

CITY COUNCIL STUDY SESSION ITEM

SUBJECT:

Update Regarding Lake Sammamish Slough and Proposed Willowmoor Project

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POLICY ISSUES

Bellevue has been closely monitoring the status of the County's management of the Transition Zone between Lake Sammamish and the Sammamish River due to high water levels that impacted Bellevue property owners living along Lake Sammamish. In 2013, King County convened a Stakeholder Advisory Committee to evaluate options to:

- Ensure the Transitions Zone's capability to provide necessary lake level control, flow conveyance, and downstream flood control,
- Enhance habitat conditions in the river channel, floodplain, associated tributaries and wetlands for ESA-listed Chinook, steelhead, and other fish and wildlife species, and
- Reduce costs, complexity, and ecological impacts of construction, operation and maintenance of the Transition Zone.

The County has completed the alternatives analysis, and Mark Isaacson, King County Water and Land Resources Division Director, will provide a briefing on the conceptual design and alternatives for the County's proposed Willowmoor Floodplain Restoration Project. **Note that general background information on the King County Flood Control District (FCD) can be found at the end of this agenda memorandum, if needed.**

DIRECTION NEEDED FROM COUNCIL

- Action
 Discussion
 Information

No formal direction is needed at this time. This item is an opportunity for Council to receive an update, provide comments and provide direction to staff if desired on the proposed Lake Sammamish/Willowmoor project.

BACKGROUND/ANALYSIS

Lake Sammamish drains north to the Sammamish River through an engineered outlet channel located at King County's Marymoor Park. The engineered channel, referred to as the Transition Zone (TZ), is where the lake "transitions" to the Sammamish River. Designed and built by the U.S. Army Corp of

Engineers (Corps) in the 1960s, the TZ is a wide, relatively steep, straightened stream channel equipped with a shallow fixed concrete spillway that functions as a weir. The weir, submerged during periods when the lake is full, becomes exposed in the summer when the lake is low, and maintains minimum lake levels for recreational purposes. The original intent of the design of the constructed channel and weir was to provide downstream flood protection while maintaining minimum lake levels.

The degree to which vegetation grows in the outlet channel is one of several factors that affect how quickly the lake drains. In recognition of this fact, King County and the Corps agreed on vegetation maintenance plans in the 1960s that maintain the design intent of the project.

With the listing of endangered salmon in 1999, the vegetation maintenance plan was modified by King County, in agreement with the Corps, to balance competing needs for high flow conveyance, maintaining minimum lake levels and providing critical shade habitat to keep the water cool for returning endangered salmon. Annual vegetation clearing was reduced to every other year, and instead of trimming both sides of the river each year, King County transitioned to cutting and trimming only one side each year.

After the implementation of the modified maintenance practices, Lake Sammamish property owners began to experience increased lake levels during winter storms and spring runoff. The increased lake levels submerged and damaged docks and led to increased shoreline erosion from the wave action.

In 2010 Lake Sammamish residents contacted King County about the impacts of the changes, and in 2011 a new maintenance plan was approved that would increase mowing, remove cuttings and remove sediment from the TZ.

Willowmoor Project

The Willowmoor project was conceived to explore alternatives that:

- Provide lake level controls, flow conveyance, and downstream flood control to standards that protect property and minimize shoreline erosion,
- Improve aquatic and riparian habitat within and adjacent to the TZ for migrating salmon,
- Reduce summer water temperatures in the river to improve habitat conditions for migrating salmon,
- Reduce costs, complexity, and ecological impact of operations and maintenance activities, and
- Protect and enhance recreational opportunities.

Project alternatives have been reviewed by the Willowmoor Stakeholder Advisory Committee (SAC), a group of interested parties comprised of lakeshore property owners, agency staff, citizens, and other advocates of Lake Sammamish. Staff from Bellevue's Utilities Department were also part of the SAC.

The SAC considered five alternatives and recommended three for further consideration. The SAC did not come to a consensus on a recommended option, but provided comments on the alternatives that are now being considered by King County as it further develops the options. The lakeshore property owner representatives on the SAC remain actively involved in providing comments regarding the options under consideration. The three alternatives are:

1. **No Action (Continue Current Maintenance Only)**. This is the baseline alternative that uses existing maintenance practices for meeting the project objectives.
 - This alternative has the lowest overall cost (\$41,000 per year and no capital costs), but would not meet project objectives for habitat improvement.

- This option also does not reduce the number of days of high lake levels to the same extent as the other two options being proposed.
2. **Split Channel**. Modify existing main channel and weir to optimize flow conveyance and provide safe recreational navigation, construct a new side channel as a primary salmon migration route, and pump cold water from other sources (such as groundwater) to cool the river for salmon.
- This option has a significant capital cost of \$8.2 million plus another \$1.6 million for the cold water pumping.
 - Maintenance costs are estimated at \$22,000 per year (\$17,000 for channel and \$5,000 for pumping).
 - Modeling shows that this option could result in a substantial reduction in high lake levels during the winter.
3. **Widened Existing Channel**. Modify existing channel for increased conveyance. Modify existing weir to meet objectives for safe recreational navigation, lake level and downstream flood protection. This option cools the river by pumping water out of the river, cooling it through an underground pipe and then returning the cool water to the river.
- The capital cost for the widened channel is \$3.9 million plus another \$4.2 million for the cooling option.
 - Total maintenance costs are estimated at \$31,000 per year (\$12,000 for channel and \$19,000 for cooling option).
 - Modeling shows that this alternative would result in modest reductions in high lake levels.

Project Funding

The King County Flood Control District (FCD) included funding in its 2015 and 2016 budgets to advance the project to 30% design. The City of Redmond supported this effort by applying \$150,000 of its FCD Sub-Regional Opportunity Fund dollars towards this preliminary design effort. Although the final alternative has not been selected yet, placeholder funding in the amount of \$4 million was included in the FCD 2016 budget pursuant to a recommendation from the FCD Advisory Committee. Because the habitat components proposed in two of the alternatives are a considerable cost to the project, King County is pursuing habitat grant funds to augment funding to achieve the flood control benefits, including a \$200,000 Salmon Recovery Funding Board (SRFB) grant for final design.

NEXT STEPS

King County staff is continuing to refine the alternatives with a goal of developing a preferred alternative in the coming months. King County is committed to continued work with Lake Sammamish property owners, and Bellevue staff will continue to be engaged and will provide Council updates on the Willowmoor project as it evolves.

King County Flood Control District – General Background

The Willowmoor project is one of several capital projects managed by the FCD to address flooding problems throughout the county. The FCD also supports local jurisdictional flood control programs through the Sub-Regional Opportunity Fund (SROF)—an annual funding mechanism that returns 1% of the Flood District revenue back to the jurisdictions where it was collected. Since 2008, Bellevue’s own flood control capital program has received a total of \$3.1 million through the SROF.

In 2016, Bellevue’s SROF allocation is \$591,693. Bellevue is using this funding for the Factoria Boulevard Storm Conveyance Improvement project that will design and construct improvements to reduce or eliminate flooding caused by insufficient drainage system capacity along Factoria Boulevard between SE 38th Street and Richards Creek. In addition to this funding from the SROF, Bellevue has a major project on the Flood District’s capital project list. This project which is estimated at about \$8 million will address Newport Shores flooding issues. The investigation phase has been completed and the next phase will design five new fish passable structures and drainage improvements to systems connected to the creek.

Finally, Council will recall that the Flood District implemented a new grant program in 2014. This program allocates a total of about \$2.8 million outside of the regular capital project list and subregional funding. Bellevue received a grant for \$94,540 to implement the first phase of improvements to the drainage system around Larsen Lake to alleviate high waters upstream of the lake. \$40,000 was also awarded to a Bellevue condominium owners association in Factoria to help eliminate structural flooding by connecting a stormwater outfall pipe to a nearby stormwater piped system.

ALTERNATIVES

N/A

RECOMMENDATION

N/A

ATTACHMENT

NA