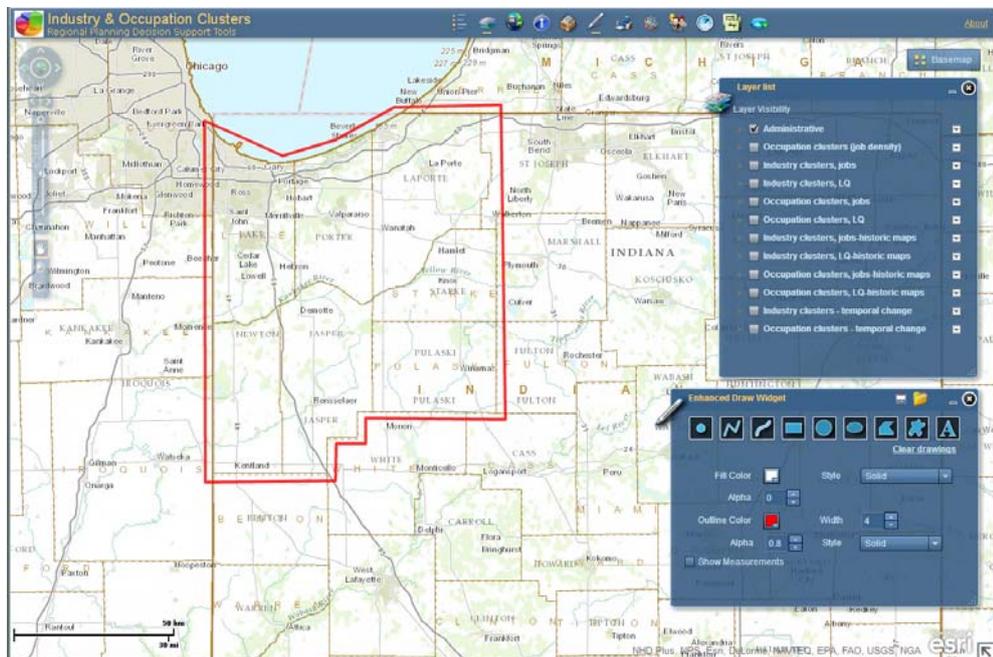## EXERCISE 4:

ADDING GRAPHICS, SUMMARIZING CLUSTERS AND QUERYING DATA

This exercise is reiteration of skills you have learned previously to add graphics on top of your current map, summarize cluster information for custom region, and perform cluster data query. This time we will focus on a custom region in North-Western corner of Indiana (NWI Region or NWIR) which includes the following seven counties: Jasper, Lake, LaPorte, Newton, Porter, Pulaski, and Starke.
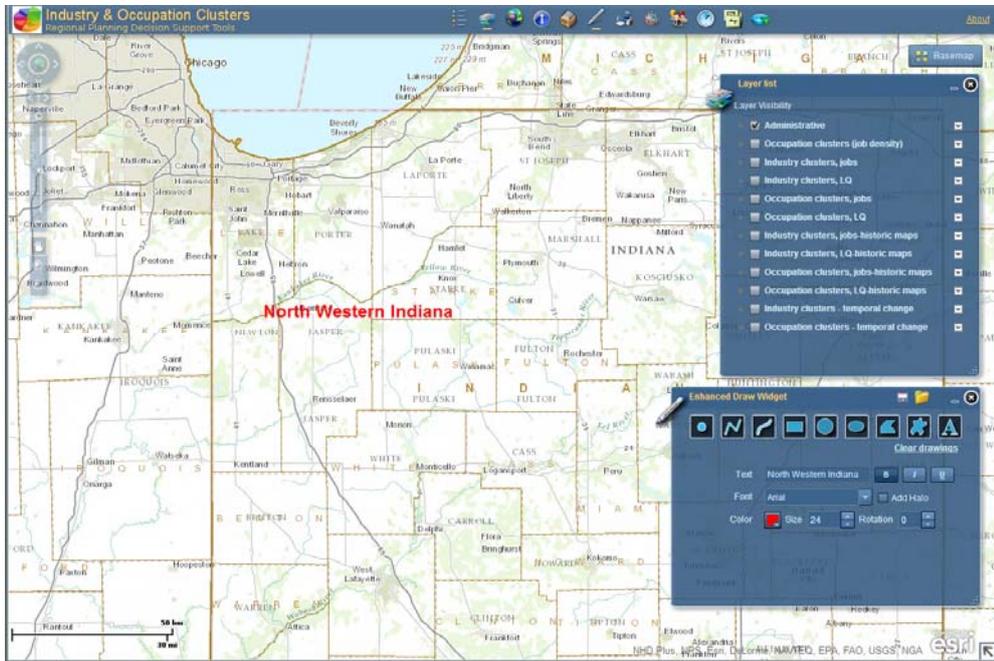
Step 1 : Draw outline of the custom region and add label

1. Using *Zoom to State* tool, navigate to Indiana and further to the north-western corner of Indiana using navigational controls in the top left corner of the map viewer. Using the pan map mode position the area in the center of the map viewer so that all counties of the region are visible on the map. Keep topomap as your background as it provides county boundaries and names. Also, you can turn off a map of counties at this time ("Administrative" layer in the layer list).

2. Using skills you have learned during webinar and from tutorials (*Enhanced Draw Widget* tool) draw a polygon or line around NWIR counties, set the color of line to red and thickness to "4". Remember if you use polygon option you will need to set Alpha value to "0" to make polygon background transparent. After you draw the boundary you will
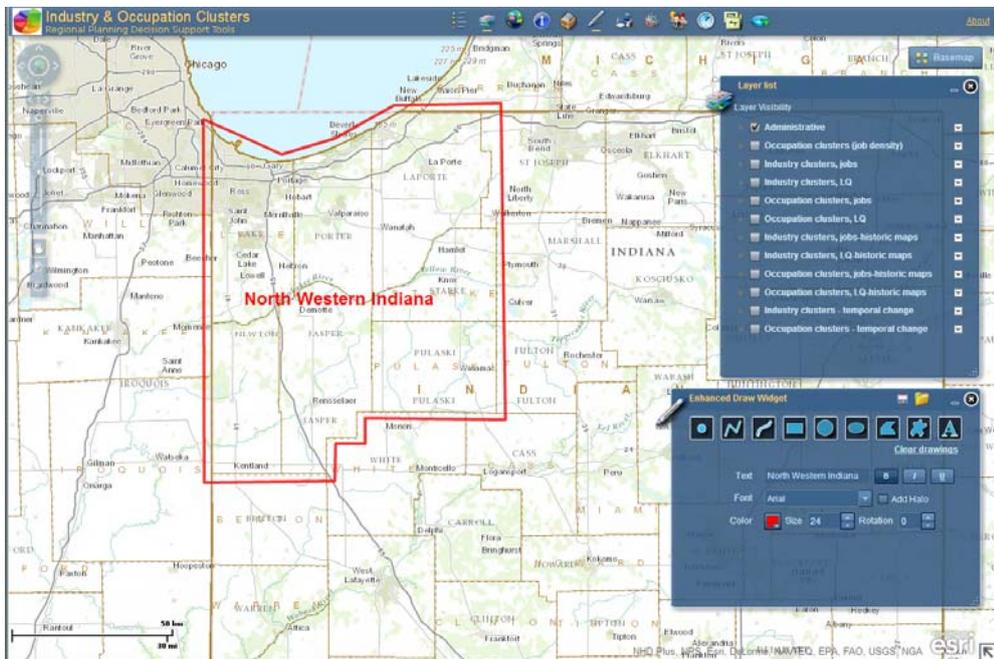

have an option to save this graphics as a txt file so that you can load it later. Click on diskette icon in the upper right corner of *Enhanced Draw Widget* pop-up window. "Save as" window will open but graphics will dissapear fron the screen. Save to file "NWI_Region_boundary.txt".

3. Next, add name to your region (e.g. "NWI Region") using the "Add text" option of *Enhanced Draw Widget* tool. For example, I used red color, bold font size 20. Click again

on diskette icon in the upper right corner of *Enhanced Draw Widget* pop-up window. "Save as" window will open but graphics will dissapear fron the screen. Save to file "NWI_Region_label.txt". Now you can add both graphics you created to the map (they will overlay). And final look will be as follows:

Q1. Please print the PDF map of the region with topomap as a background and graphics on top using the following print settings: Letter sized, scale 1:1,000,000 (you may need to pan your map to better center the region on the printed map). Note that pop-up windows will not be printed.

Step 2 : Calculate occupation cluster employment for the custom region

1. Minimize *Enhanced Draw Widget* tool pop-up window to preserve graphics on the screen. Use Occupation Clusters Summary tool to create a summary of employment for 18 clusters for the entire NWI Region.

Q2. Which industry cluster has the largest number of people employed within NWI Region? Find and turn on the map of that cluster in the layer list.

Q3. Which county within the region contributes most jobs to this cluster?

Step 3 : Query industry clusters data

1. Zoom to the entire state of Indiana, turn on a map of counties ("Administrative" layer in the layer list) and turn off any cluster maps if you still have them displayed.

2. Open *Data Search* tool. Switch to text search mode by clicking on the icon in the top menu of the tool popup window, select "Skilled production workers, 2010" from the "Search layer" drop-down list, change "Search layer field" to "Search by criteria" and enter SKILLPROD_EMP10 > 10000 in the search string. Do not hit "Search" button yet.

3. Next, switch to graphical search mode by clicking on the icon in the top menu of the tool popup window. Pick "Select by polygon" selection method and check "include text query in selection criteria" check box. Draw polygon so that it touches all counties within Indiana and not neighboring states. Click "Search" button (while still in the graphical search mode). You should see a few counties selected within Indiana, and table with search results pops up.

Q4. How many counties in Indiana have more than 10,000 jobs in Skilled production workers cluster?

Q5. Which of those counties is within NWI Region (Hint: turn on *Enhanced Draw Widget* tool: you should still have region outline available)?

Please send PDF of map (Q1) and your answers to Andrey at azhalnin@purdue.edu

THANK YOU!