EPA P3 Project Meeting
September 05, 2007

Moving Forward

1. It was generally agreed that the tasks outlined for the specific teams in the last meeting (see minutes of that meeting) were appropriate and necessary.
2. Students need to contact and meet with the faculty or staff advisors of their specific team soon to begin working on specific tasks.
3. It was also agreed that one of the first key tasks is to identify sources of existing information that relate to your team's identified tasks. Again, your faculty or staff advisor can help you with this task.
4. Individual team meetings should be weekly and should meet outside of the regularly scheduled time for the overall P3 team meeting.
5. The new overall P3 meeting time will be every other Monday at 3:30 PM.

Derek Chow, New Resource Person

Derek Chow of the US Army Corps of Engineers is director of the Ala Wai Canal Restoration Project. He has offered to help students with specific tasks on water quantity, quality, and planning and permitting. He issued an open invitation for students to attend meetings of the AWCRP to learn more about the overall issues concerning storm water runoff and stream water quality. Derek's email is: derek.j.chow@usace.army.mil. Examples of the types of data he can provide are:

1. LiDAR, very high resolution topographic information for the Ala Wai watershed, including the drainage basin for our storm pipe.
2. A storm drain inventory, so we can better delineate the inflow points of the storm drain.
3. Total maximum daily loads (TMDL) standards for pollutants and effluents

Getting Started on Major Tasks

There was much general discussion about the kinds of activities that need to be completed during this semester to work toward an effective design for the constructed wetland. These generally followed the tasks outlined in the last meeting. For students to begin working on these tasks, they need to contact the faculty advisors and other resource person.

Project and Study Plans

At this meeting, it was agreed that students on particular teams need to meet with each other and consult with the faculty advisors to formulate a study plan for the coming semester.

Student Involvement

This is intended to be a student-led project, with appropriate faculty advising and leadership. As you can see below, we already have a number of students and faculty committed to participating, but there is room for additional students in particular areas. We are offering students credit for their work on this project in a number of ways.

1. NREM 399/499: Directed Study (var cr).
This provides students opportunities to learn by doing. Students must have a faculty sponsor in NREM.

2. NREM 494: Environmental Problem-Solving.
This is the senior capstone course in NREM. Carol Ferguson, who has been the instructor for the course during the past 2 years, will allow students to use their involvement with the P3 project as a substitute for the regular requirements of NREM 494.

3. BE 481/482: Senior Engineering Design I/II.
This is the senior design course for Bioengineering students. The instructor, Dr. Loren Gautz, is encouraging students to participate in the P3 project to meet the course requirements.

4. Class projects (various).
There are several other NREM courses in which a class project is part of the course requirements. We will be encouraging instructors to either adopt the P3 project as the designated class project topic or allow students to choose to work on the P3 project to meet the course project requirements (see list below).

Partners

We have several important partners inside and outside of the university. The NREM and MBBE departments in our college have faculty and students committed to participating in the project. Dr. Eric DeCarlo in Oceanography has agreed to train students on how to conduct water quality testing and make his laboratory facilities available for analysis of pollutant levels in storm water runoff. Roxanne Adams, the head of landscaping on campus, has been involved with selection and propagation of native plants for use in the wetland. Dr. Pauline Chinn in the College of Education and Dr. John Cusick at the Environmental Center, have agreed to work with us on educational outreach activities. Rochelle Mahoe, principal of Noelani Elementary School, will work with her teachers and students to help us collect weather data important for determining potential runoff rates into the storm drain. Derek Chow of the Army Corps of Engineers, has agreed to work with us to identify the most serious pollutants, develop effluent standards, and work with the City and County on planning and permitting requirements.

Project Outline

Water Quantity

Faculty Advisors:
Loren Gautz, MBBE
Travis Idol, NREM

Students:
Kaori Caraway, NREM

Activities:
Develop digital elevation model of drainage area
Collect weather data (primary and secondary)
Measure drain flow rates
Determine runoff potential

Water Quality

Faculty Advisors:
Travis Idol
Eric DeCarlo, Oceanography
Loren Gautz

Students:
Becky Mitschele, NREM
Vera Corte Real de Oliveira, NREM

Activities:
Collect water samples
Water quality training
Laboratory analysis
Determine effluent standards

Plants and Substrate

Faculty/Staff Advisors:
Travis Idol
Roxanne Adams, Landscaping

Students:
Cynthia Nazario-Leary, NREM
Alyssa Cho, NREM

Considerations:
Plant density
Plant species composition
Appropriate rooting substrate
Water regime and flooding tolerance
Pollutant tolerance and potential for decontamination or sequestration

Wetland Design

Faculty Advisor:
Loren Gautz

Students:
Devin Takara
Edward Mihlbauer

Considerations:
Water cycle
Depth
Retention time
Inflow/outflow rates
Size
Type
Number of cells
Pollutants of interest

Economics

Faculty Advisors:
Loren Gautz
Carol Ferguson, NREM

Students:

Considerations:
Cost of construction
Benefits of treatment
Analysis of alternative treatments

Planning and Permitting

Faculty Advisor:
Carol Ferguson

Students:

Considerations:
Official permits needed or recommended
Community standards, preferences, and concerns

Educational Outreach

Faculty Advisor:
Pauline Chinn, School of Education

Students:
Vernelle Oku
Cynthia Nazario-Leary

Major Duties:
Develop educational program and materials for the following groups:
1. k-12 students
2. k-12 teachers
3. UH students
4. Manoa community members and leaders (Neighborhood Board)

Activities for Phase I should seek to involve the identified groups in the planning process, as appropriate.
Activities for Phase II should focus on:
1. developing plans to involve the identified groups in the implementation process
2. educational presentations, tours, etc. about the finished wetland

Class Partners

There are several courses in NREM and CTAHR that may want to involve their students as part of a class project. Courses and instructors are listed below. Dr. Idol will contact the instructors.

Course	*Instructor*
NREM 477: GIS for Resource Managers	Tomoaki Miura
NREM 494: Environmental Problem-Solving	Carol Ferguson
BE 481/482: Senior Engineering Design I/II	Loren Gautz
NREM 600: Evaluation of Natural Resource Management	Ali Fares/Travis Idol
NREM 665: Coastal and Wetland Ecology and Management	Greg Bruland