Seattle Public Utilities
Morse Lake Pumping Plant Project

Project Summary for External Communications
December 2011

1.1 General Information

The Morse Lake Pump Plant Project will be updated quarterly on the official Project Website:

http://www.seattle.gov/util/About_SPU/Water_System/Projects/MorseLakePumpPlantProject/index.htm

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1.2 Background

Chester Morse Lake is the major storage reservoir for SPU's water supply. In addition, it is the main source of water for the Cedar River which supports a large fish population and for which SPU has in-stream flow agreements to maintain certain flows to the river. The general operating scheme is to retain part of the high runoff during winter and spring so that the elevation of Morse Lake rises to a maximum of 1563 feet (above mean sea level) by the end of May. Typically, SPU withdraws water from the lake between early June and the end of October to deliver water to the regional water system and to maintain instream flows.

In 2002 it was found that a portion of the Outlet Channel between Morse Lake and the Masonry Pool had filled in with sediment resulting in insufficient depth to convey the 240 million gallons per day (mgd). The channel was dredged and the discharge dike rebuilt and was raised to elevation 1538 feet, which is now the lake elevation below of which pumping is required. Subsequently, the Outlet Channel has again filled with sediment. Therefore, the water stored between elevations 1532 and 1538 feet is part of the "normal" water supply available to use without declaring a water emergency, activating the water shortage contingency plan, or initiating demand curtailment by customers. However, this storage volume cannot be used without pumping under the existing conditions.

Pumping during low reservoir levels conditions is presently accomplished with two barge-mounted pumping plants that have a total of 28 pumps and a combined pumping capacity of 240 mgd. These pumping plants were a temporary measure when installed in 1987 and have not been replaced. The pumps are driven by electric motors that are

powered by shore-based mobile 1.5 MW generator sets. When it is determined that the reservoir elevation will decline below 1538 feet, mobilization of the pumping plants is initiated. Mobilization involves towing the plants to established locations in the lake, anchoring them, connection to underwater discharge pipes and power supply cables, and installing stop logs at the discharge dike.

1.3 Project Scope

The goal of the Chester Morse Lake Pumping Plant Project (Project) is to provide reliable access to water stored below the level at which gravity flow is not possible – currently elevation 1538 feet. The project objectives are to:

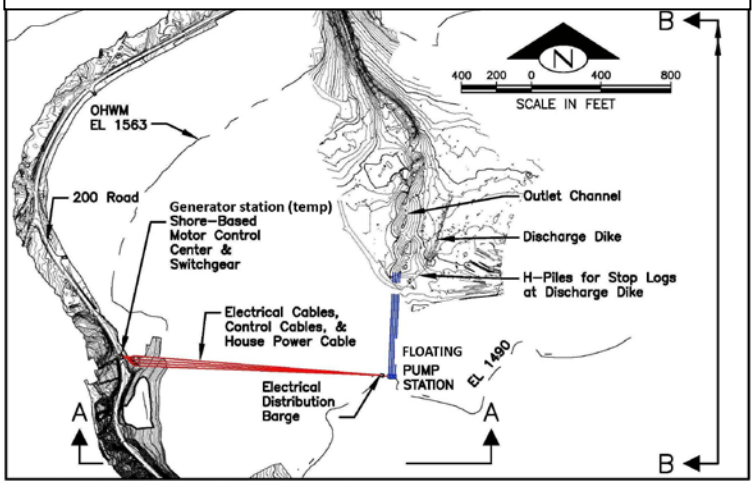
- Deliver water to Masonry Pool when water levels are between 1538 and 1532 for supply and instream flow;
- Deliver water to Masonry Pool when water levels are below 1532 to recover water released from storage for "Non-Firm Block" of Supplemental flows as required by the Cedar River Watershed Habitat Conservation Plan and Instream Flow Agreement; and
- Deliver water to Masonry Pool when water levels are below 1532 for emergency supply.

Current concept for the Project consists of four major facilities additions / improvements including the pumping facility, power supply, discharge piping and channel improvements. The preliminary concepts for these facilities are summarized below. The preliminary locations of the project facilities are shown on Figure 1.

1. Floating pump units on the northwest side of Chester Morse Lake with an anticipated capacity of 240 million gallons per day (MGD). Horizontal axial flow pumps or vertical turbine pumps will be used. The number and sizes of pumps needed to most fully achieve operational requirements has not been established, but as few as three pump units may be acceptable. A permanent anchoring system will be installed. The pump intake will have a fish screen sized according to state requirements, See Figures 1-3 below.

2. Generator Station. As shown in the plan view, mobile generators, switchgear and other electrical appurtenances will be situated on the road adjacent to the lake and approximately 2,500 lineal feet from the actual floating pump units (see Figure 2 below). It is anticipated that some excavation

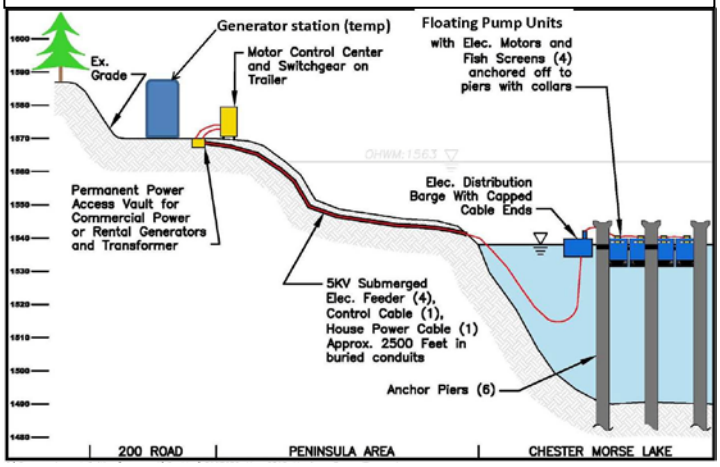
FIGURE 1: PLAN VIEW



and clearing around or near the access road will be necessary to provide for adequate space for the equipment.

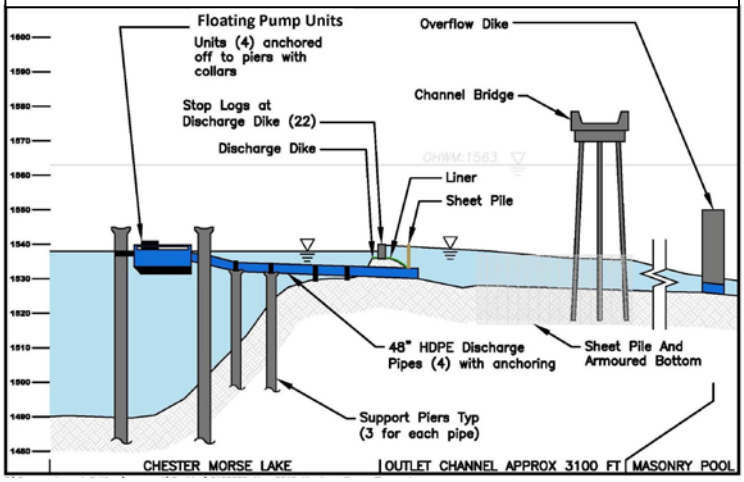
3. Four (4) 48-inch diameter transmission pipelines approximately 1000 feet in length each. The pipelines will convey the water from the pump station through the Discharge Dike (DD) and into the Outlet Channel for conveyance to Masonry Pool.

FIGURE 2: SECTION A-A



4. Improved Outlet Channel and Discharge Dike. The channel and DD will have improvements that may include sheet pile, dredging and an armored bottom in order to allow the anticipated 240 MGD of pumped water to flow downstream to Masonry Pool.

FIGURE 3: SECTION B-B



1.4 Project Delivery Method

The assumed project delivery method for the Project is General Contractor/Construction Management (GC/CM) project delivery method as defined in Revised Code of Washington (RCW) 39.10.340 -.410. This approach consists of the following:

- SPU is responsible for establishing the project requirements; support project management; supporting environmental studies; preliminary geotechnical studies and site surveying; applications for and obtaining the necessary permits and approvals; coordination and agreements with stakeholders and approval agencies;

selection of and contracting with a Design Consultant and a GC/CM; and lead in construction and environmental inspection services.

1.5 Project Schedule Milestones

The target schedule milestones for the Project are listed below. These are based on SPU's preliminary project schedule.

Key Milestones	Target Dates for Key Milestones
Support Services Consultant Selected	7/01/2012
Design Consultant Selected	10/01/2012
GC/CM Integration	01/01/2013
100% Design Development Complete	04/02/2014
Construction Begins – Channel Improvements	01/03/2015
Substantial Completion – Pump Station	09/01/2016

1.6 Project Budget

The preliminary estimate for the project budget is approximately $36-million.