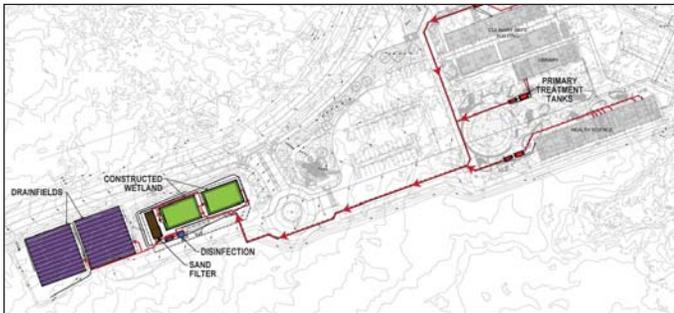
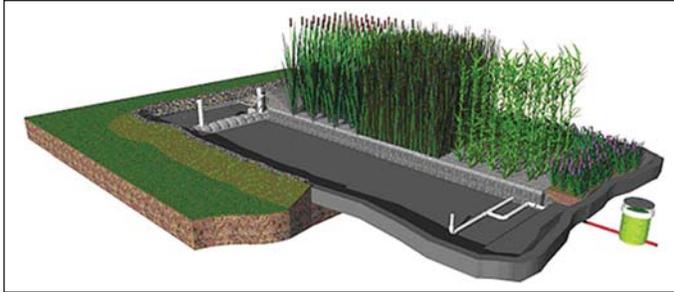


West Hawaii Campus Treatment and Reuse/Dispersal System

North Kona, Hawaii



from top: Cutaway illustration of constructed wetland for wastewater treatment; West Hawaii campus with wastewater system

The new, five-acre West Hawaii Campus of the University of Hawaii is being developed in several phases over a ten year period. The project is striving to achieve sustainable design goals and meet Leadership in Energy and Environmental Design (LEED) Platinum status. The

ultimate build out will include a Culinary Arts Building, a Learning Center, a Student Services and Administration Building, and a Health Sciences Building.

Biohabitats, in collaboration with Roth Ecological Design International, designed an

onsite wastewater collection, treatment, and reuse system for Phases I and II of the project.

Viewing pollution as a resource out of place, Biohabitats' sustainable approach to managing water resources at the new campus uses engineered wetland technologies that mimic the natural treatment processes of marshes and wetlands. These constructed systems transform 'pollution' into food for wetland organisms. The living engine driving this technology employs the food web structure found in natural marshes: microorganisms, zooplankton, algae, and higher plants.

The design of the treatment and reuse/dispersal system is operationally flexible to accommodate Phase I and II conditions, as well as equalization of flow during periodic large events. The system includes

- Primary Treatment Tanks (and grease interceptors where applicable) at each

- building or group of buildings generating wastewater;
- Small Diameter Collection System from tanks to treatment area(s);
- Horizontal Subsurface Flow Constructed Wetlands;
- A Recirculating Sand Filter;
- Dispersal via subsurface drainfield trenches (including a 100% backup drainfield);
- Mechanical Filtration and UV disinfection for all irrigation-reuse; and
- An Irrigation Reuse System via subsurface drip irrigation.

The 8,300 gallon per day wastewater system is designed to meet the requirements of DOH R-3 water quality standards. Implementing onsite wastewater treatment for reuse will highlight the University's sustainability goals, cost-effectively manage campus water resources, add to the landscape aesthetics, and generate further educational and public outreach opportunities for the University.

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