

EPA P3 Project Meeting
February 19, 2008

Team Members Present:

Travis Idol, Loren Gautz, Kaori Caraway, Devin Takara, Vera Corte Real de Oliveira, Alyssa Cho, Matt Saunter

Other participants:

Brianna McDowell, Carolyn Unser

New Student Team Member

Brianna McDowell, a master's student in NREM, joined the team and volunteered to help with water quality testing with Vera.

Water Quantity and Quality Sampling

Vera was able to collect some initial water samples and test them for bacteria counts. Dr. Idol suggested that for other water quality parameters, the team members work with him in his lab and with the Ag Diagnostic Service Center. ADSC is willing to show students how water samples are analyzed for nutrients.

Coconut Coir Logs

Carolyn Unser gave a short presentation on the use of coconut coir logs as an innovative technology for stream bank stabilization as well as a rooting substrate for native wetland sedges. The coir logs could help to stabilize plants during heavy storm flow events. They could also help filter sediments out of water as it passes through the log. Finally, as the logs break down, their high-fiber, low-nutrient content may serve as a sink for nutrients as microbes immobilize them from the water in order to decompose the coir. Logs generally decay within 2 years.

Concerns include cost and availability of the logs, which require lots of labor to produce. Currently, the logs are being imported, but coir is a locally available and renewable material.

Drainage Basin and Expected Flow Rates

Several estimates of the drainage basin now are within the 20,000-30,000 m² range. A map based on the latest information is here: [P3drainage_area_city.JPG](#). The team members involved in this effort will meet this week to finalize the map and the estimate.

Devin has estimated storm drain rates based on a 10-year storm event, roughly 2.5 in/hr, at 120 cubic feet/sec (cfs). His basic storm drain design is a single 30 x 5 m basin. It is designed to handle 300 cfs.

Plant Selection

Alyssa has selected 3 species of native sedges for the wetland. She will determine the availability of these species and their required maintenance. She will also look for any information on nutrient uptake rates. She is meeting with Carolyn to discuss their applicability with the coconut coir logs. It is likely Carolyn is using some of the same species Alyssa has chosen.

Wetland Design and Substrate

Matt suggested a 2-cell basin for the wetland. The first cell would have an impermeable liner planted with species that are stable against the first flush of water expected of a storm event. The second cell would be unlined and filled with layers of gravel, sand, and mulch typical of a subsurface flow cell. Dr. Idol suggested we expand this to a 3-cell wetland, each 5 x 10 m, to take advantage of the full space available to us and to increase overall wetland capacity. The smaller cell sizes will require connecting each cell to an overflow bypass drain to prevent washing away the plants and substrate. The current dam and weir system present at the opening of the storm drain would be modified slightly to enhance its function as a temporary retention basin in order to slow and direct the flow of water into the wetland cells.

Matt will investigate the availability of graded, recycled concrete as a gravel substrate for the wetland. He will also talk with Roxanne Adams about the availability of mulch generated by campus landscaping maintenance, any weed or pest concerns associated with its use, and how those problems can be mitigated.

Expo and Final Report

Registration for the P3 Expo being held on April 20-22 is now open. If you wish to attend the Expo, please register at: www.scgcorp.com/p3 or contact Dr. Idol.

A final report, which is our proposal for the Phase II implementation award, is due at the end of March (no specific deadline announced yet). The report format has not been released, but it will be based on last year's report. Information about the report can be found here: <http://es.epa.gov/ncer/p3/teams/index.html>. This is a significant undertaking, so we need to begin working on this document ASAP. Dr. Idol will lead the effort in writing the proposal, but he will be relying on the cooperation of all team members for data, references, and information on accomplishments.