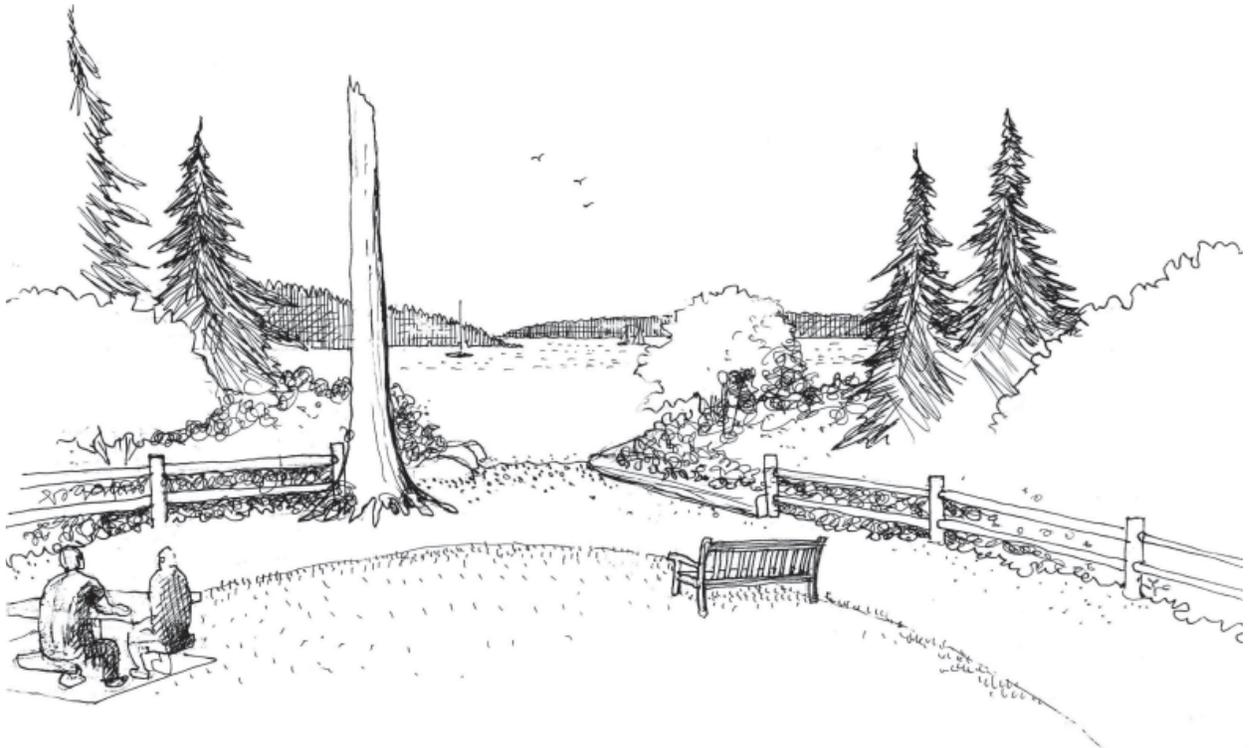


Luther Burbank Park Master Plan City of Mercer Island, Washington

April 2006

Shoreline Access and Restoration Description of Prototypes

Luther Burbank Park's shoreline provides a wide range of conditions including high functioning natural areas, and low to high intensity recreational use areas, some displaying significant erosion. The Master Plan proposes to conserve as well as modify segments of the park's 4280 linear feet of shoreline to address this range of conditions. A detailed inventory and analysis of shoreline habitat function was conducted at the beginning of the project as well as a wetland reconnaissance. These assessments are found in the appendix and provide the basis for determining which shoreline segments to conserve, which to restore, and which to provide higher intensity recreational access to. Conservation areas are essentially "no action" areas consisting of the highest functioning, intact natural shorelines. These conservation areas include the lacustrine wetlands bordering the shoreline at the north and south ends of the park. Restoration areas consist of low intensity recreation use areas forming much of the park's shoreline. These are areas where limited access to the water occurs, and where habitat has the best opportunity to be significantly improved for fish and wildlife. Higher intensity recreation use of the shoreline is proposed to occur in five specific areas comprising less than 20% of the total shoreline. In these more intensively used shoreline segments, larger beaches, generally without riparian vegetation are proposed for more concentrated access to Lake Washington. The following is a description of the three prototypical approaches to designing the shoreline to address habitat and human use in different locations and with different goals in mind.



Habitat Restoration Prototype:

The goal of this prototype (see Figure 1) is to improve the shoreline for a wide range of native fish and wildlife species including salmon. Two key aspects of habitat structure are targeted by this restoration prototype: overhanging riparian vegetation, and substrate (lake bottom surface material). Each of these two structural elements support key habitat functions such as aquatic and terrestrial prey organisms (food for fish and wildlife) and refuge from predators (hiding places) both of which are important to rearing and survival of most native fish and wildlife species. Riparian vegetation would consist of native willow and red osier dogwood shrub/small tree species overhanging the water and planted in soils wrapped in a biodegradable fabric (coir matting) placed over and in front of existing low eroding banks. The willows and dogwood are effective at stabilizing the shoreline and preventing erosion once established and are the basis for this “biotechnical” erosion control approach. Behind these plantings, other native upland trees and shrubs are proposed to provide more layers of vegetation at higher levels. A gravel surfaced trail paralleling the shoreline is proposed landward of these plantings. In general, no excavation would be needed to perform the restoration, but placement of imported soil and gravel materials is needed. Substrate restoration consists of placing a sockeye salmon spawning gravel mix just below the willow plantings between the Ordinary High and Ordinary Low Water lines (OHW and OLW). There is a two foot difference in the lake’s summer and winter water levels. These gravels are less than 1-1/2 inch in diameter and would cover the exposed “hard pan” presently devoid of gravels. Finally some woody debris is proposed in the restored areas between the OHW and OLW lines.

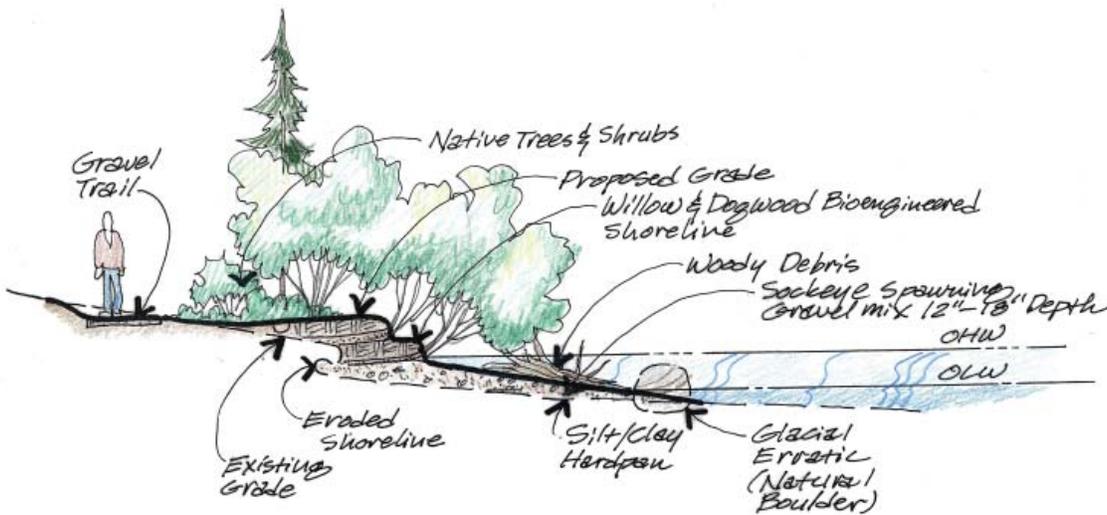


Figure 1

Micro Beach Prototype:

Periodically interspersed with the habitat restoration prototype, would be very small, “micro” beaches (see Figure 2). The goal of these beaches is to improve habitat substrate, as described above, but also to provide places for visitors to access the water on foot. Shallow draft small watercraft, such as kayaks and canoes could also use these micro beaches as landing sites. The beaches would include the same materials as the habitat prototype but consist of more beach and less restored vegetation. Some excavation and placement of gravel materials will be needed. The length of shoreline for each micro beach is intended to be no more than 30 feet. The width would be between 20 to 30 feet, with the widest point where the shoreline trail touches the beach. The gaps in riparian planting that the micro beaches form would be small enough that mature trees would spread over them. A combination of some buried rock covered with the spawning gravel described above, and large woody debris would form the edges of the beaches to help hold them in place. A similar effect is evident where some of the large poplar trees have fallen into the lake below the Park’s office. This woody debris has allowed more sand and gravel to accumulate on the updrift (north) side of it.



Figure 2

Human Access Beach Prototype:

The goal of the human access beach prototype is to emphasize access to the water for relatively larger numbers of park visitors. However, these beaches will provide a significant improvement in habitat by improving substrate conditions beyond the hardpan, steep eroding banks, or vertical bulkheads that exist in these locations. In most cases, sockeye spawning substrate can be used as the surface material for these beaches. These beaches are limited to the following five areas identified in the Master Plan including: Calkins Point; off leash dog area; homeowner demonstration area ("morning lawn"); dock/boiler building small boat launching beach; and the swim beach (see Figures 3, 4, and 5). Some excavation would be needed at some locations and placement of beach gravel would be needed at all of them. The beaches range in shoreline length from a maximum of 240 to 300 feet (swim beach and Calkins Point) to a minimum of 60 to 100 feet (off leash dog beaches, and homeowner demonstration beach). Riparian planting is not proposed at these beaches in order to maximize recreational shoreline access and water views. A combination of some buried rock covered with the gravel and large woody debris would form the edges of the beaches to help hold them in place. Some areas have existing upland edge materials such as the swim beach and the bulkhead at the boiler building. Most of the other beaches will require new edging materials to define the uplands from the beach. These edge materials are proposed to consist of durable and shoreline compatible products such as stone, and/or partially buried vinyl sheetpile with a continuous concrete cap twelve to eighteen inches wide (see Figures 3 and 4).



Figure 3

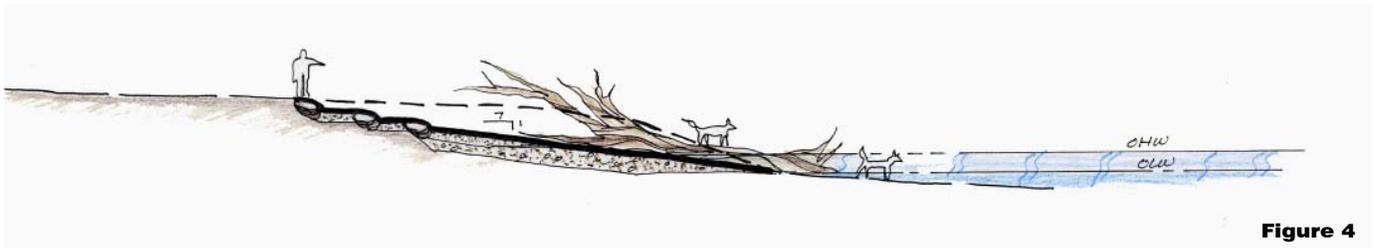


Figure 4

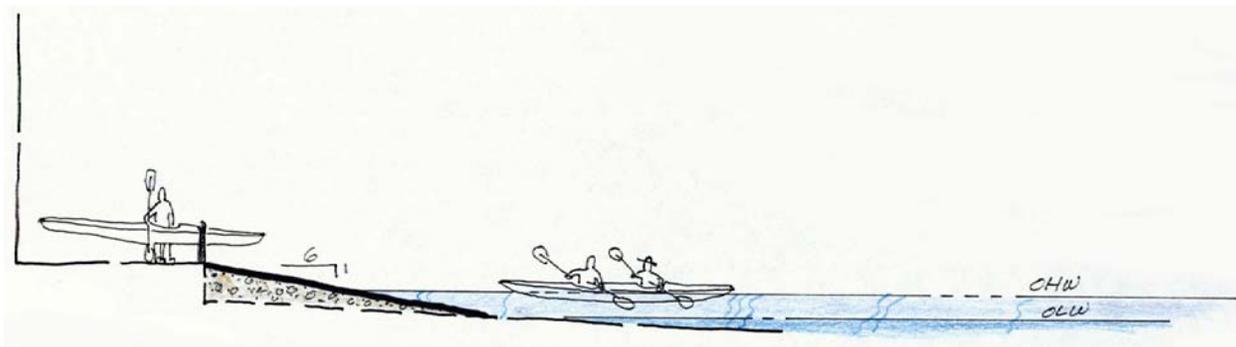


Figure 5