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VOTER REGISTRATION
IN A DIGITAL AGE

Christopher Ponoroff

Edited by Wendy Weiser

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I. INTRODUCTION

Millions of Americans register to vote each year, and millions more update their registration information.¹ Between 2006 and 2008, states received more than 60 million voter registration forms, most on paper.² This labor-intensive paper system swamps election officials, burdens taxpayers, and creates a risk for every voter that human error—a misplaced form, a data entry slip—will bar her access to the ballot box.

A comprehensive national study found that registration problems kept up to three million people from voting in 2008.³ A paper-based system may be the best the 19th century had to offer, but it is out of step with the higher-tech approach in other spheres of American life, and the approach in other democracies.⁴

Fortunately, paper-based voter registration has quietly begun to go the way of ticker tape. Now at least seventeen states electronically transfer voter registration data from Departments of Motor Vehicles (DMV) to election authorities; in some states, the process is entirely paperless;

in others, officials use paper forms solely to obtain some information, like signatures.⁵ Secure online voter registration is now available in seven states, and is under development in at least five more.⁶ In the past two years alone, eleven states have developed paperless systems, and many others have begun to consider reform.

This report is the first in-depth survey of these registration innovations—“automated” voter registration, in which government offices like DMVs collect and transfer voter registrations electronically, and online voter registration, in which citizens submit voter registration applications over the Internet. Based on documentary research and interviews with election officials in fifteen states, this report explains how paperless voter registration works, reviews its development, and assesses its impact.

The bottom line: paperless voter registration yields substantial benefits for voters and governments alike.

KEY FINDINGS

1. Paperless voter registration is cost-effective and saves states millions of dollars each year

- It cost Arizona less than \$130,000 and Washington just \$279,000 to implement both online voter registration and automated voter registration at DMVs.
- Delaware’s paperless voter registration at DMVs saves election officials more than \$200,000 annually on personnel costs, above the savings they reaped by partially automating the process in the mid-1990s. Officials anticipate further savings.

Our paper-based voter registration system may be the best the 19th century had to offer, but it is out of step with the higher-tech approach in other spheres of American life.

- Online and automated DMV registrations saved Maricopa County, Arizona over \$450,000 in 2008. The county spends 33¢ to manually process an electronic application, and an average of 3¢ using a partially automated review process, compared to 83¢ for a paper registration form.

2. Paperless voter registration is more accurate and reliable than paper forms

- Officials consistently confirm that paperless registrations produce fewer errors than paper forms and reduce opportunities for fraud.
- A 2009 survey of incomplete and incorrect registrations in Maricopa County, Arizona found that electronic voter registrations are as much as five times less error-prone than their paper-based counterparts.

3. Paperless voter registration increases voter registration rates

- DMV voter registrations have nearly doubled in Washington and Kansas, and increased by even more in Rhode Island.
- Seven times as many South Dakotans submitted voter registrations at DMVs after the state implemented an automated system.
- Registration rates among 18-24 year-old citizens rose from 28 to 53 percent after Arizona introduced online and automated registration.

Given the clear benefits, it makes sense that more and more states have begun to adopt paperless registration. Although Congress is currently considering reforms along these lines,⁷ this paper focuses on state-based reform efforts. An online appendix at <http://www.brennancenter.org> provides additional state-by-state information. In a field often subject to partisan bickering, it is noteworthy that state voter registration innovations have earned praise from Republicans and Democrats alike, as well as from election officials and agency personnel. Paperless voter registration is the wave of the future.

II. HOW PAPERLESS VOTER REGISTRATION WORKS

A. Automated Voter Registration

We define an “automated” voter registration system as one in which government offices, including DMV or social service offices, collect and transfer voter registrations to election officials without using separate paper forms. These offices enter registration data into their computers and transfer them electronically, in a format that election officials can securely review and upload directly into their voter registration database systems. Typically, the process takes place within a state’s secure internal network.

The federal “motor voter” law of 1993 requires a number of state agencies to accept voter registrations from their customers.⁸ DMVs handle by far the greatest number, and it is there that at least seven states—Arizona, Delaware, Florida, Kansas, Pennsylvania, Rhode Island, and Washington—have fully automated their voter registration process. These states have not yet brought other agencies into the automated fold, although Delaware is planning to do so in the near future.⁹ Ohio legislators are further considering a system that would require both DMVs and public service agencies to register consenting customers automatically, an approach recently endorsed by the District of Columbia Board of Elections and a bipartisan Governor’s Commission in Utah.¹⁰

In a field often subject to partisan bickering, it is noteworthy that state voter registration innovations have earned praise from Republicans and Democrats, as well as from election officials and agency personnel.

In at least ten more states—Arkansas, California, Georgia, Kentucky, Michigan, New Jersey, North Carolina, South Carolina, South Dakota, and Texas—DMV registrations are partially automated. Officials transmit at least some information electronically, but have not completely eliminated separate forms or local data entry.

This section provides an overview of how these systems work. Detailed descriptions of the automated process in eleven states are included in the appendix to this report.

1. Full Automation at DMVs

First, the DMV Collects Voter Registration Information. In five of the seven states that use a fully automated system—Delaware, Florida, Kansas, Rhode Island, and Washington—a person who seeks a driver’s license or photo I.D. card visits a DMV branch office, steps up to the counter, and answers a series of questions posed by a DMV employee. At some point the employee’s computer program prompts him to ask the customer if she would like to register to vote. In at least one of these states, Rhode Island, the DMV transaction cannot proceed until the employee records the customer’s response.¹¹

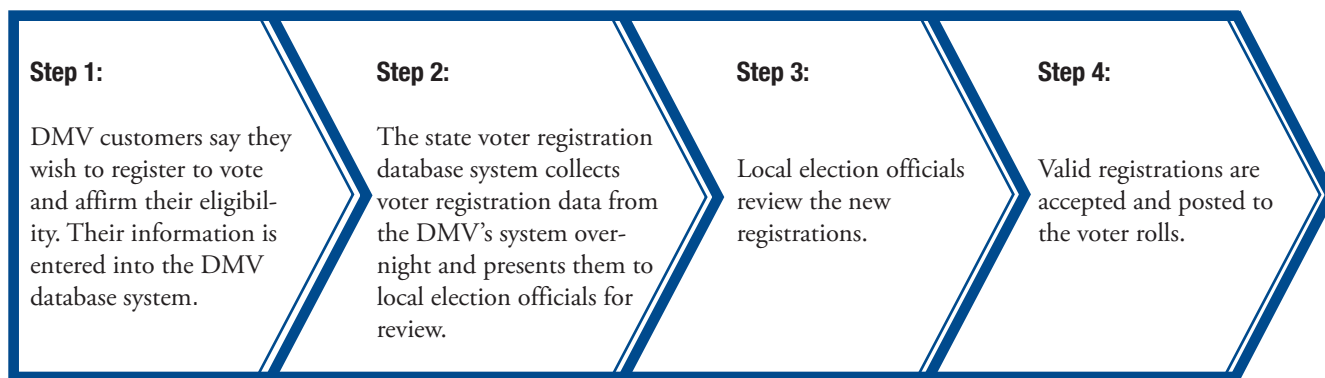
If she does wish to register, the customer must affirm her eligibility and, where required, indicate her party preference.¹² In three states—Florida, Kansas, and Washington—she does so by answering additional questions posed by the interviewer. DMV employees in these states will not proceed with the registration process if the customer provides an answer indicating she is not eligible to register.¹³ In Rhode Island and Delaware, visitors use a stylus to answer eligibility questions presented on an electronic pad.¹⁴ Election officials in all five states also require a signature for voter registrations. Customers in Delaware must provide a separate signature on an electronic signature pad, but in the other four states elections officials simply use a copy of the digitized signature that customers provide for their driver’s license or I.D. cards.¹⁵

At least two of these states use a more simplified approach to collect updates for existing registrations. When a registered voter is changing her address with the DMV in Delaware and Kansas, the interviewer will ask if he should share the update with election officials, and the customer need only assent for the exchange to be made.¹⁶ In contrast, DMVs in Rhode Island and Washington require customers to answer the same set of questions about eligibility regardless of whether they are submitting new registrations or updating existing ones.¹⁷

The registration process differs in Arizona and Pennsylvania, because people there do business with the DMV a little differently. In Arizona, customers fill out paper application forms that include questions about voter registration. DMV employees then enter the information from these forms into their computers.¹⁸ Customers at Pennsylvania DMVs enter their information at self-service computer terminals, using an application program that also includes questions about voter registration.¹⁹ In both states a customer must affirm her eligibility in order to submit a voter registration application.²⁰

Second, the DMV Transmits Registration Information to Election Officials. In each state with full automation, once DMV records have been marked for voter registration, the DMV computer system will automatically transmit information to election authorities. The transmission includes all the information necessary for voter registration: name, age, address, and an identification number, as well as party affiliation and a digitized signature, where required.

Illustration 1: How the Automated Process Works



The process is similar in most states. In at least four states—Arizona, Kansas, Pennsylvania, and Washington—the DMV system posts registration data to a secure site or server at night.²¹ The state’s voter registration database system then retrieves the voter registration application records, sorts them by county or zip code, and provides them to local election officials.²² Rhode Island’s system is the same, except that a private vendor is responsible for retrieving applications from the DMV and loading them into the statewide voter registration system.²³ In contrast, Delaware transfers registrations from the DMV immediately, in real time, through its mainframe network.²⁴

Third, Election Officials Process the Registrations. Once they receive a registration application, election officials in these seven states verify the address, confirm voter eligibility, assign a precinct, and perform a duplicate check—that is, search the state’s voter rolls to determine whether the person who submitted the application is already registered.

Local officials most often perform these tasks manually, one application at a time, with paper and paperless registrations alike. In Rhode Island, however, the state’s voter registration system uses a street index to review addresses automatically before it sends them to county offices.²⁵ Washington’s statewide voter registration system runs duplicate checks after counties accept an application.²⁶ And in Maricopa County, Arizona, the county computer system verifies addresses, assigns precincts, and searches for duplicates automatically.²⁷ County officials in all three jurisdictions will manually review any irregular or inconclusive results.

Officials also attempt to verify each new applicant’s driver’s license number, or the last four digits of her Social Security number, if provided, through the DMV.²⁸ In four states—Arizona, Florida, Pennsylvania, and Washington—the statewide voter registration system automatically runs this verification check on all registrations before or immediately after counties accept them, even those sent by the DMV.²⁹ Three states—Delaware, Kansas, and Rhode Island—verify Social Security numbers at the DMV during customer interviews, and election officials will not run a separate verification check if the DMV has already found a match.³⁰

In addition to the seven states described above, at least two other states are currently in the process of developing fully automated systems. Texas expects to have full automation in place by the end of May, and over half of its DMV offices are already paperless.³¹ In Arkansas county election officials have received digitized signatures from the DMV for years, and this summer will begin receiving full data transfers as well.³² And in a growing number of states, legislators have further proposed to register all consenting DMV customers automatically.³³

2. Partial Automation at DMVs

At least ten states electronically transfer some data from DMVs to election officials, such as name, age, and address, but at present do not fully meet our definition of an automated system. Those states are Arkansas, California, Georgia, Kentucky, Michigan, New Jersey, North Carolina, South Carolina, South Dakota, and Texas.

Five of these states—California, Georgia, Kentucky, New Jersey, and South Carolina—send some registration data electronically, but rely on paper forms to obtain and transfer signatures. In South Carolina, however, a person who has registered through the DMV may vote a regular ballot even if county election officials have not received her signature, provided she gives her signature at the polls and poll workers confirm with the DMV that she attempted to register.³⁴ South Dakota forwards everything electronically but does so in PDF format, which county officials must then copy into their computer systems as they would a paper form.³⁵ And in North Carolina, the DMV prints voter registration forms that are pre-populated with information from its computer system. After customers sign and return the forms, officials scan them into image files and electronically transmit them to election officials.³⁶

Michigan employs a hybrid system. DMV officials forward all voter registration data electronically, but they also print pre-populated voter registration forms for customers to sign and then mail these forms to local election offices. If a voter’s paper form fails to reach local officials before an election, she may supply a signature at the polls and still vote a regular ballot.³⁷ Michigan’s system is also marked by an unparalleled degree of cooperation between Elections and the DMV, in part because the agencies fall under the same state authority.³⁸ State law requires that people with DMV and voter registration records to use the same address for both. And because DMV files indicate whether a customer is already registered to vote, interviewers are usually able to avoid creating duplicative new registrations.³⁹

Illustration 2: Distinguishing Automated Systems

Collecting Data

Has the DMV Eliminated Separate Forms for Voter Registration?

No	Applicants Fill Out a Single Form for the DMV and Voter Registration and Sign Separate Signature Cards for Voter Registration	New Jersey
	Interviewers Enter DMV and Voter Registration Data into Their Computers and Print Pre-Populated Voter Registration Forms for Applicants to Sign	Kentucky, Michigan, North Carolina, South Carolina
Yes	Applicants Fill Out a Single Form for the DMV and Voter Registration	Arizona, South Dakota
	Interviewers Enter DMV and Voter Registration Data into Their Computers; No Use of Paper	Delaware, Florida, Kansas, Rhode Island, Washington, Texas*
	Applicants Use a Self-Service Computer Program to Enter DMV and Voter Registration Data	Pennsylvania

Transferring Data

When the DMV Electronically Transfers Voter Registration Data to Election Officials,

State	Does the DMV Include All Data Elements?		Does the DMV Do So in a Format That Uploads Immediately into Registration Databases?	
	No	Yes	No	Yes
Arizona		√		√
Delaware		√		√
Florida		√		√
Kansas		√		√
Kentucky	X			√
Michigan		√		√
New Jersey	X			√
North Carolina		√		√
Pennsylvania		√		√
Rhode Island		√		√
South Carolina	X			√
South Dakota		√	X	
Texas*		√		√
Washington		√		√

* Texas is currently in the process of adopting an automated system. A minority of counties still use paper forms, but officials expect that these will have transitioned to a paperless system by the end of May 2010.

B. Online Voter Registration

We define an online registration system as one that allows individuals to submit a voter registration application over the Internet. Six states—Arizona, Colorado, Kansas, Louisiana, Oregon, and Washington—currently have online systems in place for individuals who have a driver’s license or non-driver’s identification card. At least five more states—California, Indiana, Nevada, North Carolina, and Utah—are developing similar systems.

Delaware offers a different kind of online system, one that allows a person to submit most of an application online but also requires that she mail a signed voter registration form to election officials. However, a Delaware resident who submits a registration online may still vote a regular ballot on Election Day even if officials fail to receive her signature. After poll workers have called the county election office and confirmed that the person submitted an online registration, she shows identification, signs a signature card, and casts a regular ballot.⁴⁰

Internet-based voter registration begins with an online portal, a secure web-based application.⁴¹ The online system receives data through the portal and transfers it to local election officials, typically after attaching a digitized signature from the user's DMV files. Ideally states would make this service available to all eligible citizens, but currently only Delaware's system is accessible to those without a driver's license or state identification card.⁴² A bill introduced in the 111th Congress by Representative Zoe Lofgren would require all states to make online registration available to all eligible citizens, providing a mechanism for states to attach citizens' signatures to the record if the state has those signatures on file.⁴³

1. Online Registration Through DMVs

Arizona, Washington, Kansas, and Oregon have all adopted very similar online systems.⁴⁴ First, a person navigates to the online portal—accessible from the official website of state election authorities—and opens a page on which she must check boxes to affirm that she is a U.S. citizen who is eligible to register to vote. On a second page she enters her name, the number of her driver's license or state identification card, and possibly other identifying data such as her date of birth. In Arizona, Washington, and Oregon the online system then checks this information against DMV records in real time.⁴⁵ If it cannot find an exact match, the system prevents the user from proceeding unless she re-enters her information correctly.⁴⁶

If it finds a match, the online system prompts the user to enter any further information that is part of the registration process, such as party preference, and allows her to supply a separate mailing addressing and other optional data. On a final page she reviews the information she has entered, and can either return to previous screens to make corrections, or click a button to submit the application.⁴⁷ Once county officials have accepted her submission she will receive a confirmation card in the mail, as with any registration.

After a user submits her application in Arizona, Washington, and Kansas, the online systems retrieve her DMV signature and post the application to the same secure site or storage network used to hold DMV registrations. Online and DMV registrations alike are then retrieved by the statewide voter registration system, forwarded to local officials, and reviewed in the same way.⁴⁸ In contrast, Oregon does not have automated DMV registration, and its online portal posts data directly to the statewide voter registration system. The system then retrieves DMV signatures on a nightly basis and provides applications to county officials by morning.⁴⁹ As with the automated registration systems described above, states offer online portals as a means of submitting information to county officials for review, not of directly modifying voter rolls.

Registered voters can also submit updates to their records online. In three states—Arizona, Kansas, and Oregon—people submit both new registrations and updates through the same online portal. In Washington, voters who move within a county use a separate voter services website to update their addresses.⁵⁰

2. Delaware's Online System

Delaware residents can also access an online portal, but the process is a little different than in the four states described above. After a user submits information through the online portal, the system forwards her data to county officials in real time. It also instructs the user to print a copy of her application, sign it, and mail

it to her county's election office. As noted above, if the user does not mail a signed form, she can still vote a regular ballot on Election Day if she shows identification and provides a signature at the polls, and poll workers confirm that she submitted an online registration.⁵¹

III. PUTTING IT IN PLACE

Virtually everywhere, election officials provided the impetus for paperless programs as part of their efforts to achieve a more efficient and effective way of doing business.⁵² Some first sought authorization from their state legislatures, where reform frequently enjoyed bipartisan support; for instance, online registration bills unanimously passed the state Senates of Colorado, Indiana, Louisiana, and Utah.⁵³

Some states began to implement automated registration as early as the 1990s, after the passage of the National Voter Registration Act of 1993. Arkansas, California, Delaware, Kentucky, Michigan, Pennsylvania, South Carolina, and Washington all began electronically transmitting some registration data from DMV offices in the mid- to late 1990s, though they continued to use paper forms as well. Arizona became the first state to launch online registration in 2002. Elsewhere, however, automation projects were postponed by lack of funding, technological infrastructure, or administrative coordination.⁵⁴

The Help America Vote Act of 2002 (HAVA) played a major role in removing some of these barriers. In addition to providing federal funding to upgrade voter registration lists, HAVA required states to integrate their local voter registration lists into a single statewide computerized registration system, and to develop programs for using that system to attempt to verify registrations against DMV and Social Security Administration records.⁵⁵

This created a foundation for data sharing between election officials and other state agencies, especially DMVs, which substantially facilitated further reform efforts. As Washington Assistant Director of Elections Katie Blinn said of online registration, "If you have a statewide database, you already have eighty-five percent of it."⁵⁶

Once HAVA was implemented, automation and online registration started gaining traction nationwide. Arizona introduced partial automation at the DMV, while Pennsylvania and Rhode Island developed full automation, in 2005. North Carolina and South Dakota launched partially automated systems in 2006, the same year Delaware developed its online system. Michigan began transmitting digitized signatures with DMV registrations in 2007.

In 2008 Washington and Kansas introduced fully automated DMV voter registration, and Washington adopted full online registration. Kansas also launched an online system in 2009. That same year five additional state legislatures approved online registration, and both Arizona and Delaware adopted fully paperless systems of DMV voter registration. Oregon introduced online registration in March 2010, and was quickly followed by Colorado and Louisiana.

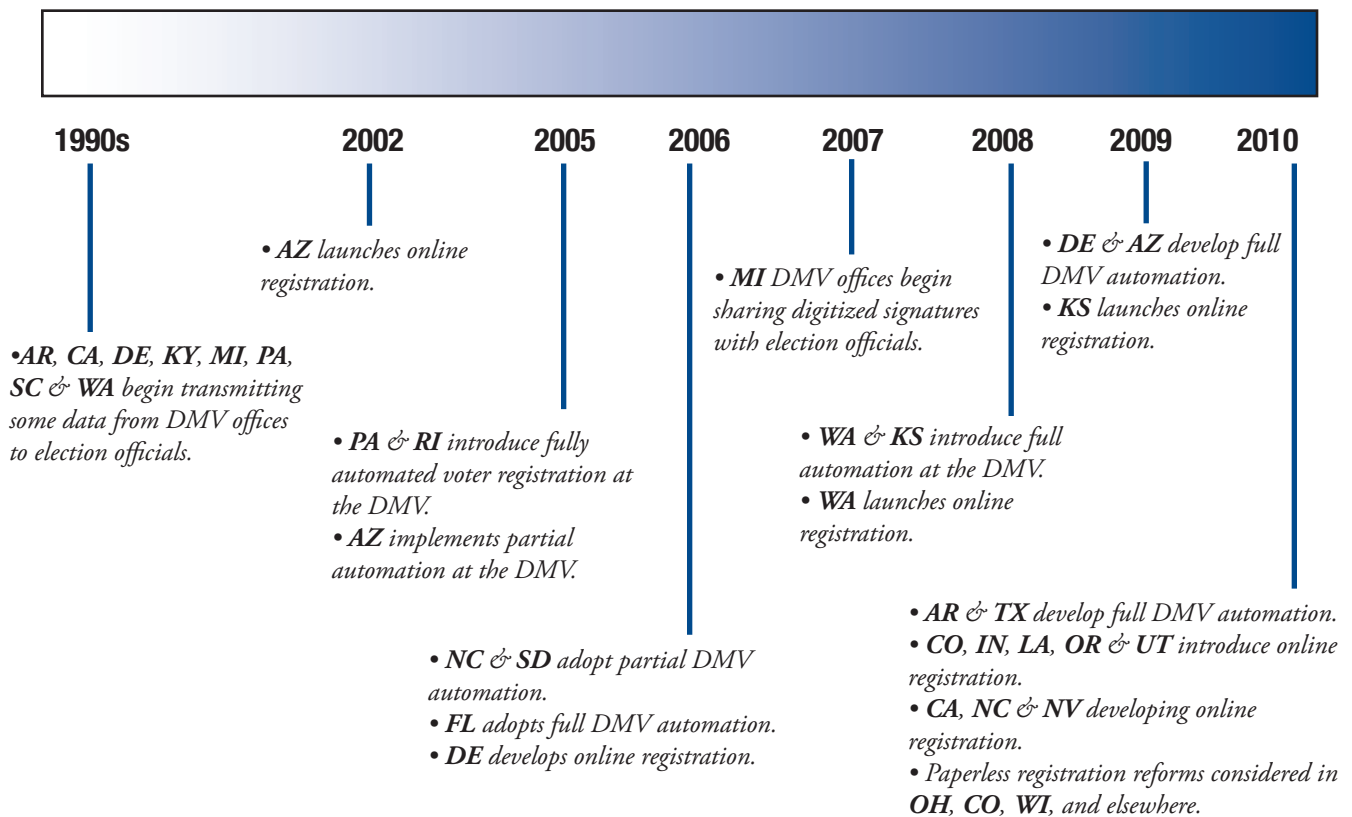
None of the states we surveyed reported technical problems developing their systems. In the words of Kansas State Election Director Brad Bryant, "it just wasn't rocket science."⁵⁷

A. Development Time

States have typically taken approximately one year to develop and implement paperless voter registration systems. North Carolina developed a partially automated registration system at the DMV in approximately one year, about the same time it took Delaware to build its online registration system, and to move from partial to full automation at the DMV.⁵⁸ South Dakota developed partial automation at the DMV over the space of twelve to eighteen months, while Kansas developed a fully automated system at the DMV in about a year and a half, and online registration in six to eight months.⁵⁹ Oregon implemented online registration in approximately seven months.⁶⁰

The development process was slightly more complicated in Arizona and Washington. Arizona developed an online portal in about six months, and automated registrations at the DMV in three to four months. But officials initially forwarded paperless registrations to county offices in PDF form.⁶¹ It was only after they implemented the new version of their statewide voter registration database in 2009 that most counties began accepting direct data transfers—though Maricopa County, by far the state’s most populous county, had developed the capacity to receive these transfers as early as 2002.⁶²

Illustration 3: Growing Adoption of Paperless Registration



Developing the capacity to make direct state-to-county transfers was also a separate project in Washington, which uses a “bottom-up” voter registration database system—one that links independent county databases, whereas most states have a single unified system. Washington officials spent about six to eight months developing the capacity to collect and process online and automated DMV registrations at the state level. Work on expanding the state-to-county transfer process began at the same time, but required several months of additional work.⁶³

B. Costs

Start-up costs have typically been modest, though they have sometimes varied. It cost Arizona \$130,000 to develop both automated and online registration.⁶⁴ Election officials there benefited from favorable circumstances: they were able to build online voter registration into an existing DMV site, and then to build automated DMV voter registration into the online system.⁶⁵

Costs were not much greater in other states. Washington spent approximately \$170,000 on state-level work to develop both automated and online registration and \$109,000 on county-level work, for a total of \$279,000.⁶⁶ Oregon spent about \$200,000 developing online voter registration.⁶⁷ And Kansas officials developed a fully paperless system using existing staff and infrastructure, without any separate appropriations or use of federal HAVA funds.⁶⁸

Kansas was fortunate in that it was able to tie some of its work to HAVA implementation.⁶⁹ Rhode Island did as well when it adopted full automation, and spent a total of \$70,000 for separate work at DMV offices.⁷⁰ In South Dakota, partial DMV automation cost \$60,000.⁷¹

Two states—North Carolina and Delaware—pursued distinctive approaches to automation that involved significant hardware expenses. Delaware’s system, which involves greater integration of DMV and voter databases, and special electronic signature pads at each DMV terminal, cost \$600,000 in federal HAVA funds.⁷² North Carolina, which scans paper registration forms for electronic transmission, spent \$250,000 on hardware.⁷³

Paperless programs have also proven inexpensive to maintain. In Arizona, where online and automated DMV registration account for over 70 percent of all registrations, officials estimate that these programs cost a total of at most \$125,000 annually for operation and upkeep.⁷⁴ In contrast, a recent study by the Pew Center on the States found that in 2008, when Oregon’s registration system was entirely paper-based, the state spent \$200,000 simply for printing voter registration forms, and another \$78,000 for providing voter registration at DMV offices.⁷⁵ All told the state government spent \$2.3 million on voter registration in 2008; but the system’s total cost, including data entry labor costs at the county level, was nearly \$9 million.⁷⁶ And it is at the county level that officials have realized their greatest savings from paperless registration, as further detailed below.

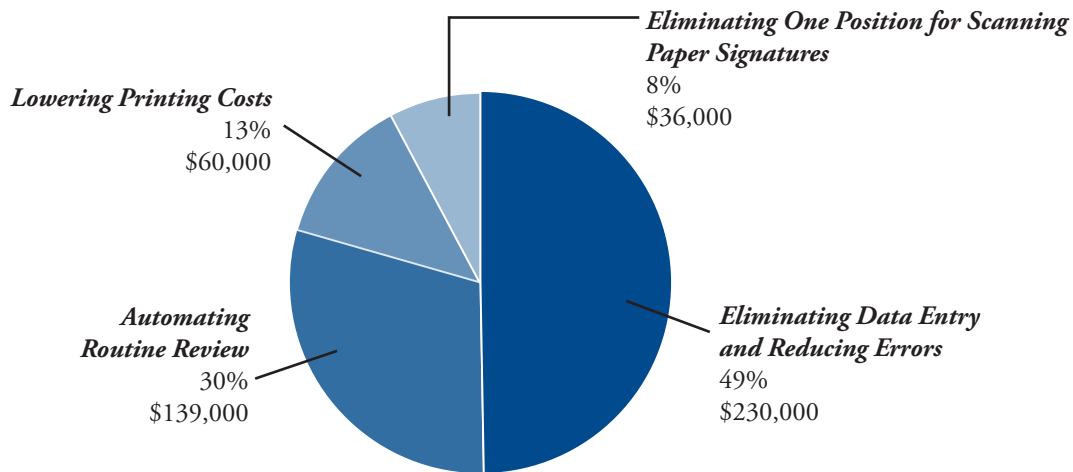
IV. POSITIVE OUTCOMES FROM PAPERLESS VOTER REGISTRATION

A. Cost Efficiency

Unlike paper applications, online and automated DMV voter registrations do not require data entry by election officials, are virtually never incomplete, are not marred by illegibility, and are at least partially verified before they reach election officials. In every state in which we conducted extended interviews, officials found the result to be a faster and more efficient registration process.

In Maricopa County, Arizona, election officials save 50¢ on data entry with every registration they receive electronically.⁷⁷ County officials have realized further efficiencies by automating most of their review process, so that only the 10 percent of paperless registrations that cannot be automatically verified now requires manual review.⁷⁸ This saves a further 30¢ on average; county officials estimate they spend an average of only 3¢ to process an electronic transaction compared to 83¢ for a paper form, thereby saving over \$370,000 in 2008.⁷⁹ And with the dramatically reduced cost of printing and handling paper forms, total savings were well over \$450,000.⁸⁰

Illustration 4: Savings Breakdown for Maricopa County, Arizona, in 2008



In both Kansas and Washington, local election officials have similarly estimated that they can process electronic registrations in half the time or less than they can process a paper form.⁸¹ As a result, officials in four Washington counties reported in a recent study that they save “anywhere from \$.50 to \$2.00” on each registration they receive electronically; to put this in perspective, officials processed over 300,000 new online and DMV registrations in 2008.⁸² The Washington Secretary of State’s office in turn saved \$126,000 in 2008 due to online and automated DMV registration.⁸³ Full automation at the DMV has also allowed Delaware to eliminate five vacant positions in its state and county election offices, for an annual savings of \$200,000.⁸⁴

Illustration 5: Savings from Paperless Registration

Jurisdiction	Savings
Maricopa County, Arizona	Over \$450,000 in 2008
Delaware	Over \$200,000 in 2009, beyond prior savings from partial automation
Washington	\$126,000 in 2008 in the Secretary of State's office; more in the counties

Election officials have not been the only beneficiaries. At DMV offices, automation has relieved officials of the burden—and the expense—of sorting, packaging, and mailing voter registration forms. In Delaware, DMV officials now spend an average of 30 seconds collecting voter registrations compared to 90 seconds in the past.⁸⁵

Voters too save something: the price of a stamp. Trifling as that may seem, Washington Election Information Services Manager David Motz estimated that if everyone who used his state's online system in 2008 had mailed forms instead, the cost of the postage would have been nearly \$90,000.⁸⁶

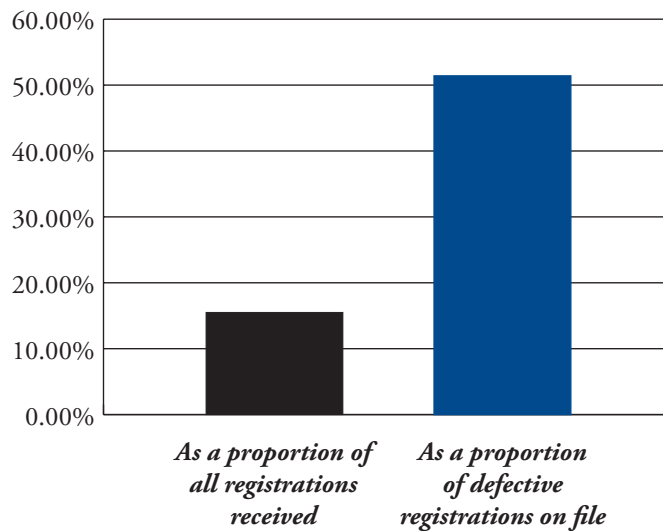
B. Accuracy

Election officials consistently reported electronic voter registrations to be less error-prone than paper forms.⁸⁷ Craig Stender, HAVA Program Manager for the Arizona Secretary of State, reports that his office received “far, far fewer calls” about registration problems in 2008 than it has in past presidential election years. And Chris Nelson, the Secretary of State of South Dakota, believes that automated DMV registration has helped reduce the number of provisional ballots cast in his state.⁸⁸

A survey from Maricopa County helps put these reports in perspective. On August 17, 2009, county officials examined all applications then “on suspense,” which they define as those with incomplete, inaccurate, or illegible information, and for which they were seeking further input.⁸⁹ They found that paper applications, which made up only 15.5 percent of all registrations they had received up to that time in 2009, accounted for over half of these “suspended” records—showing that paper-based forms are as much as five times more likely to introduce errors into the registration process, as compared to paperless registration.⁹⁰

Paperless registration also helps to keep the voter rolls more accurate by making it easier for voters to update their information. Currently voters often do not update their registration records promptly, or at all, and this is a source of endless complication. Election officials must routinely engage in voter roll purges and other efforts to clear outdated “deadwood” from their lists, a time-consuming process that often risks wrongly disenfranchising voters.⁹¹ Old information also leads to greater use of provisional ballots, which can become a flashpoint for controversy and litigation.⁹²

Illustration 6: Disproportionate Error Rates: Paper Registrations in Maricopa County, Arizona, August 2009



C. Reliability

The state officials we interviewed have found their paperless voter registration systems to be highly reliable. None reported any security problems, or any significant technical problems, with automation at the DMV.⁹³ And there were almost no detected instances in which a paperless registration keyed in at the DMV failed to reach local election officials.⁹⁴ To the contrary, officials in three states noted that DMV offices now send fewer applications to the wrong county office.⁹⁵ And several officials reported that automation has reduced the number of people who try to vote on Election Day but are informed that their names are not on the voter rolls and thus that they cannot cast a regular ballot, despite claims that they registered to vote at the DMV.⁹⁶

There were similarly no discovered data transfer or security problems with online registration, and only two instances in which an online portal was unexpectedly placed out of service for more than a few hours.⁹⁷ Washington's change-of-address program was down for eight weeks in the early summer of 2008, after work to update the program inadvertently destabilized it; according to Voting System Specialist Patty Murphy, officials could not immediately address the issue because of other election-year priorities.⁹⁸ Also in 2008, Arizona's online portal was unavailable for part of the day before a registration deadline due to problems in a third party network at the DMV that day, though over 16,000 people were still able to use the online system once service was restored.⁹⁹

Technical difficulties simply did not emerge as a source of concern in our interviews; instead, officials repeatedly observed how paperless procedures ensure that registrations reach county officials in a timely and regular fashion. Moreover, paperless transactions leave a data trail that election officials can trace if the need arises, such as when voters claim that a submission was lost, or when officials must verify a person's eligibility to have their provisional ballot counted.¹⁰⁰

D. Effects on Voter Registration

1. Automated Voter Registration at DMVs

Four of the seven states we examined with full automation have reported striking growth in the number of voter registration transactions they receive from the DMV. In Washington and Kansas, which fully automated their systems in 2008, the number of DMV registrations received in 2009 was nearly double that of 2007.¹⁰¹ Rhode Island recorded even larger growth: it automated in August 2005, and recorded a total of 10,870 DMV registrations that year compared to 26,043 registrations in 2006.¹⁰² In Arizona, at least 9.8 percent of the citizen voting-age population registered or made updates through the DMV in 2007-2008, compared to 5.1 percent in 1999-2000, before the system was automated.¹⁰³

Three states—Florida, Delaware, and Pennsylvania—have shown little growth since automating. Our knowledge of Florida’s system is limited. But it is notable that both Delaware and Pennsylvania partially automated their DMV systems in the 1990s, and are two of the three states with

Four of the seven states we examined with full automation have reported striking growth in the number of voter registration transactions they receive from the DMV.

the highest rates of DMV registration in the country. The third is Michigan, which boasts one of the oldest “motor voter” programs in the nation, and which also began making data transfers in the 1990s.¹⁰⁴

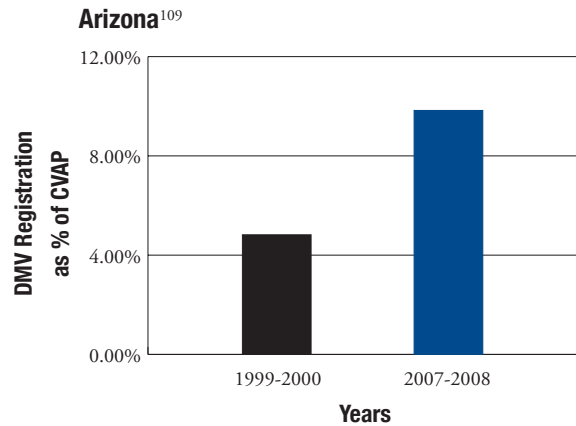
South Dakota, which, of all the states we examined, recorded the lowest rate of DMV registration before adopting partial automation, has seen the highest growth since. Its reported DMV registrations grew in number from 5,670 in 2003-04 to 39,371 in 2007-08, figures equal to 0.84 percent and 6.85 percent of the state’s voting-age citizen population, respectively.¹⁰⁵ This is a growth of seven or eight-fold, depending on the measure.

It should be noted that automation creates a system that is not only more reliable, but also more reliably understood. Whereas paper forms might be incorrectly tallied and reported, most officials can easily track the exact number of electronic forms they receive. Thus, some increases in a state’s reported numbers might simply reflect more accurate reporting. The effect of this correction should not be exaggerated, however. Washington, where the Secretary of State’s office received electronic transfers and centrally tracked DMV registration numbers both before and after full automation, is also among the states that have recorded large increases.¹⁰⁶

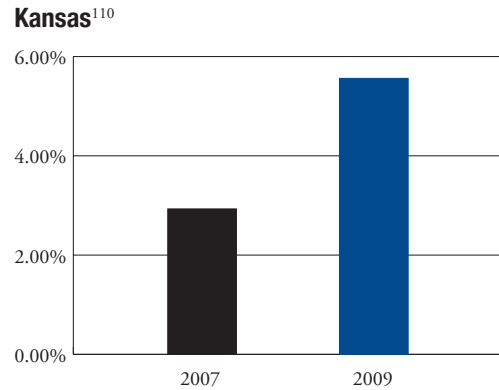
Washington is noteworthy for another reason as well. Both there and in Rhode Island, DMV officials had already expedited the voter registration process prior to full automation by printing pre-populated forms for interested customers.¹⁰⁷ Yet registration rates still increased significantly in both states after they removed paper from the process entirely.¹⁰⁸

Illustration 7: DMV Registration Rates Before and After Automation

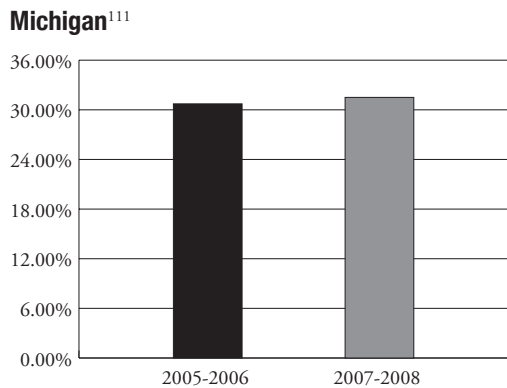
The charts below illustrate the proportion of voter registrations that states received from their DMV offices before and after adopting automation, either in full or in part. Some of these states differ dramatically in both the absolute size of their population and in their rate of growth. In order to best illustrate relative shifts in the importance of DMV as a source of voter registrations, we present DMV voter registrations received each year as a percentage of a state's total population of voting-age citizens.



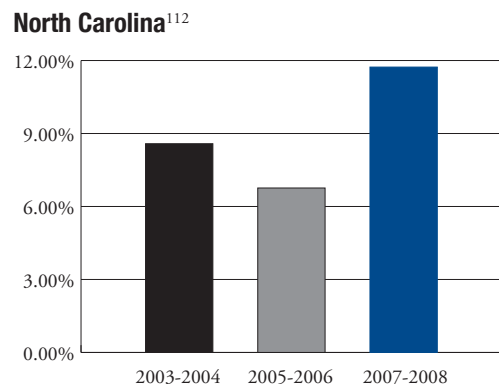
Arizona adopted online voter registration in 2002, followed by partial automation at its DMVs in 2005 and full automation 2009-10. By 2008, even as record numbers of voters were registering online, the proportion who registered at the DMV was still more than double what it had been eight years earlier.



DMV offices in Kansas provided visitors with blank voter registration forms until August 2008, when they adopted a fully paperless system.

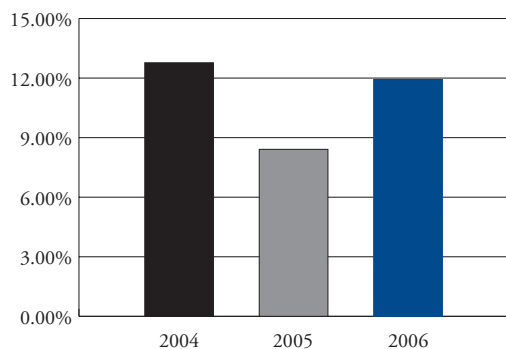


Michigan has been offering voter registration in its DMV offices for over 30 years. Local election officials began receiving this data electronically in 1998, and started receiving digitized signatures in 2007.



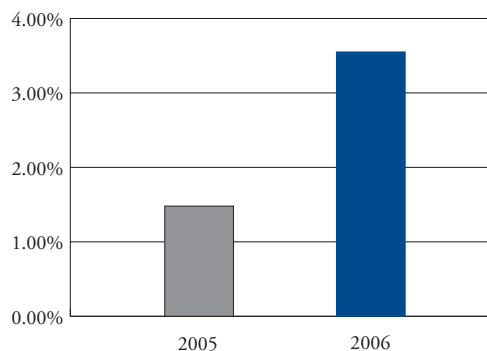
In 2006 North Carolina introduced a partially automated voter registration system at DMVs, where visitors sign pre-populated registrations forms that are scanned and forwarded to election official electronically.

Pennsylvania¹¹³



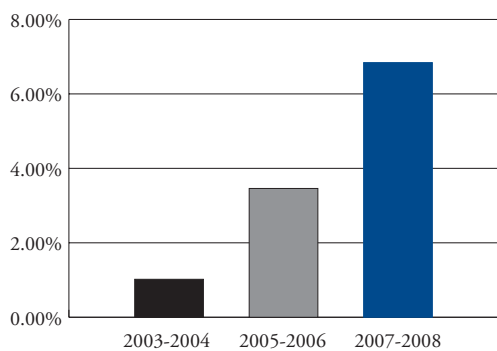
Pennsylvania has operated a paperless registration system at DMV offices since 1995. Some counties fully automated the system in 2003, and all did so in 2005.

Rhode Island¹¹⁴



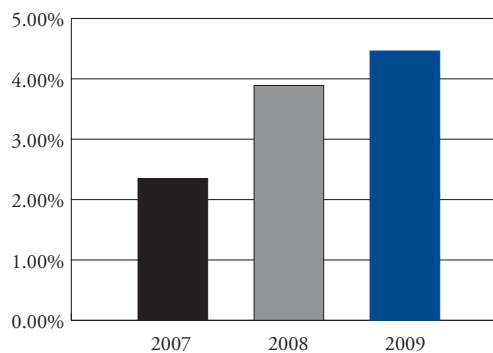
Rhode Island replaced the use of pre-populated voter registration forms at the DMV with full automation in August 2005. Figures for 2004 are not available.

South Dakota¹¹⁵



South Dakota's DMV offices partially automated voter registration in January 2006. The jump in registrations is even greater than appears here, because the 2007-08 numbers are incomplete.

Washington¹¹⁶



DMVs in Washington adopted a fully paperless automated system in 2008.

2. Online Voter Registration

Voters quickly embraced online voter registration in both Arizona and Washington, where online systems accounted for approximately 25 percent of all registrations in their first year.¹¹⁷ Use of Arizona's online system has increased over time, reaching 39 percent of all registrations in 2008.¹¹⁸ And interest continues to grow: in April, Project Vote announced that it will soon release an application allowing people to make submissions to online registration portals using smart phones and other mobile devices.¹¹⁹

Kansas introduced its online voter registration system less than a year ago, in the middle of a year with no regular elections, and to date its online portal has drawn few users.¹²⁰ Use of the online system has also been relatively low in Delaware, although it jumped significantly in 2008.¹²¹ In Oregon, where midterm elections

are on the horizon, the new online portal drew nearly 1100 submissions in its first week.¹²²

Younger adults particularly favor online registration. 18-24 year olds, who register to vote at substantially lower rates than older groups, accounted for nearly a third of all online transactions in Washington in 2008.

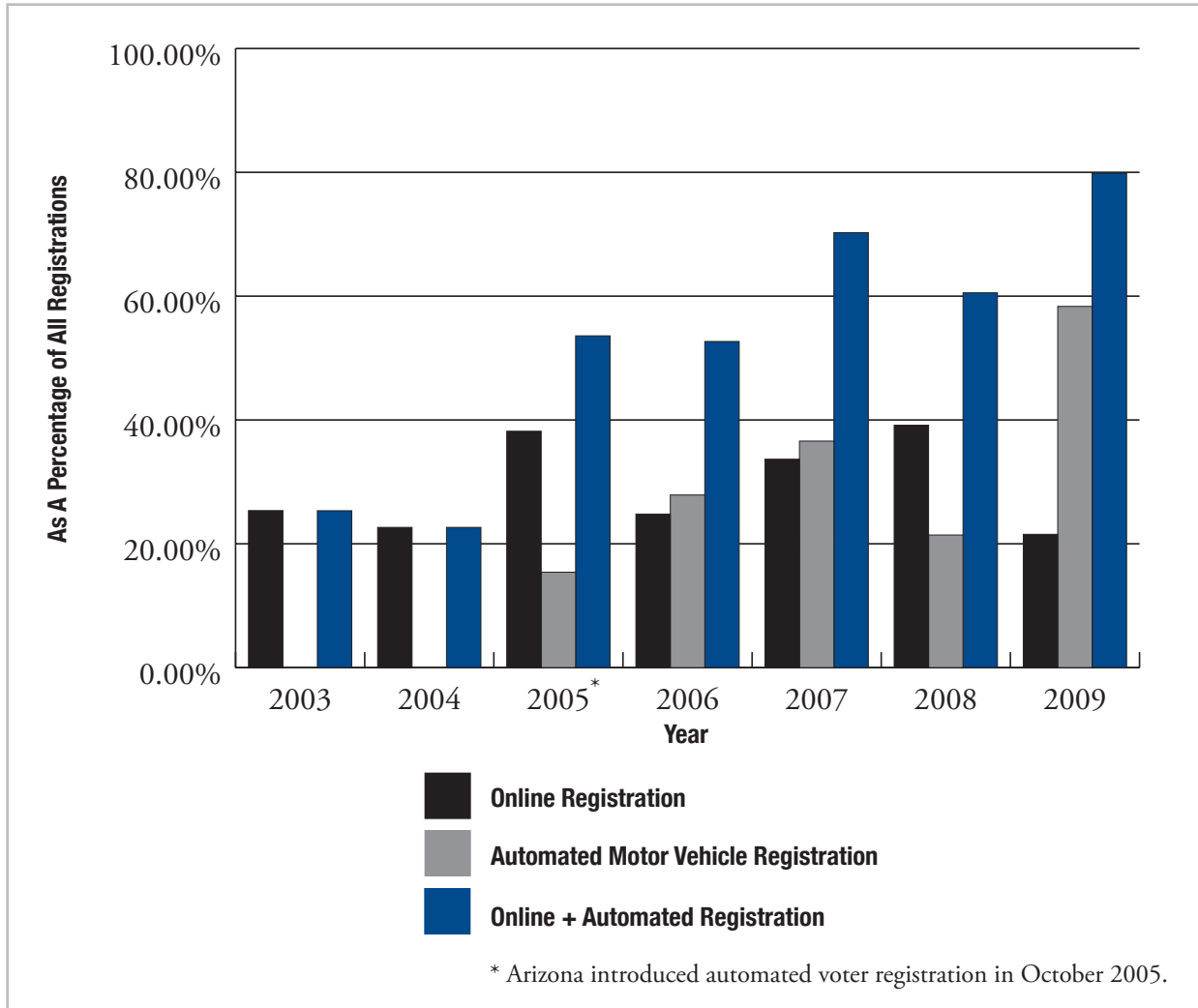
Overall, a recent academic study sponsored by the Pew Center on the States found that residents of Arizona and Washington hold a highly favorable view of online registration—especially if they have personally used it.¹²³ In Washing-

ton, where polling was conducted during the online system's first year, nearly 70 percent of people who had used the system reported that it was "very easy" to do so.¹²⁴ And a full 95 percent agreed with the statement, "if I had a son or daughter turning 18, I would encourage them to register to vote online."¹²⁵

Indeed, younger adults particularly favor online registration. Citizens aged 18-34, a group that accounts for 25 percent of registered voters nationwide, have submitted 36 percent of all online registration updates in Maricopa County, Arizona.¹²⁶ More striking still, 18-24 year-olds, who register to vote at substantially lower rates than older groups, accounted for nearly a third of all online transactions in Washington in 2008.¹²⁷ While it is difficult to disaggregate the impact of any single influence on total registration rates, this may help explain a steady rise in registration among 18-24 year-old- Arizonans, from 28.7 percent in 2000 to 47.8 percent in 2004, and 52.7 percent in 2008.¹²⁸

In Arizona, polling for the Pew-sponsored study also indicates that minorities are particularly likely to use online registration.¹²⁹ Researchers also found that neither of the two major parties enjoyed a marked advantage from online registration, a finding which is further supported by data from Maricopa County.¹³⁰

Illustration 8: Growing Use of Paperless Registration in Arizona¹³¹



V. CONCLUSION

Paperless registration has spread rapidly over the past few years. In states across the country, and with little fanfare, government officials and policy makers have identified a better way to serve the public and acted together to pursue it. The results have been uniformly positive in a wide range of different states—large and small, red and blue—with different infrastructures. And they indicate that automated systems in all voter registration agencies nationwide and broadly accessible online voter registration will save money, increase the accuracy of voter rolls, and reduce barriers to voting.

ENDNOTES

- 1 For the sake of brevity, we use “registration” to refer to both new registration applications and updates to existing registrations unless otherwise noted.
- 2 U.S. ELECTION ASSISTANCE COMM’N., THE IMPACT OF THE NATIONAL VOTER REGISTRATION ACT OF 1993 ON THE ADMINISTRATION OF ELECTIONS FOR FEDERAL OFFICE 2007-2008: A REPORT TO THE 111TH CONGRESS 6 (2009) [hereinafter 2007-08 NVRA REPORT], *available at* http://www.eac.gov/program-areas/research-resources-and-reports/completed-research-and-reports/program-areas/research-resources-and-reports/copy_of_docs/nvra-report-final_congress.pdf/attachment_download/file.
- 3 R. MICHAEL ALVAREZ ET AL., 2008 SURVEY OF THE PERFORMANCE OF AMERICAN ELECTIONS – FINAL REPORT: EXECUTIVE SUMMARY 5 (2009), *available at* <http://www.vote.caltech.edu/drupal/files/report/2008%20Survey%20of%20the%20Performance%20of%20American%20Elections%20Executive%20Summary.pdf>. Based on the results of this and other research, co-author Stephen Ansolabehere further estimates that registration and authentication problems discouraged an additional 2 to 4 million additional people from attempting to vote at all. *See Voter Registration: Assessing Current Problems: Hearing Before the H. Comm. on Rules & Admin.*, 111th Cong. 10 (Mar. 11, 2009) (testimony of Stephen Ansolabehere, Prof., Harvard Univ.), *available at* http://rules.senate.gov/public/?a=Files.Serve&File_id=9756364e-0cd6-4322-bd34-65257213eeba.
- 4 *See, e.g.*, JENNIFER S. ROSENBERG WITH MARGARET CHEN, EXPANDING DEMOCRACY: VOTER REGISTRATION AROUND THE WORLD (Brennan Center for Justice 2009), *available at* http://www.brennancenter.org/content/resource/expanding_democracy_voter_registration_around_the_world.
- 5 States apply a variety of names to their motor vehicles administration offices. We use the acronym for the most common name, Department (or Division) of Motor Vehicles, for general reference.
- 6 Indiana and Utah will both introduce online registration in 2010, and North Carolina and Nevada may do so as well. California expects to launch an online system in 2012. Ind. Pub. L. 120-2009 (H.E.A. 1346); Telephone Interview with Mark Thomas, Office Admin., Utah Lt. Gov. (Feb. 25, 2010); Telephone Interview with Deborah Paschal, Deputy for Legis. Affairs, Cal. Sec’y of State (Oct. 19, 2009); E-mail from Matt Griffin, Deputy for Elections, Nev. Sec’y of State, to Nhu-Y Ngo, Research Assoc., Brennan Ctr. for Justice (Feb. 11, 2010).
- 7 *See, e.g.*, Voter Registration Modernization Act, H.R. 1719, 111th Cong. (2009) (Rep. Lofgren) (online registration); Responsible Online Voter Registration Empowerment Act, H.R. 4449, 111th Cong. (Rep. McCarthy) (online registration); Editorial, *The Right Way to Register Voters*, N.Y. TIMES, July 23, 2009 (noting that Senator Schumer is working on a national voter registration bill).
- 8 *See* 42 U.S.C. §1973gg-3(a), 5(a) (2008).
- 9 Interview with Elaine Manlove, Del. State Election Comm’r; Howard Sholl, Deputy Admin. Dir., Dep’t of Elections, New Castle County; and Christopher Ramos, Programmer, Office of the State Election Comm’r, in Wilmington, Del. (Dec. 14, 2009) [hereinafter Elaine Manlove et al.].
- 10 *See* H.B. 260, 128th Gen. Assemb., Reg. Sess. (Oh. 2009); DISTRICT OF COLUMBIA BOARD OF ELECTIONS AND ETHICS, STUDY OF THE FEASIBILITY OF IMPLEMENTING AUTOMATIC VOTER REGISTRATION IN THE DISTRICT OF COLUMBIA (Apr. 2010); GOVERNOR’S COMM’N ON STRENGTHENING DEMOCRACY, FINAL REPORT (Dec. 2009), *available at* <http://www.strengthenedemocracy.org>.
- 11 Telephone Interview with Janet Ruggiero, Dir. of Elections, R.I. Sec’y of State (Mar. 9, 2010).
- 12 Washington does not record party preference. Telephone Interview with Michael Bethany, Info. Tech. Specialist, Wash. Dep’t of Licensing (Dec. 23, 2009).
- 13 This is the express policy in Kansas and Washington. E-mail from Brad Bryant, State Election Dir., Kan Sec’y of State (Apr. 12, 2010); WASH. DEP’T OF LICENSING, LICENSING SERVICE REPRESENTATIVES MANUAL § 6.25(II) (B)(3) (on file with the Brennan Center). The same may also be true of Florida: Tameka Byer of Leon County does not recall her office receiving any applications from the DMV indicating the visitor had answered ‘no’ to an eligibility question. Telephone Interview with Tameka Byer, Election Records Manager, Leon County Supervisor of Elections Office (Apr. 14, 2010).
- 14 Telephone Interview with Janet Ruggiero, Dir. of Elections, R.I. Sec’y of State (Feb. 23, 2010); Elaine Manlove et al., *supra* note 9.
- 15 Elaine Manlove et al., *supra* note 9.
- 16 *Id.*; Telephone Interview with Brad Bryant, State Election Dir., Kan. Sec’y of State (Jan. 28, 2010). DMV em-

employees in Kansas ask customers whether they are registered to vote before beginning interviews, while interviewers in Delaware are informed of a customer's registration status by their computer programs, which automatically search the state's registration database.

- 17 Telephone Interview with Janet Ruggiero, Dir. of Elections, R.I. Sec'y of State (Mar. 24, 2010); WASH. DEP'T OF LICENSING, LICENSING SERVICE REPRESENTATIVES MANUAL § 6.25(II) (on file with the Brennan Center).
- 18 Telephone Interview with Craig Stender, HAVA Project Manager, Ariz. Sec'y of State (Dec. 21, 2009).
- 19 Telephone Interview with Lindsey Hock, Voter Registr. Div. Chief, Pa. Dep't of State (Dec. 23, 2009).
- 20 In Pennsylvania, voter registration transactions will terminate if a visitor answers no to a question about her eligibility. E-mail from Lindsey Hock, Voter Registr. Div. Chief, Pa. Dep't of State (Apr. 13, 2010). In Arizona, customers indicate their desire to register by checking a box next to a statement that reads, "Are you a United States citizen who wishes to register to vote or update your existing voter registration?" Text at the bottom also states that, by signing the form, a person who has checked yes for voter registration is certifying her eligibility to register. ARIZ. DEP'T OF TRANSP. MOTOR VEHICLES DIV., DRIVER LICENSE / IDENTIFICATION CARD APPLICATION, available at <http://mvd.azdot.gov/mvd/formsandpub/viewPDF.asp?lngProductKey=1238&lngFormInfoKey=1238>.
- 21 We were not able to determine the precise means of transmission in Florida.
- 22 Each of these states makes nightly transfers except Pennsylvania, which transmits DMV registrations several times a week. Telephone Interview with Larry Boyle, Deputy Chief Counsel; David Burgess, Deputy Sec'y for Planning; Lindsey Hock, Voter Registr. Div. Chief; & Jonathan Marks, Statewide Unif. Registry of Electors Div. Chief, Pa. Dep't of State (Jan. 28, 2010) [hereinafter Lindsey Hock et al.].
- 23 Telephone Interview with Janet Ruggiero, *supra* note 14.
- 24 Elaine Manlove et al., *supra* note 9. For a broad overview of the Delaware DMV's network architecture, see for example DEL. DEP'T OF TRANSP., REQUEST FOR INFORMATION: DMV SYSTEMS MODERNIZATION 12 (2010), available at http://deldot.gov/information/business/proservs/pdf/rfi_1.pdf?012410151052.
- 25 Telephone Interview with Janet Ruggiero, *supra* note 14.
- 26 Telephone Interview with Katie Blinn, Ass't Dir. of Elections, Randy Newton, Voter Registr. Database Support & Patty Murphy, Voting Systems Specialist, Wash. Sec'y of State (Dec. 29, 2009) [hereinafter Katie Blinn et al.]. County officials run an in-county duplicate check before they accept a registration, and a statewide check occurs afterward. Telephone Interview with Mike Rooney, Elections Supervisor & Dave Heinemann, Election Clerk, Pierce County Auditor's Office (Jan. 6, 2010).
- 27 Telephone Interview with Tammy Patrick, Federal Compliance Officer, Maricopa County Elections Dep't (Dec. 29, 2009).
- 28 In turn, DMVs are required to facilitate matching searches against the Social Security Administration's database. 42 U.S.C. §§ 15483(a)(5)(A), (B) (2008).
- 29 Telephone Interview with Craig Stender, *supra* note 18; Telephone Interview with Tameka Byer, Election Records Manager, Leon County Supervisor of Elections Office, Fla. (Jan. 6, 2010); Lindsey Hock et al, *supra* note 22; Telephone Interview with Mike Rooney & Dave Heinemann, *supra* note 26.
- 30 Elaine Manlove et al., *supra* note 9; E-mail from Brad Bryant, State Election Dir., Kan. Sec'y of State (Jan. 28, 2010); Telephone Interview with Janet Ruggiero, *supra* note 14.
- 31 E-mail from Ann McGeehan, Dir. of Elections, Tex. Sec'y of State, to Nhu-Y Ngo, Research Assoc., Brennan Ctr. for Justice (Feb 2, 2010). Telephone Interview with Ann McGeehan (March 30, 2010). The Texas DMV began transmitting registration data electronically about ten years ago, but until now has also continued to use pre-printed registration forms.
- 32 Telephone Interview with Fletcher Allen, Programmer Analyst, Elections Div., Ark. Sec'y of State (March 1, 2010). According to Mr. Allen, the state expects to introduce automated data transfers in June or July.
- 33 For example, the Ohio legislature is currently considering a bill, passed by the state House, to require automatic registration at a wide array of government offices; automatic DMV registration bills were considered this year in Minnesota and Wisconsin; and panels recommended widespread automatic registration in Utah and the District of Columbia. See H.B. 260 (Oh. 2009), *supra* note 10; H.F. 1053/S.F. 0660, 2009 Leg., Reg. Sess. (Mn. 2009); A.B. 895/S.B. 640, 2010 Leg., Reg. Sess. (Wi. 2010); GOVERNOR'S COMM'N ON STRENGTHENING DEMOCRACY, *supra* note 10; DISTRICT OF COLUMBIA BOARD OF ELECTIONS, *supra* note 10. A number of state election officials are taking steps toward automation without new legislation.

- 34 Telephone Interview with Donna Royson, Voter Serv. Dir., S.C. Election Comm'n (Jan. 8, 2010). In Kentucky, when a customer registers with the DMV but election officials fail to receive her signature before Election Day, she may seek authorization by phone from her County Board of Elections to vote a regular ballot. Telephone Interview with Katie Gabhart, Gen. Counsel, Ky. Bd. of Elections (Feb. 22, 2010).
- 35 Telephone Interview with Chris Nelson, Sec'y of State, Kea Warne, Elections Supervisor & Jennifer Headlee, HAVA Program Manager, S.D. Sec'y of State (Dec. 15, 2009) [hereinafter Chris Nelson et al.].
- 36 While these image files are used to provide a copy of the registrant's signature, the DMV also forwards raw data that upload directly into the state's voter registration system. Telephone Interview with Marc Burris, Info. Tech. Dir., N.C. Bd. of Elections (Dec. 22, 2009) [hereinafter Marc Burris Dec. 22].
- 37 Telephone Interview with Brad Wittman, Election Liaison Div. Dir. & Tim Hanson, Dir. of Program Dev., Bureau of Elections, Mich. Dep't of State (Feb. 5, 2010).
- 38 Both agencies are overseen by the Secretary of State. They use parallel databases, with file servers that are housed in the same building in Lansing and which share data via direct cable connections. Telephone Interview with Brad Wittman, Election Liaison Div. Dir. & Tim Hanson, Dir. of Program Dev., Bureau of Elections, Mich. Dep't of State (Mar. 24, 2010).
- 39 Telephone Interview with Brad Wittman, Election Liaison Div. Dir. & Tim Hanson, Dir. of Program Dev., Bureau of Elections, Mich. Dep't of State (Dec. 17, 2009). DMV interviewers in Delaware can also see whether a customer is registered, and thus avoid creating duplicates. Elaine Manlove et al., *supra* note 9.
- 40 Telephone Interview with Elaine Manlove, Del. State Election Comm'r (Jan. 22, 2010).
- 41 In Arizona, people can also access the online registration portal through self-service kiosks in most DMV offices. Telephone Interview with Craig Stender, *supra* note 18.
- 42 A national survey sponsored by the Brennan Center in 2006 found that as many as 11 percent of U.S. citizens do not have valid, government-issued photo identification of any kind. And rates are considerably higher among some demographics. Citizens who earn less than \$35,000 per year are more than twice as likely to lack current identification as those who earn more than \$35,000, while voting-age African-American citizens are over three times more likely than voting-age white citizens to lack such identification. BRENNAN CENTER FOR JUSTICE, CITIZENS WITHOUT PROOF 3 (Nov. 2006), *available at* http://www.brennancenter.org/page/-/d/download_file_39242.pdf.
- 43 Voter Registration Modernization Act of 2009, H.R. 1719, 111th Cong. (2009).
- 44 We did not have the opportunity to examine in detail the two newest online systems, those of Colorado and Louisiana. However, their format appears very similar to those of the four states considered here.
- 45 While these systems allow users to re-enter their information, and thereby correct for their own errors, mistakes in DMV records can still prevent eligible citizens from using the system. Typos, transposed numbers, and other errors can occur frequently in large databases. *See, e.g.*, SOCIAL SEC. ADMIN., QUICK RESPONSE EVALUATION; ACCURACY OF THE HELP AMERICA VOTE ACT VERIFICATION PROGRAM RESPONSES 5 (June 2009), *available at* <http://www.ssa.gov/oig/ADOBEPDF/A-03-09-29115.pdf> (reporting a failure rate of 31 percent when attempting to match voter information with Social Security Administration data). *See also* JUSTIN LEVITT, WENDY R. WEISER & ANA MUÑOZ, MAKING THE LIST: DATABASE MATCHING AND VERIFICATION PROCESSES FOR VOTER REGISTRATION (Brennan Center 2006), *available at* http://brennan.3cdn.net/96ee05284dfb6a6d5d_j4m6b1cjs.pdf.
- 46 Kansas officials plan to adopt real-time verification in the next few years; at present, the online system matches records only after users have submitted their applications. E-mail from Brad Bryant, State Election Dir., Kan. Sec'y of State (Nov. 10, 2009). Note also that Arizona's online portal will lock users out for 24 hours if they submit non-matching information three consecutive times. Telephone Interview with Craig Stender, HAVA Project Manager, Ariz. Sec'y of State (Nov. 18, 2009).
- 47 In Arizona and Kansas the user then receives an electronic receipt; in Oregon, the final page displays a tracking number.
- 48 Telephone Interview with Craig Stender, *supra* note 18; Katie Blinn et al., *supra* note 26; KAN. SEC'Y OF STATE, PROJECT SUMMARY – ELECTRONIC MOTOR-VOTER, ONLINE VOTER REGISTRATION, ONLINE CHANGE OF ADDRESS 4 (2009) (on file with the Brennan Center) [hereinafter KAN. SUMMARY].
- 49 Telephone Interview with Steve Trout, Elections Div. Dir., Or. Sec'y of State (Mar. 10, 2010).

- 50 OFFICE OF THE WASH. SEC'Y OF STATE, WASHINGTON STATE ONLINE VOTER REGISTRATION 2 (Oct. 2009) (on file with the Brennan Center) [hereinafter WASH. OVERVIEW]. A slightly older (Jan. 2009) version of this overview is available at http://nass.org/index2.php?option=com_docman&task=doc_view&gid=632&Itemid=99999999.
- 51 Telephone Interview with Elaine Manlove, *supra* note 40.
- 52 We confirmed that state election officials provided the main impetus for reform in Arizona, Delaware, Kansas, Michigan, North Carolina, Rhode Island, South Dakota, and Washington. We discovered no instances in which state election officials opposed online or automated DMV registration.
- 53 2009 Colo. Sess. Laws Ch. 263 (H.B. 1160); Ind. Pub. L. 120-2009 (H.E.A. 1346); 2009 La. Act No. 187 (H.B. 520); 2009 Utah Laws Ch. 89 (S.B. 25). For more information see WENDY WEISER, CHRISTOPHER PONOROFF & NHU-Y NGO, MODERNIZING VOTER REGISTRATION: MOMENTUM IN THE STATES 1-3 (2010), available at http://www.brennancenter.org/content/resource/vrm_state_momentum.
- 54 Officials in Kansas, North Carolina, and South Dakota all considered adopting an automated system at DMV in the 1990s, but were unable to do so until HAVA provided the funding and the infrastructure with which to proceed. Chris Nelson et al., *supra* note 35; Marc Burriss Dec. 22, *supra* note 36; KAN. SUMMARY, *supra* note 48, at 1. In Delaware, plans for full automation similarly took several years to bring to fruition. Elaine Manlove et al., *supra* note 9.
- 55 See 42 U.S.C. §§ 15301, 15483(a)(1) & (5)(B) (2008). Kentucky and South Carolina are the only states in which we found that modernization efforts entirely preceded HAVA implementation.
- 56 Katie Blinn et al., *supra* note 26. Ms. Blinn was speaking in general terms, not offering a technical appraisal.
- 57 Telephone Interview with Brad Bryant, State Election Dir., Kan. Sec'y of State (Nov. 23, 2009).
- 58 Marc Burriss Dec. 22, *supra* note 36; Elaine Manlove et al., *supra* note 9; Telephone Interview with Elaine Manlove, *supra* note 40. Texas officials also expect to complete the move from partial to full automation within the space of a year. Telephone Interview with Ann McGeehan, *supra* note 31.
- 59 Chris Nelson et al., *supra* note 35; E-mail from Chris Nelson, S.D. Sec'y of State (Apr. 7, 2010); E-mail from Brad Bryant, State Election Dir., Kan. Sec'y of State (Jan. 25, 2010).
- 60 The state approved online registration in August 2009 and introduced it at the beginning of March 2010. Telephone Interview with Steve Trout, *supra* note 49; see also Bill Graves, *State Voter Registration Now Just a Click Away*, THE OREGONIAN, Feb. 28, 2010.
- 61 Telephone Interview with Craig Stender, HAVA Project Manager, Ariz. Sec'y of State (Dec. 24, 2009).
- 62 Telephone Interview with Craig Stender, HAVA Project Manager, Ariz. Sec'y of State (Apr. 9, 2010); E-mail from Tammy Patrick, Federal Compliance Officer, Maricopa County Elections Dep't (Apr. 12, 2010).
- 63 Most states created a single, "top-down" system for both state and county election officials when they implemented HAVA, while county systems in Washington predate the statewide database, which interfaces with but has not replaced them. The result is that, while elsewhere state-to-county data transfers take place within a single system, Washington had to develop a further level of connectivity between one system, the state's, and four separate systems developed for its counties. This work was completed gradually over the course of 2008, and by November only eight of the state's thirty-nine counties were not yet receiving registrations electronically. All counties are now receiving paperless registrations electronically. Katie Blinn et al., *supra* note 26; Telephone Interview with Patty Murphy, Voting Systems Specialist & Randy Newton, Voter Registr. Database Support, Wash. Sec'y of State (Feb. 18, 2010); E-mail from Patty Murphy (Apr. 12, 2010).
- 64 Telephone Interview with Craig Stender, *supra* note 18.
- 65 Telephone Interviews with Craig Stender, HAVA Project Manager, Ariz. Sec'y of State (Nov. 18 & Dec. 21, 2009).
- 66 See WASH. OVERVIEW, *supra* note 50, at 8.
- 67 Telephone Interview with Steve Trout, *supra* note 49.
- 68 E-mail from Brad Bryant, State Election Dir., Kan. Sec'y of State, to Nhu-Y Ngo, Research Assoc., Brennan Ctr. for Justice (Oct. 20, 2009).
- 69 Officials required the vendor developing their statewide registration system to build it with the capacity to

receive electronic records from DMV and, potentially, other sources; hence they did not themselves have to undertake this work later on. *Id.*

- 70 Telephone Interview with Janet Ruggiero, *supra* note 14.
- 71 E-mail from Jennifer Headlee, HAVA Coordinator, S.D. Sec’y of State (Jan. 11, 2010).
- 72 These costs included over \$150,000 for hardware, and salaries for two full-time programmers. E-mail from Elaine Manlove, Del. State Election Comm’r, to Laura Seago, Research Assoc., Brennan Ctr. for Justice (Dec. 3, 2009).
- 73 Marc Burris Dec. 22, *supra* note 36. We were not able to obtain an estimate for North Carolina’s other development costs.
- 74 ARIZ. SEC’Y OF STATE, ARIZONA’S ELECTRONIC VOTER REGISTRATION PROGRAM (EZ VOTER) 18 (updated Aug. 19, 2009) (on file with the Brennan Center). Yearly totals vary with levels of registration activity. Telephone Interview with Craig Stender, *supra* note 18. Maintenance totals are not available elsewhere, as most of the officials we spoke to view paperless registration as part of their statewide registration database system and have not calculated its separate cost. In Washington, however, Election Information Services Manager David Motz estimated that “ongoing maintenance for servers and electricity” for the online system costs \$22,000 a year. E-mail from David Motz, Voter Info. Services Manager, Wash. Sec’y of State (Oct. 16, 2009).
- 75 PEW CENTER ON THE STATES, THE REAL COST OF VOTER REGISTRATION: AN OREGON CASE STUDY 5 (Dec. 2009, revised Mar. 2010), *available at* [http://www.pewcenteronthestates.org/uploadedFiles/The_Real_Cost_of_Voter_Registration\(1\).pdf?n=4907](http://www.pewcenteronthestates.org/uploadedFiles/The_Real_Cost_of_Voter_Registration(1).pdf?n=4907).
- 76 *Id.*
- 77 Telephone Interview with Tammy Patrick, *supra* note 27.
- 78 *Id.*
- 79 *Id.*; MARICOPA COUNTY ELECTIONS DEP’T., VOTER REGISTRATION IN 2008: ON-LINE IMPACT & ON-THE-GROUND EFFORTS 52 (2009), *available at* <http://recorder.maricopa.gov/outreach/pdf/2-2009%20Voter%20Registration%20in%202008.pdf>. The presentation indicates the county received 462,904 paperless applications in 2008, and notes that, at 5 minutes a form, processing these would have cost approximately \$385,750. Instead, the actual expense was approximately \$13,887. Telephone Interview with Tammy Patrick, *supra* note 27.
- 80 E-mails from Tammy Patrick, Federal Compliance Officer, Maricopa County Elections Dep’t (Mar. 3, 2010). In fiscal years 1999-2000 through 2001-02, Maricopa spent an average of \$80,856.94 annually printing paper registration forms, compared to an average of \$20,938 for fiscal years 2006-07 through 2008-09. Note too that the county’s population was 28.7 percent larger in 2008 than in 2000, and registration was up by about 13 percent statewide, so that printing the same proportion of forms to voters in 2008 as in 2000 would have cost considerably more. By 2008 the county had also eliminated a full-time position for scanning signatures from paper forms, at a savings of \$36,000 annually.
- 81 Telephone Interview with Michael Rooney & Dave Heinemann, *supra* note 26; Telephone Interview with Brad Bryant, *supra* note 57 (reporting the assessment of an election official in Sedgwick County).
- 82 MATT A. BARRETO ET AL., ONLINE VOTER REGISTRATION (OLVR) SYSTEMS IN ARIZONA AND WASHINGTON: EVALUATING USAGE, PUBLIC CONFIDENCE AND IMPLEMENTATION PROCESSES 122, 138-9 (Apr. 2010), *available at* http://www.pewcenteronthestates.org/uploadedFiles/wwwpewcenteronthestatesorg/Initiatives/MVW/online_voter_reg.pdf?n=2908. The authors note that “[v]ariation in staffing and wages contribute to variation in the average pay associated with processing registrations.” *Id.* at 139. WASH. SEC’Y OF STATE, WASHINGTON VOTER REGISTRATION STATISTICS (2004, 2007-09) (on file with the Brennan Center) [hereinafter WASH. VOTER REGISTRATION STATISTICS].
- 83 E-mail from David Motz, *supra* note 74. The Secretary of State’s office was formerly responsible for forwarding mail-in and DMV registration forms to county offices, and \$126,000 is the amount it would have cost to process and mail the number of paperless registrations the state received in 2008. *Id.*; E-mail from David Motz, Election Info. Serv. Manager, Wash. Sec’y of State (Nov. 10, 2009). These savings were partially offset by the one-time costs of printing and mailing registrations to counties not yet receiving automated transmissions. Telephone Interview with David Motz (Nov. 17, 2009).
- 84 Telephone Interview with Elaine Manlove, *supra* note 40.
- 85 Elaine Manlove et al., *supra* note 9. Motor vehicle officials in Washington have also noted a drop in the time

interviewers spend on voter registrations, from about 60 to 30 seconds. Telephone Interview with Michael Bethany, *supra* note 12.

- 86 E-mails from David Motz, Election Info. Services Manager, Wash. Sec’y of State (Oct. 16 & Oct 20, 2009).
- 87 We directly confirmed the greater accuracy of paperless registrations with officials in Arizona, Delaware, Kansas, Michigan, Pennsylvania, South Dakota, and Washington.
- 88 Telephone Interview with Craig Stender, *supra* note 46; Chris Nelson et al., *supra* note 35.
- 89 Officials used a one-day sampling to assess the profile of the suspense pool because they do not track totals over time. According to Tammy Patrick, the Maricopa County Elections Department’s Federal Compliance Officer, the profile of such a one-day sampling would be unlikely to vary over time except shortly before a major election, when registration drives would tend to drive up the proportion of defective paper forms. Telephone Interview with Tammy Patrick, *supra* note 27. Because officials will usually only discard suspense records after a major election (unless they have been on file for less than 60 days), the August sample will have comprised all unresolved suspense files received from late 2008 through the time of the review. Telephone Interview with Tammy Patrick (January 29, 2010). Ms. Patrick estimates that defective online and paper forms are about equally likely to end up on suspense and to remain there for an equivalent amount of time, so that their relative weight in the suspense pool is likely an accurate indication of the overall error rate of each relative to the other. E-mails from Tammy Patrick (Mar. 23 & Mar. 24, 2010).
- 90 MARICOPA COUNTY ELECTIONS DEP’T, ONLINE VR vs. PAPER VR: QUALITY OF REGISTRATION 5 (2009) (on file with the Brennan Center) [hereinafter MARICOPA PRESENTATION]; E-mail from Tammy Patrick, Federal Compliance Officer, Maricopa County Elections Dep’t (Mar. 24, 2010).
- 91 See, e.g., MYRNA PÉREZ, VOTER PURGES (Brennan Center 2008), available at http://brennan.3cdn.net/5de1bb5cbe2c40cb0c_s0m6bqskv.pdf.
- 92 As occurred in Ohio, for example, on the eve of the 2004 and 2008 elections. See Andrew Zajac, *Court Decisions on Provisional Ballots Could Affect Election Results*, CHICAGO TRIBUNE, Oct. 26, 2004; Ian Urbina, *In Tight Race, Victor May be Ohio Lawyers*, N.Y. TIMES, Oct. 31, 2008.
- 93 At most, officials reported isolated instances of minor “glitches.” In Washington, for example, the voter registration database system received one nightly transfer from motor vehicles in which the county and residential address were missing for 305 registrations. The Secretary of State’s office simply sent these back for correction. E-mail from Patty Murphy, Voting System Specialist, Wash. Sec’y of State (Jan. 8, 2010); E-mail from Patty Murphy, (Feb. 1, 2010).
- 94 One isolated instance occurred in North Carolina in 2008; officials resolved the issue and have put measures in place to ensure that it does not occur again. Telephone Interview with Marc Burris, Info. Tech. Dir., N.C. Bd. of Elections (Feb. 4, 2010).
- 95 Telephone Interview with Brad Wittman & Tim Hanson, *supra* note 39; E-mail from Brad Bryant to Nhu-Y Ngo, *supra* note 68; Marc Burris Dec. 22, *supra* note 36. Moreover, a misdirected electronic registration can usually be sent back through the statewide system almost immediately.
- 96 Telephone Interview with Janet Ruggiero, *supra* note 14; Telephone Interview with Ann McGeehan, *supra* note 31; Telephone Interview with Craig Stender, *supra* note 18. Officials in Delaware and Kansas more recently adopted fully automation with the hope of similarly reducing the number of allegedly lost registrations. E-mail from Brad Bryant to Nhu-Y Ngo, *supra* note 68; Elaine Manlove et al., *supra* note 9. There are at least three reasons these claims of ‘failed’ DMV registrations could occur more frequently in a paper-based system. A person might check the registration box on a DMV application form but fail to appreciate that she still needs to fill out and return a separate voter registration form. She might make a mistake while filling out her voter registration form, and not later be informed of it. Finally a person’s completed form might simply be lost, misplaced, or forgotten. Whatever the cause, however, the result in each case is that a person who wanted to register was not able to.
- 97 Both Arizona and Washington will occasionally disable their programs for routine maintenance work, typically in the early hours of a weekend morning. Telephone Interview with Craig Stender, HAVA Project Manager, Ariz. Sec’y of State (Jan. 29, 2010); E-mail from David Motz, Election Info. Serv. Manager (Nov. 12, 2009); Telephone Interview with David Motz, *supra* note 83. Following one of these scheduled outages, motor vehicle employees in Washington neglected to reestablish connections with the online system Monday morning on the day before a registration deadline in 2009. They had done so, and the online portal was again active, by noon. E-mail from Patty Murphy, *supra* note 93.

- 98 E-mails from Patty Murphy, Voting System Specialist, Wash. Sec’y of State (Jan. 8 & Feb. 1, 2010). Washington uses Microsoft Office Sharepoint Servers (MOSS) to host its web services. State programmers were making adjustments as part of “an overall relook at the MOSS setup” when compatibility issues with the address service arose. *Id.*; E-mail from Patty Murphy (Feb. 12, 2010).
- 99 The problem originated in AAMVAnet, the network that DMVs nationwide use to process their applications, and which Arizona’s online portal uses to check a user’s personal information against DMV records. Without AAMVAnet the system could not verify this information, and this then prevented transactions from proceeding. Arizona officials plan to replace this use of AAMVAnet with an internal protocol. Telephone Interview with Craig Stender, *supra* note 61; ARIZ. SEC’Y OF STATE, EZ VOTER REGISTRATION STATISTICS 2002-2009 (on file with the Brennan Center) (providing monthly tallies of online and automated MVD registrations) [hereinafter EZ VOTER REGISTRATION STATISTICS].
- 100 Officials can use a search function to bring up a transaction’s full history from the time it entered state computers in Arizona, Delaware, Kansas, Michigan, North Carolina, Pennsylvania, and Washington. In Florida and Rhode Island, DMV officials can pull up a transaction record on their computers to determine whether a customer attempted to register. Of course, no such data trail will exist if DMV employees simply fail to record a customer’s desire to register in the first instance, but it is for this reason that DMV programs in virtually all states with full automation now prompt employees to key in this information.
- 101 Kansas officials recorded 52,836 DMV registrations from January through November of 2007, and 102,056 over the same period in 2009. KAN. SEC’Y OF STATE, KAN. VOTER REGISTRATION STATISTICS, 2007 & 2009 (on file with the Brennan Center); E-mail from Brad Bryant, State Election Dir., Kan. Sec’y of State (Mar. 25, 2010). In Washington, DMV registration climbed from 103,418 in 2007 to 205,082 in 2009. WASH. VOTER REGISTRATION STATISTICS, *supra* note 82.
- 102 R.I. SEC’Y OF STATE, VOTER REGISTRATION STATISTICS 2005-2009 (on file with the Brennan Center).
- 103 FED. ELECTION COMM’N, THE IMPACT OF THE NATIONAL VOTER REGISTRATION ACT ON THE ADMINISTRATION OF ELECTIONS FOR FEDERAL OFFICE 2001-2002, 39, available at <http://www.eac.gov/program-areas/research-resources-and-reports/completed-research-and-reports/national-voter-registration-act-studies>; 2007-08 NVRA REPORT *supra* note 2, at 38-9. The DMV registration numbers that provide the basis for these percentages are incomplete for 2007-08. 2007-08 NVRA REPORT, *supra* note 2, at 41. Unfortunately the totals from the 2003-04 and 2005-06 NVRA Reports cannot be used for comparisons, as the state included online registrations in its DMV registration tallies for these years. It ceased doing so in 2007-08, when the NVRA Report survey included for the first time a separate category for online applications. E-mail from Tammy Patrick, Federal Compliance Officer, Maricopa County Elections Dep’t (Dec. 22, 2009); Craig Stender Dec. 24, *supra* note 61.
- 104 See the Election Assistance Commission’s NVRA Reports, available at <http://www.eac.gov/program-areas/research-resources-and-reports/completed-research-and-reports/national-voter-registration-act-studies>; the page includes a link to older NVRA Reports compiled by the Federal Election Commission. The reports appear to show a jump in DMV registrations in both Michigan and Pennsylvania beginning in 2005-06, but we have confirmed that this is almost certainly due to the fact that around this time both states began electronically tracking these numbers, rather than depending on manual tallies by local officials as they had in the past. Telephone Interview with Brad Wittman, Election Liaison Div. Dir., Bureau of Election, Mich. Dep’t of State (Mar. 5, 2010); Lindsey Hock et al., *supra* note 22.
- 105 U.S. ELECTION ASSISTANCE COMM’N, THE IMPACT OF THE NATIONAL VOTER REGISTRATION ACT ON THE ADMINISTRATION OF ELECTIONS FOR FEDERAL OFFICE 2003-04 25, Table 2; 2007-08 NVRA REPORT, *supra* note 2, at 38-9.
- 106 WASH. VOTER REGISTRATION STATISTICS, *supra* note 82. Before adopting full automation, DMV offices both transmitted registration data and mailed all paper registration forms to the Secretary of State’s office, which maintained weekly tallies of the number of forms received. E-mails from David Motz (Oct. 16 & Nov. 30, 2009).
- 107 Telephone Interview with Janet Ruggiero, *supra* note 14; Telephone Interview with Michael Bethany, *supra* note 12. Mr. Bethany noted that printers are not always numerous in DMV offices, not always centrally located, and, as printers will, sometimes break. This meant that printing and retrieving registration forms could take time, with the result that sometimes people who had indicated a desire to register would simply leave in the meantime. *Id.* Delaware also used pre-populated forms until 2009, and officials there noted the same problems. Elaine Manlove et al., *supra* note 9.
- 108 Efforts to better accommodate customers may pay off in other ways as well. Delaware has seen a significant increase in the number of changes of party affiliation made through DMV, and officials believe “this is because the e-Signature project gives DMV clients more privacy.” NEW CASTLE COUNTY DEP’T OF ELECTIONS, 2009 VOTER REGISTRATION REPORT 2, 6 (March 2010), available at http://electionsncc.delaware.gov/vr/reports/vr_rpt09.pdf.

- 109 U.S. CENSUS BUREAU, REPORTED VOTING AND REGISTRATION OF THE CITIZEN VOTING-AGE POPULATION, FOR STATES: NOVEMBER 2008, *available at* <http://www.census.gov/hhes/www/socdemo/voting/publications/p20/2008/tables.html>; U.S. CENSUS BUREAU, REPORTED VOTING AND REGISTRATION OF THE CITIZEN VOTING-AGE POPULATION, FOR STATES: NOVEMBER 2000, *available at* <http://www.census.gov/hhes/www/socdemo/voting/publications/p20/2000/tables.html>; 2007-08 NVRA REPORT, *supra* note 2; U.S. FED. ELECTION COMM'N., THE IMPACT OF THE NATIONAL VOTER REGISTRATION ACT OF 1993 ON THE ADMINISTRATION OF ELECTIONS FOR FEDERAL OFFICE 1999-2000, *available at* http://www.eac.gov/files/clearinghouse/reports_surveys/The%20Impact%20of%20the%20NVRA%20of%201993%20on%20Admin%20of%20Elections%20for%2099-00.pdf.
- 110 KAN. SEC'Y OF STATE, *supra* note 101; U.S. CENSUS BUREAU, REPORTED VOTING AND REGISTRATION OF THE CITIZEN VOTING-AGE POPULATION, FOR STATES: NOVEMBER 2006, *available at* <http://www.census.gov/hhes/www/socdemo/voting/publications/p20/2006/tables.html>; U.S. CENSUS BUREAU, *supra* note 109.
- 111 U.S. CENSUS BUREAU, *supra* 109; U.S. CENSUS BUREAU, *supra* note 110; 2007-08 NVRA REPORT, *supra* note 2; U.S. ELECTION ASSISTANCE COMM'N., THE IMPACT OF THE NATIONAL VOTER REGISTRATION ACT OF 1993 ON THE ADMINISTRATION OF ELECTIONS FOR FEDERAL OFFICE 2005-2006, at 34, *available at* http://www.eac.gov/program-areas/research/doc/the-impact-of-the-national-voter-registration-act-on-federal-elections-2005-2006/attachment_download/file.
- 112 For registrations see the Election Assistance Commission's NVRA Reports, available at <http://www.eac.gov/program-areas/research-resources-and-reports/completed-research-and-reports/national-voter-registration-act-studies>. *See also* U.S. CENSUS BUREAU, REPORTED VOTING AND REGISTRATION FOR THE CITIZEN VOTING-AGE POPULATION, FOR STATES: NOVEMBER 2004, Table 4b, *available at* <http://www.census.gov/hhes/www/socdemo/voting/publications/p20/2008/tables.html>; U.S. CENSUS BUREAU, *supra* note 110; U.S. CENSUS BUREAU, *supra* note 109.
- 113 PA. DEP'T OF STATE, PENNDOT VOTER REGISTRATION STATISTICS (2010) (on file with the Brennan Center); U.S. CENSUS BUREAU, *supra* note 110; U.S. CENSUS BUREAU, *supra* note 112.
- 114 R.I. SEC'Y OF STATE, *supra* note 102; U.S. CENSUS BUREAU, *supra* note 110; U.S. CENSUS BUREAU, *supra* note 112.
- 115 For registrations see the Election Assistance Commission's NVRA Reports, available at <http://www.eac.gov/program-areas/research-resources-and-reports/completed-research-and-reports/national-voter-registration-act-studies>; the page includes a link to older NVRA Reports compiled by the Federal Election Commission. *See also* U.S. CENSUS BUREAU, *supra* note 109; U.S. CENSUS BUREAU, *supra* note 110; U.S. CENSUS BUREAU, *supra* note 112.
- 116 WASH. VOTER REGISTRATION STATISTICS, *supra* note 82; U.S. CENSUS BUREAU, *supra* note 109; U.S. CENSUS BUREAU, *supra* note 110.
- 117 Spreadsheet tallies for 'EZ Voter' and total registration numbers, 2003-2009, e-mailed by Craig Stender (Mar. 4, 2010). In Washington, the Secretary of State's office recorded 583,000 registration transactions in 2008, of which 158,000 were made through the online system. It should be noted, however, that this total does not include registrations that organizations which conducted registration drives submitted directly to county election offices, or which individuals made in person at these offices. WASH. VOTER REGISTRATION STATISTICS, *supra* note 82.
- 118 EZ VOTER REGISTRATION STATISTICS, *supra* note 99.
- 119 Press Release, Project Vote, VR Drives Go Paperless with New Software for iPad & Other Mobile Devices (Apr. 7, 2010), *available at* <http://www.projectvote.org/newsreleases/475-vr-drives-go-paperless-with-new-software-for-ipad-a-other-mobile-devices.html>.
- 120 From last July, when it was officially announced, through the end of 2009, Kansas's online portal received 1097 submissions. However, in the same period election officials received 11,373 updates from the DMV's change of address website. KAN. SEC'Y OF STATE, KANSAS VOTER REGISTRATION STATISTICS, 2007 & 2009 (on file with the Brennan Center); E-mail from Brad Bryant, *supra* note 101.
- 121 In New Castle County, home to the majority of Delaware residents, officials received one in every 10 registrations through the online system in 2008. *See* NEW CASTLE COUNTY DEP'T OF ELECTIONS, 2008 VOTER REGISTRATION REPORT 6 (Feb. 2009), *available at* http://electionsncc.delaware.gov/vr/reports/vr_rpt08.pdf.
- 122 Telephone Interview with Steve Trout, *supra* note 49. The registration deadline for this year's primary election was April 27. *Id.*

- 123 In both Arizona and Washington, approximately two-thirds of all respondents agreed that “If I moved to a new address within the state and had to change my address, I would update my address online.” See MATT A. BARRETO ET AL., *supra* note 82, at 19, 44.
- 124 *Id.* at 28. Another 20 percent considered it “somewhat easy.”
- 125 *Id.* at 34. 94.2 percent also agreed with the statement that “online registration will cut down printing costs and help increase the efficiency of government,” while 97.5 percent agreed that it was more convenient than using paper forms to register. *Id.* In Arizona, two-thirds of all respondents—that is, including those who had not used the online system—agreed that they would encourage their child to register online. *Id.* at 44.
- 126 MARICOPA COUNTY ELECTIONS DEP’T, ONLINE VOTER REGISTRATION MODIFICATIONS: A CUMULATIVE ANALYSIS OF MARICOPA COUNTY VOTER FILES AS OF 1/25/2010, 22 (2010) (on file with the Brennan Center) [hereinafter MARICOPA COUNTY CUMULATIVE ANALYSIS]; THOM FILE & SARAH CRISSEY, U.S. CENSUS BUREAU, VOTING AND REGISTRATION IN THE ELECTION OF NOVEMBER 2008 4 (2008), available at <http://www.census.gov/prod/2010pubs/p20-562.pdf>.
- 127 WASH. OVERVIEW, *supra* note 50.
- 128 Indeed, the recent Pew-sponsored study found that in both Arizona and Washington, people who registered online were more likely to vote than people who registered using traditional methods—and that this was especially true of younger voters. See MATT A. BARRETO ET AL., *supra* note 82, at 13-4, 40. U.S. CENSUS BUREAU, REPORTED VOTING AND REGISTRATION FOR THE CITIZEN VOTING-AGE POPULATION, FOR STATES: NOVEMBER 2000; U.S. CENSUS BUREAU, REPORTED VOTING AND REGISTRATION OF THE CITIZEN VOTING-AGE POPULATION, FOR STATES: NOVEMBER 2004; U.S. CENSUS BUREAU, REPORTED VOTING AND REGISTRATION OF THE CITIZEN VOTING-AGE POPULATION, FOR STATES: NOVEMBER 2008. These tables are available at <http://www.census.gov/hhes/www/socdemo/voting/publications/p20/index.html>.
- 129 An October 2008 poll found that African-Americans accounted for 2.2 of registered voters, but 5.4 percent of those who reported using the online system. These same figures were 1.9 percent v. 2.9 percent for Asians and 26.9 percent v. 34 percent for Latinos. MATT A. BARRETO ET AL., *supra* note 82, at 40.
- 130 *Id.* at 13, 40. Officials in Maricopa County performed a survey of all records on file that had been modified through the online system at least once, and found that 31.5 percent were Democrat-affiliated and 36.5 percent Republican-affiliated, while the remaining 32 percent were almost all unaffiliated (the Libertarian Party, Arizona’s largest third party, accounted for about 1 percent). MARICOPA COUNTY CUMULATIVE ANALYSIS, *supra* note 118, at 20. As of October 2009, 30.7 percent of all active registrations in Maricopa County were Democrat-affiliated and 38.3 percent Republican-affiliated. ARIZ. SEC’Y OF STATE, STATE OF ARIZONA REGISTRATION REPORT: 2009 OCTOBER VOTER REGISTRATION – OCTOBER 1 (2009), available at <http://www.azsos.gov/election/voter-reg/2009-10-01.pdf>.
- 131 EZ VOTER REGISTRATION STATISTICS, *supra* note 99; ARIZ. SEC’Y OF STATE, ARIZ. VOTER REGISTRATION TOTALS 2003-2009 (on file with the Brennan Center) (listing annual totals for all types of registrations received).

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