“Crisis in Voting Technology”
The PCEA a Year Later:
Progress & Opportunities

State Certification Testing of Voting Systems National Conference
Seattle, Washington
May 18th, 2015
• The PCEA
• The Report
• The Work Continues

& what will be covered in the next two days—what are the states doing?
Executive Order

THE WHITE HOUSE,
The Executive Order

The Executive Order focused the Commission’s work on several areas of concern:

i. the number, location, management, operation, and design of polling places;
ii. the training, recruitment, and number of poll workers;
iii. voting accessibility for uniformed and overseas voters;
iv. the efficient management of voter rolls and poll books;
v. voting machine capacity and technology;
vi. ballot simplicity and voter education;
vii. voting accessibility for individuals with disabilities, limited English proficiency, and other special needs;
viii. management of issuing and processing provisional ballots in the polling place on Election Day;
ix. the issues presented by the administration of absentee ballot programs;
x. the adequacy of contingency plans for natural disasters and other emergencies that may disrupt elections; and
xi. other issues related to the efficient administration of elections that the Co-Chairs agree are necessary and appropriate to the Commission's work.
Meetings In:
- Alaska
- Washington
- California
- Colorado
- Kentucky
- Georgia
- Ohio
- Florida
- Pennsylvania
- New York
- DC
But we heard from officials in all of these states*:

*according to my notes
The Website
www.supportthevoter.gov
Public Hearing Format:
1) State & Local Election Officials

Philadelphia Hearing
Public Hearing Format:
2) Academics & Topical Expert Testimony

2. Four Significant Innovations

1. Statewide Voter Registration Lists
   • 1 state in 2000.
   • HAVA: all states by 2006
2. National Voter Registration Lists
   • Maintained by Private Firms
   • Lessons for Management of Official Lists
3. Technology advances
   • Managing extremely large databases
   • Merging data
4. State Laws Opening Lists
   • On-Line Registration (17 states)
   • Same Day Registration (11 + 3 states)
   • Self Management
In Ohio we had our only 2-day hearing with the first day being solely devoted to voting technology:

- State and Local Election Officials
- Scientists from NIST
- Certification Leaders
- Testing Laboratory Representatives
- Usability Experts
- Manufacturers
- Academics
Public Hearing Format:
3) Public Testimony

Denver Hearing
Survey of Local Election Officials

Charles Stewart III
MIT
December 3, 2013

Full presentation is available on the website.
# What Caused the Lines?

Q27. Which factors do you believe contributed most to those lines? [Please check all that apply]

<table>
<thead>
<tr>
<th>Factor</th>
<th>All</th>
<th>Smaller Jurisdictions</th>
<th>Larger Jurisdictions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Too many people showed up at the same time</td>
<td>56.6%</td>
<td>56.9%</td>
<td>53.8%</td>
</tr>
<tr>
<td>2. Overly long/complicated ballots</td>
<td>35.8%</td>
<td>34.4%</td>
<td>50.0%</td>
</tr>
<tr>
<td>3. People in wrong precinct</td>
<td>21.2%</td>
<td>22.1%</td>
<td>11.5%</td>
</tr>
<tr>
<td>4. Inadequate space @ polling place</td>
<td>16.9%</td>
<td>16.7%</td>
<td>19.2%</td>
</tr>
<tr>
<td>5. Registration problems</td>
<td>13.9%</td>
<td>14.5%</td>
<td>7.7%</td>
</tr>
<tr>
<td>...</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Insufficient # of poll books</td>
<td>7.6%</td>
<td>6.9%</td>
<td>15.4%</td>
</tr>
<tr>
<td>...</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Not enough early voting days</td>
<td>7.3%</td>
<td>6.5%</td>
<td>15.4%</td>
</tr>
</tbody>
</table>
• Q16. Looking forward, over the next 5 to 10 years what areas of election administration are in significant need of improvement or an upgrade? (Choose 3)

<table>
<thead>
<tr>
<th>Area</th>
<th>All</th>
<th>Smaller Jurisdictions</th>
<th>Larger Jurisdictions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Voting tech. &amp; voting machine capacity</td>
<td>24.3%</td>
<td>24.1%</td>
<td>36.9%</td>
</tr>
<tr>
<td>2. Availability of poll workers</td>
<td>21.9%</td>
<td>22.2%</td>
<td>9.2%</td>
</tr>
<tr>
<td>3. Voter education</td>
<td>17.9%</td>
<td>18.1%</td>
<td>7.7%</td>
</tr>
<tr>
<td>4. Training/management of poll workers</td>
<td>11.4%</td>
<td>11.4%</td>
<td>12.3%</td>
</tr>
<tr>
<td>5. Postal service issues</td>
<td>10.2%</td>
<td>10.2%</td>
<td>12.3%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Availability of polling places</td>
<td>6.5%</td>
<td>6.4%</td>
<td>15.4%</td>
</tr>
</tbody>
</table>
What did we hear?

- Jurisdictions are frustrated and do not feel that their voices are heard:
  - In legislation (the “least powerful lobby”).
  - In appropriations (“elections tend toward the lower end of the scale of priorities, behind education, public safety, and health care, to name just a few resource competitors”).
  - Elections are awash with data, but many administrators don’t know what to collect to tell their story most effectively.
What did we hear?

- Jurisdictions sometimes struggle with data collection and analysis:
  - Getting buy-in from staff on the value of data collection
  - Most efficient ways to capture information
  - Identifying what is most helpful/instructive
  - Time

- Catch-22 of constant changes in legislation & wanting enabling legislation for administrative progress
What did we hear?

- Jurisdictions are struggling with resources:
  - lack of,
  - quality of,
  - distribution of,
  - & options available to them in the current market.

- Concern with the stymied standard setting process and potential impact on voting equipment certification for new innovations.
What did we hear?

- After the passage of the Help America Vote Act (HAVA) there was an influx of federal dollars to upgrade voting equipment.
- That equipment has been aging at a consistent rate across the country and is now 10 years old and counting.
- *Replacement is necessary, and soon.*
- Jurisdictions need a nimble process at “election-speed”
What did we hear?

- Jurisdictions are having more equipment fail testing.
- Equipment is requiring increased (and costly) maintenance.
- Parts are getting harder to obtain.
What did we hear?

Jurisdictions want to utilize new technology to provide services to their voters.

The voters are increasingly expecting their voting experience to be familiar—to be able to vote on a machine or devise that is as easy to use, and may actually be, their tablet or smartphone.
What did we hear?

- Security vs. Access
- One size does not fit all...more on that in a minute
Last year we met in the White House on January 22\textsuperscript{nd}, 2014 for a little more than half an hour. It was obvious from the questions that they had both read the report. The Vice President took notes.
I. Definition of the Charge

The guiding principle for these recommendations, however, is to improve the voter experience. By improving the voter experience, we mean that:

- Voters at all points of contact with the electoral process should find that it is accessible and dependable.
- Voters should not need to wait more than half an hour to vote.
- Ballots should be well-designed and simple to understand.
- The registration process should be efficient and reliable.
- Voter rolls at the polling place should be accurate.
- Voting information provided by officials should be clear and comprehensive.
- Ballots delivered by mail should arrive in a timely fashion and should be tracked from delivery to return.
- Military and overseas voters should receive their ballots on time and be confident that the election authority has received them in time to be counted.
- Polling places should be well-organized, well-equipped, and accessible.
- Well-trained and informed poll workers should supply useful guidance, answer questions, and resolve issues as they arise.
- Accommodations should be made for populations requiring specialized support, such as voters with disabilities or limited English proficiency.
Even amidst the diversity of local jurisdictions, similar types of jurisdictions … often share similar problems and can learn from each other about the best solutions to common problems.
It is about the common functions of conducting an election that can be scaled to fit the jurisdictions needs.
Commission on Political Reform chaired by:
- Former Senator Olympia Snowe,
- Former Senate Majority Leader Tom Daschle,
- Former Senate Majority Leader Trent Lott,
- Former US Secretary of Agriculture and Representative Dan Glickman,
- Former Governor of Idaho and US Secretary of the Interior Dirk Kempthorne.
It is important to note that the Report received bipartisan support for many of the PCEA Recommendations.
The Recommendations in the Report

Many of the recommendations have technology ties:

- Voting equipment standards, testing, & certification
- Voter registration
- Data sharing
- Electronic pollbooks
- Vote Centers/Early Voting
- Auditing
Key Recommendations:

- **Voter Registration Modernization:**
  - Online voter registration
  - **INTRA**state, list efficiencies including Department of Motor Vehicles and other government agency data transfer improvement in compliance with the National Voter Registration Act (NVRA)

- **INTER**state, statewide voter list comparisons:
  - Interstate Voter Registration Cross Check (IVRC)
  - Election Registration Information Center (ERIC)
Key Recommendations:

- Reform of the standard-setting and certification of voting equipment.
- Minimum, quorum of EAC Commissioners not necessary for standard setting – *let the Boards continue their work*
Now that we have EAC Commissioners we can move the standards forward.

The EAC has already:
- VVSG 1.1 approved
- Testing Manual changes approved
- New VSTL certified
- Chain of command established for future

ALSO: IEEE VSSC P1622 common data formats work
Why does this matter?

The common data work will (hopefully) enable interoperability of future systems.

Test manual changes will speed up the testing and certification of new systems as well as modifications:

- EAC has had a certification completed in 12 DAYS—the average should be in weeks for mods, months for new systems (NOT years)
Professionalism

• Calling for ongoing professionalism of the field of election administration:
  • Election Administration as Public Administration, *IT managers*
  • Encourage attendance at national association meetings such as NASS, NASED, Election Center, NACO, & IACREOT
  • Encourage strong statewide programs to train election administrators and poll workers
Knowing your numbers can be the “antidote to the anecdotes”, help in resource allocations, and aid in telling your story to legislatures, media, and appropriators.

Designing systems that enable data collection that is helpful in administration is beneficial.
Being able to quantify success is as important as identifying concerns.
Sometimes we can leverage technology to assist in the data collection, but election administrators are very resourceful...

Orange County, FL knows results are in when precinct stalls are full
Richland County, SC now tracks their results cartridges using pigeon cubbies in their tabulation room
Many states allow for the use of Vote Centers to service voters, with more going that route every year.

Vote Centers do require the ability to service all voters for a jurisdiction at every location so there are challenges that technology mitigates.

Voting technology considerations need include things like ballot on demand systems.

But do these need to be addressed in a standard? Are they being tested?
We heard a lot of testimony about the benefits of the use of ePollbooks when administered properly:

- Ability to have more current information than printed rosters, thus eliminating the supplemental lists that pollworkers don’t always check.
- Streamlining check-in process
- Having entire voter list, not just precinct thus and improving directing voters to correct polling place
- Wealth of data available that is easy to digest & articulate.
The discussion on EPBs and other peripherals gets particularly interesting if the EPB is tied into the generation of the DRE ballot card or interfaces with the actual voting equipment.

Does this make it part of the “voting system”?

But many jurisdictions are using EPBs for so much more than just a roster/registers.

We will discuss this quite a bit over the next two days
Many jurisdictions have created their own in-house technology while others have taken advantage of the burgeoning market.

Orange County, FL created an ePollbook solution as well as a line-tablet for looking up voters prior to checking them in to ascertain if they are in the correct polling place.
Connectivity at the polls isn’t the only consideration, so is interoperability within a voting system.

IEEE VSSC 1622 working group has started the process to define a common data for EPBs.

- Will this encourage interoperability?
- How can it further data collection and analysis?

How does certification address systems with component testing &/or commercial off-the-shelf technologies?
The time it takes to actually complete the ballot needs to be taken into consideration when doing resource allocations, particularly if it varies dramatically from one election to the next.

Regardless of type of voting—optical scan paper ballot, DRE, central counted paper ballot, the ballot itself can directly attribute to line issues.
For the 2014 General Election we did observations in Florida, Virginia, and in Maryland

Collected data at the various stages of voter processing and voting
Change in check-in process adding 30 seconds:

- 90 sec, 2 stations, 7 min wait
- 120 sec, 2 stations, 1 hr wait
- 120 sec, 3 stations, 5 min wait

The addition of a single check-in station negates the hour long wait at the end of the day.
There is the struggle between taking advantage of voter interest in Federal General Elections, and creating voter fatigue/roll-off with more complicated ballots.

Simplicity and usability will aid vulnerable voting populations but the tide “will raise all boats”.

Ballot content aside, equipment needs to engender capturing the voter’s intent quickly and correctly.
Ballot layout is determined by:
- Content
- Statute
- Equipment requirements
- Administrative decisions

Use lowercase letters.

Lowercase letters are more legible than all capital letters because they make shapes that are easier to recognize.
Most, but not all, jurisdictions do some sort of audit:
- Logic and Accuracy testing of voting equipment
- Reconciliation audit of precinct turnout & ballots cast
- Hand-count audits
- Risk limiting audits

EAC does have funds available for Logic and Accuracy testing: www.eac.gov
Reconciliation audits are much improved with the move to ePollbooks from paper-based systems.

It is important to know before the official canvass that all ballots were accounted for.

Are there any standards implications for audit technologies?
Post PCEA Report Activity

- In addition to the Commission on Political Reform (CPR) and Republican National Lawyers Report (RNLA) there has been great interest in furthering the recommendations of the Report.
- Many Commissioners have been busy testifying at State and Federal levels regarding the PCEA Recommendations, presenting at national, state, and local conferences, and meeting with stakeholders.
- Because of this momentum, the Democracy Project at the Bipartisan Policy Center (BPC) has established a post-Report Initiative.
Bipartisan Policy Center

➢ “As the only Washington, DC-based think tank that actively promotes bipartisanship, BPC works to address the key challenges facing the nation.”

➢ BPC has been an active participant in the PCEA process and is the perfect home for post-Report work which is being made possible through generous support from private foundations.
Focus at BPC is on 5 of the core Recommendations:
- Online Voter Registration
- Data Sharing
- Polling Place Efficiencies & Resource Allocations
- Expansion of Voting Opportunities
- Technology
Contact Made With Election Administrators

This includes personal conversations with state &/or local administrators explaining the recommendations of the PCEA Report and the BPC supporting efforts as well as presentations to: NASS, NASED, IACREOT, & Election Center.
Technology efforts:

- Council of State Governments working groups on PCEA recommendations for UOCAVA voters (policy & tech)
- IEEE VSSC 1622 efforts
- Usability & Accessibility Roadmap
- Ongoing vendor conversations
- Pew VIP & EPI
- ERIC & IVRCC
- Overseas Vote Foundation E2E VIV
- NASED working group
Working group comprised of State Elections Directors seeking to identify a path forward for the states

1) If there is an EAC (at the time the group began there wasn’t much hope in nominations, let alone confirmations).

2) If there isn’t an EAC—what do the states do?

Because of this last quandary, we needed to really understand the scope of reliance on federal work.
Later today we will also hear about the work at NCSL in this area of the manner with which the states are addressing (or not) the certification of their voting equipment via legislative action and the funding of equipment replacement.
Categories of Reliance: Established by the EAC

Voting System Testing & Certification

No Federal Requirements: Relevant state statutes and/or regulations make no mention of any federal agency, certification program, laboratory, or standard.

15 states have no federal testing or certification requirements: AK, AL, CA, FL, IL, ME, MI, MT, NE, NH, NJ, OR, VT.

(Notes: American Samoa, Guam, Puerto Rico, and the Virgin Islands are also in this category.)

Requires Testing to Federal Standards: Relevant state statutes and/or rules require testing to Federal voting system standards (Federal reference standards: drafted by the Federal Election Commission - FEC, National Institute of Standards and Technology, or the EAC).

9 states + DC require testing of voting systems to Federal standards: CT, DC, HI, IN, KY, NV, NY, TN, TX, VA.

Requires Testing by a Federally Accredited Laboratory: Relevant state statutes and/or regulations require testing by a federally or nationally accredited laboratory to Federal standards.

13 states require voting systems be tested by a federally accredited laboratory: AZ, IL, IA, LA, MA, MD, MN, MO, NC, PA, RI, WI.

Requires Federal Certification: Relevant state statutes and/or rules require that voting systems be certified by a federal agency.

13 states require federal certification first (statutes or rules): CO, DE, GA, ID, NC, ND, SC, SD, UT, WA, WY, WV, WI.

Abbreviations:

ADA - Americans with Disabilities Act
DOE - Department of State
EAC - Election Administration Commission
FEC - Federal Election Commission
HAVA - Help America Vote Act
ITA - Independent Testing Authority
NASED - National Association of State Election Directors
NIST - National Institute of Standards and Technology
SBE - State Election Board
SCE - State Election Commission
SOS - Secretary of State
VPRAT - voter verified paper audit trail
12 States Require Federal Certification
10 States & DC Require Federal Standards
13 States Require Federally Certified Labs (VSTLs)
Federal Ties

Standards Certification VSTL
Standards

- AK, AR, KS, MI & MS semantically federal standards (IE HAVA, FEC, NASED).
- CA it is the floor of their standards.
- FL uses large portions of the VVSG.
- NH doesn’t have a set of standards in statute but will use sections of the VVSG as well as looking at what other states the equipment is certified in and how they tested it.
Certification

- **NE:** While not required in statute, Nebraska does require federal certification before a system can be used in their state. They require federal certification through internal policy.

- **ME:** Maine doesn’t require federal testing by statute but required EAC certification in their last RFP.

- **MT:** Statutorily, Montana does not have to have Federal certification prior to certifying a voting system for use in Montana. However, as a practical matter they have always relied on the testing that goes into Federal certification.

- **NJ:** does require testing to the federal guidelines. It is not in statute but rather a de facto requirement established by the voting machine examination committee.
Reliance

Rules
Statutory
RFP
Federal Ties

Standards Certification
VSTL
There have been other areas identified where improvements can be made:

- Process of writing the standard (IE public comment period, boards)
- Format of the standards (plain language summary, test assertions, etc.)
- Time for certification (triage, vendor preparedness)
- Innovation class
2 Short Years...

- The voting technology market is changing:
  - Software-based solutions
  - COTS elements
  - Shifting of the ballot marking process to off-site
- Systems now on the market incorporate many of the recommendations in the Report, address some of the concerns of election officials, and meet *some* of the voter’s expectations.
- Possibly they introduce issues that are still surfacing?
Two weeks ago Denver conducted a pilot election that I don’t think we thought possible when the PCEA was holding our hearings and writing the Report.
1. Get a number
2. Have a seat
3. Vote!
Once in the voting booth the voter made their selections on a COTS tablet which printed to a COTS printer...
Central tabulation (CO has a mail ballot delivery system to all voters in the state) was also conducted all on COTS scanners
Implications? Complications?
States are moving forward to replace their HAVA-purchased equipment.

Last week South Carolina had a voting system fair and invited legislators, local election commissioners, & election administrators to view what is available on the market.

We will hear about some of the states strategies.
Purchasing implies replacement
Retirement? Decertification?
Process?
Timing?
Questions?

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