2008 Source Control Status Report

The Department of Ecology (Ecology) published a Source Control Status Report in May 2008. The status report explains the source control work done between July 2007 and March 2008. For complete details, read the full report online at http://www.ecy.wa.gov/pubs/0809063.pdf.

The Lower Duwamish Waterway

The Lower Duwamish Waterway (LDW) Superfund site includes the lower 5.5 miles of the Duwamish River, and also contains many state cleanup sites. The site extends from the southern tip of Harbor Island to south of the Norfolk Combined Sewer Overflow*. The sediments* in the waterway are contaminated with various pollutants from industrial activity, combined sewer overflows, and run off from residential and commercial areas. Chemicals of concern in the waterway include polychlorinated biphenyls, metals, polycyclic aromatic hydrocarbons, dioxins, and other organic compounds.

The Washington State Department of Ecology (Ecology) and the U.S. Environmental Protection Agency (EPA) are working to clean up contaminated sediments and control sources of recontamination in the Lower Duwamish Waterway in cooperation with the City of Seattle, King County, the Port of Seattle, and The Boeing Company.

What is Source Control?

Source control is the process of finding and then stopping, or reducing releases of contaminants to waterway sediments. The goal of source control is to keep sediments from being contaminated again after cleanup occurs.

To accomplish these goals Ecology leads the Source Control Work Group. The Source Control Work Group plans, coordinates, conducts, and evaluates source control efforts. The members and their roles are explained in the blue box to the right.

Ecology divided the Lower Duwamish Waterway into 23 source control areas (or sub-drainage basins) that need investigation. These are shown on the map on pages four and five. The 2004 Source Control Strategy breaks source control efforts into four tiers. Tier one source control areas are the seven Early Action Areas (EAAs). EAAs were identified

Source Control Work Group Member Agencies and Responsibilities

Department of Ecology
Overall lead for source control, contaminated site cleanup, regulates storm water and other discharges.

King County
Lead for wastewater treatment; reducing combined sewer overflows and controlling industrial waste discharges to the sewer system.

City of Seattle
Lead for source control for it's storm drain and combined sewer systems.

City of Tukwila
Lead for source control within their storm drain system.

Port of Seattle
Lead for source control for Port properties through tenant inspections.

US Environmental Protection Agency
Lead for sediment investigation/ cleanup, source control lead for Terminal 117, Boeing Plant 2 and Rhone-Poulenc cleanup sites, and source control technical assistance.

* See Definition Side Bar on Page 6.

in the Technical Memorandum done by Windward Environmental in 2003. Tier two areas are those identified in the Phase Two Remedial Investigation and EPA Record of Decision as needing cleanup. Tier three source control areas don't drain to an identified sediment cleanup area. Source control is needed in these areas to prevent future contamination of the waterway. Tier four source control areas are where sediment has become recontaminated after cleanup.

Ecology develops Source Control Action Plans for each source control area. The Source Control Action Plans describe potential sources of contamination that may affect sediments. The plans also describe source control actions that are planned or underway, and sampling and monitoring that must be done to find more sources. Ecology finds those responsible for contamination and works with them to control contamination. For more information on Ecology's approach to source control, the Source Control Strategy is available on our website: http://www.ecy.wa.gov/programs/tcp/sites/lower_duwamish/source_control/sc.html.

Working Together to Control Sources

Ecology Source Control Action Plans

Ecology continues working on Source Control Action Plans (SCAPs) for the Lower Duwamish Waterway. The first step in developing a SCAP is to summarize existing site information and find out what is missing (data gaps). From July 2007 to March 2008, Ecology began work on data gaps reports for the following areas:

- Early Action Area-6 (Boeing Isaacson/ Central King County International Airport).
- River Mile 0-0.1 East (Spokane St. to Ash Grove Cement).
- River Mile 0.9-1.0 East (Slip 1).
- River Mile 1.4-1.7 East (St. Gobain to Glacier Northwest).
- River Mile 1.7-2.0 East (Slip 2 to Slip 3).
- River Mile 2.0-2.3 East (Slip 3 to Seattle Boiler Works).
- River Mile 2.3-2.8 East (Seattle Boiler Works to Slip 4).
- River Mile 3.9-4.4 East (Slip 6).

The next step is to publish the final SCAP for each area. Since the previous Source Control Status Report was published in July 2007, SCAPs have been published for:

- Early Action Area-4 (Boeing Plant 2/Jorgensen Forge).
- Early Action Area-7 (Norfolk CSO/SD).
- River Mile 1.3-1.6 West (Glacier Bay).

As of March 2008, Ecology has published seven SCAPs that identified 246 source control action items. Of the 246 action items:

- 61 are complete.
- 54 need to be done before sediment cleanup.
- 76 need to be done before or along with sediment cleanup.
- 55 are ongoing actions or actions to be done as resources are available.

Seattle Public Utilities (SPU)/King County Source Tracing

Source tracing samples were collected to find sources of chemicals of concern in:

- Key manholes in the combined/sanitary sewer (King County).
- In-line sediment traps in the storm drain systems (SPU).
- Onsite catch basins (SPU).
- Catch basins in the public right-of-way (SPU).
- In-line grab samples from storm drain main lines (SPU).

King County Combined Sewer Overflow (CSO) Technology Pilot

The King County Wastewater Treatment Division plans to test CSO treatment technologies. The pilot will assess feasibility for CSO treatment.

The county held a workshop on December 18, 2007 to share information about the technologies being considered, and to hear stakeholder views on technologies to consider for testing and pollutants of

* See definition side bar on page 6.

concern. Test results will support decision-making on future control options. Control options include:

- Stormwater control or separation from the sanitary sewer.
- Conveyance improvements.
- Storage and transfer to secondary treatment plants.
- Local (satellite) near existing CSO outfalls.

Since 1990, the King County Wastewater Treatment Division has reduced CSOs in the Duwamish from 784 million gallons per year to 79 million gallons in 2006-07. For more information visit: http://dnr.metrokc.gov/wtd/cso.

Urban Waters Initiative

Under the Urban Waters Initiative, inspectors from Ecology's Water Quality and Hazardous Waste programs are working with Seattle Public Utilities (SPU) and King County inspectors and Ecology Toxics Cleanup Program staff on inspections in the Duwamish area. They created a master list of facilities, priorities for coordinating inspections, and a checklist for source control inspections. During 2007, SPU did 198 source control business inspections. This includes re-inspections to ensure compliance and screening inspections to learn about site activities. Ecology has done NPDES* inspections at 16 facilities since July 2007. The King County Industrial Waste Program is providing relevant information about stormwater issues as it inspects industrial wastewater pretreatment in the Duwamish area.

Upcoming Sampling

Ecology plans to do the following sampling:

- Stormwater sediment from industrial facilities. The goal is to evaluate the potential for these types of facilities to contaminate sediments and to estimate the amount of pollutants being added to the sediments.
- Sampling to characterize the nature and extent of contamination of the upland shoreline along the Lower Duwamish Waterway. Possible sampling places include sand beaches with pilings, armored riprap, fill material, and slag piles from industrial operations. Samples will be collected from the intertidal zone above four foot elevation, and from above the mean high water line. A Sampling and Analysis Plan for this effort will be prepared during late summer 2008.

Recent Source Control Activities

Tier 1 Areas

Early Action Area-1 (Duwamish Diagonal)

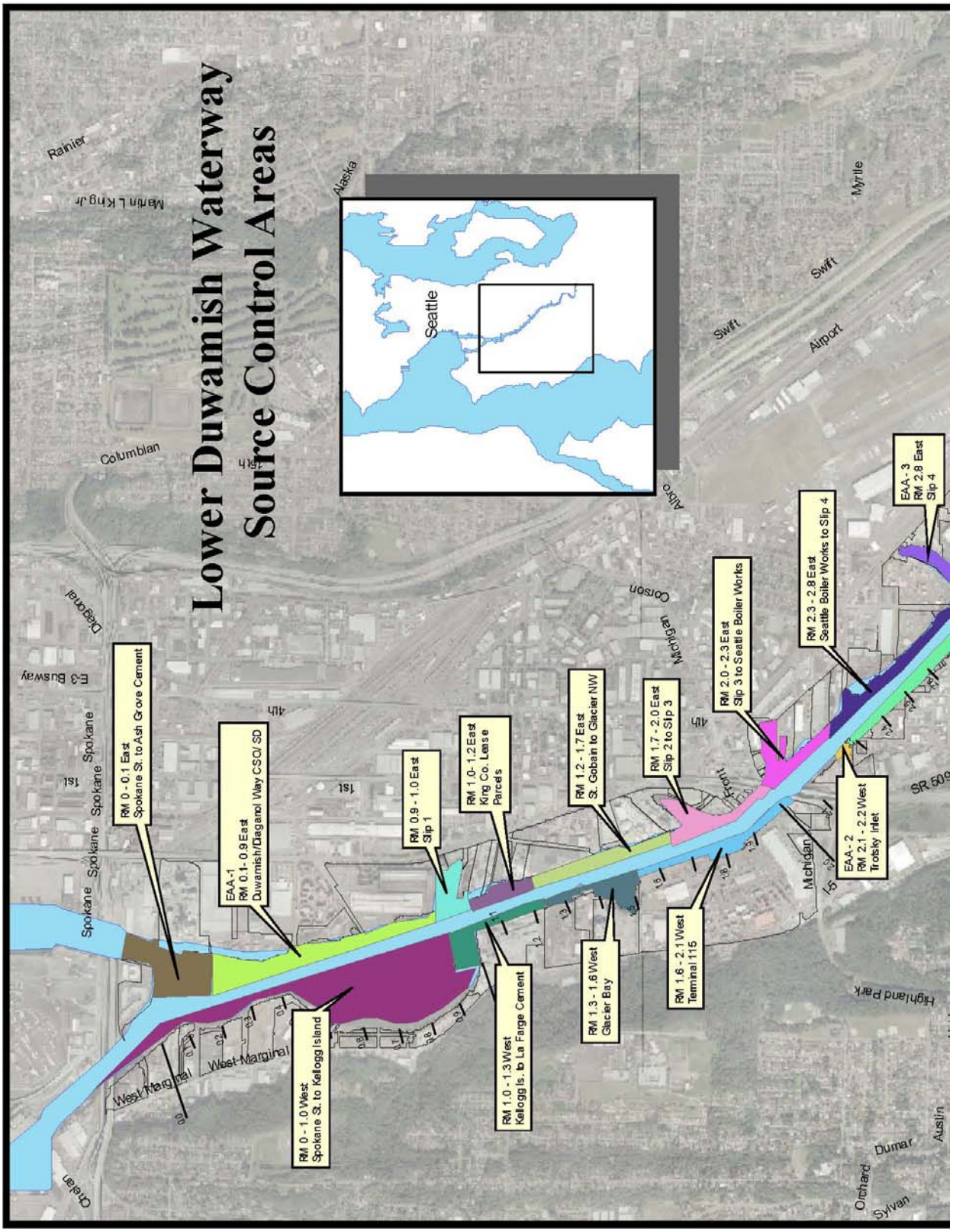
Duwamish Diagonal Combined Sewer Overflow/Storm Drain. From July 2007 through March 2008, Seattle Public Utilities (SPU) cleaned 3,503 storm drain system structures in the Diagonal Avenue South CSO/SD basin. At the Tully's (former Rainier Brewery) property, SPU found high concentrations of polychlorinated biphenyls in catch basins*. The operator and SPU cleaned the storm drains and catch basins at the property and downstream from the property.

Terminal 108 investigation. The Port of Seattle published results of an independent groundwater investigation at Terminal 108, which is located just north of Diagonal Avenue S. The report concluded that groundwater at Terminal 108 is not adding contaminants to surface water or sediment in the Lower Duwamish Waterway. The Port of Seattle also finished a Source Control Strategy Work Plan for Terminal 108. They are working on an Environmental Conditions Report and Source Control Strategy Plans for the Eastern and Western parcels.

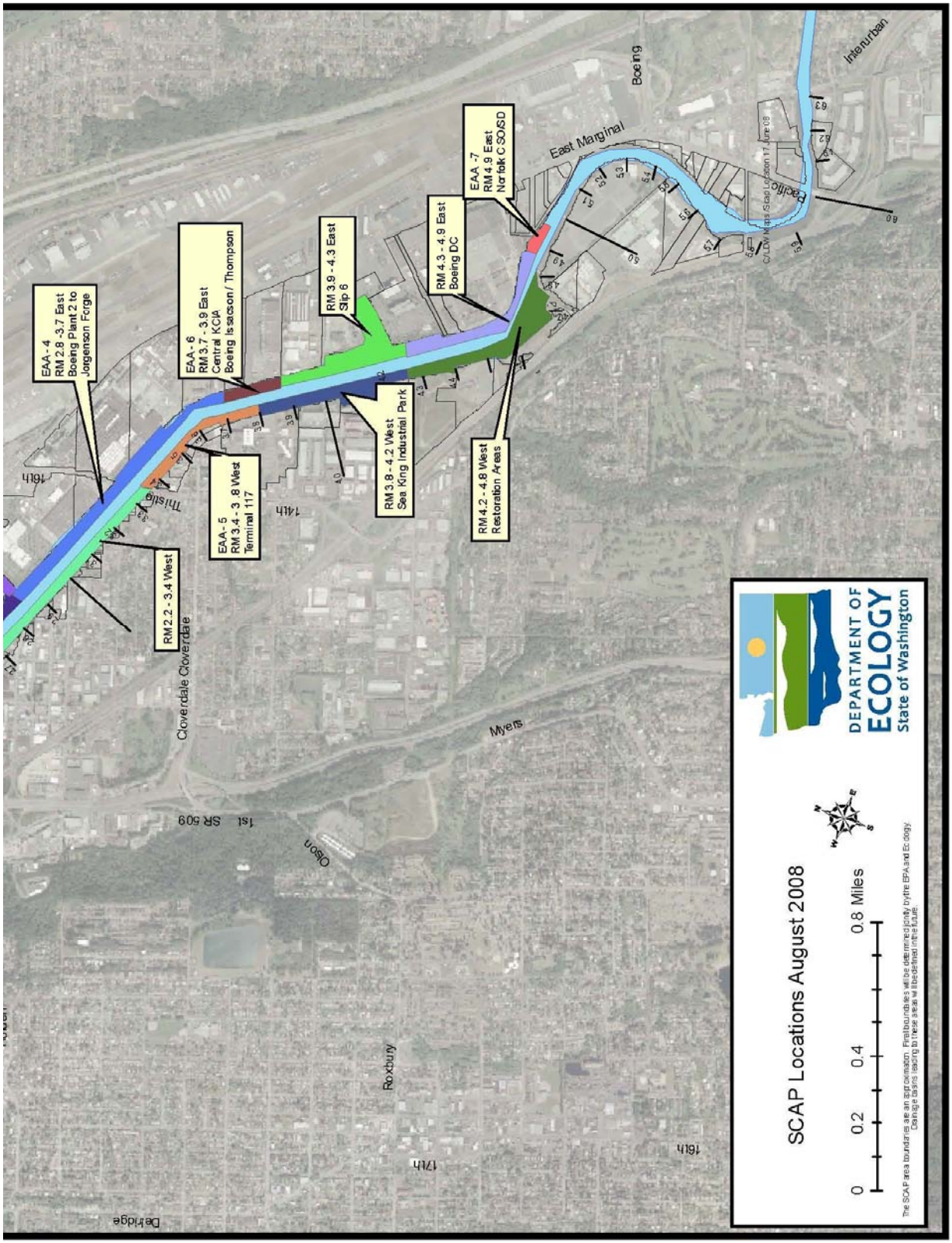
Early Action Area-2 (Trotsky Inlet)

Ecology took sediment and water samples from the mouth of the Second Avenue South outfall* and found five pollutants that are a threat to sediments. Ecology sampled groundwater and soil at Industrial Container Services (Trotsky Property), and

* See definition side bar on page 6.



* See definition side bar on page 6.



* See definition side bar on page 6.

sediment in the Trotsky inlet. Contaminants were higher than state standards in soil, groundwater, and sediments. A data report is being prepared. Ecology is working toward an Agreed Order with Industrial Container Services and the property owner to investigate.

Early Action Area-3 (Slip 4)

North Boeing Field/Georgetown Steam Plant state cleanup site. The City of Seattle completed design drawings and specifications for removal and replacement of the Georgetown Steam Plant flume* as an interim action. The project was approved by EPA and reviewed by Ecology. Work should start in the fall of 2008.

In October 2007 the Boeing Company (Boeing) collected samples from seven inline sediment traps* located on Boeing-leased property at North Boeing Field. Polychlorinated biphenyl concentrations were lower than results from one year before. Boeing replaced or re-routed three sections of the north storm drain line and sampled soil.

Boeing installed several new catch basins and manholes, slip-lined 500 linear feet of concrete storm drain in the north drain line, and did other work to stop contaminated soil from entering the storm drain lines.

Ecology is negotiating an Agreed Order with King County, Boeing, and the City of Seattle, the potentially liable parties for this site. The order will allow an Ecology contractor to do a Remedial Investigation/Feasibility Study* (RI/FS). A signed order is expected in late summer 2008. Ecology's contractor costs will be reimbursed by the potentially liable parties.

Crowley Marine Services state cleanup site. Ecology finished a Site Hazard Assessment for the Crowley Marine Services property. A site hazard ranking of two was given, where one stands for the highest relative risk and five the lowest. Ecology will soon begin negotiations for an Agreed Order to do a Remedial Investigation at the site.

Early Action Area-4 (Boeing Plant 2/Jorgenson Forge)

Boeing Plant 2 federal cleanup site. Under an EPA Resource Conservation and

Source Control Definitions

Combined sewer overflow: Discharges of diluted sewage and stormwater released to water bodies during heavy rainfall when sewers reach capacity.

Sediment: Mud at the bottom of the waterway.

Catch basins: Underground structures that collect solids from stormwater runoff from streets to prevent build up in stormwater drain lines.

Outfall: A point where a waste stream enters a body of water.

GTSP Flume: System of open ditches and buried pipes that move water from the George-town Steam Plant to Slip 4.

Sediment Traps: Bottles installed in stormwater lines to trap samples of solids carried by stormwater. Often used to trace sources of contamination within a drainage basin.

Remedial Investigation/Feasibility Study: A study to find the extent of contamination at a site and to evaluate alternative cleanup actions.

Remediation: Cleanup of contaminated soil, water, or sediments.

Model Toxics Control Act: State law that guides site cleanups.

National Pollution Discharge Elimination System (NPDES): Federal permit program that controls water pollution discharges.

* See definition side bar on page 6.

Recovery Act Order, Boeing is investigating the site and doing remediation*, including shoreline groundwater monitoring, interim measures, upland planning and remedy selection, contaminated caulk assessment, and stormwater source control sampling.

Jorgensen Forge federal and state cleanup site. Under an Agreed Order with Ecology, Jorgensen Forge has prepared a Source Control Evaluation Report to evaluate existing data and find sources of contaminants to sediment. Jorgensen Forge has also produced a draft Data Gaps Investigation Work Plan. They are working to find the source of high levels of zinc in stormwater. Under the Superfund program, EPA and Jorgensen Forge are also negotiating an Amended Agreed Order on Consent (federal equivalent to a state Agreed Order) to prepare an Engineering Evaluation/Cost Analysis to clean up sediments in the waterway near the site.

Early Action Area-5 (Terminal 117)

Terminal 117 federal cleanup site. EPA, the Port of Seattle, and the City of Seattle amended the Statement of Work for the Non-Time Critical Removal Action (NTCRA) at Terminal 117. This expands the area to include contamination found in the upland soils after the 2005 Settlement Agreement. This will join cleanup of the street right-of-ways with the rest of the cleanup area. In December 2007 EPA received an Engineering Evaluation/ Cost Analysis (EE/CA) work plan. The Port of Seattle and City of Seattle finished a data gaps analysis for the upland, sediments, and streets sub areas and found enough data to prepare the EE/CA.

Basin Oil, oil recycling closure oversight by the state. Across the street from Terminal 117, Basin Oil finished removing drums of waste materials in March 2008.

South Park Marina. Ecology's consultant finished sampling soil, groundwater, and bank soils in March 2008. The results showed metals, polychlorinated biphenyls, pesticides, volatile and semi-volatile organic compounds, and petroleum hydrocarbons higher than screening levels. A data report was delivered to Ecology in May 2008.

Early Action Area-6 (Boeing Isaacson-Thompson/Central King County International Airport)

Boeing Isaacson/Thompson investigation. September 2007 groundwater samples from wells at the Boeing Thompson property had arsenic concentrations above the Model Toxics Control Act* cleanup level. Ecology is working to identify what actions need to be taken to address the contamination.

Early Action Area-7 (Norfolk CSO/SD)

Boeing Developmental Center. The Boeing Company prepared an annual storm drain system sampling report. It documents post-removal monitoring done near the location of the 2003 sediment removal action at the Boeing Developmental Center south storm drain line outfall.

Tier 2 and 3 Areas

River Mile 1.3-1.6 West (Glacier Bay)

Duwamish Shipyard state cleanup site. Duwamish Shipyard, Inc. cleaned out and sampled catch basins and storm drain lines. Ecology is negotiating an Agreed Order with Duwamish Shipyard, Inc. to do a Remedial Investigation and Feasibility Study.

River Mile 3.9-4.4 East (Slip 6)

8801 E. Marginal Way S. state cleanup site. Ecology is negotiating an Agreed Order with PACCAR Inc. and Merrill Creek Holdings, LLC. for upland investigation and interim action at the 8801 East Marginal Way South site (former Kenworth Truck/PACCAR site). This includes an Interim Action Work Plan and a Remedial Investigation/ Feasibility Study. Insurance Auto Auctions, the current lessee, has installed and tested new stormwater system

* See definition side bar on page 6.

improvements to remove suspended solids and metals from facility stormwater discharges.

Public Involvement

Community Meetings

Ecology met with 50 stakeholders on November 27, 2007 at the South Seattle Community College to announce and describe the Urban Waters Initiative.

EPA held a public meeting on November 29, 2007 at Concord Elementary School to discuss the draft results of the Lower Duwamish Waterway Superfund Remedial Investigation. Ecology had source control information at the meeting.

Ecology and EPA work together during meetings to address concerns related to cleanup. Ecology will continue to hold public meetings on source control at specific sites.

Duwamish River Festival

The third annual Duwamish River Festival was held on August 18, 2007 in Seattle's South Park neighborhood. Over 700 people attended. Ecology worked with agency and stakeholder groups on the family-friendly environmental festival to give updates on the Superfund cleanup, source control information, and more.

Program partners included EPA, Ecology, Duwamish River Cleanup Coalition, King County, City of Seattle, Port of Seattle,

The Boeing Company, Seattle Public Utilities, Public Health of Seattle and King County, Washington State Department of Health, Puget Sound Clean Air Agency, Seattle Parks & Recreation, Green/Duwamish Central Puget Sound (WRIA 9) Watershed-Forum of Local Governments, Alki Kayak Tours, and NRC Environmental.

Urban Waters Inspection Focus Sheet

In May 2008 Ecology finished a focus sheet for use by the Urban Waters inspectors. The goal of the focus sheet is to help businesses understand the reason for the inspections and more about the program.

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* See definition side bar on page 6.