
LAUGHING JACOBS CREEK HANS JENSEN PARK REACH

Location:	Laughing Jacobs Creek (tributary to Lake Sammamish), King County, WA. WRIA #08.0166
Proposed Action:	Enhance existing stream channel by installing pool-forming structures, bank softening measures, and additional spawning gravel. Connect to proposed realignment of the creek downstream of the footbridge (Project G).
Species Benefiting:	kokanee, coho, cutthroat trout



Kokanee/Chinook Restoration Feasibility Assessment in the Sammamish Watershed

Map H - Laughing Jacobs Creek - Hans Jensen State Park Habitat Enhancement Project



11810 North Creek Parkway N
Bothell, WA 98011

Project 0-915-17013-0

- Sanitary sewer
- Storm sewer
- Water utility
- Contour
- Watercourse
- Parcel



0 50 100 200 Feet

Laughing Jacobs Creek - Hans Jensen Park Habitat Enhancement Project:

Enhance existing stream channel by installing pool-forming structures, bank softening measures and additional spawning gravel. Re-route the reach downstream of the footbridge to tie in with new culvert under ELS Parkway (Project G) and create natural bed, bank, and riparian areas.

162406 9010

SE 44TH ST

EAST LAKE SAMMAMISH PKWY SE

Laughing Jacobs Creek

Project G:
Laughing Jacobs Creek
Sammamish State Park
Channel Re-route Project

Kokanee/Chinook Restoration Feasibility Assessment in the Sammamish Watershed

Map H - Laughing Jacobs Creek - Hans Jensen State Park Habitat Enhancement Project



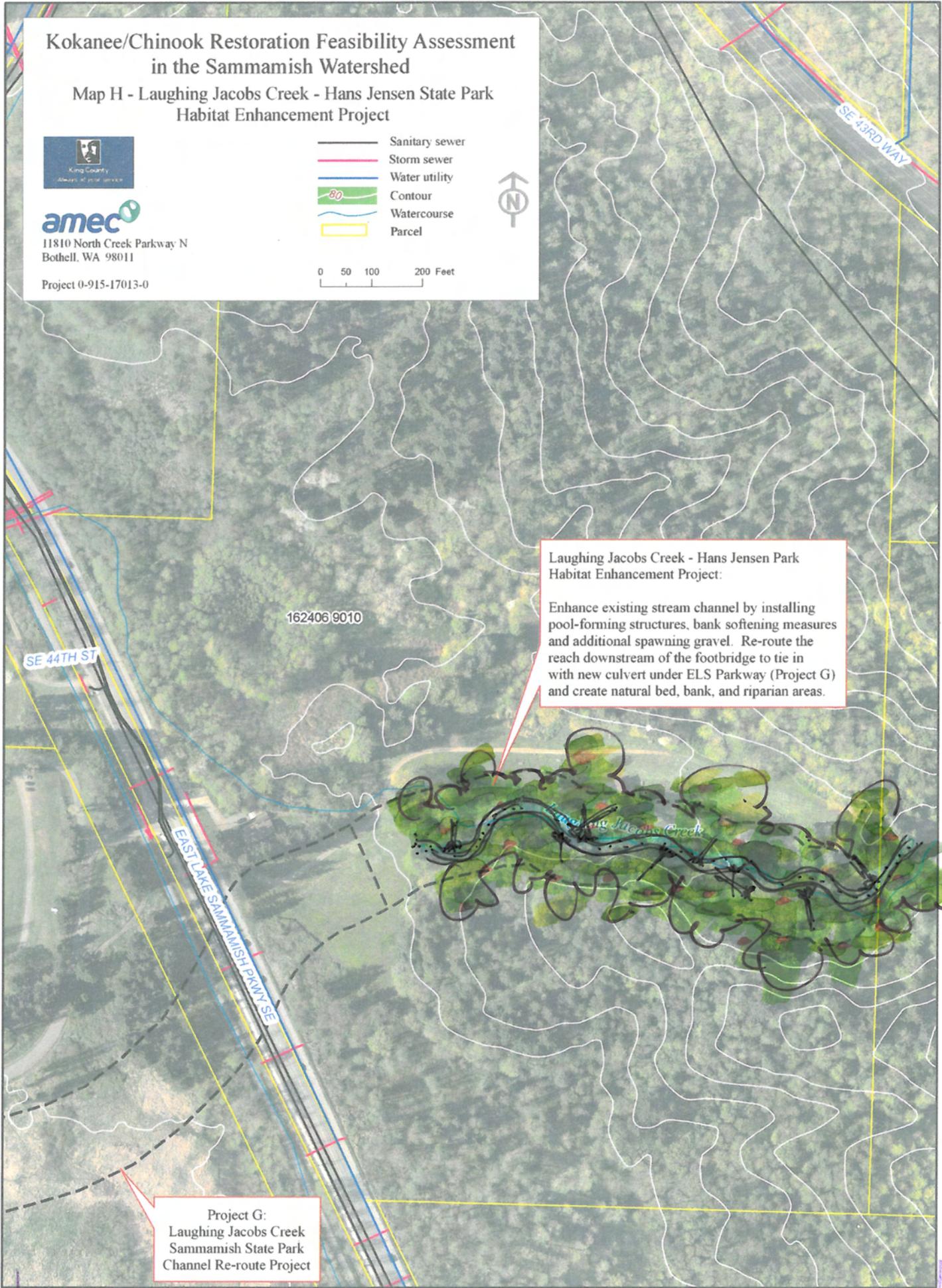
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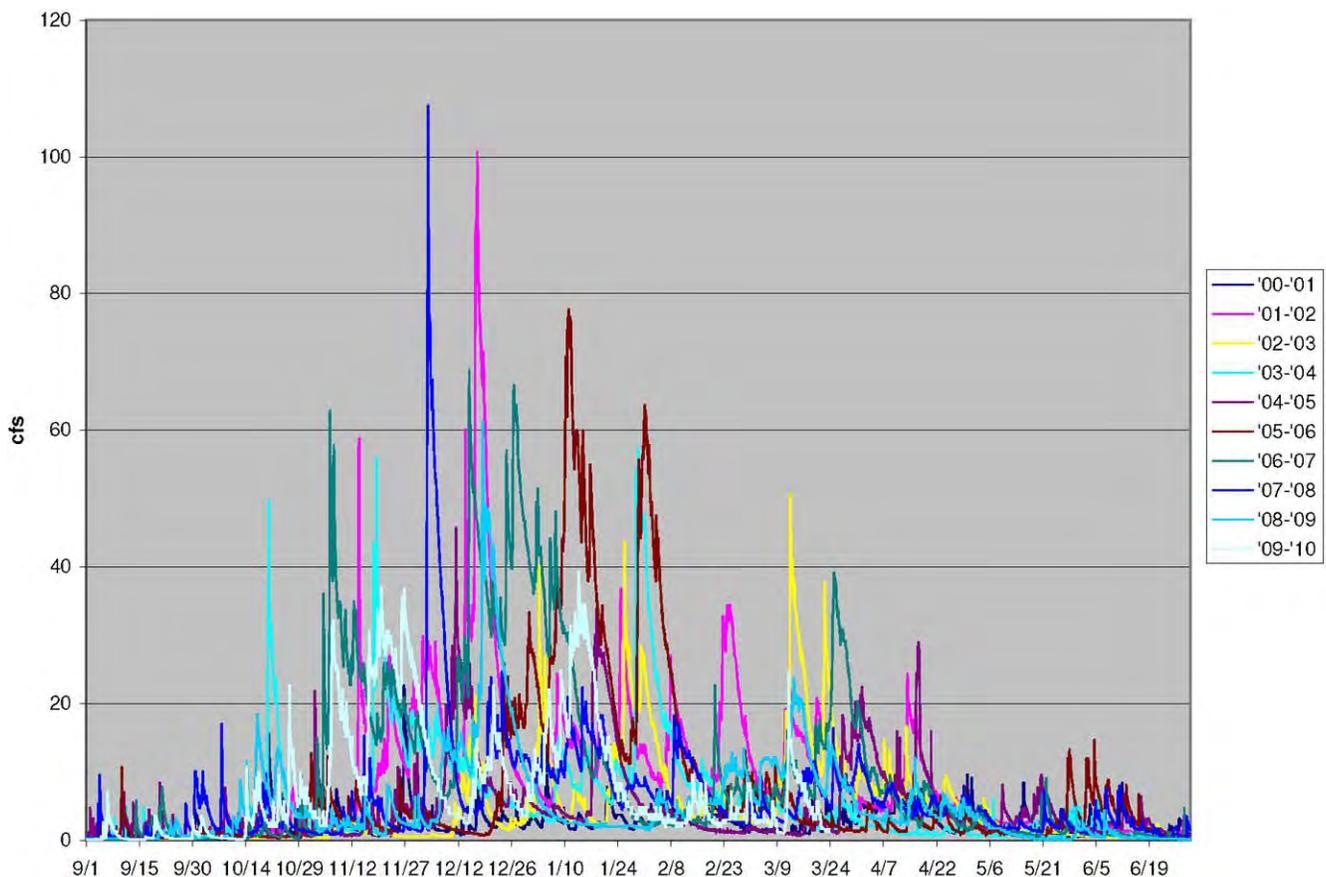
**Laughing Jacobs Creek - Hans Jensen Park
Habitat Enhancement Project:**

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**Project G:
Laughing Jacobs Creek
Sammamish State Park
Channel Re-route Project**

SITE BACKGROUND

Laughing Jacobs Creek flows from Laughing Jacobs Lake, down from the plateau, into the southeastern end of Lake Sammamish. The upper portion of the 3,600 acre watershed lies within the City of Sammamish and unincorporated King County and consists primarily of low- to mid-density residential neighborhoods. The lower portion of the watershed, is within the City of Issaquah, where the creek flows through a forested canyon into Hans Jensen State Park. Discharge in Laughing Jacobs Creek is generally 10 cfs in the summer, with winter flows commonly exceeding 50 cfs.



Within the park, the stream course consists of a narrow riparian corridor of mature evergreen forest and a constricted channel with armored banks - remnants of the land's history as a farm. This reach has a low proportion of pool habitat and the substrate is composed of larger size gravels and cobbles.

Outside of the park boundary, Laughing Jacobs Creek flows under the East Lake Sammamish (ELS) parkway and trail via a 48 inch diameter corrugated pipe culvert, where it joins with Many Springs Creek. The creek then flows across three private lots before flowing into the lake just north of the Sammamish State Park boat launch.

Annual surveys have found kokanee spawning in Laughing Jacobs Creek as far upstream as the Hans Jensen State Park east boundary; therefore, the ELS parkway culvert is passable to some extent by kokanee (Hans Berge, personal communication).

IMPORTANCE FOR KOKANEE AND/OR CHINOOK POPULATIONS

Laughing Jacobs Creek contains one of only three consistent spawning populations of late-run kokanee in the Sammamish Basin. From 1996 to 2007, escapement ranged from 0 to 384 spawners with an average of 90 spawners (Jackson 2009). The Creek is also an important part of the emergency supplementation program currently being implemented by the USFWS. Kokanee broodstock are collected from Laughing Jacobs Creek in the winter, and fry are released back into the creek in the spring. Enhancing instream habitat and floodplain connection will have a high likelihood of improving the viability of the run.

LIMITING FACTORS

Under its current configuration, the section of Laughing Jacobs Creek that flows through Hans Jensen State Park is disconnected from its floodplain. Armored banks restrict high flows to the main channel, which increases local velocities and scours the smaller gravels that kokanee prefer for spawning. While the riparian zone is high quality mature forest, and potentially a good source of large wood, the natural channel forming processes have been altered. The stream is generally not allowed to migrate across the floodplain, undercut root wads and recruit these pool habitat-forming features. These natural, habitat forming processes have been constrained for at least 75 years - an aerial photo taken in 1936 clearly shows sections of the creek, especially toward the lower end of the current park property, where the stream was channelized (Figure 1).

PROPOSED ACTION

The objective of this project is to enhance kokanee spawning habitat by addressing functional elements of the creek that have existed in a degraded condition for decades. We propose to soften the banks of the creek and install large wood that will help anchor the creek within its natural floodplain and promote pool-forming processes.

The project will include the following elements:

- Rip-rap and debris will be removed from the stream and the banks will be re-graded to a flatter slope to increase capacity at high flows and provide a better floodplain connection.

- Large wood jams will be installed at selected locations to create pool habitat and retain smaller gravels. Other natural habitat features may be installed to anchor the stream-course within the floodplain.
- Best Management Practices will be used to preserve existing riparian vegetation and prevent water quality impacts during the construction (i.e., work area will be dewatered and discharge will be appropriately treated).
- Spawning gravel and natural habitat-forming features will be installed in the naturalized channel and native riparian species will be planted where construction impacts occurred.

This project is considered separately for this review, but restoration potential of Laughing Jacobs Creek would be greater if this project is considered in conjunction with another proposed project on Laughing Jacobs Creek: the Sammamish State Park Channel Re-alignment (Project G). Under this combined plan, the existing stream course will join a newly created channel below the small bridge in Hans Jensen Park and will be re-directed to the new alignment of the lower reach in the Sammamish State Park wetland area.

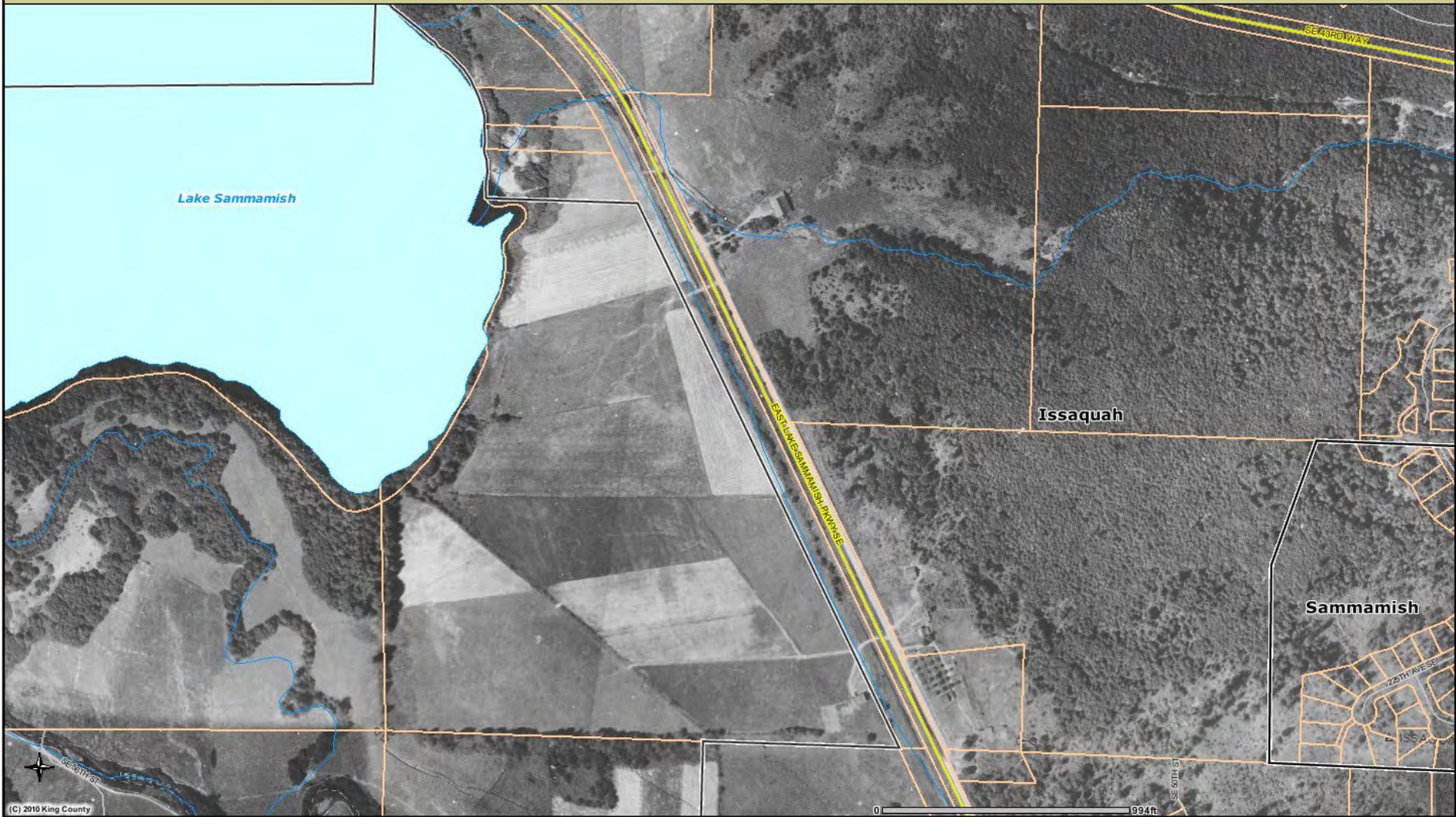
EXPECTED BENEFITS

The project will restore natural hydrological processes to 1,000 linear feet of critical kokanee spawning habitat. Reconnection to the floodplain will improve flood storage capacity, reduce velocities, retain spawning gravel, and recruit large wood. Installed features will promote the formation of pool habitat for holding upstream migrating fish and provide rearing and foraging habitat for juvenile fish. Project benefits will be protected over the long term because this reach is protected within the State park. Educational and outreach elements will be promoted as add-ons to this high profile project.

SELECTION CRITERIA SCORING MATRIX RESULTS

Category	Basic Question	Scoring Question	Score	Justification
Location	In which stream and reach is the project located? What is the historical and current significance for kokanee and/or Chinook?	What is the historical and current significance of the site for kokanee ?	10	One of three core kokanee streams in the Sammamish basin
		What is the historical and current significance of the site for Chinook ?	4	Stream mouth may be used by juveniles as rearing habitat, but upper reach not likely used for spawning
Limiting Factors	Would the project address specific limiting factors?	How well does the project address factors limiting kokanee ?	5	In many ways the reach is in good condition. Could be improved w/ pool forming structure and less armoring
		How well does the project address factors limiting Chinook ?	2	Unlikely that Chinook would use site
Watershed Context and Condition	Is project success dependent on conditions elsewhere in the watershed?	Do surrounding land uses and/or management strategies lead to constraints (or opportunities) for the proposed restoration? Examples: water quality, sediment, flow regime, fish access, riparian vegetation	9	This long reach could improve downstream WQ and reduce flashiness
		Who owns project area and is long-term protection ensured?	10	Hans Jensen State Park
		Who owns neighboring parcels? What land uses occur upstream and/or downstream that could be affected by restoration? What risks do those uses pose to the site now and in the future?	9	DNR upstream (then development); WSDOT, trail, private downstream
Costs	How expensive will proposed action be? What is the likelihood for funding?	What is the order of magnitude cost estimate?	8	Adding wood & off channel habitat could be kept inexpensive (depending on stream length). Excavation would significantly increase cost.
		Are matching funds available?	6	From Park? City? Need more info
		Are specific grants or appropriations in mind that would be likely to fund this type of project?	4	Enhancements to existing habitat are less commonly covered by grants, but would tie in to larger realignment project
Socio-Political	What other considerations will determine feasibility of implementation?	Does the project have public support and/or support from the local jurisdiction?	6	Planning doc for kokanee mentions broad effort to protect and enhance existing habitat
		Does the project have landowner support?	5	Park is likely supportive
		Does the project utilize or create public access?	10	Viewable from picnic area - education potential

Laughing Jacobs Creek



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COMMENTS: Hans Jensen Park

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Date: 10/6/2010 Source: King County iMAP - Property Information (<http://www.metrokc.gov/GIS/iMAP>)

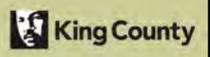


Figure 2. 1936 aerial photograph of lower Laughing Jacobs Creek with overlay of current parcel boundaries and roads (Source: King County iMAP).



