

VEST VT 2020

State: Vermont

Organization: Voting and Election Science Team (VEST)

Summary of Races included: Presidential, U.S. House, Governor, Lieutenant Governor, Attorney General, Secretary of State, Treasurer, Auditor [General]

Date File Updated: 07/28/2021

Date Report Updated: 08/11/2021

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

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"> ● VEST VT 2020 Data File <ul style="list-style-type: none"> ○ Accessed: 07/20/21, Source: VEST on the Harvard Dataverse ○ https://dataverse.harvard.edu/dataset.xhtml?persistentId=doi:10.7910/DVN/K7760H ● VEST VT 2020 Documentation <ul style="list-style-type: none"> ○ Accessed: 07/20/21, Source: VEST on the Harvard Dataverse ○ https://dataverse.harvard.edu/file.xhtml?fileId=4938251&version=15.0 ● VT Precinct-Level Election Results <ul style="list-style-type: none"> ○ Accessed: 07/20/21, Source: VT Secretary of State Election Archive ○ https://electionarchive.vermont.gov/elections/search/year from:2020/year to:2020/stage:General ○ Note: For each needed election, click under Candidates -> See Details for Election -> Download this Election -> Precinct Results. ● VT State House Districts 2012 Shapefile <ul style="list-style-type: none"> ○ Accessed: 05/19/21, Source: VT Open Geodata Portal ○ https://geodata.vermont.gov/datasets/vt-data-vermont-house-districts-2012?geometry=-80.269%2C42.477%2C-64.614%2C45.249 ● U.S. Census Bureau's 2020 Redistricting Data Program <ul style="list-style-type: none"> ○ Accessed: 08/04/21, Source: US Census ○ https://www.census.gov/geo/partnerships/pvs/partnership19v2/st50vt.html

	<ul style="list-style-type: none"> ○ Note: Shapefiles can only be downloaded for up to 5 counties at a time, so we did some minor processing in combining the various county files into one folder. ● VT 2019 ACS Survey for Areas w/ Allocated Votes <ul style="list-style-type: none"> ○ Accessed: 07/20/21, Source: U.S. Census ○ https://data.census.gov/cedsci/table?q=Buels%20gore&g=0600000U5000327962,5000363550,5000734600,5000902125,5000908725,5000911800,5000925975&tid=ACSST5Y2019.S0101&hidePreview=true ○ Note: This table provides 2019 ACS population data for the areas where VEST allocated votes.
<p>Processing steps available?</p> <p>Yes</p>	<p><u>Description of processing steps:</u></p> <ul style="list-style-type: none"> ● VEST’s full processing steps, which were accessed 07/20/21 and can be accessed at the link above, are short enough to copy below: <ul style="list-style-type: none"> ○ Election results from the Vermont Secretary of State (https://electionarchive.vermont.gov/) ○ Precinct shapefile from the U.S. Census Bureau's 2020 Redistricting Data Program ○ The Census VTD shapefile features city wards. However, precinct boundaries for state and federal elections are not based on city wards. They are instead defined by legislative districts wherever they cross municipal boundaries. Therefore, city wards were merged in the shapefile and cities or townships were instead split into precincts wherever necessary using the state legislative district shapefile. ○ Vermont has four unorganized towns whose residents cast votes in neighboring towns. These were distributed back based on voting age population in the 2019 American Community Survey as 2020 Census results are not yet available at the township level. (Averill-Canaan, Buel's Gore-Huntington, Ferdinand-Brighton, Glastenbury-Shaftsbury.) ● We were able to follow VEST’s steps, though as is detailed below, our final numbers for the four unorganized towns’ allocation did not match those of VEST. <p><u>Information not in their processing steps:</u></p> <ul style="list-style-type: none"> ● A list of which precincts needed to be either joined together or modified using the state legislative district shapefile.

<p>Able to replicate joining election data and shapefiles?</p> <p>Yes</p>	<p>Yes, given the documentation they provided we were able to join 284 out of 284 precincts. To do so and we made the following modifications:</p> <ul style="list-style-type: none"> • 29 election results precincts and 12 original shapefile precincts were eventually joined together using the state legislative district shapefile. • 5 precincts were created from merging shapefile precincts together. • There were 5 zero-vote precincts in the election results we added to join to the shapefile. • All of the performed name changes were trivial, besides recognizing that “Wells River Voting District” was part of “Newbury”, which we were eventually able to do by researching “Wells River”.
<p>Able to replicate joining demographic data to block-level shapefiles?</p> <p>N/A</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>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. Although the totals do not exactly match those of VT’s election summary report (https://outside.vermont.gov/dept/sos/Elections%20Division/election%20info%20and%20resources/elections%20results%20and%20data/generalofficialresults.pdf) they do match the totals that VT has on the precinct-level

section of their website. We have reached out to them regarding these differing values on their site. The extent of the differences is below;

- State Treasurer - Write In - 9 votes
- Attorney General - Write In - 15 votes
- Auditor of Accounts - Write In - 4 votes
- Governor - Zuckerman - 1 vote
- Governor - Write In - 1 vote
- House - Welch - 6 votes
- House - Write In - 3 votes
- At the countywide total level, the election results matched VEST's.
- At the precinct-level, 284 precincts to compare:
 - 8 of these rows have election result differences
 - 276 of these rows are the same
 - The max difference between any one race between precincts is: 6 votes
- The 8 precincts with differences were all part of the unorganized town allocation, so it is likely that VEST used slightly different numbers as part of that allocation.

Geographies: No

- Out of 284 total precincts:
 - 11 precincts w/ a difference of 0 km²
 - 115 precincts w/ a difference between 0 and .1 km²
 - 130 precincts w/ a difference between .1 and .5 km²
 - 23 precincts w/ a difference between .5 and 1 km²
 - 1 precincts w/ a difference between 1 and 2 km²
 - 2 precincts w/ a difference between 2 and 5 km²
 - 2 precincts w/ a difference greater than 5 km²
- All precincts with a difference of greater than .1 km² are printed in our validation notebook.
- The only non-negligible differences appears to be in the Essex 2 and 3 precincts, where VEST has swapped geographies from what the census provides.