

The Qwuloolt Estuary Restoration Project: A Holistic View After Implementation

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The Tulalip Tribes

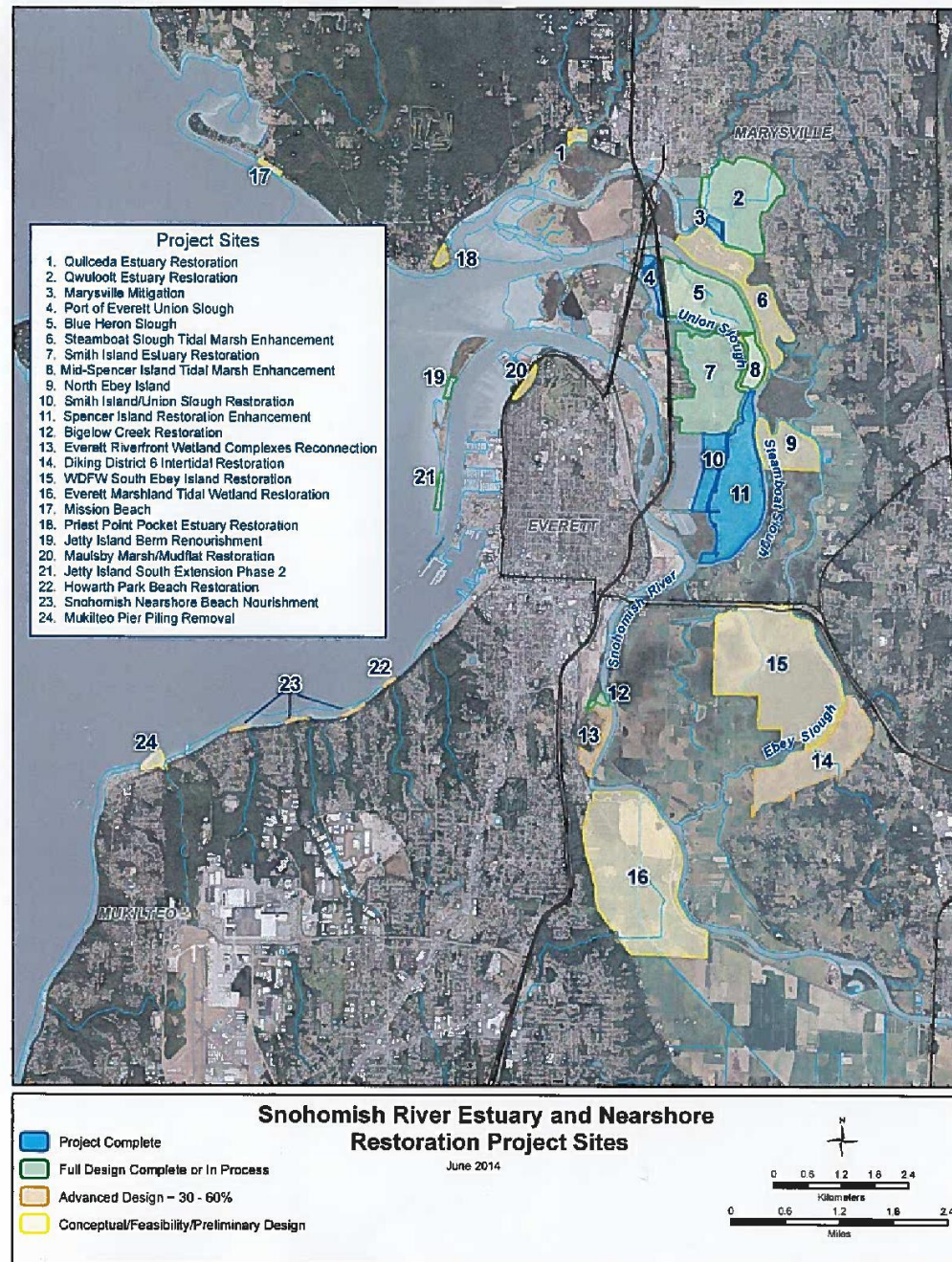
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Snohomish Estuary Restoration Projects

"The quality and quantity of rearing habitat in the nearshore, estuary, and mainstem rivers is the primary factor limiting Chinook and bull trout char."

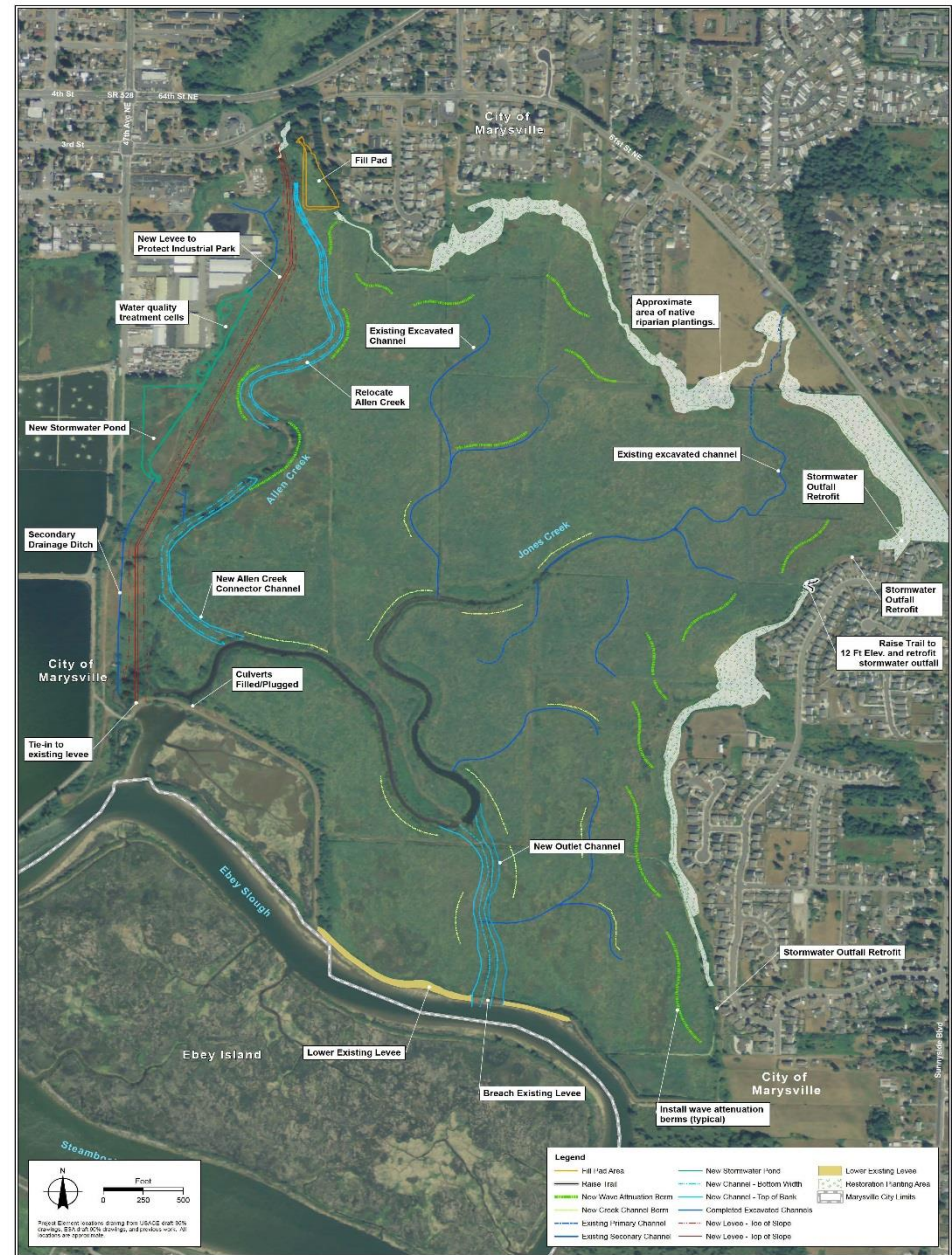
2005 Snohomish Basin Salmon Recovery Plan



Map provided by
Snohomish County
Surface Water
Management
Department 2014

Project Elements

- Perimeter Elements:
 - + Setback Levee (Corps)
 - + Levee Breach and Lowering (Corps)
 - + Tidegate Decommissioning (Tribe)
 - + Stormwater Ponds (Tribe)
 - + Stormwater Outfall Retrofit (Tribe)
 - + Sewer Line Retrofit (Tribe)
- Interior Elements (Tribe):
 - + Channel and Outlet Construction
 - + Ditch Filling
 - + Wave Attenuation Berms
 - + Native Planting
 - + Structure and Garbage Removal



Qwuloolt Estuary Restoration Site - Proposed Project Elements
Marysville, Washington

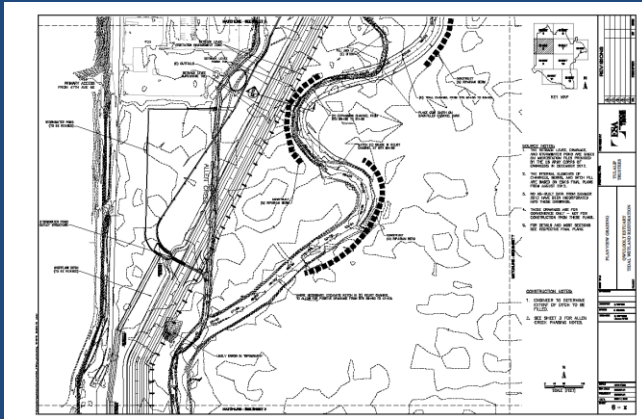
Project Timeline

	1994- 2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Scoping										
Property Acquisition										
Property Easements										
Design and Permitting (Arch/Cult. Res., Section 401, 404, HPA, ESA, NEPA, SEPA, Shoreline, Grading)										
Interior Habitat Work: demolition, garbage removal, channel work, ditch fill, berm building, native planting										
Stormwater Pond Construction and Stormwater Retrofitting										
Setback Levee Construction										
Levee Breach										

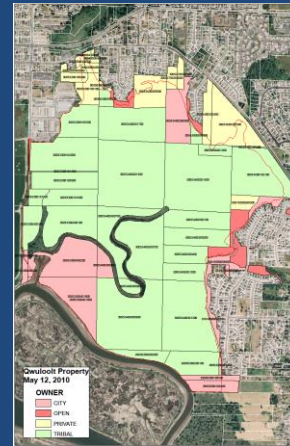
Technical Lessons

2. Estuarine restoration requires complex sequencing, proactive communication, and temporary dewatering

1. Coordinate plansets and data



3. Soil quality, quantity, and expertise are critical



4. Real estate vetting and documentation, esp. in urban-ruburban settings, requires multi-party iterative review

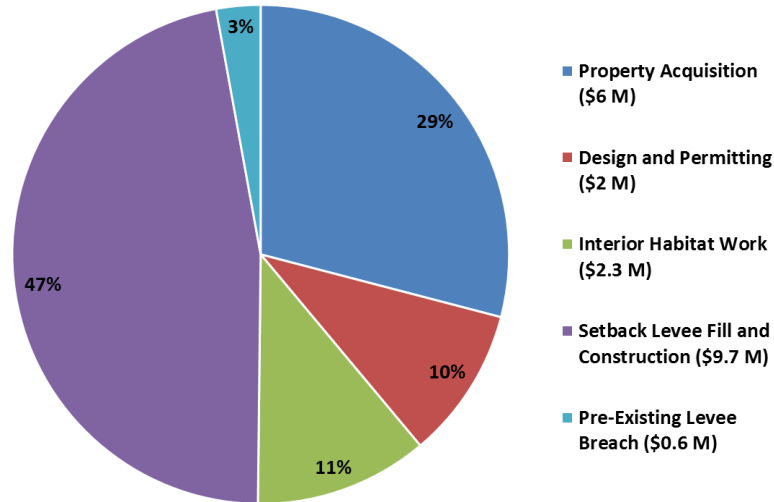


5. Parties should agree on contingency plans



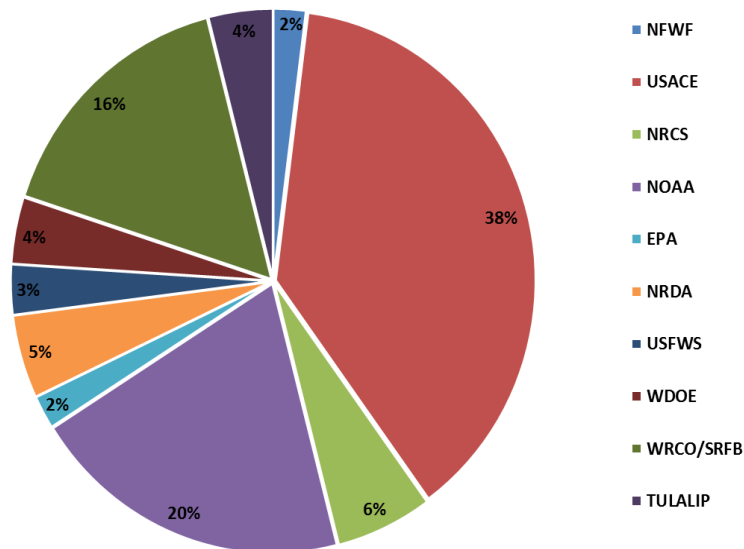
Economic Lessons

Total
Project
Costs
(\$20.6 M)



1. Setback levees are expensive and complexity is determined by perimeter real estate
2. Acquisition is next largest cost

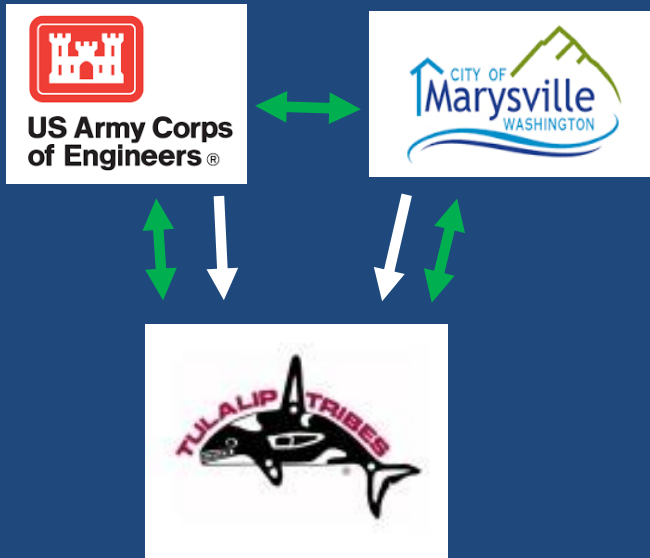
Funding
Sources for
Construction
(\$14.6 M)



3. If we are serious about large-scale restoration, funding should be streamlined, large, and long-term

Political Lessons

1. Project and agency goal convergence and divergence requires scoping and compromise



2. Staff consistency, dedication, and communication create trust and accelerate project implementation



3. Personal connections are the basis of project partnerships and critical during emergencies



4. Bureaucracies are (still) made up of people who are project champions



Cultural, Social, and Educational Lessons

1. Connect project with key constituency



2. Connect project with community at-large



3. Facilitate formal and informal educational opportunities



4. Project branding, website development, and public relations create momentum



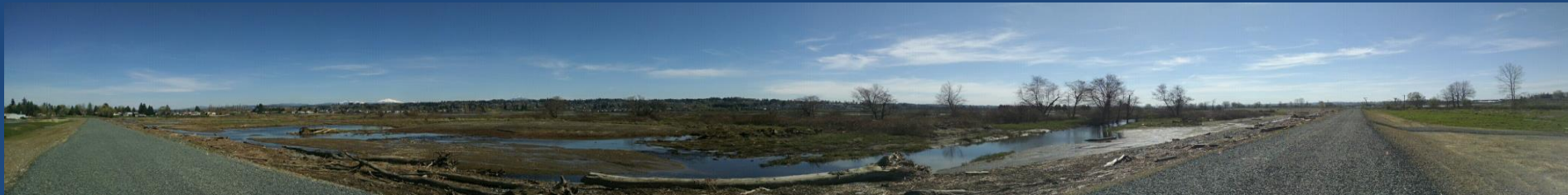
Summary

- Biggest Issues are Political and Economic, and Interact with Technical
- Need to Plan for Project and Agency Goal Convergence/Divergence
- Need a Dedicated and Consistent Interdisciplinary Team
- Large and Complex Projects = Large Commitment of Time, Staff, and Resources, with Associated Contingencies
- Need for Large and Long-Term Funding Sources for Large-Scale Restoration
- Complex Real Estate Requires Multi-Party Iterative Review
- Connecting with Grassroots Fosters Stewardship
- Public Affairs Events and Products Create Project Momentum
- Monitoring is Critical for the Unfolding Story of Large-Scale Restoration



Acknowledgements

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Partners:

City of Marysville
USACE
NOAA
USFWS
NRCS
WDOE
WRCO
PSP
WDFW
Sound Transit
Sound Salmon Solutions
Banksavers

Funding:

NFWF
USACE
NRCS
NOAA
EPA
NRDA
USFWS
WDOE
WRCO/SRFB
TULALIP

Staff and Volunteers:

Tulalip Natural and Cultural Resources
City of Marysville Public Works
USACE Seattle District
NOAA NWFSC Watershed Program
Snohomish County SWM
Sound Salmon Solutions
Northwest Indian College
Adopt-A-Stream
Banksavers
WSU Beachwatchers
WA Conservation Corps
Pilchuck Audubon
Pacific Coast Joint Venture
Earth Day 2011-2013 participants
Evergreen Unitarian Universalist Church

Questions?

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Related Talks:

Morgan Ruff, Weds. 10:30 a.m.-12:00 pm., Protection, Remediation, and Restoration Track (SW1F), Protecting Hydrology in the Snohomish River Basin

Casey Rice, Weds. 1:30-3:30 pm., Protection, Remediation, and Restoration Track (SW2F), Restoration monitoring across the Snohomish River Estuary, Puget Sound , Washington- project and landscape contexts

Todd Zackey, Thurs. 10:30 a.m.-12:00 pm., Habitat Track (ST2C), Pre-and post-breach monitoring of the Qwuloolt Estuary Restoration Project in the Snohomish River Estuary

Time Lapse of Levee Breach

Access at:

<http://video-monitoring.com/timelapse/tulalip/slideshow.htm>