CITY COUNCIL REGULAR SESSION

Resolution authorizing and directing the City Manager to execute the Lake Sammamish Kokanee Interlocal Agreement.

Joyce Nichols, Director of Intergovernmental Relations, 452-4225
City Manager's Office

Nav Otal, Utilities Director,452-2041
Kit Paulsen, Environmental Scientist, 452-4861
Utilities

EXECUTIVE SUMMARY

This Resolution authorizing and directing the City Manager to execute the Lake Sammamish Kokanee Interlocal Agreement.

RECOMMENDATION

Move to adopt Resolution No 9686.

If approved, effective date: 11/18/2019

BACKGROUND/ANALYSIS

Jurisdictions within the Lake Sammamish basin are considering entering into an interlocal agreement to share the costs of investigating conditions within Lake Sammamish and emergency actions to assist in Kokanee salmon recovery (Attachment A: Lake Sammamish Kokanee Interlocal Agreement). As of November 12, the City of Issaquah and the Snoqualmie Tribal Councils have approved entering into this agreement.

Lake Sammamish late-run Kokanee salmon populations are facing newly-severe and acute environmental pressures within Lake Sammamish and are at risk of extinction. The number of late-run Kokanee returning to spawn has severely declined from nearly 20,000 in 2012 to just 19 in 2017. These low numbers of Kokanee could lead to their extinction within the Lake Sammamish basin unless additional recovery actions are taken quickly. Other salmon and cold-water fish species may also be affected.

Kokanee are related to Sockeye salmon but spend their lives in freshwater, never migrating to the ocean. There are no sport, tribal, or commercial fisheries for them. Major factors influencing their survival are localized habitat conditions in Lake Sammamish and natal spawning streams.

Previous Recovery Efforts
There is a long history of recovery efforts in the region for Lake Sammamish Kokanee.

- In the 1980s, concerns about algae blooms in Lake Sammamish spurred local governments (Bellevue, Issaquah, Redmond, and King County) to conduct investigations and act to reduce nitrogen and phosphorus entering the lake. Nutrient levels are now lower than they were in the 1980s.

- In the 1990s, local governments initiated technical studies into Kokanee populations, including population genetics, spawning areas, and abundance. This work identified the need for habitat restoration and limited hatchery egg incubation to maintain Kokanee populations.
- In the 2000s, stream restoration projects were initiated by local governments and private citizens in Kokanee spawning areas to reduce impact of high flows that were eroding incubating Kokanee eggs and to allow fish passage to existing spawning habitat. The Lake Sammamish Kokanee Work Group began in 2007 as a voluntary coalition of local jurisdictions (Bellevue, Issaquah, Redmond, Sammamish, and King County), the US Fish and Wildlife Service, the Washington Department of Fish and Wildlife, Washington State Parks, the Snoqualmie Tribe, numerous non-profit organizations, and citizens. The Kokanee Work Group developed technical guidance documents, education programs, citizen science monitoring efforts, and stream restoration projects.
- In the 2010s, despite on-going stream restoration and hatchery supplemental efforts, Kokanee abundance dropped precipitously and data implicate that Lake Sammamish habitat is the limiting factor.

Lake Sammamish Investigations and Kokanee Emergency Actions Needed Now

<u>Lake Sammamish Water Quality Investigations</u>

The recent decline in Kokanee raised concerns over water quality changes within the lake, especially the decline in available fish habitat between the warm surface water temperature and cooler, but oxygen depleted water layer found deeper in the lake. In the summers of 2014 – 2016, the warmer surface temperature extended deep into the lake and overlapped with the oxygen-depleted deeper water, resulting in three summers with almost no lake habitat suitable for cold water fish survival. This phenomenon of lake stratification leaves only a small band/layer of viable habitat with increased predation, disease, and other stresses that can lead to reduced survival. It is expected that there have always been periods of habitat limitation, but the magnitude of the warm temperature and low dissolved oxygen “squeeze” has been occurring more frequently.

The effect of the “squeeze” on the entire ecological system of the lake is uncertain, but indicates unfavorable conditions for other species of concern, including federally-listed threatened Chinook salmon as well as Coho salmon. Loss of key species could also affect the food web, leading to increases in algae blooms or other impacts to the quality of Lake Sammamish.

Additional study is needed to determine the extent of the water quality constraints and to better understand how improvements could be made by increasing cold water through riparian shading, low impact development, and other methods for reducing surface water temperature and increasing cold groundwater seeps and springs. Investigations into organic and chemical oxygen demand and ways to improve oxygen in lower levels of Lake Sammamish are also needed.

<u>Kokanee Recovery Actions</u>

Due to the acute and critical reduction in the number of Kokanee returning to streams to spawn, activities related to hatchery programs, fish disease, and predation are needed to maintain enough Kokanee genetics for recovery while habitat is being improved. Some of the immediate actions include

holding juvenile kokanee in cold-water rearing ponds to avoid peak summer lake temperatures; testing for increased bacterial and parasite infestation in the late-run Kokanee; and maintaining genetic diversity in the unique late-run Kokanee population by holding a portion of 2019 juveniles at a spring-fed pond for three years (brood stock). Local jurisdictions have a role in the parasite issues because urbanization has dramatically altered lakeshore and stream habitat. Identifying the key stressors on Kokanee will allow targeted, specific habitat recovery actions to improve Kokanee survival.

Key Elements of the Daft Kokanee Interlocal Agreement

Costs for Kokanee research and recovery efforts are estimated to cost $100,000 in 2019 and $150,000 in 2020. It is anticipated that additional investigations and juvenile kokanee rearing operations will be needed in future years as well. The draft ILA establishes a 10-year agreement with an annual termination clause. The ILA would include the cities of Bellevue, Issaquah, Redmond, and Sammamish; King County; and local Native American Tribes. The Snoqualmie Tribe is the only Native American Tribe to request to participate in the ILA to date.

Process

The ILA would be effective upon the signatures of three eligible jurisdictions. Other jurisdictions are in the process of scheduling reviews of the ILA with their respective governing bodies.

The ILA would establish a policy committee of elected officials who would meet to review the work plan and approve the associated annual budget. Depending on the operating guidelines established by the elected officials, this could require one to two meetings annually.

This ILA would require staff participation in the Kokanee Work Group to coordinate and develop the Kokanee ILA work plan and budget. All jurisdictions currently have voluntary staff participation.

Proposed ILA Cost-Share Model

Since 2006, the Lake Washington/Cedar/ Sammamish Chinook Salmon habitat recovery program (WRIA 8) ILA has used a cost-share formula based on land area, population, and assessed value of land draining to the watershed. The Kokanee ILA proposes to use the same cost-share formula for jurisdictions, based on lands draining to Lake Sammamish.

Tribes participating in the ILA would contribute an amount mutually agreed upon by all of the parties of the ILA rather than using the WRIA 8 model. Initial cost-shares under this model would be as shown below:

Entity	Formula Share	2019	*2020*
Bellevue	*19.5%*	*$19,500*	*$26,400*
Issaquah	*22.9%*	*$23,000*	*$31,000*
Redmond	*4.3%*	*$ 4,300*	*$5,800*
Sammamish	*28.5%*	*$28,500*	*$38,400*

King County	*24.9%*	*$25,000*	*$33,600*
Snoqualmie Tribe	NA	*NA*	*$15,000*
Total		***$100,000***	***$150,000***

ILA Administration

King County offered to be the Service Provider for the proposed ILA, similar to the ILAs for the regional salmon recovery efforts. Overhead costs would be limited to contract management and ILA administration services and would be evaluated as part of the annual budget process.

POLICY & FISCAL IMPACTS

Policy Impact

The ILA raises the policy question of Bellevue's role in protecting and restoring Lake Sammamish water quality, the ecological health of the Lake Sammamish watershed, and maintaining a unique population of Kokanee salmon. The following policies and the Storm and Surface Water Mission Statement support entering into a cost-share agreement for Kokanee recovery actions:

- EN-19 Retain existing open surface water systems in a natural state and restore conditions that have become degraded.
- EN-20 Maintain surface water quality, defined as meeting federal and state standards and restore surface water that has become degraded, to the maximum extent practicable.
- EN-25 Restore and protect the biological health and diversity of the Lake Washington and Lake Sammamish basins in Bellevue's jurisdiction.
- UT-35 Participate in regional watershed-based efforts with the goals of achieving local drainage basin health and addressing Endangered Species Act issues. Manage the storm and surface water system within a system wide, watershed-based context.

Storm and Surface Water Mission Statement: "A surface water system that controls damage from storms, protects surface water quality, supports fish and wildlife habitat, and protects the environment." The City of Bellevue Storm and Surface Water System Plan, 2015.

Fiscal Impact

Bellevue's portion of the cost-share of the ILA is $19,500 in 2019 and $26,400 in 2020. The ILA costs are not in the current 2019-2020 budget. The department proposes to cover the costs with savings from other programs in the Storm and Surface Water Fund. Future year costs would be included as a line item in the Storm and Surface Water budget.

OPTIONS

1. Adopt the Resolution authorizing and directing the City Manager to execute the Lake Sammamish Kokanee Interlocal Agreement.
2. Do not adopt the Resolution and provide alternative direction to staff.

ATTACHMENTS & AVAILABLE DOCUMENTS

Proposed Resolution No. 9686

AVAILABLE IN COUNCIL LIBRARY

Lake Sammamish Kokanee Interlocal Agreement