**Mapping Challenges – Lab 7 – Aaron Marks**

The main challenge with any map design is turning basic data into presentable features that the user of the map is looking for and can easily identify and understand. For this lab I decided to make a reference map of the area of Pittsburgh, more specifically one that a person would use to be able to locate something, or multiple things, in the area. The base data included various points of interest that could have served as the maps purpose. In fact there was too much data to fit in the scale of map chosen. More on the map scale follows.

Of the available features, I felt making a map of the parks in the area would be a starting point for the project. The map seemed kind of empty still, yet I wasn't about to just add other random places like cemeteries or libraries. I went to the PASDA website and found their version of Park data, which included a ton of information I could then also use. They have data ranging from measurements of area, parameter, acreage, as well as information about the owner and whether it was a local, state, or national park. Also included in the shape file were the footprints of these parks. That was what I used to base my map on. I used the footprints of larger parks to show not only where they were at but to give an idea of their size. Only parks of a certain size are shown with a labeled footprint. I left the smaller parks included, but left them unnamed and unlabeled to reduce clutter. Problems found here consisted of overlapping data being represented and data sets containing names and points of parks in one but not the other. The overlapping data can be seen where some footprints also contain a tree icon, and the differences include those footprints without a tree.

So with the idea of the data I wanted to show, I needed to decide how the map would look, such as the background and ways of referencing. To keep the map looking simple I decided to include certain roads, rivers and streams, leaving railways and municipality borders out. Roads left in included only US and State routes and Interstates. This left some gaps where these major roads end or connect to others. This can be seen as these roads enter Pittsburgh, they just come to an end. As for the background, I felt a solid color was too bland so I tweaked the DEM and hill shade data provided to create a pleasing map. Minimal labeling would show the whereabouts of the parks but not necessarily give exact route directions; after all it is just a reference map.

To color the map I went with a green to brownish green color ramp on the DEM as opposed to a preset white-brown-green ramp as the terrain in the area isn't as extreme, such as the Rocky Mountains for example where there are actually snow capped mountains. Water was represented with blue hues and roads were colored white to stand out on the green background. The park areas were also colored based on being local or state parks.

Shapes and generalization were also looked at. The complex outlines of the parks were unnecessary and were generalized to calm the detail down. Roads were also smoothed out slightly but the change wasn't anything major so the changes were undone. One thing I would have liked to spend more time on was where the roads' ramps seem to be included, like east of East Park and west of McKinley Park. They just show up as clusters, when I tried to remove features of a certain length it left gaps elsewhere. The gaps were less pleasing than the clusters.

**Background:**

Dem_f3: color ramp chosen using yellowish brown to green. 10% contrast, 60% transparency

F_alleg_3: color ramp chosen using white to grey. 10% brightness, 50% transparency

a_aleg_3: color ramp left white to black. 50% transparency

**Water:**

NHDArea: Classified by FType. StreamRiver area color hue changed, removed outline, 25% transparency

NHDFlowline: Classified by Fcode. Intermittent streams 2 pixel width, Perennial streams 3 pixel width. All hued blue, 25% transparency

**Roads:**

Trans_RoadSegment : Selected Interstate, US Route, and State Route only. White. 3 pixel width. Others omitted such as local, private, ramps, alleys, so on.

**Railraods:**

Trans_RailFeature: Omitted

**Points:**

AlleghenyC_GNIS: FEATURE_CL = Park shown as a tree. Selected Name = Pittsburgh exported as it's own point, labeled and given Star symbol.

**External Data:**

AlleghenyCounty_Parks2000: Classified by CLASS. Generalized by 50 meter peak simplify and then a 50 meter smooth. Hued by class, Local : yellow, State : red. Also queried for parks "AREA" >= 500000. 35% transparency to layer.

**Labels:**

Parks: Ariel 8 pt bold black font, 1 pixel white halo mask, stacking allowed with max line length 15 chars. Some were adjusted in the end.

Roads: Sheilds were assigned using default icons and Ariel 8 pt bold black font.

Populated Places: Pittsburgh: Ariel 10, bold, 1 character spacing.