WESTPORT SLOUGH

Project Description

The Westport Slough is located on the Oregon Side of the Columbia River at about river mile (RM) 43.5. The project provided for a channel 28 feet deep, 200 feet wide, and about 3,500 feet long.

Maintenance

Hopper and pipeline dredges have been used to remove material. In 1966 this project was dredged and 67,230 cy of material was removed to a depth of 30 feet. Hopper dredge were used to remove an average of 166,600 cy of material from 1986 to 1990. A pipeline dredge was used in 1986, 1989, and 1990 and averaging 439,000 cy of material.

Disposal is on the Oregon side at disposal areas O-45.1 and O-46.8 (for beach nourishment) and O-46.2 and O-46.8 as a borrow pit. The Washington side is also used at W-45.0 and W-46.0 to replace eroded material from the shoreline. Disposal at W-46.3 also provides flow control to reduce shoaling at the Upper Westport Bar.

Sediment

In 1990-2006 sediment was found to be predominately silty sand material.

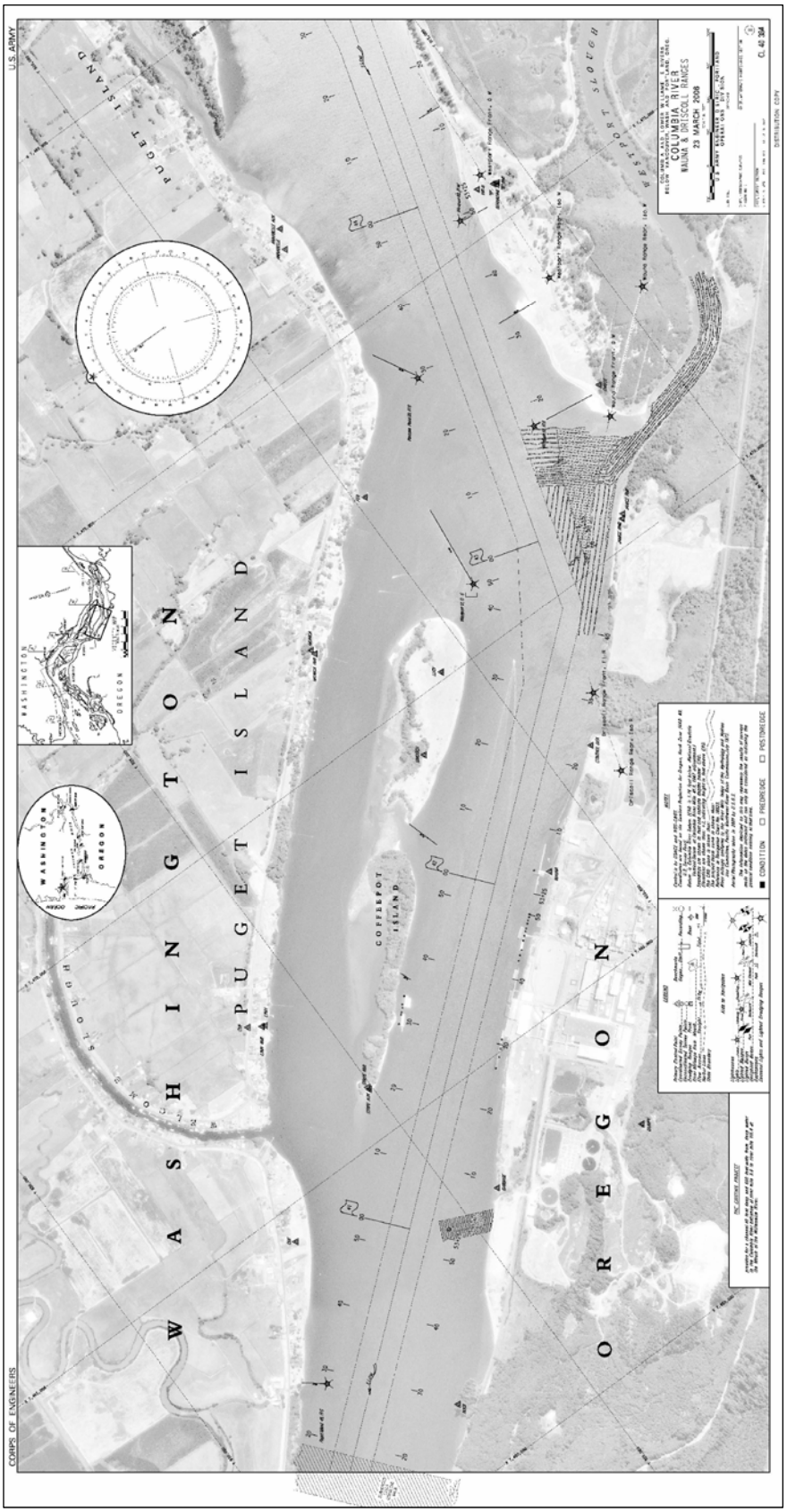

Figure 1: Westport Slough Vicinity Map

Sediment Evaluation

1990 May, four samples were taken by vibracore for physical and chemical analysis. Four of the samples were composited into two samples for chemical analysis. Composite #1 chemical analysis consists of metals, PAH's, pesticides, and PCB's by Battelle Pacific Northwest Division Marine Science Laboratory. There was no unusual concentration elevations of heavy metals. The pesticides PCB's, and PAH's were undetected. Material should qualify for in-water disposal. Composite #2 was tested for dioxins and furans. The most toxic dioxin was not detected. The furan 2,3,7,8-TCDF was detected at 0.89 ng/kg.

1998 June, Four sediment samples were taken by gravity core in the Columbia River on the Oregon side of the Wahkiukum/Westport Ferry channel. The samples were sent to Sound Analytical Services, Inc. laboratory of Tacoma, WA, for physical and chemical analyses, to include: metals, total organic carbon (TOC), pesticides/polychlorinated biphenyls (PCBs), phenols, phthalates, miscellaneous extractables, polynuclear aromatic hydrocarbons (PAHs), dioxins/furans and P-450 RGA (a dioxin/furan screen). All samples submitted were classified as "silty sand" (SM) with a mean grain size of 0.06mm (median 0.10mm), with 75% sand and 25.0 % fines. All chemical analyses were well below the screening level (SL). The proposed dredge material from this project is acceptable for both unconfined in-water and upland disposal. No significant, adverse ecological impacts are expected from such disposal in terms of sediment toxicity.

1999 July, The Corps of Engineers, Portland District personnel collected 2 sediment core samples and 4 water samples on July 9, 1999. The purpose of this sampling event is to characterize the sediment located on both the Westport Slough side and the Clatskanie River side of the earthen plug separating the two systems. The sediment cores were analyzed for physical analyses and composited for chemical analyses. The 4 water samples collected were composited to run an elutriate extraction and analyzed the same as the sediment composite (to include 9 metals, pesticide/ PCB, and polynuclear aromatic hydrocarbon) (PAH). The elutriate test was preformed to show the effect on the water column in the event the earthen plug is removed and sediment from either or both sides were eroded into the water column. No contaminates of concern were detected above the DMEF screening levels in the samples collected from the potential dredge (erosion) site. The sediment represented by the samples collected has been determined to be suitable for open in-water or up-land disposal without further characterization.

2005 July, A total of five (5) surface grab sediment samples were submitted for physical and chemical analyses. The combined averages indicate the material is 85.0% sand, 15% silt and clay, with 0.8% volatile solids. The chemical analyses indicated only low levels of some metals (Cu, Pb, Ni & Zn) in the samples, with all levels well below their respective DMEF screening levels (SLs); all laboratory method detection levels (MDLs) reported were below SLs. No pesticides, PCBs or PAHs were detected in any of the samples, also, with MDLs well below SLs.

All material was determined to be suitable for unconfined in-water placement without further characterization.

July 2006, The current sampling event was conducted to characterize sediment for potential dredging to 20-feet within the Westport Slough Channel to accommodate ocean-going barges. Previous sampling events were conducted to a shallower depth (11-12 feet) as the project was maintained only to provide safe passage of the shallow draft Wahkiakum/Westport Ferry. Sediment becomes increasingly finer-grained as you proceed into the Westport Slough Channel from the Columbia River Ferry Crossing Channel.

There are no known sources of contamination in the area upstream. Georgia Pacific (formerly James River paper mill) is located at Wauna 2.0 miles downstream; 1998 sediment was tested for Dioxin/Furans, with none detected in any samples at low laboratory detection levels.

On July 13, 2006 the sampling team attempted to sample the study area. Due to equipment mal-function samples were not collected that day. On July 19, 2006, a total of four (4) vibra-core samples and one (1) surface grab sediment sample were submitted for physical and chemical analyses. The combined averages for the core samples indicate the material is 66.4% sand, 33.8% silt and clay, with 2.55% volatile solids.

The chemical analyses indicated very low levels of PCB, DDT, phthalates, phenol and hexachlorobutadiene detected at levels estimated below the laboratory reporting limit but above the laboratory method detection limit. Samples contained various “low molecular weight” or “high molecular weight” PAHs, 4,4’-DDD and 4,4’-DDE at and above the laboratory reporting limit. All concentrations measured were substantially below the DMEF screening levels. All detected analytes or sum of analyte classes were well below DMEF screening levels. All laboratory detection levels are well below those listed in Table 8-2 of the DMEF.

All material is determined to be suitable for unconfined in-water placement without further characterization.