

A scenic view of a river or stream flowing through a wooded area. The water is dark blue and reflects the sky and surrounding trees. In the foreground, the tip of a dark-colored canoe is visible. The background features a dense line of trees, including bare deciduous trees and evergreens, under a clear blue sky with a few wispy clouds. The overall atmosphere is peaceful and natural.

Willowmoor Floodplain Restoration
Project Kick-Off Meeting

June 27, 2013

Clise Mansion, Marymoor Park

Presentation Overview

- Project Area History & Context
- Transition Zone Maintenance
- Willowmoor Project
 - Purpose & Goals
 - Project Scope
 - Funding & Schedule
 - Public Involvement



Project Area History & Context



Sammamish River

Project Site

Sammamish Transition Zone



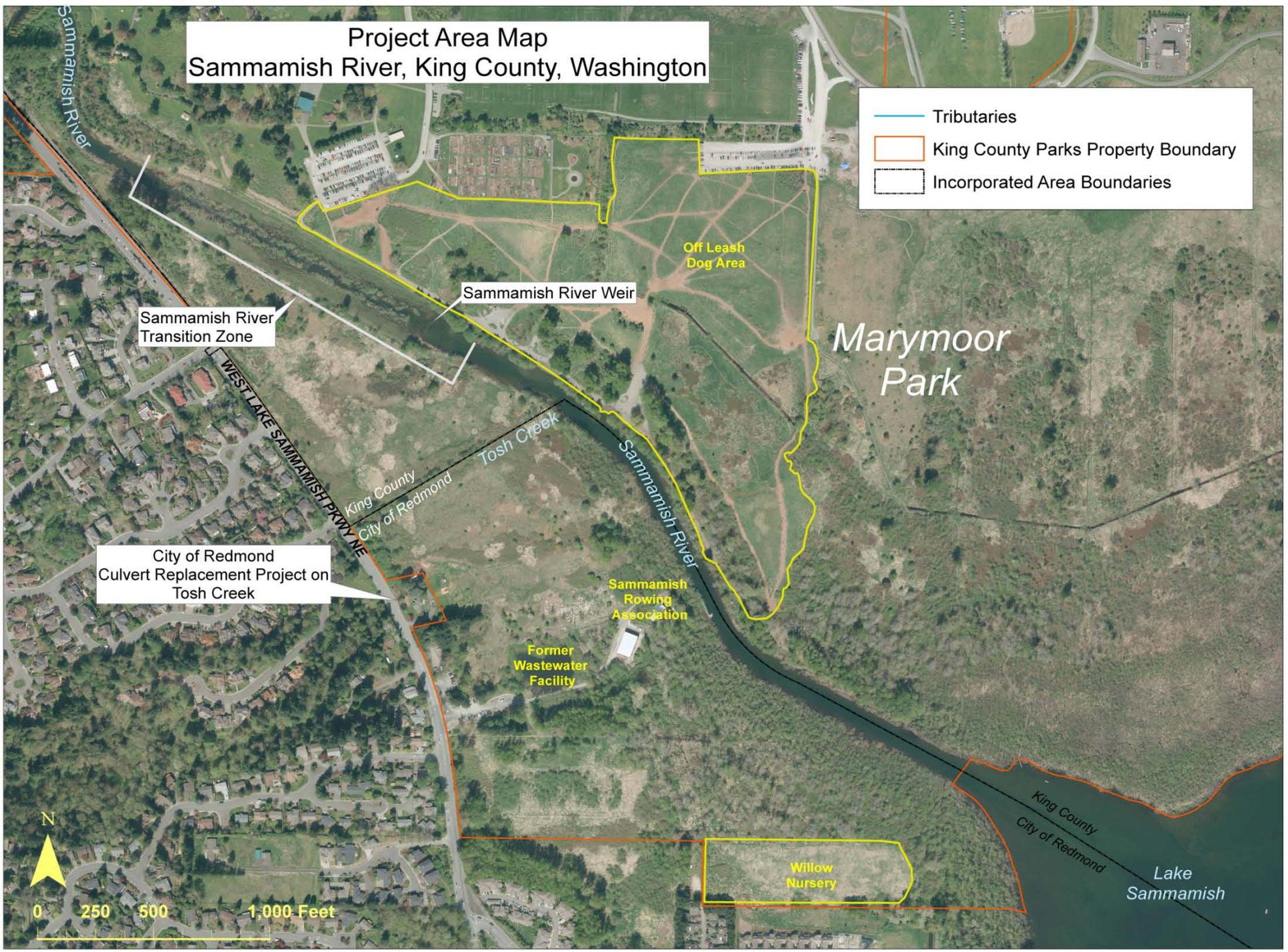
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Date: 4/18/2011 Source: King County MAP - Property Information (<http://www.metrokc.gov/GIS/IMAP/>)



Project Area Map Sammamish River, King County, Washington

-  Tributaries
-  King County Parks Property Boundary
-  Incorporated Area Boundaries

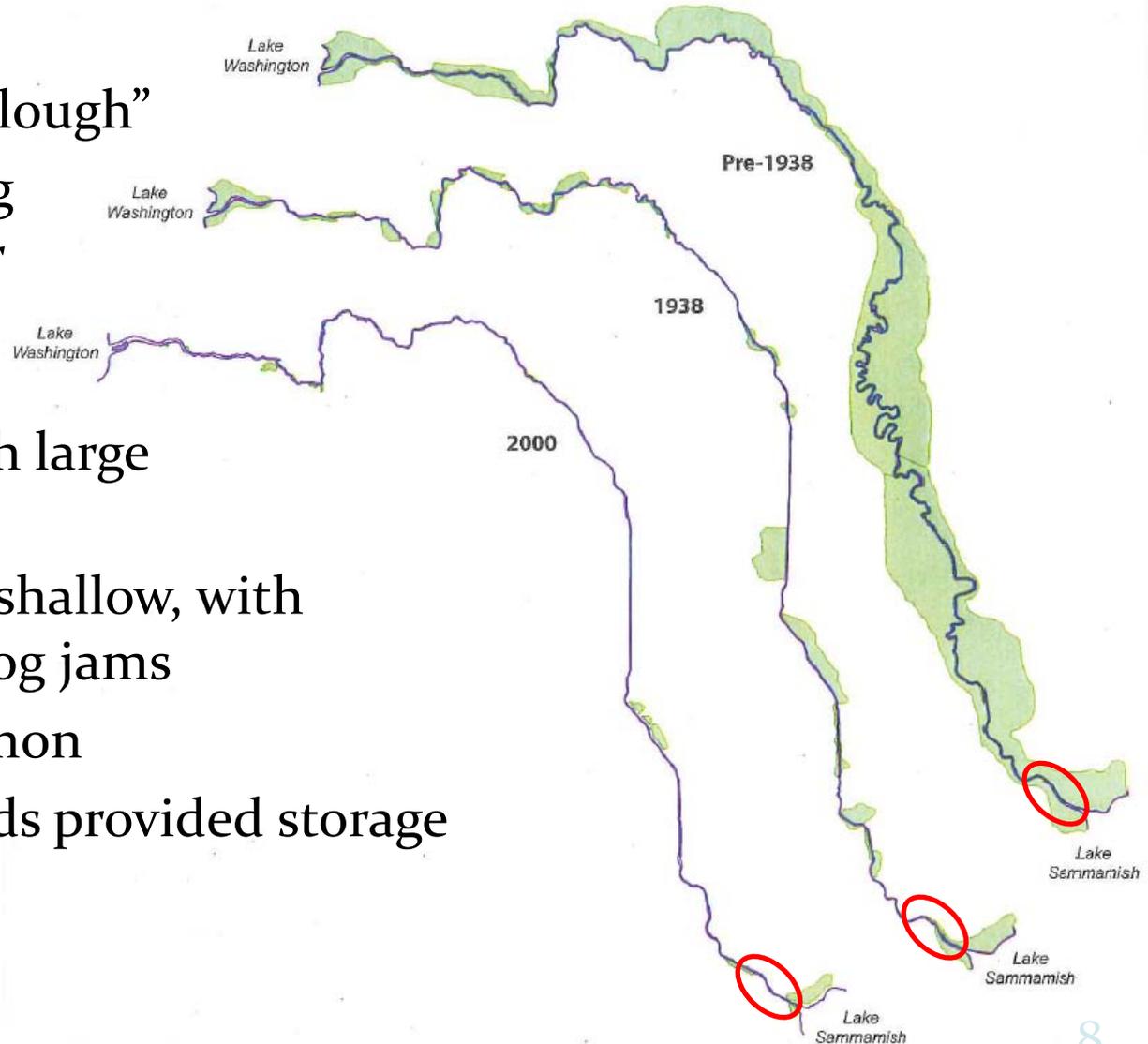


Transition Zone



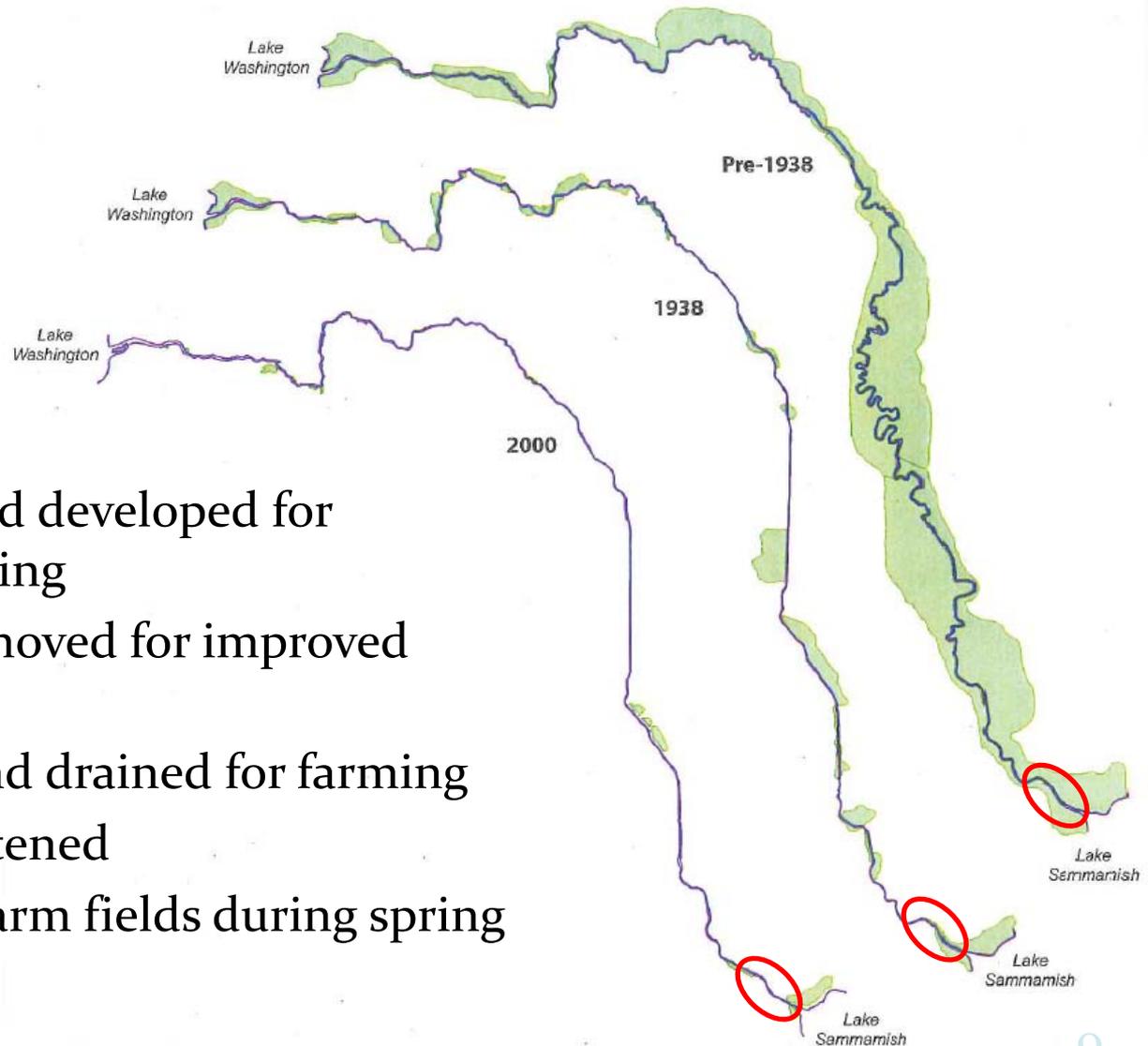
Early Sammamish River

- Known as “Squak Slough”
- Traditional hunting and fishing area for Native Americans
- Meandered through large wetland complex
- River channel very shallow, with frequent logs and log jams
- Flooding was common
- Floodplain wetlands provided storage for flood waters



Late 1800's – Mid 1900's

- Period of European settlement
- Logging in surrounding forests
- Floodplain cleared and developed for homesteads and farming
- Logs and log jams removed for improved navigation
- Floodplain ditched and drained for farming
- River channel straightened
- Chronic flooding of farm fields during spring run-off



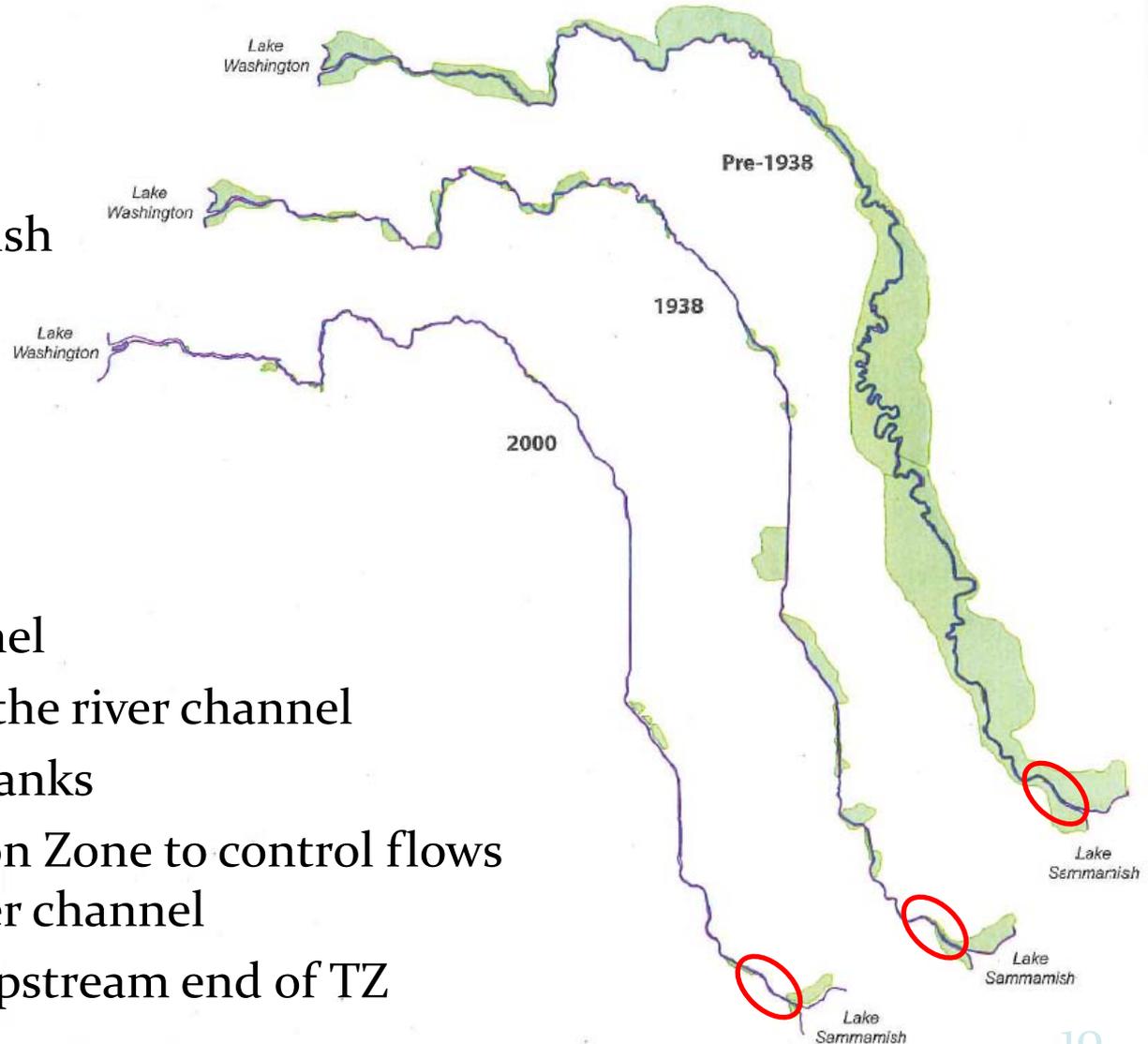
1964 Army Corps Project

Project Goals:

- Prevent spring-time flooding of Sammamish Valley ag-lands
- Provide more control of Lake Sammamish water levels

Project Elements:

- Deepened river channel
- Further straightened the river channel
- Reconstructed river banks
- Constructed Transition Zone to control flows into Sammamish River channel
- Constructed weir at upstream end of TZ



Post 1964 Channel Modifications River Scale

- **1990's Salmon Habitat Enhancements**
 - 1990's Sensitive Area's Ordinance + imminent listing Chinook
- **Habitat Related Enhancements**
 - Example: Mammoth Sammamish: King County, City of Redmond, USACE
 - Projects addressed high water temperatures and lack of structural diversity
 - Innovative methods to increase vegetation while maintaining flood capacity
 - 2002 Sammamish River Corridor Action Plan – Path Forward
 - King County, USACE

Post 1964 Channel Modifications Transition Zone

- **1990's Transition Zone modifications**
 - 1998 weir rebuild included Chinook low-flow fish passage
 - Dog exclusion fencing and re-vegetation projects
 - Willow buffer allowed to grow
 - Reduced intensity of mowing banks
- **2003 Willowmoor Conceptual Report**
 - Long term plan to provide better flood and habitat benefits
 - Similar goals as current project
 - Smaller study area
 - Data, analyses and design concepts will be used as appropriate in current effort

2000's Lake Water Surface Elevation

- Increasing trend of high water surface elevation on Lake Sammamish from 1990's to 2000's
- Lake Sammamish Food Reduction Plan - 2011
 - Increase mowing on banks and removing clippings
 - Trim willow buffer and restore navigation channel
 - Remove aquatic weeds (Brazilian elodea)
 - Evaluate sediment removal
 - Monitor plan effectiveness
 - Re-invigorate Willowmoor effort as long term solution

Sammamish River Transition Zone

2011 Vegetation Maintenance: Before/After Photo Monitoring

BEFORE



Photo 5 before, left bank buffer missing willow, no navigation issue, weir found.



Photo 6 before, both bank buffers >> 10 feet, encroaching on navigation

AFTER



Photo 5 after, no trimming, willow planted on left bank, weir reported and surveyed



Photo 6 after, both banks trimmed, buffer width and navigable channel



2000's Lake Water Surface Elevation

- Increasing trend of high water surface elevation on Lake Sammamish from 1990's to 2000's
- Lake Sammamish Food Reduction Plan - 2011
 - ✓ Increase mowing on banks and removing clippings
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Willowmoor = Long term Maintenance Solution

- Develop better site design for the flood project in order to address modern regulatory environment and support salmon recovery
- Reduce maintenance costs by installing a design that addresses multiple benefit river management

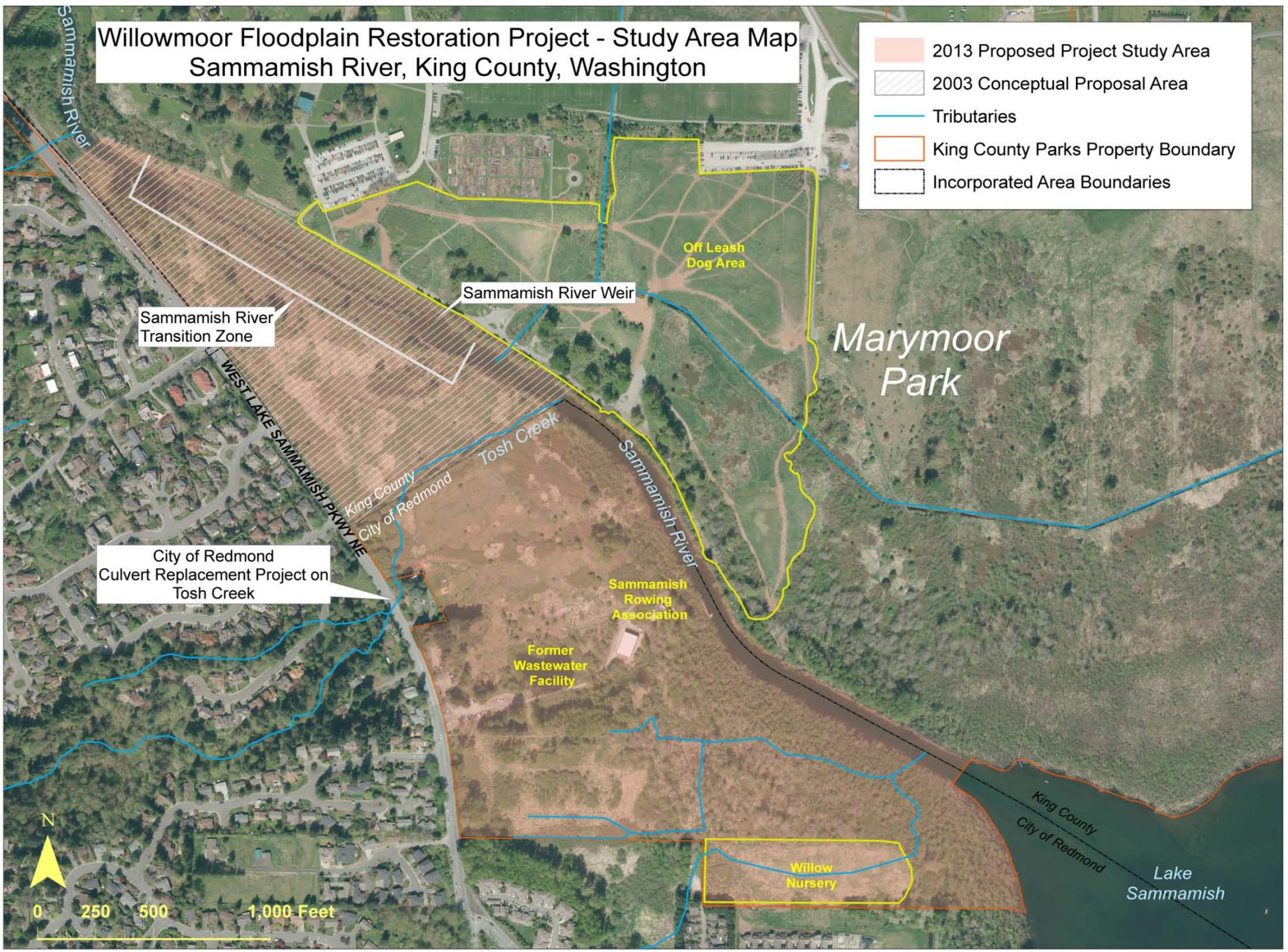
Willowmoor Floodplain Restoration Project

Project Goals

- Design:
 - Provide effective, sustainable flood control
 - Reduce maintenance
 - Enhance habitat
- Process:
 - Effectively communicate with public
 - Engage stakeholders in project development

Willowmoor Floodplain Restoration Project - Study Area Map Sammamish River, King County, Washington

- 2013 Proposed Project Study Area
- 2003 Conceptual Proposal Area
- Tributaries
- King County Parks Property Boundary
- Incorporated Area Boundaries



Sammamish River Transition Zone

Sammamish River Weir

Off Leash Dog Area

Marymoor Park

City of Redmond Culvert Replacement Project on Tosh Creek

Sammamish Rowing Association

Former Wastewater Facility

Willow Nursery



0 250 500 1,000 Feet

Project Scope

- Conduct Technical Studies & Data Collection
- Develop and Evaluate Design Alternatives
- Select Preferred Alternative
- Prepare Preliminary Design

Technical Studies and Data Collection

- Conduct suite of technical studies to:
 - Characterize project site
 - Identify opportunities & constraints
 - Establish design criteria
- Prepare “Basis of Design” report

Hydrology & Hydraulics

- Backbone of design process
- Hydrology: quantity & timing of rainfall and river flow
- Hydraulics: how water moves through the river (speed, direction, depth, etc.)
- Examine original (early 1960's) design with respect to:
 - Changed conditions since original design
 - Currently available data
 - Currently available analysis technologies
 - Potential future changes
- Develop updated hydrology
- Recommend appropriate design values

Habitat / Water Quality

- **Identify Land Use Restrictions on Parks Property**
- **Wetland and Vegetation Mapping**
- **Stream Corridors and Connectivity**
 - Identify opportunities and constraints for improving riparian and wetland habitat connectivity
- **Cold Water Sources**
 - Develop planning level sketches and estimates for a variety of cold water sources
- **Fish and Wildlife**
 - Identify opportunities and constraints for habitat improvement for listed species and others
 - WRIA 8 goals and 2002 Sammamish Corridor Action Plan goals

Public Access & Recreation

- Consideration of existing uses (dog park, rowing, walking, bird-watching, etc.)
- Public access potential on southwest (left) bank
- Safety and access for water users
- Improved conditions for passive recreation

Design Alternatives & Preferred Alternative Selection

- Develop suite of conceptual design alternatives
- Based on Basis of Design report
- Solicit suggestions and input from Stakeholder Committee
- Conduct selection process for a preferred alternative

Preliminary Design

- Further develop design of the preferred alternative
- Prepare more detailed cost-estimate
- Permit ready plan set
- Suitable for grant applications.

Project Funding

- Current Project Phase
 - funded by KC-FCD, including \$150K opportunity funding from Redmond
- Future Project Phases
 - will likely be a combo of KC-FCD funds + habitat restoration grants
 - Will fund final design, permitting and construction

Partners & Stakeholders

- Partnership between KC-FCD, KC-DNRP (Parks & Rivers) and City of Redmond
- Large variety of stakeholders representing diverse set of interests:
 - Park users
 - Lake property owners
 - River valley property owners
 - Environmental interests
 - Tribes
 - Municipalities
 - Local, state and federal agencies
 - Businesses
 - Public at large.

Project Schedule

Tech Studies & Data Collection	Now – Dec 2013
Alternatives Development & Selection	Jan– Jun 2014
Preliminary Design	Jul – Dec 2014

Communications & Public Involvement

- Website
- Mailings
- Public Meetings
- Stakeholder Advisory Committee

Stakeholder Advisory Committee

Purpose & Roles

- Represent their organization's positions and interests related to design of the project;
- Exchange information and ideas with the project team and other stakeholders;
- Assist with the creation of design goals and criteria;
- Help to develop project alternatives;
- Disseminate information about the project to their membership or peers; and
- Provide a public voice to help guide the project toward implementation.

Stakeholder Advisory Committee Meeting Topics & Schedule

<i>Jun 27, 2013</i>	<i><u>Public Mtg #1: Project Kick-off</u></i>
Jul 2013	<u>Stakeholder Mtg #1: Committee Kick-off</u>
Aug – Oct 2013	<u>Stakeholder Mtg s #2-3: Discuss project criteria/review tech studies</u>
Nov – Dec 2013	<u>Stakeholder Mtg #4: Brainstorm on Project Alternatives Concepts</u>
<i>Jan 2014</i>	<i><u>Public Mtg #2: Technical Studies Results / Intro of Early Concepts</u></i>
Feb – May 2014	<u>Stakeholder Mtg #5-6: Further Development of Project Alternatives</u>
Jul 2014	<u>Stakeholder Mtg #7: Discussion of Alternative Selection</u>
<i>Aug 2014</i>	<i><u>Public Mtg #3: Presentation of Preferred Alternative</u></i>

Thank you!