S. Counties*, Public Citizen, May 31, 2018, https://www.citizen.org/wp-content/uploads/voting_equipment_pricing_mini-report_05_31_18_final-1.pdf (counties in survey paid from \$49,950 to \$53,000 for an ES&S DS450 high-speed scanner and \$94,503 to \$111,500 for an ES&S DS850 high-speed scanner).

252 An estimated rental cost of \$5,000 per month for two months.

253 An estimated rental cost of \$10,000 per month for two months.

254 10 additional workers for 14 days at \$15 per hour.

255 25 additional workers for 14 days at \$15 per hour.

256 We used EAVS 2018 data for the number of precincts and poll workers.

257 Kathy Boockvar (Pennsylvania Secretary of State), Jonathan Marks (Deputy Secretary of Elections, Pennsylvania Department of State), Michael Moser (Director of Election Security and Technology, Pennsylvania Department of State), interview by Brennan Center for Justice, Apr. 10, 2020; Pennsylvania Department of State, "Election Operations During COVID-19," https://www.dos.pa.gov/VotingElections/OtherServicesEvents/Documents/PADOS_ElectionOperationsDuringCOVID19.pdf ("[The State] has ordered polling place protection kits and will be distributing them to counties prior to the primary, which include supplies such as masks, gloves, hand sanitizer and other cleaning sanitizers, and tape to mark the floor for distance markers.").

258 Polling places will need at least two plexiglass sneeze guards for poll workers at check-in tables. ShopPopDisplays, a supplier in New Jersey, sells plexiglass sneeze guards for \$130–\$214 per unit. ShopPopDisplays, "Sneeze Guards," accessed Apr. 22, 2020, <https://www.shoppopdisplays.com>. Displays2Go, a supplier in Massachusetts, sells plexiglass sneeze guards for \$90–\$110 per unit. Displays2Go, accessed Apr. 22, 2020, <https://www.displays2go.com>.

DGS Retail, a supplier in Massachusetts, sells plexiglass sneeze guards for \$55–\$189 per unit. DGS Retail, accessed Apr. 22, 2020, <https://www.dgsretail.com>. McDonald Paper, a supplier in New York, sells plexiglass sneeze guards for \$176–\$230 per unit. McDonald Paper, accessed Apr. 22, 2020, <https://mcdonaldpaper.com>.

259 The mean hourly wage for building cleaning workers in local government buildings is \$18.62. U.S. Bureau of Labor Statistics, “Occupational Employment and Wages, May 2019, Building Cleaning Workers,” accessed Apr. 22, 2020, <https://www.bls.gov/oes/current/oes372019.htm>. For community facilities, such as those that would be used for polling places, the Centers for Disease Control and Prevention recommends extensive cleaning and disinfection procedures that go beyond what cleaning services would ordinarily entail. Centers for Disease Control and Prevention, “Detailed Guidance for Disinfecting Facilities,” accessed Apr. 22, 2020, <https://www.cdc.gov/coronavirus/2019-ncov/community/organizations/cleaning-disinfection.html>.

260 Print Elect sells ballot-marking pens at a cost of \$0.33–\$0.66 per unit. Print Elect, accessed Apr. 22, 2020, <https://www.printelect.com>. Election Source sells ballot-marking pens at a cost of \$0.78 per unit. Election Source, accessed Apr. 22, 2020, <https://electionsource.com>. Government Forms & Supplies sells ballot-marking pens at a cost of \$0.81 per unit. Government Forms & Supplies, accessed Apr. 22, 2020, <https://www.governmentformsandsupplies.com>.

261 Verified Voting, “The Verifier – Polling Place Equipment – November 2020,” <https://www.verifiedvoting.org/verifier>.

262 Kathy Boockvar (Pennsylvania Secretary of State), Jonathan Marks (Deputy Secretary of Elections, Pennsylvania Department of State), Michael Moser (Director of Election Security and Technology, Pennsylvania Department of State), interview by Brennan Center for Justice, Apr. 10, 2020.

263 See U.S. Election Assistance Commission, 2018 *Election Administration And Voting Survey Codebook*, June 2019, <https://www.eac.gov/research-and-data/datasets-codebooks-and-surveys>.

264 The U.S. District Court for the District of Maine pays certified interpreters \$55 per hour. U.S. District Court for the District of Maine, “CJA Quick Guide: Interpreter Services and CJA 21 Voucher Preparation,” https://www.med.uscourts.gov/pdf/Informational_Handout_re_InterpreterServices.pdf. Rates for a collection of interpreter service vendors used by the Rhode Island Department of Education cost \$45–\$165 per hour. Rhode Island Department of Education, “Translation and Interpretation Services,” Multilingual Learners (MLLs) / English Learners (ELs), accessed Apr. 22, 2020, <https://www.ride.ri.gov/StudentsFamilies/EnglishLearners.aspx#40321621-translation-and-interpretation-services> and <https://www.ride.ri.gov/Portals/0/Uploads/Documents/OSCAS/English-Learner-Pages/RI%20Translation%20and%20Interpretation%20Services.pdf>. In 2012, the Virginia Department of Health contracted

for interpreter services at a rate of \$38 per hour. Office of Purchasing and General Services, Virginia Department of Health, Contract 120020-501AA with Propio Language Services LLC (Virginia, 2012), <http://www.dbhds.virginia.gov/library/administration/adm-Contract%201200020-501AA%20Language%20Interp%20Transla%20Propio%20April%202012.pdf>. A school district in Washington, DC, received quotes for interpreter services from two providers at \$45 per hour and \$95 per hour. Cobb County School District, 20120033, *Interpretation and Translation Services TabSheet*, accessed Apr. 22, 2020, http://www.cobbk12.org/centraloffice/purchasing/Tabsheetsv3/InterpretationandTranslationServices.Q20120033_tabsheet.pdf.

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270 See Karen Shanton and Wendy Underhill, *Costs of Voter Identification*, National Conference of State Legislatures, June 2014, https://www.ncsl.org/documents/legismgt/elect/Voter_ID_Costs_June2014.pdf; Richard Sobel, *The High Cost of ‘Free’ Photo Voter Identification Cards*, Charles Hamilton Houston Institute for Race & Justice at Harvard Law School, June 2014, <https://today.law.harvard.edu/wp-content/uploads/2014/06/FullReportVoterIDJune20141.pdf>.

271 Dave Leichtman (Director, Program Strategy, Defending Democracy at Microsoft), interview by Brennan Center for Justice, Apr. 15, 2020; Andy Brush (Consultant, Michigan Department of Technology Management and Budget) and Ashiya Brown (Elections Analyst, Michigan Secretary of State), interview by Brennan Center for Justice Apr. 17, 2020.

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