**Question**

**1. Describe your choices in making map 1**

**Variable of interest on Nebraska Counties**

I chose median income by Nebraska County as the variable of interest. The reason was thought to be the variable that people are most likely to be interested in among the variables provided in the data.

**Borders between counties**

The borders between counties were slightly thicker to clarify the boundaries for each county, and a thicker line was selected for the State boundary than the boundaries for each county in consideration of the hierarchy.

**Scale bar**

The scale bar was chosen in a simple form, and the unit was changed to miles, saving the audience the effort of converting the units.

**Municipal Boundary**

The labels are clearly visible by choosing a bold font, and the position has been partially modified to avoid overlapping with polygons.

**State parks**

The symbol was made in green to match the image of the park, and the size of the symbol was selected in consideration of the overall aspect of the map.

**Streams**

The impairment of the streams is the heart of this map. Therefore, different colors were used to classify the types of impairment.

**DEM**

Colors familiar to people were chosen so that the audience could guess the surrounding terrain and relative altitude through DEM.

**North arrow**

It is usually located at the top, but it is placed at the bottom left to prevent the objects of the map from being covered and to balance the arrangement of all map elements.

**Title**

Bold font was used for readability, but the font size was chosen in consideration of the overall sense of balance.

**Legend**

The legend for Inset map was placed outside the frame to increase the text size of the legend and to make the text legible. The legend of main map included a light background color considering the DEM color.

**2. Describe your choices in making map 2. Include why you chose the problem and where you obtained your data. Finally, your map is a communication piece. What was the intent of your communication and do you feel as though you achieved your goal?**

Description

In June 2018, the North Platte River flooded in Scotts Bluff County, west Nebraska, causing significant damages. USGS worked with local municipalities to create Flood-Inundation Maps and published their reports and shapefiles in 2019 <https://pubs.er.usgs.gov/publication/sir20195099>). A shapefile consisting of a total of 10 layers was created by dividing the 9-18 stages into 10 stages (The 9-ft stage is approximately bankfull). Including all 10 stages in a static map makes it difficult to distinguish each stage, so I adjusted it to three stages and expressed it on the map. In addition, roads, city boundaries, streams, and elevation data are included so that viewers can accurately recognize the clear regional characteristics.

The reasons I chose this problem are damages from due to flooding can be reduced to a minimum by taking appropriate measures in advance, and personally, it is an important information/intelligence for assessing how much damage will be done to the friendly forces and for judging the possibility of maneuvering when the bank collapses.

To make this map, I obtained from data from outside in addition to the data we used in the class.

1. USGS(2019). Shapefiles of the flood-inundation maps for the North Platte River at Scottsbluff and Gering, Nebraska. <https://www.sciencebase.gov/catalog/item/5bbd02abe4b0fc368eaeb872>

2. NebraskaMAP. Highway shapefile

<https://www.nebraskamap.gov/datasets/nebraska::highways/about>

3. NebraskaMAP. [City Boundaries](https://www.nebraskamap.gov/datasets/city-boundaries) shapefile

<https://www.nebraskamap.gov/datasets/nebraska::city-boundaries/about>

4. Scotts Bluff County DEM

<https://snr.unl.edu/data/geographygis/NEDSdownload.aspx>

Intent of communication

Damage from flood-Inundation should be minimized. If residents are aware of the extent to which inundation will be at each stage when it is expected, and if the city government gives an appropriate warning, these damages can be minimized. That's what I want to communicate with. However, it is difficult to see that my intention has been achieved. I felt again that continuous effort is needed to give people a clearer visualization.

**3. What did you learn?**

In this lab, by overlapping multiple layers, more accurate information/intelligence could be produced possible and more appealing to people. Also, I learned once again that we need accurate data (surveying, creating shapefile, and so on) created by the efforts of many people to give a impressive visualization.

I overlapped various map layers to communicate what I want. Depending on the ordering of the overlapping layers, a completely different final product could be shown. If the extent of all layers is different, the finally displayed map frame (and transparency) changes according to the order of the layers. Therefore, all layers must be made with the final visualization in mind.