SIUSLAW RIVER

Local Sponsor: Port of Siuslaw

Project Description

An entrance channel into the Siuslaw, authorized at 18 feet deep and 300 feet wide, runs from deep water to RM 0.2. From there, the channel is 16 feet deep and 200 feet wide, to the dock at Florence at RM 5.0. The channel widens at bends in the river. A turning basin opposite the dock is 16 feet deep, 400 feet wide, and 600 feet long. From Florence, a 12-foot deep, 15-foot wide channel runs to RM 16.5. At RM 15.8, the channel widens into a turning basin 12 feet deep, 300 feet wide, and 500 feet long.

Maintenance: Siuslaw River Entrance

Shoaling at the entrance usually requires dredging to 20 to 22 feet to ensure the authorized depth of 18 feet between dredging operations. The entrance and south jetty shoals build during late winter and spring. The inside range and south turn shoals are affected more by river flood stages than by tidal action. A small hopper dredge removes material from the entrance shoals between April and October.

Maintenance: Siuslaw River

Shoals result from the river moving sand supplied by dunes to the south; in addition, shoaling results from movement of the river's normal bed load.

The lower river, from RM 0.0 to the Highway 101 bridge near RM 4.8, is usually dredged by the same hopper dredge that works the entrance bar. This reach is currently maintained to -12 feet MLLW to accommodate existing traffic. Removing shoals above the highway bridge with a hopper dredge is possible, but the lack of in-water disposal sites makes this dredging impractical.

The channel above RM 5.0 requires infrequent maintenance. A pipeline dredge last cleared the shoals at RM 5.5 and 6.0 in 1981. No dredging has been performed above that point since 1976. Some shoaling occurs from RM 5.0 to RM 16.0, but it has remained fairly constant and is not limiting traffic.

Sediment

The sediment at the entrance is sand, with an average in-place density of 2,000 grams/liter. Sediment from the Siuslaw River near RM 1.0 is sand, with an average in-place density of 1,850 grams/liter. Sediments collected in 1991 showed the

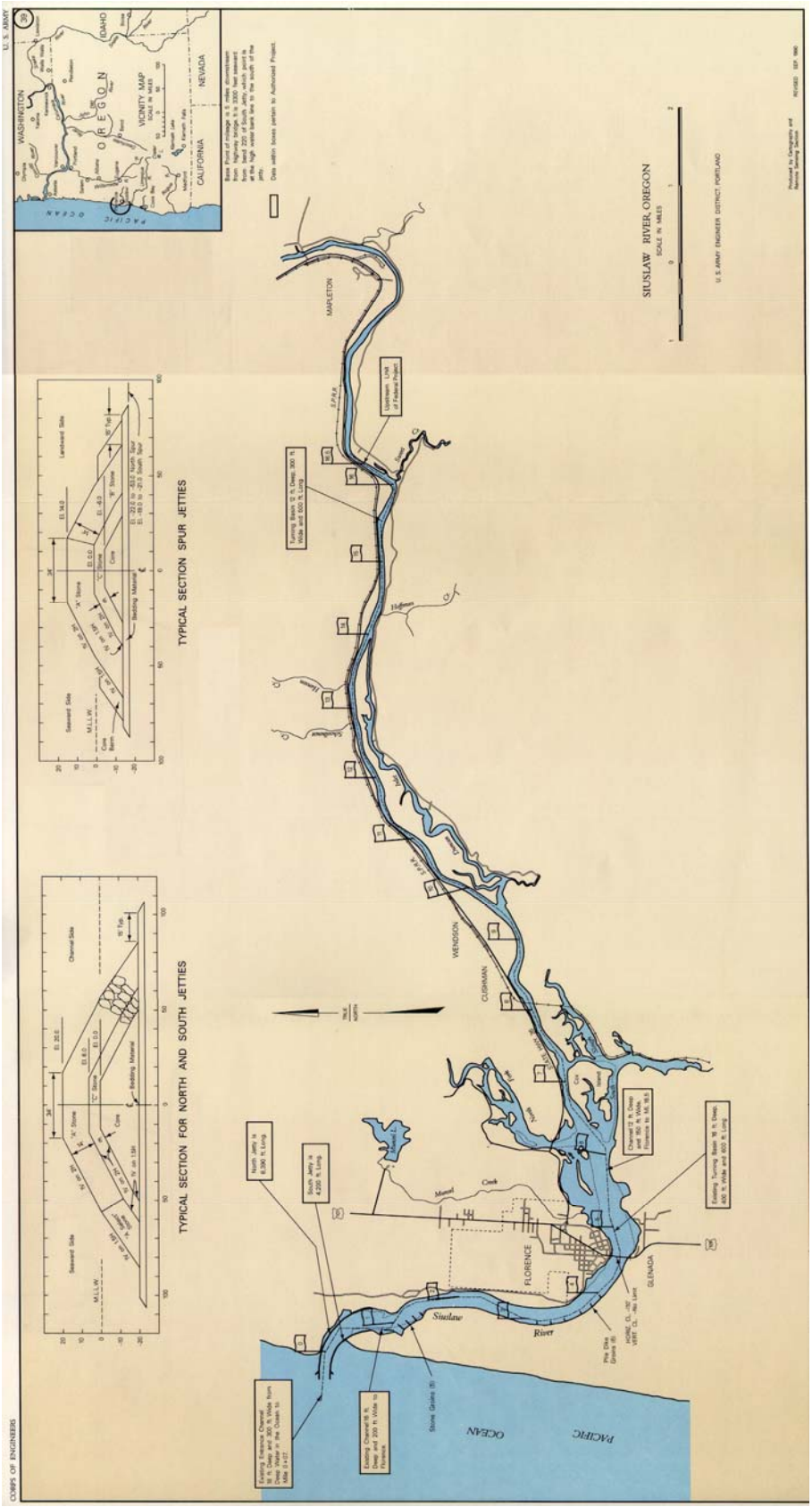

Figure 1: Siuslaw River Vicinity Map

material to be a poorly graded sand with an average of 99.9% sand, 0.1% fines, and 1.1% volatile solids. Mean grain size was 0.32 mm. Sediments within the federal navigation project are tested periodically, generally every five years, to ensure they are still suitable for ocean disposal. Generally, this testing is limited to physical analyses since the material meets exclusion criteria found in the MPRSA regulations.

Sediment Evaluation

1987, sediment samples from the federal navigation project were analyzed by the Portland District. Only physical analyses were conducted.

1991, sediment samples from the federal navigation project were analyzed by the Portland District. As with the 1987 analyses testing was limited to physical analysis except for one sample which was subjected to chemical analyses. Siuslaw River sediments are 99.9% poorly graded sand with a low volatile solids content (1.1%). The mean median grain size (0.32 mm) was that of medium sand. The results of the chemical analysis of one sample, S-1, taken from the turning basin at RM 5.0 near the town of Florence, had metals concentrations below established levels of concern. No pesticides, PCBs, PAHs, or phenols were detected.

1996 JUNE, Ten samples were collected using a ponar grab sampler which takes a sample approximately 9 cm thick that represents the surface sediments. These samples were subjected to physical tests including density, void ratio, volatile solids, specific gravity, particle size classification (ASTM D2487) and particle roundness. Siuslaw River sediments range from 100% to 92.7% (mean 98.6%) poorly graded sand with volatile solids content ranging from 1.4% to 0.3% (mean 0.8 %). The mean grain size is that of medium sand (0.294 mm). The material meets the exclusionary criteria of the Clean Water Act and therefore does not require any further testing prior to disposal.

2001 April, Eight (8) surface grab sediment samples were collected from the Siuslaw River. All samples were submitted for physical analyses (mean 0.29mm, with an average of 99.15 % sand and 0.81% fines), with 2 samples analyzed for metals (9 inorganic), total organic carbon (TOC), pesticides/polychlorinated biphenyls (PCBs), phenols, phthalates, miscellaneous extractables, polynuclear aromatic hydrocarbons (PAHs) and organotin (TBT) pore water analysis.

Sediment represented by samples collected during this sampling event meet the Tier II guidelines established in the DMEF for unconfined in-water placement without further characterization.

2006 August, Seven (7) surface grab samples were collected in the Siuslaw River from the entrance to River Mile (RM) 6. All samples were submitted for physical analyses, with grain-size ranging from 98.5% to 95.4% (mean 97.1%) poorly graded sand, with volatile solids content ranging from 0.69% to 2.24% (mean 1.14 %). One (1) sample was selected for chemical analyzes to include: metals, total organic carbon (TOC), pesticides/polychlorinated biphenyls (PCBs), phenols, phthalates, miscellaneous extractables, polynuclear aromatic hydrocarbons (PAHs) and two (2) sample were submitted for organotin (TBT) (total) analysis. The first sample analyzed for TBT was collected in the turning basin, adjacent to the marina (sample 6). Sample 7 collected in the federal channel by the fuel dock was submitted for all chemical parameters listed

above. Pore-water TBT was not run due to insufficient pore-water in the samples, a result of the high sand content.

Sediment represented by samples collected during this sampling event meet the Tier II guidelines established in the DMEF/SEF for unconfined in-water placement without further characterization.