

Hydrodesign Proposal

Project team #6

We're interested in doing a project on Waller creek north of the UT campus, perhaps in one of the areas discussed by Karl McArthur. We'd welcome guidance on site selection. Our objective is to design a neighborhood-scale LID retrofit of an older area, using decentralized features like rain gardens, bioswales, and increased canopy cover to manage stormwater on-site. We'd like to create a solution similar to that of the High Point neighborhood redevelopment in Seattle, WA. We will also design to meet current standards for storm water runoff in Austin. Given the challenges of retrofitting, a sand filter at our stormwater outlet will probably also be appropriate.

- Needed data
 - GIS map of project site, with adequate elevation information, canopy cover, and information about impervious surface cover.
 - Information about current grey stormwater infrastructure (stormwater inlets, spacing, pipe dimensions, etc.)
 - Given our area of interest, we'll likely want floodplain maps
 - Rainfall intensity-duration-frequency information, available through the City of Austin.
- Simulation models
 - None of us are very familiar with hydrologic modeling, but we'll want to model hydraulic flow through our project site, and estimate discharge during a 25-year storm. StormCAD uses the rational method to estimate peak discharge, so that might be appropriate.
 - HEC-HMS can also be used to model the flow of storm water in the neighborhood to evaluate existing and proposed conditions.
- Key Project element
 - Sand filter- we anticipate the possibility of needing a sand filter, accompanied by a detention basin, at the outlet of our design
- Key responsibilities
 - Ben S. – GIS work
 - Ben B. – Lead on sand filter design
 - Lauren G. – Lead on modeling
 - Austin H. – Data collection