



Revised Staff Report

Agenda Item:	5	Name:	Michelle Clark
Proposed No.:	FCDEC Motion No FCDECM2021-03	Date:	April 7, 2021

Proposed Motion FCDECM 2021-03: A motion stating the Flood Control District Zone District executive committee's intent to include the Willowmoor Floodplain Restoration Project in the Sammamish Capital Investment Strategy, explore near-term mitigation strategies for Lake Sammamish property owners, and continue to pursue permits required for ongoing maintenance of the Sammamish River Transition Zone.

Proposed FCDEC Motion FCDECM2021-03 states the King County Flood Control District (District) Executive Committee's intent to include the Willowmoor Floodplain Restoration Project (Willowmoor Project) in District's Sammamish Capital Investment Strategy, explore mitigation opportunities for lakeshore property owners, and continue pursuing the permits necessary for maintenance in the Sammamish River Transition Zone (Zone).

In the 1960s the US Army Corps of Engineers (Corps) constructed the Zone was constructed as part of the overall Sammamish River Improvement Project ("the Improvement Project") in cooperation with King County primarily to control flooding in the Sammamish river valley. King County is responsible for maintaining the Improvement Project through an operation and maintenance agreement with the Corps. The District, through the King County water and land resources division as its service provider, provides funding for and conducts regular maintenance of the Zone, including mowing, trimming, removal of vegetation, removal of accumulated sediments in the channel and associated mitigation efforts. State agencies and tribal government representatives have expressed concern that these maintenance actions adversely affect water quality and habitat and are in conflict with federal, state and local efforts to protect and enhance riverine habitat for recovery of salmon species listed under the federal Endangered Species Act necessitating the need for a permit to perform the necessary maintenance of the Zone.

In recent years, property owners around Lake Sammamish have expressed concerns about high lake levels impacting their properties. The Willowmoor Project was created with the intent to reduce the frequency and duration of high lake levels while maintaining downstream Sammamish river flood control performance. Since mid-2013, the District's service provider, the King County, has been collecting data, conducting technical analyses and developing a suite of conceptual design alternatives for the Willowmoor Project. The District has funded and implemented a variety of means to engage various stakeholders and the public during the conceptual alternative development process for

the Willowmoor Project, culminating in the adoption of Motion 2016-04.1 in June 2016. Executive Committee Motion 2016-04.1, which provided direction to proceed to 30 percent design with the Project, including, in part:

- developing the split channel alternative in such a way that balanced the objectives of flood control, habitat restoration, fish passage and sustainability;
- conducting a feasibility analysis of a dynamic weir that included costs and benefits;
- developing a maintenance plan for when the project is complete;
- pursuing grant sources and identifying funding partners to further evaluate cold water supplementation and assume ongoing maintenance costs should the option be selected; and
- continuing existing maintenance during design and permitting phases.

In May 2018, King County prepared a report in response to the issues listed in Motion 2016-14.1. The report, using the "Modified Existing Conditions HEC-RAS" model for lake levels, indicated that there was no significant difference in flood risk reduction between the wide and narrow side channel alternatives and that the manually operated weir, which assumed adjustments in weir height only on a seasonal basis, was not expected to reduce lake levels for a significant number of flood days. After reviewing the report, the District requested King County evaluate the flood risk reduction of a dynamic weir, which could be adjusted with greater frequency and in anticipation of major weather events. In July 2019, King County prepared a progress memorandum for an addendum to the weir analysis using the "Contemporary Conditions spreadsheet." The analysis preliminarily indicated a 25 percent to 47 percent reduction in flood days exceeding lake elevation of 27 feet was possible using a remote dynamically operated weir. This memorandum included a sensitivity analysis that indicated the consequence of incorrect parameter estimation for downstream risks was very high, and could have negative consequences on the city of Redmond's stormwater infrastructure.

Because the results of the 2018 and 2019 analyses varied significantly due to differences in data availability and model setup, the District requested a third-party review of the models and analysis to inform further decision making for the Willowmoor Project. The District issued a request for proposals for a third-party evaluation in 2019 and again in 2020. Unfortunately, no responses were received in either cycle.

The increase in lake levels is incredibly complex and requires a comprehensive study of the basin to develop potential solutions. Lake Sammamish and the Zone are integral parts of the Sammamish River basin and changes in one part of the basin, including Sammamish River tributaries, necessarily impact other parts of the basin. In February 2020, Lake Sammamish experienced historic flooding resulting in damage to property including docks, crawlspaces and small outbuildings around the lake located within the 100-year floodplain. Climate change is projected to increase the frequency and intensity of storm events in King County, increasing the potential for high lake level events and associated lakeshore flooding. Uphill development around Lake Sammamish and in tributary stream basins have resulted in increased run-off into Lake Sammamish during storm events.

The Sammamish River Capital Investment Strategy is intended to take a comprehensive look at the entire Sammamish river basin in collaboration with the Corps, cities, and other stakeholders and to update the capital investment and maintenance strategy for meeting the flood risk reduction, fish habitat, and navigability requirements of the Corps' 1964 Operations and Maintenance Manual.

If Proposed Motion FCDECM2021-03 is adopted, the District will:

1. Update the Sammamish river capital investment strategy work program authorization and project charter to include Lake Sammamish, the Willowmoor project and Issaquah creek to ensure a complete basin-wide approach;
2. Work with cities that border Lake Sammamish to design and implement near-term flood mitigation options for lakeside landowners, such as floating docks, out building relocation or elevation and other floodproofing measures;
3. Conduct outreach to homeowners' associations and others on the lake to make them aware of their potential eligibility for flood-reduction grants and flood insurance;
4. Prepare a high-level assessment of the scope and level of effort needed for data collection and a tributary gaging, groundwater monitoring and weather station network that would be able to support lake level forecasting;
5. Continue to pursue the permits needed to continue vegetation maintenance in the Zone;
6. Issue a third-party review request for proposals for analysis of weir alternatives, to remain open until the District executive director executes a contract for the work;
7. Identify updates to the 2021 work plan and budget needed to undertake the work described in this motion for potential inclusion in the 2021 midyear budget update;
8. Explore possible county-owned locations closer to Lake Sammamish for sandbag distribution; and
9. Request King County reach out to city stormwater programs in Bellevue, Issaquah, Sammamish and Redmond through existing contacts and coordination venues to learn more about their current plans, including stormwater retrofits and green stormwater infrastructure initiatives, such as rain gardens, and share its findings to the District executive director.

Striking Amendment

Since the March 3, 2021 Executive Committee, the District has received input from the community. The motion has been amended to incorporate community input and to add clarity. These changes include:

1. An expanded explanation of the permit required by the co-managers of the Sammamish River – Washington Department of Fish and Wildlife and the Muckleshoot Indian Tribe. (Line 23 to 37)
2. Inclusion of the Sammamish Flood Reduction Plan signed by King County and representatives of Lake Sammamish residents in 2001 that included a four-fold increase in mowing of the Zone and the evaluation of sediment and debris removal.)Line 47 to 50)
3. Inclusion of King County actions following the February 2020 flood event. (Line 92 to 96)
4. Clarification of the intent of the *current* Sammamish CIS. (Line 109 to 123)
5. Direction to include Bear Creek in the revised Sammamish CIS. (Line 131)
6. Clarification that the new grant program is intended to assist lakeshore property owners in the creation of resilient infrastructure. (Line 134 to 137)
7. Clarification of a consultant review process to: (Line 150 to 159)
 - a. Determine the adequacy of the methodology analyzed in the June 2020 Remotely Operated Dynamic Weir Analysis Addendum Technical Memorandum confirming the preliminary results of the July 5, 2019 progress memorandum; and
 - b. Evaluate the feasibility and potential impact on flooding of a remotely operated dynamic weir that could include a wider notch than in the current configuration and be adjusted multiple times throughout the year in response to forecasted storms.

Attachments

FCDECM2021-03

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Redline crosswalk of changes