

# **Risk-Limiting Audit Participation Group**

**Kickoff Conference  
Colorado Secretary of State  
February 3, 2017**



# Agenda

- Introduction
- Purpose of the RLA Participant Group
- RLA Participant Group Members
- Conference protocols and guidelines
- Schedule of conferences
- Overview – Colorado legal requirements
- Overview – Risk-limiting audits
- Next meeting



# Introduction

- Welcome to the kickoff conference of the Risk-limiting Audit Participant Group
- Housekeeping items
  - Audio broadcast
  - Note date and time
  - Use microphones to speak



# Purpose of the RLA Participant Group

- Section 1-7-515, C.R.S., requires Colorado's clerks and recorders to implement risk-limiting post-election audits commencing in 2017, in accordance with rules adopted by the Secretary of State
- Secretary of State contemplates adopting RLA rules later this year
- The purpose of this group is to exchange views and participate in the development of a set of principles to inform the structure and content of the contemplated RLA rules

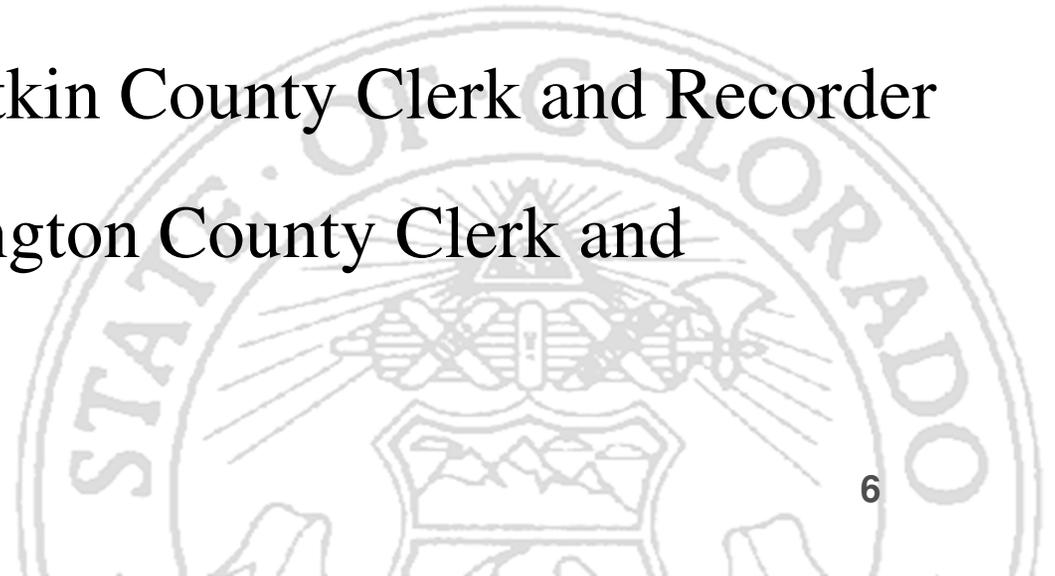


# Purpose of the RLA Participant Group (continued)

- These conferences are not rulemaking hearings. Rather, they represent a forum for various stakeholders to exchange ideas about RLA procedures and best practices
- Formal rulemaking will begin after the 2017 legislative session adjourns on May 7<sup>th</sup>
- All members of public – including RLA Participant Group members – will have an opportunity to submit written comments regarding the proposed RLA rules, during pre-notice and public comment phases

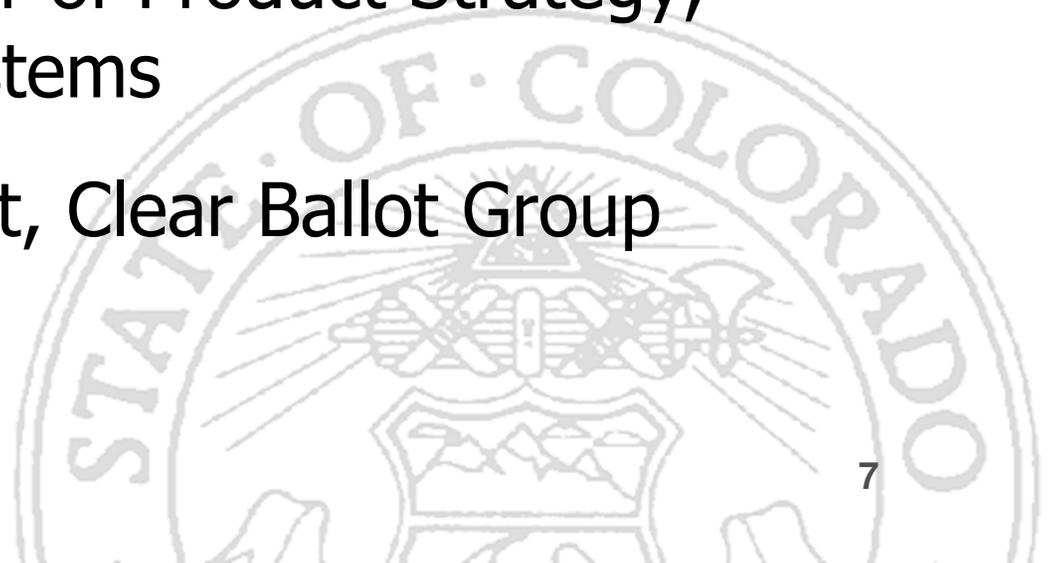
# RLA Participant Group Members

- Pam Bacon, CCCA President and Logan County Clerk and Recorder
- Matt Crane, Arapahoe County Clerk and Recorder
- Hillary Hall, Boulder County Clerk and Recorder
- Janice Vos Caudill, Pitkin County Clerk and Recorder
- Garland Wahl, Washington County Clerk and Recorder



# RLA Participant Group Members (continued)

- Philip Stark, Ph.D., Associate Dean of Mathematical and Physical Sciences, and Professor, Department of Statistics, University of California, Berkeley
- Eric Coomer, Director of Product Strategy, Dominion Voting Systems
- Ed Smith, VP Product, Clear Ballot Group



# RLA Participant Group Members (continued)

- Harvie Branscomb, computer scientist and election integrity proponent
- Neal McBurnett, computer scientist and election integrity proponent
- Mark Lindeman, political scientist and liaison for ad hoc group of election integrity and risk-limiting audit proponents



# RLA Participant Group Members (continued)

- **Representatives of Secretary of State**

- Dwight Shellman – County Support Manager
- Jessi Romero – Voting Systems Manager
- Danny Casias – Voting Systems Specialist
- Jerome Lovato – Voting Systems Specialist
- Trevor Timmons – Chief Information Officer
- Ben Rector – JAVA Development Manager
- Steven Ward – Administrative support



# Conference protocols and guidelines

- Jerome Lovato is the main point of contact for the working group ([jerome.lovato@sos.state.co.us](mailto:jerome.lovato@sos.state.co.us) or 303-894-2200 ext. 6355)
- Submit all comments to Jerome by 5:00 PM on the Friday before the next meeting (Please do not reply-to-all when submitting comments or questions)
- The scope of the meetings will be limited to the agenda that will be sent to the group prior to each meeting
- All comments and audio of meetings will be posted on <https://www.sos.state.co.us/pubs/elections/VotingSystems/riskAuditGroup.html>

# Schedule of conferences

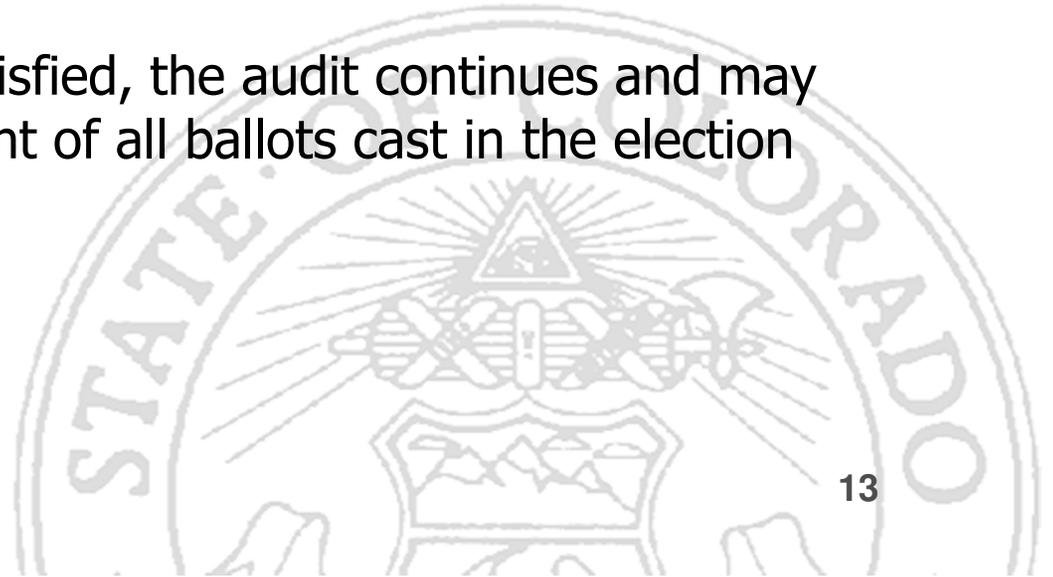
- Conferences will be held every other Friday from 1:30 – 3:30 PM at the Secretary of State's offices, located at 1700 Broadway, Denver, CO 80290
- Dates of future conferences: 2/17, 3/3, 3/17, 3/31, 4/14, 4/28
- Today's conference is being held in the Blue Spruce conference room on the second floor
- Future conferences probably will be held in the Aspen conference room on the third floor
- The exact location of future conferences will be specified in the notice of conference, issued in advance

# Overview – Colorado legal requirements

- Colorado law requires three voting system tests for each election
  - Hardware diagnostic test (Election Rule 11.3.1)
  - Logic and accuracy test (Election Rule 11.3.2)
  - Post-election audit (Election Rule 11.3.3)
- Historically, county clerks have conducted *random* post-election audits after each election
  - Provides some assurance that randomly selected tabulation equipment operated accurately
  - But does not yield a statistically meaningful level of confidence that the audit revealed an incorrect outcome, if any

# Overview – Risk-limiting audits

- As noted, section 1-7-515, C.R.S., requires Colorado to implement risk-limiting audits in 2017
- Risk-limiting audits utilize a methodology that yields a statistical level of confidence (the risk limit) that the audit will reveal an incorrect outcome.
  - If the risk limit is satisfied, the audit is successful and stops
  - If the risk limit is not satisfied, the audit continues and may result in a manual recount of all ballots cast in the election



# Overview – Risk-limiting audits (continued)

- The number of ballots that need to be examined in a risk-limiting audit is a function of the margin of victory in audited contests
  - Relatively fewer ballots are audited in contests with wide margins
  - Relatively more ballots are audited in contests with narrow margins



# Overview – Risk-limiting audits (continued)

- Must be vendor agnostic
- Must be transparent yet protect voter anonymity
- Uniform risk limit throughout the state
- SOS will develop RLA tool for counties to use in randomly selecting ballot to audit, based on Philip Stark's online prototype
- Exact methodology depends on county's voting system:
  - Comparison audit for counties with voting systems that generate ballot-level cast vote record (See Election Rule 21.4.14)
  - Parallel scanning or ballot polling audit for counties with voting systems that cannot generate ballot-level cast vote record

# Overview – Risk-limiting audits (continued)

- Pre-Election
  - Appoint an audit board
  - Create a ballot manifest for use during ballot scanning, describing how scanned ballots are organized and stored
  - Define ballot batch size
  - Maintain ballot chain-of-custody
- Ballot scanning
  - Maintain ballot order (Bates stamping/imprinting?)
  - Secure and store ballots in accordance with ballot manifest

# Overview – Risk-limiting audits (continued)

- Post-Election: Conducting the audit
  - Timing of audit: after tabulation and before canvass
  - Select contests to audit
  - Randomly select ballots to audit
  - Retrieve randomly selected ballot from storage location
  - Compare selected ballot to CVR and ballot image
  - If tabulated ballot has been duplicated, compare tabulated ballot to original ballot
  - Continue reviewing randomly selected ballots until risk limit is met or full recount
  - Submit RLA report to SOS

# Next meeting

- In outline form:
  - List all general principles and concepts that should apply to risk-limiting audits
  - List in order all steps in the conduct of comparison and ballot polling audits
- We will review all submissions next meeting, then dive into detail of individual steps at subsequent meetings

