

# **The Election Validation Project: Increasing Trust in Elections Through Audits, Standards, and Testing**

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**2018 Election Assistance Commission Data Summit**

**July 12, 2018**

# Public Trust In Elections

“The American electorate deserves a modern, voter-centric election system that runs efficiently and inspires trust in electoral outcomes.”



Post-election data...

# Who are your voters and how do they behave?

- Demographics
- Party preference
- Turnout rates
- Date and time ballot cast
- Method of voting (mail or in-person)
- Geo-mapping

# How well did you communicate with your voters?

- Voter registration – new forms and updates
- Voter hotline logs
- Website/social media analytics
- Signature discrepancy rates
- Provisional ballots – quantity and reason
- Undelivered ballots
- Adjudication rates and reasons
- Data from ambiguous marks

# Are your processes and training effective?

- Ballot style assigned versus ballot style received
- Cost and processing times
- Poll worker surveys
- Poll worker hotline/troubleshooting logs
- Inventory of ballots and supplies
- Time for individual polling locations to close down

# How effective was your planning and resource allocation?

- Total number of voters who voted by date, time, method
- Number of voting machines and check-in stations
- Length of time to check in and vote a ballot
- Allows you to calculate average wait times and throughput
- USPS IMB data

# Were ballots handled & tabulated correctly?

- Ballot reconciliation logs
- Ballot manifest
- Cast vote record (CVR)
- Adjudication audit logs
- Chain of custody reports





- **October 17, 1846 - William Morton administers ether as a general anesthesia for surgery**
- **Within 2 months of being published it was being used in every capitol in Europe**
- **6 years later it was being used in every hospital in the country**
- **Visible and immediate affect could be recognized right away**
- **Not only good for the patient but good for the doctor, allowing surgeons to be meticulous**

**A win/win for both patient and doctor made it spread virally!**

- **October 26, 1877 – Joseph Lister performs a surgery to demonstrate “antiseptic surgery” using carbolic acid**
- **It cut infections by 85%**
- **A generation later still less than half the profession using it**
- **It was pain now for a gain later**
- **Required changing the culture of surgery by convincing people to take action on something with delayed visible benefits**

**How can we lessen the pain now and highlight the long-term benefits of post-election audits and testing?**



# Give me a playbook and I'll give you an audit...

- Plain language definitions
- Clearly outline necessary steps and deadlines
- Calculate the workload
- Checklists
- Tools and templates
- Practice, practice, practice
- Collaboration reigns supreme!

# American Institute of CPAs (AICPA)

**“One of the challenges that management and auditors face is obtaining accurate data in a usable format following a repeatable process.”**

AICPA working group developed **voluntary, uniform audit data standards** that identify key information needed for audits and provide a common framework:

- **data file definitions and technical specifications**
- **data field definitions and technical specifications**
- **supplemental questions and data validation routines to help auditors better understand the data and assess its completeness and integrity**



## **Organizing & Tracking**

- Documented plan for tracking and reconciling ballots
- Pre-determined size for each batch of ballots

## **Ballot Storage Containers**

- Pre-determined ballot/batch capacity with unique ID
- Thoughtful ballot storage/container staging essential

## **Ballot Manifest**

- Pre-formatted with scanner ID and batch numbers

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**PRE-SCANNING**

## ❑ **Ballot Scanning**

- Verify number of ballots scanned matches tracking form
- Consider printing a unique ballot ID number on each ballot
- Batch size matters!!

## ❑ **Ballot Manifest**

- Excel spreadsheet,
- Independent of the
- Formatted to show number of ballots s

### **Ballot Manifest**

**A map or legend of how individual ballots and batches of ballots are stored**

**DAILY SCANNING & RECONCILIATION**

	A	B	C	D	E
1	County	Device ID	Batch	# of Ballot	Location
2	Arapahoe	3	1	100	ICC 02-1
3	Arapahoe	3	2	100	ICC 02-1
4	Arapahoe	3	3	100	ICC 02-1
5	Arapahoe	3	4	100	ICC 02-1
6	Arapahoe	3	5	100	ICC 02-1
7	Arapahoe	3	6	100	ICC 02-1
8	Arapahoe	3	7	100	ICC 02-1
9	Arapahoe	3	8	99	ICC 02-1
10	Arapahoe	3	9	99	ICC 02-1
11	Arapahoe	3	10	100	ICC 02-1
12	Arapahoe	3	11	100	ICC 02-1
13	Arapahoe	3	12	99	ICC 02-1
14	Arapahoe	3	13	100	ICC 02-1
15	Arapahoe	3	14	99	ICC 02-1
16	Arapahoe	3	15	100	ICC 02-1
17	Arapahoe	3	16	100	ICC 02-2
18	Arapahoe	3	17	99	ICC 02-2
19	Arapahoe	3	18	100	ICC 02-2
20	Arapahoe	3	19	99	ICC 02-2
21	Arapahoe	3	20	100	ICC 02-2

# BALLOT MANIFEST

COUNTY	SCANNER	BATCH	BALLOTS	BIN
Fremont	03	01	49	17
Fremont	03	02	50	17
Fremont	03	03	52	18
Fremont	03	04	48	18

## **❑ Ballot Storage**

- **Pre-format container labels with batch number and number of ballots scanned (can be populated from ballot manifest)**
- **Affix container label and security seals**
- **Poll Workers sign and date label, record seal numbers**
- **Move to staging area**

## **❑ Reconciliation**

- **Compare daily totals from Ballot Manifest, voting system batch report (CVR), and voter database/poll book**
- **Research and resolve discrepancies**

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# **DAILY SCANNING & RECONCILIATION**



2017 Arapahoe County Coordinated Election															
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
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	City of Au	City of Aurora
3								Brian E. Ar	Dave Grut	Reid Hetti	Allison Hi	Tim Huffn	Abel Laek	Tom Tobia	Russ Wagner
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	1	0
8	44853	3	97	72	3-97-72	6273703332	44								
9	44854	3	97	73	3-97-73	6273803191	40								
10	44855	3	97	74	3-97-74	6273703239	43								
11	44856	3	97	75	3-97-75	6282602546	30	1	0	0	0	1	0	0	0
12	44857	3	97												
13	44858	3	97												
14	44859	3	97												
15	44860	3	97												
16	44861	3	97												
17	44862	3	97												
18	44863	3	97												
19	44864	3	97												
20	44865	3	97	84	3-97-84	6284003450	51	1	0	0	1	0	0	0	0
21	44866	3	97	85	3-97-85	6273703332	44								
22	44867	3	97	86	3-97-86	6263803167	38								

# CAST VOTE RECORD

## **Upload CVR and Ballot Manifest to audit tool**

- Hash utility used for security

## **Retrieving Ballots for Audit**

- Audit tool returns list of ballots randomly selected for audit
- List can be sorted by storage container number and batch number for ease in retrieving ballots

## **Ballot Card Verification**

- Audit team blind enters voter markings into audit tool for CVR comparison

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**AUDIT**

# It's a path... not an immediate destination



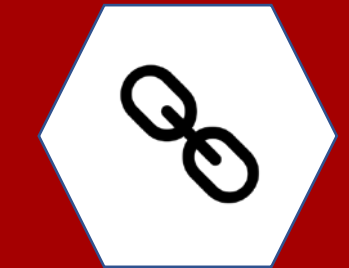
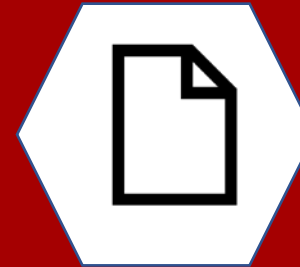
**STRONG  
COLLABORATION**

**TERMS &  
DEFINITIONS**



**VOTER INTENT  
GUIDELINES**

**BALLOT STORAGE  
& ORGANIZATION**

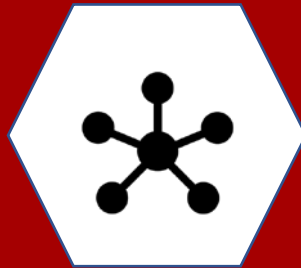


**BALLOT  
RECONCILIATION**



**PAPER BALLOTS &  
CAST VOTE  
RECORD**

**RANDOM  
SELECTION (PRNG)**



**SAMPLE SIZE  
BASED ON  
MARGIN OF VOTES**

**BALLOT MANIFEST**



**DATES &  
DEADLINES**

# How do we deal with some of the more complicated issues like ballots scanned at a precinct polling location or voter anonymity, when we struggle to communicate the core terms?

Batch-Level Comparison Audits	Ballot-Level Comparison Audits	Ballot Polling Audits
<p>Batches corresponding to individual precincts or voting machines are randomly selected. The votes in each selected batch are audited by hand, and the audit counts are compared to the original tabulation totals.</p>	<p>Individual ballots are sampled, audited, and compared to how each was interpreted in the tabulation.</p>	<p>Individual ballots are sampled and audited, and the audited vote totals are used to assess the tabulation counts and outcomes. Ballot polling does not directly identify mistabulated ballots, but in some cases is the easiest method for verifying contest outcomes.</p>

**How can we use post-election data to focus on prevention rather than intervention?**

**Why only audit/test voting equipment? Why not audit and validate other critical components of the election system?**

# Post-Election Audits – Tell Me More

- 1 state conducts a performance audit
- 2 states require process improvement based on audit outcome
- 3 states require an independent auditor or statistician
- 3 states establish the ballot sample size based on the margins of the race
- 3 states require risk-limiting audits

# Collaborative of State and Local Election Professionals and Subject Matter Experts

- Identify points in the election system for additional pre- and post-election audits
- Provide tools and guidelines for a repeatable process
- Identify key information and data for making improvements and measuring success
- Assistance for implementation

# **We need to become audit experts!**

- **Confidently explain our needs and our process to policy makers, voters, vendors, and staff**
- **Nomenclature and definitions matter**
- **Logistics and process matter**
- **One size does not fit all**
- **We need a central repository of guidelines and information vetted by election officials**



**State and local election offices now employ a number of experts...**

- **Legal**
- **Communication/Social Media**
- **Data Analyst**
- **Information Technology**

**Why not experts in auditing and quality control?**



**We need to be pit crews...not cowboys**

**Feasibility of shared,  
customizable, risk-limiting  
audit tool**

**“Americans can and should expect their electoral system to be a source of national pride and a model to all the world”**

**– NATIONAL COMMISSION ON FEDERAL ELECTION REFORM, 2001**

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