

Willowmoor Floodplain Restoration Project Update to WRIA 8 Salmon Recovery Council

Kate Akyuz, Project Manager

September 20th, 2018

**Department of Natural Resources and Parks
Water and Land Resources Division
River and Floodplain Management Section**



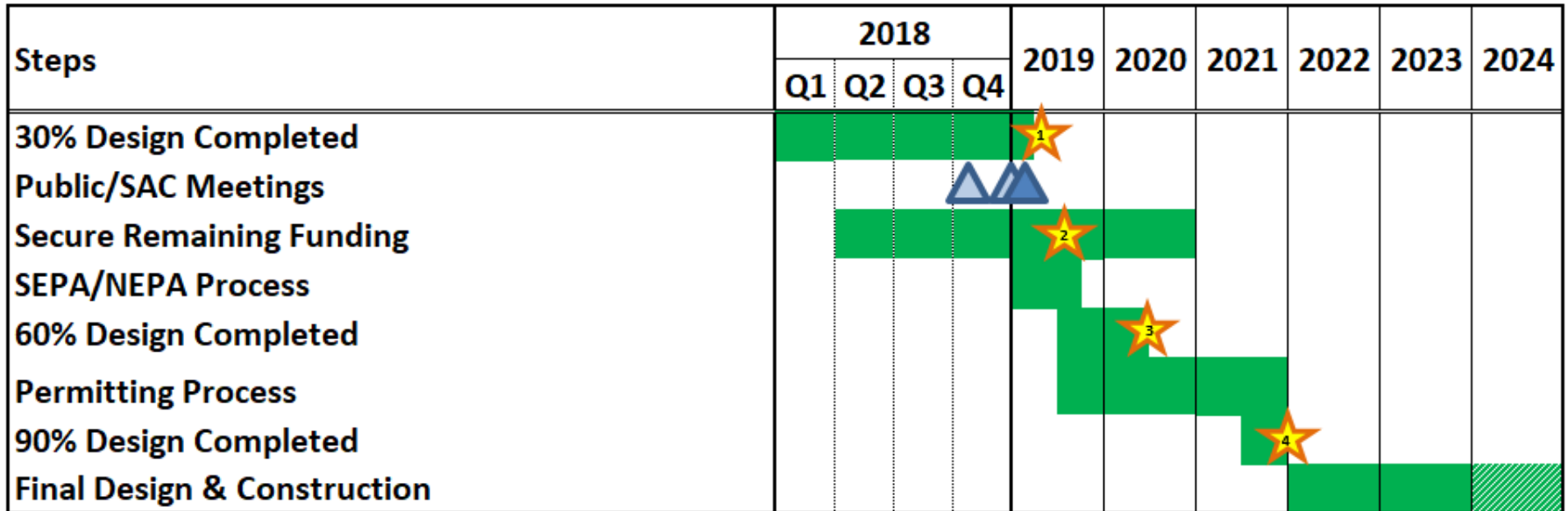
Briefing Summary

- Project Schedule and Background
- Sammamish Basin and Transition Zone
- Maintaining/Monitoring the Transition Zone
- Willowmoor CIP
 - Goals
 - Alternatives
 - Partnerships
 - Next Steps



Project Schedule

Willowmoor Project Timeline



- ▲ SAC Meeting - FCD Review of Meeting Materials
- ▲ SEPA Public Meeting - FCD Review of Meeting Materials
- Schedule Contingency for Unanticipated Discovery of Cultural Resources
- ★ FCD Approvals
 - 1 - 30% Design Approval
 - 2 - Final Design and Construction Funding Approval
 - 3 - 60% Design Approval
 - 4 - 90% Design Approval

Background

- **1965: Corps constructed Sammamish River Flood Control Project**
- **1998: Corps modified Transition Zone (TZ) weir**
- **1999: Puget Sound Chinook listed as threatened - ESA**
- **2000-2010: Lake Sammamish flooding concerns**
 - Property damage
 - Shoreline erosion
- **2003: Conceptual design TZ**
- **2011: Maintenance agreement**
- **2013-15: Alternatives analysis**
- **2016: Public meeting and FCD adopted Motion FCDECM 2016-04.1 selecting split flow alternative**

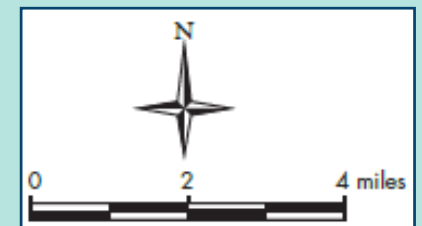


Sammamish River Basin



*Sammamish River
Transition Zone*

*Sammamish
River Basin*



Sammamish River Transition Zone

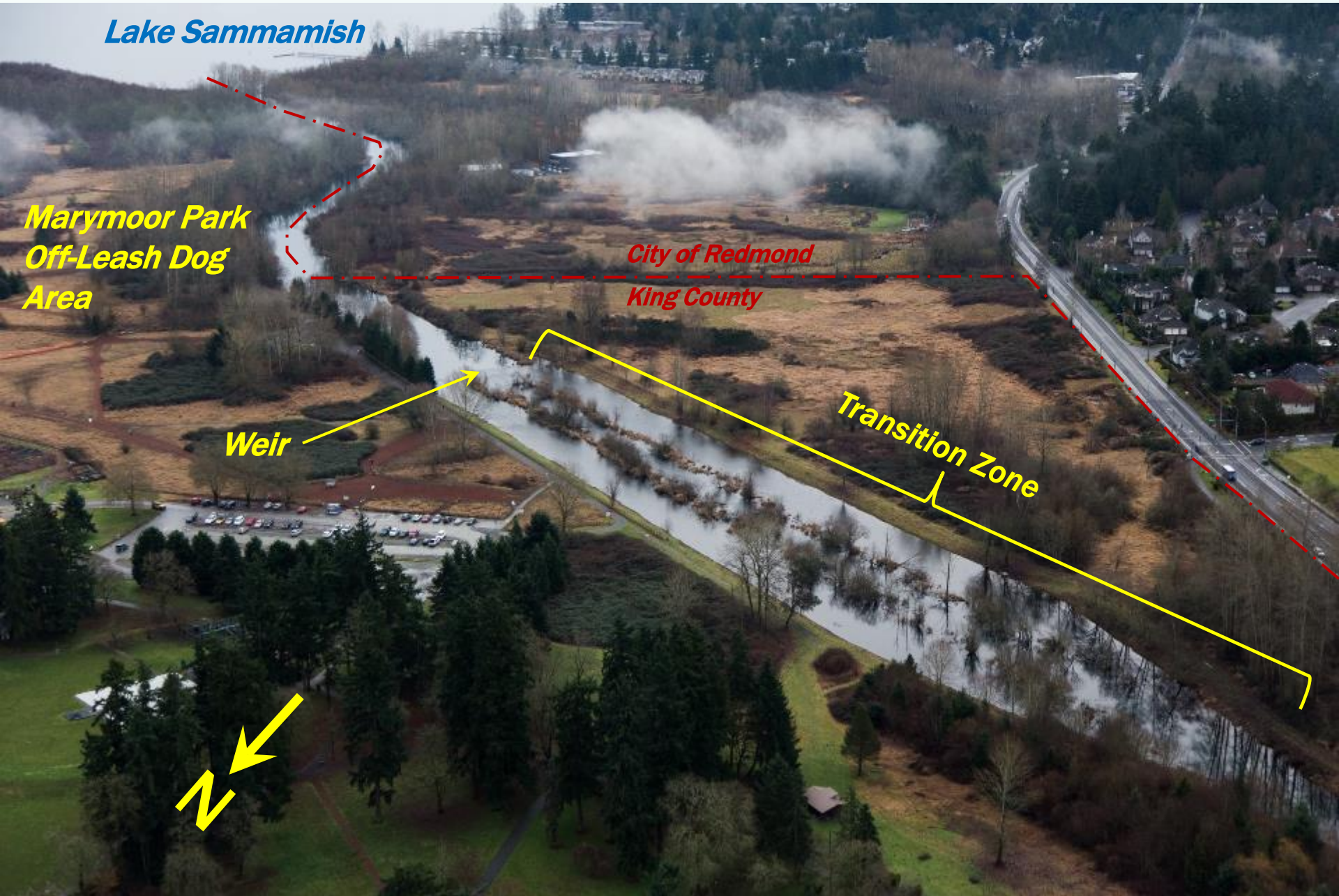
Lake Sammamish

*Marymoor Park
Off-Leash Dog
Area*

*City of Redmond
King County*

Weir

Transition Zone



What are the Issues?

- Lakeside landowners concerned about rising lake levels
- Habitat for ESA-listed salmon
- Increased Transition Zone maintenance and permitting costs



Willowmoor - Project Direction

FCDECM 2016-04.1

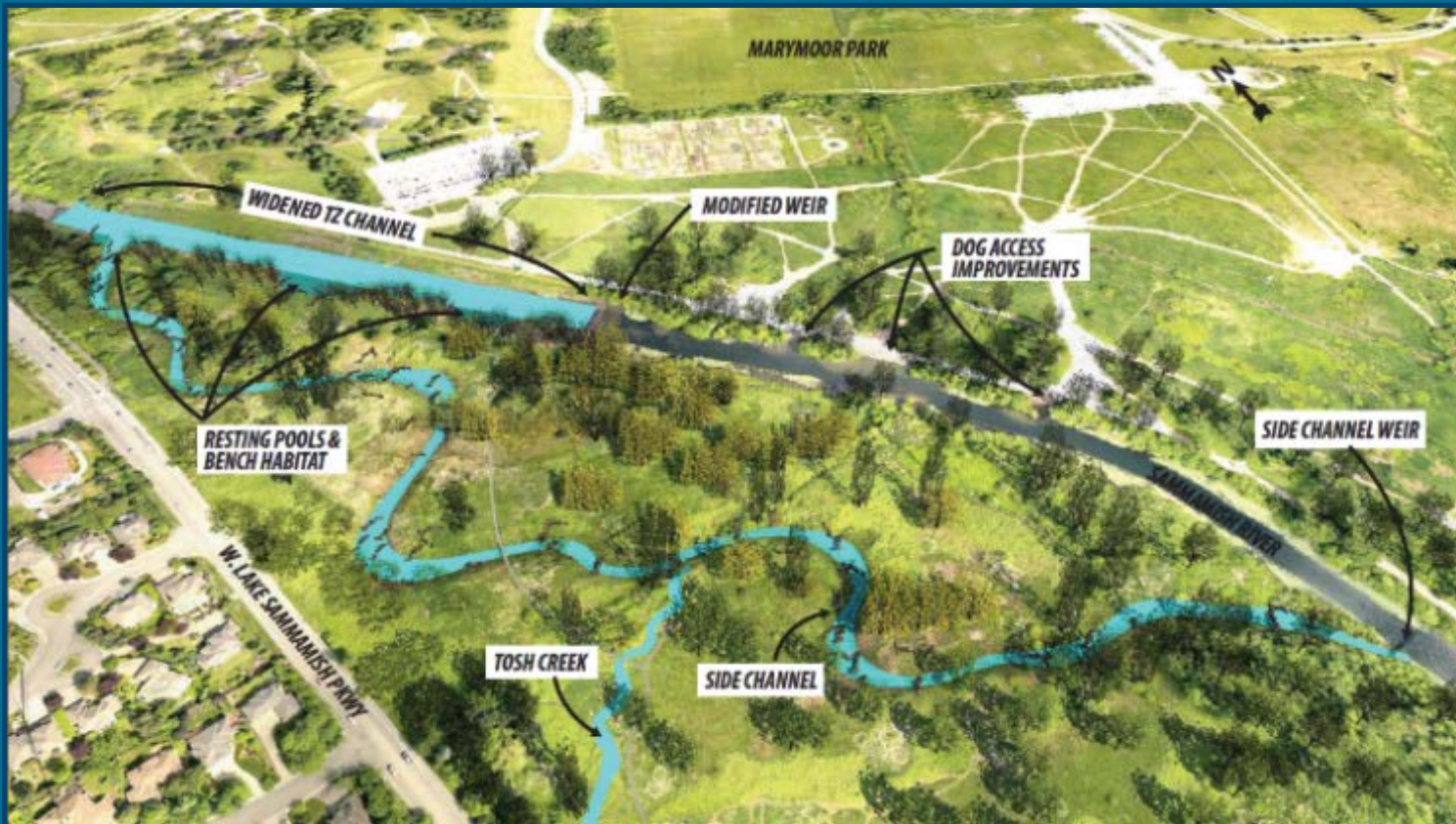
June 22, 2016

“A project that balances flood control, habitat restoration, fish passage, recreational access and on-going maintenance, including beaver mitigation and a dynamic weir.”

Split Channel



SECTION



AERIAL PERSPECTIVE

Alternatives' Performance: Reduction in High Lake Levels

	Average days/year lake level exceeds:		
	EL 27.0	EL 28.0	EL 29.0
Alt. 1: Ongoing Maint.	97	12	1.1
Alt. 4: Split Channel	47 (-50)	6 (-6)	0 (-1.1)
Alt. 5: Widened Channel	94 (-3)	11 (-1)	0.9 (-0.2)

12 years of lake level modelled

(#) = Number of days reduced relative to maintenance alt.

Design Considerations Moving Forward

- **Feasibility Dynamic Weir**
 - Update Bear Creek hydrology
 - Weir options (adjustable types, flow-splitting scenarios)*
 - Redmond stormwater outfall impacts*
- **Habitat**
 - Split channel fish study; passage, mortality, sustainability*
 - Variable depth pools for fish*
 - Lakeshore wetland impacts
- **Cultural Resources**
- **Cold Water Supplementation**
 - Partnership funding for design, long term O&M*
 - Redmond groundwater related to cold water supplementation*
- **Recreation**
 - Passage for small boats*
 - Trails
- **Operations & Maintenance**
 - Vegetation management*
 - Beaver management*

All items with asterisk (*) are contained in FCDECM 2016-04.1

Milestones Completed in 2018

- Hired Tetra Tech in April as consultant design team and initiated progress towards 30% design
- Implementing communication plan and continuing close engagement of the public, Tribes, and agencies
- Continue TZ maintenance and monitoring
- Applied for habitat grants

30% Design Progress

COMPLETED TASKS:

- Updated project schedule and website
- Bathymetric and topographic survey
- Ordinary High Water Mark for Tosh Creek and Sammamish River
- Updated Bear Creek and Sammamish River hydrologic models
- Groundwater pump test
- Basemap preparation
- Preliminary weir analysis

TASKS IN PROGRESS:

- Hydraulic model updates and calibration
- Cultural resources desktop study
- Critical areas report
- Army Corps Section 408 funding agreement
- Stream table construction
- Refine hypolimnetic withdrawal report
- Meeting with cold water stakeholders
- Stakeholder Advisory Committee Meeting (10/4/18)
- Recreation Workshop (10/4/18)

Cold Water Supplementation Design Progress

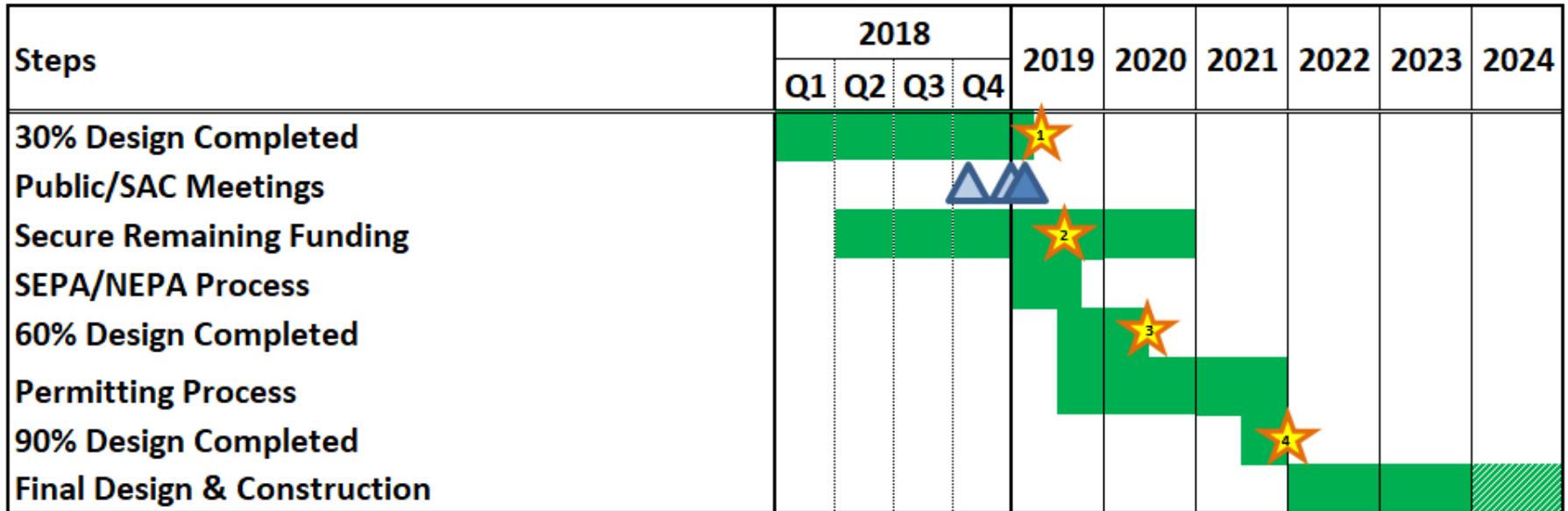
- Applied for Salmond Recovery Funding Board and Floodplains By Design grants for cold water supplementation final design, received evaluator feedback, short-listed for both.
- Conducted meeting with Federal, State, Local, and Tribal agencies to refine temperature performance criteria for alternatives analysis.
- Initiated work on the 3 cold water supplementation alternatives:
 - Initiated work on **hyporheic connection** design
 - Designed **deep groundwater** pump test and applied for permits in consultation with City of Redmond
 - Met with various stakeholder groups to discuss **hypolimnetic withdrawal alternative** and ongoing study needs

Partnership Funding and Implementation

- FCD Funded through 30% design (Redmond \$150K)
- 2016 FCD budget added \$4M
- State Grants
- Salmon Recovery Funding Board (\$200K award + new app)
- Floodplains By Design Proposal (\$750K application)
- Design review and approval by US Army Corps of Engineers
Headquarters

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Questions?



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