Election Security, Cyber Threats and the Way Forward

Jonathan Marks, Deputy Secretary for Elections & Commissions
Pennsylvania Department of State

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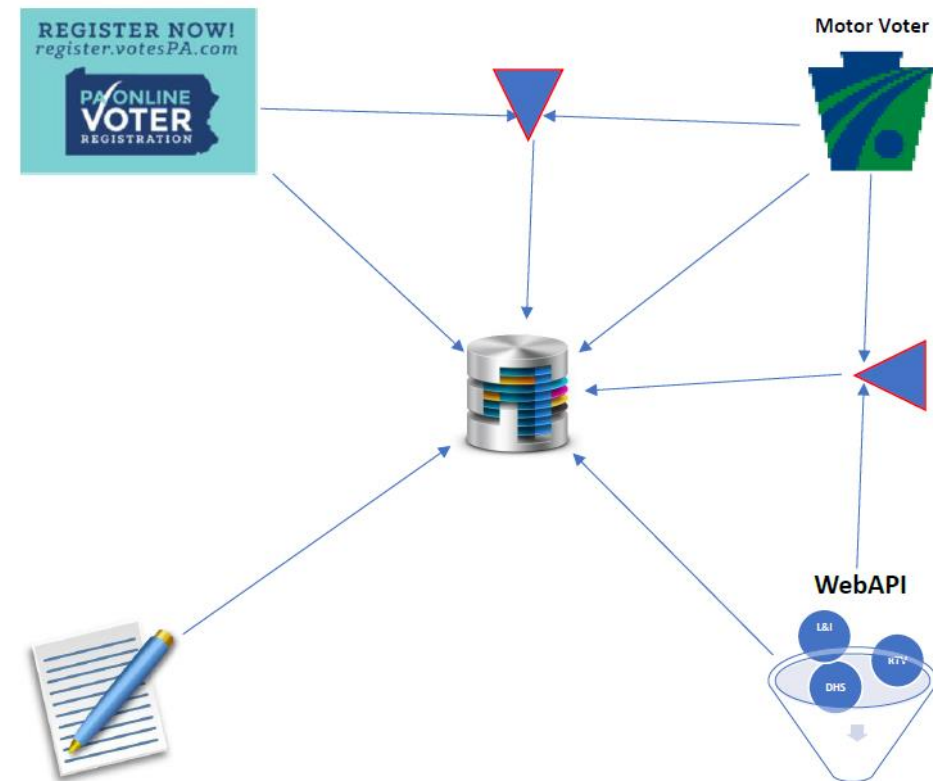
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SURE

- The Statewide Uniform Registry of Electors (SURE) is the official registry of voters in every county.
- SURE is a truly statewide system
    - It is a top-down system that every county must use to maintain voter records.
    - Access to SURE is provided exclusively by the Commonwealth.
    - Every official artifact confirming a voter's eligibility to vote is generated from SURE, including the voter's registration card, official voter lists, poll books, absentee balloting lists, etc.

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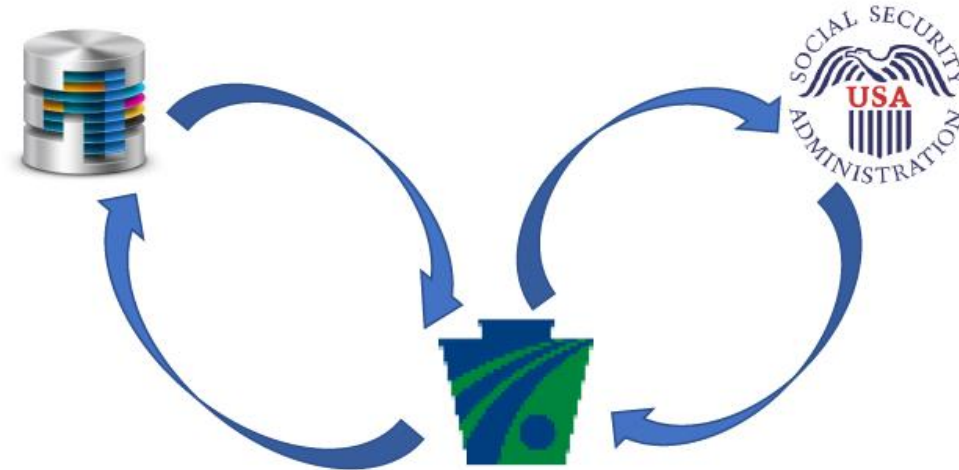
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SURE & Voter Registration

- There are four primary methods for voters to interface with SURE:
  1. Traditional paper voter registration applications (NVRA Agency, Individual, and Voter Registration Drives)
  2. Motor Voter
  3. Online Voter Registration
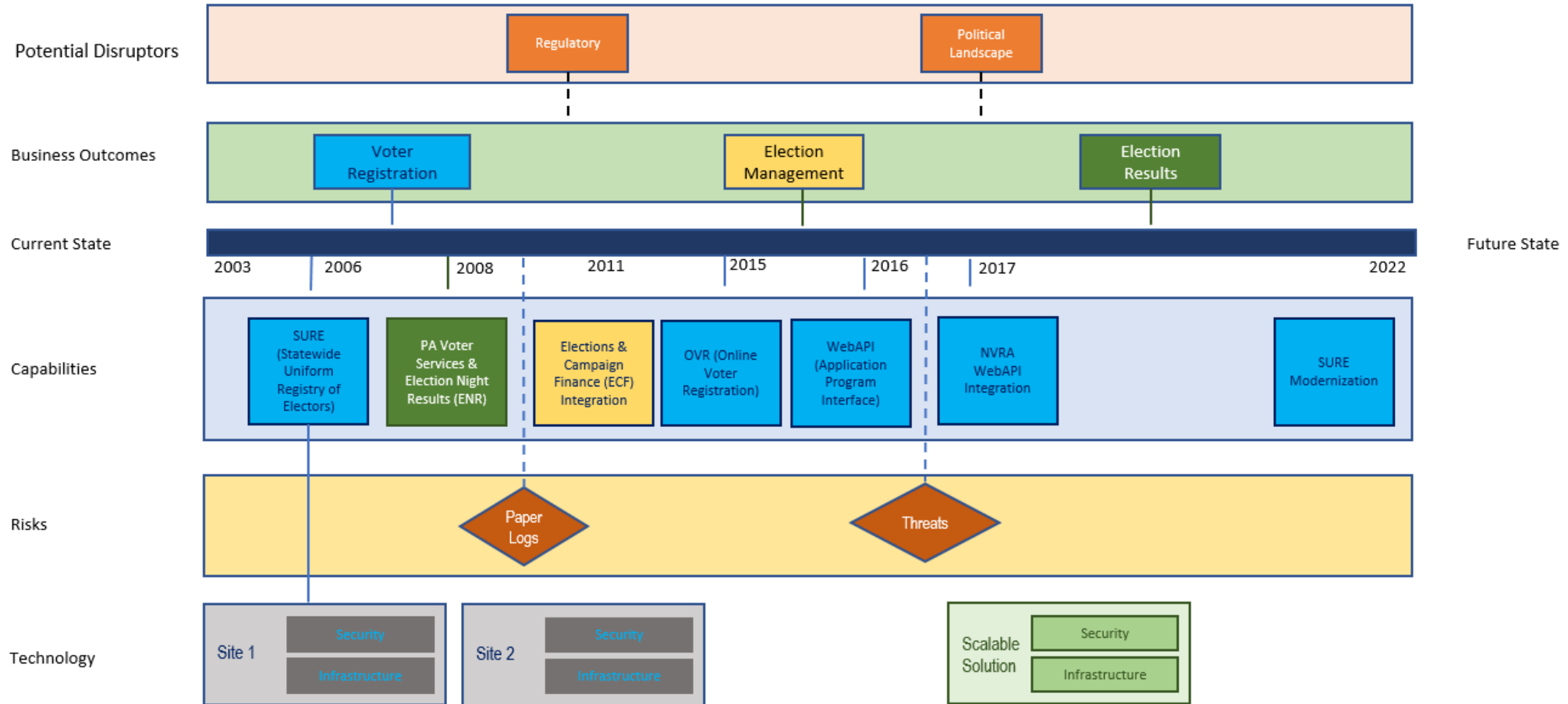 4. WebAPI (Agency and 3rd Party Partners)

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REGISTER NOW!
register.votesPA.com
PA ONLINE VOTER REGISTRATION

Motor Voter

WebAPI

L&I
PTV
DHS

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PII Verification

- DL number and/or SSN 4 are submitted to PennDOT for verification.

- PA DOS leverages PennDOT agreement with SSA to verify SSN.

SURE Roadmap

Potential Disruptors	Regulatory ⬛ Political Landscape
Business Outcomes	Voter Registration · Election Management · Election Results

Current State ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ **Future State**

2003 · 2006 · 2008 · 2011 · 2015 · 2016 · 2017 · 2022

Capabilities
- SURE (Statewide Uniform Registry of Electors)
- PA Voter Services & Election Night Results (ENR)
- Elections & Campaign Finance (ECF) Integration
- OVR (Online Voter Registration)
- WebAPI (Application Program Interface)
- NVRA WebAPI Integration
- SURE Modernization

Risks
- Paper Logs
- Threats

Technology
- Site 1 — Security / Infrastructure
- Site 2 — Security / Infrastructure
- Scalable Solution — Security / Infrastructure

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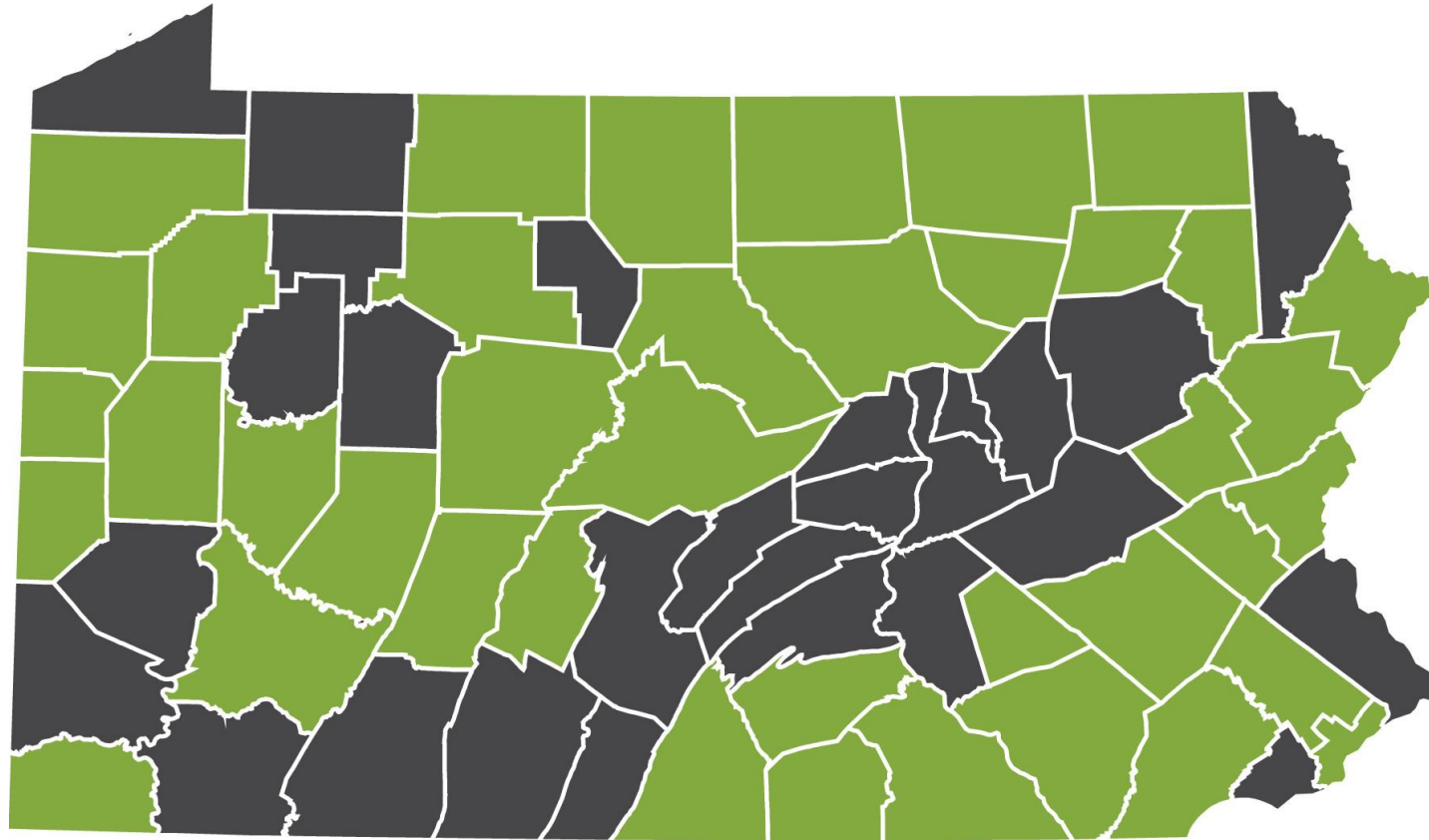pennsylvania
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SURE Security Strategy

- SURE is delivered through a secure private network managed by the Commonwealth.

- SURE and its environment benefit from an enterprise-wide, multi-layered security strategy:
  - ✓ Barriers and monitoring at the perimeter.
  - ✓ Customized barriers and monitoring inside the perimeter.
  - ✓ Strategic encryption of data in transit and data at rest.
  - ✓ Event logging of data in use.
  - ✓ Daily backups.
  - ✓ Well-defined incident management and communications plans.

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Voting Systems & Election Management

- Counties begin ballot preparation 10 weeks prior to every primary, 12 weeks prior to every November election, and 7 weeks prior to every special election.

- The 67 counties use 10 different voting system configurations.

- Over 25,000 voting system units are deployed in more than 9,000 locations on Election Day.

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PA Voting Systems in Transition

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Election Preparation

- Official candidate information, ballot configurations, ballot definitions, audio ballot files, etc. are maintained using the voting system's Election Management System (EMS).
- Voting systems are manufactured and/or maintained by 6 different vendors.
- A total of 11 vendors support counties' printing, ballot definition and setup, and Logic and Accuracy (L & A) testing.
- 8 different vendors support 35 counties with ballot definition, setup and/or L & A testing.
- Counties train more than 40,000 poll workers prior to every primary and election.

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Physical Security of Voting Systems

- Physical security is critical to overall security.

- Effective cybersecurity assumes good physical security.

- Statutory and administrative physical security protocols:
  - Facility security
  - Chain of Custody
 - Access controls
  - Maintenance

Chain of Custody

- Voting system components are locked and stored in a secure facility between elections.
- EMS and other components of voting systems may only be connected to each other on an isolated, single-purpose network.
- Once L & A testing is complete, the precinct components of the voting system are locked and sealed.
- Voting system keys are delivered to the Judge of Elections.
- The precinct components of the voting system must be delivered to the precinct officials no later than 1 hour prior to the opening of polls.
- Precinct election officials are responsible for verifying that the precinct components of the voting system are in working order and haven't been tampered with.
- Voting system custodians and deputy custodians are charged with maintaining and documenting the voting system chain of custody throughout pre-election testing, Election Day and post-election activities.

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Reporting Election Results

- With the exception of optical scan voting systems that provide for central tabulation of cast votes, election results are tabulated at the precinct.

- Precinct results must be signed by all members of the local board of elections.

- The judge of elections is charged with returning to the county board of elections the signed precinct results and all other reports required by statute.

- The minority inspector of elections must maintain a copy of the precinct results and other reports returned to the county.

- The county board of elections must reconcile the countywide results with precinct results during the official canvass of votes.

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PA DOS Role on Election Day

- PA DOS maintains contact with federal, state and county partners throughout the day to monitor the progress of voting and to identify and respond to any issues or threats.

- If necessary, PA DOS assists with the coordination of support and resources provided by federal and state partners.
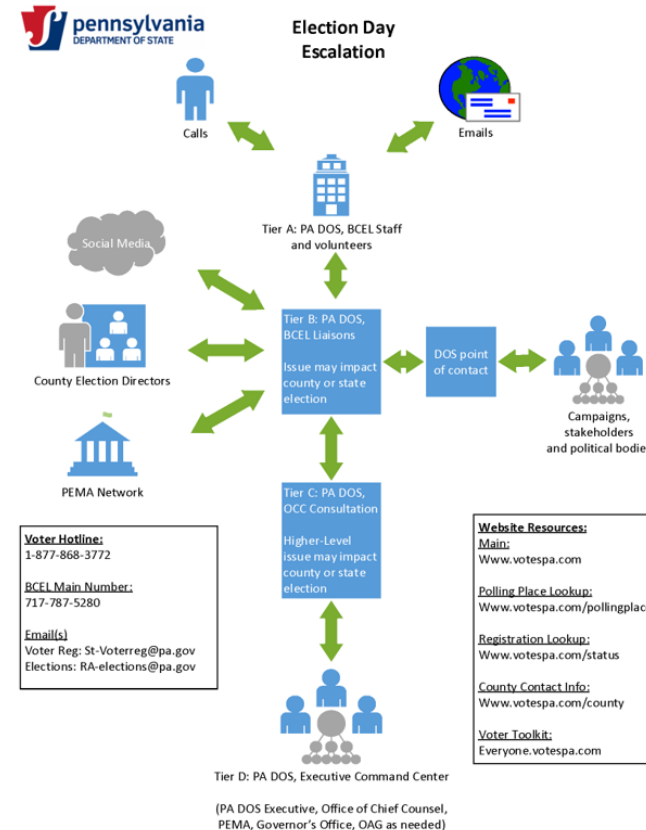
Election Night and Post-election

- On Election Night, DOS shifts its focus to collecting unofficial election results from the counties and disseminating those results via its website.

- <u>Unofficial</u> election night returns for most counties are transmitted through our Election Night Returns (ENR) application.

- ENR also benefits from the Commonwealth's enterprise-wide, multi-layered security strategy.

- The counties report <u>official</u> countywide and precinct-level results to us electronically through the Elections and Campaign Finance system (ECF).

- An official copy of the certified results must be transmitted on paper, with the signatures of a majority of the county board of elections, before the results can be tallied and certified by the Secretary of the Commonwealth.

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Security Posture Evolution

- Threats were not transitory prior to 2016.
- Persistent threats have resulted in a continuously-evolving security posture.
- Attitudes about election security among stakeholders have changed:
  - Increased focus on information sharing and communication.
  - Greater sensitivity to public perception and loss of confidence.
  - Enhanced cybersecurity and physical security awareness among both IT and administrative election staff.
  - Greater willingness to engage third parties to assess vulnerabilities.
  - Practicing the universal remedy for getting and staying in shape – MORE EXERCISE.

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What We Are Doing Today

- Facilitating additional training opportunities for every person involved in the business process.

- Make sure password management principles and policies are consistent throughout the business process.

- Improved data analytics.

- Leveraging federal and state partnerships to assist counties
  - Phishing campaigns.
  - Tabletop exercises.
  - Risk and vulnerability assessments.

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The Future State

- Replacement of SURE with a new system that has security best practices baked into the application(s).

- Systematic enforcement of uniform baseline security awareness training for all users at all levels.

- Role-based security training as a prerequisite for any level of privileged access.

- Closer monitoring of user accounts:
  - Continuously monitoring users' access and activity.
  - Stricter thresholds and controls for privileged users.
  - Empowering managers to audit their users' activity.