VEST AR 2020

State: Arkansas
Organization: Voting and Election Science Team (VEST)
Summary of Races included: Presidential, U.S. Senate. [General]
Date File Updated: 07/27/2021
Date Report Updated: 11/24/2021
RDH Validation Code (Github): https://github.com/nonpartisan-redistricting-datahub/pdv-ar

RDH Criteria	Explanation

Is all raw data available?
 	
Yes
	<u>Accessible files:</u>
	• VEST AR 20 data file
	   ○ Accessed 11/10/21, Source: VEST
	   ○ https://dataverse.harvard.edu/file.xhtml?fileId=4931787&version=24.0
	• VEST AR 20 documentation file
	   ○ Accessed: 11/10/21, Source: VEST
	   ○ https://dataverse.harvard.edu/file.xhtml?fileId=5371928&version=24.0
	• AR Precinct-Level Election Results
	   ○ Accessed: 10/29/21, Source: Open Elections
	   ○ https://github.com/openelections/openelections-data-ar
	• AR Voting Precincts 2020 Shapefile
	   ○ Accessed: 11/04/21, Source: Arkansas GIS Office
	   ○ https://gis.arkansas.gov/
	   ○ Downloaded: Voting Districts - 2020 Census

Processing steps available?
 	
Yes
	<u>Description of processing steps:</u>
	• The full processing steps can be accessed at the link above and were accessed on 11/10/21. Part of the documentation is copied below:
	   ○ Election results from Arkansas Secretary of State (https://www.sos.arkansas.gov/elections/research/election-results)
	   ○ Precinct shapefile from the Arkansas GIS Office (http://gis.arkansas.gov/product/election-precincts/)
	   ○ Greene County was consolidated from 24 townships to 6 townships by court order in late 2019. Due to the proximity of the 2020

elections the results were reported by ballot type rather than by precincts based on the prior township map. The associated precinct parts were identified using the voter statistics report provided by the county. The relevant splits involve the state house districts, a Justice of the Peace district, and two school districts. Note also that in the general election results from the AR Secretary of State one of the reporting units in the new Bagwell Lake township is mislabeled as Crowley Ridge 3.

- Precinct merges were made in the following counties to match county reporting units: Carroll, Crittenden, Dallas, Hot Spring, Howard, Independence, Mississippi, Monroe, Nevada, Phillips, Poinsett, St. Francis.
- The following additional revisions were made to match the 2020 precinct boundaries.
    - Boone: Add precinct splits with municipal and district boundaries on county map
    - Greene: Align Paragould city wards with city PDF
    - Izard: Split Sage in Melbourne 4 and Oxford in Brockwell with township shapefile
    - Nevada: Split West Rural by township
    - Ouachita: Split 11/19 with township and state house district shapefiles
    - Phillips: Add Helena-West Helena wards from city redistricting map
    - Prairie: Split White River Country with school zone shapefile
    - Sebastian: Split 9-2A and 9-2C by Greenwood city ward
    - St. Francis: Align Forrest City wards with city PDF and municipal code

Information not in their processing steps:
- List of precinct name changes.
- List of exact merges.

Able to replicate joining election data and shapefiles? No	Given the documentation VEST provided we were not able to follow all of their steps to complete the shapefile join. However, we were able to join 2349 precincts with 242 precinct shapefiles unjoined and 61 election result precincts unjoined. We made a number of name changes to complete the election data join.

Able to replicate joining demographic data to block-level shapefiles? N/A	There is no demographic data on the file.
Able to replicate joining boundary data? N/A	There is no boundary data on the file.
Successfully ran validation? No	**Election results: Yes** - We validated election results at three different levels: - 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 Arkansas's Secretary of State's official results summary. (https://results.enr.clarityelections.com/AR/106124/web.274956/#/summary) - At the countywide total level, the totals matched VEST's. The totals also matched Arkansas's Secretary of State's official results summary (https://results.enr.clarityelections.com/AR/106124/web.274956/#/summary) - At the precinct-level of the 2530 precincts that were able to be joined, all matched exactly. **Geographies: No** - We were not able to fully validate as there were a number of merges and splits VEST conducted that we were unable to conduct. - Of the 2349 precincts we were able to validate (out of 2747 total precincts in VEST's file): 3 precincts w/ a difference of 0 km^2 2172 precincts w/ a difference between 0 and 0.1 km^2 141 precincts w/ a difference between 0.1 and 0.5 km^2 16 precincts w/ a difference between 0.5 and 1 km^2

- 4 precincts w/ a difference between 1 and 2 km^2
- 8 precincts w/ a difference between 2 and 5 km^2
- 5 precincts w/ a difference greater than 5 km^2