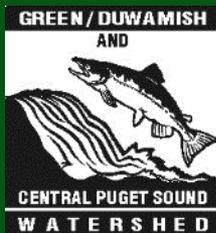


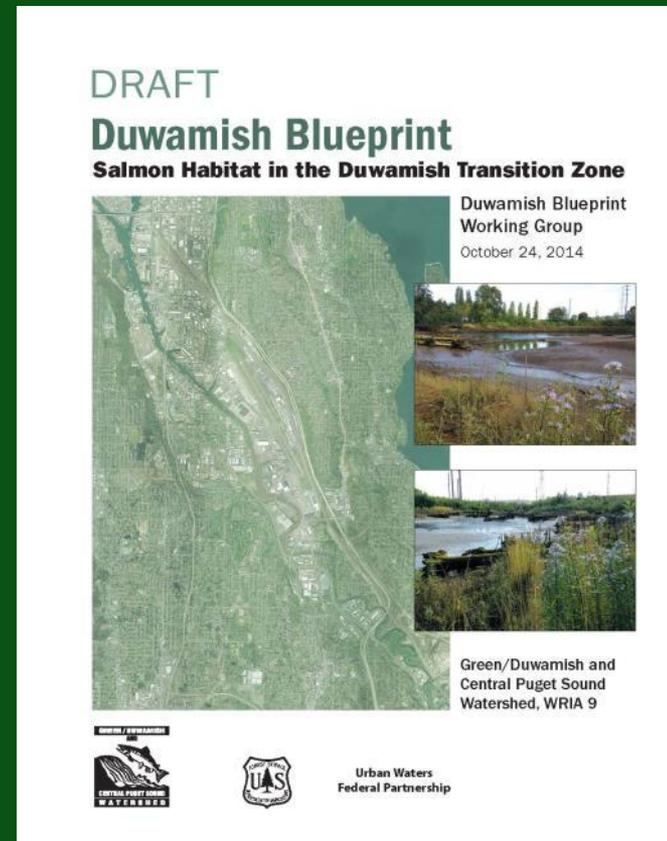
Duwamish Blueprint: Habitat Opportunities in the Duwamish Transition Zone

November 5, 2014

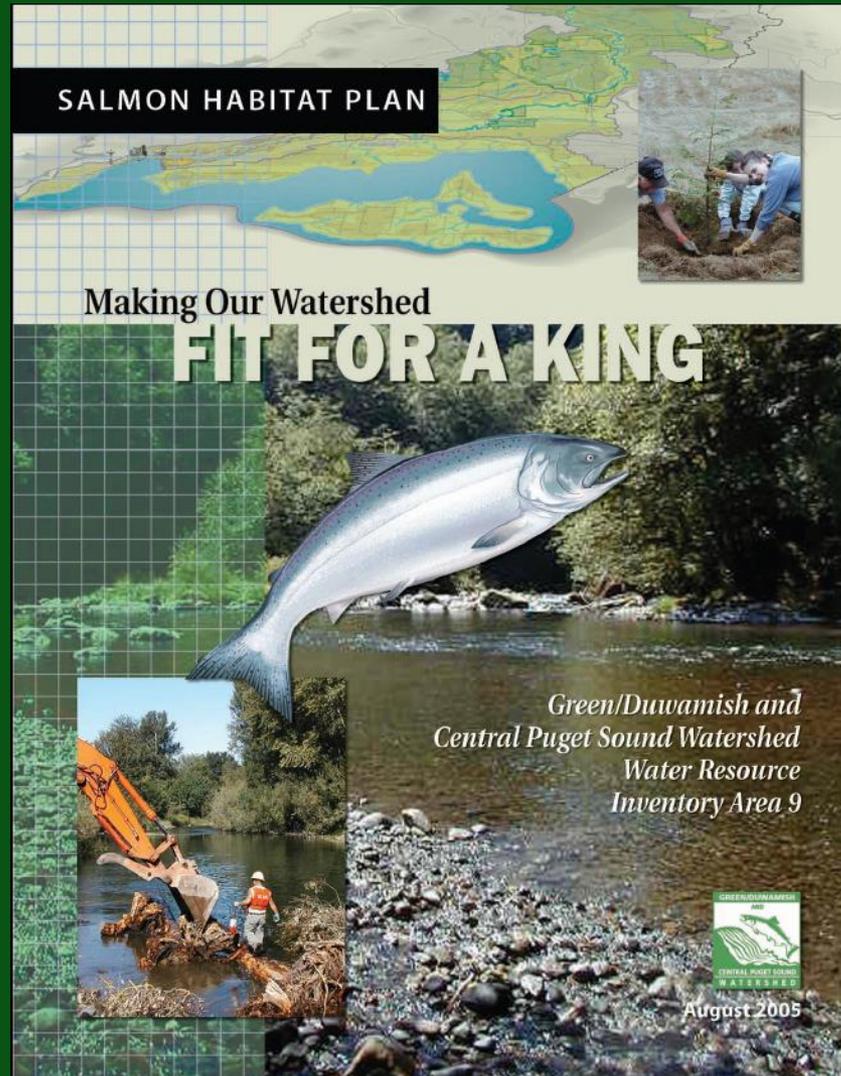
Presentation at King County's Science Seminar



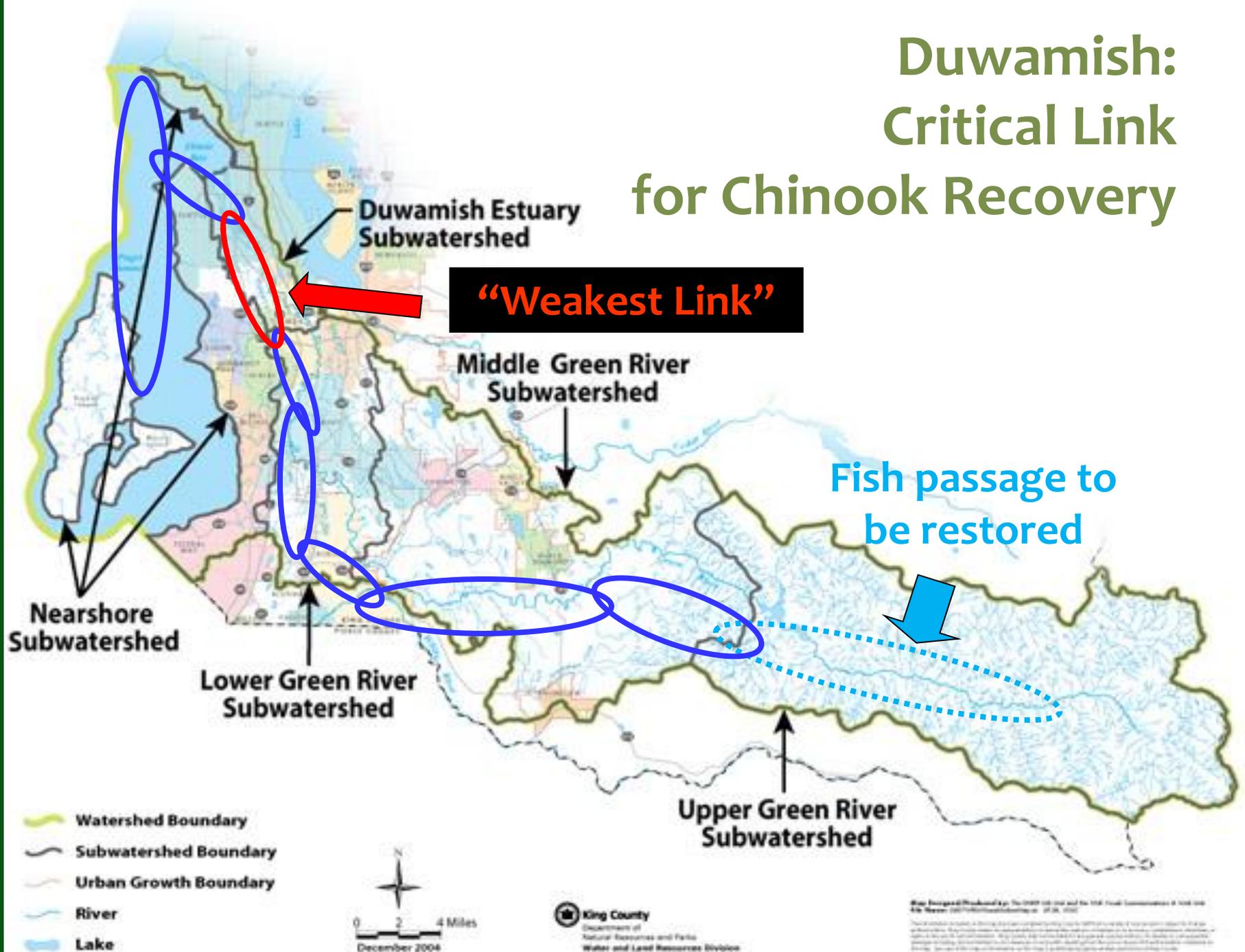
Elissa Ostergaard, Planning and Stewardship Coordinator
WRIA 9 – Green/Duwamish and Central Puget Sound Watershed



WRIA 9 Salmon Habitat Plan



Duwamish: Critical Link for Chinook Recovery



- * Young Chinook migrate year-round, peak February – June.
- * Physically changing to adapt from fresh to salt water.
- * Eat aquatic organisms—good sources are marshes with creeks flowing in and mud flats.
- * Bugs from trees will do.
- * Need shallow water off-channel to rest during high flows.



Juvenile Chinook salmon

Duwamish Estuary Subwatershed

- 11 miles of river
- Lower half dredged and straightened for boat traffic
- Two large rivers diverted away (Cedar and White)
- Only 3% of original wetlands and estuary habitat remains
- High diversity – Tukwila School District most diverse in nation



0 1/2 1 Mile
August 2006

Transition Zone



- * 9 miles long – 6 miles in Tukwila
- * “Nursery” - small fish eat and grow as they transition to salt water
- * Large fish survive best in Puget Sound
- * Most important area for intertidal shallow water habitat



Duwamish: Greatest Need, Fewest Opportunities

- * Few undeveloped parcels
- * Port and water-dependent uses
- * Financial backbone of the area
- * Equity & social justice
- * Contamination
- * Cultural resources
- * Expensive

Duwamish Blueprint: WRIA 9 partners identifying realistic opportunities

- * Plan and strategy for Duwamish Transition Zone
- * Duwamish Working Group partners include WRIA 9, Port of Seattle, cities of Seattle and Tukwila, King County, Boeing, Forterra, Washington Department of Fish and Wildlife, NOAA
- * Cooperation and ability to react when opportunities arise needed
- * Restoring a few large parcels would meet the 2025 Duwamish habitat restoration goal for Chinook recovery (40 acres of new shallow water habitat)

Habitat Targets - Current Status

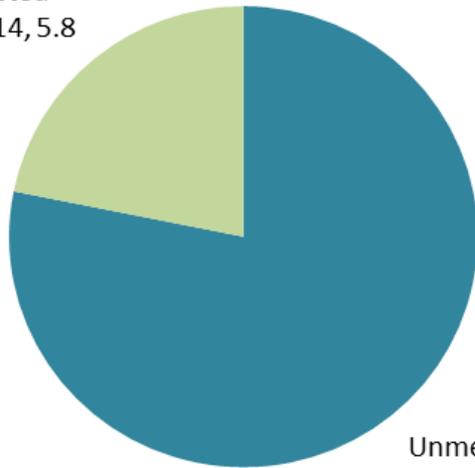
2015 goals from the 2005 Salmon Habitat Plan (WRIA 9):

- * 26.5 acres of shallow water habitat and
- * 3 miles of shoreline bank restored



Shallow Water Habitat Restored (acres)

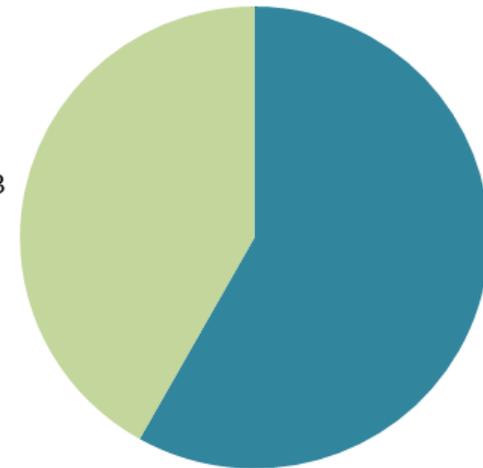
Completed
2005-2014, 5.8



Unmet 2015
Goal, 20.7

Shoreline Bank Restored (miles)

Completed
2005-2014, 1.3



Unmet 2015
Goal, 1.7

New Habitat Goals

- * 40 acres of shallow water habitat by 2025 (mud flats and marsh)



Potential –

- * 100 acres of shallow water habitat (if all reaches restored to fullest extent)
- * 11.7 miles of shoreline bank/riparian restoration
- * 5,350 pieces of large woody debris

Habitat Project Design

- * Large projects preferred (>2 acres)
- * Mudflat in Lower Duwamish and off-channel habitats in the upper Duwamish – most needed
- * Brackish areas near streams are best

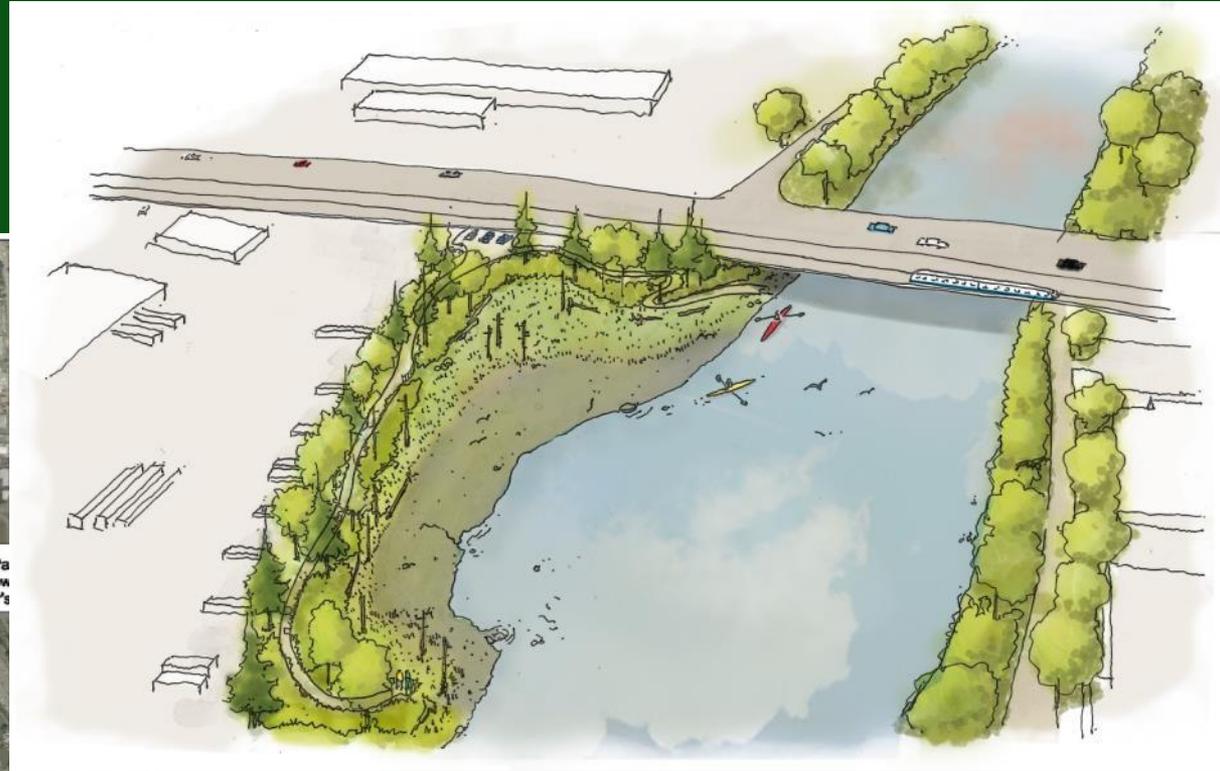
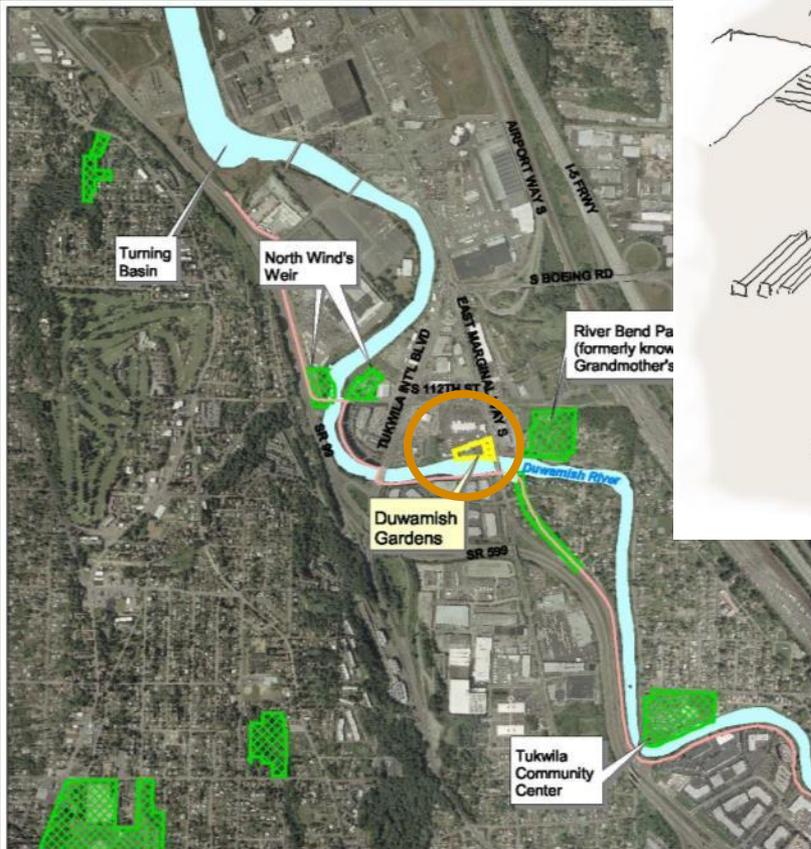


Habitat Project Design

- * Improve shoreline banks if more habitat can't be built
- * Plant trees across the subwatershed
- * Vary elevations and slope banks gradually to adapt to sea level rise

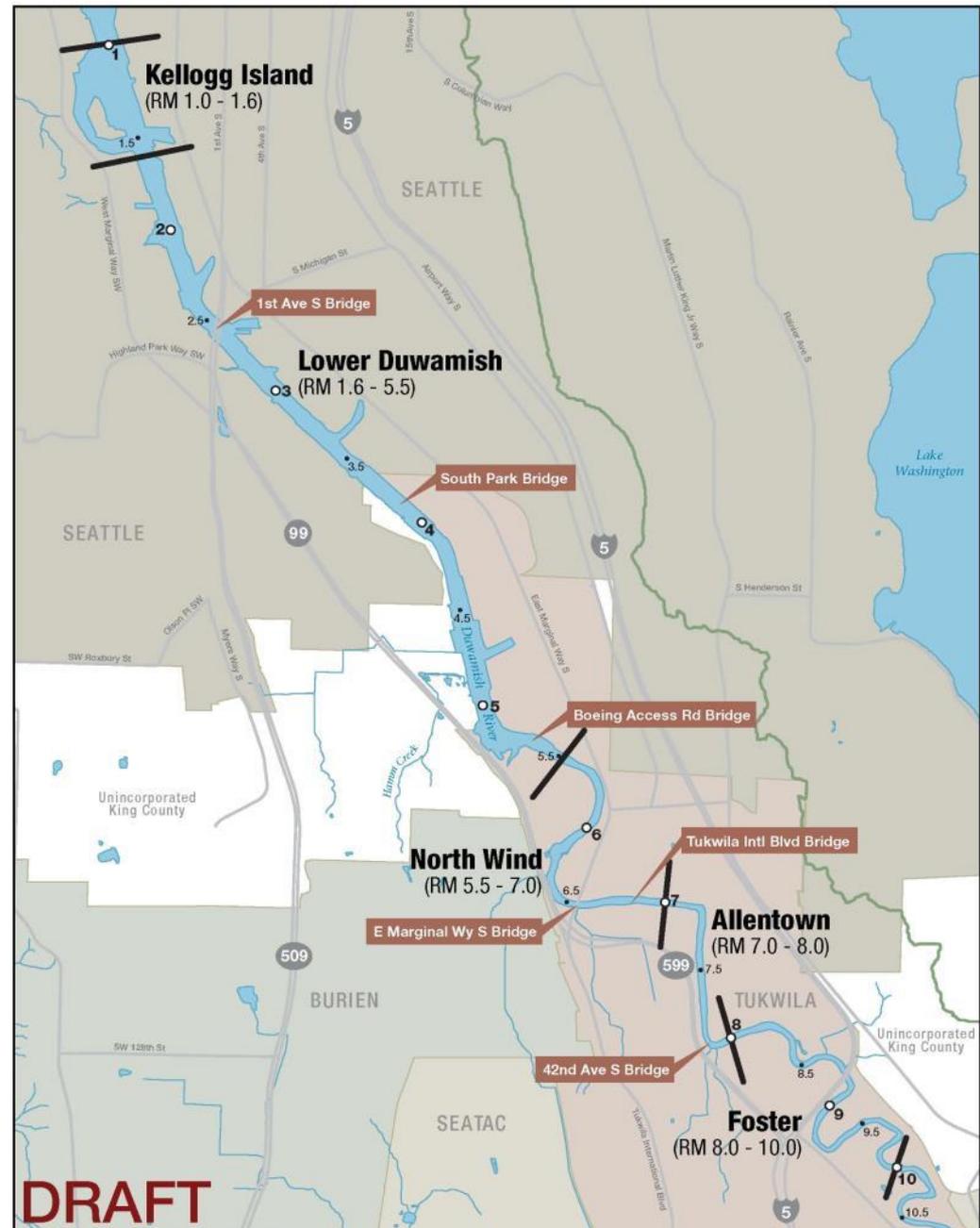


Tukwila/WRIA 9 Project: Duwamish Gardens



Planned construction:
2014

Next Habitat Opportunities?

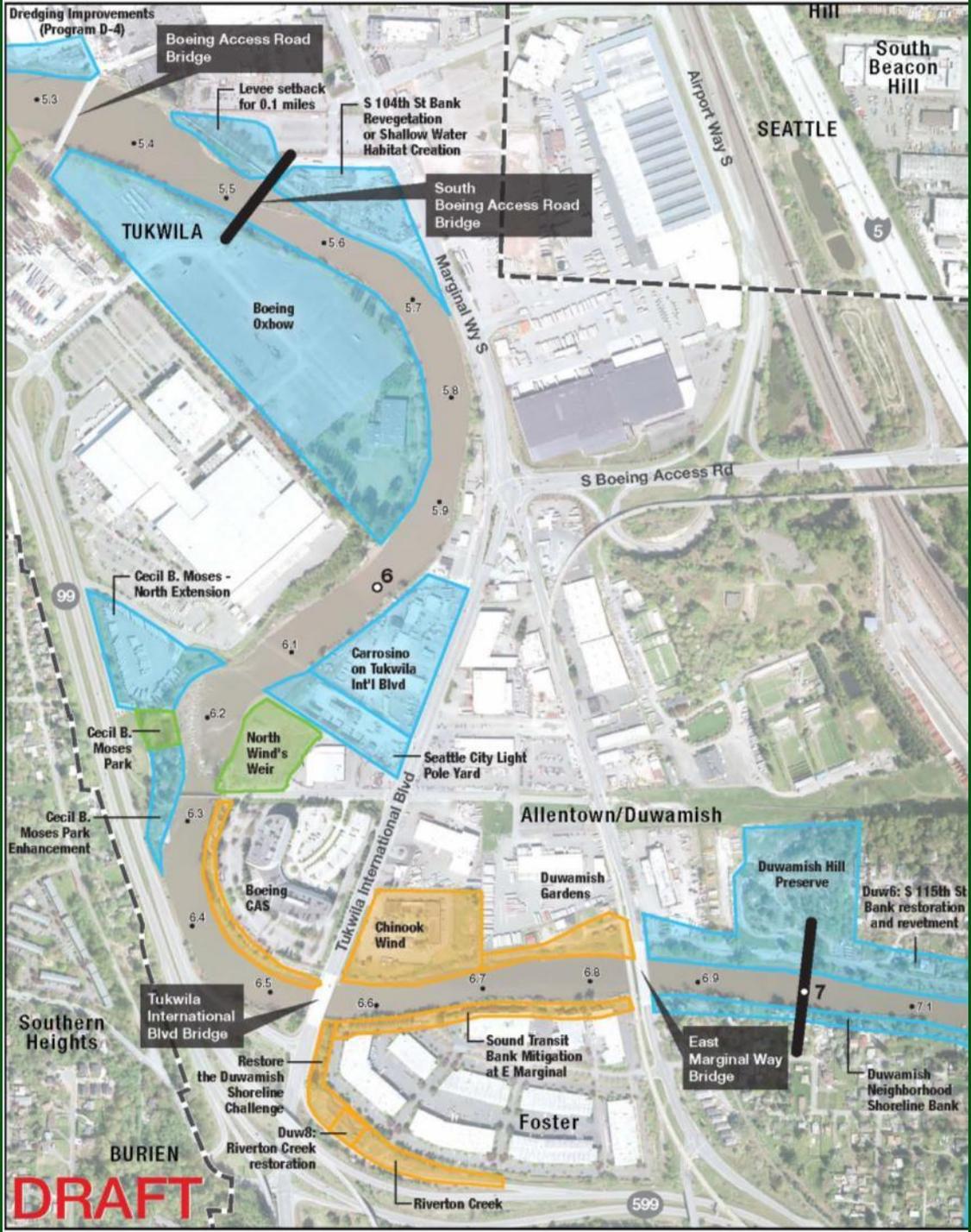


Index Map: Duwamish Blueprint Habitat Reaches

North Wind Reach

Duwamish Blueprint North Wind Reach (RM 5.5-7.0) Map

- Restoration Projects
- Completed
 - In Progress
 - Potential
- Reach Boundaries
- 0.1 River Miles, 1/10 Mile Increments
- Bridge Bridges
- City Boundaries



DRAFT

For Sale: Chinook Wind



Next Tukwila/WRIA 9 Project: Chinook Wind



For Sale: Chinook Wind

- * 5.83 acres – largest restoration site thus far
- * \$6-7M – purchase price
- * Hotel & parking lot
- * Cultural resources and data recovery?
- * Contamination?
- * \$1,950,000 from Conservation Futures allocated to City of Tukwila for purchase – September 2014
- * Remaining: Mitigation Reserves Program, fee-in-lieu for mitigation, salmon recovery funds, City match?

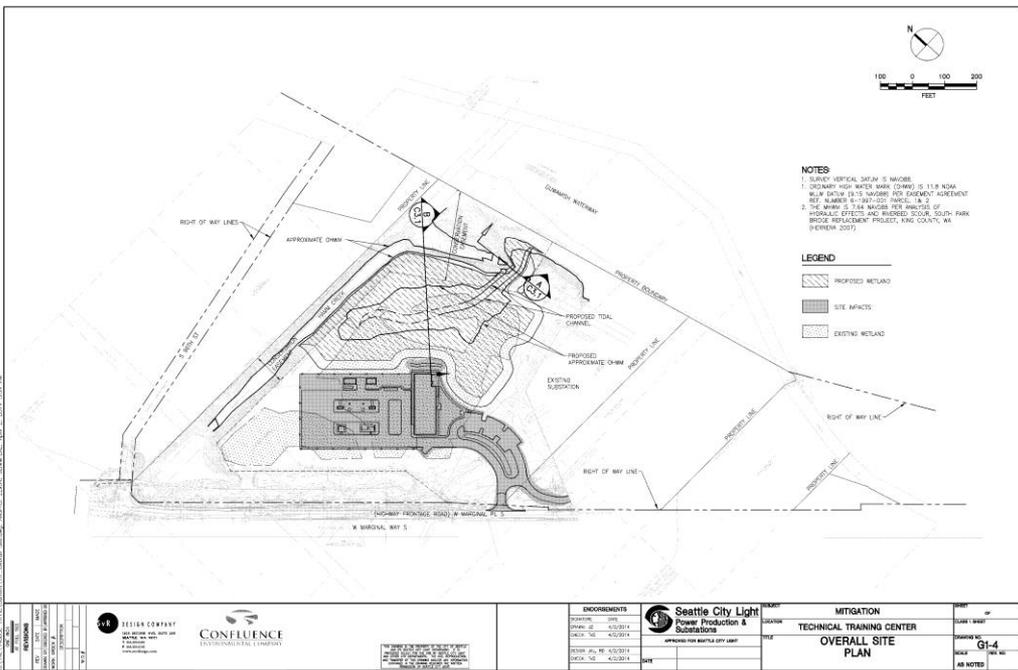


Hamm Creek/City Light North

- * 20 acres
- * In Transition Zone
- * Undeveloped
- * Hamm Creek provides fresh water
- * Public ownership - Seattle City Light
- * Last, best, most cost effective place for large-scale restoration

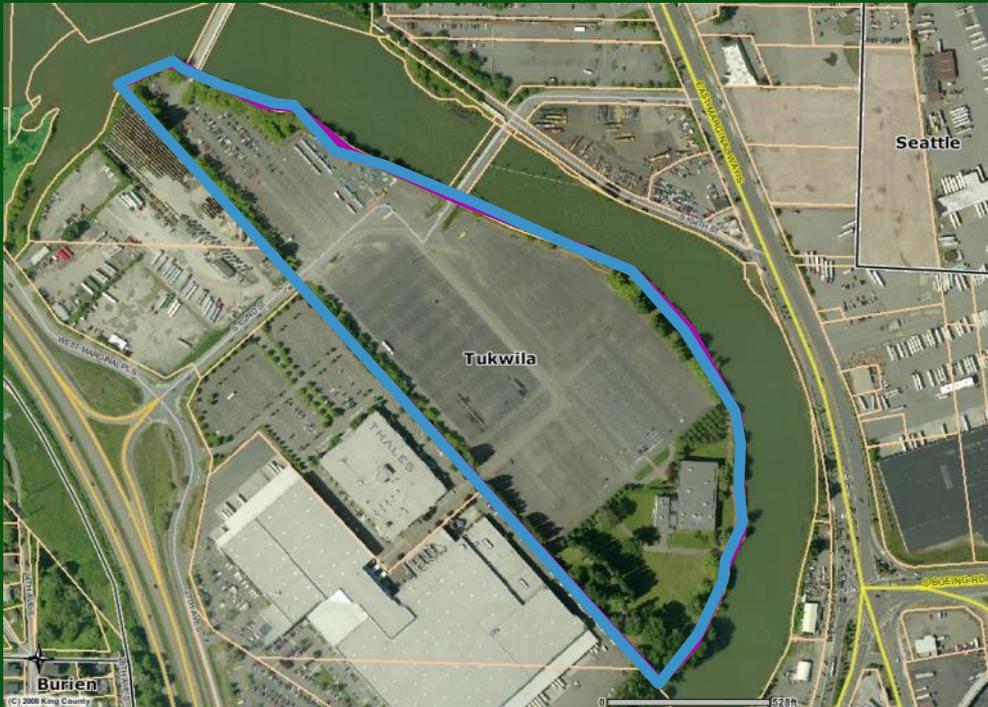


Latest Seattle City Light Plans for Hamm Creek/City Light North



- * Training facility
- * 1/3 of site habitat potential
- * Requires new armoring to protect building
- * Future sea level rise
- * Alternatives analysis – other large, flat sites not on the estuary?
- * Need public leadership for estuary restoration

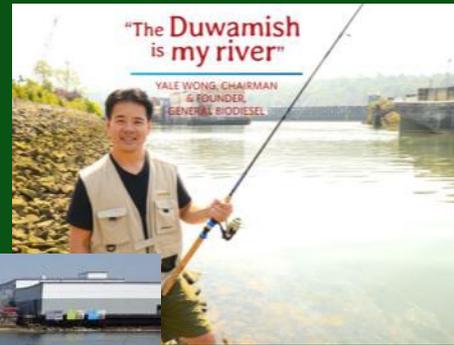
Desimone (former Boeing) Oxbow



- * Inside Transition Zone, just upstream of Superfund area
- * No known contamination
- * Lightly used parking area
- * Over 30 acres
- * Owner would need to be willing to sell - ?

Funding Strategies

- * Use mitigation and restoration funds with WRIA 9 support to project sponsors
- * Reserve or source needed for \$multi-million opportunities that arise
- * Equity and social justice – neighborhoods want healthy environment, trees, open space, access to the river
- * Urban Waters Federal Partnership
- * **Local support to focus attention on need for urban restoration at regional scale**



Blueprint Recommendations

- * Community involvement is critical for ongoing support and site success
- * Strategy for watershed-wide riparian tree planting
- * Economic & social analysis of benefits of Chinook Wind
- * Move forward with largest projects and shorelines
- * Part-time Duwamish Basin Steward



Community planting event at North Wind's Weir, Feb. 6, 2010

Contact Information

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- * Jeff Stern, King County
- * Kathy Minsch, Seattle Public Utilities
- * Andrea Cummins/Sandra Whiting/Ryan Larson, City of Tukwila
- * Laura Arber, Washington Department of Fish and Wildlife
- * Brian Anderson, The Boeing Company
- * John Sloan/George Blomberg, Port of Seattle
- * Judy Blanco/Liz Johnston, Forterra
- * Advisory – Glen St. Amant, Muckleshoot Indian Tribe
- * Plus subject matter experts on climate change, fish use of the Duwamish, urban forestry