



## Algae Removal Project Update: 5-18-2015

Madison is particularly lucky to have a number of great public beach facilities. Unfortunately, the enjoyment of these beaches has been periodically marred by the arrival of algal blooms that occur during the summer months. Additionally, the location of some of the beach areas compound the algae problem as prevailing winds from the west gather algae into thick mats along the eastern shore of both lake Monona and Mendota. Once gathered near the waterline, the algae become particularly difficult to remove due to its semi-liquid nature.

The scale of the algae problem and the difficulty with which the algal scums are removed is demonstrated in this photo from Warner Park.

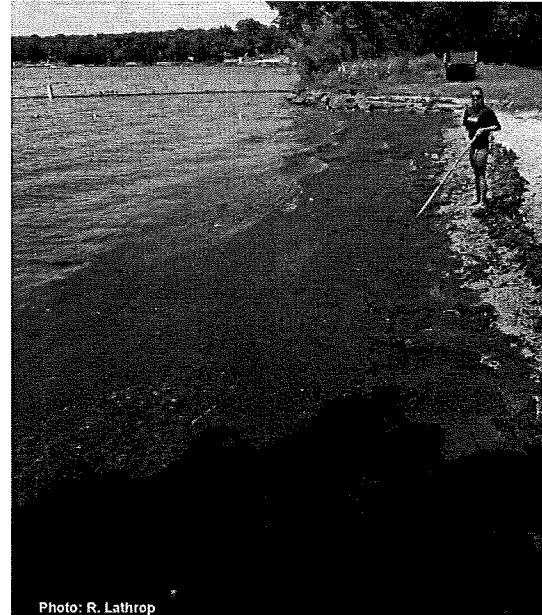


Photo: R. Lathrop

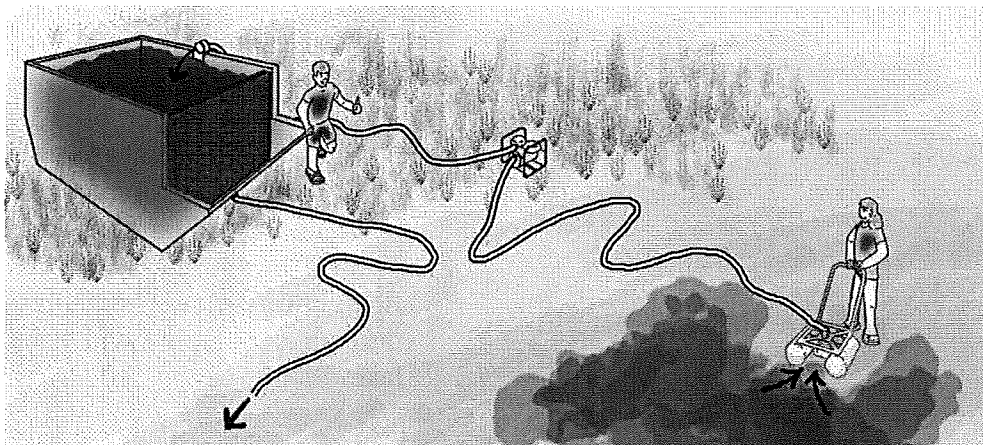
A lifeguard at B.B. Clarke Beach uses a rake to remove algal scum from Lake Mendota in July, 2014

### A Solution to Algae Removal

Over the past weeks, the Madison College based design team has conducted extensive research into the design of filtration systems, pumps and the nature of the algae to be removed from the beaches. From our research we have formulated a design which we feel will be effective at the removal of algal scums from Madison's public beaches.

Our design will be of suitable size to remove the algae from Warner park public beach and swimming area. We hope to operate this system a number of times over the summer to validate and fine tune our design as well as gather data on the algae removed from the beaches.

### Current Design

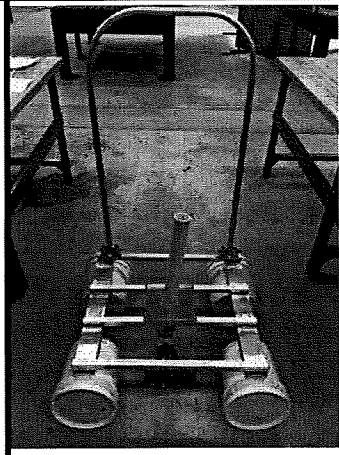


Our current design consists of a modified 10-yard refuse container, a gasoline powered heavy duty water pump and a floating intake of our own design.



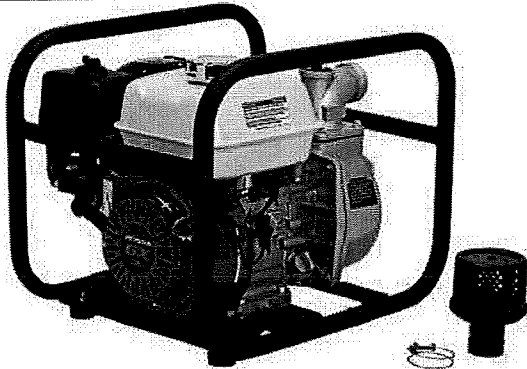
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### The Floating Intake



Keeping the water inlet at the proper depth is crucial to the operation of the system. The floating intake nozzle maintains the water inlet at the proper depth in the water to prevent air intake and prevent intake of sand and debris from the lake bed.

### Water Pump



The water pump provides the suction to transport the algae/water from the intake nozzle to our filtration system.

The pump in our design is very commonly available, gasoline powered pump, known as a trash pump, capable of handling water with significant debris.

### Algae Filter



After the pump and intake remove the algae from the lake, it travels through a fire hose and arrives at the modified 10-yard refuse container. The container, modified from a dumpster, has been outfitted with metal mesh screens secured to a steel frame. The water-algae mixture enters the dumpster, is strained by the mesh screens and the filtered water flows from the container through outlet pipe and back to the lake.