Remarks on Election Integrity

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Presidential Advisory Commission on Election Integrity
Manchester, NH
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Outline

• 4 Goals
• 4 Challenges
• 4 Principles
• 4 Myths
• 4 Tools
• Example: hypothetical NH post-election audit
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• Example: hypothetical NH post-election audit
Goal 1/4

Improve Security.
Goal 2/4

Outcomes that are correct.
Goal 3/4

Outcomes perceived correct.
Goal 4/4

Outcomes verifiably correct.
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Challenge 1/4

Secret Ballots.
Diverse voters and elections.
Challenge 3/4

Adversaries!
Challenge 4/4

No free lunches!
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• Example: hypothetical NH post-election audit
Election integrity is nonpartisan.
Principle 2/4

It takes a thief...
Principle 3/4

Adversaries attack weakest link.
Principle 4/4

Detect and Recover.
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• Example: hypothetical NH post-election audit
Myth 1/4

Federal certification ensures security.
Myth 2/4

Logic and accuracy testing ensures security.
“Not connected to internet” ensures security.
Myth 4/4

Decentralization ensures security.
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- Example: hypothetical NH post-election audit
Public verification of (almost) everything.
Voter verification of their own paper ballots.
Tool 3/4

Compliance audit.
Risk-limiting post-election audit.
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• Example: hypothetical NH post-election audit
Example: 2016 NH Governor

• Reported outcome:
  – 354,040 Chris Sununu
  – 337,589 Colin Van Ostern
  – 33,234 others

• Margin of victory: 2.4%

• *Comparison risk-limiting audit* compares randomly chosen paper ballots with their cast vote records until “risk limit” (e.g. five percent) is met.
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## Audit

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Examining only 300 randomly-chosen ballots (out of 724,863 cast) achieves our “risk limit” of 5%!
References


The End

Thanks for your attention!