VEST VA 2016

State: Virgina
Organization: VEST (Voting and Election Science Team)
Summary of Races included: State House Special Election
Date File Updated: 10/25/2019
Date Report Updated: 05/24/2021
RDH Validation Code (Github): https://github.com/nonpartisan-redistricting-datahub/pdv-va

RDH Criteria	Explanation

Is all raw data available?
 	
Yes
	<u>Accessible files:</u>
	● VA State House Special Election Results
	   ○ Accessed 04/14/2021, Source: VA Dept of Elections
	   ○ Link: https://historical.elections.virginia.gov/elections/search/year_from:2016/year_to:2016/office_id:8
	   ○ Click "Candidates" > "See details for this election" > "Download this election"
	● Precinct Shapefile
	   ○ Accessed 04/14/2021, Source: Census Phase 2 Release
	   ○ Link: https://www.census.gov/geo/partnerships/pvs/partnership19v2/st51_va.html
	   ○ Download by county, 5 at a time
	● VEST Precinct Election Shapefile - State House Special
	   ○ Accessed 04/14/2021, Source: VEST, Harvard Dataverse
	   ○ Link: https://dataverse.harvard.edu/file.xhtml?persistentId=doi:10.7910/DVN/NH5S2I/7SGOTB&version=56.0
	
	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** ● Description of VEST process from 2016 documentation accessed 4/13/2021:

Yes	- VEST describes the source files for their election results and precinct shapefiles, which match those listed above. - For election results, VEST also mentions that: "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." - For the precinct shapefiles, VEST also mentions that: "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." - Then VEST lists out the various modifications they made to the 2016 precinct boundaries. This full list can be found in their documentation file. - 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." **Information not in their processing steps:** State House Special - A full list of name changes used to join shapefiles and election results. - 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. - There is one precinct that appears in VEST's final file that does not appear in the raw shapefile, and five precincts in the shapefile that do not appear in VEST's file. The one that is not in the shapefile is Palmer in Newport News City.
Able to replicate joining election data and shapefiles? Yes	**State House Special** As noted above, the RDH was able to join the data on a unique identifier and found 7 (6 once merged) differences in precincts between the raw election results file and the shapefile. The precinct Berkeley D had the unique ID 095104 in VEST's file, and was split into 095042 and 095041 in the raw shapefile. The RDH merged the geometry in the shapefile to match VEST's using the geopandas dissolve function.

	- The remaining 5 precincts in the shapefile not in the vest file did not have a match. - For area differences, please see below. **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? N/A	The VA 2016 files do not contain any demographic data.
Able to replicate joining boundary data? Yes	**State House Special** As noted above, there were 5 precincts, Coventry, Deep Creek, Westover, Expressway, Deep Creek II, and Nansemond River, that appeared in the shapefile that did not appear in VEST's final file and were not merged into other precincts. There was one precinct, Palmer in Newport News City, in VEST's final file not in the shapefile. The field "HOD_DIST" matched between VEST's final file and the raw election results the RDH processed.
Successfully validated election results? Yes	<u>Election results:</u> **State House Special** - The RDH column totals (by race) and county totals perfectly matched VEST's results. - VEST's party totals matched perfectly with the VA Department of Elections report for all party columns except write-in totals. VEST reported 954 write-in votes, whereas the state reported 949. (https://results.elections.virginia.gov/vaelections/2016%20November%20General/Site/GeneralAssembly.html) - The precinct by precinct election results matched with a maximum difference of one vote. The small difference, which occurred in 20/46 rows, can be attributed to differences in the rounding techniques implemented by the RDH compared to VEST when re-assigning absentee, provisional and mail-in ballot votes. <u>Geographies:</u> **State House Special** - There were 45 precinct identifiers that matched between the two files, of these: 31 precincts w/ a difference of 0 km^2

- 12 precincts w/ a difference between 0 and 0.1 km^2
- 2 precincts w/ a difference between 0.1 and 0.5 km^2
- 0 precincts w/ a difference between 0.5 and 1 km^2
- 0 precincts w/ a difference between 1 and 2 km^2
- 0 precincts w/ a difference between 2 and 5 km^2
- 0 precincts w/ a difference greater than 5 km^2