

## Projections

Part I: Answer the following questions for each scenario (Zoom, cohort, 30 minutes)

Zoom logistics: everyone should **participate**. One person should **facilitate**, in this case meaning making sure the cohort answers all worksheet questions and identifying sticking points. Another person should **take notes**, writing down the answers as the group comes up with them.

For each scenario, list six pieces of information: (a) the map property or properties it would be important to preserve (i.e., what kind of distortion to minimize), (b) the projected coordinate system you would select from QGIS, (c) the EPSG number for the projection, (d) the position of the standard line(s) or point, (e) the Central meridian, and (f) why you made some of these decisions.

Resources:

- [Projections Slides](#)
- US Geological Survey Poster: [Map Projections](#)

1. You are making a map of Florida to study gerrymandering, and a research partner might want to use it to at least eyeball compactness. What projection will you use?
  - a. Property preserved:
  - b. Projection name (PCS):
  - c. EPSG number:
  - d. Position of standard line(s) or point:
  - e. Central meridian:
  - f. Reflections:
  
2. You are making a map of the continental US to study gerrymandering, and a research partner might want to use it to at least eyeball compactness. What projection will you use?
  - a. Property preserved:
  - b. Projection name (PCS):
  - c. EPSG number:
  - d. Position of standard line(s) or point:
  - e. Central meridian:
  - f. Reflections:
  
3. Once it's safe to travel, we want to bring you all out here! And we want to make a map of flights out of Boston Logan International Airport (BOS) that allows readers to measure using a scale bar how many miles everyone has flown to get here. What projection should we use?
  - a. Property preserved:
  - b. Projection name (PCS):
  - c. EPSG number:

- d. Position of standard line(s) or point:
  - e. Central meridian:
  - f. Reflections:
4. You're making a giant world map poster for your 6 year old niece's birthday (she likes coloring). One of her parents is from Malaysia, so you want Malaysia to be relatively prominent. Otherwise, it's going to be scribbled all over. What projection do you use?
- a. Property preserved:
  - b. Projection name (PCS):
  - c. EPSG number:
  - d. Position of standard line(s) or point:
  - e. Central meridian:
  - f. Reflections:

Part II: Look at some of the projection information for [MGGG-states](#) in the "README.md" files. Then use that information, along with a blank project in QGIS, to answer the following questions:

Zoom logistics: same as part II, but rotate **facilitator** and **note-taker**.

For of the following states, list five pieces of information: (a) the geographic coordinate system; (b) the projected coordinate system, if specified; (c) the EPSG number, if specified; (d) the map property or properties it preserves (i.e., what kind of distortion the projection minimizes); (e) the position of the standard line, lines, or point; (f) the Central meridian; (g) reflections on why you think this state's precinct file has this projection.

*Hint: Opening Project Properties → CRS will let you search the information provided in MGGG-states to get PCS names, when applicable.*

1. Colorado
  - a. GCS:
  - b. PCS:
  - c. EPSG:
  - d. Property preserved:
  - e. Position of standard line(s) or point:
  - f. Reflections:
  
2. Hawai'i
  - a. GCS:
  - b. PCS:
  - c. EPSG:
  - d. Property preserved:
  - e. Position of standard line(s) or point:

f. Reflections:

3. Pennsylvania

a. GCS:

b. PCS:

c. EPSG:

d. Property preserved:

e. Position of standard line(s) or point:

f. Reflections: