



# Duwamish River Cleanup Coalition

Community Coalition for Environmental Justice • Duwamish Tribe • Georgetown Community Council • Green-Duwamish Watershed Alliance ECOSSE • People for Puget Sound • Puget Soundkeeper Alliance • Washington Toxics Coalition • Waste Action Project

March 17, 2006

Ms. Karen Keeley  
U.S. Environmental Protection Agency  
1200 Sixth Avenue, ECL-111  
Seattle, WA 98101

## **Re: Draft Lower Duwamish Waterway Slip 4 Early Action Area Engineering Evaluation/Cost Analysis**

Dear Ms. Keely:

Thank you for the opportunity to review EPA's Draft EE/CA for the Slip 4 Early Action Area. The Duwamish River Cleanup Coalition (DRCC) represents ten environmental, community, tribal and small businesses organizations affected by the contamination and cleanup of the lower Duwamish River; we collectively serve as the Community Advisory Group (CAG) to EPA on the Superfund site cleanup. As the site CAG, DRCC hosted a Community Workshop on the Draft EE/CA and EPA's recommended alternative led by our Technical Advisor, Dr. Peter deFur, on February 27, 2006, which was attended by 55 community members, and participated in EPA's Public Meeting on the Draft EE/CA on March 7, 2006, attended by ~120 people. We have conferred with our Technical Advisor, our member and partner organizations, and interested members of the Georgetown and greater Seattle community in developing our comments on the Draft EE/CA and proposed cleanup plan for Slip 4.

### **General Comments**

The organizations and communities represented by the Duwamish River Cleanup Coalition have serious concerns and reservations about cleanup plans for sites along the Duwamish River that leave substantial volumes of PCBs and other persistent toxin chemicals in place. The proposed cleanup alternative for the Slip 4 Early Action Area proposes removing some of the highest concentration contaminants (greater than 1,000 ppm-OC) at the surface, then building an engineered remedial "cap" to cover and contain significant volumes of PCBs to be left at depth (up to 475 ppm-OC at the dredge cut and 690 ppm-OC at greater depths). Given the relatively short history of engineered remedial caps (~20 years), capping technologies are still incompletely demonstrated, their long-term effectiveness is theoretical, and it is unknown whether the integrity of such caps will in fact erode or prove sufficiently protective over time. In addition, given the location of the Slip 4/Duwamish River site directly over the Seattle fault, any chemicals left at depth are at risk of release to the environment and the public in the event of a significant seismic event. For these reasons, we prefer all PCBs and similarly toxic substances be removed from the river basin, rather than buried under a cap that may be subject to future erosion or seismic and other catastrophic

events. As a general policy, we do not support EPA's policy of allowing such materials to be capped in place. Further, we support treatment of contaminated sediments wherever feasible, and challenge EPA to aggressively pursue alternative treatment technologies in order to craft environmentally responsible long-term solutions that offer true "cleanup" of contaminated sediments.

Given EPA's policies and past decisions on remedial caps, and Region 10's statements on the proposed plan, it is clear that the agency plans to allow capping at the Slip 4 Early Action Area, despite the issues raised above. For that reason, our comments will focus on the recommended alternative (Alternative 2) presented in the Draft EE/CA. **Given the alternatives presented, the recommended alternative has our qualified support, based on satisfactory resolution of the issues and comments detailed below.** We recognize the logistical and engineering difficulties, as well as cost, of full contaminant removal in the slip. While we would not support such capping of PCBs in place in the main river channel, our support for the recommended alternative is based in part on engineering considerations, as well as the relatively contained, off-channel geography of the Slip 4 site and the current lack of plans to treat the removed material. It is important to note, however, that there are still significant numbers of community members and stakeholders who prefer full removal, preferably *with* the habitat enhancements offered in Alternative 2. We recognize that the cost of this option would exceed \$20 million, making its selection by EPA highly unlikely. However, if one of the other alternatives described in the Draft EE/CA is selected in lieu of Alternative 2, it is imperative that the revised proposal be brought back to the community for further consideration.

### Summary of Recommendations

1. Include documentation of the effectiveness of capping contaminated sediments under conditions similar to this case. An appendix or separate report would be appropriate for this purpose. The present reference to EPA experience without documentation is not sufficient.
2. The EE/CA needs to explain how the cap can be designed to remain intact and functional with the hydrostatic pressure of groundwater from adjacent uplands beneath and beside the cap.
3. Source control is incomplete. Until source control is significantly farther along, the cleanup of Slip 4 is threatened by recontamination from ongoing contamination, especially from storm drains and industrial discharges. Uninspected potential sources, including areas of Boeing Plant 2, should be subject to inspection as soon as possible.
4. There is a "hot spot" on the south side of the Slip in the vicinity of stations SL4-10 and SL4-10A that should be removed when the dredging is conducted. This area needs to be added to the areas to be dredged.
5. "Natural Recovery" is not appropriate for contaminants that do not degrade, do not breakdown or will remain toxic for many years or even permanently. PCBs and heavy metals found in Slip 4 fall into this category. The EE/CA should not include "natural recovery" as a part of the remedy for these contaminants.
6. The design of the cap should be independently reviewed by several technical experts with capping experience and who are not associated with this project.

7. Monitoring is needed annually for at least the first 3 years. The monitoring needs to include inspection for siltation, damage and maintenance needs, as well as cap chemistry, habitat integrity and shellfish quality.
8. The EE/CA should include a reference to or documentation of negotiations between the City and Crowley Marine Services, Inc. for purchase of the Slip 4 property.
9. Clear provision should be made for institutional controls to prevent ships from entering the inner portion of the Slip, i.e., navigational markers or barriers, to prevent ships or prop wash from damaging the cap.
10. The EE/CA should reference the measures or contingency plan to be implemented in the event that the cap does not function as well as anticipated, including performance standards to be met and designation of responsible parties.

### **Alternative 2/Recommended Alternative: Advantages and Limitations**

The recommended alternative proposes dredging the most contaminated surface sediments at the head of the slip and building a cap over the remaining contaminants while creating new intertidal habitat. The shoreline of the inner slip would be substantially modified as part of the shoreline redesign, with the goal of providing enhanced natural habitat for salmon and other wildlife.

This plan was preferred by the City and County and is proposed by EPA. It will create the largest area of enhanced habitat, modify the shoreline to be more natural, remove contaminated surface sediments where the highest PCB concentrations are found, minimize dredging impacts and take the inner Slip out of navigational use. The goal is to provide for habitat restoration while removing the worst contamination.

The advantage of this plan is habitat enhancement and creation. The shoreline will be modified and the cap used to create intertidal habitat that grades to the existing shoreline. The purchase of land will ensure that the habitat area remains in public control and is protected from disturbance. The property at the head of the Slip may be usable as parkland or for public access in the future. Of the alternatives presented, this plan is most compatible with the neighborhood vision for the long-term use of this area.

The most significant limitation of this alternative is that it leaves much of the contaminated sediment in place, attempting only to remove the most contaminated surface sediments at the end of the Slip. However, there is “hot spot” of contaminated sediments with elevated PCB and other chemical concentrations not included in the dredge area. If this alternative is chosen, the dredged areas should include this contaminated “hot spot” in the immediate vicinity of station SL4-10/10A. This area is just west and south of the edge of the area now planned for dredging in Alternative 4, and has high levels of PCBs in surface sediments to two feet deep. Removing the sediments in this area would add minimal cost and would remove another area of high concentration contamination.

The EE/CA notes that EPA has had good success with capping under similar conditions in this region of the country. However, there is no documentation of this claim in the EE/CA and no reference to any documentation that corroborates this claim. EPA needs to provide

documentation of their cited success capping contaminated sediments, including documentation of the effectiveness of capping technology and reference to reports that summarize the advantages, disadvantages, limitations, etc. of capping technology. Without this information, the public does not have the information necessary to make an informed assessment and will have a difficult time accepting a capping remedy for the site. An appendix or separate report would be appropriate for this purpose. The present reference to EPA experience without documentation is not sufficient.

The Draft EE/CA also does not include any details on how the cap can and will be designed to accommodate site conditions that may or will threaten the cap. Such site conditions include the groundwater pressure from adjacent uplands. This groundwater will present hydrostatic pressure beneath and on the sides of the capped area of the Slip; this water infiltration may threaten the integrity of the cap and the design needs to account for this. The proximity of geological faults in the lower Duwamish River means that the cap will have to be designed and built to withstand earthquakes. The EE/CA does not give enough information on the cap design to satisfy concerns and convince the public that such concerns can and will be addressed.

### **Dredging Containment/Residuals**

The Draft EE/CA states that few precautions need to be taken during dredging at the Slip 4 site to prevent the spread of contaminated sediments or residuals. This is likely overly optimistic and should be revised. Given the geography of the Slip 4 site, it is relatively easy and cost-effective to take measures to contain contaminants during dredging in Slip 4. Weighted silt curtains, a temporary retaining wall, or other engineered barrier should be employed to prevent migration of contaminated sediments to the outer slip and the river during dredging. While silt curtains are not effective in all environments, the lack of pass through currents and the contained geography of the slip make them relatively simple to employ and more likely to be effective within the Slip 4 site. We recommend physical containment with a silt curtain or similar barrier, and frequent water quality monitoring at the border and before the slip enters the river. These measures may have the added benefit of restricting fish access to the inner slip during dredging and cap construction as well.

### **Habitat Value and Protection**

The habitat enhancement provisions of the shoreline redesign and cap elevations to build intertidal habitat together offer a substantial advantage. The proposed habitat enhancement has the potential to provide a permanent, positive change in the nature of the shoreline and immediate upland habitat.

EPA should include several safeguards in order to ensure that the habitat performs as anticipated. Clear requirements to maintain and repair the constructed habitat must be included in the EE/CA and EPA cleanup order. Estimates of the area expected to be subject to scour near the outfall(s) should be presented, the scour footprint should be minimized through optimal design and channeling of the scour pathway, and clear commitments to maintain and repair the habitat areas outside of the designated scour footprint need to be

included in the EE/CA. In addition, EPA should include clear administrative requirements in its cleanup order that the habitat area and quality in the recommended alternative must be maintained.

### **Source Control**

The source control activities and plan are described in Appendix B and in a separate report (DRAFT Lower Duwamish Waterway Source Control Action Plan for the Slip 4 Early Action Area, Department of Ecology, 2006). The Washington Department of Ecology has the primary responsibility for conducting the source control program.

Source control for the Slip 4 Early Action Area is not complete, as all parties are aware. Fortunately, the effort is underway and several actions have already been taken to identify and eliminate sources. The problem is that if source control is not substantially complete by the time the Slip 4 cleanup is complete, regardless of the remedy selected, then the cleaned areas may be recontaminated.

Significant additional investigation and source control must occur prior to cleanup of Slip 4. DRCC is reviewing the Department of Ecology's Source Control Action Plan for the Slip 4 Early Action Area, and opposes conducting a cleanup prior to implementation of a successful source control plan. Given recent PCB results from the Steam Plant flume and numerous Boeing Plant 2 drains, cleanup is currently premature. While the quickest possible cleanup is of critical importance, the cleanup must also be ensured over the long term. In the event of recontamination, the public will have to bear any returning risks for an unacceptably long period, if the recontamination is cleaned up at all, and will bear the cost of the additional cleanup.

Recontamination would be more than simply an unfortunate outcome; it would indicate poor planning and lead to public distrust. Source control must be assured prior to cleanup of the Slip 4 Early Action Area.

In addition to the data collected to date, the source control effort will need to include an evaluation of the data from the Boeing Plant 2 groundwater wells along the southern border of the slip. To date, this information has not been provided in any public documents. The in-line sediment data from all drains to the slip also need to be collected with more accurate and sensitive equipment than currently being employed for investigations along the Duwamish. Engineered, more efficient sediment traps for measuring contaminant levels throughout the CSO and storm drain system are available and should immediately replace the less accurate traps currently employed.

### **Sediment Treatment**

The section on sediment treatment in the EE/CA is substantially improved from the previous draft document, but still dismisses alternative technologies, specifically BioGenesis, based on incomplete information and reliance on previous reports that are deeply flawed. This section should not be finalized and approved until it has been reviewed with EPA's internal experts

and the SITES Program, including Eric Stern of EPA Region 2, whose division has conducted mass balance testing on the BioGenesis treatment process and is currently completing a full scale commercial application of the technology.

### **Cap Monitoring and Maintenance**

The Draft EE/CA calls for monitoring of the cap every five years for 30 years. The proposed monitoring is not enough to insure that the initial placement of the cap and material to prevent scouring is functioning as planned and designed, or that recontamination is not occurring (at the Duwamish/Diagonal CSO Early Action Area cleanup, recontamination above SMS and CSL levels occurred within one year). The remedy needs to be inspected at least annually for the first five years, and some monitoring conducted in each of the first three (3) years to confirm various assumptions in the design and determine if source control has been effective. Monitoring is also needed to confirm the integrity of the remedy, that no contaminants are leaking, that water influx has not created a problem, that scouring has not taken place, and that navigational activity has not damaged the remedy.

In addition, it is critical that monitoring of shellfish that colonize the cap be included in the long-term monitoring plan, and that protection of shellfish be included as a performance standard that must be maintained over the life of the cap.

It is not only conceivable, but should be expected that some maintenance will be needed for the armoring, especially at the head of the Slip where the drains are still in place. In addition, shorelines need to be inspected for slumping and the outfall and sidewall areas for scour, erosion and slumping.

The capping plans expect and even rely on a certain sediment deposition in the new substrate. Some measurements should be taken to confirm that this sediment deposition is taking place as expected and is not actually a source of contamination.

Given EPA's confidence in capping as a remedy for toxic chemicals in Slip 4, EPA should make a clear commitment to maintain high quality habitat, a clean cap, and healthy shellfish in the Slip 4 Early Action Area, including a commitment to repairing or replacing the remedy in the event of any degradation of habitat, the cap or shellfish quality.

### **Public Comment and Review**

The Draft EE/CA leaves out some key information that is crucial to the public's understanding of and ability to make an informed decision about the preferred cleanup alternative. This information includes the questions above about capping design and function, as well as regional cap effectiveness, successes and failures. EPA should consider keeping the public comment period open while information about these unresolved questions and issues are addressed by EPA, Ecology, the City and the County. Following publication of additional information needed to address these issues, EPA should allow consideration by the public and host a public informational meeting. These steps will make it possible to provide

more information to the public, give the public an opportunity to evaluate the new information, and to answer questions from the public.

### **Specific Comments**

Page 16: Site Characterization, Biota, Salmonids

NOAA has recently completed study on salmonid PCB levels which should be included here.

Page 22: Summary of Environmental Data, Sediment Investigations, Comparison of Historical and 2004 PCB Results

It is critical that the City, County, EPA and Ecology determine whether the decline in surface sediment PCB concentrations is due to source control improvements or physical processes. This determination has major implications for remedial design as well as determining additional source control needs for the site.

Section 4.2 retains the use of Natural Recovery (enhanced or monitored) for sediments in Slip 4. Natural recovery is not an effective remedy for most contaminants in Slip 4 and this remedy should not be retained. The Slip 4 contaminants include PCBs, metals, PAHs and phthalates, only some of which are changed by natural processes. PCBs are incredibly stable and degrade or breakdown only slowly, and perhaps not measurably in deep anaerobic sediments. Metals do not breakdown or degrade at all. Only the PAHs, phthalates and some other organic materials will breakdown or degrade measurably over time in favorable natural conditions.

Section 5.3.1 refers to using enhanced natural recovery (ENR) as part of Alternative 3 for the inner area of the Slip. According to the text pages 101- 106, the difference between a cap and ENR is the thickness of the material that will cover contaminated sediments left in place. The cap is many times thicker than an ENR, which consists of a layer of only a few inches of sand. The primary contaminant of concern, PCBs, will not appreciably breakdown or degrade over time, and it is inconceivable how ENR will work in this case. Indeed, the U.S. experience with PCB cleanups is that the contamination remains in place for decades. Of course the metals will not breakdown or degrade; they will remain in the sediments forever or until physically disturbed. ENR should be dropped from this alternative, and instead either remove or cap the contaminated sediments.

Section 5.4.1 indicates that Alternative 4 will also use ENR, presenting the same problems as described above for Alternative 3. ENR should be dropped from this alternative.

Thank you for the opportunity to comment on the Draft Slip 4 Early Action Area EE/CA. Please do not hesitate to contact us if you have any questions.

Sincerely,

*BJ Cummings*

Coordinator