MGGG NC

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State: NC
Organization: MGGG
Date Updated: 12/28/20

1. Is all raw data available?

No, not all of the raw data is available. In addition, some of the raw data is available but not accessible either in the exact same format or from the same source as MGGG.
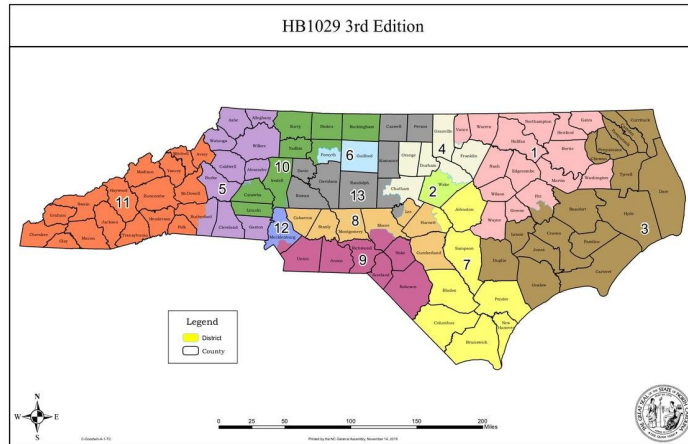
- Inaccessible Files:
  - Judge's Plan Shapefile
    - The MGGG file relates VTDs to 3 different Congressional plans. The third plan listed, which is described as "judge's plan" is not accessible online. Unlike the other two plans, the enacted 2011 and 2016 plans, this plan was not used in any NC elections but was rather a proposal plan created by a nonpartisan panel of retired judges and justices (see here for a press release on it). While North Carolina did enact a new plan in 2019 for the 2020 election, this map is not the same as the "judge's plan" map, as is detailed below. We were not able to locate a shapefile for this plan online.

Judge's Plan, Source: Duke Sanford School of Public Policy

2019 Enacted Plan, Source: Raleigh News & Observer

- Files accessed in different formats or from a different access point:
  - '12 Presidential Election Results (Different source) and '16 Election Results (Different source and format)
    - MGGG seems to have used a VTD file that included '12 presidential and '16 election results. The file on the NC General Assembly 2016 Redistricting Reference Data site no longer includes these election results (but has all the other needed election results). We contacted the NC General Assembly to ask about the file change and were redirected to State Board of Elections (SBE) as NC General Assembly said all of their materials they got from the SBE.
    - We also asked if they had 2012 and 2016 election data that's already aggregated to VTDs. We heard back via an email from Caroline Myrick (Caroline.Myrick@ncsbe.gov) mentioning Session Law 2016-109, which changed the state election reporting requirements from VTDs back to precincts. In addition, they mentioned that the only election files they had uploaded, was uploaded in February 2017, and has not been updated.
    - However, given the fact that there are other documents that reference a file with 2016 election results on the NC General Assembly Redistricting website (LDTX285 Common Cause vs. Lewis, Supplemental Expert Report of Dr. M.V. Hood III Part 3 Paragraph 1) we believe there was such a file and that it has been removed or changed for whatever reason. Ultimately, the '12 presidential election and multiple '16 election results for these are accessible through the NC Board of Elections website, with the '12 presidential results reported by VTD and the '16 election results reported by precinct.
  - Demographic Data (Different access point)
    - MGGG retrieved relevant census demographic data from the National Historical Geographic Information System (NHGIS). For this validation, we downloaded demographic data directly from the US Census API. This data has been compared and is the same data, just accessed a different way.

- Accessible files:
  - VTD Shapefile NC + Main Election Results file (everything but '12 & '16 presidential results)
    - Accessed: 12/28/20
    - Working Link: https://www.ncleg.gov/Redistricting/BaseData2016 (Click "Geographic Data" -> "Assignment Layers (counties, VTDs, blocks)"
    - Source: North Carolina General Assembly's 2016 Redistricting Reference Data, US Census Bureau

  - Census Block to VTD Keys
    - Accessed: 12/28/20
    - Working Link: https://www.ncleg.gov/Redistricting/BaseData2016 ("Numeric Data" -> "Datasets" -> "Block Level Keys")
    - Source: North Carolina General Assembly's 2016 Redistricting Reference Data

  - '12 Election results (by VTD) *see above note*
    - Accessed: 12/28/20
    - Working Link: https://er.ncsbe.gov/downloads.html (Election:11/06/2012 -> "Available Election-related Files" -> "results_sort_20121106.zip")
    - Source: North Carolina State Board of Elections

  - '16 Election results (by precinct) *see above note*
    - Accessed: 12/28/20
    - Working Link: https://er.ncsbe.gov/downloads.html (Election:11/08/2016 -> "Available Election-related Files" -> "results_sort_20161108.zip")
    - Source: North Carolina State Board of Elections

  - 2011 Enacted Plan
    - Accessed: 12/28/20
    - Working Link: https://www.ncleg.gov/Redistricting ("Congressional District Plans" -> "Enacted 2011" -> "Shapefile")
    - Source: North Carolina General Assembly

  - 2016 Enacted plan
    - Accessed: 12/28/20
    - Working Link: https://www.ncleg.gov/Redistricting ("Congressional District Plans" -> "Enacted 2016" -> "Shapefile")
    - Source: North Carolina General Assembly

  - MGGG NC File
    - Accessed: 12/28/20
    - Working Link: https://github.com/mggg-states/NC-shapefiles
    - Source: MGGG

2. Processing steps available?

Yes, MGGG has processing steps available.

- MGGG's processing steps (date accessed: 12/10/20):
    - Demographic data was aggregated from the census block level to VTDs using the General Assembly's Block Level Key.
    - Roundoff was used to assign districts from the 2011 enacted plan, 2016 enacted plan, and the judge's plan to VTDs.

- Information not in their processing steps:
    - How they joined '12 and '16 presidential election results to the VTD file. (They may have been working with a VTD file that included these, but the current file on their listed source fo the election data does not due to the change in laws described above).
    - How they labeled their districts according to the plans as there numbering was slightly different from our replications (though it mapped once the numbers were mapped to one another).

3. Able to replicate joining election data and shapefiles?

This file includes election results from multiple years reported on the same VTD geography. We were ultimately able to replicate joining election data and shapefiles for everything but the '16 election data. For the '16 election data we are able to replicate 2,296 of the 2692 total VTDs, with 8 VTDs having different values and the rest of the VTDs not having data due to difficulties matching precinct names to VTDs.

- '12 presidential processing notes:
    - According to North Carolina's data processing guidelines on their redistricting data site, "any county-wide votes found in the VTD-level data files, typically falling under categories such as 'absentee', 'transfer', or 'provisional', were excluded due to the homogenizing effect on the VTD-level data". When processing the '12 presidential results reported at the VTD level, we also removed these county-wide vote totals and after doing that the files matched completely. (https://www.ncleg.gov/Files/GIS/Base_Data/2016/Numeric/Data_Processing_Notes_2016.pdf)
- '16 election data:

- The main issue with joining these results is that North Carolina passed a law in 2016 where they now only report election results at the precinct level rather than the VTD level, which is the geography of this file.
      - While names stayed the same in many places during this change, there are some precincts that have different names from any VTDs as well as precincts that combine results from two or more VTDs.
      - When the names did match (2,296 out of 2,692 total VTDs) we were able to replicate the election data exactly in 2,288 of those VTDs.
  - Everything else:
      - The downloaded VTD file already includes the other election data so it did not need to be joined and when checked it matches.

4. Able to replicate joining demographic data to block-level shapefiles?

Yes
  - We are able to replicate all of the demographic data join. These totals match for 100% of the VTDS.

5. Able to replicate joining boundary data?

Yes, with a few caveats.
  - Judge Plan - As mentioned above, this file was not available and we did not replicate joining this boundary data.
  - Old Plan - The MGGG assignment uses a national index (435 total seat) where the other uses a 1-13 labeling. After mapping the 435 seat index to the 13 seat index, the two are the same.
  - New Plan - Here the MGGG assignment uses a 13 seat index but the numbers did not exactly match ours. MGGG's assignment also includes a 0th district. When MGGG's assignment numbers are mapped to ours, they match across all VTDs.

6. Successfully ran validation?

Yes
  - For all demographic data and election results excluding '16 election results, validation ran successfully and matched 100%.
  - For the '16 elections results, were were only able to match data at the precinct level to data at the VTD level for 2,296 VTDs. For these VTDs, all but 8 matched MGGG's results exactly.
  - We did not run the PGP validation script as the validated file matched the MGGG file entirely for everything but the '16 election results.
  - For the shapefiles, there were a few district-labeling issues (the number assigned to a district) that were fixed once the numbers were matched to one another.