

FINAL DRAFT

**KING COUNTY DEPARTMENT OF NATURAL RESOURCES
YEAR 2000 CSO PLAN UPDATE PROJECT
SEDIMENT MANAGEMENT PROGRAM**

Cooperative/Demonstration Project Opportunities

Task 1300
Technical Memorandum

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EXECUTIVE SUMMARY

This technical memorandum identifies and evaluates various opportunities to develop cooperative and/or demonstration projects for remediation of seven CSO contaminated sediment sites addressed in the Sediment Management Plan (SMP). These sites were previously evaluated based on sediment impact modeling (Task 900), preliminary review of sediment remediation alternatives (Task 1000), sediment site prioritization (Task 1100), and sediment remediation alternatives evaluation (Task 1200). This analysis focuses on cooperative efforts that could potentially be implemented by the County.

Four of the seven CSO sediment sites are identified here as providing the most favorable opportunities for cooperative and/or demonstration projects. These include King Street CSO, Hanford Street CSO, Lander Street CSO, and the Chelan Street CSO.

Also identified and discussed are other cooperative project and funding opportunities associated with sediment cleanup in Elliott Bay and the Duwamish Estuary. These include: Seattle waterfront development projects involving the City of Seattle and various private parties; Duwamish River navigation improvement projects involving the Corps of Engineers, Port of Seattle, City of Seattle, and others; and Water Resources Development Act (WRDA) funding opportunities that may be available to King County and others for sediment cleanup.

Finally, a summary ranking of recommended cooperative opportunities is presented along with potential partners and possible funding sources for each potential cooperative project.

INTRODUCTION

The sediment remediation alternatives evaluation presented in the Task 1200 report for the seven CSO outfall sites, identified two of the sites as high priority (Duwamish/Diagonal and King Street) and three as medium priority (Hanford, Lander, and Denny Way.) Two additional sites (Chelan and Brandon) were identified as lower priority sites. The following discussion focuses on the potential to develop cooperative projects for the cleanup of these sites.

Cleanup of sediments at the Duwamish/Diagonal CSO is currently proceeding as an independent cleanup action under the direction of the Elliott Bay/Duwamish Restoration Program (EBDRP). Funding for this sediment cleanup project was previously allocated through the EBDRP. A portion of the sediment cleanup work at the Denny Way CSO site is currently proceeding at the request of Ecology and WADNR in coordination with King County's Denny Way/Lake Union CSO Control Project.

While sediment cleanup at both the Duwamish/Diagonal and Denny Way CSO sites is currently proceeding under existing arrangements that include major participation by King County, there do not appear to be reasonable further opportunities for an expanded County role within the context of the Sediment Management Plan (SMP). Therefore, both the Duwamish/Diagonal and Denny Way CSO sites were assumed for this analysis to provide a low potential for further cooperative involvement by King County.

Finally, of the two lowest priority sites, only the Chelan Avenue CSO appears at this time to have the potential and opportunity for cooperative cleanup, and primarily within the context of maintenance dredging and/or improvement of the Duwamish Waterway by the Corps of Engineers. These opportunities are discussed further in a later section of this memorandum.

Thus, from the seven CSO sediment sites investigated for the SMP, there are four sites that emerge as projects with the potential to support a cooperative or demonstration project approach for cleanup; the King Street CSO, Hanford Street CSO, Lander Street CSO, and the Chelan Avenue CSO. The cooperative opportunities that exist for these projects are discussed in the following sections of this memo. Finally, the potential for King County involvement in other cooperative cleanup and habitat restoration projects which lie outside of the County's normal jurisdiction are also discussed.

Because sediment remediation alternative technologies for the seven CSO sites were previously addressed in detail in the Task 1000 memo, this report focuses primarily on cooperative opportunities. Demonstration projects could be conducted at any of the sites identified here for cooperative efforts using those technologies described in Task 1000.

COOPERATIVE / DEMONSTRATION PROJECT FEASIBILITY

A critical factor dictating the feasibility of sediment cleanup at any one of the County's CSO sites is the degree to which ongoing contaminant sources are effectively controlled. (Recontamination is one of the seven factors of analysis used by Ecology to evaluate the feasibility of sediment cleanup and remediation). In the case of the seven SMP CSO sediment sites, the trigger signifying that source control is complete is flow reduction that meets the one overflow event/year criterion. The only CSO site that is currently scheduled to meet this flow reduction criterion in the near-term (i.e., 2003) is Denny Way (King County, 1999). If modeling results can demonstrate that contaminant source control or flow reduction can be completed within a 5-year time frame at any of the other CSO sites addressed in the SMP, or if modeling can demonstrate that existing controls are adequate to prevent sediment recontamination, then proceeding with sediment cleanup and site remediation is feasible in the near-term, and exploring a cooperative venture at these sites is highly desirable.

The Elliott Bay Recontamination Study (Aura Nova, Ecology, et al. 1995) concluded that (with the exception of the King Street CSO) none of the CSOs or storm drains along the Seattle waterfront currently discharge enough contaminants to result in recontamination above the sediment cleanup standards. However, the near-field probability analysis conducted as part of the Task 900 Technical Memorandum indicated that a localized zone (i.e., less than one acre) immediately adjacent to each CSO outfall has a higher probability of sediment recontamination given the current level of source control. Presently, definitive modeling results do not exist with which to demonstrate that recontamination in the near-field area around each of the CSO outfalls will be over a small enough area to justify moving ahead with cleanup in the absence of further source control. If modeling information can be generated which shows that 5 years is sufficient for source control at any one of these sites, then remediation can logically proceed and involvement in a cooperative or demonstration effort is warranted, as discussed below.

COOPERATIVE PROJECTS

King Street CSO

Long-term redevelopment plans for an expanded Colman Dock Ferry Terminal in the immediate vicinity of the King Street CSO site are currently being developed and evaluated as part of the ongoing South Downtown Waterfront Master Development Plan and Environmental Impact Statement (EIS). The Plan and EIS are being developed by Washington State Ferries, in coordination with the Port of Seattle and City of Seattle. Conceptual alternatives being considered include construction of new auto ferry slips positioned offshore (near the outer harbor line) and slightly north of the existing slips. An expanded passenger-only ferry terminal, potentially including a cruise ship terminal, may be located within the existing Pier 48 area immediately offshore of the King Street CSO outfall. Under this scenario, expanded ferry operations would be located within the existing King Street CSO footprint (Figure 1).

Development of a cooperative agreement between those entities involved may address the interests of all concerned. There are however, a number of issues that will need to be investigated. Sediment remediation at this site will need to take into account the potential impact of propeller scour given the level of development proposed. Preliminary evaluations of propeller scour within the King Street CSO area and at other locations along the central Seattle Waterfront, were performed by the EBDRP (Aura Nova, Ecology, et al. 1995). The screening-level modeling considered worst-case vessel operating characteristics, and thus provided an initial, conservative assessment of potential propeller-wash (i.e., prop-wash) scour and possible sediment cap armoring requirements. More detailed prop-wash modeling, using more typical operating assumptions may need to be performed prior to redevelopment and/or sediment cleanup.

Benefits of cooperative agreements would be primarily in the form of financial savings resulting from shared costs of sediment cleanup and disposal. The plan for site redevelopment places the incentive for cleanup in the hands of those entities seeking to move the project quickly forward. The participation and involvement of cooperative parties would be considered a key element in achieving this goal.

Hanford Street CSO

The U.S. Army Corps of Engineers (Corps) is responsible for maintaining channel navigation improvements to the East Waterway of the Duwamish in the vicinity of the Hanford Street CSO. Because the footprint of the Hanford CSO (Figure 1) extends into the navigation channel of the East Waterway, the opportunity exists to work with the Corps (and the Port of Seattle) in the cleanup of this site. For the past 20 years, the Corps and the Port of Seattle have been considering deepening the East and West Waterways, and deepening and widening the Duwamish Waterway. The final Feasibility Report and Environmental Impact Statement for these proposed actions were completed in January

1983. Thereafter, navigation improvements of the waterways were recommended to Congress. The Seattle District of the Corps initiated preconstruction engineering and design (PED) studies in October 1984 following receipt of congressional funding. Congress in PL 99-662 authorized construction of the project; however, PED was deferred in 1986 at the request of the Port of Seattle, the local sponsor.

Over the last several years, the Corps and Port have focused their navigation improvement efforts on the East Waterway, which is a critical element of the Port's Container Terminal Development Plan (Port of Seattle, 1991). Stage I of the East Waterway project, resulting in the dredging of key approach channels and berthing areas near Harbor Island to a depth of 51 feet mean lower low water (MLLW), is expected to be completed within approximately 1 year. Stage II of the project, which will include dredging of most of the rest of the East Waterway, including nearly all of the Hanford (and Lander Street) CSO footprints, is currently in the design phase. Because of the substantial overlap between these projects, Stage II of the East Waterway navigation improvement project is a significant cooperative project opportunity for the SMP. The Task 1200 report discussed in more detail, those removal alternatives (i.e., Alternatives 4 and 5) that are consistent with this opportunity.

Benefits to cooperating parties would be in the form of financial savings resulting from shared costs of sediment cleanup and disposal. Because the Corps and Port are moving ahead with Stage II of their navigation improvement project, cooperative parties have the opportunity to "piggy-back" on removal and disposal that will occur in and adjacent to the Hanford footprint.

Lander Street CSO

The cooperative opportunities available at the Lander Street CSO are consistent with those identified above for the Hanford Street CSO. Located just downstream (approx. 1700 ft) of the Hanford CSO, the navigation improvements described above for the East Waterway by the Corps and the Port of Seattle, also apply directly to the Lander Street site. Dredging activities in the main channel of the East Waterway could be extended to include those areas encompassing the Lander CSO footprint (Figure 1).

Benefits to cooperative parties would be similar to those described above for the Hanford Street CSO.

Chelan Street CSO

The Chelan CSO footprint stretches across the West Waterway of the Duwamish River (Figure 1) and lies within the Federal channel boundary. Possible navigation improvement efforts (i.e., sediment removal) by the Corps and Port of Seattle could include sediment areas affected by the Chelan CSO. For the past 20 years, the Corps and the Port of Seattle have been considering deepening and widening the Duwamish Waterway, including the area near the Chelan Street CSO footprint. The final Feasibility Report and Environmental Impact Statement for these proposed actions were completed in January 1983. Thereafter, navigation improvements of the waterways were recommended to Congress. The Seattle District of the Corps initiated preconstruction

engineering and design (PED) studies in October 1984 following receipt of congressional funding. Congress in PL 99-662 authorized construction of the project; however, PED was deferred in 1986 at the request of the Port of Seattle, the local sponsor. Although the Duwamish Waterway deepening and widening project represents an opportunity for a cooperative project at the Chelan CSO site, plans for this project are currently on hold.

Benefits to cooperating parties would be similar to those described above for the Hanford and Lander Street CSOs.

OTHER COOPERATIVE PROJECT OPPORTUNITIES

Because other entities are also dealing with similar issues and projects involving contaminated sediments and habitat restoration within Elliott Bay and the Duwamish Estuary, other cooperative project and funding opportunities may be available. Some of these potential project opportunities are discussed below:

Seattle Waterfront

Sediments at various locations along the Seattle waterfront are known or suspected to be contaminated (Turvey 1999, personal communication). Some of these sites include areas in and around; the Seattle Aquarium (Pier 59-61), the Edgewater Inn (Pier 67), and the Unocal site at the north end of the waterfront. Should redevelopment or other activities occur at these or similar locations that would warrant the initiation of sediment cleanup, the opportunity may exist to develop a larger cooperative effort that would include a partnership with those entities involved, and which could include King County, the City of Seattle and/or interested private parties.

Duwamish River

As a result of a petition from the National Oceanic and Aeronautic Administration (NOAA), the U.S. EPA recently completed an extensive sediment sampling and chemical characterization effort on the Duwamish Estuary. Over 300 sediment samples were collected during 1998, from the river mouth up to the turning basin at RM 6.2, and a data report is anticipated to be released in April 1999 (Bennett 1999, personal communication). The data results will be used to evaluate if contaminated sediments in specific areas of the estuary, or the entire estuary reach, merits listing as a National Priorities List (NPL) site. If a listing occurs, EPA could oversee and direct cleanup at the site(s) or defer this role to Ecology. EPA has indicated that the Regional Decision Team (RDT) will likely make a decision in September 1999 as to the status of the Duwamish based on the sampling conducted (Bennett 1999, personal communication).

Prior to making a decision regarding listing of the Duwamish, EPA and the RDT will evaluate what actions are currently being taken by those entities involved in cleaning up known, existing problems and will use this information to determine whether listing is warranted or not. EPA has stated that they are looking to see solid commitments for cleanup from those parties involved, rather than just vague plans or ideas. The expectation is that contaminated sediment areas in the river will be prioritized based upon the data analysis but that the cleanup approach needs to be unified among those entities involved in the cleanup.

King County CSO sites in the Duwamish will potentially be affected if the NPL listing noted above, should occur. Some entities are currently moving ahead on the cleanup of

various contaminated areas in the Duwamish (e.g., EBDP cleanup at Norfolk; Boeing is proceeding with sediment removal and upland disposal of sediments from the area off of their Plant #2 located south of Slip 4). The development of a cooperative cleanup program however, among the larger entities involved (i.e., Corps, Port of Seattle, City of Seattle, and King County), would appear to have merit.

Within the Duwamish, various projects may warrant consideration by King County as cooperative ventures with others. These projects could be done in conjunction with the CSO projects noted above and applying funding opportunities described in the following sections. These involve projects/proposals that are currently being explored by others and include: Slip 4 confined aquatic disposal facility (CAD) and habitat creation; and Slip 27 nearshore confined disposal facility (CDF). These projects were described previously in the Task 1200 report as options for dealing with the disposal of contaminated CSO sediments, should removal be selected as a preferred alternative.

The Slip 4 CAD facility would provide needed sediment disposal capacity for the local landowner (Crowley) and others, and would concurrently provide for remediation of some of the most contaminated sediments in the Duwamish Estuary. Filling and capping of the contaminated sediments with clean materials would create critically needed intertidal mudflat habitat which is now nearly absent in the Duwamish. Such habitat would provide highly desirable feeding and rearing habitat for fish. At this point in time there are no plans in place for a Slip 4 facility.

The Slip 27 CDF facility is currently being evaluated by the Corps and Port of Seattle East Waterway Deepening Project EIS. Filling of the slip with contaminated sediments and creation of a nearshore CDF would require substantial habitat mitigation elsewhere within the estuary to compensate for the filling of subtidal and intertidal habitat. The schedule for this project is not currently defined. However, the Port is under increasing pressure from its container terminal tenants to provide terminal improvements that would be accomplished by the Slip 27 CDF facility.

Potential benefits to cooperating parties that may result from participation in these cooperative ventures include:

- Availability and use of relatively low cost multi-user disposal sites (MUDS) for contaminated sediments;
- Intergration of habitat restoration and salmon recovery efforts with sediment cleanup; and
- Facilitation of overall TMDL and/or Superfund deferral efforts.

Water Resources Development Act (WRDA) Funding Opportunities

In addition to direct cooperation with the Port of Seattle for navigation improvement projects, as described above, there is also federal Water Resources Development Act

(WRDA) funding authorities that are potentially available to assist in the implementation of the SMP. Consistent with the overall mission of the U.S. Army Corps of Engineers and with the intent of the current WRDA authority as amended by Congress, federal funding assistance is potentially available for general navigation features (Section 101; e.g., Duwamish Waterway navigation channel maintenance) and for a range of environmental improvement projects (Section 201 through 210). Additional WRDA authorities are potentially available to provide further civil works assistance such as for flood control, though such authorities are likely not applicable to the SMP.

Section 101 - General Navigation Features (O&M)

This is the “traditional” dredging and disposal authority that includes new construction (Section 101[a]) as well as operation and maintenance (O&M) of federally authorized navigation channels (Section 101[b]). Because several of the CSO sediment sites are located within federally authorized navigation channels (e.g., Hanford, Chelan, and Lander CSO footprints), existing O&M authorities (Section 101[b]) can be readily applied within this area, subject to funding conditions. Typically, the Corps includes up to 2 feet of overdredging below the authorized channel. Under some project conditions, additional advance maintenance dredging of up to another 2 feet may also be included. This overdepth allowance would generally remove most of the contaminated materials present within the CSO footprints in the navigation channels.

The costs of dredging, disposal, and long-term operation and maintenance of a Section 101 general navigation project are shared between the Corps (federal sponsor) and a qualified non-federal sponsor (typically a state, county, port, or local entity) in accordance with current cost sharing provisions and formulas. Based on the range of authorized depths present in the SMP area, the current federal share of a general navigation project would be approximately 70 percent, while the non-federal share would be approximately 30 percent.

The basis for federal involvement in a waterway dredging project is the statutory authorization that is typically contained in an omnibus public works act. However, this authorization is not a mandate, it merely gives the Corps a basis for proceeding. The legislation authorizes the federal government to undertake and maintain the project but it is not legally required to do so unless:

- The local sponsor discharges its statutory obligations;
- There is a need for the maintenance activity; and
- The project remains economically justified.

Prior to the 1996 WRDA Amendments (e.g., see Sections 201 through 207 below), the least-cost disposal site was normally selected for all general navigation projects. Typically, the open-water, dispersive Puget Sound Dredge Disposal Analysis (PSDDA) site was commonly used for this purpose. (The Corps would likely budget on the order of \$4/CY for a project of this nature).

Based on a preliminary review of sediment quality data available within the SMP area (e.g., from the Denny Way, East Waterway, and Duwamish/Diagonal site), much of the prospective dredge material may not be suitable for unconfined, open-water PSDDA disposal. In this case, the Corps normally requests that the cost for suitable confined disposal facilities for these materials be borne entirely by the local sponsor. However, under some conditions, the Corps may provide financial support for disposal (e.g., see Section 205 and Section 207 discussions below).

In order for the project to be authorized, the national economic development (NED) benefits resulting from the action must exceed the total cost of the project. In making this determination, the Corps estimates the present worth value of increased navigation and commerce over a 50-year project life. It is not yet clear whether NED benefits outside the East Waterway would justify the project costs under a Section 101(b) authority. The total cost of the project must also fall within the authorized Corps O&M budget. These determinations would need to be made by the Corps and Congress following a feasibility analysis. Section 101(b) appropriations in this case may also be added to the other authorities, as outlined below.

Section 201 – Cost Sharing for Dredged Material Disposal Areas

The 1996 WRDA Amendments modified the earlier cost sharing provisions to include a consistent role for federal participation in dredged material disposal facilities, including confined aquatic disposal (CAD) and/or upland facilities. Specifically, the definition of projects eligible for federal authorization and cost sharing now includes the construction and operation/maintenance of those dredged material disposal facilities that are necessary for general maintenance dredging (i.e., Section 101[b] projects), given the following project conditions:

- Dredging and disposal of contaminated sediments which are in the navigation channel or which may affect maintenance of such channel;
- Mitigating the effects of operation and maintenance of navigation channels (such as the erosion of shoreline and beaches; potentially also including habitat impacts); and
- Operation and maintenance of dredged material disposal facilities.

These project conditions suggest that sediment disposal facility alternatives under consideration for the SMP area may be eligible for federal authorization and cost sharing. Under the 1996 WRDA Amendments, the costs of constructing, operating, and maintaining these disposal facilities, including diking and other improvements necessary for proper disposal, would be shared in accordance with the cost sharing established for general navigation features by Section 101 (see above). Based on the range of authorized depths present in the SMP area, the current federal share of a general navigation project would be approximately 70 percent, while the non-federal share would be approximately 30 percent. However, in order for the project to be authorized, the NED benefits resulting from the action (e.g., combining the present worth value of increased navigation and commerce and environmental restoration over a 50-year project life) must exceed the

total cost of the project. The total cost of the project must also fall within the authorized Corps O&M budget.

Although these determinations would be made by the Corps and Congress following a feasibility analysis, preliminary discussions with the Seattle District suggest that the authorized O&M budget is relatively limited, and not sufficient to fund such actions. The Corps has issued Policy Guidance Letter No. 47 to further explain Corps policy regarding cost sharing for dredged material disposal facilities and partnerships.

Section 204 – Restoration of Environmental Quality

This section expands the authority provided in Section 1135 of WRDA (1986) to allow implementation of environmental quality restoration projects in those situations where the project constructed by the Corps has contributed to the degradation of the quality of the environment, and the measures do not conflict with authorized project purposes. This provision provides the authority for the Secretary of Army to undertake restoration when the Secretary determines that operation of the project has contributed to the degradation of the quality of the environment. The share of the cost of such measures are 25% non-Federal / 75% Federal and no more than \$5 million may be spent from Federal funds on any single restoration project.

Congress has stated that a good example of a high priority area that may receive environmental restoration funding under this authority is the Duwamish River, which has been heavily altered as a result of a variety of Corps operations including dams, levees, and navigation channels.

Section 205 – Environmental Dredging (Section 312 Of WRDA 90)

Section 312 of the 1990 WRDA established a 5-year program to allow the Corps of Engineers to perform dredging in and adjacent to navigation channels for environmental purposes if costs are appropriately shared by non-Federal interests (typically on a 50-50 basis), and if justified based on benefit-cost analyses. Section 205 of the 1996 WRDA amended WRDA 90 Section 312 by authorizing the Secretary to remove as well as remediate contaminated sediments. The annual funding level was also increased from \$10 million to \$30 million, and removed the sunset that existed in the 1990 act. Congress also included five areas as priorities for Section 205 appropriations, including the Ashtabula River in Ohio. The Duwamish Waterway is not included on this list. The applicable authorities under this section include:

- Section 312(a) of the 1990 WRDA states that contaminated sediment outside the boundaries of and adjacent to the navigation channel may be removed as part of operation and maintenance of a navigation project. The justification for this is that the removal of contaminated sediment from areas immediately adjacent to the navigation channel may reduce the cost of future navigation dredging. The federal share for 312(a) dredging in this case is 100%, but no federal involvement is authorized for disposal or O&M of these materials. There would also be a

requirement to demonstrate commensurate environmental/economic benefits, primarily by avoiding the future use of additional confined disposal facilities, and to ensure consistency with Policy Guidance Letter No. 49 (see below).

- Section 312(b) of the 1990 WRDA states that contaminated sediment may be removed from navigable waters of the United States for the purpose of environmental enhancement and water quality improvement. The cost share for 312(b) is 50-50 for dredging, and no federal involvement is authorized for disposal or O&M of these materials. It is important to note that much of the prospective WRDA funding for the Ashtabula Partnership project is tied to Section 312(b) authorities, since the Partnership successfully demonstrated that dredging of these areas would result in relatively large environmental/economic benefits. However, a big difference between the Ashtabula and SMP areas is that there was no CERCLA or state cleanup authority that applied to most of the Ashtabula project area, whereas state SMS/MTCA and potentially also federal Superfund cleanup requirements do apply to the SMP area. This issue is discussed in more detail relative to the Corps' Policy Guidance Letter 49 (see below).
- Section 312(d) of the 1990 WRDA states that the cost of disposal of contaminated sediment removed under this section shall be a non-federal responsibility.

Policy Guidance Letter No. 49 (PGL 49)

On January 28, 1998 the U.S. Army Corps of Engineers issued Policy Guidance Letter No. 49. This policy stated that the authorities of Section 312 of WRDA 90 (Section 205 of WRDA 96) will not be used to remove or remediate contaminated sediment from a site designated by EPA or a state for a response action under CERCLA, or if they are part of a NPL site under CERCLA.

Shortly after the initial release of the Corps' PGL 49, on February 6, 1998 members of Congress sent a letter to General Ballard, Commanding General of the Corps of Engineers stating:

“Unfortunately, we believe PGL 49 as it is currently written is overly restrictive and negates the effectiveness of Section 312. The current language would prohibit the use of the authority if a CERCLA or state response action had been designated. Section 312 directs the Secretary of the Army to give priority to the Ashtabula and Lower Fox Rivers, where the U.S. EPA has developed the basis for a CERCLA or state administered response. Section 312 authority could be used to facilitate the complete and brisk removal of contaminated sediments on a voluntary basis while preserving the rights of the federal and state governments.”

The General responded in March 1998 and concluded that the original PGL 49 prohibiting the use of Section 312 authority for CERCLA designated sites was appropriate for the following reasons:

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- Limited Corps budgets are not adequate to provide up-front funding of the high costs incurred in the cleanup of aquatic CERCLA designated sites;
 - Advance removal of sediment from CERCLA sites weakens the “polluter pays” principle of CERCLA; and
 - The Corps may be exposed to liability associated with the removal, transport and disposal of contaminated sediment.

Because most of the SMP area has not been designated a CERCLA/NPL site, PGL 49 may not be directly applicable to the CSO sediment sites. However, substantive concerns raised by the General may still need to be addressed to secure Section 205 appropriation in this case. For example, the use of WRDA funds would likely need to preserve the “polluter pays” principle of MTCA (which is similar to CERCLA). This could potentially be accomplished by limiting the authority of Section 205 to only those actions that are above and beyond normal cleanup requirements. In addition, an appropriate hold harmless agreement may be required from Ecology to release the Corps from potential MTCA liability associated with the removal, transport and disposal of contaminated sediments related to application of the environmental dredging authority. Indemnification language currently being drafted by EPA and the Corps for possible application of WRDA environmental dredging authorities at the Commencement Bay Nearshore/Tideflats Superfund Site may aid in resolution of such a hold harmless agreement.

As discussed above, WRDA requires a suitable demonstration of commensurate environmental and economic benefits to justify environmental dredging costs. In the case of Section 312(a), these benefits include avoiding the future use of additional confined disposal facilities, at potentially great cost. Other economic benefits would also result from application of the environmental dredging authority in this case, including improved navigation and commerce within the deepened waterways, and facilitating substantial habitat restoration efforts associated with the CADs (see below). Thus, there may be ample economic justification for appropriation of environmental dredging funds to the SMP area.

Section 206 – Aquatic Ecosystem Restoration

This provision enables the Secretary to carry out ecosystem restoration and protection projects when the Secretary determines that such projects will improve the quality of the environment, are in the public interests, and are justified based on monetary and non-monetary benefits. Congress determined that there is a need for ecosystem restoration projects that involve manipulation of the hydrology but which are not linked to existing Corps civil works projects. The non-Federal share of costs is 50% for construction and 100% for operation and maintenance. No more than \$5 million in Federal funds may be allotted to a project in any single locality. This section authorizes \$25 million annually to carry out this section.

Unlike some of the other WRDA environmental authorities (i.e., Section 201 through 205), Section 206 appropriations have been made for various habitat restoration projects within the Seattle District. In 1995, a reconnaissance study was initiated by the Corps on ecosystem restoration in the Duwamish/Green River Basin. The reconnaissance study investigated 54 restoration sites throughout the basin. King County is the sponsor of the study. Thus, there may be ample justification for appropriation of aquatic ecosystem restoration funds to the SMP area, particularly when applied to a combined Slip 4 CAD and habitat restoration project.

Section 207 – Beneficial Uses of Dredged Material

This section increases the flexibility of the Secretary to select a disposal method for dredged material generated by a navigation project that may result in additional environmental benefits, despite the fact that such a method may not be the least-cost option. In cases where there are significant benefits to the environment, such as the creation of wetlands or the restoration of eroded shoreline, and where added costs are minimal, the Secretary may pursue other than least-cost options. Section 207 of WRDA 96 amended the earlier Section 206 of WRDA 92 so that the incremental costs of disposal to achieve environmental benefits, over and above the least-cost option, are shared between federal and non-federal sponsors as follows: construction – 75% federal; and O&M – 0% federal.

Depending on the cleanup alternative, Section 207 may be potentially applicable to the SMP action(s), or it may be used as further justification to apply the other available authorities outlined above (i.e., Sections 101(b), 205, and 206).

Section 209 – Cost Recovery

This section requires that moneys recovered under section 107 of CERCLA for response actions undertaken by the Secretary, as well as other cost recoveries for environmental response activities, be credited to the trust fund account that paid or will pay for the response action. There are instances where the Corps finds itself faced with cleaning up civil works properties that are contaminated with hazardous or toxic substances by other parties. In such instances, the Secretary can seek recovery from the responsible party under subsection 107 of CERCLA. This provision, which is similar to authority provided to the Secretary of Defense under the Defense Environmental Restoration Program, would enable a direct credit of the amount recovered to the trust fund account from the cost of the cleanup had been taken or will be used. To our knowledge, at this time, no plans for cost recoverable actions within the SMP area have been developed by the Corps.

Section 210 – Cost Sharing of Environmental Projects

This section establishes a 50 percent non-Federal share for costs of environmental protection projects, applicable to projects authorized after the date of enactment. WRDA 1990 established environmental protection as one of the missions of the Corps of Engineers. Section 103 of WRDA 1986 set forth the cost sharing formulas for water resources development projects, but did not include a cost sharing formula for environmental protection and restoration projects. This new (WRDA 96) provision creates a consistent cost sharing formula of 50-50 Federal/non-Federal responsibility for the costs of projects for environmental protection and restoration that could be applied to the various authorities for the Corps to carry out such projects.

A likely scenario for federal participation in the SMP would be that the Corps would perform all dredging within the federal channel areas, and would transport these materials to CDF and/or CAD facilities constructed and maintained by the PLPs (e.g., Port and King County). Under WRDA, the Corps may also be responsible for the development and adaptive management of habitat restoration components of the overall action(s), such as the Slip 4 mudflat.

RECOMMENDATION

The cooperative projects presented here offer cooperating parties a number of opportunities to move forward with cleanup at several of the CSO sediment sites. The potential for cooperative cleanup, opportunities available, potential partners, and funding availability are summarized in Table 1 in order of their recommended feasibility and/or apparent viability.

Table 1. Cooperative Projects Matrix.

CSO Site	Potential for Cooperative Cleanup	Cooperative Cleanup Opportunities	Potential Partners	Possible Funding Sources
<p>High-Priority Cleanup Sites:</p> <p>Duwamish/ Diagonal</p>	<p>Low</p>	<p>A sediment cleanup study of this site has been completed as an independent cleanup action under the direction of the Elliott Bay/Duwamish Restoration Program (EBDRP). However, cleanup implementation activities are currently stalled due to a lack of planning funds.</p> <p>In addition, the U.S. Army Corps of Engineers may perform dredging of the channel area of the site, if the action is performed as part of routine channel maintenance, and if a suitable sediment disposal location is identified.</p> <p>EPA is currently considering adding the Duwamish/Diagonal site, along with other areas of the Duwamish River, to the National Priorities List (Superfund).</p>	<p>Elliott Bay/ Duwamish Restoration Program</p> <p>U.S. Army Corps of Engineers and Port of Seattle (local sponsor)</p> <p>King County</p>	<p>As part of a Natural Resource Damage Assessment settlement agreement, King County and the City of Seattle previously allocated and committed resources to the Elliott Bay/Duwamish Restoration Program for cleanup of this site.</p> <p>Funding of U.S. Army Corps of Engineers dredging activities could occur under existing Water Resources Development Act authorities, and would require Congressional appropriations and participation of the local sponsor (Port of Seattle).</p>
<p>King Street</p>	<p>High</p>	<p>Long-term redevelopment plans are currently being developed for an expanded Colman Dock ferry terminal within the existing Pier 48 area, as part of the South Downtown Waterfront Master Development Plan. Washington State Ferries and the Port of Seattle recently initiated a sediment cleanup study of the site as part of this larger planning effort. Cleanup decisions are currently scheduled for spring and summer of 2000.</p>	<p>Washington State Ferries (WSF)</p> <p>Port of Seattle</p> <p>City of Seattle</p> <p>King County</p>	<p>Washington State Ferries and/or the Port of Seattle may decide to perform some or all of the required sediment cleanup as part of site redevelopment. King County could potentially accelerate CSO control and long-term monitoring as part of an overall cooperative implementation agreement.</p>
<p>Medium-Priority Cleanup Sites:</p> <p>Hanford Street</p> <p>Lander Street</p>	<p>High</p> <p>High</p>	<p>The Port of Seattle and Corps of Engineers are currently performing planning studies for dredging and confined disposal of sediments at this site as part of the East Waterway Stage II navigation improvement project. Sediment sampling has been completed. Dredging and disposal decisions may occur in late 1999.</p>	<p>Port of Seattle</p> <p>U.S. Army Corps of Engineers</p> <p>King County</p>	<p>The U.S. Army Corps of Engineers may perform dredging; King County and the Port of Seattle could potentially share disposal costs.</p>
<p>Denny Way</p>	<p>Low</p>	<p>King County recently completed a cleanup study of the site as part of the Denny Way CSO control project. Cleanup of portions of the site is currently proceeding under this separate program.</p>	<p>King County</p>	<p>As part of the year 2000 capital budget process, King County will consider a separate capital project request for remediation of inshore contaminated sites (areas A and B) for 2004 (i.e., after Denny Way CSO has been controlled).</p>
<p>Low-Priority Cleanup Sites:</p> <p>Chelan Avenue</p>	<p>Low</p>	<p>No cleanup studies have been completed at this site, although data have been collected by King County and others on the extent of sediment contamination, some of which extends into the federal navigation channel.</p> <p>The U.S. Army Corps of Engineers may conduct dredging of the channel area of the site if the action is performed as part of routine channel maintenance, and if a suitable sediment disposal location is identified.</p>	<p>U.S. Army Corps of Engineers</p> <p>Port of Seattle (local sponsor)</p> <p>King County</p>	<p>The U.S. Army Corps of Engineers may conduct dredging if dredging is performed as part of channel maintenance; disposal costs are uncertain.</p>
<p>Brandon Street</p>	<p>Low</p>	<p>No cooperative opportunities have been identified. The available data suggest highly localized sediment contamination at this site, not extending into the federal navigation channel.</p> <p>EPA is currently considering adding the Brandon Street site, along with other areas of the Duwamish River, to the National Priorities List (Superfund).</p>	<p>King County</p>	<p>No source identified</p>

REFERENCES

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