2008 P3: People, Prosperity, and the Planet Student Design Competition for Sustainability

Proposal #:	833556
Project Title:	Treatment and Reuse of Urban Storm Water with a Customized Constructed Wetland
Project Director:	Idol, Travis
Institution:	University of Hawaii at Manoa
Reviewer:	Consensus Review

Following is a summary of the evaluation conduct by a AAAS-convened judging panel, incorporating feedback on both the written proposal and the team's presentation at the National Sustainable Design Expo.

Proposal Score*

Written Proposal Rating

Very Good

Oral Presentation Rating

Good

Overall Rating

Good

Description of Sustainability Challenge Being Addressed:

The aim of this project is to design and construct a wetland to capture and treat urban stormwater runoff in the Manoa-Palolo watershed in order to improve water quality in the Ala Wai Canal, an EPA 303(d) listed impaired stream and, in phase 1, test the design.

1. Relationship of Challenge to Sustainability (People, Prosperity and the Planet)

People:

The project aims to protect people from exposure to harmful constituents of storm water.

Prosperity:

Local inhabitants will benefit if this system (and others like it) are able to improve the water quality around the island and keep their fisheries and reefs healthy. This is also a relatively inexpensive solution to water treatment.

Planet:

The environmental benefits of this project include using less energy than traditional treatment plant, result in improved water quality, protecting the health of the ecosystem, use of local plants, and providing wildlife habitat.

2. Challenge Definition and Relationship to Phase 1

Relevance and Scope:

Phase II includes construction of the wetland that has only been designed to date. This is very doable and is the obvious next step after design. It seems an important effort, especially since the streams cross U of H land.

Relationship to Phase 1:

It is a logical progression from Phase I.

3. Innovation and Technical Merit

As stated in the paper, this has been a common practice for more than 10 years in Europe. It is also somewhat common in the US, but it seems that Hawaii has a real lack of storm water treatment, making it a very appropriate technology. There is also some innovation regarding the project siting and sizing. Use of recycled and renewable materials is a useful aspect of the design.

4. Measurable Results (Outputs/Outcomes), Evaluation Method, and Implementation Strategy

Constructed wetland will be the output. Outcome targets a 10-20% water quality improvement. A plan is provided for monitoring and measuring water quality impact. Based on comments received, the written proposal may have done a better job than oral presentations at covering this topic.

5. Integration of P3 Concepts as an Educational Tool

It is an excellent plan to tour K-12 students through the installation to raise awareness of P3, as well as

student involvement in the design process. The involvement of local charitable groups will also be a step in the right direction. The education component was addressed better in the written proposal than in the oral presentation.

***The scores given are defined as follows:**

Excellent: A truly outstanding proposal with numerous exceptional attributes.
Very Good: A very strong proposal with many noteworthy merits.
Good: A solid proposal but not among the best, may have some deficiencies.
Fair: Not a strong proposal.
Poor: A proposal with serious deficiencies.