



CITY OF KIRKLAND

Department of Public Works
123 Fifth Avenue, Kirkland, WA 98033 425.587.3800
www.kirklandwa.gov

MEMORANDUM

To: Kurt Triplett, City Manager

From: Pam Bissonnette, Interim Public Works Director
Jenny Gaus, Surface Water Engineering Supervisor

Date: October 22, 2013

Subject: Additional funding for Totem Lake/Juanita Basin Stormwater Retrofit Conceptual Design Project

RECOMMENDATION:

It is recommended that the City Council approves use of \$56,722 in Surface Water Utility reserves for addition of four tasks to the Totem Lake/Juanita Basin Stormwater Retrofit Conceptual Design Project consistent with the Totem Lake Action Plan that prioritizes economic development and flood reduction investments in Totem Lake. The tasks include:

- 1) Examine use of an alternative flow control standard for Totem Lake;
- 2) Evaluate impacts of that proposed standard and proposed stormwater retrofit facilities on flood levels of Totem Lake;
- 3) Produce a Quality Assurance Project Plan (QAPP);
- 4) Fund a contingency item for additional soil exploration.

BACKGROUND AND DISCUSSION:

The City Council approved the grant agreement for the Totem Lake/Juanita Basin Stormwater Retrofit Conceptual Design Project on June 18th, 2013 (see [June 18th Council Memo](#)). The purpose of this project is to develop conceptual designs and cost estimates for 3 stormwater retrofit facilities. The overall project cost in the grant agreement is \$270,960, with Ecology providing \$247,100 toward that total. Engineering consulting fees were estimated at \$220,000 in the grant application. Staff proposes to add four tasks to the project at a cost of \$56,722.

The following two tasks are described in greater detail below: investigation and implementation of an alternative flow control standard, and modeling of the impacts of proposed stormwater retrofit facilities on the flood level of Totem Lake. Staff believes that these tasks will result in benefits for redevelopment and for the environment of the lake. Details of each of these tasks are provided below. The cost of these tasks is \$29,357.

Two other tasks, development of a QAPP, and a contingency fund for soil exploration were not in the original consulting services estimate, but are necessary for successful completion of the grant and the project. When developing the project, staff assumed that a QAPP would not be required for the project. The Department of Ecology (granting agency) has since determined that a QAPP is required. This task is most readily done by the engineering consultant, and the cost is estimated at \$7,365. In addition, it is recommended that the project budget include contingency funds of \$20,000 for doing soil exploration borings at proposed project locations. Although efforts will be made to use existing soils information and thus not to use these funds, it may be necessary in certain instances to collect soils information to insure that the proposed facility will function as designed. The total of these two tasks is \$27,365.

Alternative Flow Control Standard

Initially, it was assumed that all areas of the Totem Lake Watershed would need to meet stringent standards for flow control and water quality treatment as noted in *The 2012 Stormwater Management Manual for Western Washington – the "Ecology Manual"*. Large facilities would be needed to hold water and release it slowly. Staff were planning to look for ways to provide these facilities regionally, thus somewhat reducing costs for redevelopment as compared to providing facilities for each individual site. But the overall size would be set by the need to have very low release rates. This concept is similar to a bathtub - the smaller the drain hole (the release rate), the larger the bathtub needs to be to prevent it from overflowing for a given amount of water pouring into it.

Northwest Hydraulic Consultants (NHC), the consultant chosen through a Request for Proposals process and interview, suggested that it may be possible to use an alternate and less stringent standard for areas that drain directly to Totem Lake. This is because standards in the Ecology Manual are intended to protect stream channels from erosion and scouring during smaller (< 2-year) storm events. Because Totem Lake provides a certain degree of natural control of flows, it may be possible to use the water-level fluctuation needs of the lake and surrounding wetlands, rather than a theoretical stream channel, as the basis for flow control standards. This may result in higher allowable release rates for smaller storms, resulting in smaller facilities that still protect the ecology of the lake. If successful, this would be a win for both redevelopment efforts and the environment. NHC has experience with working with Ecology to review and approve this type of alternate standard for the City of Issaquah, and feels confident that they could do the same thing with Totem Lake.

Investigation of an alternative flow control standard was not included as part of the original grant project. It is estimated that this additional work will add \$16,300 to the consulting work cost.

Flood Impacts of Proposed Facilities

Flood control is a top priority in the Totem Lake basin. Capital projects over the last 2 years, coupled with a project next year to the west of I-405, will significantly reduce flooding. In designing stormwater retrofit projects, we want to ensure that these facilities help to further reduce flooding. The stormwater retrofit grant project however specifically prohibited use of funds for investigation or resolution of flooding problems. Although it was not included in the scope of work for the grant, staff suggests that additional engineering work to determine the flood impacts of the proposed projects would be good insurance as we move forward. NHC estimates that this work would cost approximately \$7,500, although it is somewhat difficult to entirely separate this task from the overall modeling effort for the project.

Funding

Funds for this \$56,722 addition to the Totem Lake/Juanita Basin Stormwater Retrofit Conceptual Design Project would be drawn from Surface Water Utility Operating Reserves. The attached fiscal note (Attachment B) notes that reserves are available for use. Although this is a significant expenditure, the hope is that it will result in future gains in terms of facilitating redevelopment of Totem Lake and in protecting the lake and surrounding wetlands.

Attachments:

- A: Map of storm lines draining directly to Totem Lake
- B: Fiscal Note for Use of Surface Water Utility Reserves

Cc: Rob Jammerman, Development and Environmental Services Manager

FISCAL NOTE

CITY OF KIRKLAND

Source of Request							
Pam Bissonnette, Interim Public Works Director							
Description of Request							
Request for funding of \$56,722 from Surface Water Operating fund working capital to investigate alternative flow control standard for areas that drain Totem Lake as an additional element to the Totem Lake/Juanita Basin Stormwater Retrofit Study grant project.							
Legality/City Policy Basis							
Fiscal Impact							
One-time use of \$56,722 of Surface Water Operating fund working capital. The reserve is able to fully fund this request.							
Recommended Funding Source(s)							
<i>Reserve</i>	Description	2014 Est End Balance	Prior Auth. 2013-14 Uses	Prior Auth. 2013-14 Additions	Amount This Request	Revised 2012 End Balance	2014 Target
	Surface Water Working Capital	2,952,415	12,500	0	56,722	2,883,193	N/A
	Council is also considering a request for funding NPDES Stormwater Permit Appeal Legal Services (\$12,500); the reserve balance assumes approval of both of these requests.						
<i>Revenue/Exp Savings</i>							
<i>Other Source</i>							
Other Information							
Surface Water Operating fund working capital is available for unanticipated expenditures.							

Prepared By	Neil Kruse, Senior Financial Analyst	Date	October 22, 2013
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