

## Comments on Dominion CVR format and audit workflow

Mark Lindeman and RLA advocates, 3/27/2017

### Dominion CVR format

We have looked at a sample of a CVR .csv format from Dominion 5.2.

This format requires more special handling than is customary or, in our view, appropriate in a .csv file. It contains multiple header rows that aren't directly readable by standard CSV import functions (a separate version number row plus three rows of header information). Many values are needlessly preceded by = signs – which, again, would defeat many standard CSV import functions – and about half the file consists of 'quoted' empty fields: "", "", "", and so on:

```
= "1", = "3", = "800", = "1", = "3-800-1", = "Mail", = "1260303104-51 (104-  
51)", = "51", "0", "0", "0", "0", "0", "0", "0", "1", "0", "0", "0", "0", "0", "0", "0", "0", "0", "0", "0", "0", "0", "0", "1", "0"  
, "0", "0", "0", "1", "0", "", "", "", "", "", "", "", "", "", "", "", "1", "0", "1", "0", "0", "",  
, "", "0", "1", "", "", "", "", "", "", "", "", "", "", "", "0", "1", "", "", "", "", "", "", "", "", "", "",  
, "", "", "", "", "", "", "1", "", "", "", "", "1", "", "", "", "", "1", "", "", "", "", "", "",  
, "", "", "", "0", "1", "1", "0", "0", "1", "1", "0", "0", "1", "1", "0", "0", "1", "1", "0", "0",  
"1", "1", "0", "0", "1", "1", "0", "0", "1", "1", "0", "0", "1", "1", "0", "0", "1", "1", "0", "  
1", "0", "1", "0", "0", "1", "0", "1", "1", "0", "", "", "", "", "", "", "", "", "", "", "", "",  
, "", "", "", "", "", "", "", "", "", "", "", "", "", "", "", "", "", "", "", "",  
, "", "", "", "", "", "", "", "", "", "", "", "", "", "", "", "", "", "", "", "",
```

We strongly urge that more efficient standard representations with standard headers be adopted. In particular, prepending a version number does not satisfy any version control requirement, and does make the file far harder to use.

### Comparison Risk-Limiting Audit: Step by Step

The SoS draft “step by step” document states that the audit board “retrieves the selected ballots and compares them to the CVR.” We strongly recommend against having the audit board itself do this comparison, as that process tends to raise concerns about whether the ballots are being interpreted so as to match the CVRs rather than based strictly on the ballot markings themselves. Instead, we recommend that audit boards record their interpretations of the votes on each ballot selected for audit and submit those interpretations to the audit center, which then reports back any discrepancies found. (The submission of ballot interpretations can be done ballot-by-ballot or for sets of ballots.)