

MO VEST 2018

State: Missouri

Organization: VEST

Date Updated: Report: 03/17/21 File: 02/03/21

1. Is all raw data available?

No

- Accessible files:
 - File: VEST MO 18 data file
 - Online: [Harvard Dataverse Link](https://dataverse.harvard.edu/file.xhtml?fileId=4366212&version=33.0) - <https://dataverse.harvard.edu/file.xhtml?fileId=4366212&version=33.0>
 - Accessed: 03/02/21
 - File: VEST MO 18 documentation file
 - Online: [Harvard Dataverse Link](https://dataverse.harvard.edu/file.xhtml?fileId=4366213&version=32.0) - <https://dataverse.harvard.edu/file.xhtml?fileId=4366213&version=32.0>
 - Accessed: 03/02/21
 - File: MO Precinct-Level Election Results
 - Online: [Open Elections Github Link](https://github.com/openelections/openelections-data-mo/tree/master/2018) - <https://github.com/openelections/openelections-data-mo/tree/master/2018>
 - Accessed: 03/03/21
 - File: U.S. Census Bureau's 2020 Redistricting Data Program Phase 2 release
 - Online: [Missouri Page](https://www.census.gov/geo/partnerships/pvs/partnership19v2/st29_mo.html) - https://www.census.gov/geo/partnerships/pvs/partnership19v2/st29_mo.html
 - Accessed: 03/03/21
 - Note: These can only be downloaded 5 at a time, I downloaded the data for all counties and then filtered down to the needed ones.
 - File: 2010 Census VTD release
 - Online: [Census Link](https://www.census.gov/cgi-bin/geo/shapefiles/index.php?year=2010&layergroup=Voting+Districts) - <https://www.census.gov/cgi-bin/geo/shapefiles/index.php?year=2010&layergroup=Voting+Districts>

- Accessed: 03/03/21
 - Note: Monroe County is the only county from this source.
- File: 2020 Census VTD release
 - Online: [Census Link](#) - <https://www.census.gov/cgi-bin/geo/shapefiles/index.php?year=2010&layergroup=Voting+Districts>
 - Accessed: 03/03/21
 - Note: Platte County is the only county from this source.
- File: Camden County Precincts (tif)
 - Online: [Link](#) - <https://camdengis.integritygis.com/H5/Index.html?viewer=camden>
 - Accessed: 03/09/21
 - Note: Unable to load this file in a reasonable amount of time due to the format
- File: Cooper County Precincts (tif)
 - Online: [Link](#) - <https://coopergis.integritygis.com/H5/Index.html?viewer=cooper>
 - Accessed: 03/09/21
 - Note: Unable to load this file in a reasonable amount of time due to the format
- File: Marion County Precincts (tif)
 - Online: [Link](#) - https://mariongis.integritygis.com/H5/Index.html?viewer=marion_public
 - Accessed: 03/09/21
 - Note: Unable to load this file in a reasonable amount of time due to the format
- File: Lafayette County Precincts (tif)
 - Online: [Link](#) - <https://lafayettegis.integritygis.com/H5/Index.html?viewer=lafayette>
 - Accessed: 03/09/21
 - Note: Unable to load this file in a reasonable amount of time due to the format
- File: Laclede County Precincts (tif)
 - Online: [Link](#) - <https://lacledegis.integritygis.com/H5/Index.html?viewer=laclede>
 - Accessed: 03/09/21
 - Note: Unable to load this file in a reasonable amount of time due to the format
- File: Bates County Precincts (tif)
 - Online: [Link](#) - <https://batesgis.integritygis.com/H5/Index.html?viewer=bates>
 - Accessed: 03/09/21
 - Note: Unable to load this file in a reasonable amount of time due to the format
- File: Audrain County Precincts (tif)
 - Online: [Link](#) - <https://audraingis.integritygis.com/H5/Index.html?viewer=audrain>
 - Accessed: 03/03/21
 - Note: Unable to load this file in a reasonable amount of time due to the format
- File: Jasper County Precincts (shapefile)
 - Online: [Link](#) - <https://jaspercountymogisinitiatives-jcmo.hub.arcgis.com/datasets/voting-precincts-2020>

- Accessed: 03/09/21
 - Note: Able to load this file
- Inaccessible files:
 - Precinct shapefiles for Caldwell, Callaway, Cape Girardeau, Cedar, Franklin, Greene, Jackson, Jefferson, Lawrence, McDonald, Miller, Nodaway, Osage, Ozark, Pemiscot, Pike, Randolph, Scott, Ste. Genevieve, Texas, Warren, Washington, Worth, and Wright counties were not available in a downloadable or non-PDF format. In cases where I was able to find a non-downloadable file or PDF map, I added the link in the notebook.
 - VEST's documentation included many precinct modifications that required local files like municipal boundaries, corporate boundaries, school districts, voter file assignments, city maps. We did not attempt to locate all of these files.

2. Processing steps available?

Yes

- Description of processing steps:
 - Processing steps were accessed from VEST's 2018 documentation on 03/02/21.
 - In terms of sources for files, the documentation lists the one source for election results and the four different sources for county precinct shapefiles.
 - In terms of processing election results, the documentation explains that
 - "Absentee, provisional, and mail ballots were reported countywide in nearly every county; these were distributed by candidate to precincts based on their share of the precinct-level reported vote."
 - In terms of processing precinct shapefiles, the documentation lists the counties where precinct mergers were made to match county reporting units. The documentation also contains a list of additional modifications, most, but not all of these additional modifications are precinct boundary modifications that do not affect the total count of precincts. As we were not able to locate precinct source files for all MO counties and many of these modifications required county-specific files, we did not attempt to recreate these modifications.
- Information not in their processing steps:
 - In assigning the countywide absentee, provisional and mail ballot votes, VEST's documentation does not make it explicitly clear that they did not include Kansas City precincts in these calculations (i.e Kansas City precinct vote totals before countywide vote assignment match VEST's final total after assignment).
 - For the countywide votes assignment, how they rounded results to maintain county totals.
 - Explicit details about name changes used to match election results to precincts (although these could be deduced by looking at their final file).
 - Explicit details about which precincts were merged (although these could be deduced by looking at their final file).

3. Able to replicate joining election data and shapefiles?

No

- VEST's final file contains 3,242 precincts. We were able to join election data to precinct shapefiles for 2,169 precincts.
- This number was lower for two reasons:
 - We were not able to locate the precinct shapefiles for 24 counties.
 - For the counties with precinct shapefile, we did not make every single name change or precinct merger needed to match election data and precinct shapefiles exhaustively.
- Precinct name changes and mergers carried out to match these 2,169 precincts are included in the Python notebook.

4. Able to replicate joining demographic data to block-level shapefiles?

N/A

5. Able to replicate joining boundary data?

N/A

6. Successfully validated election results?

Yes

- We were able to replicate VEST's election results but not their precinct shapefiles.
- Because we were unable to find precinct shapefiles for every county, we completed two different checks. The first check involved making sure that the source file election results matched VEST's election results. After deducing various precinct name changes from VEST's final file, we were able to confirm their results. Of VEST's 3242 precincts we were able to exactly match 2175 of these precincts, while the remaining 1067 precincts differed at most by 2 votes, due to rounding differences from assigning the countywide votes (we used a standard rounding system, while it seems like VEST rounded in such a way to maintain county totals). We also performed a check before assigning the countywide totals, to try to minimize the effect of rounding and the largest difference in one column was 15 votes, which was itself likely due to how VEST rounded results in its final file.
- The second check involved checking the precincts where we matched elections results to precinct shapefiles against VEST's final file. As mentioned above, we were able to match election results to shapefiles for 2,169 precincts. For these 2,169 precincts, the election results matched beyond rounding differences (see above) and the precincts matched to 0 decimals for 1192 of them. This means that 977 of the precinct shapefiles had some difference. Some of these differences were attributable to precinct modifications that we did not attempt to make, while others seem to be

very minor, and almost imperceptible differences, due to the specificity of the “geom_almost_equals” function. See below for screenshots of two such precincts.

