

Sediment Management Standards & Sediment Cleanup



Chance Asher, Department of Ecology
Sediment Management Annual Review Meeting
May 4, 2016

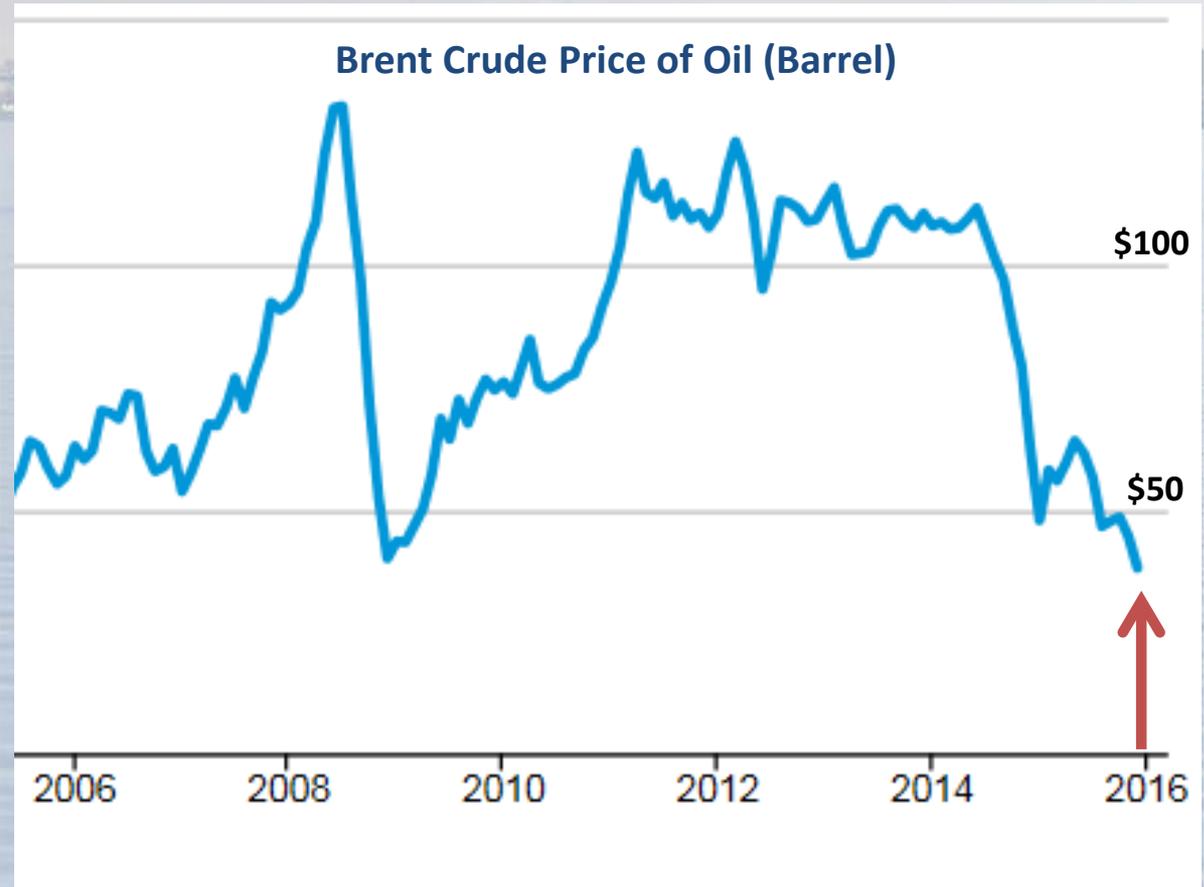
Goals for Today

Provide updates on:

- 2015-2017 Budget
 - Sediment Policy Work conducted in 2015/16
 - Sediment Policy Work to be conducted 2016/17
- Sediment Cleanup User's Manual (SCUM II) revisions
 - Sediment cleanup projects

Toxics Cleanup Program Budget Declining Oil Prices and Revenue

- Cleanup and some pollution prevention programs rely on hazardous substance tax.
- Hazardous substance tax based on barrel price of crude oil.
- Significant price decline impacting cleanup and pollution prevention.



Toxics Cleanup Program Budget

Hazardous Substance Tax Revenue

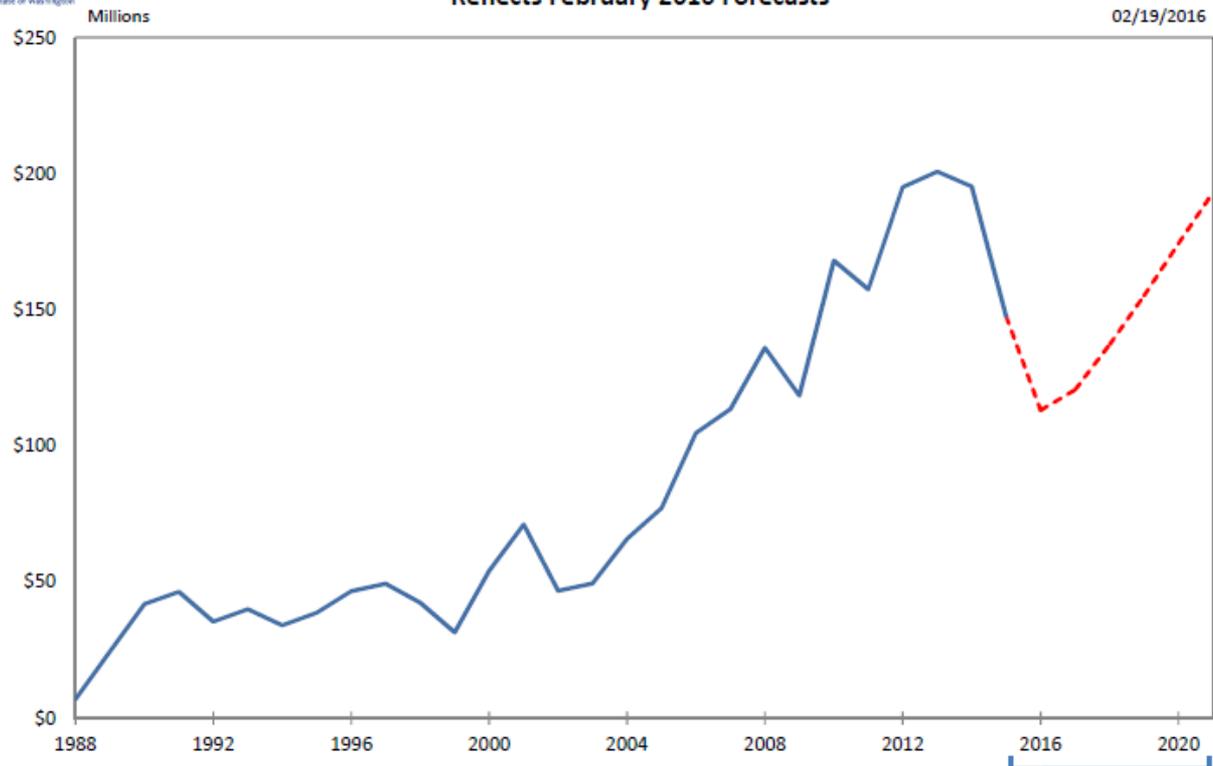
- Managing revenue shortfall by transfer between MTCA accounts, loan from CSA, delay cleanup projects.
- **Bad news:** Some cleanups delayed based on:
 - Acuity of need
 - Readiness to proceed
 - Cost efficiency
 - Ensuring geographic distribution.
- **Good news:** Cleanup and policy work continues.



Hazardous Substance Tax Revenue

Reflects February 2016 Forecasts

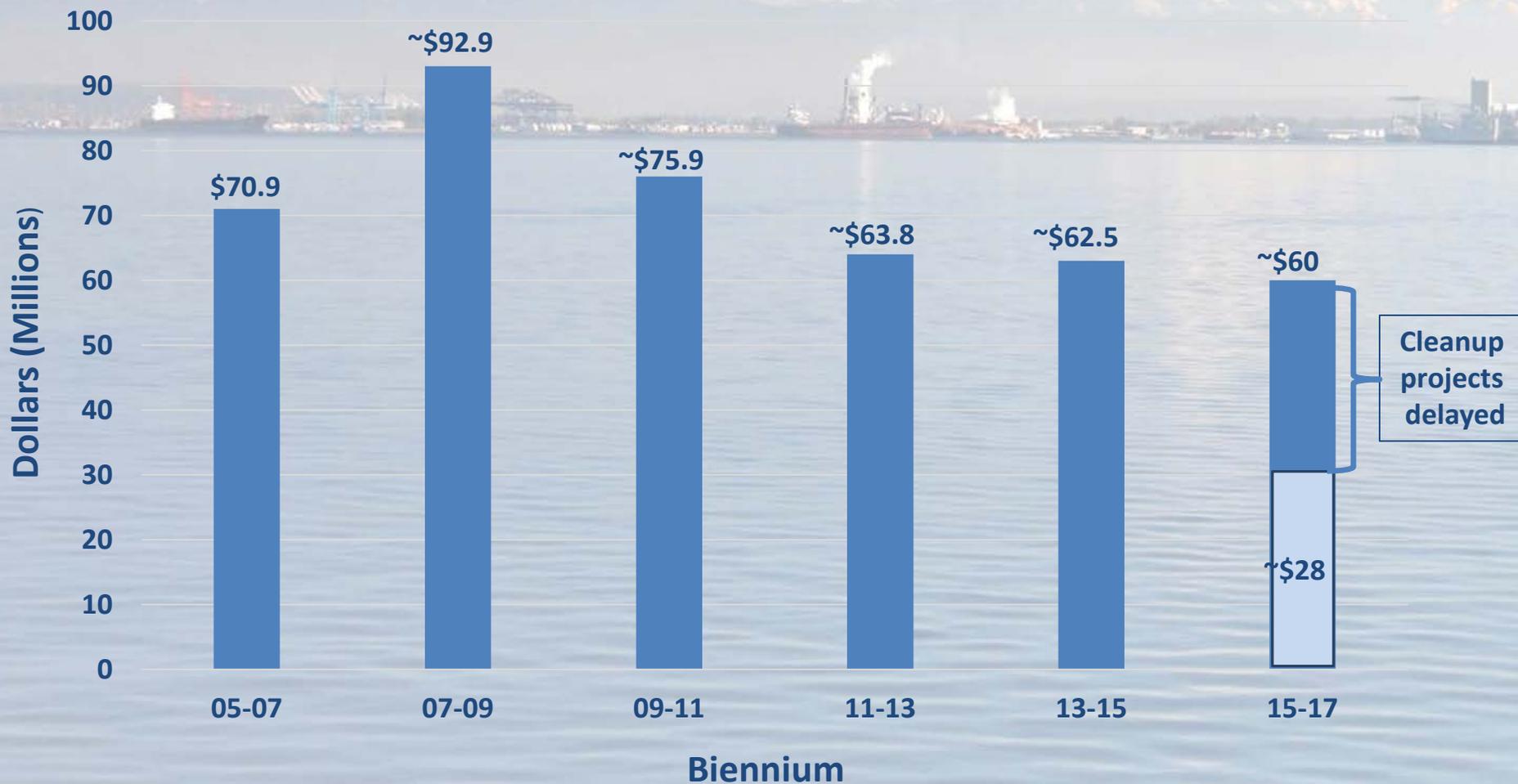
02/19/2016



Source: HST GAAP revenue sourced from Agency Financial Reporting System (AFRS). Data prior to 1997-99 Biennium extracted from Department of Revenue tax reference manual. HST forecast data sourced from Department of Revenue. Fiscal Year 2016 reflects actual collections through Fiscal Month 07 and forecast for the remainder of the fiscal year.

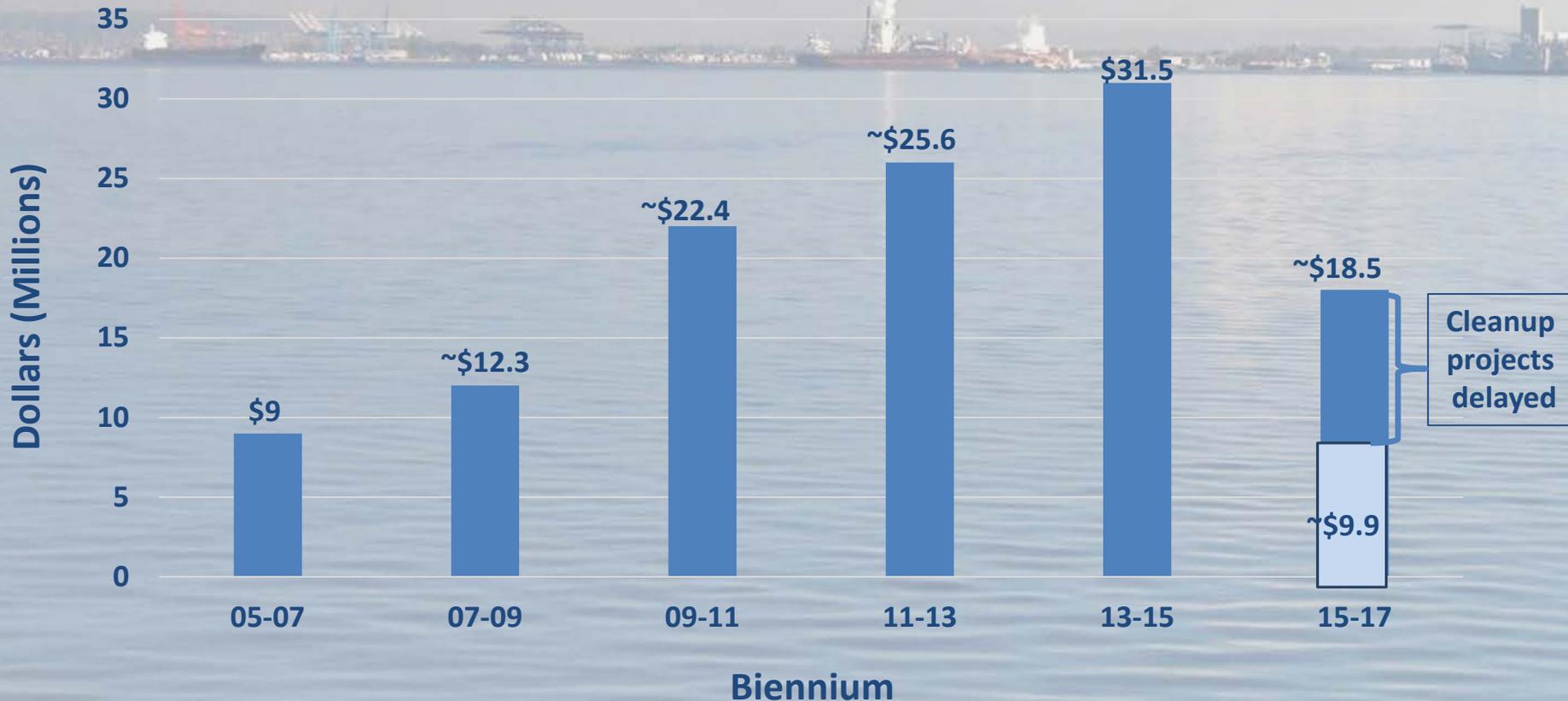
Feb 2016
Forecast

Remedial Action Grants Funding Ten Year History



- Dollars reflect **new** funding for each biennium
- ~\$65 million appropriated in 2015-17 enacted budget. In 2016 Supplemental budget reduced to \$60 million.

Puget Sound Initiative Funding Ten Year History

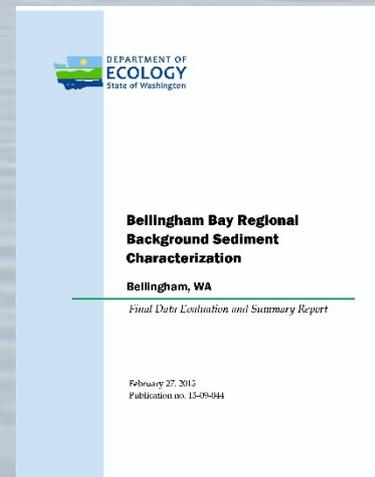
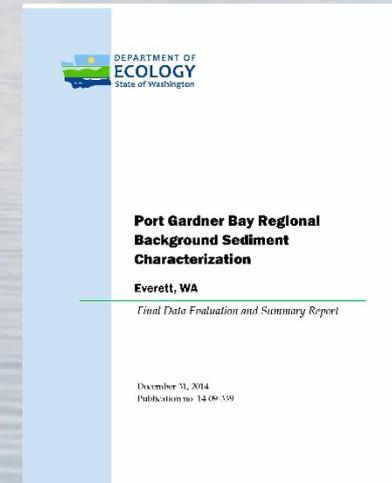
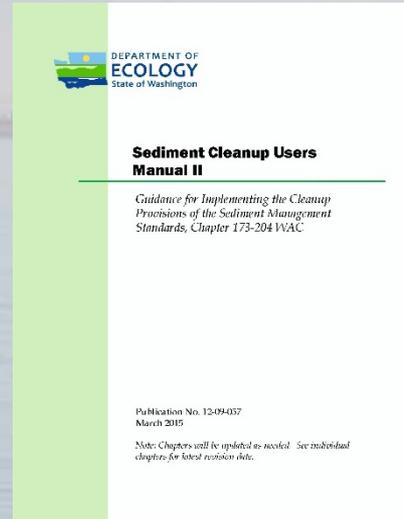


Dollars reflect **new** funding for each biennium

Sediment Policy

What We've Done

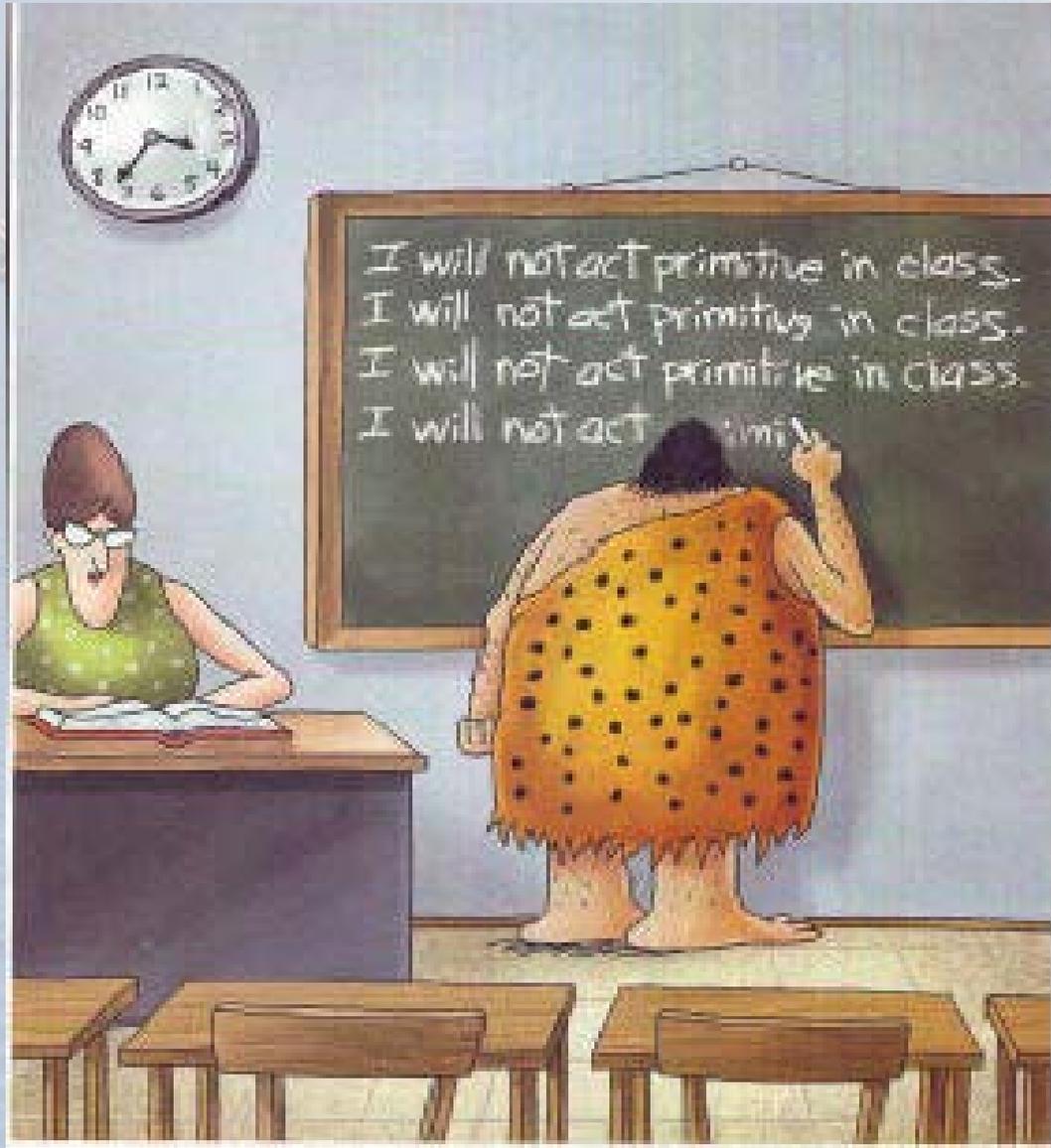
- Finalized Sediment Cleanup User's Manual (SCUM II)
- Finalized Regional Background studies
- Dedicated more sediment expert staff to policy and technical support
- Internal Training on SMS/SCUM II:
 - SMS/SCUM II 3-day training
 - Sediment Technical and Policy Workgroup



SMS/SCUM II Training



SMS/SCUM II Training



Sediment Policy

What We're Planning To Do

- **2016:**
 - Policy 1-11 aka 303(d) policy
 - NPDES Permit Writer's Manual
 - Regional background characterization
 - Biomass endpoint development
 - DMMP management review
 - Climate change and cleanup
- **2017 (dependent on budget):**
 - Freshwater Natural Background (?)
 - SCUM I revision (?)
 - Regional Background (?)



Sediment Cleanup Users Manual II

Guidance for Implementing the Cleanup Provisions of the Sediment Management Standards, Chapter 173-204 WAC



Sediment Cleanup User's Manual (SCUM II)

The Main Revisions

- Chapters 2, 4, 5, 6, 8, 11, Appendix E: Errors corrected
- Chapter 4: Clarified addressing data w/unusual TOC range.
- Chapter 5: PCB congeners and sum TEQ added Table 5-1 and EPA Method 1668 recommended.
- Chapter 6: TOC normalization equation added.
- Chapter 6 & 8: Added option to substitute Total PCB congeners for Total Aroclors for benthic criteria.
- Chapter 8: Corrected benthic criteria Tables 8-1 & 8-4.
- Chapter 9: Clarified lipid- and OC-normalization for BSAFs.
- Chapter 10: Added Total PCB congeners natural background.



DEPARTMENT OF
ECOLOGY
State of Washington

Sediment Cleanup Users Manual II

*Guidance for Implementing the Cleanup
Provisions of the Sediment Management
Standards, Chapter 173-204 WAC*

Publication No. 12-09-057
March 2015

*Note: Chapters will be updated as needed. See individual
chapters for latest revision date.*

Sediment Cleanup Updates

Cleanup Focus Areas

- Bellingham Bay
- Fidalgo Bay & Padilla Bay
- Port Gardner & Snohomish River Estuary
- Elliott Bay/Lower Duwamish
- Port Gamble
- Port Angeles
- Oakland Bay
- Budd Inlet
- Columbia River



Sediment Cleanup Updates

What We've Been Up To

- Port Gamble
- Bellingham Bay:
 - Whatcom Waterway
- Port Gardner:
 - Everett Shipyard
 - Mill A
- Lower Columbia River:
 - Lake River
 - Carty Lake



Sediment Cleanup Updates

Port Gamble

- Completed first year of a two year construction plan.
- Second year begins June 2016.
- Significant habitat restoration tied to cleanup to benefit the rich natural resources in the area.



Sediment Cleanup Updates

Port Gamble

First Year

- 3314 pilings removed
- 3000 tons concrete & debris removed



Sediment Cleanup Updates Port Gamble

First Year

41,000 cy dredged



Sediment Cleanup Updates Port Gamble

First Year

1800 feet of shoreline remediated



Sediment Cleanup Updates

Port Gamble

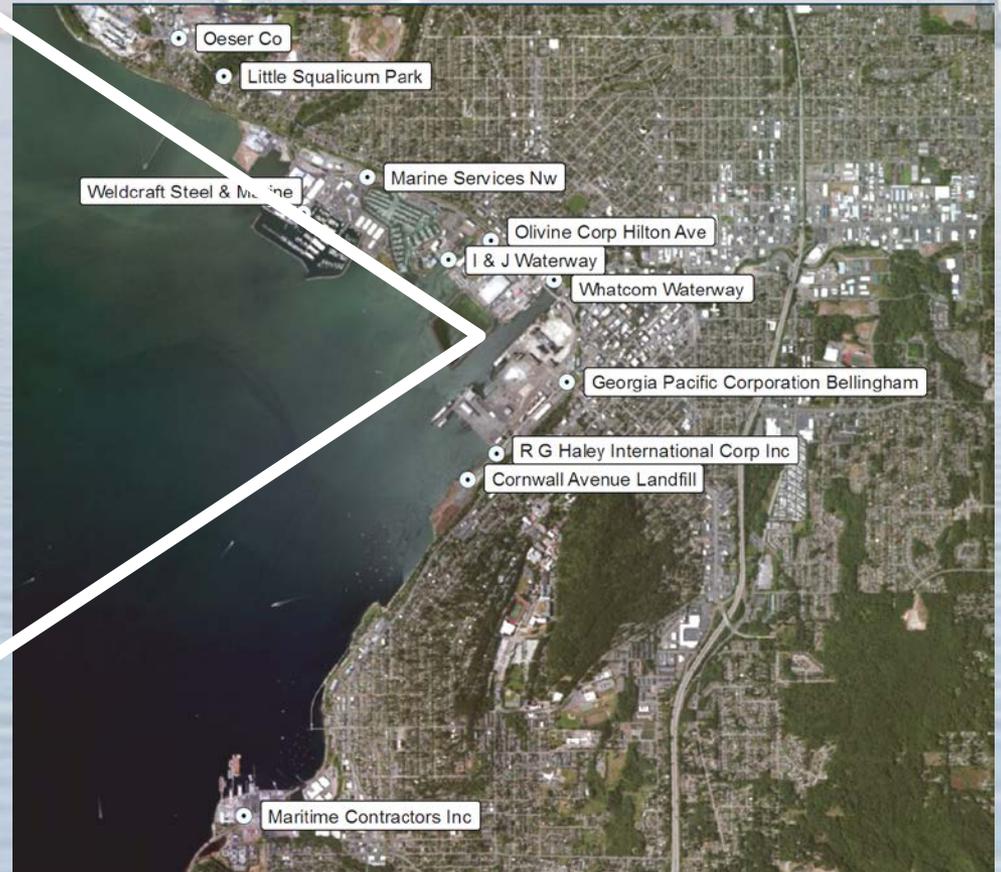
Second Year

- North Basin
- ~30,000 cy dredge
- 66 acres enhanced monitored natural recovery



Sediment Cleanup Updates

Bellingham Bay



Sediment Cleanup Updates

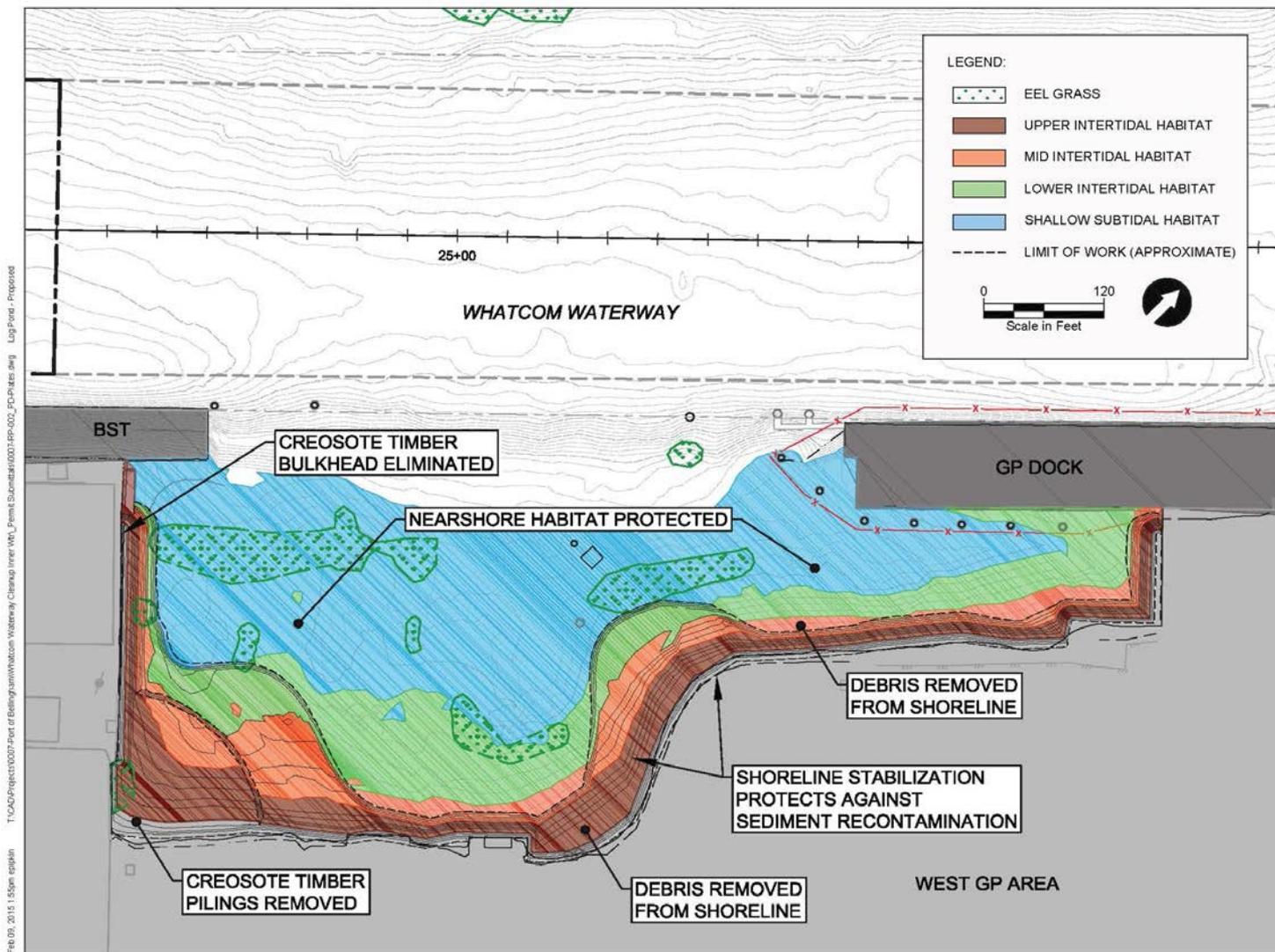
Bellingham Bay – Whatcom Waterway

- Inner Waterway
- Log Pond
- CoCs: Mercury, dioxin, metals
- Dredged ~158,900 cy
- Clean cap/residuals cover ~126,000 cy
- Capping material:
 - Clean sand
 - Clean gravel
 - Clean cobble



Sediment Cleanup Updates

Bellingham Bay – Whatcom Waterway



Sediment Cleanup Updates

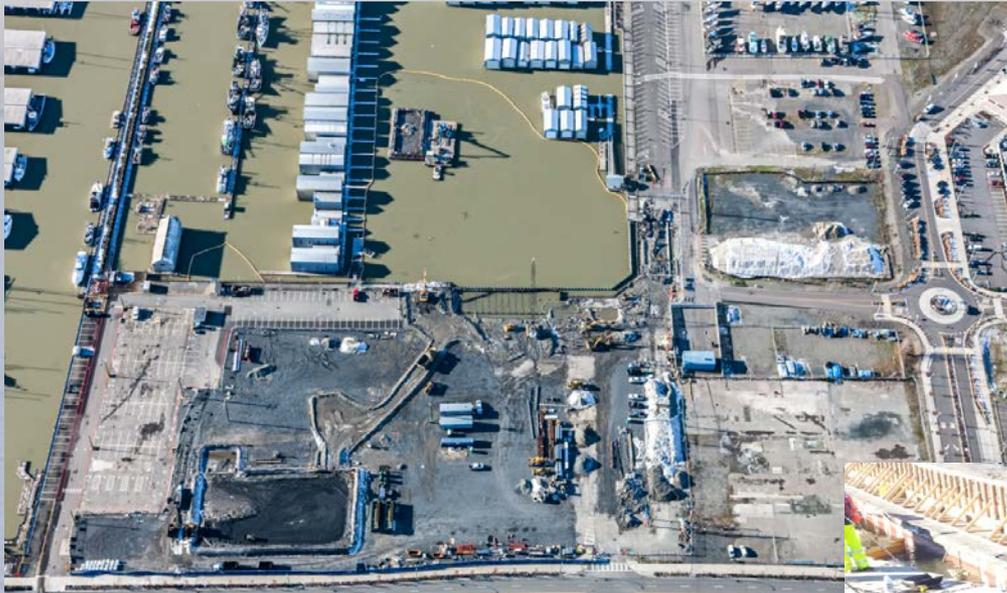
Port Gardner

- Everett Shipyard cleanup
- East Waterway - pending
- Mill A – interim action pending



Sediment Cleanup Updates

Port Gardner – Everett Shipyard



- CoCs: metals, PAHs, PCBs
- ~9,000 cy dredged
- Capping in bulkhead areas
- Removal of marine railway and haul-out



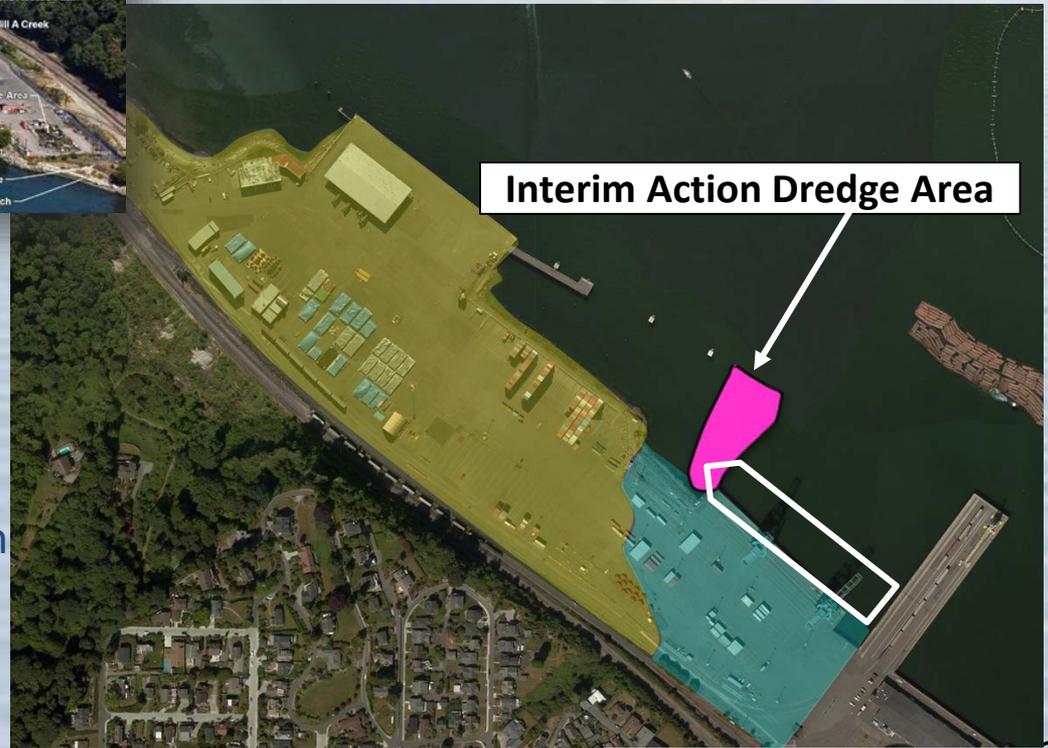
Sediment Cleanup Updates

Port Gardner – Mill A



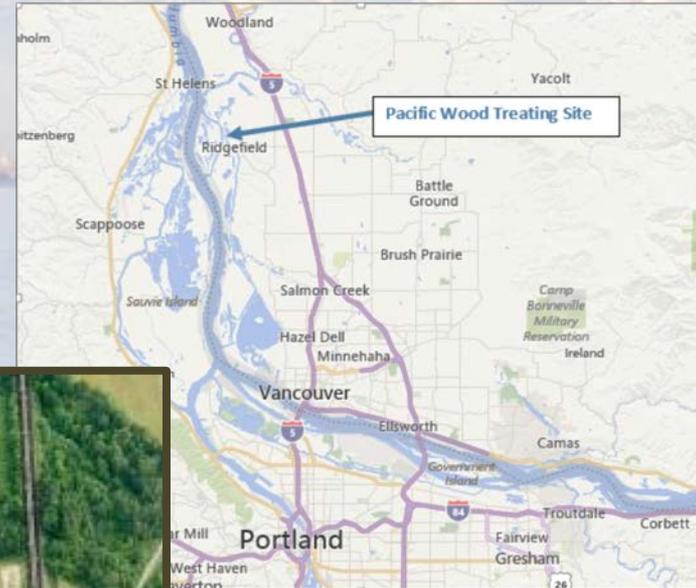
- Interim action scheduled Fall 2016
- Necessary to meet navigation depths and increase navigation access

- ~20,000 cy to be dredged
- ~1.7 acres
- Habitat improvement and mitigation



Sediment Cleanup Ridgefield National Wildlife Refuge

- Lake River and Carty Lake
- Wood treating facility on Lake River, Ridgefield.
- Upland cleanup:
 - Excavated and capped hotspots.
 - Steam enhanced remediation to remove major source.
- Sediment cleanup:
 - Dioxins, PCP, metals.
 - Precision dredging (shallow river depth and dredge prism).



Sediment Cleanup

Ridgefield National Wildlife Refuge – Lake River

- Precision dredged near shore.
- Dredged to maximum of 3 feet.
- 1 foot clean sand backfill.
- 1 foot cap on other areas.
- Long-reach excavator unloading barge at on site transload area.



Sediment Cleanup

Ridgefield National Wildlife Refuge – Lake River

- Shoreline gravel placement from barge.
- Placing and grading shoreline rock.



Sediment Cleanup

Ridgefield National Wildlife Refuge – Lake River

- Nearly complete shoreline.



Sediment Cleanup

Ridgefield National Wildlife Refuge – Carty Lake

- Wood treating facility on Lake River, Ridgefield.
- Sediment cleanup:
 - Dioxins, PCP, chromium, arsenic.
 - Dredging in the dry.
 - Wooden bulkheads removed
 - New slope added



Sediment Cleanup

Ridgefield National Wildlife Refuge – Carty Lake

- Dredging to remove dioxins/furans.
- Transloading into trucks.
- Direct transport to landfill – no dewatering.
- Existing berm enhanced for a barrier and access during construction.
- Dewatering lines installed for onsite treatment.



Sediment Cleanup

Ridgefield National Wildlife Refuge – Carty Lake

- Placement of clean sand backfill to grade.
- Worked with USFWS to ensure wetland was functional.



Sediment Cleanup

Ridgefield National Wildlife Refuge – Carty Lake

- Wooden creosote bulkhead removed.
- New slope/embankment created.
- Slope stabilization.
- Hydro seeding.



Sediment Cleanup

Ridgefield National Wildlife Refuge – Carty Lake

- Embankments planted with native wetland vegetation.





Questions?

Comments?