



SEPTEMBER 2018

## SECURING THE VOTE

### Protecting American Democracy

The 2016 presidential election made clear the vulnerability of America's election infrastructure to foreign cyberattacks. Such attacks represent a new threat to the nation's system of representative democracy. A new report from the National Academies of Sciences, Engineering, and Medicine recommends concerted action by Congress, federal agencies, and state and local governments to protect the security and integrity of U.S. elections.

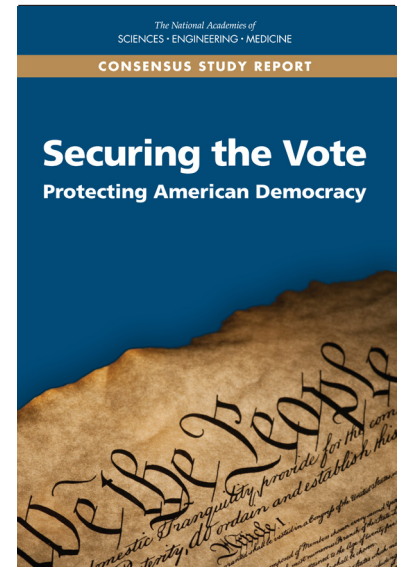
*Securing the Vote: Protecting American Democracy* recommends that focused attention be directed at strengthening cybersecurity for election systems. In addition, the report recommends that all U.S. elections be conducted with human-readable paper ballots by the 2020 presidential election. Risk-limiting audits should be implemented for all federal and state elections within a decade. And election systems should continue to be considered as U.S. Department of Homeland Security (DHS)-designated critical infrastructure. In addition, the report states that Internet voting should not be used for the return of marked ballots at the present time, as no known technology guarantees the secrecy, security, and verifiability of a marked ballot transmitted over the Internet.

### STEPS FEDERAL POLICYMAKERS SHOULD TAKE TO SECURE U.S. ELECTIONS

The report recommends that Congress:

- provide funding for state and local governments to improve their cybersecurity capabilities on an ongoing basis;
- create incentive programs for public-private partnerships to develop modern election technology; and
- authorize and fund immediately a major initiative on voting that supports research relevant to the administration, conduct, and performance of elections. This initiative should include academic centers to foster collaboration both across disciplines and with state and local election officials and industry.

The U.S. Election Assistance Commission (EAC) has a vital role to play in improving election administration, the report says. It urges the president to nominate and Congress to confirm a full commission and to ensure that the commission has sufficient members to sustain a quorum.



The report also recommends steps Congress should take to support the EAC's work, including:

- appropriating funds for distribution by the EAC for the ongoing modernization of election systems;
- authorizing and funding the EAC to develop voluntary certification standards for voter registration databases, electronic pollbooks, chain-of-custody procedures, and auditing;
- providing the funding necessary to sustain the EAC's Voluntary Funding System Guidelines standard-setting process and certification program; requiring state and local election officials to provide the EAC with data on voting system failures and information on other difficulties arising during elections (for example, long lines, fraudulent voting, intrusions into voter registration databases); this information should be made publicly available; and
- fully funding the EAC to carry out its existing functions, as well as additional ones articulated in the report. For example, the report recommends that the EAC and DHS continue to develop and maintain a detailed set of cybersecurity best practices for state and local election officials. And it urges the EAC to closely monitor the expenditure of federal funds made available to states for the purposes of enhancing election security.

The report also recommends that Congress take steps to support work by the National Institutes of Standards and Technology (NIST) around election systems, including:

- authorizing and appropriating funds to NIST to establish Common Data Formats for auditing, voter registration, and other election systems;
- authorizing and providing appropriate funding to NIST to carry out its current elections-related functions and to perform the additional functions articulated in the report; and
- authorizing and funding NIST, in consultation with the EAC, to develop security standards and verification and validation protocols for electronic pollbooks, in addition to those standards and protocols developed for voting systems.

## STEPS STATE AND LOCAL VOTING JURISDICTIONS SHOULD TAKE TO SECURE U.S. ELECTIONS

### Election Auditing

- Each state should require a comprehensive system of post-election audits of processes and outcomes.
- Jurisdictions should conduct audits of voting technology and processes (for voter registration, ballot preparation, voting, election reporting, etc.) after each election.
- States should mandate risk-limiting audits prior to the certification of election results.
- State and local jurisdictions should conduct and assess pilots of end-to-end-verifiable election systems in elections using paper ballots.

### Voter Registration

- Election administrators should develop plans that detail security procedures for assessing voter registration database integrity and put in place systems that detect efforts to probe, tamper with, or interfere with voter registration systems.
- All states should participate in a system of cross-state matching of voter registrations, such as the Electronic Registration Information Center (ERIC).

### Voting by Mail

- All voting jurisdictions should provide means for a voter to easily check whether a ballot sent by mail has been dispatched to him or her and, subsequently, whether his or her marked ballot has been received and accepted by the appropriate elections officials.

### Pollbooks

- Jurisdictions that use electronic pollbooks should have backup plans in place to provide access to current voter registration lists in the event of any disruption.
- Election administrators should routinely assess the security of electronic pollbooks against a range of threats such as threats to the integrity, confidentiality, or availability of pollbooks.

### Ballot Design

- State requirements for ballot design (inclusive of print, screen, audio, etc.) and testing should utilize best practices developed by the U.S. Election Assistance Commission and other organizations with expertise in voter usability design (such as the Center for Civic Design).

## Voting Technology

- States and local jurisdictions should have policies in place for routine replacement of election systems.
- Elections should be conducted with human-readable paper ballots.
- All local, state, and federal elections should be conducted using human-readable paper ballots by the 2020 presidential election.

## STEPS VENDORS OF VOTING TECHNOLOGY SHOULD TAKE TO SECURE U.S. ELECTIONS

- Vendors should be required to report to their customers, DHS, the EAC, and state officials any detected efforts to probe, tamper with, or interfere with voter registration systems.
- Computers and software used to prepare ballots should be separate from computers and software used to count and tabulate ballots.

## DEVELOPING THE PROFESSIONAL ELECTION WORKFORCE

- Universities and community colleges should increase efforts to design curricula that address the growing organizational management and information technology needs of the election community.
- The EAC, with assistance from the National Associations of State and Local Election Administrators, should encourage, develop, and enhance information technology training programs to educate state and local technical staff on effective election administration.

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**For More Information . . .** This Consensus Study Report Highlights was prepared by the National Academies of Sciences, Engineering, and Medicine based on the Report *Securing the Vote: Protecting American Democracy* (2018). The study was sponsored by the Carnegie Corporation of New York and the William and Flora Hewlett Foundation. Additional funding was provided from the National Academy of Sciences' W. K. Kellogg Foundation Fund and the National Academies of Sciences, Engineering, and Medicine's Presidents' Circle Fund. Any opinions, findings, conclusions, or recommendations expressed in this publication do not necessarily reflect the views of any organization or agency that provided support for the project. Copies of the Report are available from the National Academies Press, (800) 624-6242; <http://www.nap.edu> or at [www.nationalacademies.org/futureofvoting](http://www.nationalacademies.org/futureofvoting).

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