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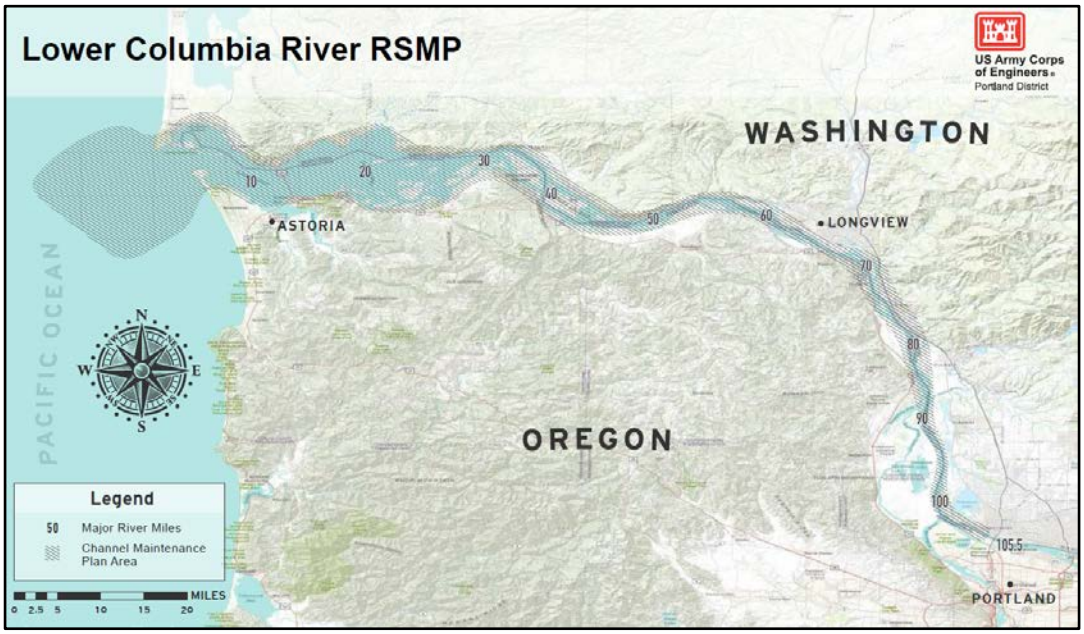
Regional Sediment Management Program Portland District (NWP):

Lower Columbia River – Regional Sediment Management Plan

Description

In 2015 a multi-year proposal to develop a Regional Sediment Management Plan (RSMP) for the Lower Columbia River (LCR) was submitted by NWP. The goal is to leverage RSM and appropriated funds to complete this plan by 2018. NWP has partnered with USGS for data collection the last two years. This data will allow NWP to develop a sediment budget, and ultimately inform shoaling rates and areas for the 106.5 miles of the deep-draft navigation channel. The RSMP is being developed (coincidentally) at the same time as the 20-year Channel Maintenance Plan (CMP). These two projects began aligning in 2016, and will serve to inform each other.



Lower Columbia River Deep-Draft Navigation Channel

Issue/Challenge To Address

Dredged material placement sites in the Columbia River have been increasingly harder to find. Historical upland and in-water placement sites are reaching capacity and there is a need to proactively manage annual O&M dredged material. Previous RSM projects have included AdH and PTM modeling of problematic reaches of the river, as well as an RSMP for the Mouth of the Columbia River. A comprehensive RSMP is needed to maximize dredging efficiency, while beneficially using the resource sediment in the process. Work will be done by NWP in conjunction with ERDC, with input from local and regional stakeholders.

Major components of developing the RSMP are developing a sediment budget, creating a stakeholder working group, identifying areas as sediment sources/needs, and completing an RSMP. Though the goal of this project is to develop an RSMP, the final step will be implementation of the plan and applying RSM principles to annual O&M navigation (and other) projects.

Successes Lessons Learned

Lessons learned will be compiled during the duration of this study.

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Lower Columbia River – Regional Sediment Management Strategy

Expected Products

- LCR Sediment Budget
- On-going development of a predictive sediment budget tool
- Regional Sediment Management Plan

Stakeholders/Users

NWP, ERDC, USGS, ODFW, WDFW, EPA, NOAA, DLCD, DOE, ODEQ, others

Projected Benefits Value Added

In 2016 the Columbia-Snake River System supported $24B in commerce. A reliable navigation channel is critical to the support of the region. Through the implementation of an RSMP annual navigation (and other) projects will be aligned with RSM projects. Specifically there tie-ins with habitat creation projects under CAP 204 and 536. The states of Oregon and Washington have been engaged on various projects supporting the beneficial use of dredged material, allowing NWP to leverage resources to develop projects that support RSM principles.

Leveraging Opportunities

This RSM proposal leverages NWP appropriated funds (FY17 $150, FY16 $150k, FY15 $220k) with RSM funds (FY16 $65k, FY15 $65k). These funds were used to set up a critical framework to develop the RSMP, including a MIPR to USGS for continuous data collection to determine sediment flux. NWP continues to fund USGS and ERDC to develop a sediment budget for the LCR (below Bonneville Dam) to be used to project annual dredging needs by reach and determine the best approach to meeting the NWP navigation mission while beneficially using the material. NWP will coordinate with USGS for additional data from the confluence of the LCR and Cowlitz River, in addition to the data collected at gauging stations at RM 52 and RM 106. In FY16 the results of FY15 data collected at the USGS gauging stations will be hindcast based on known dredging quantities to refine the estimating tool.

The District will complete an MMR on the two highest priority LCR pile dike structures in FY17. These reports will consider options for placing dredged material to extend the life of the structures and will also evaluate the continued function of pile dikes in passively maintaining the navigation channel (reducing the need for maintenance dredging) and protecting upland disposal sites. An expansion of the reports will be applicable to all 233 pile dike systems in the LCR, below Bonneville Dam.

The development of an RSMP for the LCR will set the framework for beneficial use projects in the future. Understanding the opportunities that exist for NWP to meet its navigation mission while also providing for ecosystem restoration, shoreline stabilization, etc; will be a driving component of this plan. The current 5-year O&M plan identifies placement sites through 2018. NWP will use the RSMP to inform development of a DMMP for O&M.

In 2013 a dredging VE study was conducted at NWP. As part of the initial literature review a number of the recommendations for dredging and disposal methods from the VE study will be evaluated. These recommendations included both beneficial use and least cost methods for channel maintenance.

Points of Contact

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Participating Partners

NWP, USGS, Columbia River Pilots, Port Commission Team