

- 1. Change Log Update: I've spent some time going through the data to get a better understanding of the relationships between the rows, and how to identify batches of votes that were loaded into the system. I focused on the largest batches in CD-1, CD-10, and CD-11.
- 2. I was particularly focused on batches that had both Dem and Rep candidates for Prez, Senate, and House. The purpose was to compare the votes across the ballots. Expecting to see Prez with the largest numbers, and the Senate / House being lower numbers.
- 3. Well, this is true for the Dem candidates, but not for Rep candidates. I haven't manually checked all the batches, but this tends to hold true for smaller batches (less than 50K). Here is an example of what I mean for this unusual trend in the votes of these batches.
- 4. This example is a batch of votes that was loaded on 11/3 @ 9:44PM. This batch is restated / updated on 11/6 @ 4:31PM. The bold outlines represent the batch. You can see how Dems go from largest number to smallest as you go down ballot. However, for Reps it's reversed. Odd.

Election Re	sults - Results - Loc	ality - LocalityName	T CAPNa Co	ongre - OfficeName	BallotName	→ TotalVc →	EffectiveDate	ExpirationDate	▼ ChangeReason	▼ Change
2020 Nov€	10 Certified \	107 LOUDOUN COUNTY		10 President and Vice President	Joseph R. Biden	246	10/30/2020 4:43 PM	/ 11/5/2020 11:17 A	M	
2020 Nov€	10 Certified \	107 LOUDOUN COUNTY	AB - Centr	10 President and Vice President	Joseph R. Biden	107311	11/3/2020 9:44 PM	11/6/2020 4:31 P	M	
2020 Nov€	10 Certified	107 LOUDOUN COUNTY	AB - Centr	10 President and Vice President	Donald J. Trump	43562	11/3/2020 9:44 PM	A 11/6/2020 4:31 P	M	
2020 Nov€	10 Certified \	107 LOUDOUN COUNTY	AB - Centr	10 Member United States Senate	Mark R. Warner	105885	11/3/2020 9:44 PM	A 11/6/2020 4:31 P	M	
2020 Nov€	10 Certified \	107 LOUDOUN COUNTY	AB - Centr	10 Member United States Senate	Daniel M. Gade	46099	11/3/2020 9:44 PM	A 11/6/2020 4:31 P	M	
2020 Nov€	10 Certified \	107 LOUDOUN COUNTY	AB - Centr	10 Member House of Representatives	Aliscia N. Andrew	s 48181	11/3/2020 9:44 PM	A 11/6/2020 4:31 P	M	
2020 Nov€	10 Certified \	107 LOUDOUN COUNTY	AB - Centr	10 Member House of Representatives	Jennifer T. Wexto	n 103446	11/3/2020 9:44 PM	A 11/6/2020 4:31 P	M	
2020 Nov€	10 Certified \	107 LOUDOUN COUNTY		10 President and Vice President	Joseph R. Biden	243	11/5/2020 11:17 AM	И	Reported wrong from precinct	
2020 Nov€	10 Certified \	107 LOUDOUN COUNTY	AB - Centr	10 President and Vice President	Joseph R. Biden	109335	11/6/2020 4:31 PM	И	Incomplete results reported from p	precinct
2020 Nov€	10 Certified \	107 LOUDOUN COUNTY	AB - Centr	10 President and Vice President	Donald J. Trump	44292	11/6/2020 4:31 PM	И	Incomplete results reported from p	precinct
2020 Nov€	10 Certified \	107 LOUDOUN COUNTY	AB - Centr	10 Member United States Senate	Mark R. Warner	107800	11/6/2020 4:31 PM	И	Incomplete results reported from p	precinct
2020 Nov€	10 Certified \	107 LOUDOUN COUNTY	AB - Centr	10 Member United States Senate	Daniel M. Gade	46907	11/6/2020 4:31 PM	Л	Incomplete results reported from p	precinct
2020 Nov€	10 Certified	107 LOUDOUN COUNTY	AB - Centr	10 Member House of Representatives	Jennifer T. Wexto	n 105228	11/6/2020 4:31 PM	И	Incomplete results reported from p	precinct
2020 Nov€	10 Certified	107 LOUDOUN COUNTY	AB - Centr	10 Member House of Representatives	Aliscia N. Andrew	s 48982	11/6/2020 4:31 PM	И	Incomplete results reported from p	precinct

5. I don't have an explanation for this, but, in a presentation by Dr. Shiva, he explains how election software can improperly count ballots votes. Since this data shows us the voting results of specific batches of ballots, this dataset might be useful in analyze these patters

- 6. The presentation was at the precinct level, but I think batch specific results would be helpful in determining that. Since we have these batches at the county / district level (these are absentee ballots), it could help hone in on areas where such calculation issues come from.
- 7. In the example I showed, the batch was in Loudoun County / 10 district. From the smaller batches I've checked from other counties / districts, this skewing doesn't seem to happen. Suggests this wasn't present in all places. Here's one more example.
- 8. This is a small batch example. Caroline County / District 1. Batch was loaded on 11/3 @ 8:35PM. Same batch was updated on 11/6 @ 4:03PM. Same trend as the large batch example. Dem goes large to small going down ballot. Rep small to large. Why?

Election Res	sults * Results * Loc	ality - LocalityName	▼ Congre ▼ OfficeN ▼ BallotName	▼ TotalVot ▼	EffectiveDate *	ExpirationDate	ChangeReason	▼ ChangeComments	
2020 Nov€	10 Certified \	33 CAROLINE COUNTY	1 President Joseph R. Biden	269	11/3/2020 8:27 PM	11/6/2020 11:21 AN	1		
2020 Nov€	10 Certified \	33 CAROLINE COUNTY	1 President Donald J. Trump	125	11/3/2020 8:27 PM	11/6/2020 11:21 AM	1		
2020 Nov€	10 Certified \	33 CAROLINE COUNTY	1 President Joseph R. Biden	4941	11/3/2020 8:35 PM	11/6/2020 4:03 PM	1		
2020 Nov€	10 Certified \	33 CAROLINE COUNTY	1 President Donald J. Trump	2815	11/3/2020 8:35 PM	11/6/2020 4:03 PM	1		
2020 Nov∈	10 Certified \	33 CAROLINE COUNTY	1 Member Mark R. Warner	5050	11/3/2020 8:35 PM	11/6/2020 4:03 PM	1		
2020 Nov€	10 Certified \	33 CAROLINE COUNTY	1 Member Daniel M. Gade	2740	11/3/2020 8:35 PM	11/6/2020 4:03 PM	1		
2020 Nove	10 Certified 1	33 CAROLINE COUNTY	1 Member F Qasim Rashid	4463	11/3/2020 8:35 PM	11/6/2020 4:03 PM	1		
2020 Nov€	10 Certified \	33 CAROLINE COUNTY	1 Member Robert J. Wittma	n 3192	11/3/2020 8:35 PM	11/6/2020 4:03 PM	1		
2020 Nov€	10 Certified \	33 CAROLINE COUNTY	1 President Joseph R. Biden	529	11/3/2020 8:45 PM	11/5/2020 7:23 AN	1		
2020 Nov€	10 Certified \	33 CAROLINE COUNTY	1 President Donald J. Trump	181	11/3/2020 8:45 PM	11/5/2020 7:23 AN	1		
2020 Nov∈	10 Certified \	33 CAROLINE COUNTY	1 Member L Mark R. Warner	498	11/3/2020 8:54 PM	11/6/2020 11:17 AN	1		
2020 Nov€	10 Certified \	33 CAROLINE COUNTY	1 Member L Daniel M. Gade	438	11/3/2020 8:54 PM	11/6/2020 11:17 AN	1		
2020 Nov€	10 Certified \	33 CAROLINE COUNTY	1 President Joseph R. Biden	181	11/5/2020 7:23 AM		Data entry error in central office		
2020 Nov∈	10 Certified \	33 CAROLINE COUNTY	1 President Donald J. Trump	529	11/5/2020 7:23 AM		Data entry error in central office		
2020 Nov€	10 Certified \	33 CAROLINE COUNTY	1 Member (Mark R. Warner	439	11/6/2020 11:17 AM		Reported wrong from precinct	Senate Warner number reported incorrectly	
2020 Nov€	10 Certified \	33 CAROLINE COUNTY	1 Member L Daniel M. Gade	498	11/6/2020 11:17 AM		Reported wrong from precinct	Senate Warner number reported incorrectly	
2020 Nov€	10 Certified \	33 CAROLINE COUNTY	1 President Joseph R. Biden	125	11/6/2020 11:21 AM		Reported wrong from precinct	Senate Warner number reported incorrectly	
2020 Nov€	10 Certified \	33 CAROLINE COUNTY	1 President Donald J. Trump	269	11/6/2020 11:21 AM		Reported wrong from precinct	Senate Warner number reported incorrectly	
2020 Nov€	10 Certified	33 CAROLINE COUNTY	1 President Joseph R. Biden	4957	11/6/2020 4:03 PM		Other	ballots received by noon 11/6/20	
2020 Nov∈	10 Certified \	33 CAROLINE COUNTY	1 President Donald J. Trump	2839	11/6/2020 4:03 PM		Other	ballots received by noon 11/6/20	
2020 Nov€	10 Certified \	33 CAROLINE COUNTY	1 Member Mark R. Warner	5078	11/6/2020 4:03 PM		Other	ballots received by noon 11/6/20	
2020 Nov∈	10 Certified \	33 CAROLINE COUNTY	1 Member (Daniel M. Gade	2756	11/6/2020 4:03 PM		Other	ballots received by noon 11/6/20	
2020 Nov€	10 Certified	33 CAROLINE COUNTY	1 Member P Qasim Rashid	4484	11/6/2020 4:03 PM		Other	ballots received by noon 11/6/20	
2020 Nov€	10 Certified \	33 CAROLINE COUNTY	1 Member i Robert J. Wittma	n 3214	11/6/2020 4:03 PM		Other	ballots received by noon 11/6/20	

- 9. While these examples relate to odd patterns in the batches, I've also spent some time looking in other areas. One is "tabulation errors" to see if there is anything unusual. I tweeted earlier about VA-7 Spanberger, and looked at the batches for this race closer.
- 10. In this example, we follow two updates. The first has no votes because this appears to be a preloaded entry in preparation for the election. First update: 11/4 @ 1:45AM. Second update: 11/4 @ 4:20PM. Both candidates show increases, but Spanberger +9000. More on that next

ResultsTy LocalityCc LocalityName		Congressi OfficeNar BallotName	TotalVote	EffectiveDate	ExpirationDate	ChangeReason	ChangeComments	
Certified \	47 CULPEPER COUNTY	7 Member F Nick J. Freitas	6862	11/6/2020 17:22		Tabulation error in the precinct	Correction to hand-counted numbers.	
Certified	87 HENRICO COUNTY	7 Member HAbigail A. Spanberge	r	10/30/2020 16:43	11/4/2020 1:45			
Certified \	87 HENRICO COUNTY	7 Member HNick J. Freitas		10/30/2020 16:43	11/4/2020 1:45			
Certified \	87 HENRICO COUNTY	7 Member HAbigail A. Spanberge	r 42198	11/4/2020 1:45	11/4/2020 16:20	No data entered on election night		
Certified	87 HENRICO COUNTY	7 Member HNick J. Freitas	16015	11/4/2020 1:45	11/4/2020 16:20	No data entered on election night		
Certified	87 HENRICO COUNTY	7 Member HAbigail A. Spanberge	r 51557	11/4/2020 16:20		Tabulation error in the precinct		
Certified	87 HENRICO COUNTY	7 Member HNick J. Freitas	21252	11/4/2020 16:20		Tabulation error in the precinct		
Certified	109 LOUISA COUNTY	7 Member Abigail A. Spanberge	r 6168	11/3/2020 20:12	11/6/2020 17:15			
Certified	109 LOUISA COUNTY	7 Member H Nick J. Freitas	5184	11/3/2020 20:12	11/6/2020 17:15			
Certified	109 LOUISA COUNTY	7 Member I Abigail A. Spanberge	r 6195	11/6/2020 17:15		Other	late arriving ballots added	
Certified	109 LOUISA COUNTY	7 Member F Nick J. Freitas	5200	11/6/2020 17:15		Other	late arriving ballots added	

- 11. When I look at other "tabulation errors", the adjustments are normally very small as a percentage of the votes. This could be because not all ballots were run through, but it's not clear why this tabulation was so much larger than others in the dataset.
- 12. One note on the "ChangeReason" field, this appears to be a drop down that users select. "Change Comments" are free text fields that are optional. As you can see in the example, the bottom two rows has the user note "late arriving ballots added". Some users add longer notes
- 13. such as "post marked 11/3/2020 or before". I've not spent much time looking through these. But it is interesting to see some explanation related to the changes. I'll keep going through this, but now that's what I have to share.