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GIS – Term Project Update
October 25, 2018

Proposed Title: A Study on the Lake Conroe Dam Release Following Hurricane Harvey

Update
Since the initial proposal, a base map of the study area was constructed with land usage, flowlines, and catchments extracted for the data set following the procedure as described in Exercise 2. The study area was extracted using the HUC_8 identifier based on where the dam was located (HUC_8 = 12040101). Screenshots can be seen below with the location of the dam circled in red.

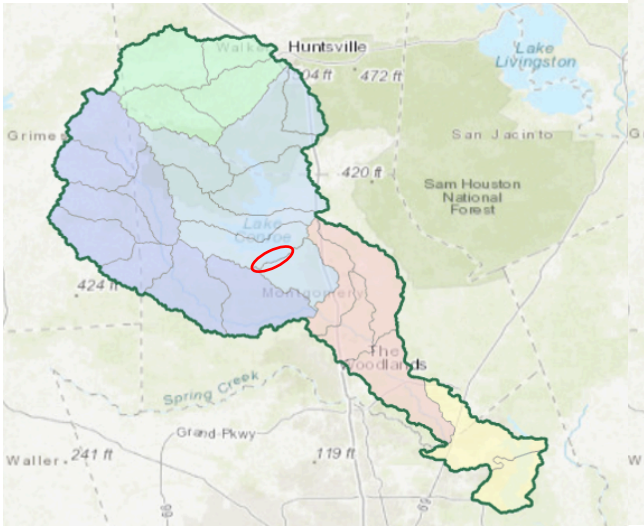


Figure 1. Subcatchments

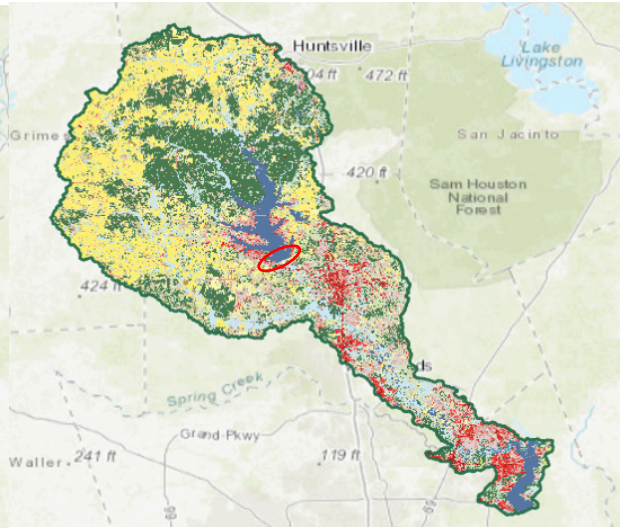


Figure 2. Land usage

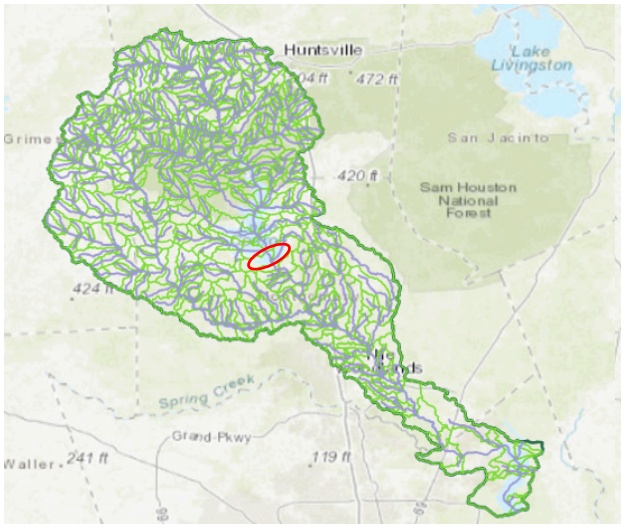


Figure 3. Flowlines and subcatchments

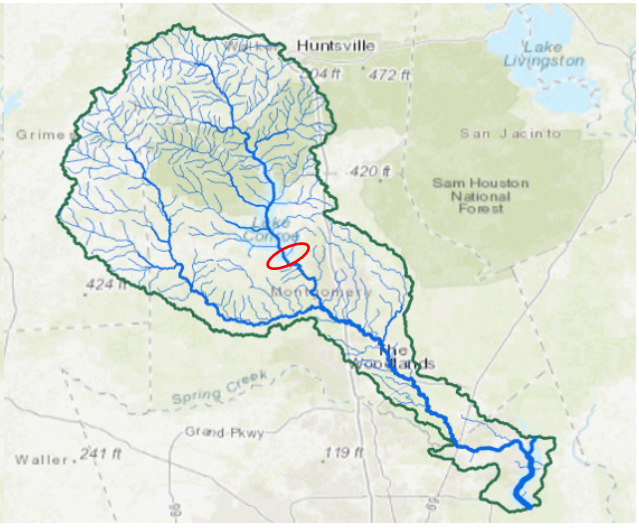
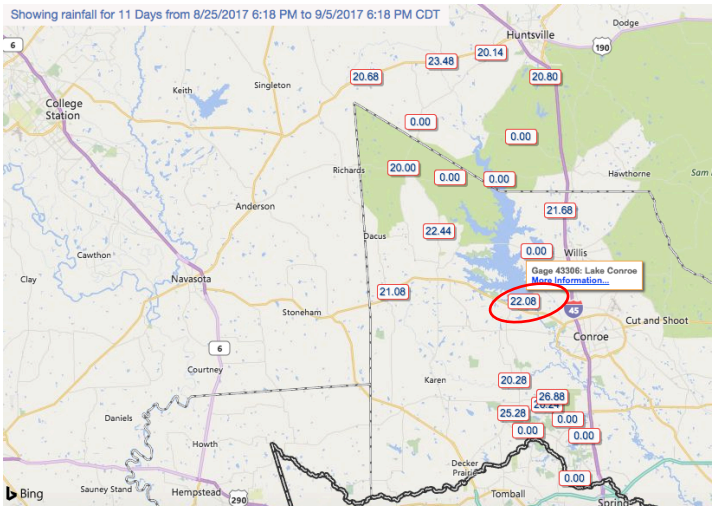
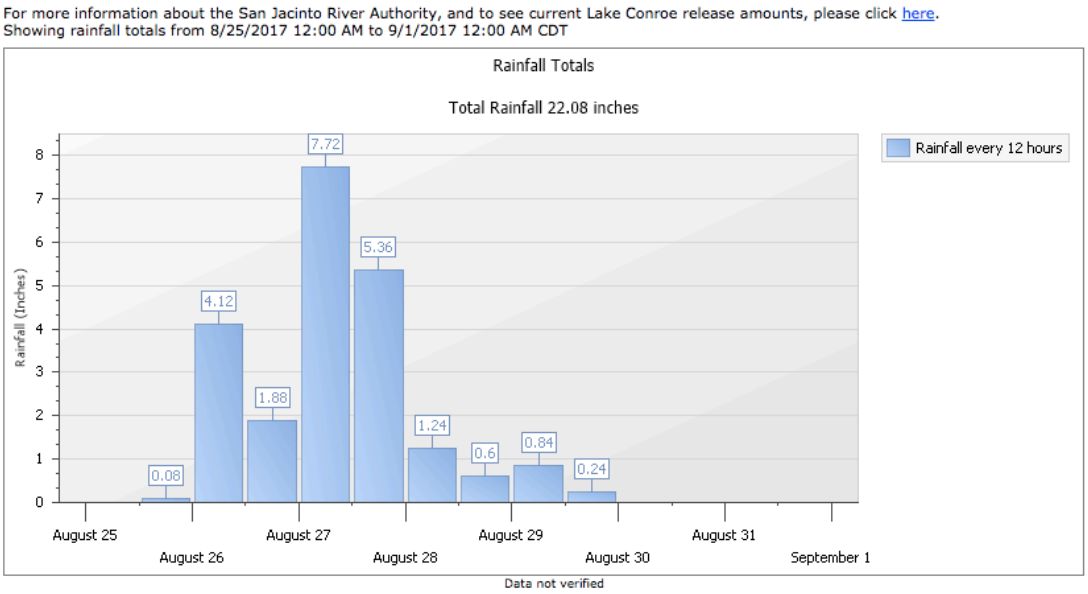


Figure 4. Flowlines

Data Collection

From the Harris County Flood Warning System, I looked at historical data (from August 25-September 5, 2017) to look at water levels during the flood. From there, I looked at the Lake Conroe gage 43306 to assess the rainfall per day right at the foot of the dam (circled in red). These screenshots can be seen below.





Moving Forward

For continuation of the project and analysis, the stream gages may need to be extracted from USGS based on the HUC_8 number if deemed necessary for the completion of the analysis. The address points still need to be obtained and put into the model to determine which homes were affected. Additionally, the flood modeling still needs to be performed by inputting the data from Hurricane Harvey into the base map.

More research has also been done on the story surrounding the dam release and the lawsuits that have been filed against the San Jacinto River Authority. Many believe that their homes would have been spared had the dam waters not been released from the Lake Conroe Dam. The San Jacinto River Authority has responded by saying that the 79,000 cfs that were released was a responsible mitigation measure that may have even prevented flooding given that 130,000 cfs of water (almost double the amount released) was entering Lake Conroe. This has prompted me to reevaluate my project proposal and while I still want to model what happened during the dam release following Harvey, rather than additionally looking into the controversial lowering of the reservoir levels, I want to look at the area that would have been impacted had the full 130,000 cfs flowed through the dam. This will give an idea of how the dam actually helped the neighborhoods downstream of Lake Conroe and hopefully will provide some interesting values of how many homes were spared due to the dam.