Objective and Scope:

In this project, Group 3 (consisting of Sarah Seraj, Osama El-Quqa, and Luis Galindo) proposes to focus on improving the drainage system of King Abdulaziz University in Jeddah, Saudi Arabia. A floodplain map will be created that will investigate the improvement of the drainage efficiency at King Abdulaziz University. Various modifications to the current design will be considered that include, but are not limited to gutter inlet size and location, storm drainage flow, and Low Impact Development (LID).

To properly identify the current efficiency, we desire the following data:

- Location and dimensions of gutters
- Rain intensity at King Abdulaziz University and surrounding area
- Catchment area
- Surface properties of road (e.g. rational runoff coefficient, road material, etc.)
- Current floodplain map

It is important to note that the desired data list proposed above is tentative to change and as the project progresses, we may require further data to model different simulations.

If need be, we will investigate the UT Austin and Waller Creek areas as both locations have smaller scale issues similar to those identified in Jeddah.

Simulation Model(s):

Our group anticipates to develop a new floodplain map that will incorporate all (if not more) of the modifications listed above in the Objective and Scope section. Possible LID strategies that can be investigated include but are not limited to: vegetated swales, permeable surfaces, etc.

The newly developed floodplain map will be compared to the current map and the overall efficiency will be determined by the decrease in floodplain area. We plan to use either HEC-HMS, HEC-RAS, or StormCAD to create our simulation model. The software that will work best for our study area will be finalized as the project develops. With the rain intensity data, we propose to use the software HEC-SSP Flood Frequency to determine the return period of a heavy flood similar to the intensity of the 2011 flood and implement the results to our floodplain map.

Work Distribution:

Our group understand that an overlap in duties is inevitable and we propose to work with each other. As most of the software that we use in this project is applicable to what is used in the industry field, we all desire to understand the fundamentals to all software used. To ensure that we all equally learn, we have assigned a lead person that will be the person heading that specific scope of the project. The following list identifies the group member that will take the lead in various aspects of the project:

Initial and final GIS database	Sarah Seraj
Dimensioned CAD design/drawings	Osama El-Quqa
Floodplain map model	Luis Galindo