

VEST MI 2020

State: Michigan

Organization: Voting and Election Science Team (VEST)

Summary of Races included: Presidential, U.S. Senate [General]

Date File Updated: 01/11/2022

Date Report Updated: 03/15/2022

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

RDH Criteria	Explanation
<p>Is all raw data available?</p> <p>Yes</p>	<p>Accessible files:</p> <ul style="list-style-type: none"> ● VEST MI 2020 file <ul style="list-style-type: none"> ○ Accessed: 03/15/2022, Source: VEST on the Harvard Dataverse ○ https://dataverse.harvard.edu/file.xhtml?fileId=4863165&version=20.0 ● VEST documentation file, 2020 <ul style="list-style-type: none"> ○ Accessed: 03/15/2022, Source: VEST on the Harvard Dataverse ○ https://dataverse.harvard.edu/file.xhtml?fileId=4931790&version=20.0 ● Election Results, SOS 2020 <ul style="list-style-type: none"> ○ Accessed: 07/26/2021, Source: MI SOS ○ https://miboecfr.nictusa.com/cgi-bin/cfr/precinct_srch.cgi ○ Note: Make sure you have "All Counties" selected, click "Search" and then click "HERE". ● Precinct Shapefile, 2020 <ul style="list-style-type: none"> ○ Accessed: 07/23/2021, Source: MI GIS Open Data ○ https://gis-michigan.opendata.arcgis.com/datasets/49eb37d0a4294924bf8ef5ffe0eac47e_6/explore ○ Note: There is a download button on the left side of the screen. ● AVCB Mapping <ul style="list-style-type: none"> ○ Accessed: 08/23/2021, Source: Open Elections ○ https://github.com/openelections/openelections-sources-mi/blob/master/2020/Detroit%20AVCBs%20by%20precinct%20(Nov.%202020).xlsx ● Census Geocodes, 2020 <ul style="list-style-type: none"> ○ Accessed: 08/23/2021, Source: US Census

	<ul style="list-style-type: none"> ○ https://www.census.gov/geographies/reference-files/2020/demo/popest/2020-fips.html ● MI County Shapefile <ul style="list-style-type: none"> ○ Accessed: 09/27/2021, Source: MI GIS Open Data ○ https://gis-michigan.opendata.arcgis.com/datasets/67a8ff23b5f54f15b7133b8c30981441/explore?location=44.916500%2C-86.594000%2C6.81 ○ Note: Didn't use the precinct shapefile for this, because VEST mentions that that file does not always split precincts across counties correctly.
<p>Processing steps available?</p> <p>Yes</p>	<p><u>Description of processing steps:</u></p> <ul style="list-style-type: none"> ● VEST's documentation, which we accessed on 03/15/2022 and can be found at the link above, is summarized below: ● VEST first lists sources for the election results and the precinct shapefile (same as the above). ● VEST discusses its treatment of statistical adjustments and write-in votes: <ul style="list-style-type: none"> ○ <i>Some counties report "Statistical Adjustments" with their precinct results, which can either be positive or negative. Many of these are related to cities that span county lines, as they often match precinct results of these county-spanning cities. In some cases these adjustments cancel each other out across the two counties that share the city, but some (notably Clinton County's East Lansing and Eaton County's Lansing adjustments) are not reciprocated, which introduces error to statewide totals. Other than these, there appears to be a handful of tiny adjustments that were made to make the precinct totals match official countywide totals. None of these adjustments of any type were distributed to precincts, which may result in candidate totals being slightly off official totals.</i> ○ <i>Write-in vote totals have been excluded, since in most cases, a large share of their votes are accounted for via statistical adjustments.</i> ● VEST discusses shapefile processing: <ul style="list-style-type: none"> ○ <i>In several cases, cities that overlapped county lines reported results in each county, but the shapefile had a single precinct. These were split at the county line in the shapefile and the two sets of results assigned accordingly.</i> ○ <i>Claire city - Isabella/Clare</i> ○ <i>Brown city - Lapeer/Sanilac</i> ○ <i>Fenton city - Oakland/Genesee</i> ○ <i>Richmond city - St. Clair/Macomb</i>

	<ul style="list-style-type: none"> ● VEST mentions anything unique to particular counties: <ul style="list-style-type: none"> ○ <i>Berrien: the results for Sodus and St. Joseph townships appear to have been flipped, these were corrected</i> ○ <i>Ottawa: via contact with the Park Township clerk's office, precinct 9 in the state shapefile has been renumbered to precinct 4</i> ○ <i>Wayne: Detroit reports absentee votes via Absent Voter Counting Boards. The linkage file of boards to precincts is from OpenElections (https://github.com/openelections/openelections-sources-mi/tree/master/2020), and votes were distributed to precincts proportionally by election day vote.</i>
<p>Able to replicate joining election data and shapefiles?</p> <p>Yes</p>	<p>Yes, given the documentation they provided we would not be able to follow their steps to complete the join. However, we were able to join 4756 out of 4756 precincts and we made the following modifications:</p> <ul style="list-style-type: none"> ● In following VEST's documentation, we split four precincts that ran across counties in the shapefiles. ● We made 14 trivial unique ID changes. ● One of these precincts was a no-vote precinct that was not initially present in the election results.
<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</p>	<p><u>Election results:</u> Yes</p>

ran validation?

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 initially did not match VEST's. However, after removing the "Statistical Adjustment" precincts, which VEST mentions in its documentation, the totals matched. The totals also did not match those of MI's election summary report (https://mielections.us/election/results/2020GEN_CENR.html), which VEST also mentions in its documentation.

Election Name	VEST Total (same as ours w/o stat. adjustments)	RDH Total w/ Stat. Adjustments	SOS Report
G20PRERTRU	2649859	2649234	2649852
G20PREDBID	2804036	2801469	2804040
G20PRELJOR	60406	60356	60381
G20PREGHAW	13718	13705	13718
G20PRENDEL	2985	2983	2986
G20PRETBLA	7204	7231	7235
G20USSRJAM	2642221	2641612	2642233
G20USSDPET	2734558	2732041	2734568
G20USSGSQU	39217	39180	39217
G20USSNDER	13093	13087	13093
G20USSTWIL	50596	50566	50597

- At the countywide total level, the election results matched VEST's. The precinct-level results with statistical adjustments included do not match the state's official county-results (https://mielections.us/election/results/2020GEN_CENR.html) in 9 counties: 005, 035, 037, 045, 073, 087, 147, 151, 159. The below table shows the counties with differences between the precinct-level votes and the county report. We are not sure why these differences are present.

FIPS	PRER TRU	PREDB ID	PREN DEL	USSN DER	USST WIL	PRET BLA	PREL JOR	PREG HAW	USSG SQU	USSD PET	USSR JAM
005	1	6	0	0	0	0	0	0	0	6	2
035	-37	-17	0	0	-3	-2	-1	0	0	-15	-39
037	-314	-924	-1	-2	-3	0	-5	-4	-4	-892	-348
045	-309	-1648	-2	-4	-27	-4	-19	-9	-33	-1636	-272
073	36	18	0	0	2	2	0	0	0	16	38
087	4	0	0	0	0	0	0	0	0	0	4
147	6	0	0	0	0	0	0	0	0	0	0
151	-4	0	0	0	0	0	0	0	0	0	-4
159	-1	-6	0	0	0	0	0	0	0	-6	-2

- At the precinct-level, we did not allocate the statistical adjustments. There were 4755 precincts we validated (everything but one zero-vote precinct). Of these:
 - 21 had election result differences
 - 4734 are the same
- The differences were some small differences (maximum of 6 votes) in Detroit City, where we had to allocate AVCB votes.

Geographies: Yes

- Out of 4756 total precincts:
 - 0 precincts w/ a difference of 0 km²
 - 4756 precincts w/ a difference between 0 and .1 km²
 - 0 precincts w/ a difference between .1 and .5 km²
 - 0 precincts w/ a difference between .5 and 1 km²
 - 0 precincts w/ a difference between 1 and 2 km²
 - 0 precincts w/ a difference between 2 and 5 km²
 - 0 precincts w/ a difference greater than 5 km²