

Modeling change in stormwater runoff resulting from a site redevelopment along a creek on a university campus.

Problem: Red Butte Creek (RBC) exits the foothills NE of Salt Lake City and, after wending its way through Red Butte Botanical gardens, first encounters the urban scape at the very edge of the University of Utah Campus, at what is the site of the Williams Building. This large site (26 acres) is currently slated for a major redevelopment, consisting of new and much needed state-of-the-art classrooms and laboratories as well as plazas and walkways, which will replace all the current lawn and other maintained landscaping (about 8.5 acres).

The University has only recently, in the last decade or so, taken a research and, more importantly, a stewardship interest in RBC. The University is using this redevelopment project as a catalyst for creating a corridor through the site, roughly 1/3 of a mile long (6 acres), that will become a protected area, open only to researchers, and that will be crossed by two small footbridges. See Figure 1 below.

Discussions with downstream neighbors in the surrounding community, who are concerned with increased run-off from the site after redevelopment, have convinced the University administration that any additional stormwater run-off caused by the redevelopment be mitigated on-site, so that the development is “water neutral”.

Objectives:

1. Model stormwater runoff from the site pre-and post-redevelopment, using the EPA Stormwater Calculator.
2. Suggest/recommend low impact development (LID) controls, green infrastructure, or environmental site design to make the redevelopment project water neutral (at least).
3. Using the EPA Stormwater Calculator, present results of the hydrologic impact of the proposed land-use change and effective means of neutralizing the impact on run off.

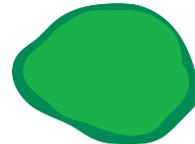
Williams Building Redevelopment Project



 Site boundary

 Red Butte Creek

 RBC Corridor Boundary

 Lawn and maintained landscape areas to be replaced with building, plazas, walkways, etc

 Bridges across the creek