VEST IA 2020

State: Iowa
Organization: Voting and Election Science Team (VEST)
Summary of Races included: Presidential, U.S. Senate [General]
Date File Updated: 06/09/2021
Date Report Updated: 01/07/2021
RDH Validation Code (Github): https://github.com/nonpartisan-redistricting-datahub/pdv-ia

RDH Criteria	Explanation

Is all raw data available?
 	
No
	<u>Accessible files:</u>
	● VEST Iowa 2020 Data File
	    ○ Accessed: 11/10/21, Source: VEST on the Harvard Dataverse
	    ○ https://dataverse.harvard.edu/file.xhtml?fileId=4789403&version=24.0#
	● VEST Iowa 2020 Documentation
	    ○ Accessed: 11/10/21, Source: VEST on the Harvard Dataverse
	    ○ https://dataverse.harvard.edu/file.xhtml?fileId=5371928&version=24.0#
	● Iowa Precinct-Level Election Results
	    ○ Accessed: 11/10/21, Source: Iowa Secretary of State
	    ○ https://sos.iowa.gov/elections/results/precinctvotetotals2020primary.html
	    ○ Iowa SOS distributes precinct-level election data in 99 different spreadsheet files, one for each county in Iowa. Scott County's election results are distributed only as a PDF and were digitized by hand.
	● Iowa Statewide Precinct Layer
	    ○ Accessed: 11/15/21, Source: Iowa Secretary of State
	    ○ https://sos.iowa.gov/elections/maps/shapefiles.html
	    ○ Select the "Precinct and District Shapefiles" link, then click the "Statewide Precinct Layer". Shapefile is in an archive called "pcts_04172014_0908am.zip". VEST is not clear whether they used this file or the county-by-county file.
	● Iowa County Boundaries Shapefile

- ○ Accessed: 11/10/21, Source: State of Iowa
  - ○ https://open-iowa.opendata.arcgis.com/datasets/iowa::iowa-county-boundaries
- 2020 Census Redistricting Data (P.L. 94-171) Shapefiles for Muscatine, Woodbury, and Marion Counties.
  - ○ Date accessed: 11/17/21, Source: U.S. Census Bureau
  - ○ https://www.census.gov/cgi-bin/geo/shapefiles/index.php?year=2020&layergroup=All+Lines
  - ○ Select "Iowa" from the dropdown menu. On the next page, select "Muscatine", "Woodbury", and/or "Marion" in the county dropdown menu.
- Dallas County Precinct Shapefiles
  - ○ Accessed: 11/17/21, Source: Dallas County GIS
  - ○ http://geodallas.dallascountyiowa.gov/SpatialDownload/Default.aspx
  - ○ Select the "VotingPrecincts.shp" checkbox to indicate you would like to download it, then click the "Create Zip File" button. When the "Download Zip File" link appears below it, click it to download the precinct shapefiles.
- Dubuque County Precinct Map
  - ○ Accessed: 11/17/21, Source: Dubuque County GIS
  - ○ https://www.dubuquecountyiowa.gov/205/GIS-Mapping
  - ○ Under the "Downloadable Maps" subheader, select the "City Precincts (PDF)" and "Election Precincts (PDF)" links.
- Johnson County Precinct Shapefiles
  - ○ Accessed: 11/17/21, Source: IowaGISData.org
  - ○ https://www.iowagisdata.org
  - ○ Site is referenced by the Johnson County Government website as the preferred source for all of the county's vector data. Shapefiles were downloaded from the "shp_Precincts_All_2013.zip" archive in the "Johnson" folder.
- Linn County Precinct Maps
  - ○ Accessed: 11/17/21, Source: Linn County Government
  - ○ https://www.linncountyiowa.gov/372/Precinct-Maps
- Polk County Precinct Maps
  - ○ Accessed: 11/17/21, Source: Polk County Government
  - ○ https://www.polkcountyiowa.gov/county-auditor/election/election-maps/#District%20Map%20Packages
  - ○ Under the "Precinct Maps" subheader, click the "2012-2021 Des Moines Precincts" and "2012-2021 Polk County Precincts" links.
- Polk County Precinct Shapefiles
  - ○ Accessed: 11/18/21, Source: Polk County Government

- Requested by email
- Pottawattamie County Precinct Shapefiles
  - Accessed: 11/17/21, Source: IowaGISData.org
  - Shapefiles downloaded from the "shp_Elections.zip" file available in the "Pottawattamie" folder.
  - PDF Maps are available from the county website here: https://elections.pottcounty-ia.gov/vote/precincts/
- Scott County Precinct Maps
  - Accessed: 11/17/21, Source: Scott County Government
  - https://www.scottcountyiowa.gov/auditor/precincts/pdfs?folder=auditor-precinct-maps/Scott_County_Precinct_Maps/Overall_Map
- Story County Precinct Maps
  - Accessed: 11/17/21, Source: Story County Government
  - https://www.storycountyiowa.gov/1172/Jurisdictional-Maps
  - Ames (PDF) and Story County (PDF)
- Story County Precinct Shapefiles
  - Accessed: 11/19/21, Source: Story County Government
  - Requested via email
- Mitchell County Precinct Maps
  - Accessed: 11/17/21, Source: Mitchell County Government
  - https://mitchellcounty.iowa.gov/maps/
  - Click the "Mitchell County Precinct Boundary Map" link under "Additional Resources"

Inaccessible files:
- Dubuque County Precinct Shapefiles
  - County government charges for access to these files.
- Scott County Precinct Shapefiles
  - County government did not respond to requests for these files.

Processing steps available? Yes	Description of processing steps:
	- VEST's documentation, accessed 11/10/21, is pasted below:
	  - Election results from Iowa Secretary of State (https://sos.iowa.gov/elections/results/index.html)
	  - Precinct shapefile primarily from IA Secretary of State (https://sos.iowa.gov/shapefiles/)
	  - The following counties instead use shapefiles sourced from the respective county governments: Dallas, Dubuque, Johnson, Linn, Polk, Pottawattamie, Scott, Story.

- The following counties were aligned with updated municipal boundaries from the U.S. Census Bureau's 2020 Redistricting Data Program: Marion, Muscatine, Woodbury.
    - Mitchell County was edited to match the revised 2020 precinct map from the county.
- VEST's documentation contains a list of precincts that were merged to match the 2020 election results. Merges occurred in Appanoose, Black Hawk, Cass, Davis, Des Moines, Fremont, Henry, Howard, Lee, Mitchell, Polk, and Tama counties. Some of these mergers involved precincts that were not present in our precinct file.

Information not in their processing steps:
- Detailed information about shapefile processing, or details about the county maps/shapefiles.

Able to replicate joining election data and shapefiles? **No**	We were able to join 1651 out of 1661 precincts. Of the 10 precincts that could not be joined, there were 3 in Mitchell County, 2 in Lee County and then 1 each in Clinton, Davis, Des Moines, Howard and Montgomery County.
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
	<u>Election results:</u> **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 those of Iowa's election summary report https://sos.iowa.gov/elections/pdf/2020/general/canvsummary.pdf
	● At the countywide total level, the totals also matched those of Iowa's county-level election summary report https://sos.iowa.gov/elections/pdf/2020/general/canvsummary.pdf
	● At the precinct-level, no differences were observed between VEST's precinct-level totals and those available from IA SOS.
	
	<u>Geographies:</u> **No**
	● There were 1661 precincts in VEST's file. We were only able to join 1651 precincts to be validated. Out of these 1651 precincts:
	  ○ 1048 precincts w/ a difference of 0 km^2
	  ○ 476 precincts w/ a difference between 0 and .1 km^2
	  ○ 96 precincts w/ a difference between .1 and .5 km^2
	  ○ 15 precincts w/ a difference between .5 and 1 km^2
	  ○ 10 precincts w/ a difference between 1 and 2 km^2
	  ○ 3 precincts w/ a difference between 2 and 5 km^2
	  ○ 3 precincts w/ a difference greater than 5 km^2
	
	A list of all these precincts and their differences is in the notebook. Some of these differences may be attributable to VEST using a slightly different source precinct shapefile. Some of the larger differences occur in the City of Keokuk in Lee County, where joining election results to precinct shapefiles was quite difficult.