Definitions:

**Urban Area**: <= 10 miles from center of 40,000 or more

**Large Urban Area**: Connected Urban Areas, as defined above, with a combined population size greater than or equal to 1,000,000 persons with a population density greater than or equal to 1,000 persons per square mile.

**Rural Area**: > 10 miles from center of 40,000 or more

**CEAC Area**: Counties with 10 or fewer people per square mile

1. Download 2020 census data from PSU’s Population Research Center website (“2020 Census State and County Data” and “City Data Census 2020​​​​​”):

<https://www.pdx.edu/population-research/census-data-oregon>

1. Import 2020 state and county data into data analysis software
2. Ensure the population density column (POPDENS\_20) is accurate by dividing the population column (POP20) by the land area column (AREALAND20) and then convert square meters to square miles by dividing by 2,589,988.
3. Download 2022 population estimate report from PSU’s Population Research Center website:

<https://www.pdx.edu/population-research/population-estimate-reports>

1. Clean the data so it is easier to import for data analysis tools
   * Remove extra rows and columns
   * On tab with multiple tables, combine into single table
2. Import 2022 population estimate data into data analysis software
3. Merge population estimate data with the census data
4. Calculate 2022 county population density (using the formula from step 3) using 2022 county population estimates and 2020 county land area
5. Add a new column: if the population density is > 10, classify it as “Rural”, otherwise classify it as “CEAC”
6. Export this table
7. Import 2020 city data into data analysis software
8. Calculate 2022 city population density (using the formula from step 3) using 2022 city population estimates and 2020 city land area
9. Query cities with 40,000 population or more
10. Geocode these city names using ArcGIS
11. Add X and Y (longitude, latitude) coordinates to table
12. Add a new column
13. Label these cities categorized as “Large Urban”: Portland, Gresham, Hillsboro, Beaverton, Tigard, Lake Oswego
14. Label the other cities with 40,000 or more population as “Urban”
15. Calculate the sum of the “Large Urban” city populations (should be greater than 1,000,000)
16. Calculate the sum of the “Large Urban” city land area
17. Calculate the population density (using the formula from step 3) for these “Large Urban” cities (should be greater than 1,000 persons per square mile)
18. Export this table
19. Import these tables into GIS software
20. Add a layer from publicly available data source for Oregon county lines
21. Classify the counties as either “Rural” or “CEAC”
22. Add the coordinates for cities with populations >= 40,000
23. Create 10-mile boundary zones around these coordinates
24. Classify the boundary zones as either “Urban” or “Large Urban”
25. Merge layers to create a single layer containing the four geographic designations
26. Export as shapefile