Group 13
Leif Moore
Jackelin Leal
Carolina Hernandez

Project Proposal

Objective

In developing a creative, competent design, we are interested in a location adjacent to Waller Creek that focuses on reducing storm water runoff as well as erosion. Waller Creek runs from the northern part of Austin to the downtown area, where it meets Lady Bird Lake. Along the creek, there are many locations where land has eroded and structures have been destroyed. Thus, we are interested in a solution to this problem that will incorporate more pervious covers that will increase infiltration and result in the reduction of storm water runoff as well as a reduction in erosion. This solution will be both pedestrian friendly and increase the efficiency of the land around Waller Creek by reducing pollutants carried in the creek and decreasing the likelihood of floods.

Data

The data needed for this project will include location of project, topography maps, current storm water runoff, soil property information, rainfall data and statistics, description of any existing drainage features, information of surrounding vegetative cover if any, rate of current infiltration, and other relevant data.

Simulation Model

HEC-HMS will likely be used to simulate the precipitation-runoff process in our area of interest. This simulation model deals with infiltration models and estimates erosion and sediment transport. Additional simulation may be used upon further research.

Key Project Element

A key element for this project will likely be a structure that is subject to excessive erosion. For instance, this may be an impervious cover trail along a section of Waller Creek that is meant to be pedestrian accessible and usable but has since been destroyed by heavy storm runoff.

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Division of Duties

Each group member will be responsible for one of the project outputs. One member will provide the initial and final GIS database, a second member will provide a dimensioned design with CAD drawings for a key element of the project, and the third member will provide a simulation model to show impact on hydraulic function of area on the plan. All members will collectively contribute to the final written report. Each group member will present on their relevant area of focus for the oral presentation.