

Waiting to Vote

Racial Disparities in Election Day Experiences

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Foreword

The pictures of Milwaukeeans waiting in line to vote on April 7 with homemade personal protective equipment were both beautiful and horrifying. It was beautiful — inspiring even — that with a deadly pandemic on their doorsteps, so many people still cared so much about their right to vote that they went to the polls. And it was horrifying that they had to risk their health in order to do so.

News reports indicated that Milwaukee, the most diverse city in a largely white state, had reduced its usual 180 polling sites to just five. Covid-19 has exposed serious problems in our election systems, and it has made the need for reform urgent. Voters of color and demographically changing communities all across the country already knew this, though. As this report details, Black and Latino Americans face longer wait times on Election Day than white voters. In the past, long wait times were disruptive and disenfranchising. In the middle of a pandemic, they could also be deadly.

Though completed before the eruption of the coronavirus, this report is even more critical now because it provides information regarding community needs as well as mistakes commonly made in planning for and staffing in-person voting. While the risk of Covid-19 will no doubt move more voters to cast their ballots by mail, some

communities — more typically communities of color — rely on polling places. We must make sure that there are in-person options, and that they have enough of the right kinds of resources.

The period leading up to the November general election will be marked by extreme disruption and hardship in all facets of American life. At the time of publication, the pandemic has killed more than 100,000 Americans. It has also caused schools to close, people to lose their jobs, and Americans to distance themselves from one another. Our fundamental right to vote and our democratic processes are more important than ever: The officials we elect will make high-stakes decisions that will impact our health, safety, and welfare.

In these dire times, our country will not benefit from the judgment and experiences of all its citizens unless all Americans can vote freely and safely.

Myrna Pérez
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Introduction

The 2018 general election saw the highest turnout in a midterm in decades.¹ While many voters were able to cast a ballot quickly and easily in that election, others faced hours-long lines, malfunctioning voting equipment, and unexpectedly closed polling places.² We estimate that some 3 million voters waited 30 minutes or more to cast their ballot.³ Many of these voters were concentrated in the southeastern United States, home to large shares of nonwhite voters.

Long lines and wait times have plagued several elections over the past decade.⁴ The consequences can be far reaching. For example, the Bipartisan Policy Center estimates that more than half a million eligible voters failed to vote in 2016 because of problems associated with the management of polling places, including long waits.⁵

For this report, we analyzed data from two nationwide election surveys regarding the 2018 election: the Cooperative Congressional Election Study, a 60,000-person survey on Election Day experiences, and the U.S. Election Assistance Commission's Election Administration and Voting Survey, which asks administrators detailed questions about how they conduct elections. We also interviewed nearly three dozen state and local election administrators.⁶ Further, we examined the electoral statutes on the books in every state in the nation to understand the sources of disparate wait times in 2018 and develop policy recommendations for lawmakers and election officials ahead of 2020.⁷ Some previous research has investigated the relationship between wait times and electoral resources — specifically polling places, voting machines, and poll workers.⁸ But no prior study has examined the relationship on a nationwide scale. We find:

- **Latino and Black voters were more likely than white voters to report particularly long wait times, and they waited longer generally.**⁹ Latino and Black voters were more likely than white voters to wait in the longest of lines on Election Day: some 6.6 percent of Latino voters and 7.0 percent of Black voters reported waiting 30 minutes or longer to vote, surpassing the acceptable threshold for wait times set by the Presidential Commission on Election Administration, compared with only 4.1 percent of white voters.¹⁰ More generally, Latino voters waited on average 46 percent longer than white voters, and Black voters waited on average 45 percent longer than white voters.
- **Voters in counties with fewer electoral resources per voter, relative to other counties, reported longer wait times in 2018.** In this report, we offer the first national-level statistical evidence that counties with

fewer polling places, voting machines, and poll workers (referred to hereafter as “electoral resources”) per Election Day voter than other counties had longer wait times in 2018.¹¹ By “Election Day voters,” we mean voters who cast in-person ballots on Election Day (referred to hereafter as “voters”). Voters in counties with the fewest electoral resources per voter reported waiting two to three times as long to cast a ballot on Election Day as voters in the best-resourced counties.

Given those two statistical findings, some might conclude that voters of color wait longer because they tend to live in counties with fewer electoral resources. Our analyses do not support this hypothesis; on average, we find, counties with higher minority shares of the population did not have fewer resources per voter than whiter counties did in 2018. Our statistical models do, however, establish that with fewer resources, the racial wait gap would have been even larger.

- **Counties that became less white over the past decade had fewer electoral resources per voter in 2018 than counties that grew whiter.** The average county where the population became whiter had 63 voters per worker and about 390 voters per polling place. In comparison, the average county that became less white had 80 voters per worker and 550 voters per polling place.¹²
- **Similarly, counties where incomes shrank over the past decade had fewer electoral resources per voter in 2018 than counties where incomes grew over the same period.** The average county where real incomes grew had 74 voters per worker and 470 voters per polling place, while counties where real incomes declined averaged 82 voters per worker and 590 voters per polling place.

Our findings suggest that allocating equal resources among counties and precincts is not sufficient to produce equal wait times for voters, particularly those of color and of lower incomes. Instead, election administrators must

target those counties and precincts with a history of long wait times and allocate enough resources to these locations to equalize the wait times for all voters. The goal for election administrators should be to distribute resources in a manner that produces a similar Election Day experience for all voters.

Given these findings, we make the following recommendations to election administrators:

- **Provide resources sufficient to minimize voter wait times.** Election officials in counties that have encountered long waits in recent elections should increase the quantity and quality of resources allocated, and state lawmakers should ensure that resources are allocated sensibly between and within counties to prevent disparate wait times.
 - **Plan for an above-trend spike in voter turnout.** Between the 2014 and 2018 midterm elections, voter turnout spiked from the lowest it had been in 72 years to the highest in decades.¹³ This created problems where election administrators had relied too heavily on past turnout trends to allocate resources.¹⁴ Voter turnout is poised to increase dramatically in 2020 over past presidential elections, and election administrators should not be misled by past trends when making resource allocation decisions.¹⁵
 - **Account for policy changes that may impact turnout.** State election policies can change from election to election, and these changes may impact the number
- of individuals who vote on Election Day, early in person, absentee, or by mail. Administrators must take these new policies into account when estimating turnout levels and allocating resources.
- **Increase compliance with resource mandates.** State officials should review their standards for resource allocation to ensure that counties are in compliance and standards are appropriate given resource levels and wait times. Advocates should hold states to those standards in 2020.
 - **Limit polling place closures.** Administrators should examine voter turnout data and early voting usage when making decisions about eliminating polling places, and they should not do so without a firm analytical justification.
 - **Develop comprehensive vote center transition plans.** Administrators should act carefully when transitioning to vote centers. Vote centers should be piloted in lower-turnout elections, and administrators should not close or combine voting locations until they fully understand how vote centers will affect turnout.
 - **Expand language assistance.** Jurisdictions that narrowly missed the legal mandate to provide non-English-language assistance under the Voting Rights Act should nonetheless offer language assistance in the 2020 election.

Overview of Methodology

This report draws on both quantitative and qualitative research methods, which we summarize below. To read more about our data sources and our econometric modeling, see the Quantitative Technical Appendix.

Quantitative Methodology

The Brennan Center leveraged national survey data to interrogate the relationships among racial and economic demographics, county-level election resources, and wait times faced by voters. In particular, we incorporated data from three sources: the Cooperative Congressional Election Study (CCES), the Election Administration and Voting Survey (EAVS), and the U.S. Census Bureau's five-year American Community Survey (ACS) estimates.

The data on how long voters waited to cast a ballot comes from the CCES.¹⁶ This 60,000-person survey is conducted after each federal election.¹⁷ It is weighted to be nationally representative and asks voters a host of questions about their sociodemographic characteristics and their experience on Election Day that year. Much of the existing academic research on voters' wait times relies on this survey data.¹⁸

We also use data from the biennial EAVS, which is administered by the U.S. Election Assistance Commission after every federal election.¹⁹ The EAVS asks local election administrators to report the number of registered voters in their jurisdiction, the number of ballots cast on Election Day, and other information pertaining to election administration. Election administrators are also asked to report the number of polling places they had open on Election Day and the number of Election Day poll workers and voting machines they had in place within a jurisdiction. We merged the data garnered from the EAVS and the CCES to explore the relationship between county-level resources and wait times.²⁰

Looking for disparities between counties could mask disparities *within* counties. In other words, it is possible that certain towns or neighborhoods within counties get more resources per voter than other parts of the county — something we would miss by looking only at how many resources a county deployed in aggregate. To test the possibility of uneven resource distribution within counties, we analyzed precinct-level data from dozens of counties around the country. These included counties where reports of racial disparities in wait times were prevalent. Our within-county analyses pointed in the same direction as the between-county analyses; we found no evidence that racial and ethnic minorities systematically receive fewer resources than white voters.

Because this report focuses on how Election Day resources impacted voter experience in 2018, we have

excluded the estimated wait times of respondents who reported voting early (whether in person or by mail) and of those who live in counties that vote primarily by mail.²¹

Qualitative Methodology

To identify specific factors that contribute to long voter wait times and electoral resource challenges, we interviewed state and local election officials. A variety of methodologies were used to select interviewees: We scoured news reports after the 2018 election to determine where the longest lines formed. We tracked parts of the country where Twitter and Facebook users posted about facing long lines on Election Day. We also used survey data to identify counties where there were reported racial disparities in wait times. On the basis of these findings, we spoke with state and local election administrators in 32 jurisdictions across the country, including some of the most populous counties in the nation, such as Harris County, Texas, and Maricopa County, Arizona.²²

Limitations

It is important to recognize the limitations of this study, as is the case with any empirical research of this nature. The first set of limitations regards the quantitative data available. There is not, for instance, perfect reporting to the EAVS about the number of resources in each county; we must assume, therefore, that trends identified using counties that do report to the EAVS hold even in the counties that do not. Moreover, the EAVS data can assess the quantity of resources but not their quality. The same number of voters per machine, for instance, in two counties might produce vastly different wait times if the machines in one county are much older than those in the other. The same holds true for poll workers: we can measure the number of workers but not the quality of available training, the extent to which they reflect their community, or whether their language skills match the needs of voters.

Our qualitative methodology represents our best effort to combat the limitations imposed by the quantitative approach. We developed our interview instrument with an eye toward identifying factors that could not be captured in the quantitative data. We asked election administrators how hard it was to find poll workers and whether they emphasized hiring poll workers who reflect their counties' demographics. We also asked them about their contingency plans for handling unexpected events,

like broken machines. Since we could not speak with administrators from every county in the country, we sought to speak with a diverse array of them.

These limitations, we hope, chart the path for future research on the relationship between resources and wait

times. There are certainly nuances that our research design fails to reveal, and there may be material ways, not captured by the models presented herein, in which nonwhite populations receive fewer resources than white ones.

Latino and Black Voters Were More Likely to Report the Longest Wait Times in 2018

Most voters waited far less than 30 minutes to cast a ballot in 2018: according to our analysis of the CCES, more than 47 percent of voters reported waiting in no line on Election Day, and the average wait time was just seven minutes.²³ Still, far too many voters were forced to wait a long time to vote. According to our analysis of the CCES, roughly 3 million people — or between 4 and 5 percent of all in-person Election Day voters — waited 30 minutes or longer to vote on Election Day in 2018.²⁴ A disproportionate number of them were Black or Latino.

The Racial Wait Gap in 2018

A large body of recent scholarship has established that throughout the country Latino and Black voters wait longer to cast their ballots than white voters. Indeed, a quantifiable racial disparity in voting wait times has been identified consistently over the past decade.²⁵

According to our analysis of the CCES, voters of color were also more likely than white voters to report waiting a very long time to vote in 2018. Specifically, 4.1 percent of white voters reported waiting in line 30 minutes or longer, while more than 6.6 percent of Latino voters and 7.0 percent of Black voters reported facing such delays. In addition, Latino and Black voters who cast a ballot in person on Election Day in 2018 reported, on average, substantially longer wait times than white voters. Latino voters waited almost 46 percent longer than white voters, and Black voters waited 45 percent longer, on average. According to our analysis, in 2018 on average, Latino voters waited 9.5 minutes to vote and Black voters waited 9.4 minutes, while white voters waited only 6.5 minutes to cast a ballot.

These findings are consistent with a study of the 2012 election conducted by the Brennan Center.²⁶ They are also consistent with other research in the field.²⁷ This racial wait gap has been established in the literature using multiple methods, including analyses of self-reported wait times and cell phone data.²⁸

Long wait times are more than an inconvenience. They can disenfranchise people who are unable to stay in line to cast a ballot. Moreover, long waits reduce voter participation in subsequent elections.²⁹

Factors Contributing to the Racial Wait Gap

Over the past decade, studies have explored the factors contributing to this racial wait gap. Researchers have established that some of the gap is driven by demographic factors. For example, multiple studies have shown that voters of all races are more likely to wait longer in counties with higher population density, and Latino and Black voters disproportionately live in these areas.³⁰

At least one study finds that county-level demographics cannot entirely explain the wait gap. Voters of color report waiting longer than white voters at the polls even after researchers control for the different types of counties in which they live.³¹ Nor can partisan bias, restrictive voting laws, income inequality, or racial segregation fully account for the wait gap.³²

The Brennan Center previously established a relationship between racial disparities in electoral resources and the wait gap in the 2012 election. In the report *Election Day Long Lines: Resource Allocation*, the Brennan Center studied resource allocation on Election Day in Florida, Maryland, and South Carolina.³³ We found that fewer electoral resources were a significant contributor to long waits and that voters in precincts with higher percentages of minority voters experienced long waits at the polls. We also found that voters in precincts with higher percentages of minority voters had fewer voting machines.³⁴

In the 2018 election, we found that some of the racial wait gap can be explained by demographic factors, a finding consistent with prior research by others.³⁵ For example, the gap between white and Black voters can be attributed in part to the fact that Black voters are more concentrated in states — particularly in the Southeast — where all voters wait longer to cast a ballot. Similarly, both Latino and Black voters are more likely to live in dense, urban counties, where voters of all races face longer wait times. Latino and Black voters also tended to be younger than white voters in 2018, and young people reported long wait times regardless of race. These findings hold even after controlling for demographic factors such as income, education, and age.

Our statistical analyses show that the 2018 racial wait gap cannot be explained by the level of resources per voter in counties populated largely by racial and ethnic minorities. In fact, whiter counties tended to have fewer resources per voter than less-white counties. This is not, however, an argument for reducing the levels of resources in the less-white counties; had minority voters received fewer resources, the racial wait gap would have been even larger.

Electoral Resource Parity Is Not Enough

>> **Racial gaps** in Election Day wait times demonstrate that certain communities may require additional resources to reach equitable outcomes — a finding that has roots in an array of fields.³⁶ These communities often face social, economic, or environmental disadvantages that adversely impact individuals; therefore they may need expanded or different supports to achieve desired outcomes. Research on education in low-income communities is illustrative of this phenomenon. For example, one report found that “students in poverty are likely to need additional supports in order to succeed academically. In other words, simply offering equal [education] funding isn’t enough” to equalize outcomes among students of diverse backgrounds.³⁷ Similar findings exist in the health-care field, where studies have shown that the U.S. health disparities gap cannot be solved simply by providing an equal number of resources to all patients. “In order to reduce the health disparities gap, the underlying issues and individual needs of underserved and vulnerable populations must be effectively addressed.”³⁸ This report suggests this phenomenon is also at play in the relationship between wait times and electoral resources.

Our interviews with election administrators indicate that resource gaps that do not appear in raw counts of polling places, voting machines, and poll workers may exacerbate the racial wait gap. Insufficient non-English-language assistance may be one contributing factor. Our interview set revealed that while some election officials are aware of a growing number of voters who need election materials in non-English languages, few counties that

are not mandated to provide such materials proactively do so.³⁹

Commentators have long noted that voting can be daunting for individuals whose first language is not English. Inadequate assistance provided to these voters can result in confusion and delays at the polls.⁴⁰ Simply adding more poll workers in a Spanish-preferred neighborhood, for instance, is likely to have little effect on voter wait times if the bottlenecks in these polling places arise from language-based confusion and the additional poll workers do not speak Spanish.

Section 203 of the Voting Rights Act (VRA) requires certain jurisdictions to provide multilingual voting materials and language assistance at polling places.⁴¹ Roughly one-third of the counties whose officials were interviewed for this report fall into that category.⁴² Many of the election administrators we spoke to are taking steps to comply with their legal obligations.⁴³ However, some county election officials told us they face challenges in providing adequate language assistance resources despite the mandate to do so.⁴⁴

Furthermore, while Section 203 provides a critical safety net, it should not be the only measure of a jurisdiction’s language assistance needs. Many jurisdictions that are not yet required to meet the VRA’s language assistance mandates have significant and growing numbers of voters who do not speak English as their first language.⁴⁵ Nevertheless, we found that among the counties whose officials we interviewed, most offer few to no services to voters with limited English proficiency.⁴⁶ In Manassas City, Virginia, for example, Latinos make up nearly 40 percent of the overall population.⁴⁷ Although the county does recruit Spanish-speaking poll workers, it has had difficulty recruiting an adequate number for Election Day and does not provide ballots or other materials in Spanish.⁴⁸

Voters with Fewer Electoral Resources Wait Longer to Vote

Many factors influence how long voters wait in line on Election Day, and long waits can arise both from decisions made by election administrators and from voter behavior. For example, the time of day when a person shows up to vote, the physical layout of a polling place, and the type of voting machine used all influence the amount of time it takes to cast a ballot.⁴⁹

Some research has attempted to understand the relationship between wait times and electoral resources.⁵⁰ However, no previous study has examined the relationship on a nationwide scale. We present here the first national-level statistical evidence that counties with fewer electoral resources relative to other counties had longer wait times in 2018.

Analyzing data from the EAVS and the CCES, we found that voters in counties with fewer electoral resources per voter than other counties reported longer wait times, on average, in 2018. This was true for each of the three primary ways of measuring electoral resources: votes cast per polling place, votes cast per poll worker, and votes cast per machine. The more voters per electoral resource allocated, the longer the delay. Voters in counties with the most voters per polling place, poll worker, and machine were also the most likely to wait in lines of 30 minutes or more.

- In 2018, voters in counties with the most voters per polling place waited more than twice as long as voters in counties with the fewest voters per polling place.
- Inadequate numbers of poll workers were an especially important contributor to long waits. In counties with the fewest voters per poll worker, voters waited less than 5 minutes; where poll workers were spread among the most voters, the average wait time was nearly 15 minutes.
- Counties with the most machines available for voters saw average waits of around 5 minutes, while the average wait time in counties with the fewest machines per voter was more than 13.5 minutes.

These findings hold true even after controlling for socio-demographic characteristics of individuals and their counties.

Factors Contributing to Inadequate Resource Allocation

Resource allocation decisions are made largely at the local level, with some state guidance. In our interviews, we found that county election administrators look to four main factors

when determining how to allocate resources: funding, statutory requirements or guidelines, the quality of available resources, and unique community needs, as shown by such indicators as voting trends and demographic shifts.⁵¹

As a result of this decentralized approach to resource allocation, resourcing varied substantially — both between and within states — in the 2018 election. In places like North Carolina, there were tremendous disparities in the level of resources available to voters on Election Day from one county to the next. In several North Carolina counties, there were more than 500 voters per voting machine in 2018, while in others there were as few as 51.⁵²

More broadly, the discrepancy between the best and the worst was significant: the 10 percent of counties with the fewest voters per polling place averaged fewer than 185 voters per site, while the 10 percent of counties with the most voters per polling place averaged over 1,060 voters per site.

Counties That Became Less White and Counties with Declining Incomes Had Fewer Resources Per Voter in 2018 than Other Counties

We found an alarming correlation between demographic and economic change over the past decade and electoral resources in 2018.⁵³ Counties where the white share of the population shrank over the past 10 years had fewer resources per voter relative to other counties. Additionally, counties where real (that is, inflation-adjusted) incomes declined or grew slowly had fewer resources per voter — even after accounting for other factors — than those where real incomes grew quickly.⁵⁴

- The average county where the population became whiter had 63 voters per poll worker and about 390 voters per polling place. In comparison, the average county that became less white had 80 voters per worker and 550 voters per polling place.⁵⁵
- Similarly, counties where the median income grew quickly over this same period had greater numbers of polling places and poll workers per vote cast in 2018 than those counties where the median real income

declined or grew slowly. The average county where real incomes grew had 74 voters per worker and 470 voters per polling place, while the average county where real incomes declined had 82 voters per worker and 590 voters per polling place.⁵⁶

An example is useful to understand these findings. If two counties were equally white in 2017, but one had seen its white share of the population decline over the preceding 10 years while the other had seen its white share remain constant, the county where the white population had declined would likely have had fewer electoral resources per voter in 2018, according to our models.

In the analysis above, we divided counties into discrete groups: places that became less white or more white over the past decade, and places where incomes went down or up over the same period. Regression analysis shows that what matters is not just *whether* these counties became less white or saw incomes decline, but also the *extent* to which these changes occurred. Not only did counties that became less white have fewer resources per voter than counties that became whiter; counties where the white share of the population declined dramatically had fewer resources per voter than counties where there was only a modest decline of the white share of the population. Likewise, counties where median incomes declined most dramatically had fewer resources per voter than those where the decline was less pronounced.

Our findings align closely with related social science research. Multiple studies have found that jurisdictions undergoing demographic change often struggle to fund and provide public goods.⁵⁷ As one paper examining demographic change and residents' willingness to increase taxes explains, it is "communities that have undergone sudden demographic changes, not communities that have long been diverse, where diversity's effects are pronounced."⁵⁸ Counties where incomes have decreased have a diminishing tax base and, consequently, are likely to cut back on public expenditures more quickly than counties with more stable tax receipts. While a county's demographic profile matters for resource allocation, so too do *changes* in these demographics — and counties that are getting whiter and where incomes are growing may be investing more in critical electoral resources.

Noncompliance with Statewide Minimum Requirements

One way to address the risk of significant resource disparities within states is to set and enforce robust statewide minimum requirements for electoral resources. At least 25 states have laws setting a floor for the number of polling places.⁵⁹ At least 15 states have laws pertaining to minimum numbers of voting machines or poll workers per voter.⁶⁰

These statutes are of little value, however, if they are not enforced. We analyzed statutory compliance nationwide and found that noncompliance was common in the

2018 election in several states. For example:

- In Illinois, 42 percent of precincts had more than 800 voters, the maximum allowed by law, and roughly 20 percent of counties had countywide averages exceeding the state maximum of 400 voters per machine.⁶¹
- In Michigan, nearly a quarter of all precincts had more than the legally mandated 2,999 registered voters, and nearly 50 percent of counties had more than 600 registered voters per machine, the maximum allowed.⁶²
- In South Carolina, 31 of 46 counties exceeded the maximum of 250 voters per machine allowed by the state, for a 67 percent noncompliance rate.⁶³ More than 2.5 million South Carolinians are active registered voters in counties that have statutorily inadequate numbers of machines.

Furthermore, countywide averages can cover up variations within counties where some precincts are well resourced and others struggle. Hall County, Georgia, provides an example of how this plays out on the ground. Although the *average* number of voters per machine in the county did not exceed state maximums, one-third of polling places in the county had more registered voters per machine than the state allowed.⁶⁴ Accordingly, depending on where they lived, voters in Hall County were assigned to polling places with different resources on Election Day, leading to divergent voting experiences.

Inadequate Planning Practices

Our interviews with election administrators suggest that some counties' election planning practices may be inadequate in the face of growing turnout and uncertainty over moves to early voting. Election administrators in several states across the country reported that they relied on turnout in comparable prior elections in their planning processes for the 2018 election.⁶⁵ (That is, while planning for the federal midterm election, administrators looked to turnout in previous federal midterms.) Overreliance on past turnout as a predictor of resource needs, however, can lead to significant problems when turnout surges, as it did in 2018. It is likely to do so again in 2020.⁶⁶

Prince George's County, Maryland, for example, used a formula that relied on historical turnout to determine the number of ballots supplied on Election Day.⁶⁷ According to one election administrator, this formula had "always worked up until the 2018 general Election Day,"⁶⁸ when voters turned out at extraordinary rates.⁶⁹ Officials had overestimated the number of early voters and underestimated the number of Election Day voters.⁷⁰ Thirteen precincts ran out of ballots on Election Day.⁷¹ Hundreds of voters reportedly waited hours to vote, some past 10 p.m.⁷² Prince George's County has since decided it will no longer use this method of resource allocation.⁷³

New Laws Threaten Access to Early Voting

>> **Existing challenges** related to inadequate planning and resources during early voting could be exacerbated by new laws that reduce the number of early voting locations and disenfranchise voters in smaller communities. For example:

- North Carolina's Senate Bill 325 — passed in 2018 — mandates uniform hours of operation at all temporary early voting sites.⁷⁴ An administrator in North Carolina explained that some counties had difficulty funding early voting sites because of the uniform hours requirement and thus had to close locations. In Forsyth County,

election officials were forced to use a contingency fund to comply with the new law.⁷⁵

- Prior to the 2019 election, Texas implemented House Bill 1888, which requires early voting sites to remain open for the entire early voting period, eliminating mobile early voting sites.⁷⁶ In Travis County, an official explained that the law placed significant financial burden on the county and most directly targeted both rural voters and young voters on college campuses, many of whom lived in areas whose populations do not justify a permanent early voting site.⁷⁷

This approach to planning can cause special problems in connection with early voting. Opportunities to cast a ballot before Election Day are increasingly popular, and administrators are struggling to predict turnout levels at early voting locations.⁷⁸ This contributes to delays at the polls.⁷⁹ In fact, according to our analysis of CCES data, early in-person voters were slightly more likely to face long waits than in-person Election Day voters.

Polling Place Closures

Another well-documented phenomenon is the steady increase in polling place closures.⁸⁰ These closures might not be a problem if they simply reflected voters shifting to early, mail, or absentee voting. The U.S. Election Assistance Commission claims that a decrease in Election Day polling places can likely be explained by rising rates of early and absentee voting in some states and a shift to Election Day vote centers in others.⁸¹ We found, however, that several states with troubling voting rights records have seen the number of Election Day ballots cast per polling place swell in the past five years, suggesting that these closures are outpacing changes in voter behavior.⁸²

Using the EAVS, we tested the early voting hypothesis in Georgia and Louisiana, which have robust early voting programs and have been closing polling places over the past several years. We found that the increasing use of early voting fails to fully account for the increase in polling place closures. According to our analysis of EAVS data, the average polling place in Georgia had 530 in-person Election Day ballots cast in 2014. In 2018, the average polling place saw 770 in-person Election Day voters, an increase of nearly 50 percent. In Georgia and Louisiana, polling places are being closed faster than voters are switching to early voting.

The shift to vote centers raises a related concern.⁸³ Vote centers replace the precinct-based system, instead allowing voters to cast a ballot at any location within their county.⁸⁴ This approach can be efficient and voter-friendly by giving voters access to a greater number of polling locations. The transition to this system, however, can be fraught.

Officials report that it can be difficult to accurately determine turnout at newly implemented vote centers, which results in inadequate resources and long lines.⁸⁵ Are voters more likely to cast a ballot near their home before work? At their children's school? Or at a location near work on their lunch break? The difficulty of predicting the answers to these questions leads to some polling places being overresourced and others underresourced.

Polling Place Statutes: A Potential Bulwark Against Closures

>> **Thirty-two states** have laws specifically pertaining to the closure of polling places.⁸⁶ These provisions set a procedural backstop that localities must follow when attempting to consolidate voting locations. Some states establish a time frame — ranging from several months to one week before an election — after which polling places cannot be moved, closed, or altered in any way.⁸⁷ Several polling place laws impose a "good cause" requirement, mandating that alterations to previously selected polling places may only occur when there is "an . . . unavoidable event," or in even more extreme circumstances, where there is "an emergency caused by an act of God."⁸⁸ Many statutes even describe steps officials must take to notify voters when closing polling places.⁸⁹

>> **Although noncompliance** may currently be common, polling place laws can provide a statutory avenue for judicial intervention to regulate the closure of voting locations, particularly in vulnerable communities.⁹⁰ Additionally, in counties impacted by polling place closures, transparency and advance warnings regarding reductions — which in turn create opportunities for advocacy and activism — can effectively stave off closures.

For example, Clark County, Nevada, moved to vote centers for the 2018 election.⁹¹ According to a county election official, this move made it harder to forecast critical elements of voter behavior.⁹² The unpredictability of citizens' responses to the new vote center model, coupled with record turnout in Nevada, created long lines throughout the county.⁹³

Looking ahead to the 2020 election, more than 60 counties in Texas, including several of the state's largest,

are expected to use vote centers.⁹⁴ Under Texas law, counties moving to vote centers are permitted to reduce the number of polling locations by 35 percent in the first election in which the model is used and by 50 percent in subsequent elections.⁹⁵ Some major counties have committed to maintaining past voting locations during the transition to vote centers.⁹⁶ Others already plan to shutter polling places.⁹⁷

Electoral Resource Challenges in 2020 and Beyond: Policy Recommendations

The 2020 election will challenge election administrators even more than the 2018 election did.⁹⁸ Some project even higher turnout, given the hotly contested presidential race.⁹⁹ And many voters will continue to have the option to cast a ballot at times other than Election Day, increasing uncertainty in election planning.¹⁰⁰

Our analysis of the survey data, electoral resource statistics, and interviews with election administrators suggests several worrisome trends that could lead to long — and uneven — wait times. However, with careful and proactive planning, our election system can be prepared to handle an uncommonly busy Election Day.

We make the following specific recommendations to election administrators:

- **Provide resources sufficient to minimize voter wait times.** Election officials in counties that have encountered long waits in recent elections should increase the quantity and quality of allocated resources — namely, polling places, poll workers, and voting machines — and state lawmakers should ensure that resources are allocated sensibly among and within counties to prevent disparate wait times.
- **Plan for an above-trend spike in turnout.** Voter turnout is poised to increase dramatically in 2020,¹⁰¹ and election administrators must avoid being misled by past turnout trends in presidential elections when making resource allocation decisions. As part of a conservative approach to resource allocation, counties should take into account their total number of registered voters. Consulting with community groups and experts in the field can help with allocation decision-making, as can exploring innovative technology. For example, the Rhode Island Board of Elections partnered with the University of Rhode Island to develop resource allocation algorithms.¹⁰² According to the board, decisions derived from these algorithms have “helped eliminate most lines.”¹⁰³
- **Account for policy changes that may impact turnout.** State election policies can change from election to election, and these changes can impact the number of individuals who vote on Election Day. Nevada, for example, will have automatic voter registration and same-day voter registration for the first time in 2020.¹⁰⁴ These pro-voter reforms expand access to the ballot box and improve election administration but can throw off election administrators’ turnout predictions. Election administrators must take new policies such as Nevada’s into account when estimating turnout levels and allocating resources.
- **Increase compliance with resource mandates.** State officials should review their standards for resource allocation and ensure counties’ compliance. Statutes mandating minimum levels of electoral resources also enable advocacy organizations, state attorneys general, and members of the public to monitor electoral resource allocation. Advocates should hold states to those standards in 2020.
- **Limit polling place closures.** In recent years, election officials have closed numerous polling locations.¹⁰⁵ As we have stated in this report, increased early voting does not fully account for these closures. Administrators should examine voter turnout data and early voting usage and avoid closing polling places without firm analytical evidence that doing so will not overburden remaining polling places. Further, election officials should consider opening additional polling places in areas where voter turnout levels are expected to be particularly high and long lines have developed in past elections.
- **Develop comprehensive vote center transition plans.** Administrators should act carefully when transitioning to vote centers. These should be piloted in lower-turnout elections so that administrators can better predict voter distribution trends. Administrators should also not close or combine voting locations until they fully understand how voters plan to use vote centers.¹⁰⁶ In addition, election officials should consider employing technological solutions to smooth the transition and maximize the effectiveness of the vote center model. In Williamson County, Texas, for example, voters can access a smartphone app that shows the nearest voting location in their county and the location with the shortest wait.¹⁰⁷
- **Expand language assistance.** Jurisdictions that narrowly missed the numerical threshold that would require them to provide non-English-language voting assistance under the Voting Rights Act should nonetheless aim to provide such assistance in the 2020 election.¹⁰⁸ In addition, lawmakers should follow the lead of cities and states that have gone beyond the VRA’s requirements. For example, California has a lower

threshold for language assistance coverage than is federally mandated and has continued to expand access to non-English-language voting materials to communities throughout the state.¹⁰⁹ Proactive language assis-

tance policies will help ensure that all voters are able to cast a ballot and minimize confusion and delay at polling places.

Quantitative Technical Appendix

In this technical appendix, we present a fuller discussion of the quantitative data sources used in this report and the statistical models used to arrive at our results.

Data Sources

Much of the existing literature on long lines on Election Day has drawn from two national survey instruments: the Survey of the Performance of American Elections (SPAЕ) and the Cooperative Congressional Election Study (CCES).¹¹⁰ Both survey instruments have historically asked voters about their experiences on Election Day, including how long they had to wait in line to cast a ballot. Unfortunately, the SPAЕ was not fielded after the 2018 election. This report, therefore, contains only estimates from the CCES on how long individuals waited in line to cast a ballot in the 2018 election.

Respondents to the CCES are asked approximately how long they had to wait to vote. Voters can pick from different buckets, such as “less than 10 minutes” or “10–30 minutes.” Respondents’ wait times are assumed to be the middle of each bucket; therefore, if someone reports waiting between 10 and 30 minutes, we assume the wait time to be 20 minutes. Voters who report waiting longer than 60 minutes are asked to approximate the number of minutes they spent in line in a free-text box; these responses have been manually coded by the Brennan Center research team.

To estimate county-level electoral resources, we incorporate data from the U.S. Election Assistance Commission’s biennial Election Administration and Voting Survey (EAVS). The EAVS asks election administrators many questions about how elections are conducted in their jurisdictions. The Brennan Center previously used the EAVS to research voter purges.¹¹¹ Other academic researchers have used the survey to investigate different aspects of election administration.¹¹² Here we use the information regarding the resources each jurisdiction reported deploying on Election Day. We specifically examine the number of polling places, poll workers, and voting machines deployed in each county.¹¹³

Not all jurisdictions respond to the EAVS each year. Although a larger share of election administrators responded to the EAVS in 2018 than in prior years, we still do not know the resources in place on Election Day for every voter in the country. When we merge the CCES and EAVS data, however, we can calculate the number of voters per polling place, the number of voters per worker, and the number of voters per machine for at least four out of every five voters in the country.¹¹⁴

A further issue with the EAVS is that, even when election administrators do respond to the survey, the data is sometimes clearly incorrect. Iowa, for instance, reported

in 2018 that there were nearly 800,000 polling places. To avoid biasing our results, we have removed Iowa polling place data. To guard against the possibility of other erroneous data, we also exclude the 1 percent of counties reporting the most voters per polling place, voters per poll worker, and voters per machine. While it is not perfect, the EAVS data remains the best option available for researchers investigating national patterns in the distribution of Election Day resources.

Regression Specifications

The results discussed in the body of the report show that voters of color waited longer to vote and that voters in counties with fewer electoral resources per voter waited longer. We also show that counties where the white share of the population and real incomes declined had fewer electoral resources per voter on Election Day in 2018. These results are based on regression analysis, a common technique used among political scientists to understand the relationships among different variables.

Racial Wait Gap

We begin by presenting the regression model that interrogates wait times on Election Day, by race. As table 1 makes clear, nonwhite voters wait significantly longer: Black voters waited 2.8 minutes longer than white voters, and Latino voters waited 3.0 minutes longer than white voters, on average. Even after we add state fixed effects in model 2 (that is, after we control for the fact that some states have higher wait times than others), we see that voters of color waited in longer lines. This means that in any given state, these voters were more likely to wait in long lines, and that they were not simply more likely to live in states with longer wait times for everyone.

In model 3, we introduce county-level characteristics. These data sets are all derived from the Census Bureau’s five-year American Community Survey estimates that end in 2017, and information about machine types comes from Verified Voting. After including these county-level factors, the Latino coefficient remains statistically significant. This means that, on average, Latino voters wait longer than white voters even after we account for important differences in the types of counties in which they live. Model 3 also makes clear that less-dense counties and those with older voters had shorter wait times on Election Day in 2018.

In model 3, the Black voter coefficient is no longer statistically significant. This means that much of the increased wait times faced by Black voters in 2018 could be explained by county-level factors. Black voters are more likely to live in denser counties with younger voters, where *all* voters faced longer waits.

Finally, model 4 adds individual characteristics to model 3. These include the respondent's family income, age, partisan affiliation, education, and marital status. We find that younger voters report waiting longer, but little else about an individual's characteristics explains wait time after we have accounted for the type of county in which the voter lives.

In model 4, the gaps between Black and white voters, and between Latino and white voters, are statistically nonsignificant at the 95 percent confidence level, but they are significant and negative for Asian and other voters. This means that racial minorities did not wait longer to vote in 2018 than white voters who lived in similar counties and had similar individual characteristics. Racial minorities, rather, are overrepresented among populations that wait longer across the board. In each model, robust standard errors are clustered by county.

Electoral Resources and Wait Times

To test the relationship between the number of voters per electoral resource in a county and voter wait times, we begin with the final model from the previous section; that is, we start with a statistical model that accounts for voters' individual, county, and state characteristics to explain wait times. We add to this model additional variables calculated using the EAVS data: the number of votes cast per polling place, per poll worker, and per voting machine. Table 2 presents the results of these models.

We find that voters who lived in counties with more votes cast per polling place on Election Day in 2018 waited longer to vote. This is true even after controlling for the other sociodemographic characteristics discussed in the previous section. Figure 1 presents the marginal effects plot demonstrating the relationship between votes per polling place and reported wait times. A marginal effects plot allows us to see the relationship between an independent variable of interest (the number of votes per polling place) and the dependent variable (reported wait times) after controlling for other variables. Figure 1 demonstrates that, after controlling for other characteristics, voters in counties with few voters per polling place waited in short lines. Counties with the fewest voters per polling place waited an average of only around 4 minutes, while voters in counties with the most voters per polling place had average waits of more than 10 minutes. In each of the charts below, the 95 percent confidence

band is included.

The theoretical relationship between the number of voters per poll worker and wait times is straightforward: workers must be available to check voters in, distribute ballots, and help address any confusion voters might have. Unsurprisingly, we find that as the number of voters per poll worker goes up, so too does the average wait time (again, after controlling for all other variables). Figure 2 shows that the average wait time in counties with the fewest voters per worker was less than 5 minutes; where poll workers were spread among the most voters, that average wait time exceeded 12 minutes.

The same pattern holds true when we examine the relationship between the average number of votes cast per machine at the county level. As figure 3 shows, holding all other factors constant, fewer machines per vote cast might cause bottlenecks that lead to longer lines. The most highly resourced counties saw average waits of around 5 minutes, while the average wait time in counties with the most voters per machine averaged more than 13.5 minutes.

Table 3 makes clear that, in addition to waiting longer overall, voters in the least-resourced counties were also more likely to wait in line for 30 minutes or more. These models use a logistic specification — the dependent variable takes the value “1” if a voter reported waiting 30 minutes or more, and a “0” otherwise. Once again, robust standard errors are clustered by state.

The marginal effects plots of these regressions, shown in figures 4, 5, and 6, make the relationship between electoral resources and long waits more apparent. These plots demonstrate that, after controlling for other sociodemographic county characteristics, fewer electoral resources per voter are associated with an increased likelihood of waiting more than 30 minutes. The 95 percent confidence interval is included.

County Characteristics and Resourcing Levels

Finally, we investigate which types of counties were the most likely to be inadequately resourced on Election Day in 2018. As discussed in the body of the report, counties that became whiter in the past decade had more resources in 2018 than counties that became less white. Similarly, counties where the median income grew (after accounting for inflation, estimated by the Bureau of Labor Statistics) had more resources than places where real incomes shrank. Table 4 demonstrates that these phenomena hold even after controlling for other relevant county and state characteristics.

Whiter and higher-income counties consistently had fewer resources on Election Day in 2018 than less white and less affluent counties. At the same time, counties in flux — those that saw their incomes decline or grow slowly, and those where the white share of the popula-

tion decreased the most quickly, over the past decade — had fewer resources than those that had remained more stable.

While the coefficients on change in percent non-His-

panic white and change in median income are quite large, this is driven in part by the relatively small range into which counties fall. Figures 7–11 present the marginal effects plots for these models.

TABLE 1

Socioeconomics and Wait Times, 2018

Dependent Variable: Wait Time	(1)	(2)	(3)	(4)
Asian	-0.239	0.384	-0.613	-1.777***
	(0.72)	(0.651)	(0.552)	(0.588)
Black	2.846***	1.732**	0.503	0.183
	(0.796)	(0.784)	(0.857)	(0.983)
Latino	2.979***	2.923***	1.744**	1.474*
	(0.741)	(0.701)	(0.883)	(0.858)
Other Race	-0.17	-0.369	-0.800*	-1.460***
	(0.547)	(0.48)	(0.483)	(0.433)
County Population Density (100 people/square mile)			0.013***	0.012***
			(0.001)	(0.001)
County Share Non-Hispanic White			-3.786*	-4.067*
			(2.294)	(2.429)
County Share over 64 Years Old			-21.239**	-17.633**
			(9.035)	(8.945)
Voter's Age				-0.051***
				(0.009)
Family Income (\$10,000)				0.036*
				(0.021)
Constant	6.544***	7.211***	14.888***	16.374***
	(0.522)	(0.229)	(1.82)	(2.164)
State Fixed Effects		X	X	X
DRE Machine Type Fixed Effects			X	X
Marital Status Fixed Effects				X
Education Status Fixed Effects				X
Political Party Fixed Effects				X
Observations	17,281	17,281	17,230	15,546
R ²	0.007	0.064	0.076	0.085
Adjusted R ²	0.006	0.061	0.073	0.081

* $p < .1$ ** $p < .05$ *** $p < .01$

TABLE 2

County-Level Resources and Wait Times, 2018

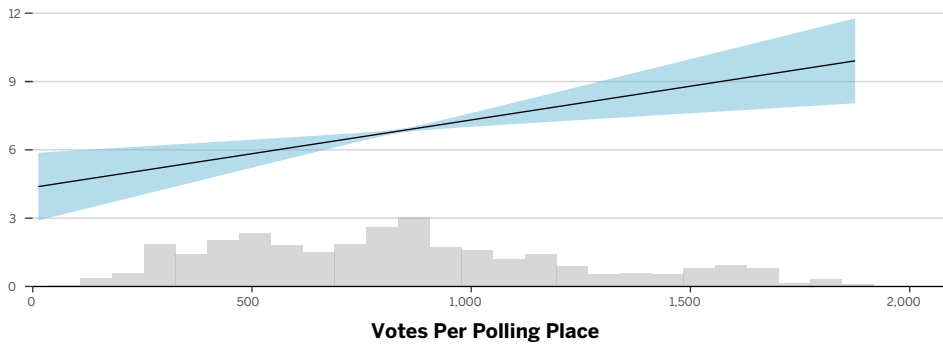
Dependent Variable: Wait Time	(1)	(2)	(3)
Votes Per Polling Place	0.003***		
	(0.001)		
Votes Per Worker		0.034***	
		(0.012)	
Votes Per Machine			0.006***
			(0.001)
County Population Density (100 people/square mile)	0.010***	0.013***	0.013***
	(0.001)	(0.002)	(0.001)
County Share Non-Hispanic White	-3.211*	-8.476***	-3.858**
	(1.861)	(2.458)	(1.932)
County Share over 64 Years Old	-6.56	-3.878	-9.817
	(8.343)	(10.206)	(7.999)
Voter's Age	-0.044***	-0.052***	-0.046***
	(0.01)	(0.009)	(0.009)
Family Income (\$10,000)	0.022	0.045	0.028*
	(0.017)	(0.028)	(0.017)
Constant	9.398***	13.371***	13.761***
	(2.753)	(3.714)	(2.336)
State Fixed Effects	X	X	X
DRE Machine Type Fixed Effects	X	X	X
Marital Status Fixed Effects	X	X	X
Education Status Fixed Effects	X	X	X
Political Party Fixed Effects	X	X	X
Race/Ethnicity Fixed Effects	X	X	X
Observations	14,101	11,810	13,533
R ²	0.095	0.104	0.095
Adjusted R ²	0.09	0.099	0.09

*p <.1 **p <.05 ***p <.01

FIGURE 1

Marginal Effect of Votes Per Polling Place on Wait Times

Minutes Waited

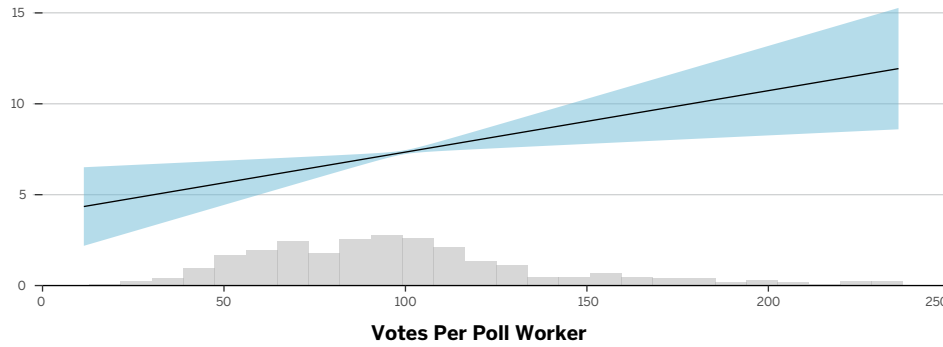


Note: Distribution of number of votes per polling place shown at bottom.

FIGURE 2

Marginal Effect of Votes Per Poll Worker on Wait Times

Minutes Waited

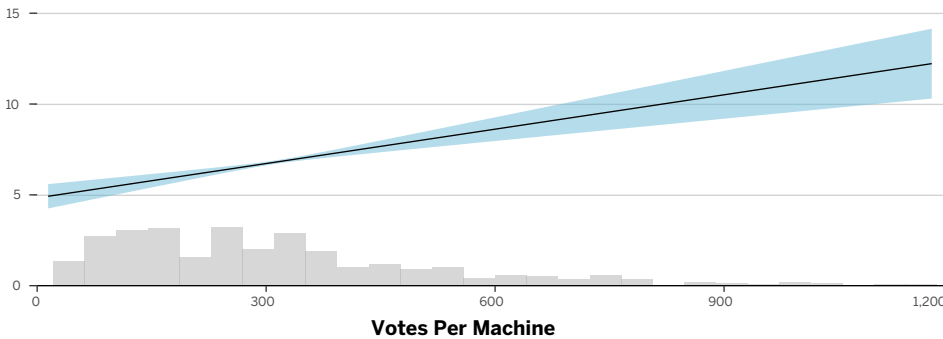


Note: Distribution of number of votes per worker shown at bottom.

FIGURE 3

Marginal Effect of Votes Per Machine on Wait Times

Minutes Waited



Note: Distribution of number of votes per machine shown at bottom.

TABLE 3

County-Level Resources and the Likelihood of Waiting in a Long Line, 2018

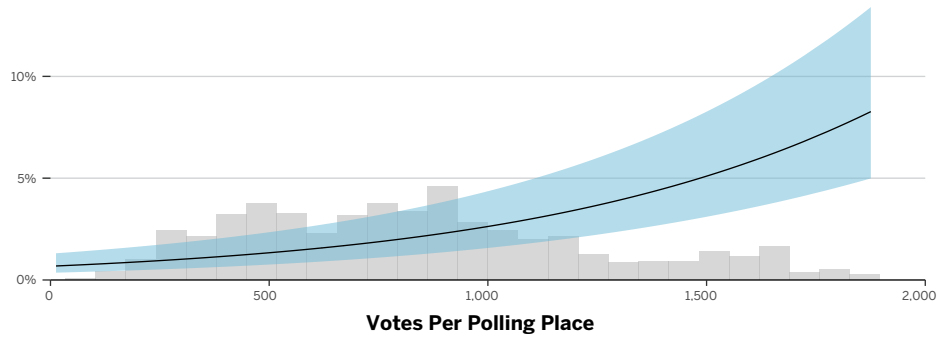
Dependent Variable: Waited in Long Line	(1)	(2)	(3)
Votes Per Polling Place	0.001***		
	(0.0002)		
Votes Per Worker		0.006**	
		(0.003)	
Votes Per Machine			0.001***
			(0.0004)
County Population Density (100 people/square mile)	0.002***	0.003***	0.003***
	(0.0003)	(0.0003)	(0.0002)
County Share Non-Hispanic White	-1.370**	-2.229***	-1.350**
	(0.637)	(0.787)	(0.591)
County Share over 64 Years Old	-1.796	-3.502	-3.281
	(3.225)	(4.115)	(2.913)
Voter's Age	-0.010***	-0.012***	-0.011**
	(0.003)	(0.004)	(0.004)
Family Income (\$10,000)	0.012	0.021	0.019*
	(0.01)	(0.013)	(0.011)
Constant	-2.650***	-1.231	-1.116
	(0.842)	(1.132)	(0.7)
State Fixed Effects	X	X	X
DRE Machine Type Fixed Effects	X	X	X
Marital Status Fixed Effects	X	X	X
Education Status Fixed Effects	X	X	X
Political Party Fixed Effects	X	X	X
Race/Ethnicity Fixed Effects	X	X	X
Observations	14,101	11,810	13,533
Log Likelihood	-2239.038	-2027.823	-2129.303

*p <.1 **p <.05 ***p <.01

FIGURE 4

Marginal Effect of Votes Per Polling Place on Long Waits

Predicted Probability of Waiting 30 or More Minutes

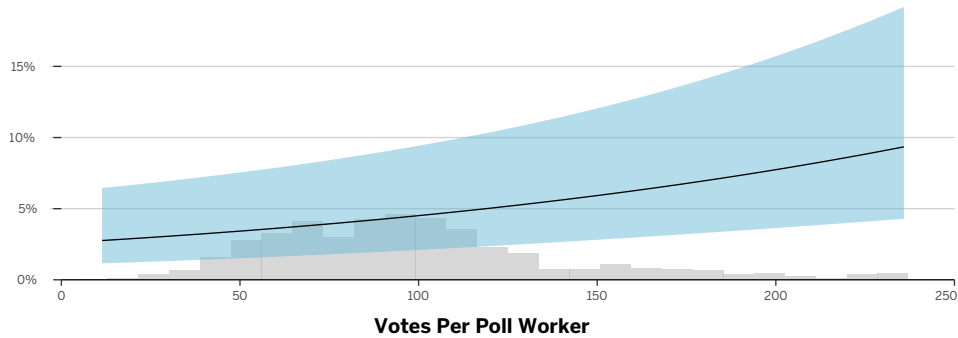


Note: Distribution of number of votes per polling place shown at bottom.

FIGURE 5

Marginal Effect of Votes Per Poll Worker on Long Waits

Predicted Probability of Waiting 30 or More Minutes

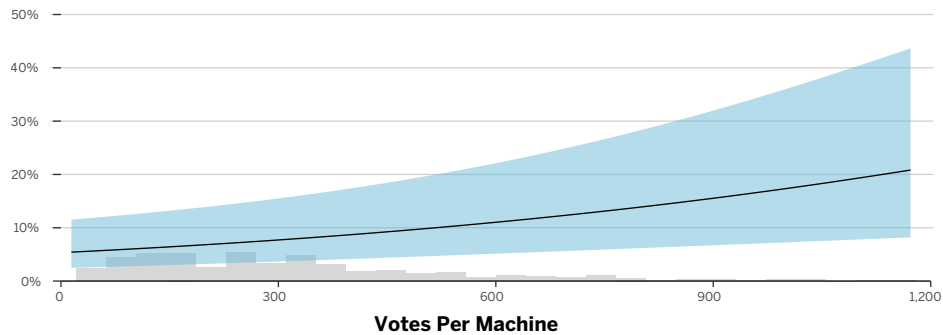


Note: Distribution of number of votes per poll worker shown at bottom.

FIGURE 6

Marginal Effect of Votes Per Machine on Long Waits

Predicted Probability of Waiting 30 or More Minutes



Note: Distribution of number of votes per machine shown at bottom.

TABLE 4

County Demographics and Resources, 2018

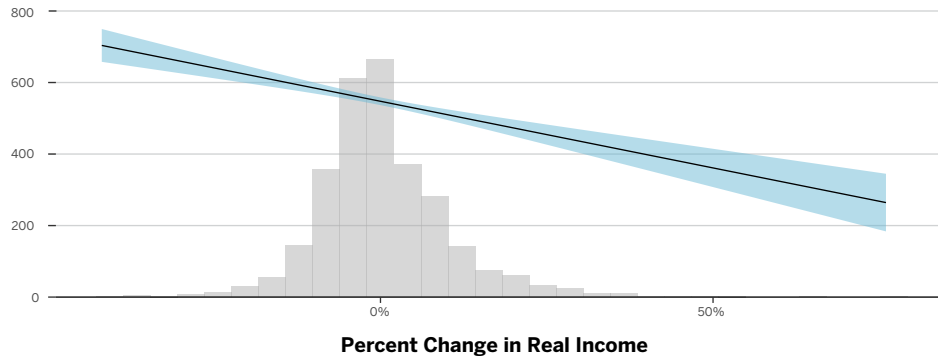
DEPENDENT VARIABLE:	VOTERS PER POLLING PLACE		VOTERS PER WORKER		VOTERS PER MACHINE	
	(1)	(2)	(3)	(4)	(5)	(6)
Change in Percent Non-Hispanic White	-1,096.394***		- 78.200**		- 50.202	
	(245.787)		(33.658)		(112.2)	
Change in Median Income		- 372.753***		- 51.640***		- 64.489**
		(53.855)		(6.839)		(30.738)
Percent White	134.690***	91.466**	36.985***	33.454***	94.871***	93.262***
	(40.09)	(39.454)	(5.538)	(5.38)	(21.77)	(21.342)
Election Day Turnout	-37.63	-70.592	12.074	8.072	128.316***	123.324***
	(94.508)	(96.163)	(12.612)	(12.696)	(44.933)	(45.011)
Median Age	-13.151***	-13.530***	-1.847***	-1.832***	-6.481***	-6.452***
	(1.207)	(1.217)	(0.165)	(0.163)	(0.707)	(0.702)
Population (10,000s)	0.512**	0.463*	0.051***	0.042***	0.113	0.096
	(0.248)	(0.245)	(0.018)	(0.016)	(0.087)	(0.086)
Population Change (percent)	201.535**	277.607***	39.095***	44.494***	101.198**	106.857**
	(83.246)	(81.813)	(11.609)	(11.575)	(43.113)	(42.54)
Median Income	0.010***	0.011***	0.001***	0.001***	0.003***	0.003***
	(0.001)	(0.001)	(0.0001)	(0.0001)	(0.0003)	(0.0003)
Population Density	0.013***	0.013***	-0.001***	-0.001***	-0.0001	-0.00005
	(0.003)	(0.004)	(0.0002)	(0.0002)	(0.001)	(0.001)
Constant	639.722***	680.204***	107.393***	106.599***	194.285***	191.596***
	(67.577)	(65.924)	(8.677)	(8.33)	(36.962)	(35.639)
State Fixed Effects	X	X	X	X	X	X
DRE Machine Type Fixed Effects	X	X	X	X	X	X
Observations	2,594	2,594	2,428	2,428	2,588	2,588
R ²	0.561	0.565	0.475	0.487	0.569	0.57
Adjusted R ²	0.552	0.556	0.464	0.476	0.56	0.561

* $p < .1$ ** $p < .05$ *** $p < .01$

FIGURE 7

Marginal Effect of Change in Incomes and Voters Per Polling Place

Voters Per Polling Place

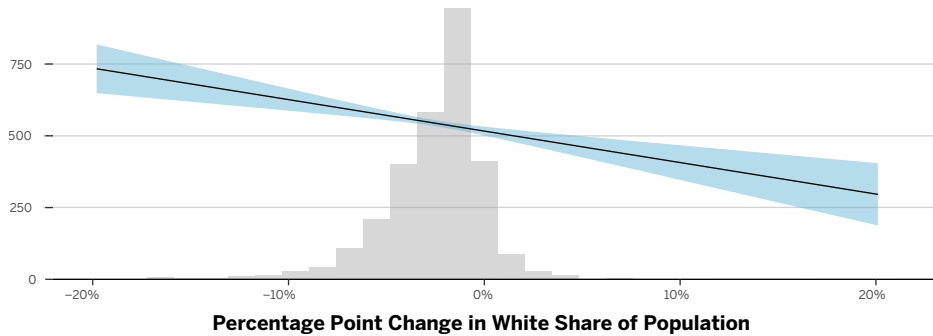


Note: Distribution of change in income shown at bottom.

FIGURE 8

Marginal Effect of Change in White Share of Population and Voters Per Polling Place

Voters Per Polling Place

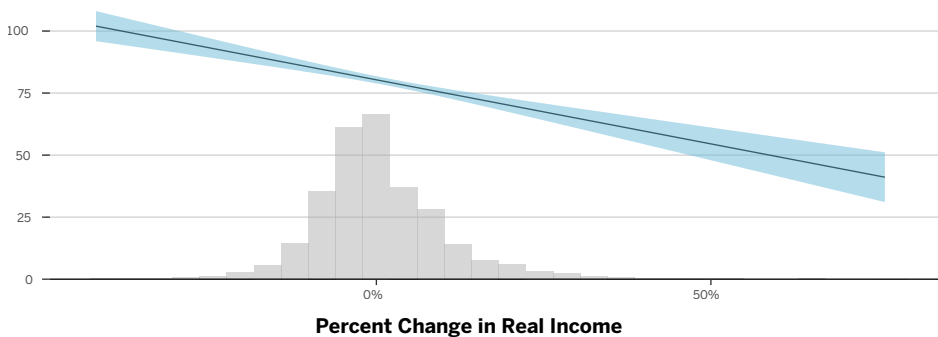


Note: Distribution of change in percent white shown at bottom.

FIGURE 9

Marginal Effect of Change in Incomes and Voters Per Poll Worker

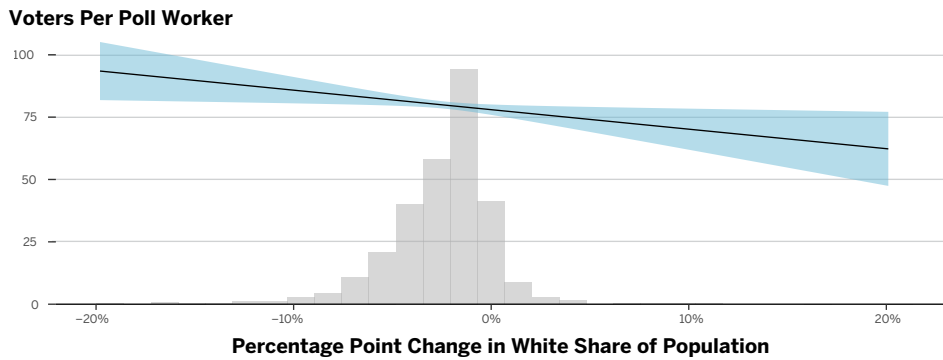
Voters Per Poll Worker



Note: Distribution of change in income shown at bottom.

FIGURE 10

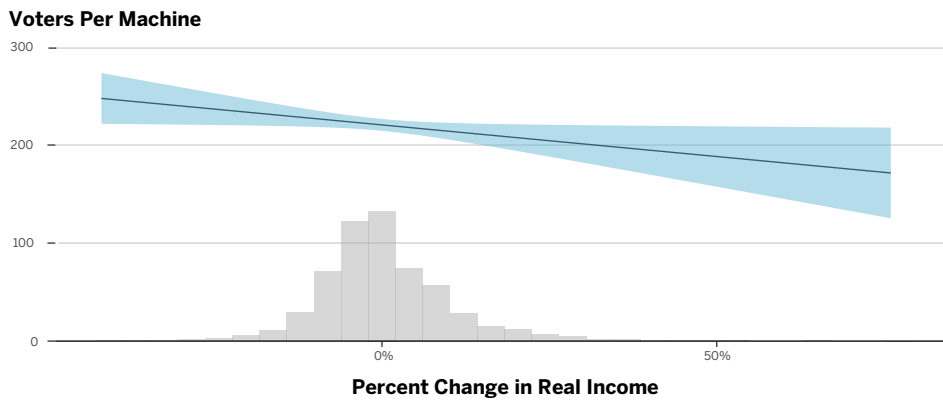
Marginal Effect of Change in White Share of Population and Voters Per Poll Worker



Note: Distribution of change in percent white shown at bottom.

FIGURE 11

Marginal Effect of Change in Incomes and Voters Per Machine



Note: Distribution of change in income shown at bottom.

Endnotes

- 1** Jens Manuel Krogstand, Luis Noe-Bustamante, and Antonio Flores, "Historic Highs in 2018 Voter Turnout Extended Across Racial and Ethnic Groups," Pew Research Center, May 1, 2019, <https://www.pewresearch.org/fact-tank/2019/05/01/historic-highs-in-2018-voter-turnout-extended-across-racial-and-ethnic-groups>; Emily Stewart, "2018's Record-Setting Voter Turnout, in One Chart," Vox, November 19, 2019, <https://www.vox.com/policy-and-politics/2018/11/19/18103110/2018-midterm-elections-turnout>; Ella Nilsen, "The 2018 Midterms Had the Highest Turnout Since Before World War I," Vox, December 10, 2018, <https://www.vox.com/policy-and-politics/2018/12/10/18130492/2018-voter-turnout-political-engagement-trump>; Jordan Misra, "Voter Turnout Rates Among All Voting Age and Major Racial and Ethnic Groups Were Higher Than in 2014," U.S. Census Bureau, April 23, 2019, <https://www.census.gov/library/stories/2019/04/behind-2018-united-states-midterm-election-turnout.html>; Grace Sparks, "There Was Historic Voter Turnout in the 2018 Midterms — Especially Among Young Voters," CNN, April 23, 2019, <https://www.cnn.com/2019/04/23/politics/voter-turnout-2018-census/index.html>; and Renae Reints, "2018 Midterm Election Sets Record as the First to Exceed Voter Turnout of 100 Million People," *Fortune*, November 7, 2018, <https://fortune.com/2018/11/07/voter-turnout-2018-midterms>.
- 2** Rebecca Ayala, "Voting Problems 2018," Brennan Center for Justice, November 5, 2018, <https://www.brennancenter.org/our-work/analysis-opinion/voting-problems-2018>; "Election Day 2018: A Brennan Center Live Blog," Brennan Center for Justice, November 6, 2018, <https://www.brennancenter.org/our-work/analysis-opinion/election-day-2018-brennan-center-live-blog>; Amy Gardner and Beth Reinhard, "Broken Machines, Rejected Ballots and Long Lines: Voting Problems Emerge as Americans Go to the Polls," *Washington Post*, November 6, 2018, https://www.washingtonpost.com/politics/broken-machines-rejected-ballots-and-long-lines-voting-problems-emerge-as-americans-go-to-the-polls/2018/11/06/ffd1e52-dfa8-11e8-b3f0-62607289efee_story.html; and Erik Ortiz et al., "Midterms 2018: Voters Face Malfunctioning Machines and Long Lines at Polls Across Country on Election Day," NBC News, November 6, 2018, <https://www.nbcnews.com/politics/elections/midterms-2018-voters-face-malfunctioning-machines-long-lines-polls-across-n932156>.
- 3** This statistic is calculated by multiplying the share of Election Day voters who waited longer than 30 minutes by the share of all voters who cast a ballot on Election Day, using data from the Cooperative Congressional Election Study (CCES). Brian Schaffner, Stephen Ansolabehere, and Sam Luks, *CCES Common Content, 2018*, Harvard Dataverse, 2019, <https://doi.org/10.7910/DVN/ZSBZ7K>. This determines the total share of the electorate that waited 30 minutes or longer on Election Day, according to the CCES. This share is multiplied by the total number of ballots cast, estimated by the United States Elections Project. "2018 November General Election Turnout Rates," last modified December 14, 2018, <http://www.electproject.org/2018g>.
- 4** Matthew Weil et al., *The 2018 Voting Experience: Polling Place Lines*, Bipartisan Policy Center, 2019, 6, <https://bipartisanpolicy.org/report/the-2018-voting-experience>.
- 5** Weil et al., *The 2018 Voting Experience*, 3–4.
- 6** Election administrators in the following counties and states were interviewed for this report: Shelby County, Alabama; Maricopa County, Arizona; Forsyth County, Georgia; Fulton County, Georgia; Gwinnett County, Georgia; Peoria County, Illinois; Prince George's County, Maryland; Detroit, Michigan; Macomb County, Michigan; Jackson County, Missouri; Clark County, Nevada; Washoe County, Nevada; State of New York; Durham County, North Carolina; Forsyth County, North Carolina; Guilford County, North Carolina; Butler County, Ohio; Franklin County, Ohio; Licking County, Ohio; Marion County, Ohio; State of Rhode Island; Charleston County, South Carolina; State of South Carolina; Davidson County, Tennessee; Denton County, Texas; Fort Bend County, Texas; Harris County, Texas; Hays County, Texas; Tarrant County, Texas; Travis County, Texas; Williamson County, Texas; and Manassas County, Virginia. All interview transcripts are on file with the Brennan Center.
- 7** This report incorporates data from three sources: the Cooperative Congressional Election Study, the Election Administration and Voting Survey, and the five-year American Community Survey. See Schaffner, Ansolabehere, and Luks, *CCES Common Content*; U.S. Election Assistance Commission, *Election Administration and Voting Survey: 2018 Comprehensive Report*, 2019, https://www.eac.gov/sites/default/files/eac_assets/1/6/2018_EAVS_Report.pdf; and Census Bureau, "American Community Survey 5-Year Data (2009–2018)," December 19, 2019, <https://www.census.gov/data/developers/data-sets/acs-5year.html>.
- 8** For instance, Michael Herron and Daniel Smith, "Precinct Resources and Voter Wait Times," *Electoral Studies* 42 (June 2016): 249, https://www.researchgate.net/publication/299503594_Precinct_resources_and_voter_wait_times.
- 9** Throughout this report, "white" corresponds to the census designation "non-Hispanic white." Following the CCES, we use it as a category exclusive of Latinos. "Voters of color" refers specifically to Black and Latino voters.
- 10** Brennan Center for Justice, "Bipartisan Presidential Commission Endorses Modernizing Voter Registration," December 1, 2014, <https://www.brennancenter.org/our-work/research-reports/bipartisan-presidential-commission-endorses-modernizing-voter>.
- 11** We define "resources" throughout this report as the number of in-person Election Day votes per Election Day polling place, poll workers, and machines available.
- 12** These differences are significant at the 95 percent confidence level.
- 13** For turnout in 2014, see David Becker, "2014 Midterms Defined by Low Voter Turnout," Pew Research Center, 2014, <https://www.pewtrusts.org/en/research-and-analysis/articles/2014/11/13/2014-midterms-defined-by-low-voter-turnout>. For turnout in 2018, see Krogstand, Noe-Bustamante, and Flores, "Historic Highs in 2018 Voter Turnout."
- 14** See "Inadequate Planning Practices" on pp. 11–12.
- 15** Susan Milligan, "Preparing for a Voter Surge," *US News & World Report*, September 20, 2019, <https://www.usnews.com/news/elections/articles/2019-09-20/experts-predict-huge-turnout-in-2020>.
- 16** Calculated from responses to Schaffner, Ansolabehere, and Luks, *CCES Common Content*.
- 17** The CCES also has a preelection wave in even years and a much smaller sample in odd years.
- 18** Charles Stewart III and Stephen Ansolabehere, *Waiting in Line to Vote*, U.S. Election Assistance Commission, July 18, 2013, <https://www.eac.gov/documents/2017/02/24/waiting-in-line-to-vote-white-paper-stewart-ansolabehere>; Charles Stewart III, *Managing Polling Place Resources*, Caltech/MIT Voting Technology Project, 2015, <http://web.mit.edu/vtp/Managing%20Polling%20Place%20Resources.pdf>; and Stephen Pettigrew, "The Racial Gap in Wait Times: Why Minority Precincts Are Underserved by Local Election Officials," *Political Science Quarterly* 132, 3 (2017): 528.
- 19** U.S. Election Assistance Commission, *Election Administration and Voting Survey: 2018*.
- 20** To test whether counties were inequitable in distributing resources within their jurisdictions, we analyzed precinct-level data from counties around the country. We focused in particular on

counties where reports of racial disparities were loudest. We found that counties did not allocate fewer resources to polling places in low-income or minority neighborhoods; in fact, in the counties where we found disparities, polling places in higher-income and whiter neighborhoods tended to have the fewest resources.

21 These include every county in Oregon, Washington, and Colorado, most counties in Utah and North Dakota, and a number of counties in California and Nebraska. Although some voters in states like Colorado vote in person on Election Day, the experience of an in-person voter in a primarily vote-by-mail state provides little insight into the relationship between wait times and resources.

22 The full set of interviews appears in note 6.

23 Throughout this report, we use the vote-verified postelection weights from the CCES.

24 This statistic is calculated by multiplying the share of Election Day voters who waited 30 minutes or longer by the share of all voters who cast a ballot on Election Day. This determines the total share of the electorate that waited 30 minutes or longer on Election Day, according to the CCES. This share is multiplied by the total number of ballots cast, estimated by the United States Elections Project. United States Elections Project, "2018 November General Election Turnout Rates."

25 For example, for the 2008 and 2012 elections, see Pettigrew, "The Racial Gap in Wait Times," 527–528. For the 2016 election, see M. Keith Chen et al., *Racial Disparities in Voting Wait Times: Evidence from Smartphone Data*, Cornell University, 2019, 1, <https://arxiv.org/pdf/1909.00024.pdf>.

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29 Stephen Pettigrew, "Long Lines and Voter Purges: The Logistics of Running Elections in America" (PhD diss., Harvard University, 2017), <https://dash.harvard.edu/bitstream/handle/1/40046499/PETTIGREW-DISSERTATION-2017.pdf?sequence=4>.

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33 Famighetti, Melillo, and Pérez, *Election Day Long Lines*, 1.

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35 For example, Weil et al., *The 2018 Voting Experience*. Also, Chen et al., *Racial Disparities in Voting Wait Times*, 1–18.

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52 According to our analysis of the EAVS data.

53 The relationship between these demographic changes and the resource levels of counties are statistically significant in each case except for the change in white population relative to number of votes cast per machine. (The full regression tables can be found in the appendix.)

54 In an ideal world, we would be able to construct a panel data set that examined how resources and demographics change together. However, the EAVS prevents us from doing so: in years prior to 2018, too few jurisdictions consistently reported their resource levels to the EAVS. Given this, we interrogate the relationship between demographic change over a 10-year period and resource levels at the end of the period. We are therefore unable to say whether resources *decline* as populations change, but rather only that there were fewer resources at the end of the period in those places where incomes or white shares declined the most.

55 These differences are significant at the 95 percent confidence level.

56 These differences are significant at the 95 percent confidence level.

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60 Ala. Code § 17-6-3; Del. Code Ann. tit. 15, § 5004A (West); Ga. Code Ann. § 21-2-323 (West); 10 Ill. Comp. Stat. Ann. 5/24-1; La. Stat. Ann. § 18:1363; Me. Rev. Stat. tit. 21-A, § 811; Mich. Comp. Laws Ann. § 168.661 (West); Miss. Code Ann. § 23-15-531.6 (West); N.C. Gen. Stat. Ann. § 163-42; N.Y. Elec. Law App 6210.19 (McKinney); 25 Pa. Stat. Ann. § 2730 (West); S.C. Code Ann. § 7-13-1680; Tenn. Code Ann. § 2-3-104 (West); Va. Code Ann. § 24.2-115 (West); and W. Va. Code Ann. § 3-4A-10a (West).

61 "The County Board in each county, except in counties having a population of 3,000,000 inhabitants or over, shall, at its regular meeting in June, divide its election precincts which contain more than 800 voters, into election districts so that each district shall

contain, as near as may be practicable, 500 voters, and not more in any case than 800." 10 Ill. Comp. Stat. Ann. 5/11-2; 10. "A voting machine or machines sufficient in number to provide a machine for each 400 voters or fraction thereof shall be supplied for use at all elections." 10 Ill. Comp. Stat. Ann. 5/24-1.

62 "When the voter registration in a precinct using voting machines exceeds 2,999, the precinct shall be divided or rearranged. When the voter registration in a precinct using voting machines is 1,000 or less, there shall be not less than 1 voting machine for each 500 active registered electors." And "when the voter registration in a precinct using voting machines is more than 1,000 and less than 3,000, there shall be at least 1 voting machine for each 600 active registered electors." Mich. Comp. Laws Ann. § 168.661 (West).

63 "The governing body of any county or municipality providing voting machines at polling places for use at elections shall provide for each polling place at least one voting machine for each two hundred fifty registered voters or portion thereof or as near thereto as may be practicable. The machines shall be of the type approved as provided for in this title and shall be kept in complete and accurate working order and in proper repair. The machines may be used in such election districts or precincts in the county or municipality as the officials holding the election or conducting the primary may determine. The governing body of the county or municipality owning the machines shall have custody of such machines and other furniture or equipment of the polling places when not in use at an election." S.C. Code Ann. § 7-13-1680.

64 "In each precinct in which voting machines are used, the municipal governing authority shall provide at least one voting machine for each 500 electors, or major fraction thereof, except that at least one voting machine shall be provided in each such precinct in any case." Ga. Code Ann. § 21-2-323 (West). Georgia plans to adopt new voting machines for the 2020 election, and Georgia law now requires that "[i]n each precinct in which optical scanning voting systems are used, the county or municipal governing authority, as appropriate, shall provide at least one voting booth or enclosure for each 250 electors therein, or fraction thereof." Ga. Code Ann. § 21-2-367(b) (West). In addition, Georgia has proposed a new rule that "when calculating the number of voting booths or enclosures required to be available to electors of a precinct pursuant to O.C.G.A. 21-2-367(b), the calculation shall take into account the number of voting booths or enclosures available for electors of a precinct on Election Day and on the last day of advance voting." Ga. Comp. R. & Regs. 183-1-14.01. "Brennan Center Submits Follow-Up Comment to Georgia State Board of Elections on Proposed Election Rules," Brennan Center for Justice, accessed March 2, 2020, <https://www.brennancenter.org/our-work/research-reports/brennan-center-submits-follow-comment-georgia-state-board-elections>.

65 Election administrator, Durham County, North Carolina, interview by Brennan Center for Justice, November 18, 2019; election administrator, Prince George's County, Maryland, interview by Brennan Center for Justice, October 24, 2019; election administrator, Licking County, Ohio, interview by Brennan Center for Justice, November 12, 2019.

66 For example, Durham County, North Carolina, experienced a major population boom over the past decade, growing by roughly 20 percent. However, election administrators in Durham told the Brennan Center that their resource allocation estimates are based heavily on turnout levels of past elections. Voter turnout in Durham in 2018 grew by more than 10 percent from the previous midterm election in 2014. Individuals in Durham also reported long wait times at some polling places in the county during early and Election Day voting. U.S. Census Bureau, "QuickFacts: Durham County, North Carolina," accessed January 21, 2020, <https://www.census.gov/quickfacts/fact/table/durhamcountynorthcarolina/PST045219>; election administrator, Durham County, North Carolina, interview by Brennan Center for Justice, November 18, 2019; Democracy North Carolina, *Report: Democracy NC Analyzes 2018 Turnout, Reveals Youth Enthusiasm, Demographic Shifts*, 2018, <https://democracync.org/news/2018-turnout-demonstrates-youth-enthusiasm-demographic-shifts>; Kirsten Rewritten, Twitter post, November 6, 2018, 9:40 a.m., <https://twitter.com/rewriteables/status/1059817800871694337>; and Battle for the Ballot, Twitter post, November 3, 2018, 12:14 p.m., <https://twitter.com/BallotBattle/status/1058754374439198720>.

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Clark County, Nevada, interview by Brennan Center for Justice, October 21, 2019; election administrator, Denton County, Texas, interview by Brennan Center for Justice, November 19, 2019; election administrator, Durham County, North Carolina, interview by Brennan Center for Justice, November 18, 2019; election administrator, Forsyth County, Georgia, interview by Brennan Center for Justice, October 31, 2019; election administrator, Forsyth County, North Carolina, interview by Brennan Center for Justice, October 22, 2019; election administrator, Fort Bend County, Texas, interview by Brennan Center for Justice, November 12, 2019; election administrator, Guilford County, North Carolina, interview by Brennan Center for Justice, October 18, 2019; election administrator, Gwinnett County, Georgia, email to Brennan Center for Justice, October 25, 2019; election administrators, Harris County, Texas, interview by Brennan Center for Justice, November 14, 2019; election administrator, Hays County, Texas, interview by Brennan Center for Justice, October 29, 2019; election administrators, Jackson County, Missouri, interview by Brennan Center for Justice, October 16, 2019; election administrators, Licking County, Ohio, interview by Brennan Center for Justice, November 12, 2019; election administrator, Manassas County, Virginia, interview by Brennan Center for Justice, October 28, 2019; election administrator, Peoria County, Illinois, interview by Brennan Center for Justice, October 29, 2019; election administrator, Prince George's County, Maryland, interview by Brennan Center for Justice, October 24, 2019; election administrator, Tarrant County, Texas, interview by Brennan Center for Justice, November 13, 2019; election administrator, Travis County, Texas, interview by Brennan Center for Justice, November 22, 2019; election administrator, Washoe County, Nevada, interview by Brennan Center for Justice, October 15, 2019; and election administrator, Williamson County, Texas, interview by Brennan Center for Justice, October 16, 2019.

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- 114** The EAVS covers the number of polling places for 93 percent of voters, the number of machines for 87 percent of voters, and the number of poll workers for 80 percent of voters.

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