

Ha'ena State Park Comfort Station

Kaua'i, Hawaii

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from top: Comfort station on left with constructed wetland on right; The constructed wetland; Ha'ena State Park

Constructed wetlands create a zero energy wastewater treatment system on an ecologically, culturally, and historically significant site.

The Ha'ena State Park is the gateway to the famed Nā Pali trail along Kauai's northern shore. The need to accommodate the popular park's increasing number of visitors necessitated improvements to the park's comfort station and existing sewage system.

The site is ecologically, culturally, and historically significant, as it was home to a native Hawaiian settlement between 1000 AD to 1800 AD. Hawaiian culture is, and has always been, tied to water; thus the protection of the site's natural resources and water quality were of utmost importance.

Design challenges included the installation of a system on a culturally sensitive site, elevation considerations to ensure gravity flow, and adherence to setbacks that protect the natural wetlands on site. In addition, power is not available

at the site and solar power was ruled out due to vandalism concerns.

Biohabitats, in collaboration with Strategic Solutions, Inc. designed and permitted a zero-energy system which included a new primary tank, subsurface flow constructed treatment wetlands, and a groundwater infiltration gallery. Native Hawaiian plants were used within the constructed wetlands cell. With no moving parts, the system is entirely power free.

The new, 2,100 gallons-per-day system not only improves the quality of water that is discharged to the environment, but it shifts treatment and disposal components away from the historic burial grounds located on the site.

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