

## VEST MI 2016

**State:** Michigan

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

**Summary of Races included:** Presidential, General

**Date File Updated:** 10/20/2019

**Date Report Updated:** 07/02/2021

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

RDH Criteria	Explanation
<p>Is all raw data available?</p> <p>Yes</p>	<p><b><u>Accessible files:</u></b></p> <ul style="list-style-type: none"> <li>● Election results               <ul style="list-style-type: none"> <li>○ Date accessed: 03/29/2021, Source: Department of State</li> <li>○ <a href="https://miboecfr.nictusa.com/cgi-bin/cfr/precinct_srch.cgi">https://miboecfr.nictusa.com/cgi-bin/cfr/precinct_srch.cgi</a></li> </ul> </li> <li>● Precinct shapefile               <ul style="list-style-type: none"> <li>○ Date accessed: 03/29/2021, Source: Department of State</li> <li>○ <a href="https://gis-michigan.opendata.arcgis.com/datasets/8ce0f3ce3ff74109ac02a26d34a0f4fc_1">https://gis-michigan.opendata.arcgis.com/datasets/8ce0f3ce3ff74109ac02a26d34a0f4fc_1</a></li> </ul> </li> <li>● VEST MI 2016 Data File               <ul style="list-style-type: none"> <li>○ Date accessed: 03/29/2021, Source: VEST on the Harvard Dataverse</li> <li>○ <a href="https://dataverse.harvard.edu/file.xhtml?fileId=4868607&amp;version=62.0">https://dataverse.harvard.edu/file.xhtml?fileId=4868607&amp;version=62.0</a></li> </ul> </li> <li>● VEST MI 2016 Documentation               <ul style="list-style-type: none"> <li>○ Date accessed: 07/02/2021, Source: VEST on the Harvard Dataverse</li> <li>○ <a href="https://dataverse.harvard.edu/file.xhtml?fileId=4441609&amp;version=54.0">https://dataverse.harvard.edu/file.xhtml?fileId=4441609&amp;version=54.0</a></li> </ul> </li> <li>● 2016 Census FIPS Codes               <ul style="list-style-type: none"> <li>○ Date accessed: 02/17/2021, Source: US Census Bureau</li> <li>○ <a href="https://www.census.gov/geographies/reference-files/2016/demo/pop_est/2016-fips.html">https://www.census.gov/geographies/reference-files/2016/demo/pop_est/2016-fips.html</a></li> </ul> </li> <li>● 2016 Detroit AVCB to Detroit Precinct chart               <ul style="list-style-type: none"> <li>○ Date accessed: 04/12/2021, Source, Derek Willis, OpenElections</li> <li>○ Sent to the RDH by VEST upon request</li> </ul> </li> </ul>
<p>Processing</p>	<p><b><u>Description of processing steps:</u></b></p>

steps  
available?

Yes

- Description of VEST process from 2016 documentation accessed 03/29/2021
  - VEST describes the source files for their election results and precinct shapefiles, which match those listed above.
  - For election results, VEST also mentions that:
    - “Detroit allows for absentee votes to be reported by Absentee Voter Counting Boards, which generally contain multiple precincts. These votes are apportioned to precincts by candidate in the same shares that the non-AVCB vote was split among precincts within a county.”
    - VEST then states that “The linkage between election precinct and AVCB was provided by OpenElections via Derek Willis.” - a file that links AVCBs to specific precincts. This seems to contradict the statement above that votes were apportioned according to precinct share of the county vote.
    - “Most counties had "statistical adjustments" that were at the county level, rather than the precinct level. Only two were for party candidates (Huron and Kalkaska), and in those cases, two or fewer votes. The remaining cases were related to "other" votes. Due to the scattered nature of "other" votes, these votes are apportioned to precincts by the split of total votes of precincts within the county.”
    - “Michigan has cities split across counties. Two are relevant to their reported election results versus the precinct map (which did not make the split), Fenton and Richmond. Those precincts were merged to reflect the precinct map.”

**Information not in their processing steps:**

- In order to replicate the unique identifier in the election results found in VEST’s file and the shapefile, the RDH had to find an external source for the MCDFIPs code, a subset of the VTD code used in the files. VEST did not mention using an external source for VTD code.
- As noted above, the wording in VEST’s documentation around AVCBs is imprecise, as the votes should be split in the shares that the non-AVCB vote was split among precincts with a AVCB, not county.. The RDH attempted to reapportion Detroit AVCB votes based on the precinct linkage file from OpenElections.
- In addition to Wayne County (Detroit’s county), Cass, Clinton, Gladwin, Lapeer and St. Clair Counties also had AVCB votes, however in these cases the precinct number corresponded to a non-AVCB precinct and votes were added accordingly.

	<ul style="list-style-type: none"> <li>• In cases of negative vote totals in the statistical adjustments, VEST is not clear in how they do so, although there are only 2 votes and then 1 vote to subtract in total. We took away votes from the precincts with the highest totals, and this seemed to match what VEST did.</li> <li>• For the precinct assigned to two AVCB's, VEST does not explicitly mention the ordering with which the two different allocation occur. We allocated the votes so that the two allocations did not affect one another, which seemed to match what VEST did.</li> </ul>
<p><b>Able to replicate joining election data and shapefiles?</b></p> <p><b>No</b></p>	<p>No, while we were able to join 4809 out of 4810 precincts (with the 1 unjoined precinct having 0 total votes) VEST's documentation did not mention most of their precinct name changes that enabled the join and the RDH made far more than 10 substantive name changes in order to replicate the join. In order to match identifiers across files, we made the following modifications:</p> <ul style="list-style-type: none"> <li>• Note any precinct name changes that were made, or types of precinct name changes.</li> <li>• First the RDH attempted to recreate the unique identifier field "VTD2016" found in both the VEST file and the precinct shapefile by concatenating the county fips code, the jurisdiction/MCDFIPs code imported from the Census geocodes file, the ward number and the precinct number from the election results files.</li> <li>• After doing so, there were still over 500 ID values that did not match due to discrepancies in ward numbers linked and differences in precinct numbers/conventions around letter use.</li> <li>• 566 precinct IDs were changed by hand using an Excel spreadsheet.</li> <li>• As mentioned in VEST's documentation, some cities in Michigan are split across counties, and in this case, precincts Fenton and Richmond were merged to match the precinct map.</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>Able to replicate joining boundary data?</p> <p>N/A</p>	<p>There is no boundary data on the file.</p>
<p>Successfully ran validation?</p> <p>Yes</p>	<p><b><u>Election results:</u> Yes</b></p> <ul style="list-style-type: none"> <li>● We validated election results at three different levels: <ul style="list-style-type: none"> <li>○ Statewide candidate vote totals</li> <li>○ Countywide candidate vote totals</li> <li>○ Precinct-level candidate votes</li> </ul> </li> <li>● At the statewide total level, the election results matched VEST's. The VEST and DOS totals also matched those reported on the MI SOS site (<a href="https://mielections.us/election/results/2016GEN_CENR.html">https://mielections.us/election/results/2016GEN_CENR.html</a>).</li> <li>● At the countywide level, we did not expect the totals to match initially, due to the precincts split across counties, but after carrying out the merges mentioned in VEST's documentation, the totals matched.</li> <li>● At the precinct-level, there are 4809 precincts with election results: <ul style="list-style-type: none"> <li>○ 139 of these rows have election result differences</li> <li>○ 4670 of these rows are the same</li> <li>○ The max difference between any one shared column in a row is: 1.0</li> </ul> </li> <li>● Outside of these 9 precincts, all the remaining 136 precincts have differences of 1 vote when differences occur, which may be due to differences in rounding when performing vote allocation.</li> </ul> <p><b><u>Geographies:</u> Yes</b></p> <ul style="list-style-type: none"> <li>● Out of 4810 total precincts: <ul style="list-style-type: none"> <li>○ 4810 precincts w/ a difference between 0 and 0.1 km<sup>2</sup></li> </ul> </li> </ul>