

VEST WI 2016

State: Wisconsin

Organization: Voting and Election Science Team (VEST)

Summary of Races included: Presidential, U.S. Senate [General]

Date File Updated: 03/24/2021

Date Report Updated: 08/04/2021

RDH Validation Code (Github):

<https://github.com/nonpartisan-redistricting-datahub/pdv-wi/tree/main/vest-wi-2016>

RDH Criteria	Explanation
<p>Is all raw data available?</p> <p>Yes</p>	<p><u>Accessible files:</u></p> <ul style="list-style-type: none"> ● File Name/Description <ul style="list-style-type: none"> ○ Date accessed: 03/25/2021 , Source: ex: Wisconsin Legislative Technology Services Bureau via GeoData@Wisconsin ○ https://geodata.wisc.edu/catalog/145055E1-87EF-4D13-B138-4DC3907F3677 ○ https://gisdata.wisc.edu/public/WI_20122020_Election_Data_Wards_2017.zip&sa=D&source=editors&ust=1626189490657000&usg=AOvVaw0WJaPH16g2xxnoeWv5W_Vs (direct download) ● VEST Wisconsin 2016 Data File <ul style="list-style-type: none"> ○ Accessed: 03/25/2021, Source: VEST on the Harvard Dataverse ○ https://dataverse.harvard.edu/file.xhtml?fileId=4468121&version=56.0 ● VEST 2016 Documentation <ul style="list-style-type: none"> ○ Accessed: 07/12/2021, Source: VEST on the Harvard Dataverse ○ https://dataverse.harvard.edu/file.xhtml?fileId=4863153&version=62.0
<p>Processing steps available?</p> <p>Yes</p>	<p><u>Description of processing steps:</u></p> <ul style="list-style-type: none"> ● VEST included a number of decisions in the documentation to improve the source dataset: <ul style="list-style-type: none"> ○ The shapefile used for the 2016 election results was the 2017 wards shapefile. The 2017 wards shapefile featured multiple changes and corrections to the ward boundaries what were already in effect for

the November 2016 general election but were not in the January 2016 wards shapefile.

- Several thousand votes were reported for the town of Menasha, which had almost entirely been incorporated into the village of Fox Crossing. The ward numbers in the Menasha results matched exactly the wards in Fox Crossing that didn't report any results, so the Menasha results were applied to Fox Crossing.
- The following wards had been added due to annexations subsequent to the 2016 general election. They were merged back into the 2016 wards along with any associated election results.
 - Brown: Wrightstown 5
 - Clark: Abbotsford 7
 - Dane: DeForest 18, Sun Prairie 22
 - Eau Claire: Eau Claire 68
 - Fond du Lac: Fond du Lac 28
 - Green Lake: Green Lake 4
 - Kenosha: Kenosha 94
 - La Crosse: Holmen 12
 - Manitowoc: Manitowoc 29
 - Marathon: Wausau 48
 - Monroe: Tomah 21
 - Outagamie: Combined Locks 6, Kaukauna 13
 - Washington: Slinger 9
 - Waukesha: Sussex 10
 - Waupaca: Clintonville 9, 10
 - Winnebago: Menasha 39-42, Neenah 26
- These additional changes were made to reflect the 2016 ward-by-ward results.
 - Grant: Split Platteville 8/9
 - Jefferson: Renumber Watertown 3 to Watertown 19
 - La Crosse: Split Holland 1 from Holmen 2
 - Winnebago: Relabel Fox Crossing 8-13 as Menasha 8-13
 - Note that the election results for Holland 1-6 and Holmen 1-11 in La Crosse County were reapportioned accordingly using the same whole population methodology as the WI Legislative Technology Services Bureau.

Information not in their processing steps:

- There are two wards in Winnebago County (Menasha/Fox Crossing 9 and 13) that were not included in VEST documentation for merges
- All of the merges listed by VEST did not include any information regarding what wards that needed to be merged, were merged back to. (e.g. Menasha

	<p>39 needs to be merged per VEST documentation, but they did not indicate what the wards were merged back to).</p> <ul style="list-style-type: none"> • VEST’s write-in field did not match the write-in field in the source data. We determined that they created this field by summing all remaining candidates who they did not give their own field together, along with the write-in votes, to create their own write-in fields, which we were able to replicate.
<p>Able to replicate joining election data and shapefiles?</p> <p>N/A</p>	<p>The source shapefile was already joined to election results. There were a number of merges, splits, and renames that needed to be completed to get the source file to have the same number of wards and unique IDs as VEST. These are specified above in their documentation. As noted, there were two unaccounted for wards in Winnebago County. After interrogating the data in QGIS, we merged Menasha 9 and Fox Crossing 9, and Menasha 13 and Fox Crossing 13 together, respectively, which was not included in the documentation.</p>
<p>Able to replicate joining demographic data to block-level shapefiles?</p> <p>N/A</p>	<p>Demographic data was already included in the source shapefile.</p>
<p>Able to replicate joining boundary data?</p> <p>N/A</p>	<p>Boundary data was already included in the source shapefile.</p>
<p>Successfully ran validation?</p> <p>No</p>	<p><u>Election results:</u> No</p> <ul style="list-style-type: none"> • We validated election results at three different levels: <ul style="list-style-type: none"> ○ Statewide candidate vote totals ○ Countywide candidate vote totals

- Precinct-level candidate votes
- At the statewide total level, the election results matched VEST's exactly. The totals also matched those of the Wisconsin Secretary of State's election summary report (<https://elections.wi.gov/sites/elections.wi.gov/files/Statewide%20Results%20All%20Offices%20%28post-Presidential%20recount%29.pdf>, NOTE: to compare write-in votes, sum all candidates who do not have their own field in the VEST data, as they sum to be the same)
- At the countywide total level, the election totals matched VEST's exactly as well for all 72 counties in Wisconsin.
- At the precinct-level, all election results matched exactly in 70/72 counties, the two exceptions being La Crosse and Winnebago counties.
 - With a threshold of 0 votes difference between the source and VEST file, 6842/6872 wards contain 0 vote differences for any candidate in any race, meaning there is a difference for 30 wards.
 - La Crosse County:
 - The differences for La Crosse County likely stem from our re-allocation process. We re-allocated votes according to the WI LTSB criteria, but it is possible that some blocks were omitted if they weren't wholly contained in the wards, which could have skewed the ratios for Holland 1 and Holmen 2 very slightly. It's also possible that VEST may have used a slightly different total population table number than we used in this script. This could explain the slight discrepancies in VEST and our modified Source data for La Crosse County. It is notable, however, that there are slight differences outside of Holmen 2 and Holland 1, for which we did not modify the underlying data. It is possible VEST did more re-allocation here, but it is not included in their methods.
 - The max difference between any one shared column in a row is: 31
 - The average difference is: 4.372881355932203
 - There are 109 total wards in La Crosse County
 - 17 of these wards have election result differences
 - 92 of these wards have the exact same election results
 - Winnebago County:
 - There are a number of major differences in Winnebago County. It is unclear what these differences stem from. There are two wards in the raw shapefile that are unaccounted for in VEST documentation. These two precincts were merged with their respective Menasha/Fox Crossing counterparts as this is visual what made sense in QGIS (Menasha 9 and Fox Crossing 9

merged together, and Menasha 13 and Fox Crossing 13). It is possible that there was a modification to the file made after VEST retrieved it, as in addition to these two wards, there are election differences across the county (Menasha and Fox Crossing areas). The merges were checked visually and with symmetric differences in QGIS and appear to be completed correctly.

- The max difference between any one shared column in a row is: 896
- The average difference is: 103.59055118110236
- There are 185 total wards in Winnebago County
 - 13 of these wards have election result differences
 - 172 of these wards have the exact same election results
- In looking at the ward totals file on the WI website (<https://elections.wi.gov/elections-voting/results/2016/fall-general>), it seems as if our totals are correct: for the La Crosse totals, and VEST is closer (but not exactly matching the Winnebago totals).

Geographies: Yes

- Out of 6872 total precincts:
 - 6856 precincts w/ a difference of 0 km²
 - 16 precincts w/ a difference between 0 and 0.1 km²
 - 0 precincts w/ a difference between 0.1 and 0.5 km²
 - 0 precincts w/ a difference between 0.5 and 1 km²
 - 0 precincts w/ a difference between 1 and 2 km²
 - 0 precincts w/ a difference between 2 and 5 km²
 - 0 precincts w/ a difference greater than 5 km²