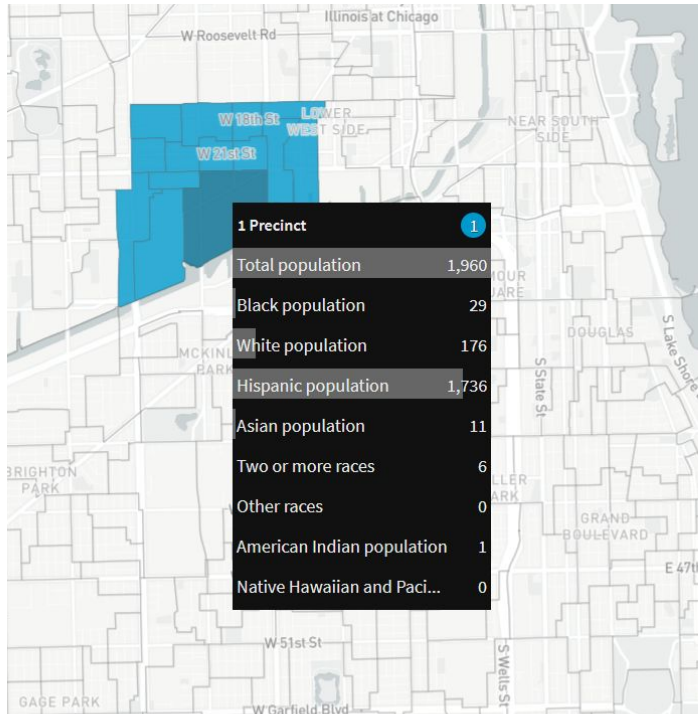


The data picture

Heather Rosenfeld,
hrosenfeld@mggg.org

MGGG Mapping Training

What data?



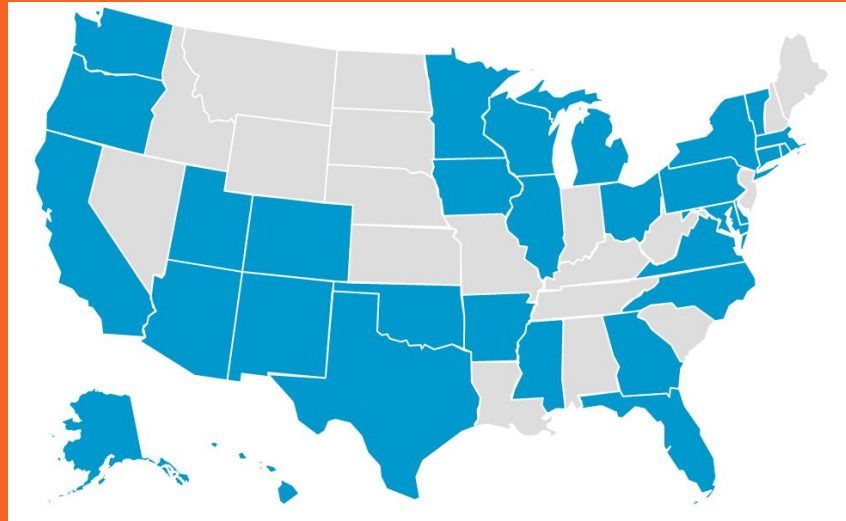
Precinct boundaries

Election results

Demographic information (race, voting age population)

District boundaries

The problem



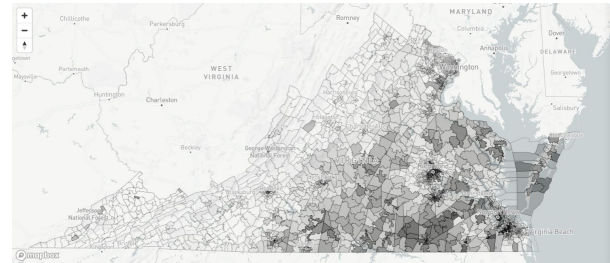
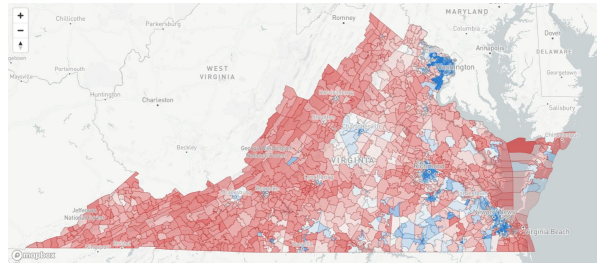
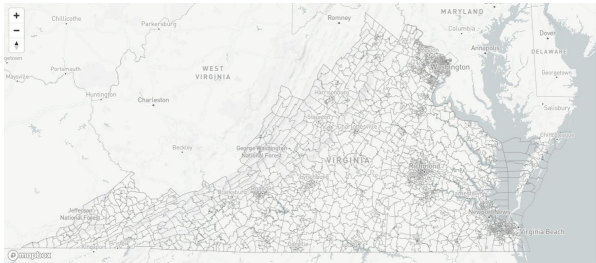
... when you want
to add another
state

...when you want to
add another year of
data

-
- 1. There is no national repository of precinct-level data.**

1. There is no national repository of precinct-level data.

- **Precinct** boundaries
- **Election** results
- **Demographic** information



2. There is a lot of variability in precinct boundary maintenance

... Sometimes **states** will maintain the boundary file(s)

... Sometimes **counties or municipalities** will maintain the boundary file(s)

... Boundary files can have **multiple formats** (.shp, .pdf, paper map)


... Boundaries **change over time** and can be **altered without reporting** to states

2. There is a lot of variability in precinct boundary file maintenance

Hawaii Statewide GIS Program

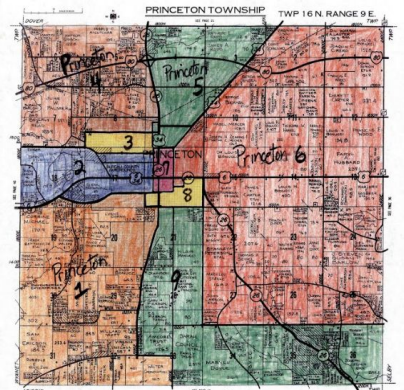
Election Precincts

Last updated 2 years ago | 262 Records



Map showing election precinct boundaries across the Hawaiian Islands, including Honolulu, Hilo, and various seamounts like Takaofa, Dutton, and Bishop. The map is titled 'HAWAII UNITED STATES' and 'Hawaiian Islands'.

Overview Data API Explorer



PRINCETON TOWNSHIP TWP 16 N. RANGE 9 E.

Map showing detailed precinct boundaries (Princeton 1 through 9) and land parcels within Princeton Township, TWP 16 N. RANGE 9 E.

Princeton Precincts

DILLER ROD, INC.

NEW HOLLAND
KINZE

(815) 875-3389

701 East Peru Street • Princeton, Illinois 61356

STIHL
Number One Chainsaw

Club Car
Power Equipment

35

2. There is some variability in election results reporting and storage

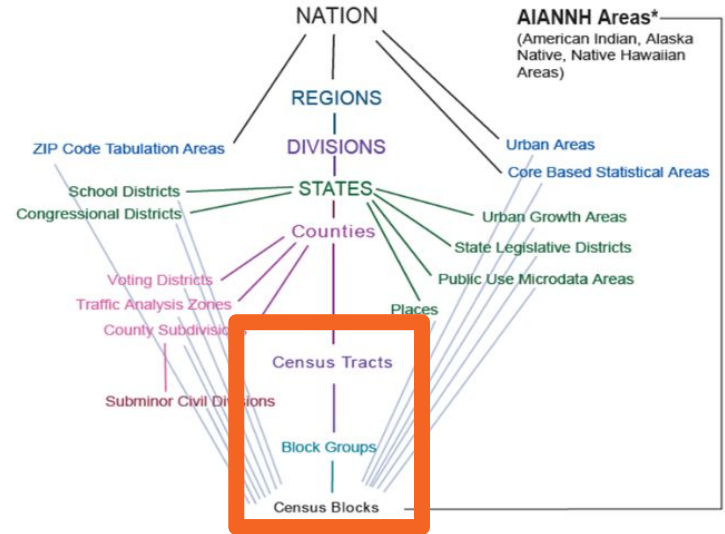
... Some **states** report

... Some **counties/municipalities** report

... The **number of years** archived varies

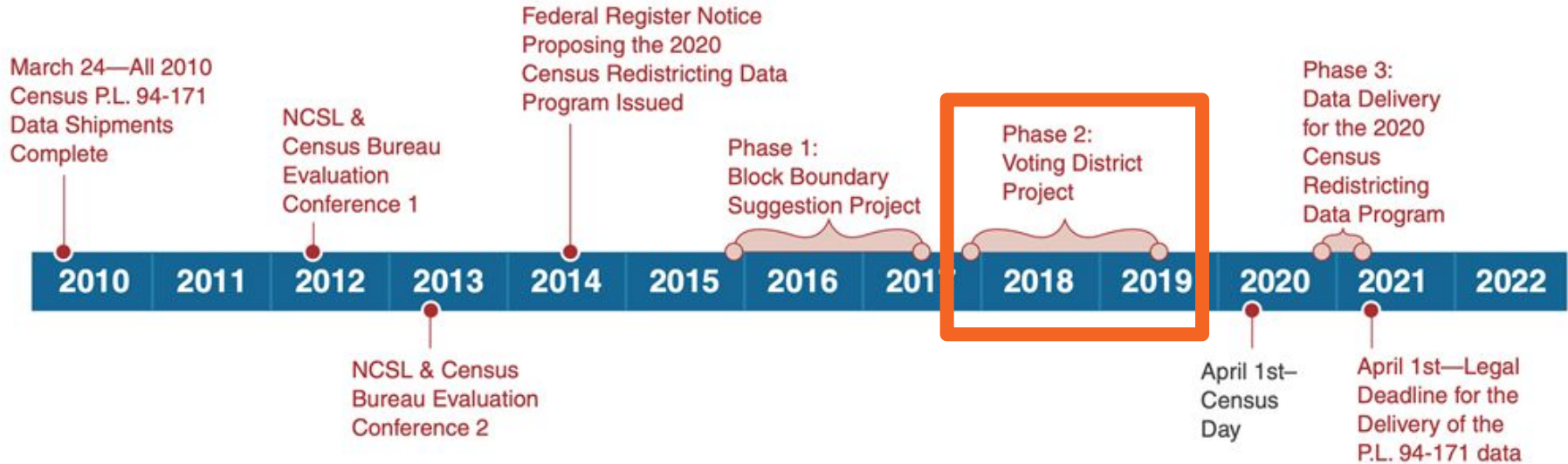
3. Units don't match

- Precinct boundary files vs election results
- Census data vs precincts

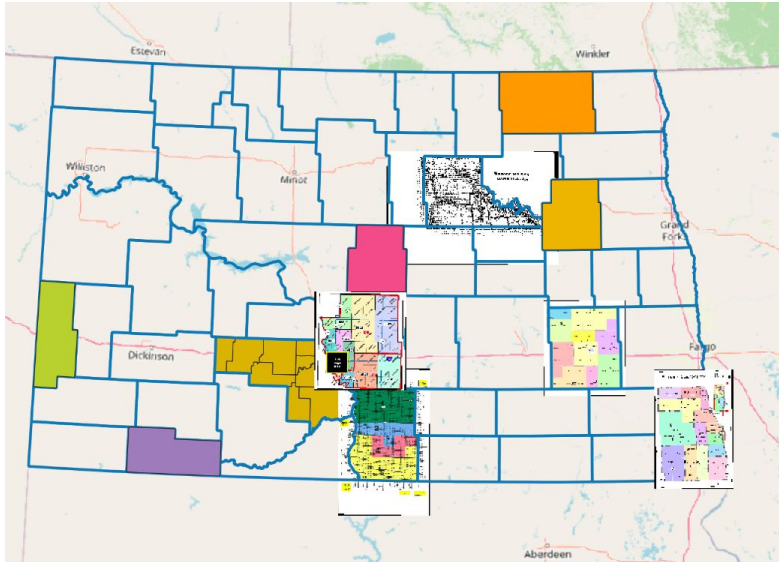


Caveat: Things that help

Voting Tabulation Districts (VTDs)



Interdisciplinary Labor



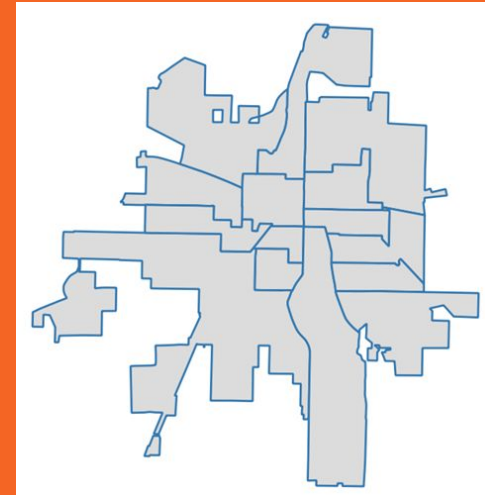
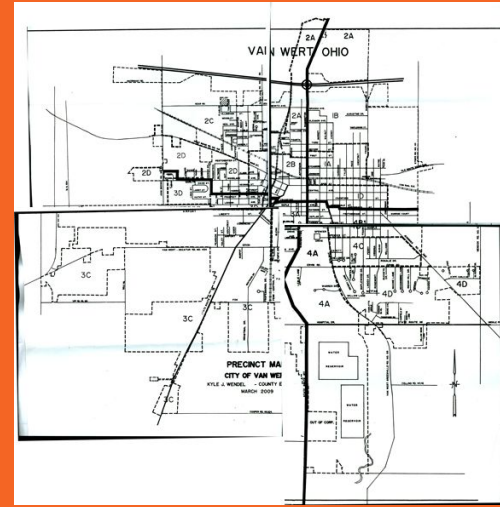
- political geography and civil rights
- mapping/GIS
- computer programming
- on-the-ground local knowledge
- partners (e.g., Princeton Gerrymandering Project)

Find/make a statewide* precinct shapefile

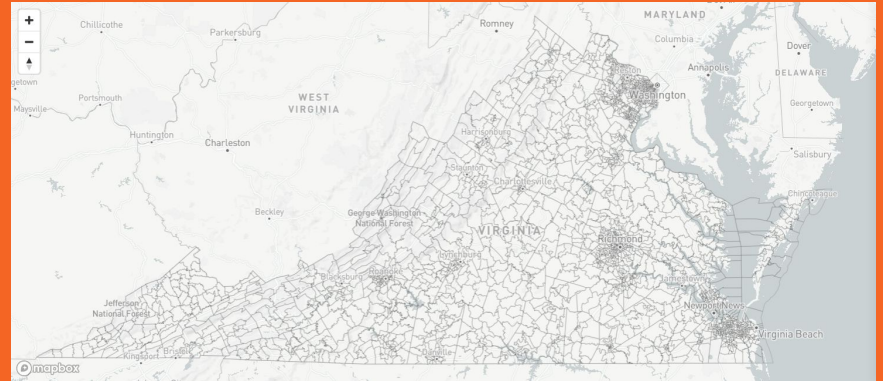
*or module-wide

- Web searches
 - Contact county/state election officials
 - Digitize files (QGIS)
 - (Draw files based on available information)
 - Merge files (e.g., multiple counties/towns)
-

Find/make a
precinct
shapefile:
digitizing



Precinct shapefile



Find and format election data for the state*

*or module

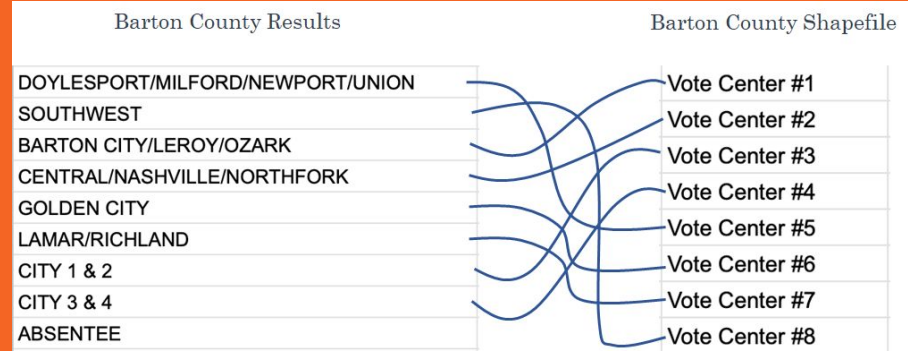
- Web searches
- (Contact county/state election officials)
- Digitize files (PDF-->csv)
- Format files by political party and year

Consider: Have precinct boundaries changed between years?

Join precinct shapefile and election results

- Data sleuthing (ancillary data)
- Contact county/state election officials
- maup (software package) for county-level results -- e.g., from absentee ballots

Join precinct shapefile and election results: data sleuthing



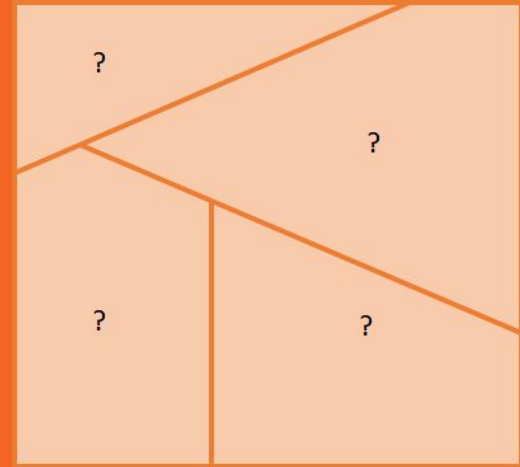
- Use ancillary information
- Check 0-vote precincts
- Check for merged precincts

Join precinct shapefile and election results

- Data sleuthing (ancillary data)
 - Contact county/state election officials
 - **maup (software package) for county-level results -- e.g., from absentee ballots**
-

Detour: more on maup

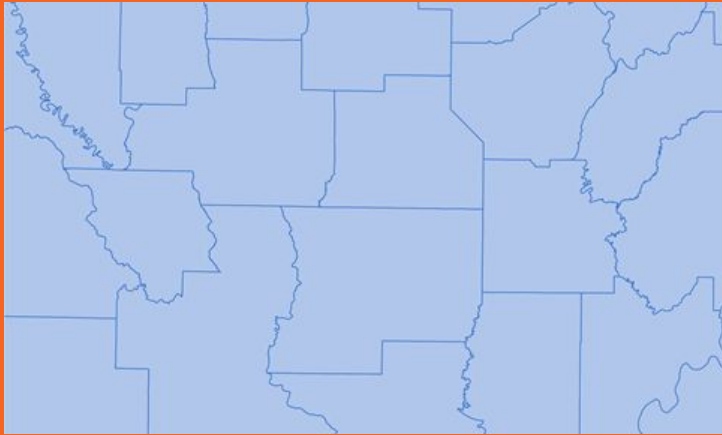
10	10	10	10
10	10	10	10
10	10	10	10
10	10	10	10



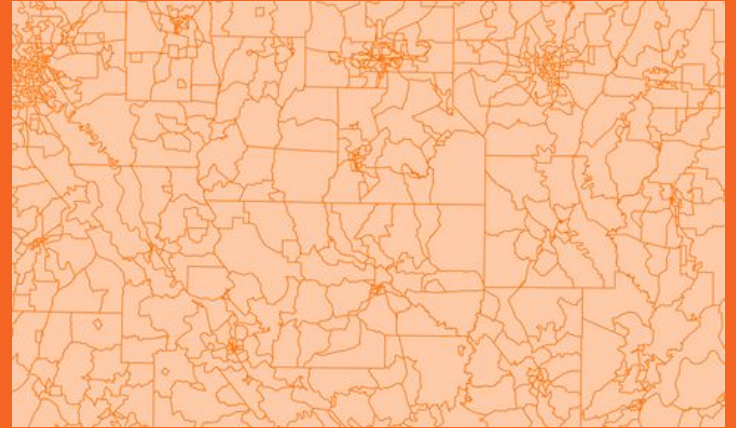
Detour: more on maup

- **Assign**: source to target units based on majority area
 - Aggregate census blocks to precincts
 - Disaggregate precincts to blocks
 - Assign precincts to districts
- **Prorate**: uses user-specified weights to go from source to target

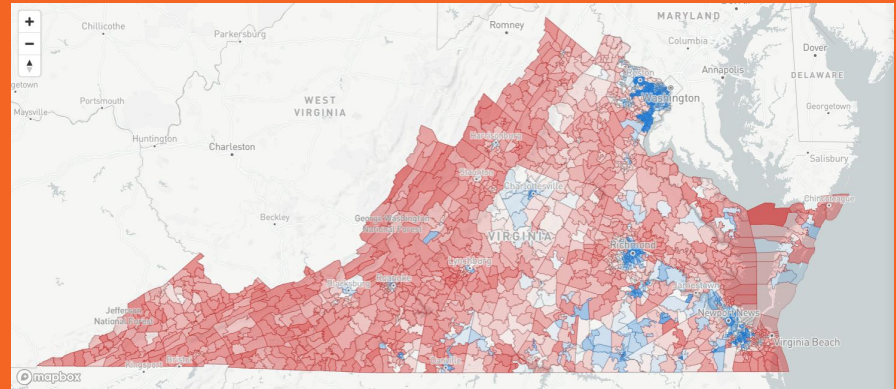
Detour: county-level votes to precincts



*Prorate
function*



Shapefile with election results



Find and process demographic data

- Decennial Census
 - (American Community Survey)
 - Join to shapefile

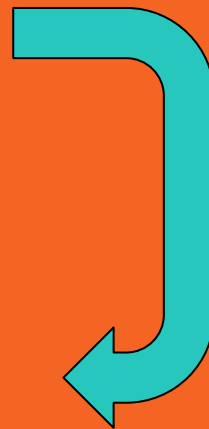
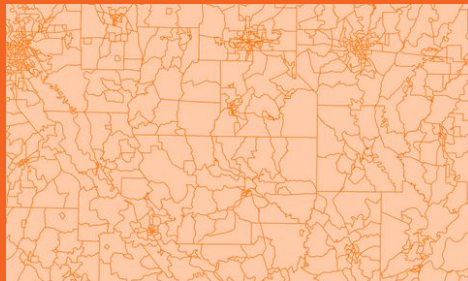
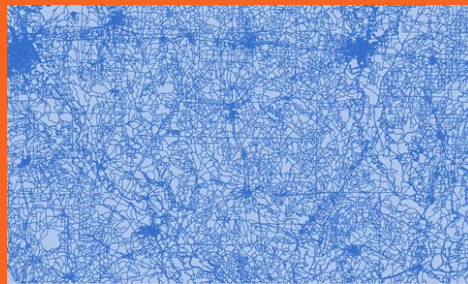
 - data.census.gov
 - nhgis.org
-

Join demographic data to precinct shapefile

- maup software package
 - Census blocks to precincts
 - (Census block groups to precincts)
-

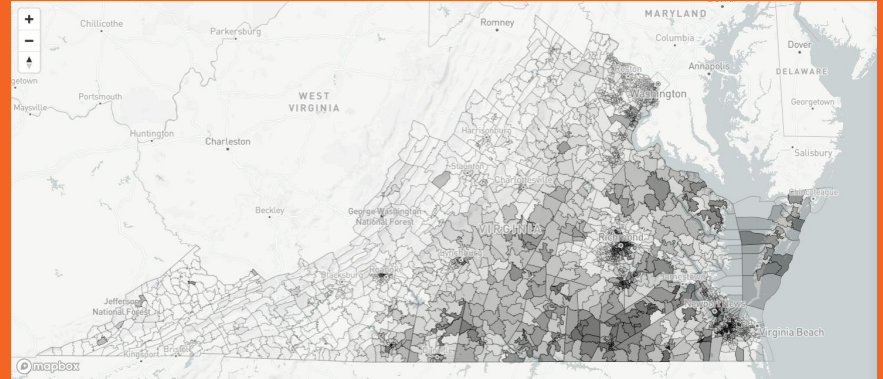
Join demographic data to precinct shapefile

- maup (software package)
- Census blocks to precincts



assign
function

Shapefile with demographic data



Questions?
