Election Accuracy: Audits

NCSL's Strong Elections, Strong States: Western States

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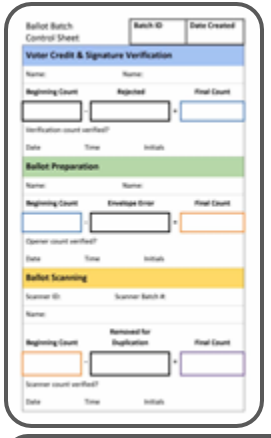
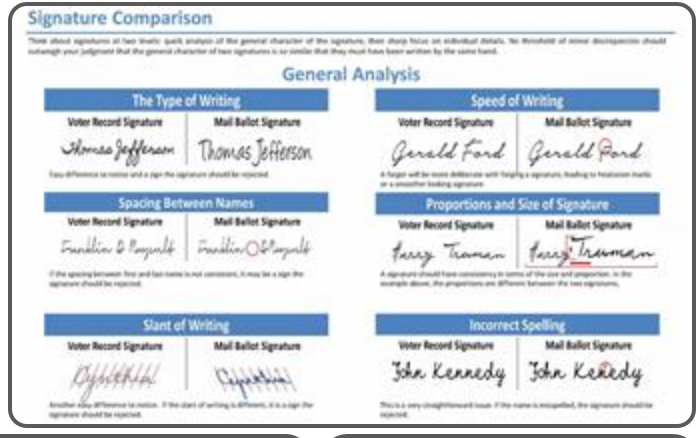
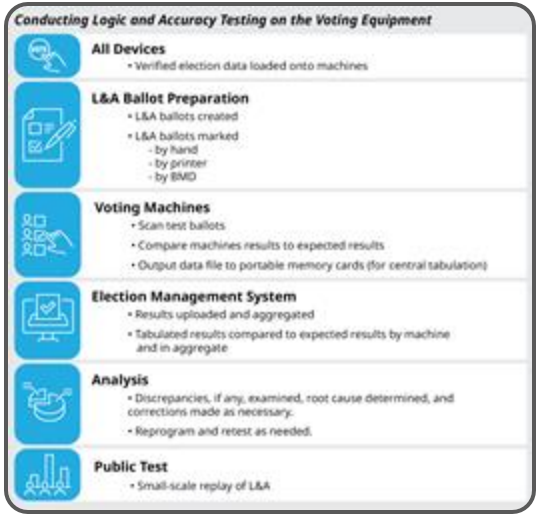
The Elections Group
May 20, 2023
Denver







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Why audit elections?

- Detect voting system errors
  - Human error
  - Misconfiguration
  - Manipulation
- Provide accountability to voters
- Deter fraudulent activity
- Assure votes were issued, counted and reported accurately
- Provide feedback for process improvement

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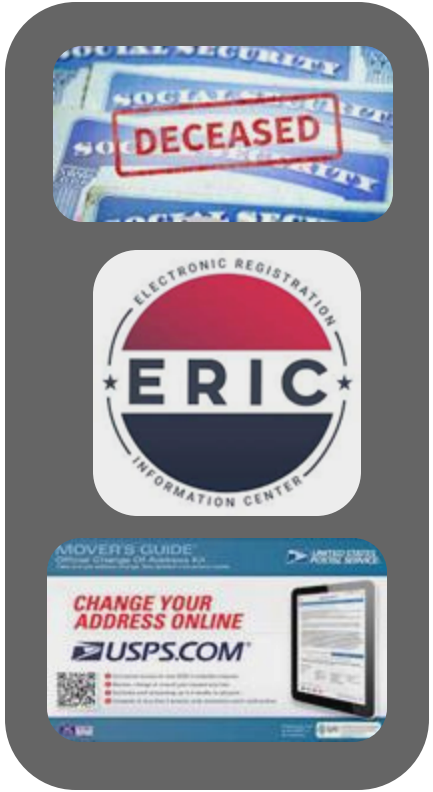
VR List Maintenance Audits

- Data entered accurately
- Timely updates
- Electronic Registration Information Center (ERIC)
  - Cross-state and in-state movers
  - National Change of Address
  - Social Security Death Index
  - Duplicates



Pre-Election

District Assignment Audits

- Geospatial review ensures
  - correct boundary lines have been drawn
  - voters have been assigned to the correct precincts
- NSGIC Geo-Enabled Elections Project

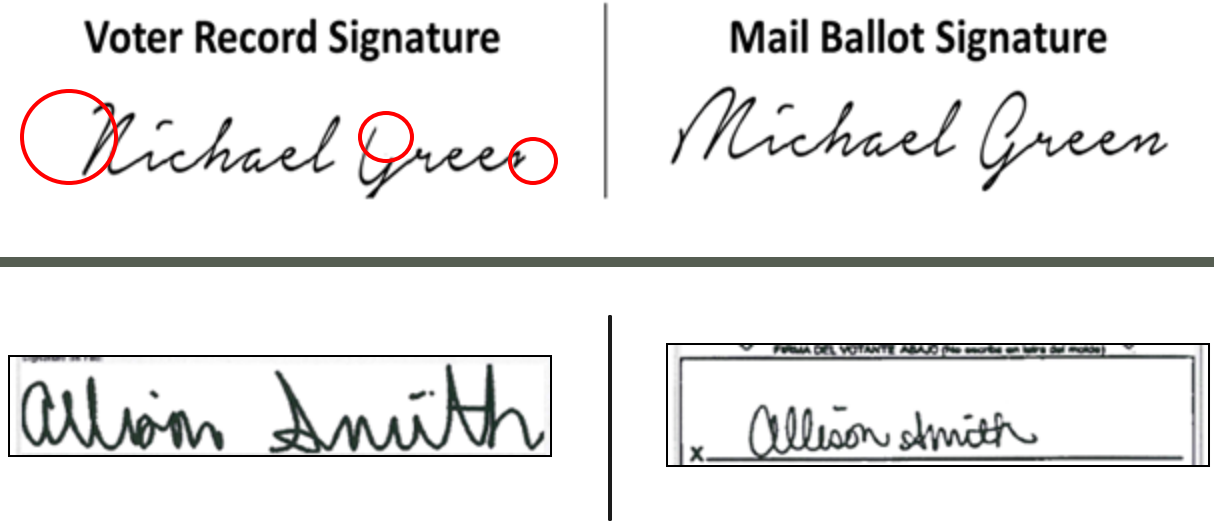
GIS in Elections

BEST PRACTICES for GEO-ENABLING ELECTIONS

DETAILED GUIDANCE

NSGIC GEO-ENABLED ELECTIONS

Mail Ballot Verification Audits

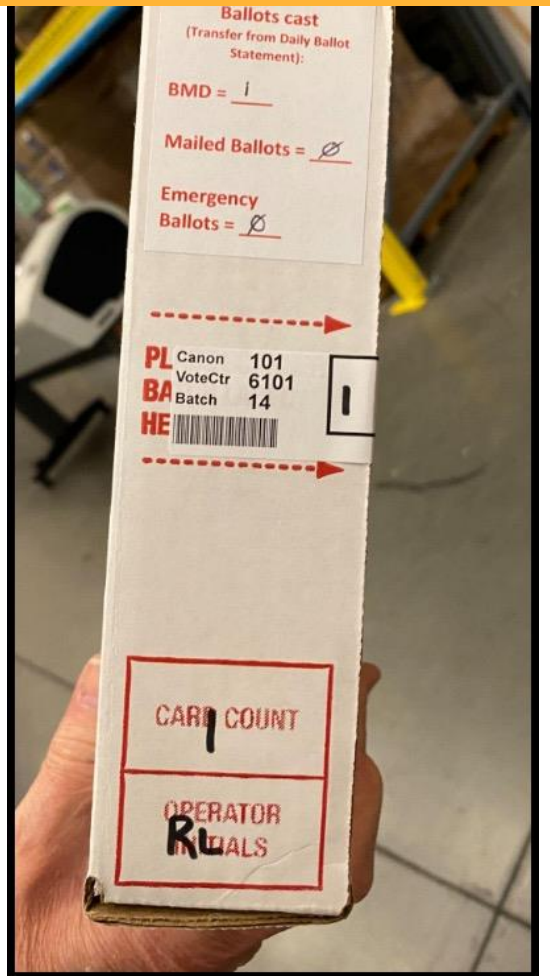


- Verify the individual who received an absentee or mail-in ballot is the same individual who completed it.

Pre- and Post-Election

Security Audits

- Physical Security
- Operational Security
- Cybersecurity
- Audits are a way to mature election security



Ballot Accounting Audits

- Ensure votes have not been dropped, lost, or added as a result of human error or a failure of voting equipment.
- Ensures the ballot record remains complete and intact from the moment ballots are cast through the audit.
- Evidence the ballot record is trustworthy!

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How it should work

- Verify ballot accounting records for accuracy and completeness.
- Verify security seal numbers against the numbers recorded.
- Validate who signed the forms.
- Verify reconciliation forms against the voter registration database (for vote credit) and the statements of votes cast from the voting system.
- Verify the total number of ballots shown in duplication log equals the physical number of original ballots.

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Tabulation Audits

- Verify voting equipment was accurately programmed
- Verify voting equipment interpreted ballots correctly
- Verify voting equipment tabulated votes correctly

Methods: Tabulation Audits

- Traditional or Fixed %
- Risk-Limiting
- Transitive

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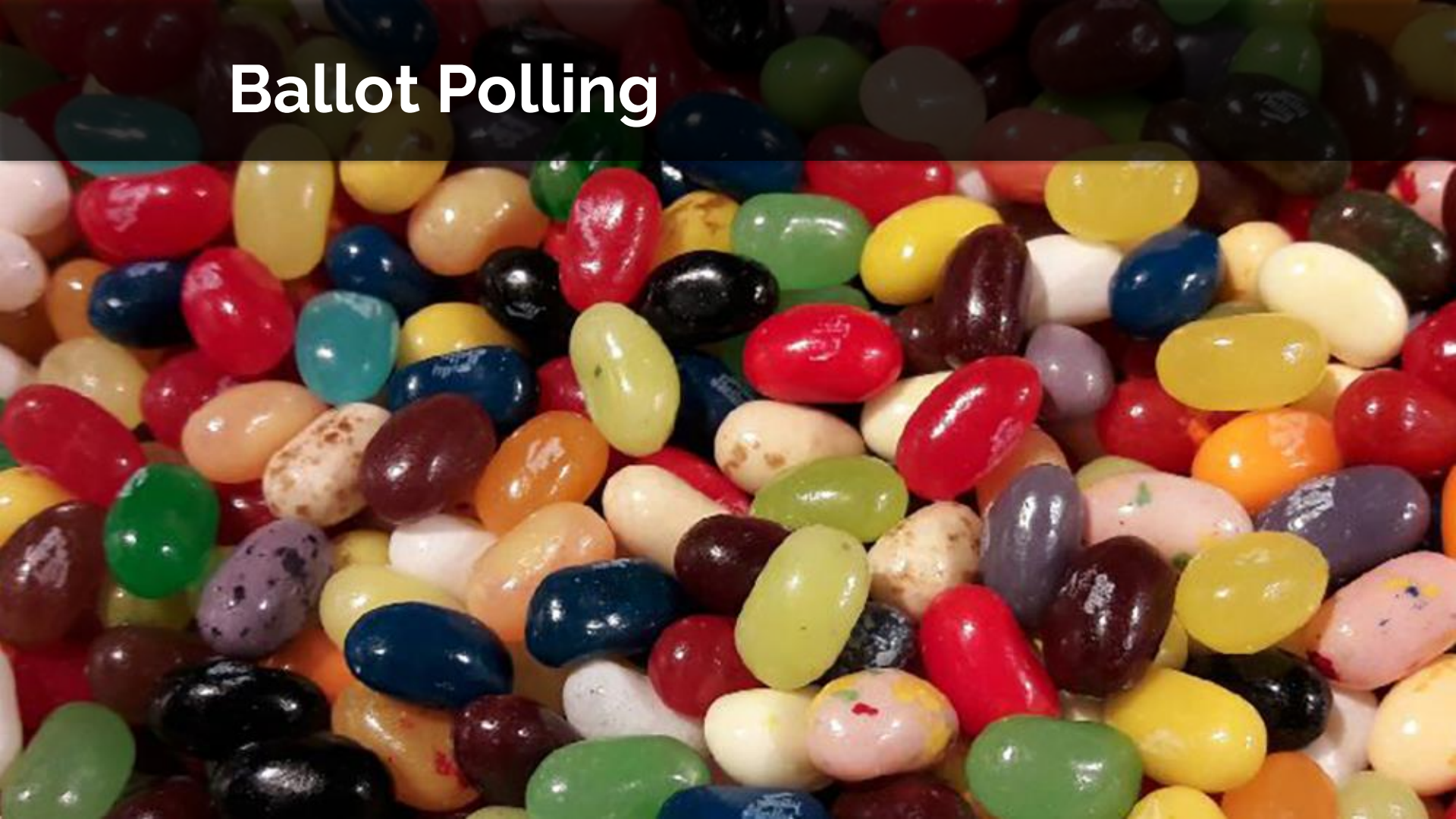
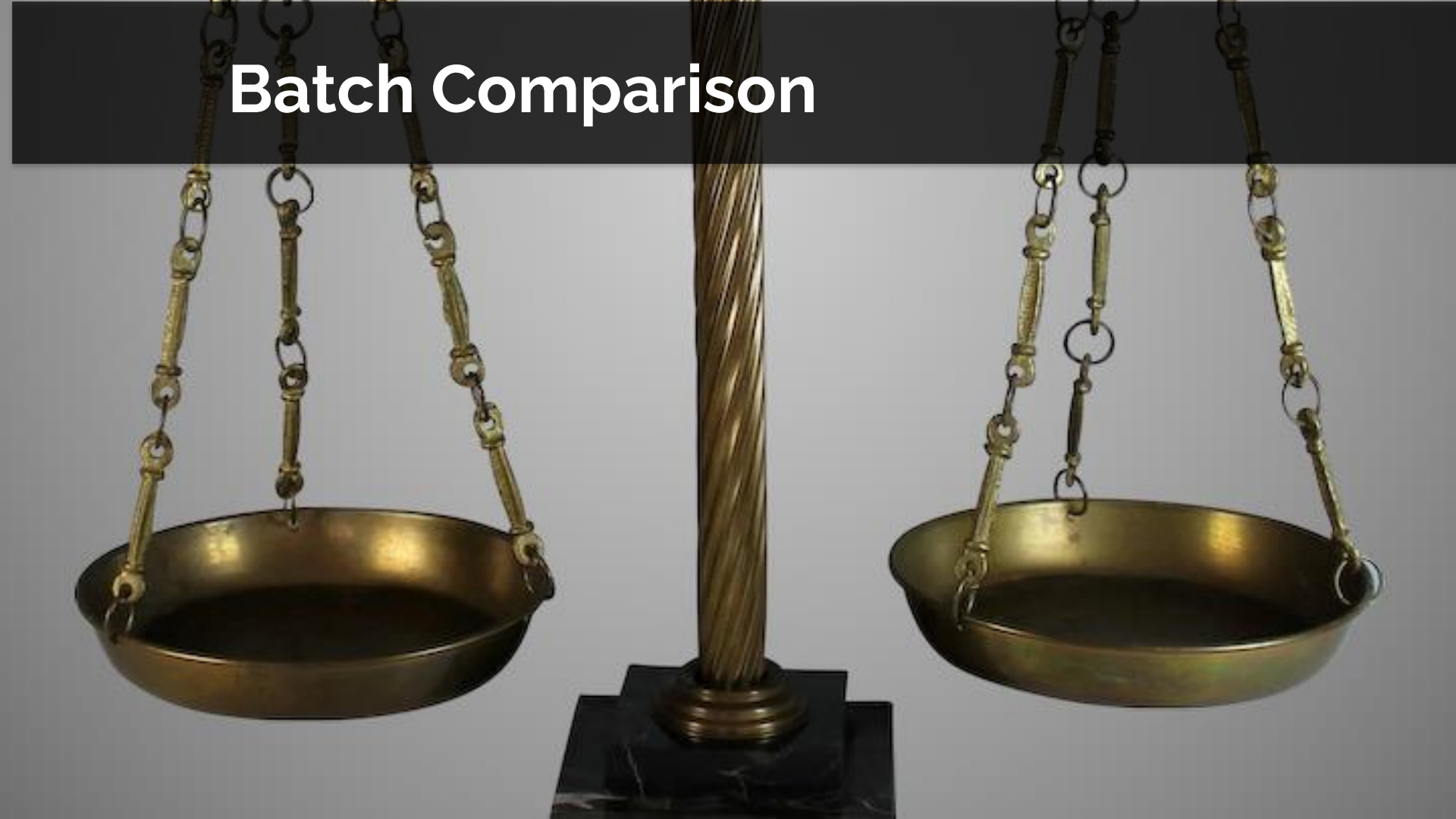
Ballot Polling



Batch Comparison

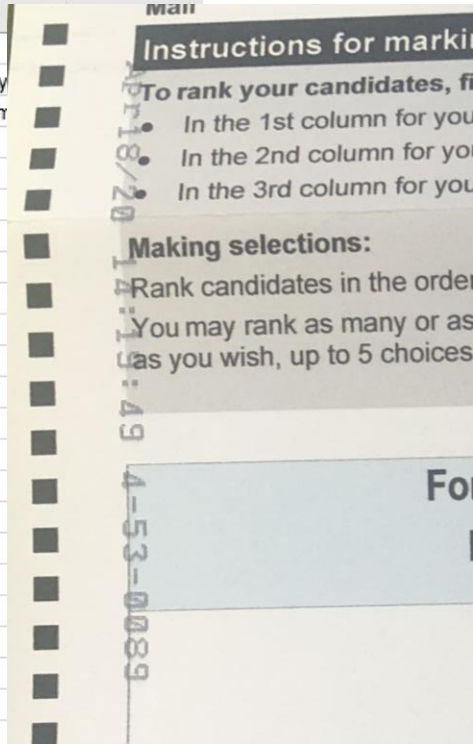


Ballot Comparison

Cast Vote Record (CVR)

	A	B	C	D	E	F	G	H	I	J	K	L	M
1	2017 Arap	5.2.16.1											
2								City of Aur	City of Au	City of Au	City of Au	City of Au	City of Au
3								Brian E. Ar	Dave Grut	Reid Hetti	Allison Hi	Tim Huffn	Abel Laek
4	CvrNumbe	Tabulator	BatchId	RecordId	Imprinted	PrecinctPort	BallotType						
5													
6	44851	3	97	70	3-97-70	6273803212	41						
7	44852	3	97	71	3-97-71	6284003450	51	0	0	0	1	0	0
8	44853	3	97	72	3-97-72	6273703332	44						
9	44854												
10	44855												
11	44856												
12	44857												
13	44858												
14	44859												
15	44860												
16	44861												
17	44862												
18	44863	3	97	82	3-97-82	6294203511	29	0	1	0	0	0	1
19	44864	3	97	83	3-97-83	6264003453	51	0	1	0	0	0	0
20	44865	3	97	84	3-97-84	6284003450	51	1	0	0	1	0	0
21	44866	3	97	85	3-97-85	6273703332	44						
22	44867	3	97	86	3-97-86	6263803167	38						

CvrNumbe	Tabulator	BatchId	RecordId	Imprinted	PrecinctPort	BallotType
44851	3	97	70	3-97-70	6273803212	41
44852	3	97	71	3-97-71	6284003450	51

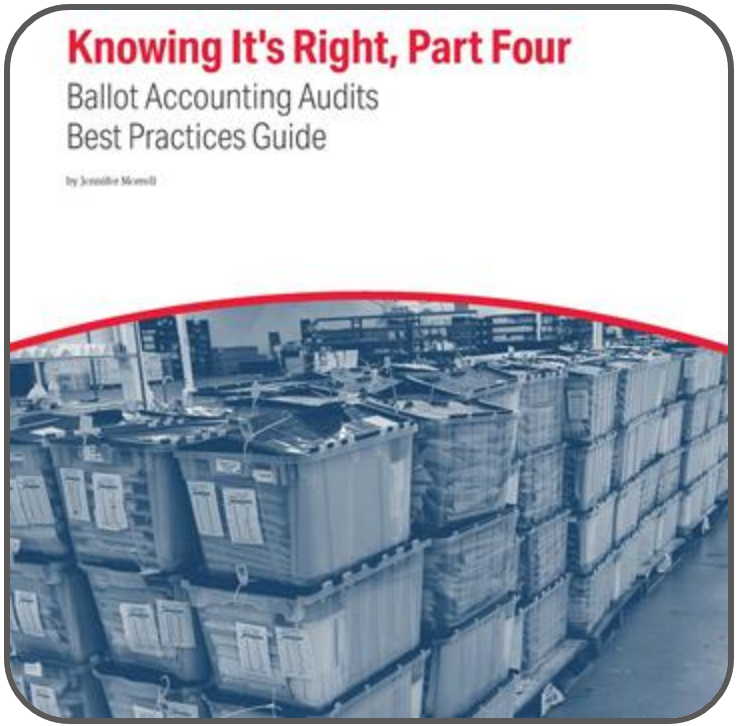


03-97-70 11/6/2017 15:23

```
16: 2
29:
  id: "99802-203-89"
  votes:
    339:
      15: 1
      16: 3
      17: 4
      18: 2
30:
  id: "99804-50-64"
  votes:
    339:
      16: 2
      17: 3
      18: 1
31:
  id: "99807-31-36"
  votes:
    339:
      15: 1
      16: 4
      17: 2
      18: 3
32:
  id: "99804-350-4"
  votes:
    339:
      15: 1
      16: 3
      17: 2
      18: 4
```

Hybrid – Ballot Polling & Ballot Comparison

Knowing It's Right



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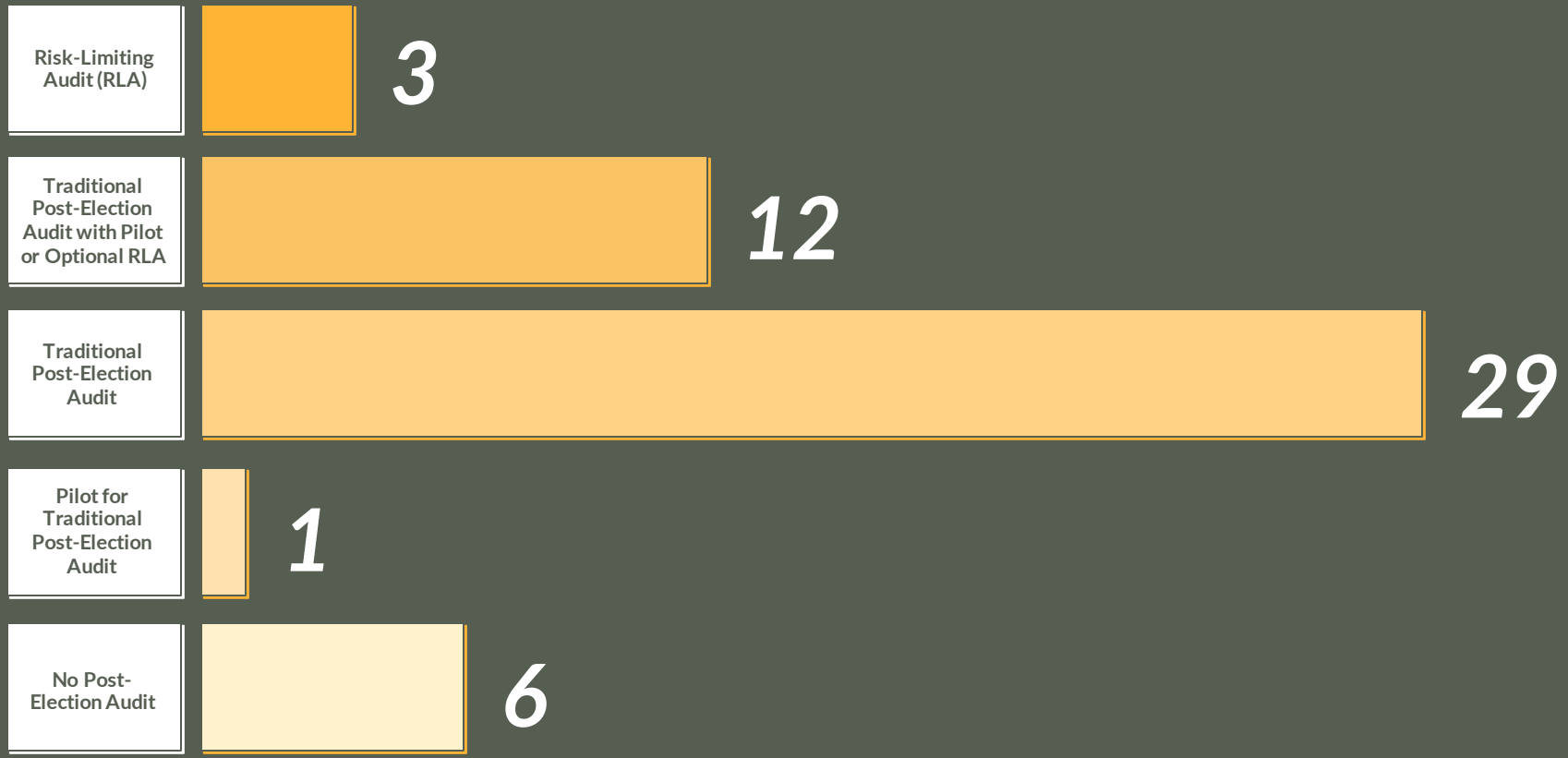
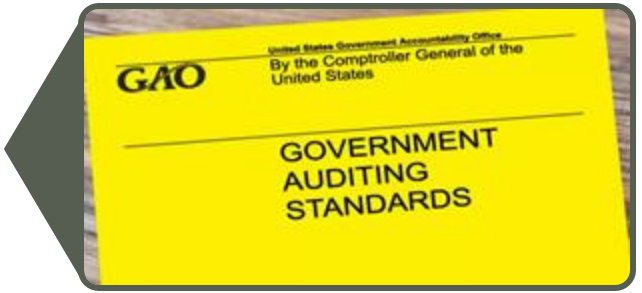
Methods Used for Tabulation Audits



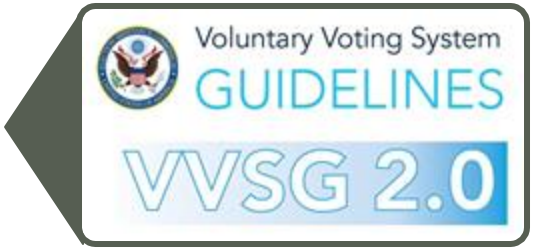
National Standards for Election Audits

Government Standards

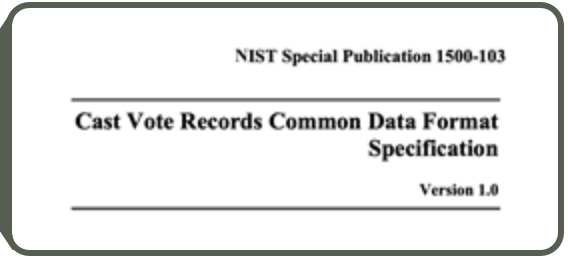
- Generally Accepted Government Auditing Standards



- Voluntary Voting System Guidelines (2.0)



- Cast Vote Records Common Data Format Specifications



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juice

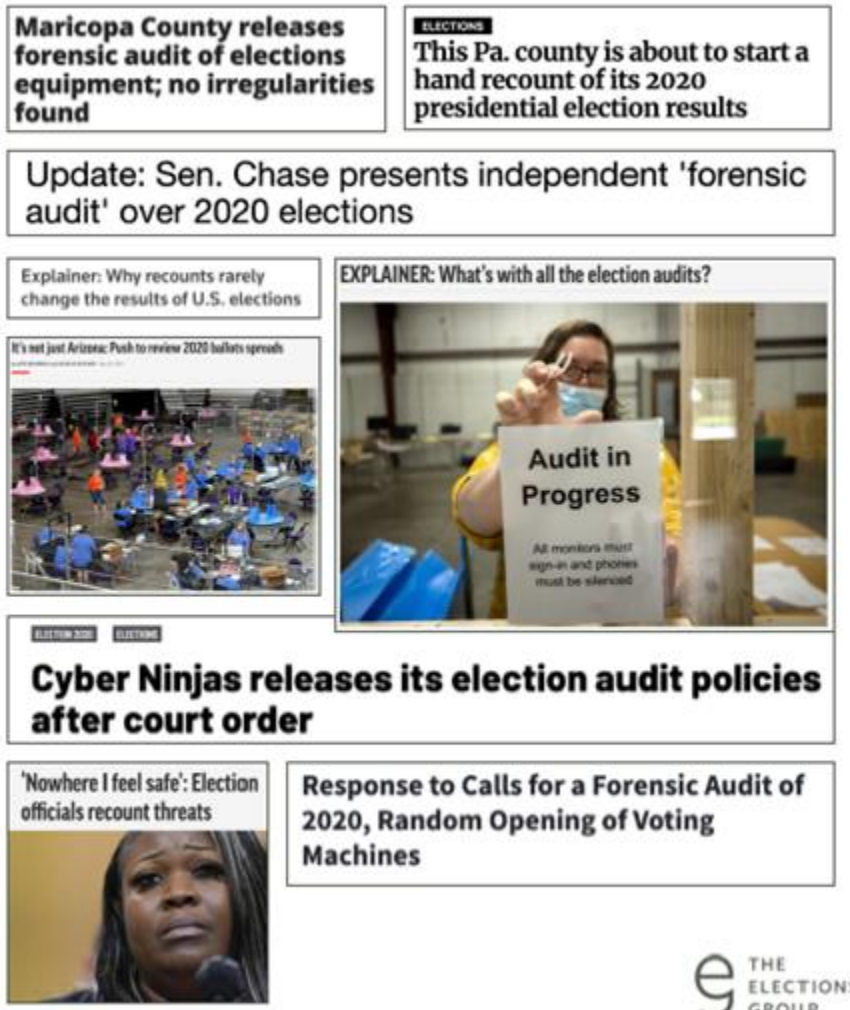
1,190
833,789
0.332
0.338
10,000
0.332
158,294
0.479
0.460
10,000
350,000
7,500

The opportunity…

- Well-implemented post-election audits ensure the accuracy of election results and speak to the integrity of the elections process
- Done correctly, they offer a way to reassure voters that their vote was counted accurately and that the election was trustworthy.
- Post-election audits enjoy broad institutional and bipartisan support.

The challenge…

- Election officials are facing pressure to implement ill-defined “forensic” audits.
- Audit implementation is receiving a higher than usual level of scrutiny.
- Help is needed developing and defining audit procedures and communicating the value to voters and stakeholders.



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What does a future election **audit system** look like where voters, candidates, and other stakeholders **trust** that elections are as fair and legitimate in other states as in their **own** jurisdictions?

Audit research project

- Develop an audit systems map to help guide the development of standards and align around a shared vision for strategy and change.
- Conduct interviews and focus groups with election officials to understand needs and blockers for implementing change.
- Conduct research on internal compliance audits, identifying procedures that states can implement to mitigate major mistakes in upcoming election cycles.

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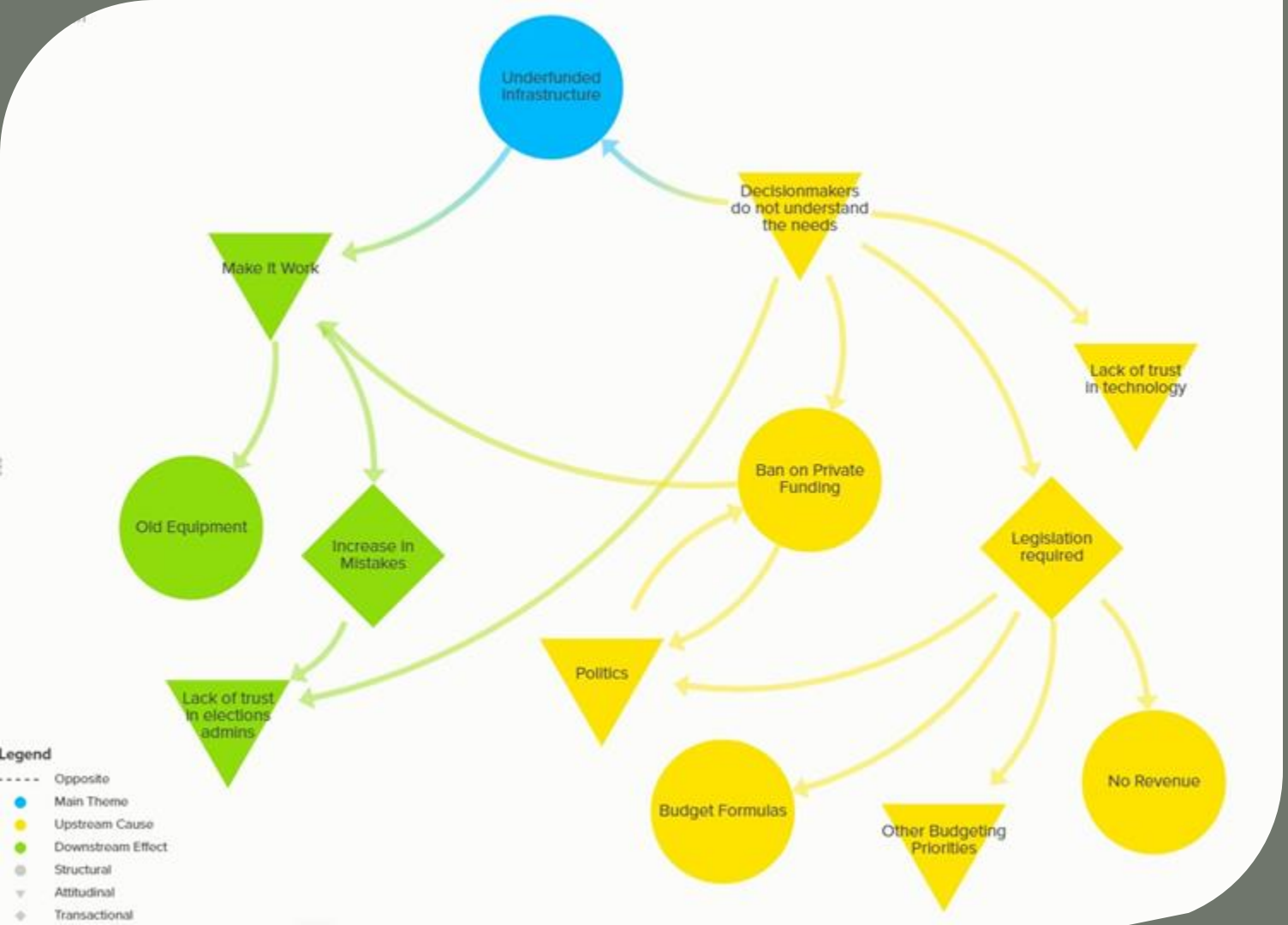
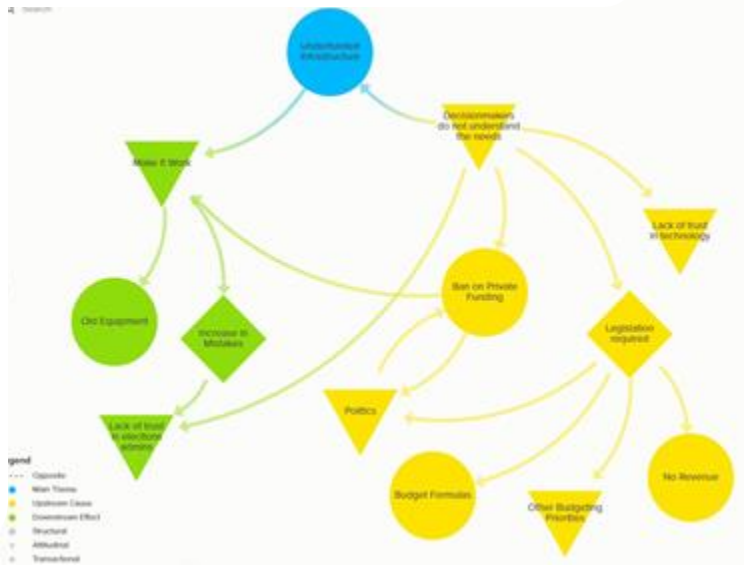


We need more…

- MONEY
- PEOPLE
- SPACE
- TIME

Election Process Mapping



TEST – Will it work?

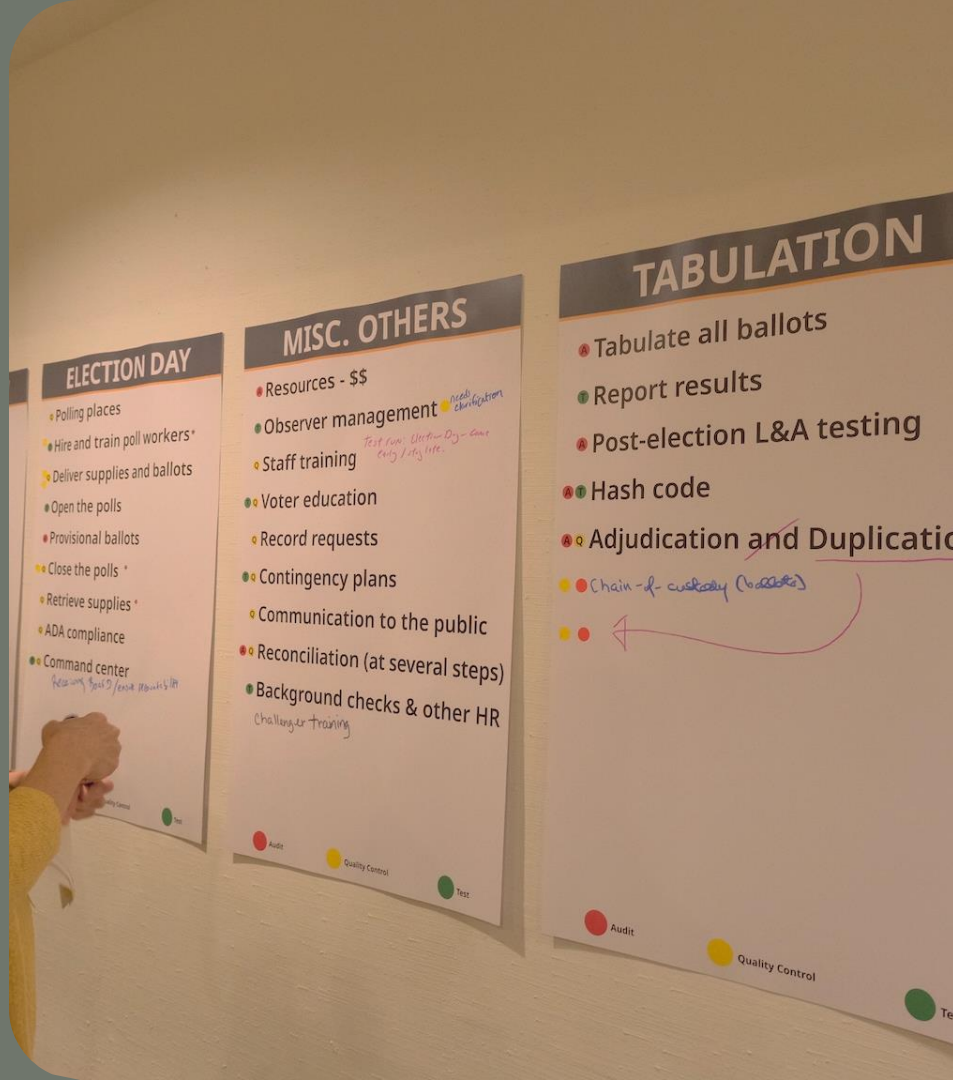
A test is an assessment tool or method used to measure knowledge, skills, abilities, or performance of an individual or a system.

QUALITY CONTROL – Is it working?

A quality control measure is a set of procedures, activities, or techniques used to monitor and verify that a process meets the desired quality standards. It is used to identify defects, errors, or non-conformities in a process before it is released or delivered to customers.

AUDIT – Did it work?

An audit is a process of reviewing and evaluating an organization, system, process, or record to ensure compliance with applicable laws, regulations, policies, and standards.



Principal 1
Ethics

Auditing is essential to government accountability to the public. The public expects those who perform audits to follow ethical principles. Integrity and objectivity are maintained when auditors perform their work and make decisions that are consistent with the broader interest of those relying on the audit report, including the public. The ethical principles that guide the work of those conducting election audits should include:

1.1 - Public interest

1.2 - Integrity

1.3 - Objectivity

1.4 - Proper use of government information, resources, and positions

1.5 - Professional behavior

Other principles include...

- Independence
- Timeframe
- Evidence
- Clearly defined scope
- Transparency and reporting
- Privacy

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How do you effectively communicate the results of your audit?

Logic and Accuracy Testing Protocols

Logo

What is Logic and Accuracy Testing?

Logic and Accuracy (L&A) Testing is a set of procedures performed to ensure there are no errors on ballots or ballot displays and that voting machines are properly programmed. These tests occur prior to every election.

How Does Testing Work?

Each type of device is tested with different protocols and for specific purposes. For each piece of equipment the steps listed below will be completed to ensure the voting system operates as expected. Certain tasks such as candidate name proofing have already been completed.

Ballot Marking Devices

Testing Process

1. Loading ballots on screen.
2. Ensuring the collection of contests and candidates are correct.
3. Making predefined selections on screen to ensure accuracy of the touchscreen hardware.
4. Reviewing the printed ballot cards to ensure they match the on screen selections.
5. Repeating the process to generate a set of predefined test ballots to be used on the scanner that will be deployed in the same precinct.

(Replace with picture of your equipment)

Precinct and Central Count Scanners

Testing Process

1. Inserting predefined test ballots into the scanner ensures:
   a. There are no paper size or stock issues.
   b. The specific ballot styles (collections of contests and candidates) available to voters in a precinct can be counted by the scanner.
   c. Error conditions, such as smudged ballots, ballots with marginal marks, ballots with over-voted contests, tears, etc., are outstacked or otherwise recorded for future adjudication or replication by staff.
2. Tabulating the results from the ballots cast on the scanner and comparing them to the expected results.

(Replace with picture of your equipment)

Note: This is why the test ballots are marked with a predefined set of choices.

The Tabulation System is tested by aggregating results from each scanner into the system. Each scanner has a removable media that loads the results into the central tabulation system to be aggregated with the other scanners. The results are combined with the results from the central count scanners, to ensure all results are added up and reported correctly.

(Replace with picture of your equipment)

The Election Night Reporting System is not part of the voting system but is what displays the results to the public on the internet. It is tested by transferring results data from the tabulation system on a secure memory device and loading it into a separate computer to ensure the public display of results reflects what is in the Tabulation System.

(Replace with picture of your system)

Where to Start?

When selecting a process for auditing, consider both

- **the impact of a potential issue** and
- **the likelihood of a system problem**

That is, what are the potential consequences of a particular system being broken (impact), as well as the probability that a problem exists (likelihood).

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4 Impactful things WE still need to consider

- Determining a relevant sample size
  - Q: What is adequate?
  - A: It depends…
- Who validates an election?
  - Who oversees the audit?
  - Who conducts the audit?
  - Reimagining the role of canvass boards
  - Reimagining the role of observers
- How better audits might impact recounts
- Certification deadlines

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5 Impactful things YOU can consider doing

- Review statutory dates
  - candidate filing
  - canvass/certification
  - recounts & challenges
- Support state audit working groups and pilot programs
- Support statewide use of GIS technology
- Enhance rules for election observers
- Join ERIC if you're not a member

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We don’t know
the ***destination***,
but we do know
the **direction**
we should go.

Jennifer Morrell

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