

VEST AL 2020

State: Alabama

Organization: Voting and Election Science Team (VEST)

Summary of Races included: Presidential, U.S. Senate, State Supreme Court, Civil Appeals Court, State Court of Criminal Appeals, Public Service Commissioner [General]

Date File Updated: 05/28/2021

Date Report Updated: 08/27/2021

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

RDH Criteria	Explanation
<p>Is all raw data available?</p> <p>No</p>	<p>Accessible files:</p> <ul style="list-style-type: none"> ● VEST AL 2020 file <ul style="list-style-type: none"> ○ Accessed: 6/3/2021 ○ https://dataverse.harvard.edu/file.xhtml?fileId=4751074&datasetVersionId=247483 ● VEST documentation file, 2020 <ul style="list-style-type: none"> ○ Accessed: 6/3/2021 ○ https://dataverse.harvard.edu/file.xhtml?fileId=4773529&version=9.0 ● Election Results, SOS 2020 <ul style="list-style-type: none"> ○ Accessed: 6/3/2021 ○ https://www.sos.alabama.gov/alabama-votes/voter/election-data ○ Note: selected 'General Election Results - Precinct Level', file contains a separate xls file for every county ● TIGER/Line VTD File, 2020 <ul style="list-style-type: none"> ○ Accessed: 6/3/2021 ○ https://www2.census.gov/geo/tiger/TIGER2020PL/STATE/01_ALABAMA/01/ ○ Note: VEST refers to their precinct shapefile source as 'the U.S. Census Bureau's 2020 Redistricting Data Program final release'. We believe this is the 2020 TIGER/Line VTD file. ● Baldwin County Shapefile <ul style="list-style-type: none"> ○ Accessed: 6/3/2021 ○ https://baldwincountyal.gov/government/probate-office/elections/district-maps-voting-precincts

- Note: they have a GIS department but only PDF map available on the website at that link.
- Calhoun County Shapefile
 - Accessed: 6/3/2021
 - https://www.calhouncounty.org/forms/Commission_Districts_Voting.pdf
 - Note: only finding a PDF map on their website.
- Limestone County Shapefile
 - Accessed: 6/3/2021
 - <https://www.votelimestone.com/related-links/limestone-county-beat-map-with-polling-locations/>
 - Note: only finding a PDF map on their website.
- Madison County Shapefile
 - Accessed: 6/3/2021
 - <https://www.madisoncountyvotes.com/voter-resources/polling-locations/>
 - Note: their interactive precinct map only shows the polling locations, but not precinct boundaries.
- Mobile County Shapefile
 - Accessed: 6/3/2021
 - <https://www.mobilecountyal.gov/government/departments/administration/gis-mapping/election-maps/>
 - Note: only finding a PDF map on their website. You can request GIS maps by mail request form.
- Morgan County Shapefile
 - Accessed: 6/3/2021
 - <https://www.morgancountyelections.com/election-information/precinct-maps/>
 - Note: there is an interactive arcgis precinct map, but there is no download option. Emailed Kate Terry, the Chief Clerk at kterry@morgancounty-al.gov.
- St. Clair County Shapefile
 - Accessed: 6/3/2021
 - <https://stclair.maps.arcgis.com/apps/webappviewer/index.html?id=63f82a53398c49d38bf0e036e163e08a>
 - Note: there is an interactive argis precinct map, but there is no download option. Emailed gissupport@stclairco.com
- Shelby County Shapefile
 - Accessed: 6/4/2021
 - <https://maps.shelbyal.com/html5/>

- Note: there is an interactive arcgis precinct map, but there is no download option. Called the county IT Services (205-670-6981), and told to call back and ask for Victoria at 1pm (6/4/2021).
- Talladega County Shapefile
 - Accessed: 6/3/2021
 - https://www.talladegacountyal.org/departments/voter_registration/county_district_maps.php
 - Note: only finding a PDF map from 2013. Unlikely that they have a shapefile because the map looks like a scan of a physical copy.
- County Canvass Report, 2020
 - Accessed: 8/27/2021
 - <https://www.sos.alabama.gov/sites/default/files/election-2020/Final%20Canvass%20of%20Results-Merged.pdf>

Inaccessible files:

- Blount County Shapefile
 - Accessed: 6/3/2021
 - <https://blountcountyal.gov/departments-services/elections-and-voting>
 - Note: not finding any precinct maps on their website.
- Cullman County Shapefile
 - Accessed: 6/3/2021
 - Note: not finding a precinct map on their county website, there is a jpg map in the Cullman Times from 2014 at this link:
https://www.cullmantimes.com/cullman-county-voting-precincts-map/image_0269f200-6231-11e4-9024-af8efe886238.html
- DeKalb County Shapefile
 - Accessed: 6/3/2021
 - Note: not finding a precinct map on their website.
- Franklin County Shapefile
 - Accessed: 6/3/2021
 - Note: not finding any precinct maps on their website.
- Jefferson County Shapefile
 - Accessed: 6/3/2021
 - <https://jeffcoprobatecourt.com/elections/voting-precinct-changes/>
 - Note: not finding a precinct map on their website, but they do list precinct changes over time.
- Lee County Shapefile
 - Accessed: 6/3/2021
 - Note: not finding a precinct map on their website.
- Marengo County Shapefile

- Accessed: 6/3/2021
- Note: not finding a precinct map on their website.
- Marshall County Shapefile
 - Accessed: 6/3/2021
 - Note: only finding the list of polling locations, but no precinct map on their website.
- Tuscaloosa County Shapefile
 - Accessed: 6/3/2021
 - Note: they have a list of polling locations, but not finding a precinct map on their website.

Note: VEST mentions, but does not provide links to a handful of local files that it uses as part of its shapefile manipulations. Given the absence of documentation explaining how to find or use the files, we did not attempt to locate these.

Processing steps available?

Yes

Description of processing steps:

- Describe or copy/paste their processing steps and note date accessed. What steps were completed that aligned with their processing steps?
- Overview of VEST’s documentation:
 - File Locations:
 - Election results from the Alabama Secretary of State Elections Division (<https://www.sos.alabama.gov/alabama-votes/voter/election-data>).
 - Precinct shapefiles initially from the U.S. Census Bureau's 2020 Redistricting Data Program final release, except the following counties use shapefiles sourced from the respective county governments instead: Baldwin, Blount, Calhoun, Cullman, DeKalb, Franklin, Jefferson, Lee, Limestone, Madison, Marengo, Marshall, Mobile, Morgan, St. Clair, Shelby, Talladega, Tuscaloosa.
 - Election Results Processing:
 - Absentee and provisional ballots were reported countywide in all counties. These were distributed by candidate to precincts based on their share of the precinct-level reported vote.
 - Shapefile Processing:
 - Precinct boundaries were adjusted as appropriate to align with county maps, municipal boundaries, or commission districts. Precinct boundaries throughout the state were

further reviewed with the voter registration file in effect for the November 2020 general election. Voting districts in nearly all counties were edited accordingly to align with reporting units in the 2020 election results. In many counties the resulting boundaries bear little resemblance to the 2020 Census VTDs. As these boundary revisions were so extensive only splits and merges are specified below by precinct.

- Many precincts have outdated names in the Census VTDs. The Census VTDs also have at least some precinct names in wrong locations for the following counties: Clarke, Clay, Cleburne, Conecuh, Dallas, Escambia, Geneva, Greene, Jefferson, Lauderdale, Limestone, Marion, Marshall, Monroe, Perry, Randolph, Russell, Tallapoosa, Walker, Washington, Wilcox. Moreover, many precinct numbers and consequently the VTD GeoIDs are also incorrect throughout much of the state in the Census shapefiles. All precinct names and numbers have been edited to match the 2020 voter file.
- The following splits and merges were made to align voting district boundaries with reporting units in the 2020 election results.

Information not in their processing steps:

- VEST documentation says that “Absentee and provisional ballots were reported countywide in all counties”, but there are two counties (073 and 089) where there are multiple absentee precincts, and VEST appears to have allocated these votes to subsets of precincts within the counties.
- A full list of precinct election result and precinct geometry name changes.

Able to replicate joining election data and shapefiles?

No

We were not able to replicate joining election data and precinct boundaries because we did not have precinct boundary data for every county. In particular:

- There were (8) counties where we were unable to find either a shapefile or any maps to validate against: Blount, DeKalb, Franklin, Jefferson, Lee, Marengo, Marshall, and Tuscaloosa.
- There were (10) counties where we were able to find precinct boundary data, although not in shapefile format: Baldwin, Calhoun, Limestone, Madison, Mobile, Morgan, St. Clair, Shelby, Talladega, and Cullman. Our notebook contains a print out of VEST’s geometries for these counties as well as the geometries that we were able to obtain.

	<ul style="list-style-type: none"> In the remaining (49) counties, where VEST uses data from the US Census Bureau, we were able to join 980 precincts, with 142 election result precincts and 98 precinct geometries unjoined.
<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> Yes</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. The totals also matched those of AL's election summary report (https://www.sos.alabama.gov/sites/default/files/election-2020/Final%20Cavnass%20of%20Results-Merged.pdf). At the countywide total level, the election results matched VEST's. The totals also matched those of AL's election summary report (https://www.sos.alabama.gov/sites/default/files/election-2020/Final%20Cavnass%20of%20Results-Merged.pdf). At the precinct-level, we were able to check 1971 precincts (1 zero-vote VEST precinct was not in the source election results). Of these 1971 precincts:

- 1682 of these precincts have election result differences
- 289 of these precincts are the same
- The max difference between any race in a precinct is 3 votes
- The average difference is: 1
- In terms of the differences greater than 1 vote, these occurred in counties 043, 073, 089, and 111.
 - The precincts in counties 043 and 111 with these differences were the precincts where we had to merge election results, and the order of this merge and vote allocation likely explains the differences relative to VEST.
 - Counties 073 and 089 contained multiple absentee precincts, and the minor differences in these counties is likely due to us not being able to perfectly replicate how VEST awarded the votes from the absentee precincts among the counties.

Geographies: No

- We were not able to run the validation on all precinct geographies due to inaccessible shapefiles.
- Out of 980 total precincts that we were able to join:
 - 405 precincts w/ a difference of 0 km²
 - 129 precincts w/ a difference between 0 and .1 km²
 - 104 precincts w/ a difference between .1 and .5 km²
 - 44 precincts w/ a difference between .5 and 1 km²
 - 71 precincts w/ a difference between 1 and 2 km²
 - 94 precincts w/ a difference between 2 and 5 km²
 - 133 precincts w/ a difference greater than 5 km²
- Given the extensive shapefile changes that VEST mentions in its documentation (which we were unable to replicate) these differences are not surprising.
- We were unable to find either a shapefile or any map to validate against in DeKalb, Franklin, Jefferson, Lee, Marengo, Marshall, and Tuscaloosa counties.
- Baldwin, Calhoun, Limestone, Madison, Mobile, Morgan, St. Clair, Shelby, Talladega, Blount, Cullman Counties all had some sort of map, but not a shape file on their website.