

## VEST MT 2016

**State:** Montana

**Organization:** Voting and Election Science Team (VEST)

**Summary of Races included:** Presidential, U.S. House, Governor and Lt. Governor, Attorney General, Secretary of State, State Auditor, State Superintendent of Public Instruction [General]

**Date File Updated:** 06/02/2021

**Date Report Updated:** 06/24/2021

**RDH Validation Code (Github):** <https://github.com/nonpartisan-redistricting-datahub/pdv-mt>

RDH Criteria	Explanation
<p>Is all raw data available?</p> <p><b>No</b></p>	<p><b><u>Accessible files:</u></b></p> <ul style="list-style-type: none"> <li>● VEST MT 16 data file <ul style="list-style-type: none"> <li>○ Accessed 06/15/21, Source: VEST</li> <li>○ <a href="https://dataverse.harvard.edu/file.xhtml?fileId=4773518&amp;version=60.0">https://dataverse.harvard.edu/file.xhtml?fileId=4773518&amp;version=60.0</a></li> </ul> </li> <li>● VEST MT 16 documentation file <ul style="list-style-type: none"> <li>○ Accessed: 06/15/21, Source: VEST</li> <li>○ <a href="https://dataverse.harvard.edu/file.xhtml?fileId=4789393&amp;version=60.0">https://dataverse.harvard.edu/file.xhtml?fileId=4789393&amp;version=60.0</a></li> </ul> </li> <li>● MT Precinct-Level Election Results <ul style="list-style-type: none"> <li>○ Accessed: 06/17/21, Source: MT Secretary of State Election Archive</li> <li>○ <a href="https://sosmt.gov/elections/results/">https://sosmt.gov/elections/results/</a></li> <li>○ Note: Click 2016 Election Results-Precinct by Precinct to download.</li> </ul> </li> <li>● MT Voting Precincts 2016 Shapefile <ul style="list-style-type: none"> <li>○ Accessed: 06/21/21, Source: Montana State Library</li> <li>○ <a href="https://mslservices.mt.gov/Geographic_Information/Data/DataList/datalist_Details.aspx?did=%7bdbc29997-21d8-4af1-9d87-5c5134775995%7d">https://mslservices.mt.gov/Geographic_Information/Data/DataList/datalist_Details.aspx?did=%7bdbc29997-21d8-4af1-9d87-5c5134775995%7d</a></li> <li>○ Note: Click “Download Data” button and then MontanaVotingPrecincts_shp.zip</li> </ul> </li> <li>● Lewis &amp; Clark County Shapefile <ul style="list-style-type: none"> <li>○ Accessed: 6/17/2021, Source: Lewis and Clark County</li> <li>○ <a href="https://www.lccountymt.gov/it/gis-maps/completed-maps/voting-precincts.html">https://www.lccountymt.gov/it/gis-maps/completed-maps/voting-precincts.html</a></li> <li>○ Note: only PDFs of the precinct maps are available.</li> </ul> </li> </ul>

- Lake County Shapefile
  - Accessed: 6/24/2021, Source: Lake County
  - <https://www.lakemt.gov/election/pdf/Lake%20County%20Precincts.pdf>
  - Note: only PDFs of the precinct map are available.

**Inaccessible files:**

- Fallon County Precinct Shapefile, 2016
  - Link: <https://www.falloncounty.net/elections.html#gsc.tab=0>
  - Note: there is a pdf of a precinct map from 2017 on the Fallon County website. They only list a phone number as contact and we tried calling on 5/27/2021 but did not get through to someone.
- Phillips County Precinct Shapefile, 2016
  - Note: not finding a precinct map on the Phillips County website. Emailed the County Clerk, Lynnel LaBrie at [clerkrecorder@phillipscounty.mt.gov](mailto:clerkrecorder@phillipscounty.mt.gov).
- Valley County Precinct Shapefile, 2016
  - Note: not finding a precinct map on the Valley County website. Emailed the County Clerk, Marie Pippin at [mpippin@valleycountymt.gov](mailto:mpippin@valleycountymt.gov).

Processing steps available?

Yes

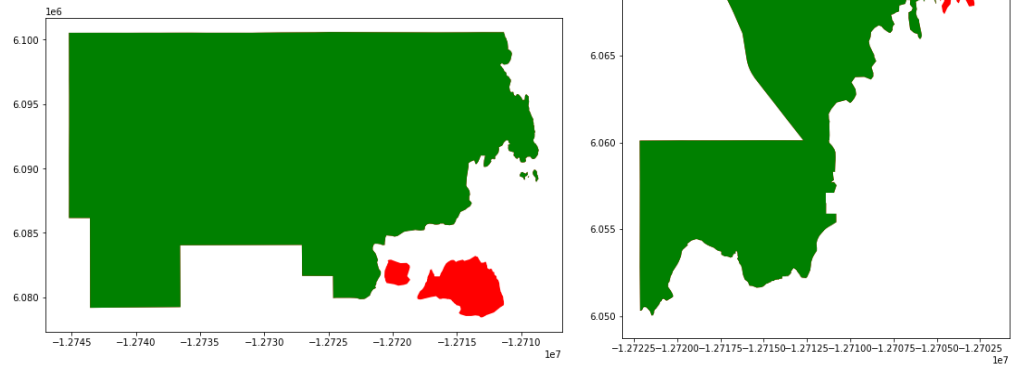
**Description of processing steps:**

- The full processing steps can be accessed at the link above and were accessed on 06/15/21. The steps are short enough to copy fully below:
  - Election results from Montana Secretary of State (<https://sosmt.gov/elections/results/>)
  - Precinct shapefile primarily from Dave Ritts at the Montana State Library, pending submission to the U.S. Census Bureau's 2020 Redistricting Data Program.
  - The following counties used 2016 precinct maps sourced from the respective county governments instead: Fallon, Phillips, Valley.
  - Precinct splits in Lake County were reversed based on the 2016 precinct shapefile from the county.
  - The A/B subdivisions of Precinct 16 and Precinct 33 in Lewis and Clark were added based on county precinct maps.
- We were able to visually confirm but did not perform splits, for precinct shapefile validation we merged them.

**Information not in their processing steps:**

	<ul style="list-style-type: none"> <li>• List of name changes for precincts between election results and VEST's file.</li> <li>• Precinct 1 in Treasure county subdivisions into Precinct 3, 4, and 6.</li> </ul>
<p><b>Able to replicate joining election data and shapefiles?</b></p> <p><b>Yes</b></p>	<p>Yes, we were able to replicate joining election data and shapefiles.</p> <ul style="list-style-type: none"> <li>• There were initially 689 precinct shapefiles and 686 precinct election results.</li> <li>• Merges of Precincts 16, 16A, and 16B and precincts 33, 33A and 33B in Lewis and Clark county were done according to processing steps. These merges appeared correct when looking at the pdf precinct map.</li> <li>• Merges of precincts in Fallon, Phillips, and Valley counties were done according to processing steps. Merges in Fallon county appeared correct when looking at the pdf precinct map. Maps for Phillips and Valley were not accessible.</li> <li>• Merges of precincts in Lake county were done according to processing steps. Merges in Lake county appeared correct when looking at the pdf precinct map.</li> <li>• Merge of Precincts 3, 4, and 6 in Treasure county into Precinct 1 was also done but was not in the processing steps. No maps for Treasure county were accessible.</li> <li>• After the name changes listed above all but 3 zero vote precincts were able to be joined.</li> <li>• Assigned the names 'FLATHEAD-1', 'FLATHEAD-2', and 'LAKE-1' to both the VEST file and the shapefile for the 3 zero vote precincts. The files were then able to be fully joined.</li> </ul>
<p><b>Able to replicate joining demographic data to block-level shapefiles?</b></p> <p><b>N/A</b></p>	<p>There is no demographic data on the file.</p>
<p><b>Able to replicate joining</b></p>	<p>There is no boundary data on the file.</p>

<p>boundary data?</p> <p>N/A</p>	
<p>Successfully ran validation?</p> <p>No</p>	<p><b><u>Election results:</u> Yes</b></p> <ul style="list-style-type: none"> <li>● We validated the election results at the state, county and precinct levels.</li> <li>● At the state-level, candidate vote totals matched exactly. The statewide race totals also matched the totals from the State Canvass report (<a href="https://sosmt.gov/wp-content/uploads/attachments/2016GeneralStatewideCanvass.pdf?dt=1494348815885&amp;dt=1494348873534&amp;dt=1497553987845&amp;dt=1497555053569&amp;dt=1497555121034&amp;dt=1497555299184&amp;dt=1497892315130&amp;dt=1519325848767">https://sosmt.gov/wp-content/uploads/attachments/2016GeneralStatewideCanvass.pdf?dt=1494348815885&amp;dt=1494348873534&amp;dt=1497553987845&amp;dt=1497555053569&amp;dt=1497555121034&amp;dt=1497555299184&amp;dt=1497892315130&amp;dt=1519325848767</a>) on the MT SOS website.</li> <li>● At the county-level, candidate vote totals matched exactly.</li> <li>● At the precinct-level, candidate votes also matched exactly.</li> </ul> <p><b><u>Geographies:</u> No</b></p> <ul style="list-style-type: none"> <li>● There were 689 precincts initially in the VEST file. After merges 664 precincts were able to be checked.</li> <li>● In some of the merges we were unable to validate with shapefiles or pdf maps of the precincts as these were inaccessible.</li> <li>● Out of 664 total precincts: <ul style="list-style-type: none"> <li>○ 29 precincts w/ a difference of 0 km<sup>2</sup></li> <li>○ 569 precincts w/ a difference between 0 and 0.1 km<sup>2</sup></li> <li>○ 58 precincts w/ a difference between 0.1 and 0.5 km<sup>2</sup></li> <li>○ 5 precincts w/ a difference between 0.5 and 1 km<sup>2</sup></li> <li>○ 1 precincts w/ a difference between 1 and 2 km<sup>2</sup></li> <li>○ 2 precincts w/ a difference between 2 and 5 km<sup>2</sup></li> <li>○ 0 precincts w/ a difference greater than 5 km<sup>2</sup></li> <li>○ The largest differences in the shapefiles concern Flathead lake. It appears that VEST assigned islands(red) in Flathead lake to precincts “DAY 1 HD12” and “POL 2 HD12”.</li> </ul> </li> </ul>



- Other differences greater than  $0.1\text{km}^2$  appear to be boundary differences and can be seen in the notebook.