Exercise One: Introduction to Catalog (15 points)

Assignment 1.1 (8 points)

Read the information for the “Long_Range_Plan_2050_Planning_Areas” file and answer the following questions:

- What is the geometry type for this file?
    - Polygon
- Does the file have a defined projection, and if so, what is it?
    - Transverse Mercator
- What are the linear units used in this file?
    - Meters (1.0)
- What resolution is the file?
    - 0.00000000222002416450096 Meters

Assignment 1.2 (3 points)

Now close the Properties window for the shapefile and open up the metadata by right clicking the long range planning file and selecting View metadata. A new main tab in ArcGIS Pro should open, displaying the Catalog on the left and a Metadata tab on the right.

- What displays in the Metadata tab, and why might that be the case?
    - It displays the text “This item has authored FGDC metadata that must be upgraded to ArcGIS metadata format before it can be used in ArcGIS Pro.”
    - This could be because the authors of the shapefile did not update their metadata to be viewed in the ArcGIS format.
- Now tab over to the Geography tab on the right side. The view should change. Based on what you see in the window, what area of the country/state does this dataset cover?
    - This seems to cover the Philadelphia metropolitan area
- Finally, tab over to the Table tab. List the first three columns you see
    - FID, Shape, objectid

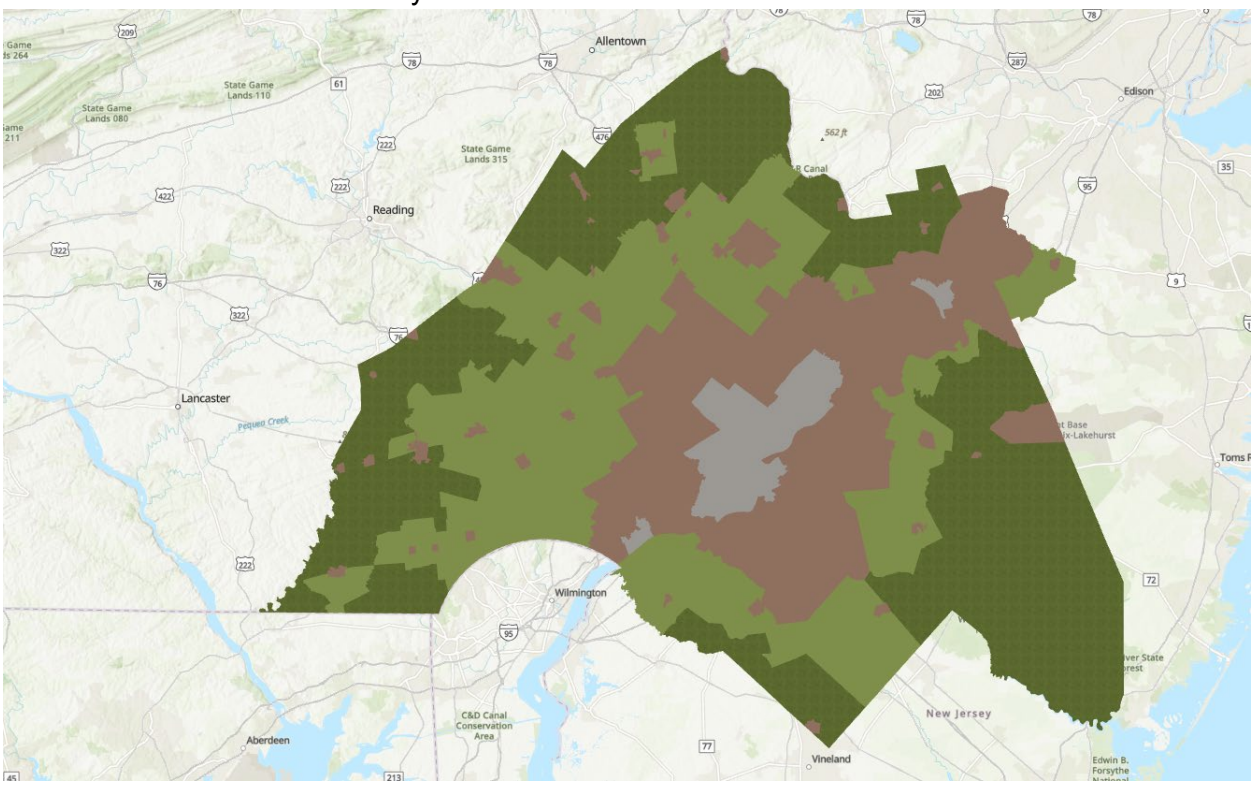
Assignment 1.3 (4 points)

- Explain why some folders and files in Catalog look different from the folders and files you see using Windows Explorer.
    - Catalog only displays files that ArcGIS can open, whereas Windows Explorer displays all the files that are in a directory

Exercise Two: ArcGIS Pro Basics (15 points)

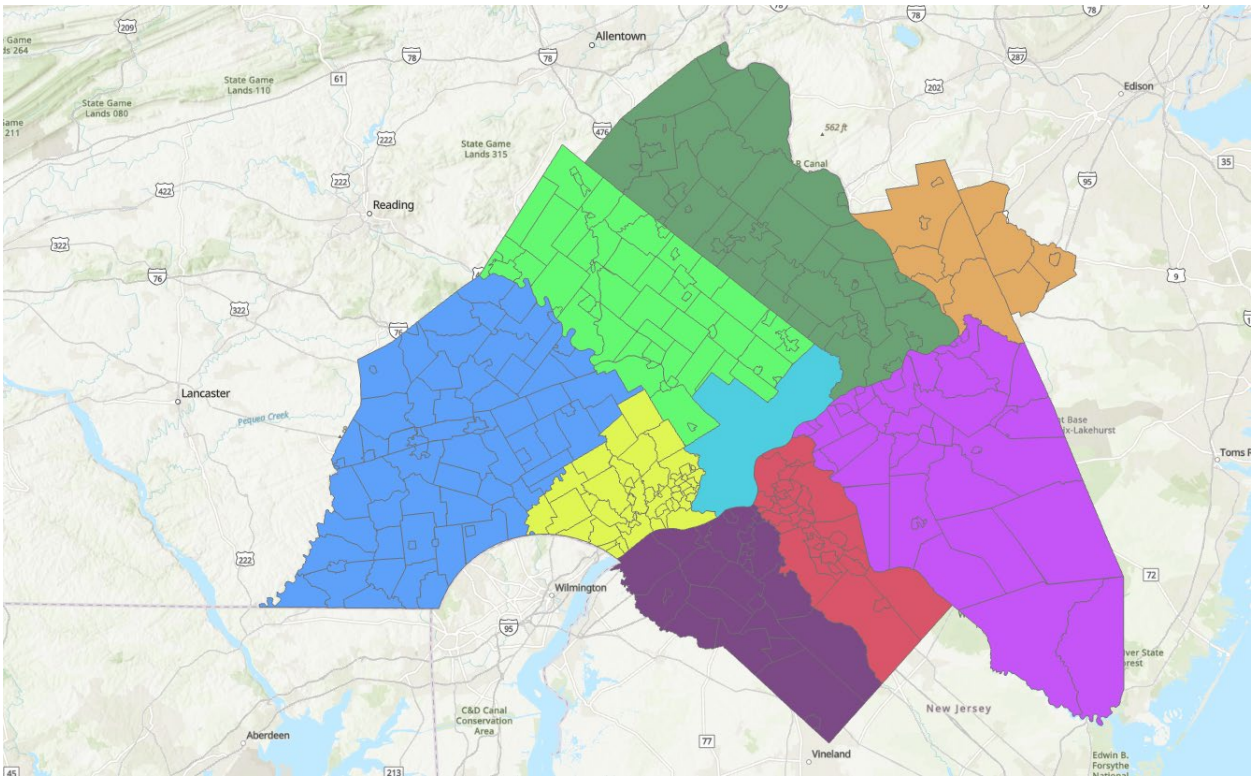
Assignment 2.1 (4 points)

- Include a screenshot of your zoomed-in area in this Word document.



Assignment 2.2 (4 points)

- Repeat these steps. This time creating a “unique value” map for the field called “coname” in the same dataset. Include the screenshot in this Word document, here. What are you showing now?
    - This is a map of the counties under consideration in the dataset

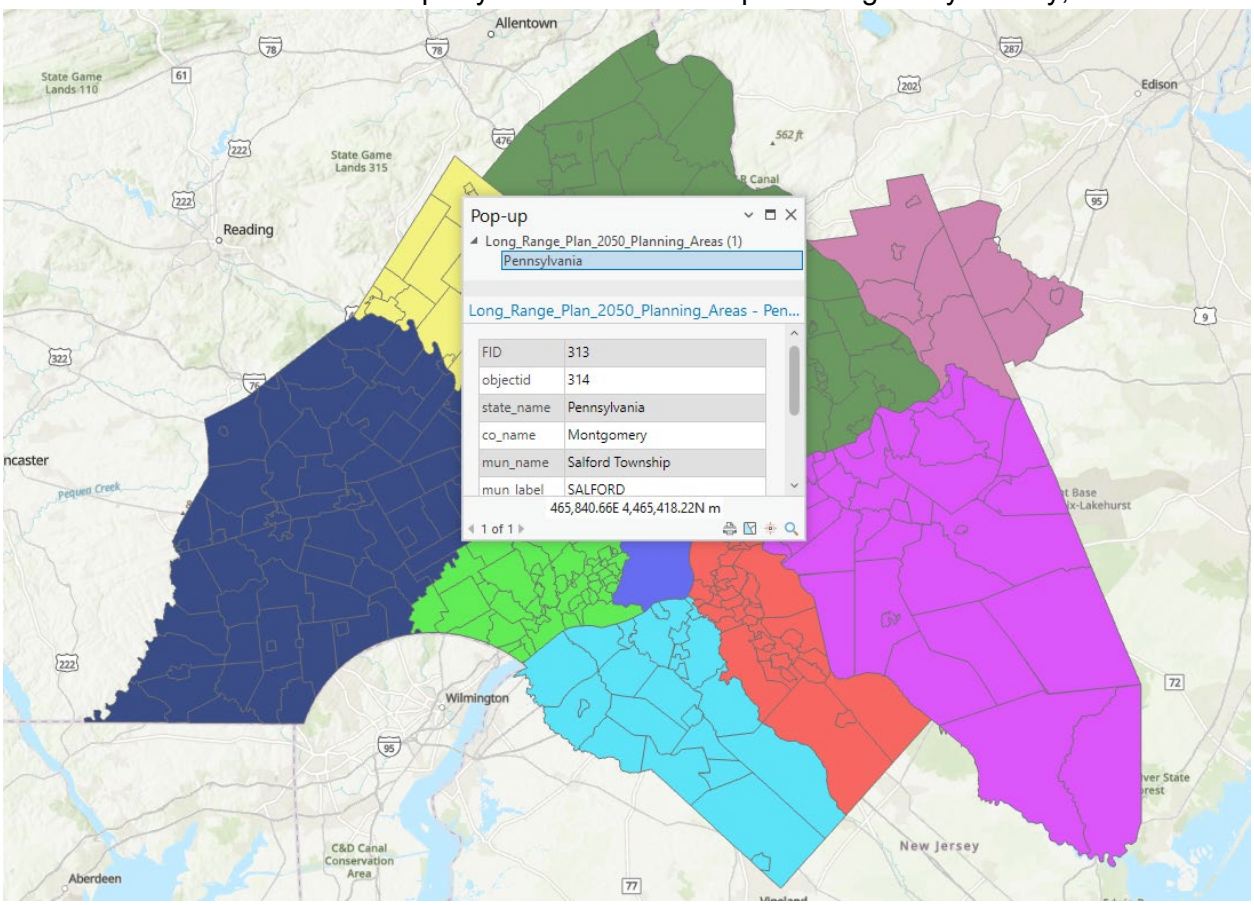


Assignment 2.3 (3 points)

- If you use the Project tab of the ribbon, and then choose Save As, what exactly are you saving? Be specific in your answer. (Hint: See the description of Pro Projects above.)
    - This is saving the project file that contains all the maps in the project

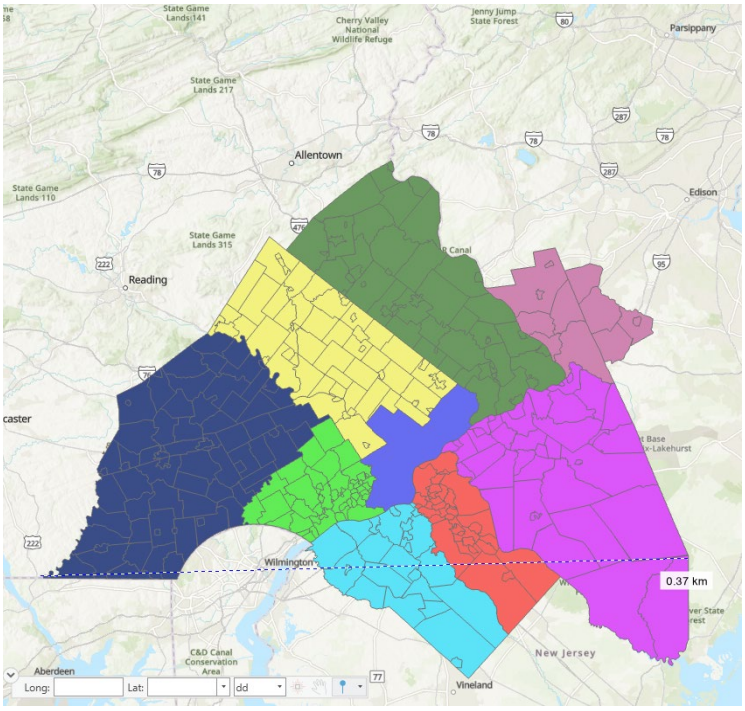
Assignment 2.4 (2 points)

- Using the Explore tool, click on a map feature. Include a screenshot. List the information that pops up and describe what it is.
    - This is the municipality of Salford Township in Montgomery County, PA.



Assignment 2.5 (2 points)

- I measured the distance between the easternmost and westernmost points in the map



Exercise Three: Scale (10 points)

Assignment 3.1 (4 points)

- Determine the RF for a scale that is expressed verbally as 1 inch = 600 feet.
    - 600 feet = 7200 inches
    - RF = 1:7200
- Determine the RF for a scale that is expressed verbally as 1 inch = 1 mile.
    - 1 mile = 63360 inches
    - RF = 1:63360
- Determine the RF for a scale that is expressed verbally as 4 inches = 1 mile.
    - RF = 1:15840
- The distance between two known points on a map is 5 miles. What is the RF scale of a map on which the points are 3.168 inches apart?
    - RF = 1/ (5 mi / 3.168 in)
      RF = 1 / (316800 in / 3.168 in)
      RF = 1:100000

Assignment 3.2 (3 points)

- Explain clearly (as if you were telling public members of a planning commission) what the RF scale of 1:500 means on a map that you are presenting to them. Is this a large-scale or small-scale map? Explain the difference between these two expressions (i.e. “large scale” and “small scale”) from a cartographer’s point of view.
    - 1:500 on a map means that a distance of 1 unit on the map represents 500 units on the ground. So, 1 inch on the map scales to 500 inches on the ground. This would be a large-scale map, since the area under consideration is zoomed into and the objects and places on the map are shown in detail.
    - From a cartographer's point of view, a large-scale map is one that shows the area under consideration in greater detail than a small-scale map, which, on the other hand, shows the area in less detail. Objects on a small-scale map appear small (zoomed out) and vice versa.

Assignment 3.3 (3 points)

- What are the disadvantages of the verbal scale method?
    - Verbal scale does not hold if a map is enlarged or reduced.
- What are the advantages of the graphic scale bar?
    - Graphic scale bar is consistent even if a map is enlarged or reduced.
- What are the practical advantages of the RF method?
    - It is a unitless scale and is versatile, and is clear and concise for users who may not be familiar with map scales.

Exercise Four: Location Map (10 points)

- Include a screenshot of your location map, zoomed out to show the entire DVRPC service area, with the location of Philadelphia highlighted.