

Jerome Lovato

From: harvie@electionquality.com
Sent: Monday, April 10, 2017 8:34 AM
To: Jerome Lovato
Cc: Harvie Branscomb
Subject: Fwd: Update for RLVTA web

Categories: CORLA

-----Original Message-----

From: Harvie Branscomb <harvie@electionquality.com>
To: Harvie Branscomb <harvie@electionquality.com>
Sent: Sun, 09 Apr 2017 6:29 PM
Subject: Update for RLVTA web

To Jerome and the Colorado Risk Limiting Vote Tabulation Audit project

I suggest we be carefull about using "audit" as a verb and become more specific in our texts for example:

- **achieve, or satisfy risk limit-**
- **run PRNG** - select sequence of ballot manifest entries to sample
- **sample-** select by algorithm the ballot(s) for capture
- **capture-** access paper ballot and report voter intent
- **measure risk-** calculate risk for comparison to risk limit

each of those could be replaced by "audit" at the expense of clarity. Best if we try to be more specific.

Here is a set of questions that I think deserve to be answered. I have provided my proposed answer to each.

1) Do we establish a default risk limit when ever "risk limit" is to be used? (yes - 5%)

- is risk limit to be adjusted to account for the scale of the contest? (not at present until #2 scope of contests to be sampled is resolved)
 - 1% for all statewide? (no)
 - 1% risk limit only for top of ticket statewide contest? (yes)
- should the risk limit be based on limited workload? (no)
- is there an algorithm for meeting mixed-system risk limit statewide - both CVR and non-CVR? (yes- it should be available soon)

2) Should we have a goal to achieve risk limits for all contests? (yes)

- in 2018 and beyond (yes- with effective risk limits)
- in 2017 (no, we will measure risk in contests in instances we have math to do so)
- if not all, which in 2017? (statewide plus countywide or if none, largest non-countywide contest)

3) Do we have workload caps? (only for 2017)

- 2017 workload caps for non CVR counties? (yes, limit to CVR-based sample size calculation at discretion of county)
- 2018 workload caps for non CVR counties? (no- try to get a CVR solution from existing vendor)
- after 2017 workload cap to transition to manual recount? (decision of when to switch to manual recount at discretion of county)

4) Do we calculate sample size to the largest sample among minimum margin statewide or minimum margin countywide or if none, margin of largest in county? (yes, whichever produces the largest sample)

- instead of "if none, margin in largest in county", another more contested contest? (if the choice samples more ballots, but at discretion of county)
- also sample a minimum 16? (yes)
- Audit Center creates and publishes list of ordered random numbers sufficient for all statewide ballots? (yes)
- Audit Center publishes a list of ballot manifest entries as previously assigned to above random numbers? (yes)

5) Do we capture all uncontested contests on all sampled ballots? (yes, with local discretion to stop capturing for satisfied, mandatory contests)

- stop capturing (statewide, countywide, largest in county) as each contest is satisfied, settled ? (at local discretion, otherwise continue to capture)
- keep capturing multi-county contests until all sampling stops? (yes, there is no in-process attempt to risk measure the multi-county except statewide)

6) Do we calculate risk measurements for all contests possible to calculate? (yes)

- publish risk measurements of non mandatory contests? (yes with explanation of the meaning of risk limit)
- publish remaining number of ballots likely needed to achieve risk limit? (yes if possible)

7) Do we ask county to upload photo of each sampled ballot and original if duplicated? (yes)

8) Do we ask county to capture voter intent blind - without prior knowledge of machine CVR? (yes)

9) Do we continue to create a public record of interaction between stakeholders (advocates, counties) after rulemaking begins? (preferably)

10) Do we restart the rulemaking discussion (and legislative advisory) process for 2018 as early as possible? (yes)

Harvie Branscomb