

## ArcGIS Pro Basics

*Step 1: Create a new project (ie. Exercise\_1).*

*Step 2: Save the new project in a new folder called MyProjects (or some similar name) and store that in the \GISclass\ClassProjects folder (where your unzipped course data is located). The folder structure should be \GISclass\ClassProjects\MyProjects.*

*Step 3: Connect to your GIS class data folder (mgisdata).*

*Question 1: Find the usdata geodatabase. List all (names) of the different feature classes, raster's & tables present in the geodatabase (if any) (there are 19 total).*

Point features: **cities, quakehis, volcanos**

Line features: **interstates, majroads, rivers**

Polygon features: **cd110, cd111, cd112, cd113, cd114, countries, lakes, spcszn83, states**

Rasters:

Tables: **customers, dating, normal\_precip, popestmt00**

\*\*\*There is **no raster dataset** within usdata.gdb\*\*\*

*Question 2: Add the counties feature class from the usdata geodatabase. How many counties are there in the United States? (Look in lower left corner of attribute table)*

**Answer: 3142**

*Question 3: Add the lakes feature class to the map. Which is the largest lake in the United States? What is its area? (The area is given in square miles.) (Hint: Do NOT use the measure tool). Do NOT use the Shape\_Area field. This is inaccurate. (Do not Google the answer. It is different than you will get in ArcGIS.)*

**Name: Lake Superior**

**Area: 32213.001 sq.ml**

*Question 4: Using the measure tool measure the area of the same lake as above (using the same units). What was the area that you calculated? Was it the same or different? If you got a different answer, why do you think that was the case?*

**Area: 30394.57 sq. ml (excluding the area of two islands within the area of lake).**

It was different from the original area which is mentioned in the previous question. It is different because of the errors made during using the measuring tool by the person. When I select the points to create the shape of the lake to measure, there was always an inconsistency in the zoom in- zoom out scale which was one of the main reasons of the error. Moreover, it is difficult to identify the exact corner of an area

because the more you zoom in the more you get the opportunity to select the original point of that corner. It is all about human error. Also we can describe it as a visibility error.

**Question 5:** *In the states feature class, what is the minimum, maximum, and average 2014 population density (POP14\_SQMI) for the states?*

**Min:** 1.3

**Max:** 10116.1

**Average:** 387.601961

**Question 6:** *Use the OpenStreetMap basemap to view the Kent campus in ArcGIS Pro. Zoom in to the extent of the main campus. Take a **screen capture** and insert it here.*

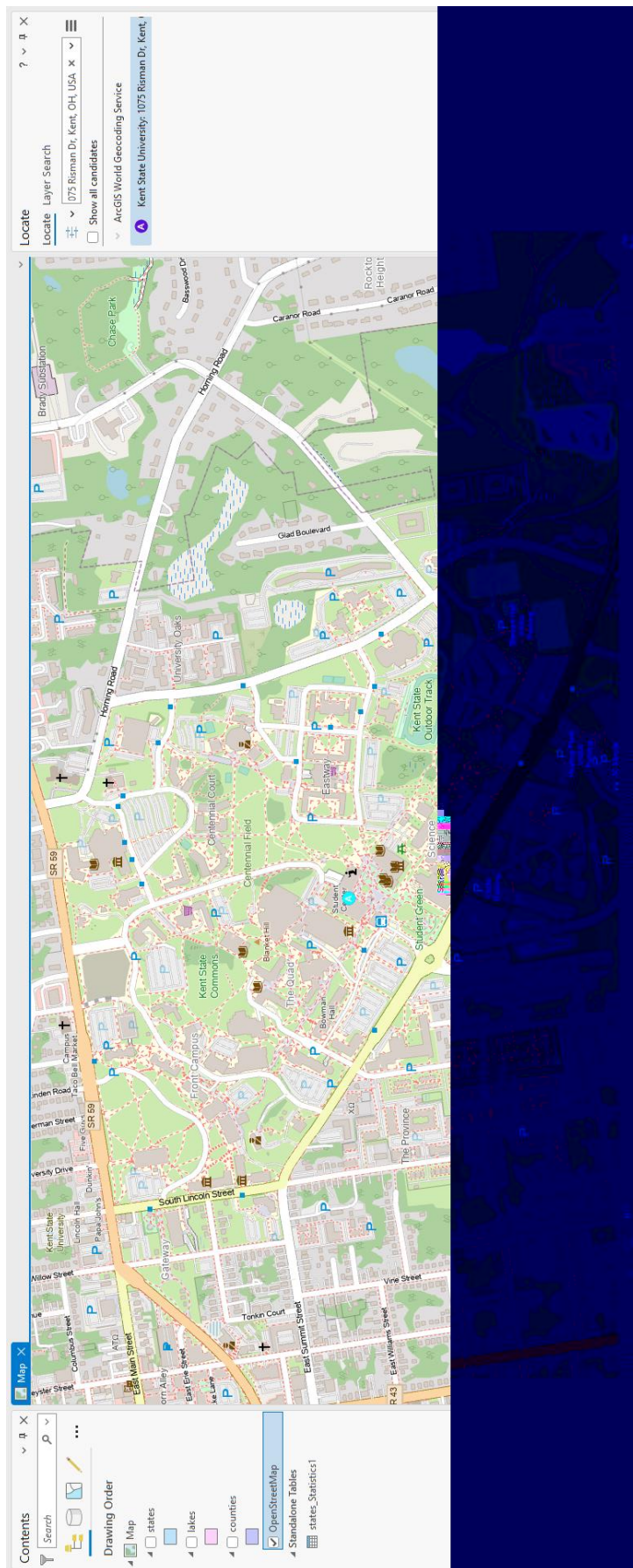


Figure 1 OpenStreetMap of Kent University Campus

**Step 4:** Open a new, blank map in your project. Create a basic map of your birth state (don't worry about features extending beyond the boundaries of your state – we will learn how to deal with this in a later lab). Include the following features:

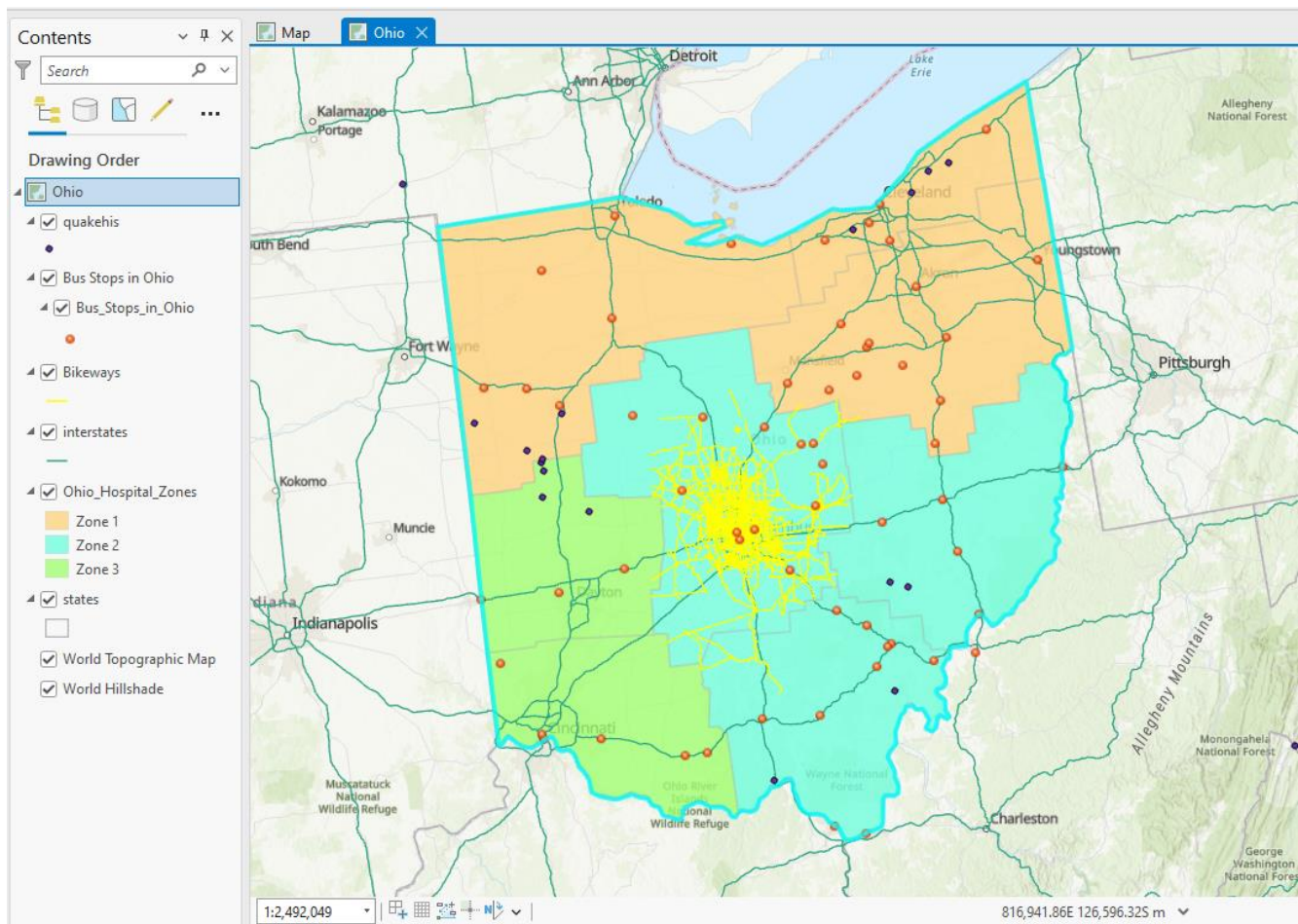
- Give your map an appropriate name (on the map tab)
- Include the state boundaries (mgisdata folder) and display them as hollow.
- Include at least two data sets from the data provided for the class (mgisdata folder) (in addition to the state boundary).
- Search ArcGIS Online for at least 3 data sets that cover your area. These datasets should be of themes of interest to you.
- Create a 3D scene and add one of the above layers to it (select Insert > New Map > New Local Scene from the ribbon)
- Link the 2D and 3D maps together.
- Zoom in to the extent of your state.

**Question 7:** Take a **screen capture** of your 2D map, including the Contents pane (make sure that the layers are expanded to show the symbology for each layer), and insert here (make the image large enough so it can be clearly seen – Fill the Page!!).

### Location of Map: **Ohio**

Features from existing datasets: **states, interstate, quakehis**

Features from ArcGis online: **Bus\_Stops\_in\_Ohio, Bikeways, Ohio\_Hospital\_Zones** (considering my interest in the role of transportation in emergencies)



**Figure 2 Map of Ohio State**



**Question 8:** Take a screen capture of your 3D scene (angled so the 3D is apparent – ie. horizon is visible), including the Contents pane, and insert here (make the image large enough so it can be clearly seen).

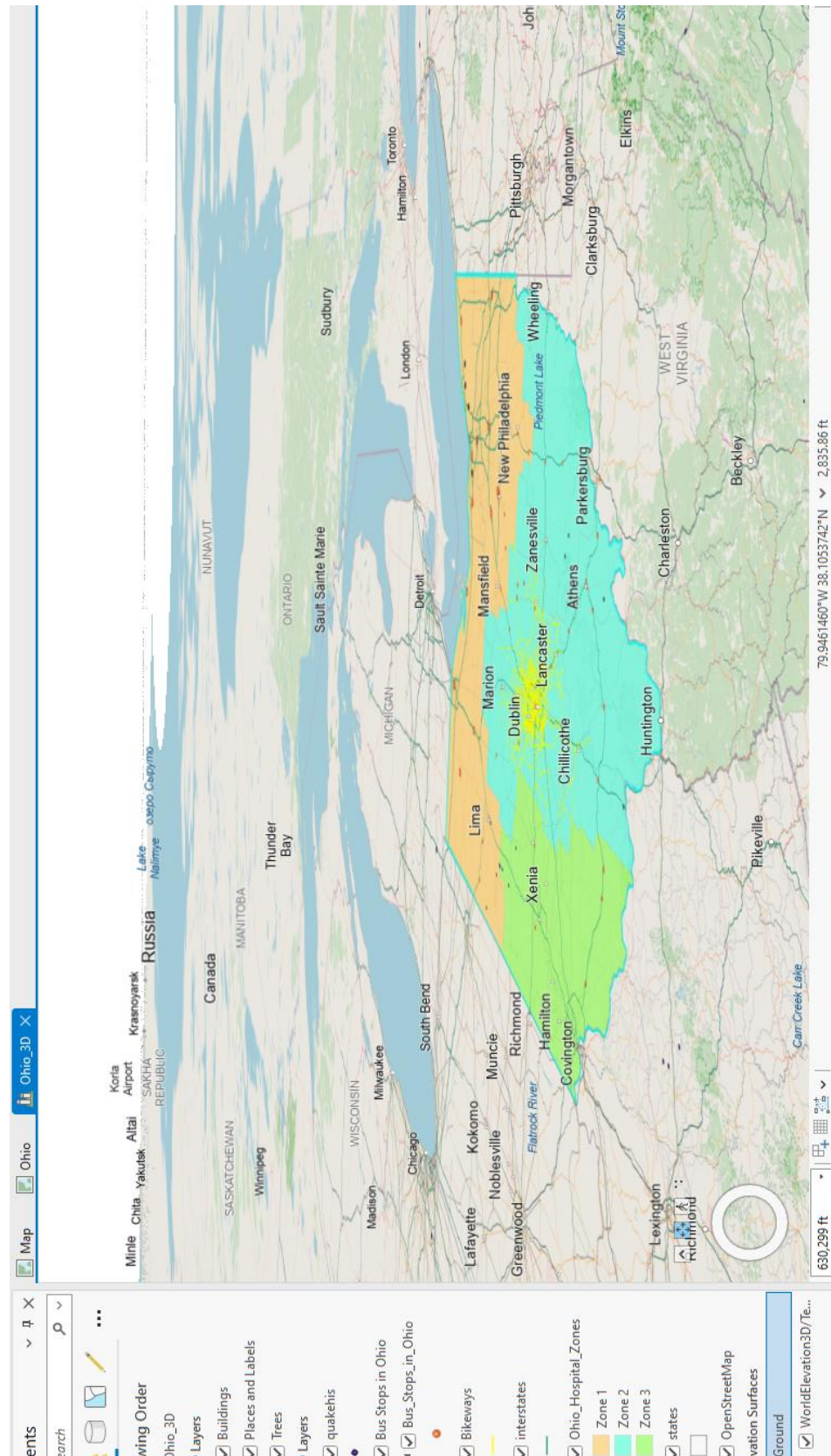


Figure 3D scene of Ohio State

**Question 9:** Take a *screen capture* of your map showing the linked 2D & 3D (both views should be visible at the same time in ArcGIS – Side by side). Insert the image here (put it on the next page in the document and use the whole page for the image).

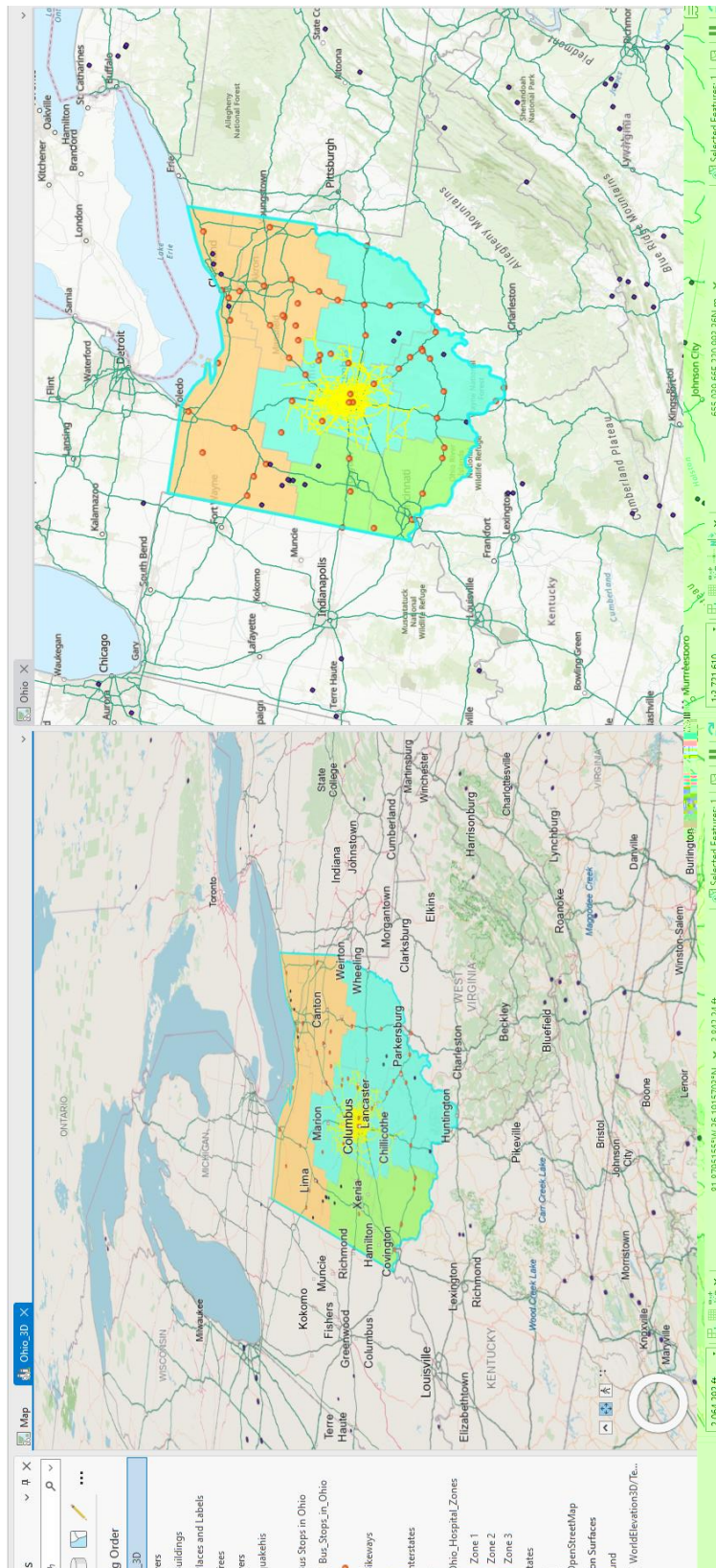


Figure 4 The 2D and 3D views linked together