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## Flooding In the Manayunk Neighborhood of Philadelphia: Update

For my project I am looking at the flooding of the Schuylkill River and its effect on the Philadelphia neighborhood of Manayunk. I am specifically looking at the three flood events: Hurricane Floyd in 1999, Hurricane Irene in 2011, and a flash flood in 2014. For each flood event I would like to use rainfall and runoff data to determine the increased height in the Schuylkill river and see how that compares to the observed water height for each flood event at a local establishment that marked the flood heights they experienced during each storm.

So far I have done the following:

- Collected shape files for Philadelphia County, the Manayunk Neighborhood, and the Schuylkill River watershed in Philadelphia from Pennsylvania Spatial Data Access . I imported these files into ARCGIS along with the X,Y coordinates for USGS gauges upstream, downstream, and at Manayunk. This map is shown below in Figure 1.

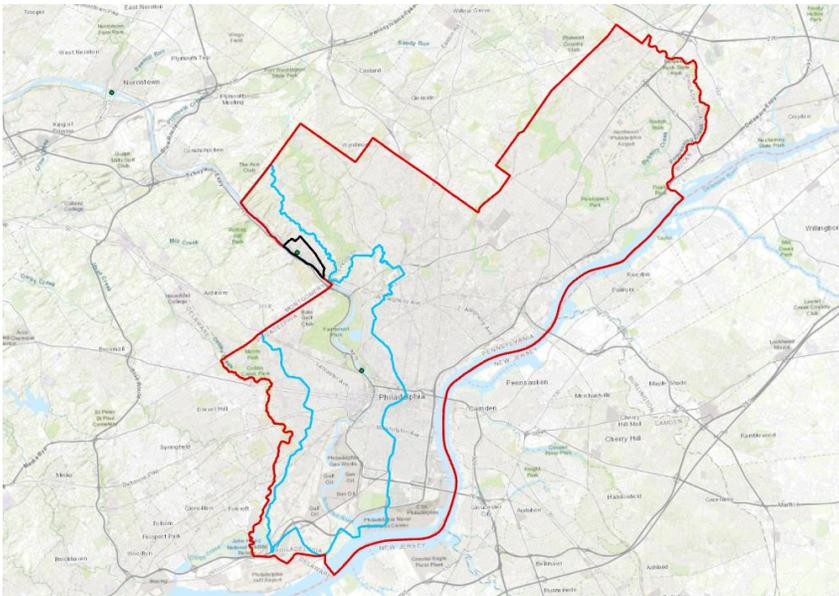


Figure 1: Map of the area of my study. Philadelphia, the Schuylkill Watershed, and Manayunk are shown outlined in red, blue, and black respectively.

- Collected the land use data for Philadelphia and imported that into ARCGIS which is shown below in Figure 2.

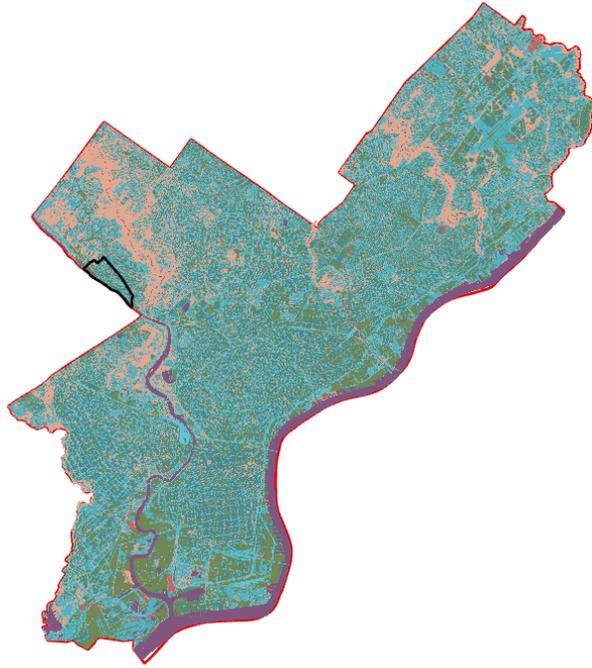


Figure 2: Land Use map of Philadelphia

- Downloaded the 10m x 10m DEM data for part of Philadelphia that Manayunk is located in.

I still need to do the following work:

- Get the rainfall data in Philadelphia from NOAA for each of the flood events.
- Get the streamflow and height data for each of the flood events.
- Develop a hydraulic model for flow and water level in the Schuylkill River
  - This model will be based on Height Above the Nearest Drainage.(HAND).
  - Need to complete Exercise 5 to learn how to use HAND in ARCGIS and then I will see if it works well with what I am planning to do.