

WHATCOM WATERWAY

BELLINGHAM, WA

BRIAN GOURAN – PORT OF BELLINGHAM

Whatcom Waterway Site



Whatcom Waterway Site Overview

- Mercury from former Georgia-Pacific facility became widely dispersed in Bellingham Bay
- Mercury co-located with five other Bellingham Bay cleanup sites
- Co-located contaminants included dioxins/furans, PAHs, TBT, wood waste, municipal waste, phenols, and other metals (As, Cd, Pb, Zn, and Cu)



Objectives of Remediation

- Reduce surface sediment toxicity to benthos
- Reduce mercury bioaccumulation (esp. in Dungeness crab)
- Put early emphasis on source control
- Make sediment cleanup compatible with changing land uses and habitat goals
 - Waterfront District redevelopment since 2003
- Provide for adaptive management



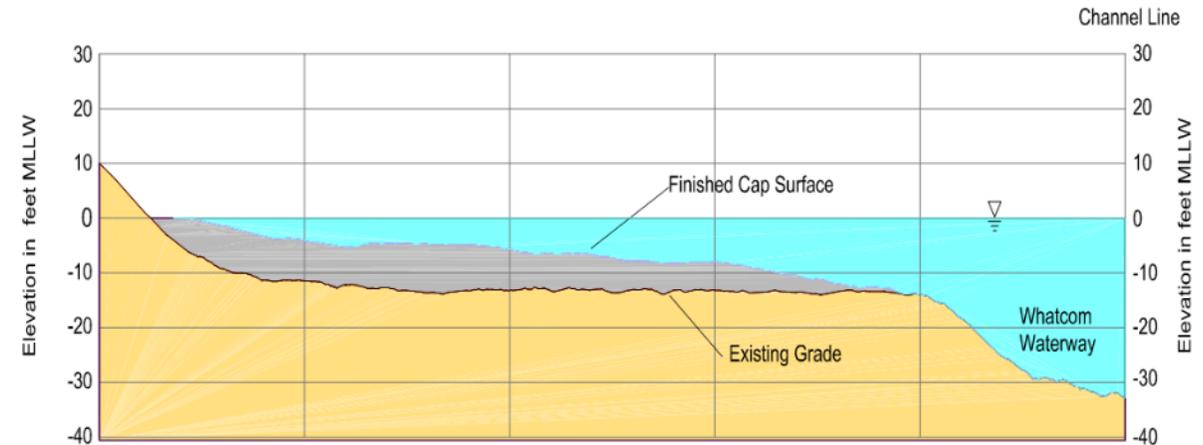
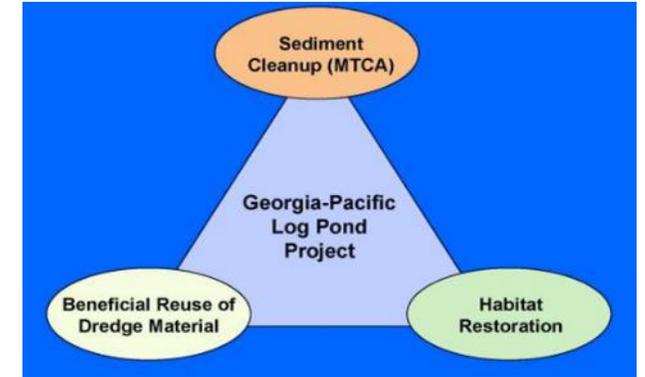
Site Summary

- 1970 to 1972: Point source controls
- 1996 to 2007: RI/FS & Consent Decree
- 1998 to 2001: Bellingham Bay Pilot Project
- 2001: Log Pond Interim Action
- 2015 to 2016 Phase 1: Whatcom Waterway Cleanup Phase 1
 - 110,000 cubic yards of material dredged and disposed of off site
 - 100,000 cubic yards of capping material placed
- Pending: Whatcom Waterway Cleanup Phase 2



2001 Log Pond Interim Action

- Accelerated natural recovery by capping area with highest concentration
- Concurrent beneficial reuse of clean dredged material and habitat restoration
- 3-foot cap for cleanup
- Up to 10 feet placed to restore productive 6-acre intertidal beach and eelgrass habitat



Unexpected Challenges

- Changes in land uses and regulatory focus
 - Port acquires GP Properties 2005
 - Dioxins/furans
 - Consent Decree Amendment 2011
- Project funding availability
 - Project supported by state grant program (50% match; funding constraints)
 - Phasing required to align project with funding availability
- Permitting timeline and stakeholder concerns
 - Tribes requested water quality monitoring during construction and biological (tissue/seafood) monitoring post-construction and voiced concerns about increased vessel traffic



2015 to 2016 Cleanup of Phase 1 Areas

Dredging areas

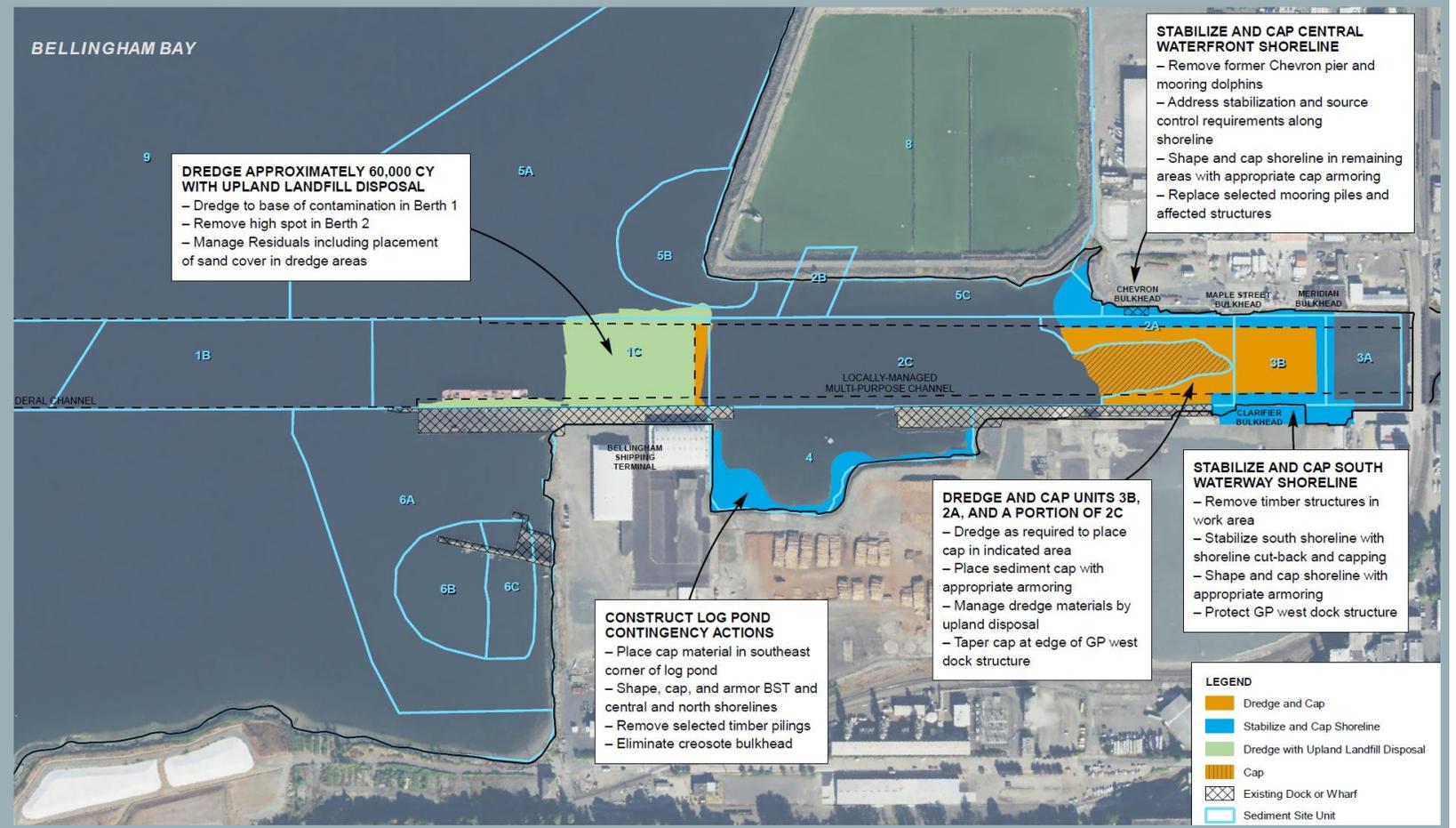
- Federal channel
- Multi-purpose channel
- Central Waterfront

Capping areas

- Multi-purpose channel
- Shoreline areas

Source control

- Groundwater plume
- Central Waterfront bulkhead replacement



Phase 1 Construction



Dredging Inner Waterway

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Installing Cutoff Wall

Phase 1 Construction



Log Pond Capping

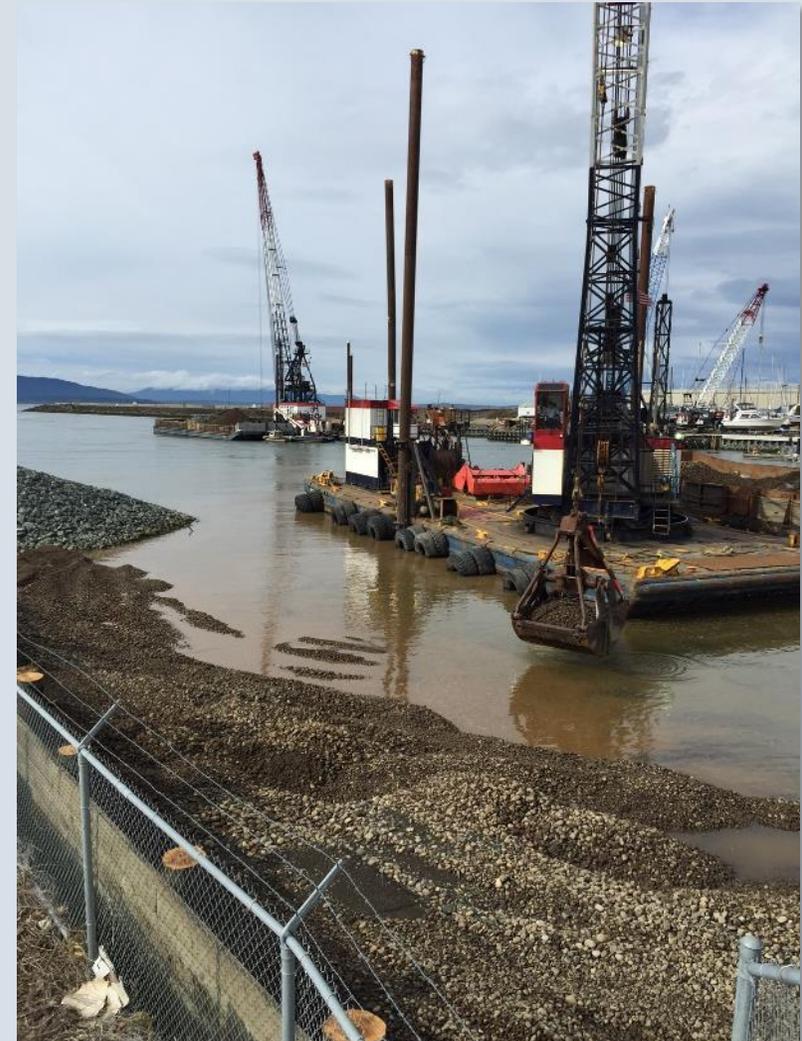


Removing Creosote Structures

Phase 1 Construction



Log Pond Shoreline



Inner Shoreline

Phase 1 Construction

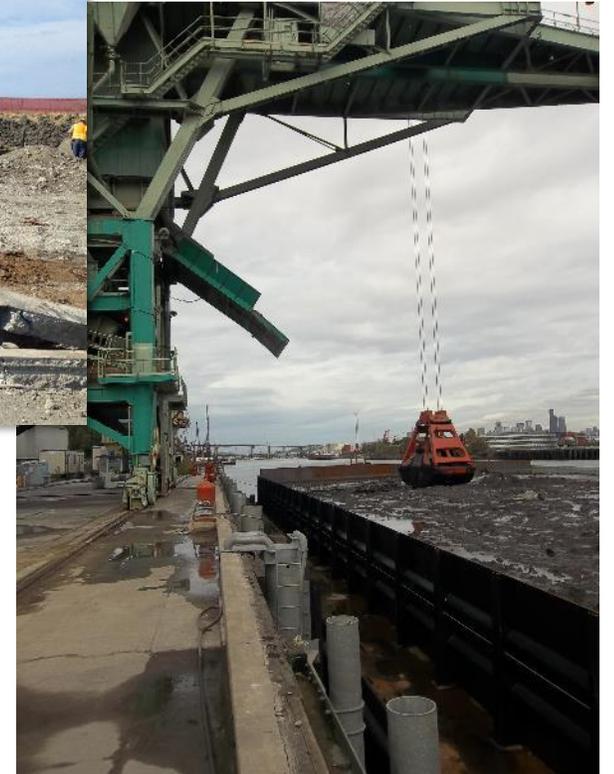


Waterway and Former GP Mill

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Construction Challenges

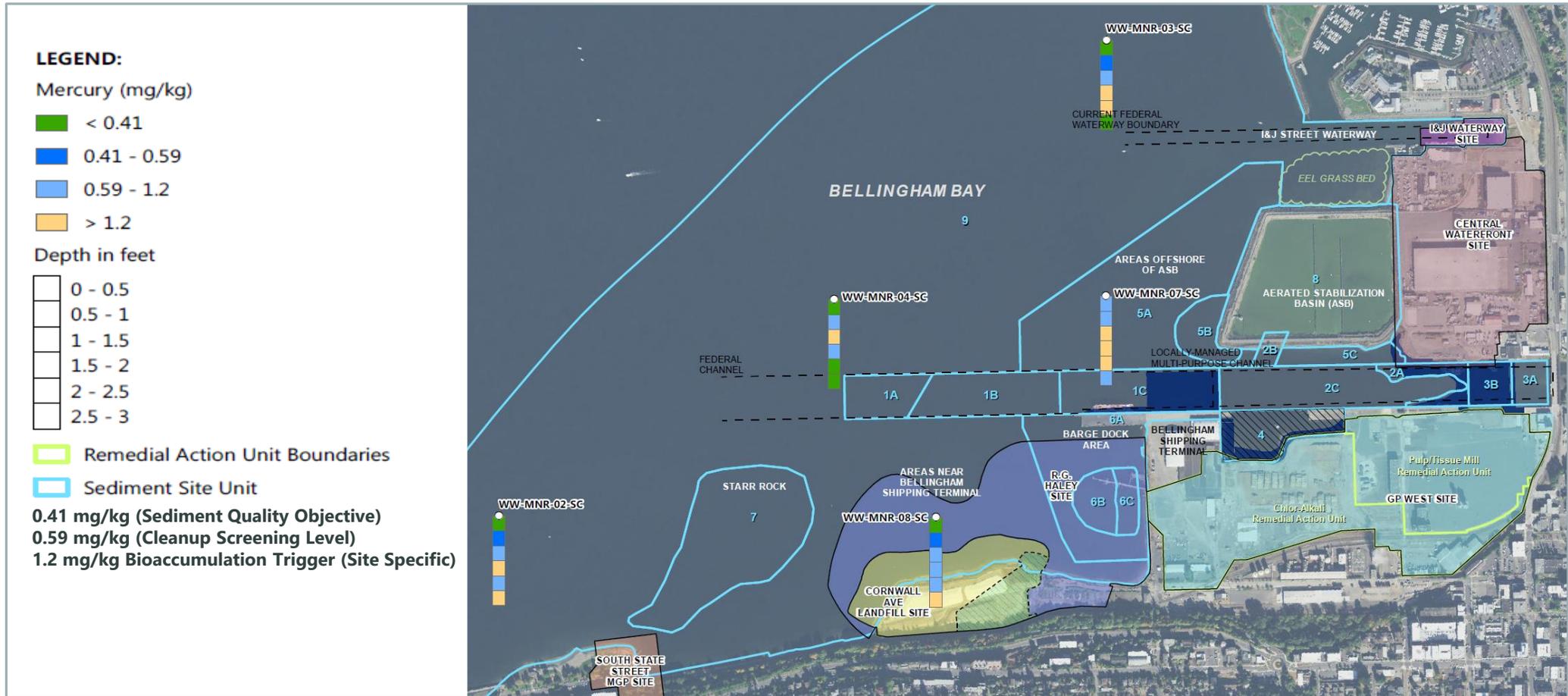
- Shoreline Conditions
 - Buried Debris
- Off-Load Facility
 - Permitting
 - Community Concerns
- Proximity of Hatchery
- Water Quality Monitoring
- Tenant Operations



Project Performance

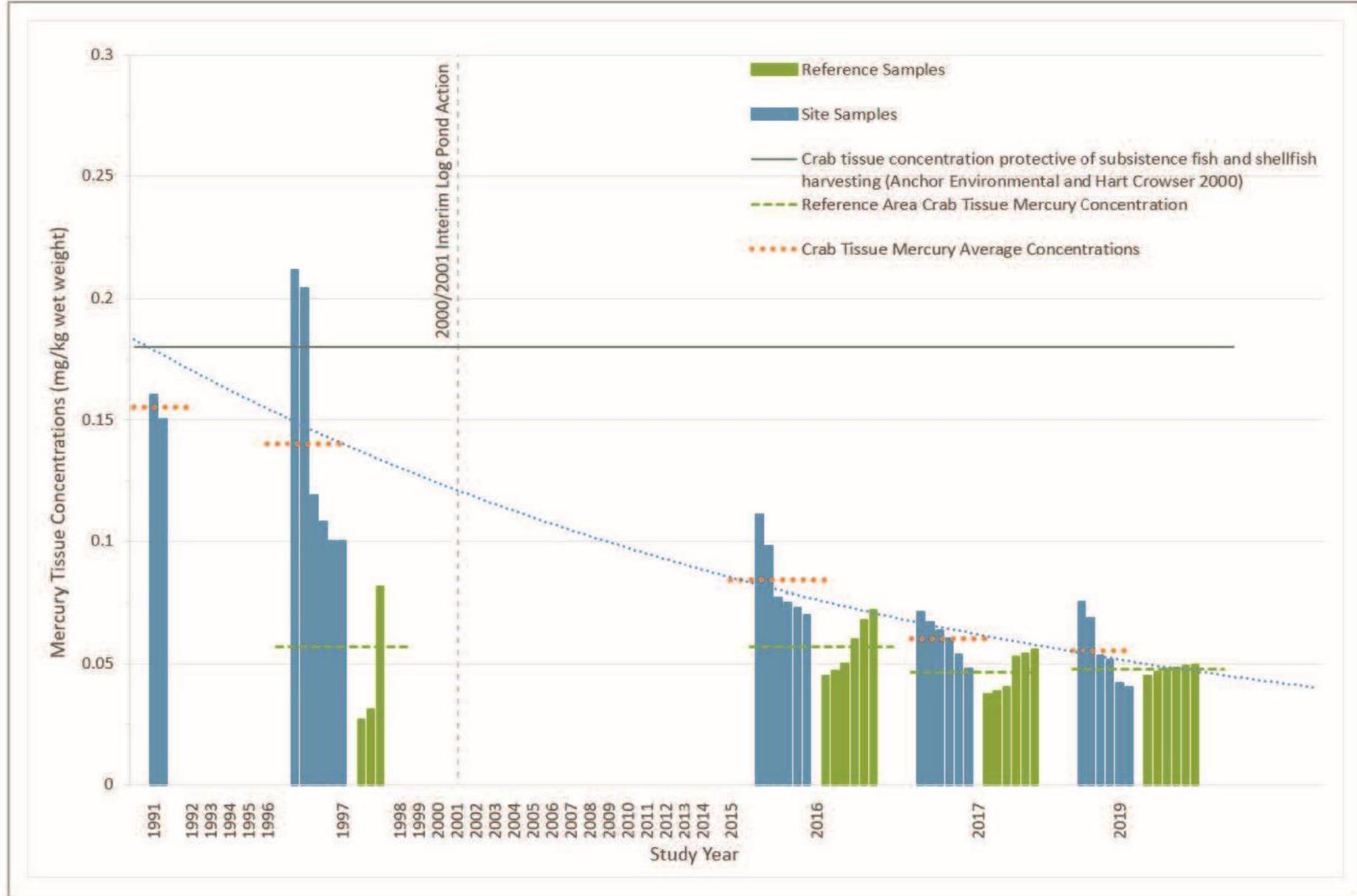
- Source controls and natural recovery reduced sediment toxicity
- 2001 Log Pond cap continues to be protective
 - Productive benthic/epibenthic communities by first year
 - Increased utilization by salmon and forage fish
 - Eelgrass meadow restoration after several years
- Dungeness crab bioaccumulation approaching background
 - Mercury less than risk-based thresholds
- Dioxins/furans within regional background range

Sediment Cores Show Progressive Natural Recovery through Burial and Mixing



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Dungeness Crab Mercury Levels Approaching Background



Post Remediation Opportunities



Waypoint Park Beach

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Post Remediation Opportunities



Waypoint Park Beach

Post Remediation Opportunities



Marine Trades and Barge Terminal

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Post Remediation Opportunities



Bellingham Shipping Terminal



Key Take-Home Messages

- Strong Partnerships/Relationships
 - Bellingham Bay Action Team
 - Port Tenants
- Active stakeholder and community involvement is worth the effort
 - Successful projects build community confidence
- Cooperative projects have multiple benefits
 - Integrated habitat restoration and cleanup
 - Better fit with community land use needs
- Adaptive management required to address changing land use and regulatory focus



What's Next?

- Marine Trades Area Cleanup and Redevelopment (Includes Phase 2 area)
 - Port considering changes in land use, may require remedy modification
- Ongoing Monitoring
- Community redevelopment in Waterfront District
- Cleanup remaining MTCA Sites with co-located contaminants