

Lake Washington Shoreline Permitting Process Study



April 24, 2008

Spring Shoreline Planners Coordination Meeting

University of Washington

Environmental Management Keystone Project

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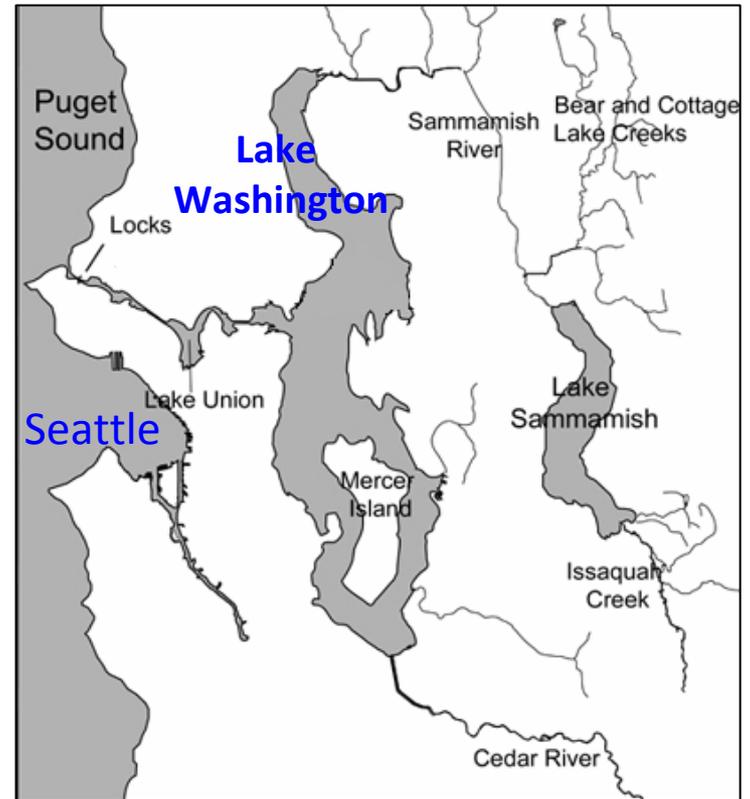
Environmental Management Keystone Project

- Applied social research project that is a requirement of the Environmental Management Certificate Program at UW
- Interdisciplinary teams (Environmental Engineering, Marine Affairs, Environmental Health, and Public Affairs)
- Team works in collaboration with community partners:

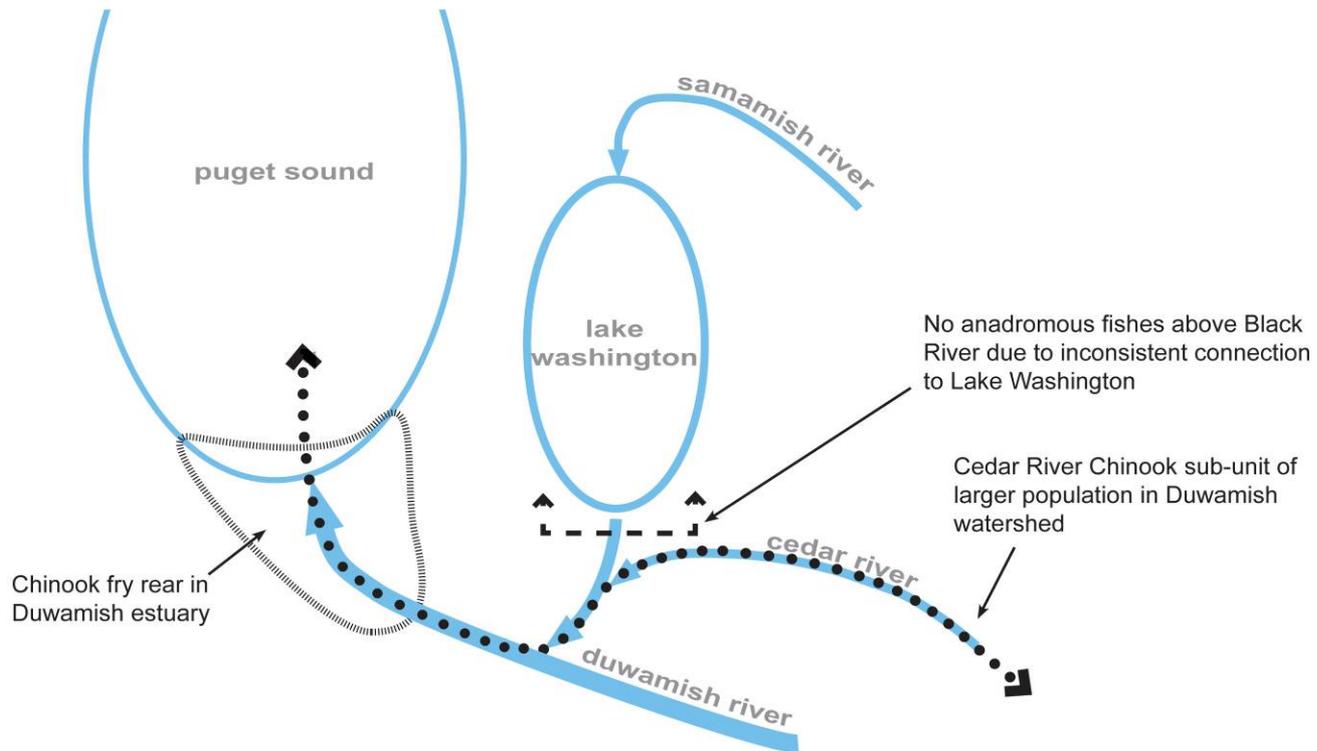


Lake Washington: History and Conditions

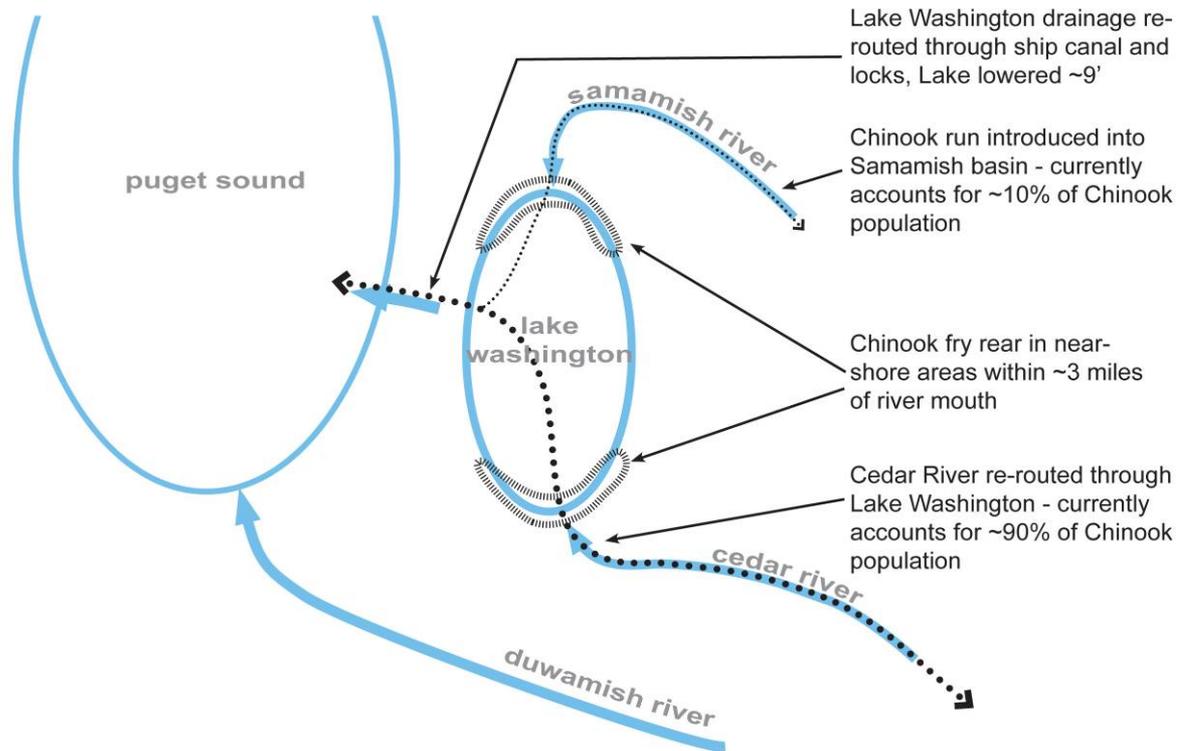
- Heavily urbanized lake
- 80 miles of shoreline, largest natural lake west of Cascades in WA State
- Modified lake system (c.1916)
 - Lowered water level by 9 ft, exposing 5.4 km² of shore habitat
 - Level regulated by locks
 - Maintained within 2 ft range year round and opposite to natural cycle
- Home to a threatened chinook salmon run



Historic Conditions



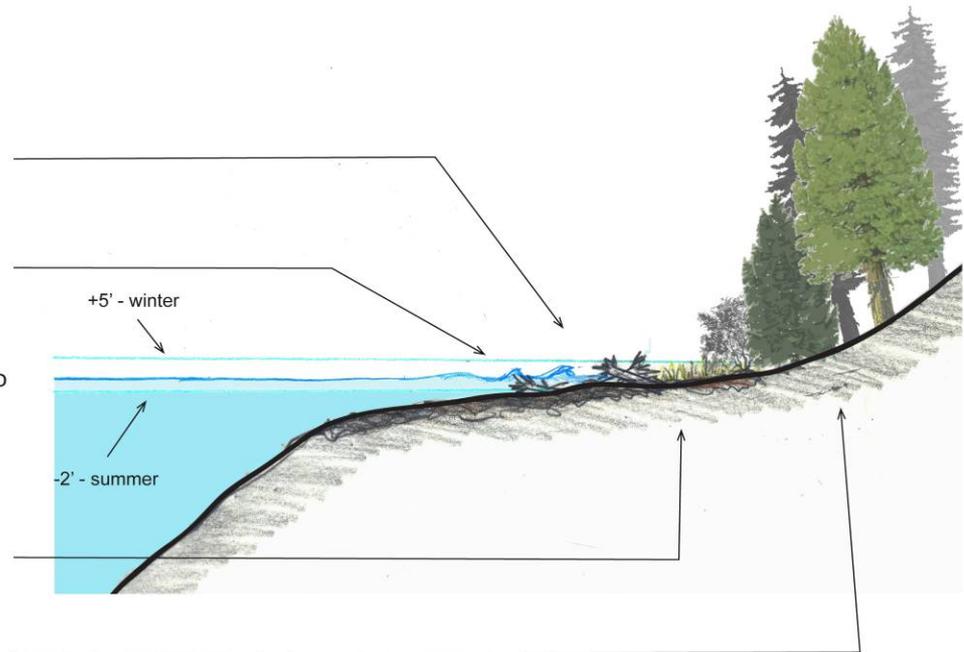
Current Conditions



Historic Shoreline

historic conditions (typical)

- shore as low gradient transition zone between the lake and dry land with some areas having actively eroding bluffs providing new beach sediment inputs
- waves up to 3' or more during less frequently recurring storms
- mean water level with upwards of 7' water fluctuation throughout year (typically up to +5' in winter storms, up to -2' in summer droughts)
- low gradient shore with gravel/sand substrate or emergent wetlands in low wave energy areas
- well vegetated wetland, riparian, and upland areas providing carbon inputs and woody debris similar habitat structure to an estuary



Current Shoreline

current conditions (typical)

- bulkheads and other 'hard' elements create a vertical boundary between land and water. The results:
no bluff erosion = no source of new beach sediment
hard edge = wave energy reflected into toe of slope
increasing erosion loss to deep water

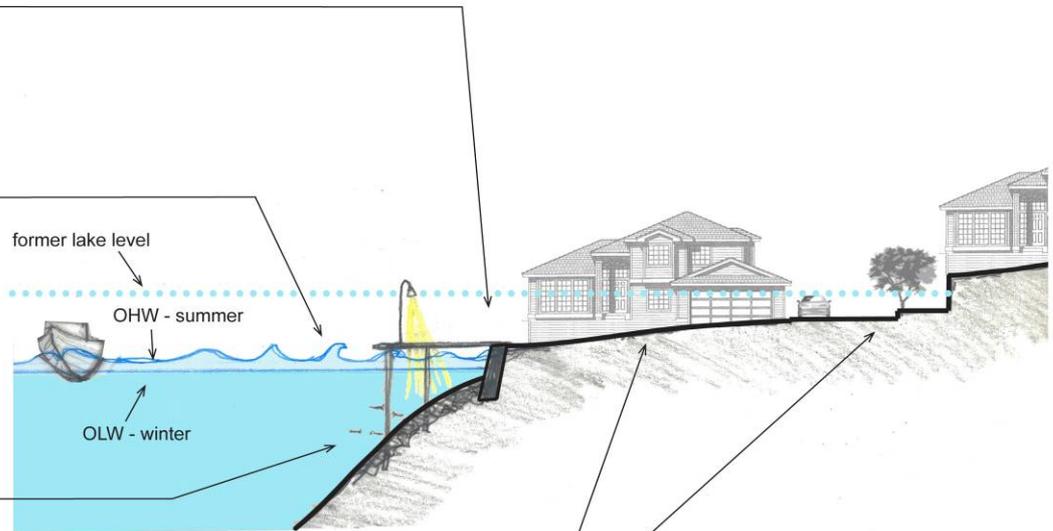
- lake level lowered in 1916 by ~9' exposing higher gradient and more erodible section of lake bottom to wave energy

- waves up to 4' or more during all times of the year, particularly on high boating days

- mean water level controlled to vary <1' during even the most intense storms, lake level lowered 1.9' during winter months

- over-water structures discourage salmonid use and providing cover and spawning habitat for introduced non-native predatory fishes

- native shore vegetation removed - mostly replaced by turf and non-native ornamentals



Lake Washington: Current Status

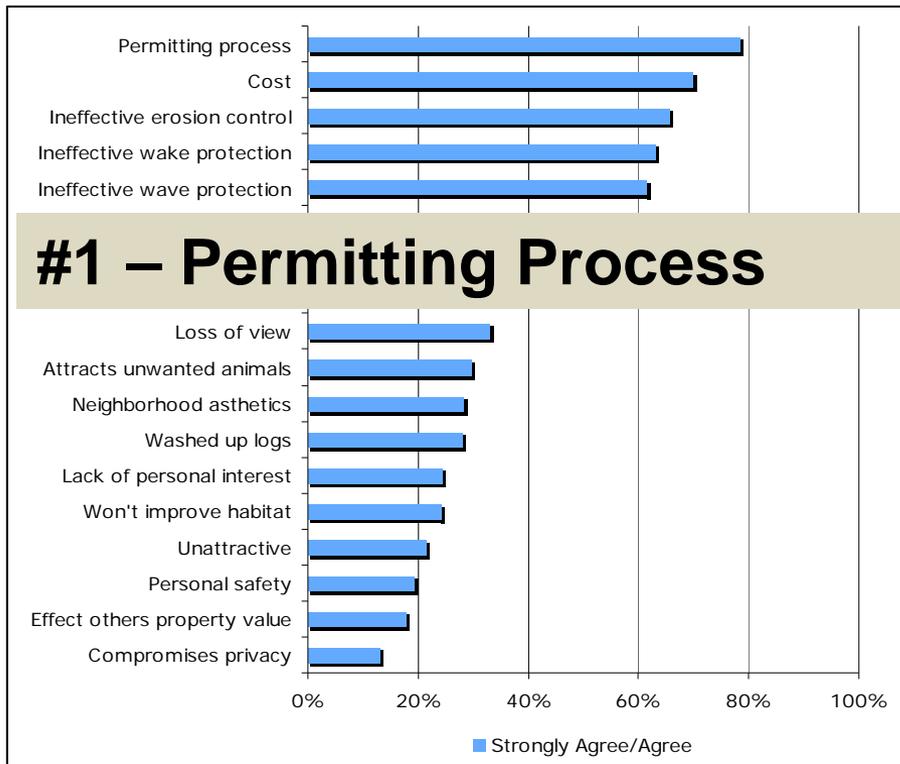
Shoreline (Toft 2001):

- 70% Hardened
 - Bulkhead, riprap
- 30% Not hardened
 - Beach, landscaped, naturally vegetated,
- 2,737 docks

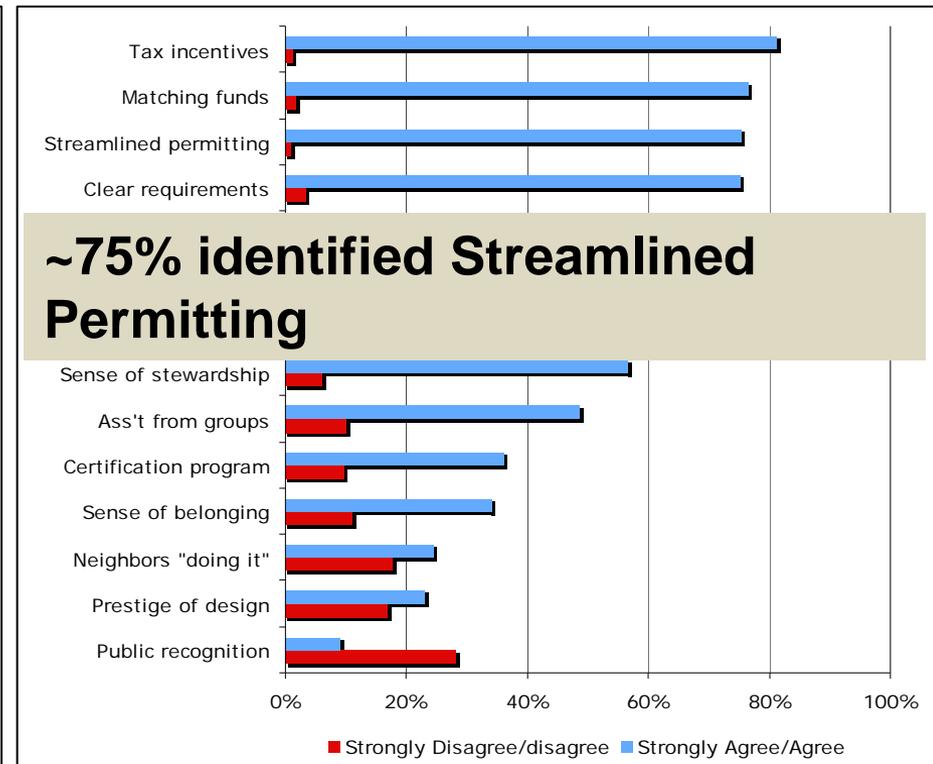


2006-2007 Fish Friendly Team Results

Barriers to restoring shorelines

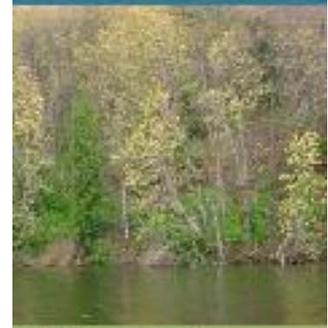


Incentives for restoring shorelines



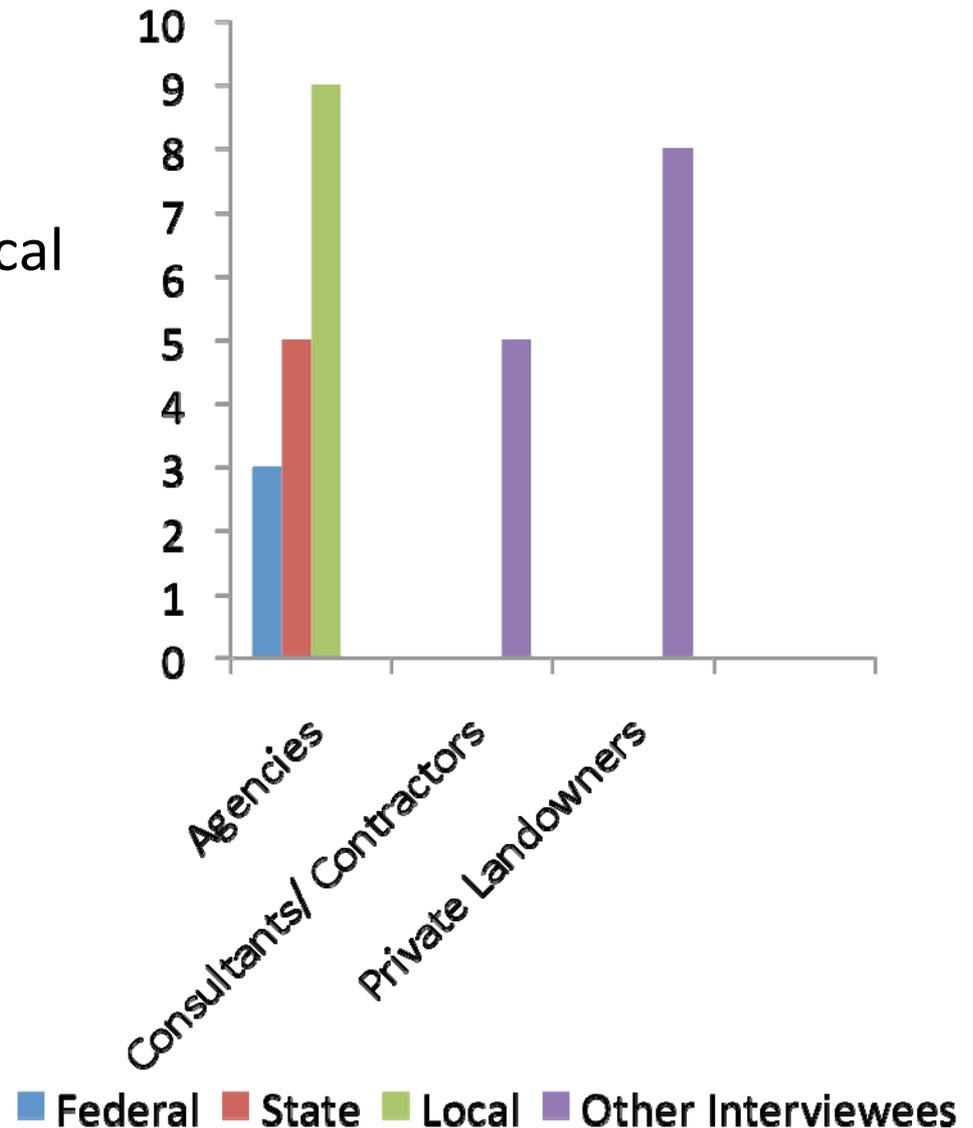
Project Objectives

- Perform a policy analysis of the shoreline construction permitting process that Lake Washington landowners are required to navigate
- Use this information to create end products that we or our community partners will use to promote alternative shorelines on Lake Washington



Interview Process

- Permit Issuers
 - Federal, State, and Local
- Permit Applicants
 - Contractors
 - Consultants
 - Private Landowners



Interview Summary

Example Interview Questions:

What is the step-by-step permitting process for private landowners interested in implementing an alternative shoreline design?

Are there any perceived or actual bottlenecks in the permitting process?
If so, where do they exist?

Are there any shortcuts or streamlines in the permitting process for landowners interested in implementing alternative shoreline designs (as compared to installing or replacing a bulkhead or riprap)?

Are there any improvements that could be made in the permitting process?

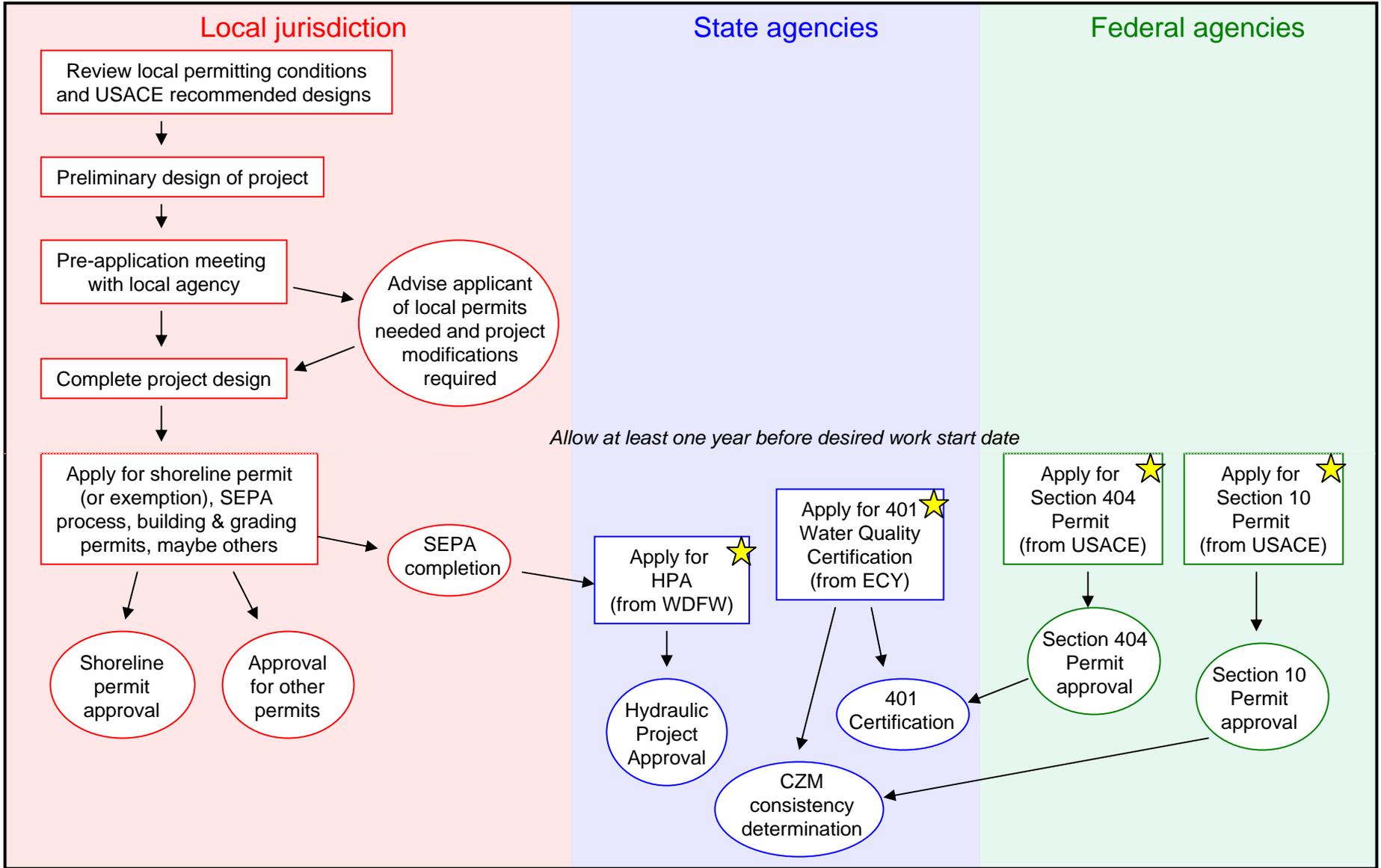
Are there any incentives within the permitting process for applicants interested in implementing alternative shoreline designs?

Group Interviewed	Number of Individuals Interviewed
Agencies	
<i>Local</i>	
City of Bellevue	3
City of Mercer Island	1
City of Renton	1
City of Seattle	3
City of Kirkland	1
<i>State</i>	
Washington State Department of Ecology (DOE)	2
Washington State Department of Fish and Wildlife (WDFW)	2
Governor's Office of Regulatory Assistance (ORA)*	1
<i>Federal</i>	
National Oceanic and Atmospheric Administration (NOAA)	1
United States Army Corps of Engineers (USACE)	2
Consultants and Contractors	
5	
Private Landowners (Here Represented by Local Jurisdiction)	
City of Bellevue	2
City of Mercer Island	3
City of Seattle	1
City of Lake Forest Park	1
Unincorporated King County near Kirkland	1
Total	30

Some Key Themes Learned

- More education is needed for permit applicants
- More cross-agency communication is needed
- Non-permitted (illegal) shoreline work is widespread
- Few incentives for alternative shoreline designs exist





- = Applicant's responsibility
- = Permitting agency's responsibility
- = use JARPA as application form

CZM – Coastal Zone Management
 ECY – WA Department of Ecology
 HPA – Hydraulic Project Approval
 JARPA – Joint Aquatic Resource Permit Application
 SEPA – WA State Environmental Policy Act
 WDFW – WA Department of Fish & Wildlife
 USACE – U.S. Army Corps of Engineers

For assistance or questions about permitting, visit the Washington State Office of Regulatory Assistance (ORA) website: www.ora.wa.gov

Project Deliverables

- Immediate: Permitting Process Schematic
- Future:
 - Newsletter/Brochure
 - Policy Analysis Report
- Unknowns:
 - Target Group(s)
 - Agencies
 - Contractors/consultants
 - Private landowners
 - Content
 - Which key themes?
 - Recommendations
 - Facts
 - Format
 - Web-based
 - Paper



Thank You

Environmental Management Symposium

- May 28th, 4:30 – 8:00pm, UW Business School Executive Education Center Douglas Forum

Contact info:

http://courses.washington.edu/emksp07/NOAA_AltTradShorelines

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