# VEST VA 2016

**State:** Virgina
**Organization:** VEST (Voting and Election Science Team)
**Summary of Races included:** U.S. President
**Date File Updated:** 10/24/2019
**Date Report Updated:** 05/24/2021
**RDH Validation Code (Github):** https://github.com/nonpartisan-redistricting-datahub/pdv-va

| RDH Criteria | Explanation |
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| **Is all raw data available?**<br><br>Yes | <u>Accessible files:</u><br>● VA US President Election Results<br>○ Accessed 04/14/2021, Source: VA Dept of Elections<br>○ Link: https://historical.elections.virginia.gov/elections/search/year_from:2016/year_to:2016<br>○ Click “Candidates” > “See details for this election” > “Download this election”<br>● Precinct Shapefile<br>○ Accessed 04/14/2021, Source: Census Phase 2 Release<br>○ Link: https://www.census.gov/geo/partnerships/pvs/partnership19v2/st51_va.html<br>○ Download by county, 5 at a time<br>● VEST Precinct Election Shapefile - US President<br>○ Accessed 04/14/2021, Source: VEST, Harvard Dataverse<br>○ Link: https://dataverse.harvard.edu/file.xhtml?persistentId=doi:10.7910/DVN/NH5S2I/SNV9ZA&version=56.0<br><br>Note: The RDH did not attempt to make any of the changes noted in the documentation that were precinct-specific and required sources beyond the Census Phase 2 release. |
| **Processing steps available?** | <u>Description of processing steps:</u> **All Files**<br>● Description of VEST process from 2016 documentation accessed 4/13/2021 |

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| **Yes** | ○ VEST describes the source files for their election results and precinct shapefiles, which match those listed above.<br>○ For election results, VEST also mentions that:<br>■ "Absentee ballots and provisional votes were reported at the county or city level throughout the state. These were distributed by candidate to precincts based on their share of the precinct-level reported vote."<br>○ For the precinct shapefiles, VEST also mentions that:<br>■ "Virginia election reports often include precinct splits that are obsolete or unused in practice. These have been omitted. In cases where voters were incorrectly assigned to the wrong district the de facto precinct split has been included for that election."<br>○ Then VEST lists out the various modifications they made to the 2016 precinct boundaries. This full list can be found in their documentation file.<br>○ Lastly, VEST notes that "Results are divided across four files. Because precincts can be split across legislative districts, the legislative races are reported with their own geography that divides these split precincts, resulting in shapes that are assigned to exactly one district."<br><br>**<u>Information not in their processing steps:</u> U.S. President**<br>● A full list of name changes used to join shapefiles and election results.<br>○ The process/convention for creating a unique identifier was not noted in VEST's documentation. The RDH convention/process was the same for all four 2016 files. In order to merge the precinct level election results with the precinct boundary shapefile, the RDH created a unique identifier by concatenating the county FIPS code with the "VTDST" key. VEST does not specify what they used for their unique ID to merge the two files. 21 identifiers out of 2456 were duplicates prior to this modification).<br>● Fairfax Court precinct appears in VEST's file but not the raw election results. The RDH did not add in this precinct because there were zero votes across the board.<br>● VEST's documentation states, "Absentee ballots and provisional votes were reported at the county or city level throughout the state. These were distributed by candidate to precincts based on their share of the precinct-level reported vote." By allocating the votes as such, the RDH noticed that VEST had split precincts by congressional district, as appropriate, to reallocate votes, which was not noted in their documentation. The RDH overlaid the precinct shapefile from the Census with the Congressional district shapefile to recreate these splits. |

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| **Able to replicate joining election data and shapefiles?**<br><br>No | While the RDH was able to join based on the unique identifier noted above, there were 29 identifiers in the raw election results/VEST file that did not match anything in the shapefile, and 57 in the shapefile that did not match anything in the VEST file or raw election results. There were 16 precincts that the RDH was able to match by hand by plotting the precinct in the shapefile and VEST's file where the unique IDs did not have a clear match based on the unique_id field.<br><br>For more information on the mismatch, please see our Github linked above.<br><br>**Note:** While the RDH attempted to match VEST's file, the RDH did not attempt to make any of the changes noted above that were precinct-specific and required sources beyond the Census, such as county-specific files. |
| **Able to replicate joining demographic data to block-level shapefiles?**<br><br>N/A | The VA 2016 files do not contain any demographic data. |
| **Able to replicate joining boundary data?**<br><br>N/A | The U.S President file does not have a field for boundaries beyond precinct and county. |
| **Successfully validated election results?**<br><br>Yes | **Election results: U.S. President**<br>• The RDH column (total party/candidate votes for the state) and county totals matched VEST's.<br>• The VEST totals by party matched those reported by the VA Department of Elections in all cases except for write-in vote totals where VEST reported 33749 and VA reported 31870. (https://results.elections.virginia.gov/vaelections/2016%20November%20General/Site/Presidential.html)<br>• The precinct by precinct election results matched between the RDH and VEST with a maximum difference of one vote which occurred in 1230/2456 precincts compared. This small difference occurred in matched rows when comparing VEST's final file with the RDH election result/shp recreation. The difference can be attributed to differences in the rounding techniques |

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| | implemented by the RDH compared to VEST when re-assigning absentee, provisional and mail-in ballot votes.<br><br>**<u>Geographies:</u> U.S. President**<br>● There were 2438 precinct identifiers that matched between the two files, of these:<br>○ 1789 precincts w/ a difference of 0 km^2<br>○ 513 precincts w/ a difference between 0 and 0.1 km^2<br>○ 68 precincts w/ a difference between 0.1 and 0.5 km^2<br>○ 24 precincts w/ a difference between 0.5 and 1 km^2<br>○ 18 precincts w/ a difference between 1 and 2 km^2<br>○ 18 precincts w/ a difference between 2 and 5 km^2<br>○ 8 precincts w/ a difference greater than 5 km^2 |