

## ***WATER'S EDGE PRESERVE PROJECT (Located on Webster Lake between Lily & Stump Ponds)***

The goal of the project is not to have any negative impact on the existing environment, but to improve the area onshore and in the water surrounding the site. Since the area has a significant historical context going back to the beginning of the 18th Century, the project will explore and highlight this history.

### **1. LAKE RESIDENTIAL DEVELOPMENT & NATURAL HABITAT**

- Determine the type of development that best fits the site
- Minimize the environmental impact on the area according to Best Management Practices & Regulations
- Develop a Landside Natural Habitat to include walking trails and a connection to Memorial Beach
- The overall goal is to improve the property and surrounding areas.

### **2. LILY POND RESTORATION**

Problem Identification:



The Restoration of the water habitat around the historic pony bridge and walking path will begin by improving the stormwater runoff design from Route 395 (Site #3) and extending invasive plant management into this area. The restoration will include using private experts that specialize in these types of projects. The project will also be coordinated with the Massachusetts Division of Ecological Restoration to develop an effective strategic plan that can be extended to the restoration of other wetlands surrounding the Lake.

### **Site #3 Erosion Problems flowing into an Old Retention Pond**



### **Site #3 Retention Pond**

**(Note: This was originally identified as the Western end of Lily Pond)**



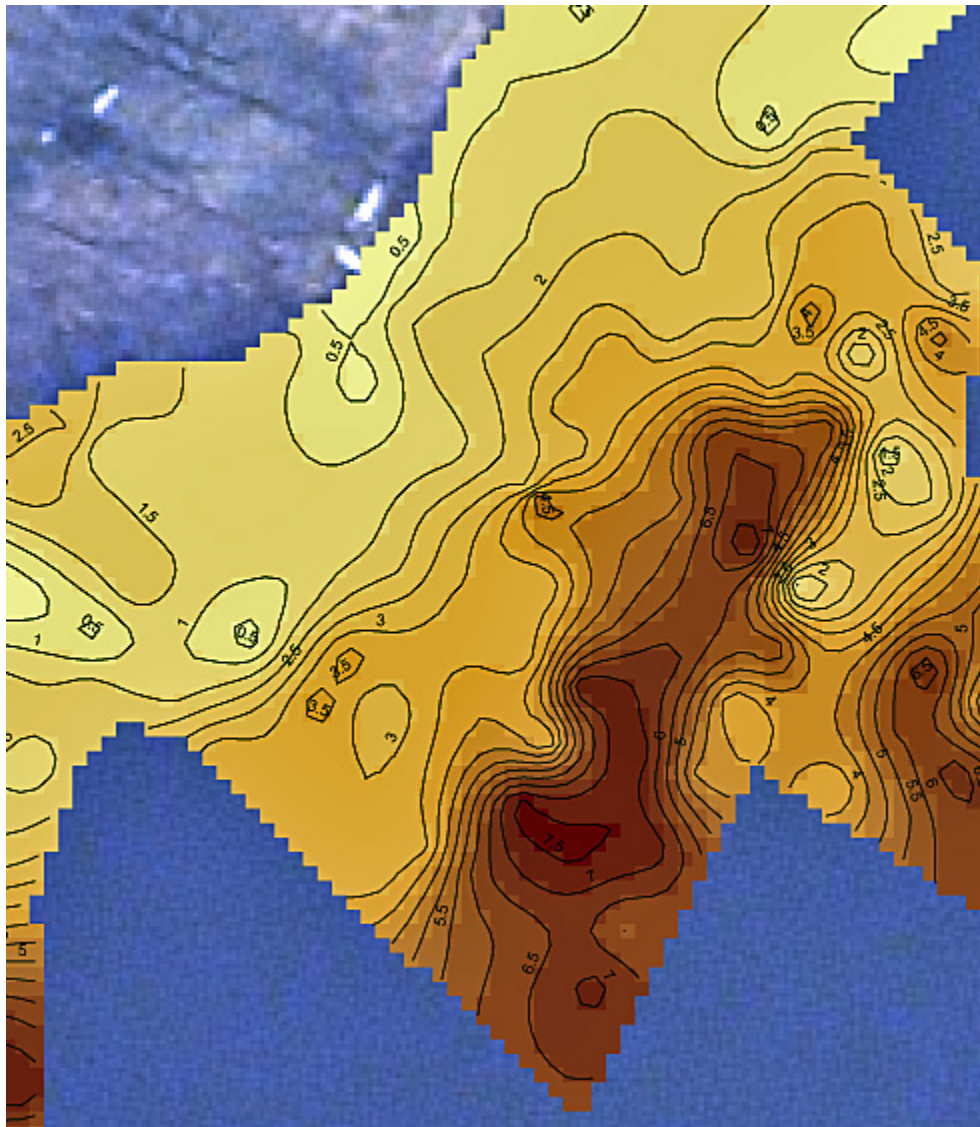
A December survey by CR Environmental mapped the various depths of the project area. These depths included water and sediment. Also surveyed were the strata that existed below the sediment. This stratum was identified as sand, gravel, and rock. The survey was conducted using GPS coordinates and stainless steel probes. The results were recorded on a satellite map overlay. The survey showed that in certain areas of Lily Pond there exists up to 6.5 feet of organic sediment over the base strata. The sediment was covered by 0.5 feet of water. Within the water column, there was a dense growth of invasive vegetation that included Fanwort,

Variable Milfoil, and some natural lily pad growth. The Lily Pond area is in poor condition after 200 years of runoff and the introduction of invasive species.

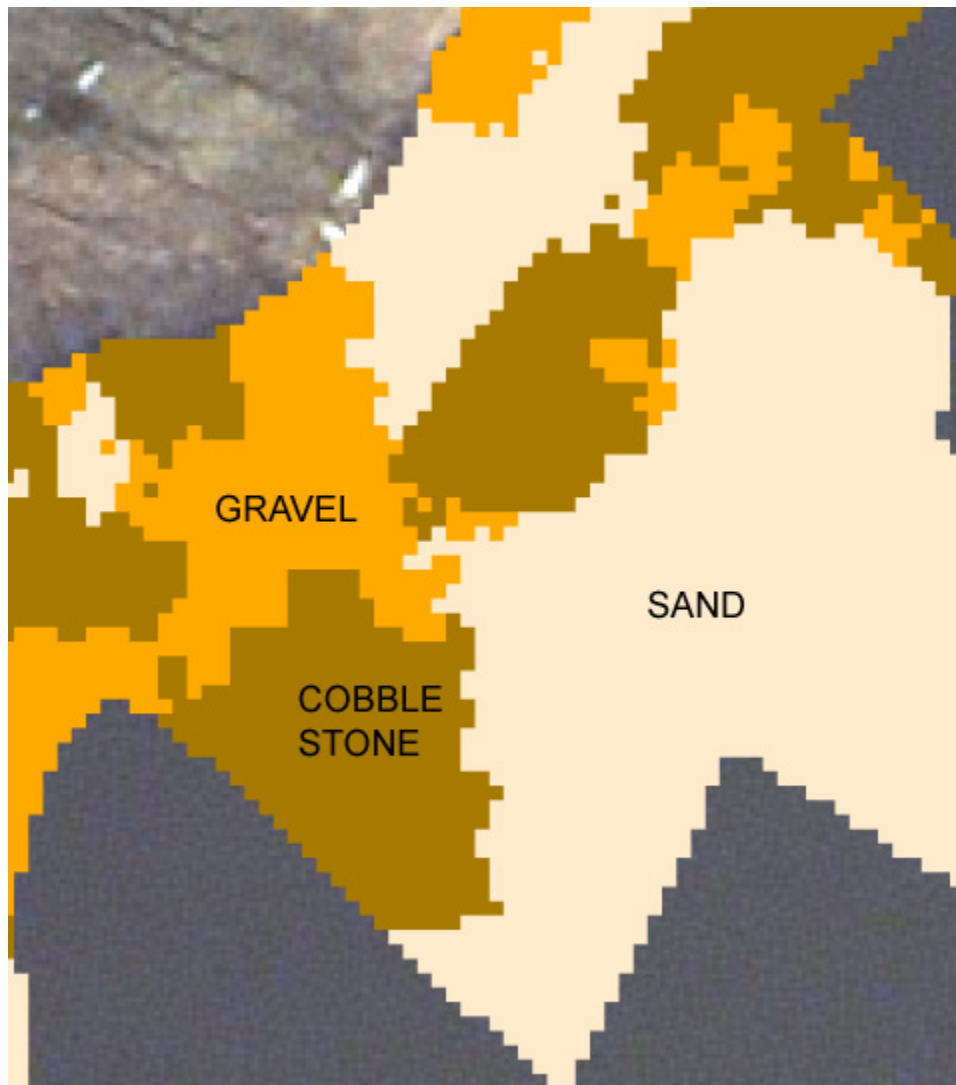
**Section of Lily Pond Water Depth**



### Section of Lily Pond Organic Sediment Depth



### Section of Lily Pond Substrate



An analysis of these component levels is planned for 2013 to determine the nutrient values and contaminant levels of the strata. Results will be published at a later date.

Possible Solutions:

- 1. Sediment Control** – With the elimination of sand on the adjacent highway, the addition of more sediment will be a result of invasive vegetation decay. There is a possibility of using the energy from the highway runoff to aerate the pond and possibly allow the natural bacteria to remove some of the organic sediment
- 2. Invasive Species Control** - Herbicide treatment of the area may be necessary to encourage natural specie growth.
- 3. Sediment Removal** - A dredged channel in the middle of the pond may aid the recovery, once items 1 and 2 are complete.

The restoration of Lily Pond will take years of work. The area is more of a swamp than a pond that acts as a natural filter to the Lake. Unfortunately, the filter is almost to capacity and on the verge of becoming a mud flat. A severe drought period could accelerate the process. This would mean the area would become devoid of aquatic vegetation and wildlife. It would eventually revert to brush and eventually forest. Should this be allowed or should the pond be restored?