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**Opening Remarks for the Public Release of**  
***Securing the Vote: Protecting American Democracy***

**September 6, 2018**

**OPENING REMARKS**

**LEE C. BOLLINGER**

Good morning and welcome to everyone here with us today and to those joining us on the web. Dr. Michael McRobbie and I are here as co-chairs of the Committee on the Future of Voting to publicly release the committee's report, *Securing the Vote: Protecting American Democracy*.

Work on the report began in 2016, when the National Academies of Sciences, Engineering, and Medicine appointed an independent ad hoc committee to review the state of U.S. election infrastructure. The committee's work was supported with grants from the Carnegie Corporation of New York and the William and Flora Hewlett Foundation.

The committee was asked to do several things:

1. Document the current state of play in terms of technology, standards, and resources for voting technologies;
2. Examine challenges arising out of the 2016 federal election;
3. Evaluate advances in technology currently and soon-to-be available that can improve voting; and

4. Offer recommendations that provide a vision of voting that is easier, accessible, reliable, and verifiable.

Our committee was composed of a diverse and talented group of professionals, some expert in scientific and technical disciplines, others in law, and others in election administration. It has been gratifying to work with Dr. McRobbie and with the dedicated members of the study committee.

Over the course of our study, the committee reviewed extensive background materials and held five public meetings where invited experts spoke to the committee about a range of topics. These topics included voter registration, voting accessibility, voting technologies and market impediments to technological innovation, cybersecurity, post-election audits, and the education and training of election workers.

The committee did not access classified information but instead relied on information in the public domain, including state and federal government reports, published academic literature, testimony from congressional hearings, and presentations to the committee.

In assessing the current state of the U.S. elections system, we heard from election officials from across the nation and across all levels of government. We were impressed by these individuals, who are working tirelessly to improve accessibility, to harness new technologies, and to ensure the integrity of the results of elections. Unfortunately, however, it is also true that election officials too often lack appropriate staff and resources and are routinely hampered by a patchwork of laws and regulations that make it difficult to upgrade, modernize, and consistently improve their election systems.

We also heard from researchers working to design better ballots, to develop better and more secure voting systems, and to identify new ways to quickly and reliably certify that the results of elections are reflective of the will of the voters. Yet here, as well, all too often their efforts are underfunded, important research questions remain unaddressed, and they face challenges in translating research into practice.

Since the 2000 election, election infrastructure has been a focus of attention due to concerns about aging and insecure voting equipment, inadequate poll worker training, insufficient numbers of voting machines and pollbooks, deficient voter registration information systems, and inadequate verification procedures for votes cast. State and local election administrators had been forced to reevaluate and modernize the operation of voting systems in the wake of incidents such as the “hanging chad” in the 2000 presidential election and long lines that occurred in some jurisdictions in the 2004, 2008, and 2012 elections. In advance of the 2016 election, officials worked aggressively to ensure that the national election would run smoothly and without disruptions.

When Dr. McRobbie and I were asked to serve as co-chairs of the study committee, we anticipated that our attention would be focused on the solutions and resources needed to address issues such as long lines at polling places and outdated election equipment. We imagined that we would offer an evaluation of the innovations being adopted by forward-looking election administrators and that we would find that voting systems are moving away from in-person physical balloting towards systems that enable remote and/or Internet voting.

However, by the time of the committee’s first meeting in April 2017, it was clear that the most significant threat to the American elections system was coming, not simply from the need for new

technologies, but rather from efforts by foreign actors seeking to undermine the credibility of election results so as to undermine confidence in our democratic institutions.

During the 2016 presidential election, America's election infrastructure was targeted by a foreign government. According to assessments by members of the U.S. Intelligence Community, actors sponsored by the Russian government obtained and maintained access to elements of multiple U.S. state or local electoral boards. While our understanding of these malicious efforts is evolving, there is little doubt that they represented an assault on the American system of representative democracy.

The events that unfolded in 2016 exposed new technical and operational challenges that require the immediate attention of state and local governments, election officials, the federal government, researchers, and the American public. The 2016 election showed us that citizens must become more discerning consumers of information and that state and local governments must work collaboratively and together with the federal government to secure our election systems.

At the most fundamental level, America's leaders must speak candidly and apolitically about threats to our election systems. Transparent communication about actual threats to and attacks on the integrity of our elections is vital. As usual, openness is the best path to overcome cynicism and distrust. The American people deserve to have confidence that their leaders place the larger interests of democracy above all else.

It is noteworthy and fortunate that, as the U.S. election system has undergone technological changes and adapted to meet changing needs over the past two decades, the American electorate has largely remained confident that the votes on the ballots it casts are accurately counted and tabulated.

Nevertheless, recent events make it clear that our system of voting must evolve further in order to also protect against external actors who wish to undermine our democracy. The extraordinary threat from foreign actors has profound implications for the future of voting and obliges us to reexamine seriously both the conduct of elections in the United States and the role of federal and state governments in securing our elections.

***Our nation is at a critical moment. It is imperative that everyone, no matter what party or ideology one subscribes to, must now work together to strengthen our elections and protect the American system of democratic self-government.***

This, of course, means many things. We must be inclined to think strategically and creatively about the administration of U.S. elections. We must foster an environment that promotes innovation in election systems technology, provides election administrators with tools to increase the professionalization of the election workforce, and allocates appropriate resources for the operation of elections. We need to better secure elections by improving cybersecurity and by developing auditing tools that provide assurances that votes are tabulated correctly and that the results of elections are accurate.

This report, in sum, tries to respond to the needs of this moment, and it offers numerous recommendations designed to harden our election infrastructure and safeguard its integrity.

We must always keep the vote in perspective. In the United States, over many decades and centuries, we have built up the most elaborate and fulsome constitutional protections for freedom of speech and press of any nation on earth, previously or currently. We embrace the virtues of public debate that is

“uninhibited, robust, and wide-open.” But we have always linked the right of free and open debate to our prior commitment to create a democracy, an experiment in self-government arising out of years of hard-won experience. In this entire regime, the vote is the culmination of all these fundamental commitments. It is the necessary element in the magical mix of citizen sovereignty, freedom of expression, and decision-making fit for an enduring society. To secure the vote, as our title says, is to secure democracy and our way of life.

I would now like to pass the microphone to Dr. McRobbie to provide a summary of the committee’s recommendations.

Michael.

**OPENING REMARKS**  
**MICHAEL A. McROBBIE**

Thank you Lee.

While improvements to the elections system have been made since 2001, as Lee noted, old problems have persisted and new problems have emerged. Elections in the United States are subject to aging equipment, targeting by external actors, and a lack of sustained funding, as well as to growing expectations that voting should be more accessible, convenient, and secure.

To fully address the challenges inherent in the use of technology in election systems and to prevent foreign interference, federal, state, and local officials must take appropriate measures to ensure that the results of elections reflect the will of the electorate. Election systems in the future must not only be secure but also be adaptive and resilient. To ensure the integrity of the voting process, we must be constantly vigilant, have the ability to verify and safeguard data, and make continuous improvements

in voting processes and technologies. If the challenges currently facing our election systems are ignored, we risk an erosion of confidence in our elections system and in the integrity of our election processes.

The report recommends steps that the federal government – including Congress, federal agencies, the U.S. Election Assistance Commission – and state and local jurisdictions, universities, and vendors of voting technology should take to improve the security of election infrastructure and to safeguard its integrity and credibility.

The committee makes the following five key recommendations:

(4.11) 1. ***Elections should be conducted with human-readable paper ballots.*** These may be marked by hand or by machine (using a ballot-marking device); they may be counted by hand or by machine (using an optical scanner). Recounts and audits should be conducted by human inspection of the human-readable portion of the paper ballots. ***Voting machines that do not provide the capacity for independent auditing (e.g., machines that do not produce a voter-verifiable paper audit trail) should be removed from service as soon as possible.***

*Paper ballots are evidence that cannot be manipulated by faulty software or hardware, and that can be used to audit and verify the results of an election.*

(4.12) 2. ***Every effort should be made to use human-readable paper ballots in the 2018 federal election. All local, state, and federal elections should be conducted using human-readable paper ballots by the 2020 presidential election.***

(5.8) 3. ***States should mandate risk-limiting audits prior to the certification of election results.*** With current technology, this requires the use of paper ballots. States and local jurisdictions should implement risk-limiting audits within a decade. They should begin with pilot programs and work toward full implementation. ***Risk-limiting audits should be conducted for all federal and state election contests, and for local contests where feasible.*** *By examining a statistically significant random sample of paper ballots, risk-limiting audits can determine with a high level of confidence whether a reported election outcome reflects a correct tabulation of the votes cast.*

(5.11) 4. ***At the present time, the Internet (or any network connected to the Internet) should not be used for the return of marked ballots.*** Further, ***Internet voting should not be used in the future until and unless very robust guarantees of security and verifiability are developed and in place,*** as no known technology guarantees the secrecy, security, and verifiability of a marked ballot transmitted over the Internet.

(4.1) 5. Election administrators should ***routinely assess the integrity of voter registration databases*** and the integrity of voter registration databases connected to other applications. They 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. ***States should require election administrators to report any detected compromises or vulnerabilities in voter registration systems*** to the U.S. Department of Homeland Security, the U.S. Election Assistance Commission, and state officials.

In addition to these key recommendations, the committee recommends that Congress:



1. appropriate funds for distribution by the U.S. Election Assistance Commission for the ongoing modernization of election systems;
2. provide funding for state and local governments to improve their cybersecurity capabilities on an ongoing basis;
3. require state and local election officials to provide the U.S. Election Assistance Commission with data on voting system failures and other difficulties arising during elections (for example, long lines, intrusions into voter registration databases), and such information should be made publicly available;
4. fully fund the U.S. Election Assistance Commission to carry out its existing functions as well as the additional functions articulated in the report; and
5. 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.

Areas of research should include, for example,

- research to evaluate the reliability of various approaches to voter authentication;
- research to understand the effects of coercion, vote buying, theft, etc., on voting by mail and...[into] technologies for reducing this threat; and
- research to assess the potential benefits and risks of Internet voting.

The report also makes recommendations to other federal entities. For example, we recommend that:

(4.16) The U.S. Election Assistance Commission and U.S. Department of Homeland Security should continue to develop and maintain a detailed set of cybersecurity best practices for state and local election officials...

and that

(4.7) Congress should authorize and fund the National Institute of Standards and Technology, in consultation with the U.S. Election Assistance Commission, to develop security standards and verification and validation protocols for electronic pollbooks...

Our report also offers recommendations for state and local jurisdictions. For example, we recommend that:

(6.5) 1. Along with Congress, states should allocate funds for the modernization of election systems.

(4.3) 2. All states should participate in a system of cross-state matching of voter registrations...

(4.5) 3. 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.

(4.8) 4. Election administrators should routinely assess the security of electronic pollbooks...[and] develop plans that detail security procedures for assessing electronic pollbook integrity.

(4.9) 5. State requirements for ballot design...and testing should use best practices developed by the U.S. Election Assistance Commission and other organizations with expertise in voter usability design...

(5.5) 6. Each state should require a comprehensive system of post-election audits of processes and outcomes...

and

(5.10) 7. State and local jurisdictions should conduct and assess pilots of end-to-end-verifiable election systems in elections using paper ballots.

With regard to vendors of voting technology, the committee recommends, for example, that:

(4.2) . Vendors should be required to report to their customers, the U.S. Department of Homeland Security, the U.S. Election Assistance Commission, and state officials any detected efforts to probe, tamper with, or interfere with voter registration systems.

and that

(4.13) 2. Computers and software used to prepare ballots...should be separate from computers and software used to count and tabulate ballots... Voters should have an opportunity to review and confirm their selections before depositing the ballot for tabulation.

Finally, the committee recommends that:

(6.3) Universities and community colleges should increase efforts to design curricula that address the growing organizational management and information technology needs of the election community.

and that

(6.2) The U.S. Election Assistance Commission, 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.

The complete text and the entire list of the committee's recommendations may be found in our report.

I would like to conclude my remarks by stating that, as a nation, we have the capacity to build an elections system for the future, but doing so will require focused attention from citizens, federal, state, and local governments, election administrators, and innovators in academia and industry. It also will require a commitment of appropriate resources. Representative democracy only works if all eligible

citizens can participate in elections, have their ballots accurately cast, counted, and tabulated, and be confident that their ballots have been accurately cast, counted, and tabulated.

Lee and I would now like to open the floor for questions to either of us or to any of the other members of the committee who are here with us today. But first let me join Lee in again thanking the committee for their extraordinary dedication to this project, for the countless hours they committed to reading background materials and examining the many facets of the U.S. election system, debating with and educating each other, and drafting (and re-drafting) the text of the report. It has been a genuine pleasure to work with the committee and with my co-chair.