



DEPARTMENT OF
ECOLOGY
State of Washington

PUBLIC PARTICIPATION PLAN

FOX AVENUE BUILDING LLC SITE
FORMER GREAT WESTERN CHEMICAL COMPANY
SITE
SEATTLE, WASHINGTON

Prepared by
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July 1991

Updated December 2008

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Introduction

The Washington State Department of Ecology (Ecology) developed this public participation plan according to the Model Toxics Control Act (MTCA). This plan is designed to promote meaningful community involvement during the investigation and cleanup of the Fox Avenue Building LLC site located in Seattle, Washington (also known as the former Great Western Chemical Company site). This plan outlines and describes the tools Ecology will use to inform the public about site cleanup activities, and it describes how the community can become involved in this process.

In 1991, Ecology and the potentially liable person (PLP), Great Western Chemical, entered into Agreed Order #DE TC91-N203. The Agreed Order is a legal agreement that formally describes their working relationship. Ecology entered into a new Agreed Order **Number XXXX** in **Month** 2008 with Fox Avenue Building LLC (Fox Avenue Building), the current owner of the property, to continue the cleanup that needs to be done at the site.

Location and Site Background

Location

The Fox Ave Building property is located at 6900 Fox Avenue South on the east side of the Lower Duwamish Waterway. The Fox Avenue Building Site (Site) is defined by the extent of contamination at and migrating from the Fox Avenue Building property. The Site is bordered to the north by South Willow Street, to the south by the Whitehead Property (Historical Tyee Lumber Co.), to the east by an empty lot known as “Lot 11” which is on East Marginal Way South, and to the west by Fox Avenue South (see figure on page eight).

Lower Duwamish Waterway Cleanup

The Fox Avenue site is in an industrial area within the Lower Duwamish Waterway site in south Seattle. The Lower Duwamish Waterway (LDW) site is approximately 5.5 miles long and flows into Elliott Bay. This part of the waterway is designated as a

contaminated site under both state and federal law. 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 (LDW). The LDW was added to the National Priorities List (Superfund) by EPA on September 13, 2001. There are several sites in the LDW area that are being cleaned up by EPA and Ecology under the Resource Conservation and Recovery Act (RCRA). Ecology added the site to the Washington State Hazardous Sites List on February 26, 2002.

The sediments in the waterway contain a wide range of contaminants due to years of industrial activity and run off from urban areas. These contaminants include polychlorinated biphenyls (PCBs), polycyclic aromatic hydrocarbons (PAHs), metals, dioxins, and phthalates.

In December 2000, EPA and Ecology entered into an Administrative Order on Consent with King County, the Port of Seattle, the City of Seattle, and The Boeing Company, for these four parties to perform a Remedial Investigation (RI) and Feasibility Study (FS) of sediment contamination in the waterway. EPA is leading work on the Remedial Investigation/Feasibility Study (RI/FS) and supporting Ecology in source control work. Ecology is leading source control efforts in coordination with the City of Seattle, King County, the Port of Seattle, the City of Tukwila, and EPA. Ecology also supports EPA efforts on the RI/FS.

As part of the source control efforts in the LDW, Ecology works with their consultants to develop Source Control Action Plans (SCAPs) for areas of sediment contamination that will or may require cleanup. The purpose of the SCAPs is to identify potential contamination sources and the actions needed to keep sediments from being contaminated again after any cleanup occurs.

The Fox Avenue site is located within the River Mile 2.0-2.3 East (Slip 3 to Seattle Boiler Works) Source Control Area. The SCAP for this area is based on a thorough review of information pertinent to sediment recontamination in this source control area,

as presented in *Lower Duwamish Waterway, RM 2.0 – 2.3 East (Slip 3 to Seattle Boiler Works) Source Control Area Summary of Existing Information and Identification of Data Gaps Report* (E & E 2008). This report and the Source Control Action Plan for this source control area are located on Ecology's website:

http://www.ecy.wa.gov/programs/tcp/sites/lower_duwamish/sites/slip3_rm2-0_2-3/slip3.htm

Site Background

The Fox Avenue site is located in an industrial area near the Lower Duwamish Waterway in south Seattle. A number of commercial and industrial buildings are located within a block of the Site. On the other side of East Marginal Way South is a residential neighborhood. The Site occupies an area of about two and one half acres.

In 1918, the Seattle Chain and Manufacturing Company leased four lots (city block) from King County until 1937, when it purchased it outright. Seattle Chain and successor companies operated coke and oil fired furnaces and warehouses on the property. For the next 20 years, ownership of the property changed hands several times until 1956 when Marian Properties LLC Enterprises bought the property and leased a portion of it to Great Western Chemical (GWC). GWC started operations in a former Seattle Chain warehouse building, which it rebuilt into a larger warehouse on the west end of the property. GWC, owned by McCall Oil Company, operated a chemical and petroleum repackaging and distribution facility on the property. GWC received bulk chemical products and repackaged, transferred, and distributed both liquid and dry chemical products. GWC pumped bulk product through buried pipes and hoses on the surface. The facility had a number of underground and above ground storage tanks which stored chemical and petroleum products, including solvents, acids and lube oils.

Other lessees of the Site during the 1950s and 1960s included Campbell Chain Company, which leased the warehouse in the northern part of the property, and the Tye Lumber Company, which leased parts of Lot 11 and the Seattle Chain and Manufacturing Company building for storage and product assembly to the west and south of GWC's

operations. From the 1960s through the 1980s, GWC replaced and upgraded much of their warehouse structures. In 1969, the buildings on Lot 11 were torn down and Tyee Lumber Company shut down. Throughout the years, a number of chemicals and petroleum products were handled at the Site.

Fox Avenue Building LLC bought the GWC property from Marian Properties LLC in 2003 after GWC filed for bankruptcy protection in 2001. Cascade Columbia Distribution now leases the property from Fox Avenue Building and uses the warehouse as a chemical distribution facility.

The groundwater from this Site reaches the Lower Duwamish Waterway making this site a concern for source control. In addition to overall site cleanup, source control at this Site will be done to ensure recontamination of the Lower Duwamish Waterway Superfund site does not occur.

Contaminants of Concern

Contamination at this Site is due to releases from Great Western Chemical's operations. The contaminants of concern in the soil and groundwater are:

- Chlorinated solvents
- Petroleum hydrocarbons
- Semi-volatile organic compounds (SVOCs)
- Dioxins and furans

Previous Cleanup Work

In 1989, Great Western Chemical (GWC) closed six underground storage tanks (USTs) in place which still remain under a concrete pad. The same year, GWC also decommissioned ten other USTs, and removed these from the property in 1990. As part of an overall remodel, GWC retained the services of Hart-Crowser to provide engineering assistance in the removal of the tanks.

In 1991, GWC entered into Agreed Order #DE TC91-N203 with Ecology. Under this Agreed Order, GWC agreed to do a Remedial Investigation/Feasibility Study. In 1993 GWC finished the Remedial Investigation and Preliminary Risk Assessment Report (RI/PRA). More work was done following this report and summarized in a Supplemental Remedial Investigation and Feasibility Study report in 2000.

Previous investigations and cleanup work performed by GWC and Fox Avenue Building since 2000 include:

- Soil and groundwater sampling.
- Seep and soil vapor sampling.
- Installation of groundwater monitoring wells.
- Various other investigations to define the nature and extent of contamination.
- Operation of a soil vapor extraction system
- Pilot testing of various remediation technologies, including injections of chemical oxidants into groundwater.
- Underground and above ground storage tank removals.

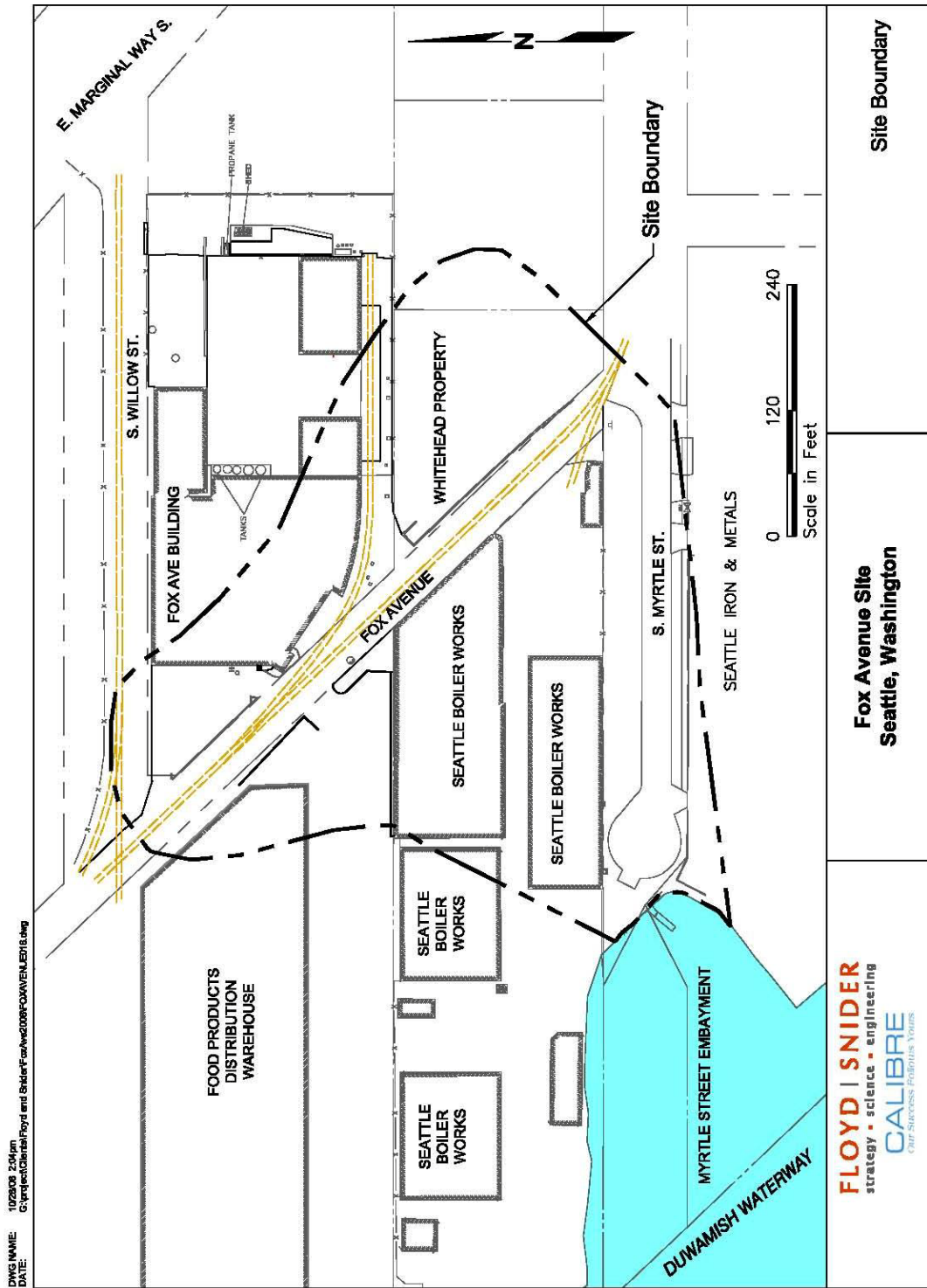
Current Site Activity

Ecology is entering into a new Agreed Order for this Site with the current property owner, Fox Ave Building LLC. This Agreed Order requires Fox Avenue Building to

perform the actions set forth in the Scope of Work, which is Exhibit B to the Agreed Order. As set out in the Scope of Work, Fox Avenue Building will:

- Conduct a Groundwater Enhanced Reductive Dechlorination (ERD) interim cleanup measure. This cleanup measure will stimulate naturally-occurring bacteria to degrade solvent contaminants in a groundwater plume that migrates from the Site to the Lower Duwamish Waterway.
- Conduct a source area silts data gap investigation and ERD Pilot Test. These activities will better define the extent of remaining source area contamination and assess whether ERD is an effective technology for reducing solvent contamination in the source area within a reasonable restoration time frame.
- Conduct Vapor Intrusion Evaluation. Fox Avenue Building will collect vapor samples to find whether tetrachloroethylene (PCE) vapors from the subsurface are reaching the office portion of the Fox Avenue facility at concentrations of concern.
- Evaluate restarting the Soil Vapor Extraction (SVE) System. Fox Avenue will weigh the benefits of restarting the existing SVE system if a vapor pathway into the Fox Avenue warehouse still exists.
- Prepare a Supplemental Feasibility Study to evaluate cleanup action alternatives for the Site and enable Ecology to select a cleanup action that will attain cleanup levels under state law within a reasonable restoration time frame.
- Prepare a draft Cleanup Action Plan (CAP) for Ecology approval that details the proposed cleanup actions to address the contamination at the Site.

Site Map: Fox Avenue Building Property and Site Boundary



Community Profile

For decades much of the land along to the Lower Duwamish Waterway has been industrialized. Current commercial and industrial operations include cargo handling and storage, marine construction, boat manufacturing, marina operations, concrete manufacturing, paper and metals fabrication, food processing, and airplane parts manufacturing.

Although the Lower Duwamish Waterway is viewed primarily as an industrial corridor, two residential neighborhoods border the banks of the river: South Park and Georgetown. The South Park neighborhood is on the western shore of the Lower Duwamish Waterway, and the Georgetown neighborhood is on the eastern side of the Duwamish Waterway. The residents of the community are well known for their commitment to neighborhood issues particularly related to the ongoing site cleanups along the Lower Duwamish Waterway. A description of these communities is provided below.

South Park Community Description

The South Park neighborhood is located in South Seattle, on the west bank of the Lower Duwamish Waterway. Native Americans of the Duwamish Tribe were the first residents of South Park who lived on the shores of the Duwamish River for thousands of years. This area was once a small farming town composed of Italian and Japanese farmers who supplied fresh produce to Seattle's Pike Place Market. South Park became part of the City of Seattle in 1907. By 1920 the Duwamish River was straightened out into a straight, deep channel that would accept ocean-going ships and barges. This change in the Duwamish greatly impacted South Park. The curving meanders had been straightened, which made it easier for industry to develop along the banks of the waterway.

In the mid 1960s, South Park was rezoned as industrial. Over 4,000 people complained and the City of Seattle changed the zoning to low-density residential. The City of Seattle built the South Park Community Center in 1989 which remains a vital resource within the community. The South Park Community Center offers a wide variety of free and low cost programs and special events. Special events include free breakfasts and family

events. The community center provides before and after-school programs and school break camps for students. They also offer adult classes ranging from yoga to technology to English classes. South Park is also served by the City-owned neighborhood center, managed by the South Park Neighborhood Association. The neighborhood center houses several non-profit and city services including the South Park Food Bank, City-sponsored South Park Action Agenda, and the Environmental Coalition of South Seattle.

The Seattle Public Library opened the new South Park branch at 8604 Eighth Avenue South (at Cloverdale Street) in September 2006. This new branch is 5,019 square feet and has the capacity to hold 18,700 books and materials (about one-third of the collection is Spanish-language, including bilingual children's materials and Spanish Language fiction and non-fiction). The library also has bilingual staff on hand to answer questions and to help patrons.

The South Park neighborhood is comprised of about 3,717 people of various ethnicities: 37% Hispanic, 34% white, 14% Asian, 7 % Black, 5% multiracial, 2% American Indian, 1% Native Hawaiian/Pacific Islander. The average age is 31 years old and the average income is \$20,917 (based on records from 2005). A variety of retail and service businesses are located along 14th Avenue South. Data from the Seattle Office of Economic Development lists the primary categories of employment in South Park as wholesale trade, transportation and utilities; construction/resources; manufacturing; and services.

Georgetown Community Description

The Georgetown neighborhood is located in South Seattle, on the east side of the Lower Duwamish Waterway across the river from South Park. Georgetown is Seattle's oldest neighborhood, settled by Luther Collins in 1851. It was incorporated as the City of Georgetown from 1904-1910, and later annexed by the City of Seattle.

According to records from 2005, just over 1,100 people live in Georgetown. The largest local employers in Georgetown are in the arts, entertainment, and recreation industries.

The Georgetown neighborhood is home to large employers such as The Boeing Company and King County International Airport.

The community is host to local events such as art walks, and annual Arts and Garden Tours. The neighborhood is home to historic buildings such as the Old Georgetown City Hall and the Georgetown Steam Plant. The South Seattle Community College has recently revitalized its Georgetown Campus and is home to the Puget Sound Industrial Excellence Center Apprenticeship and Education Center. The campus offers more than 25 apprenticeship programs including masonry, meat cutters, electricians, iron workers, and cosmetology. The neighborhood is also home to the Georgetown Community Council which meets once a month and is very active in the community.

The Duwamish River Cleanup Coalition

The Duwamish River Cleanup Coalition (DRCC) is an advisory group to EPA and Ecology and works with the South Park and Georgetown neighborhoods and other stakeholders to ensure a Duwamish River cleanup that is accepted by and benefits the community and is protective of fish, wildlife and human health.

DRCC was formed by an alliance of community, environmental, tribal, and small business groups affected by ongoing pollution and cleanup plans for the Lower Duwamish Waterway. The coalition members include: Community Coalition for Environmental Justice, the Duwamish Tribe, The Green-Duwamish Watershed Alliance, I'M A PAL Foundation, Environmental Coalition of South Seattle, Georgetown Community Council, People for Puget Sound, Puget Soundkeeper Alliance, South Park Neighborhood Association, Washington Toxics Coalition, and Waste Action Project.

DRCC is a formal "community advisory group" recognized by EPA and representing the interests of the community toward the cleanup work along the Lower Duwamish Waterway. DRCC receives public participation grant funding from Ecology. They also receive technical assistance grants from EPA for technical advisors to review all Lower Duwamish Superfund cleanup related studies and plans. They are involved in all aspects

of the proposed Superfund cleanup and related MTCA cleanups. DRCC is working with Ecology to ensure that the cleanup and source control measures meet community standards.

Key Community Concerns and Issues

Ecology and EPA conducted interviews with community members, environmental organizations, and community organizations in October 2002 for the Lower Duwamish Waterway Site Community Involvement Plan. Ecology did an abbreviated version of community interviews in 2006 and determined that the concerns raised in 2002 were still pertinent. In 2008, stakeholder groups provided comments to EPA and Ecology on the Lower Duwamish Waterway Remedial Investigation Draft Report developed for the Lower Duwamish Waterway Superfund Site. Although these comments are directed to the entire Superfund site, they are relevant for the Fox Avenue Building site because it is part of the larger Superfund site. The stakeholder comments indicated that their concerns have remained constant with the concerns outlined below.

There is clear interest in this cleanup process along the Lower Duwamish Waterway. The following is representative of significant concerns and issues expressed during the community interviews. Ecology will work to respond to community concerns through the cleanup process and through coordination with EPA, other organizations, such as state and local health agencies, and the community advisory group that has been established for the site.

- **Health:** Stakeholders are concerned that living close to the Lower Duwamish Waterway could affect their health. They expressed concern about consumption of all bottomfish and parts of other fish, as well as contamination from chemicals, bacteria and viruses. There is concern about exposure to contaminated sediments through contact at public access parks, employment at industries on the waterway, restoration work, and other cleanup work. Some said that there should be limited access to the river if there is a health risk.

- **Wildlife:** Stakeholders expressed concern for fish and wildlife. Sea lions, salmon, bottomfish, crabs, mussels, clams, shrimp, opossums, squirrels, ducks and other birds were mentioned, as well as concern about the disappearance of herons and for herons on Kellogg Island in the Duwamish Waterway.
- **Domestic animals:** There is concern about dogs eating garbage from the river and horses being on a greenbelt above the river.
- **River and groundwater contamination:** There is concern that the river is dying and that it contains contaminants, including PCBs and mercury. There is concern about the effect of septic systems near the river; sewer overflows; surface water runoff, including oil, antifreeze and fertilizers; unreported spills and illegal dumping; and pumping of waste into the river or groundwater. There is concern that permits for discharges to the river are not being enforced or will be revised to be less strict. There is concern that sources of PCBs are not being addressed and that calculated cleanup levels for many contaminants will not be strict enough. There is also concern that the current efforts to control ongoing sources of pollution will not be enough to actually control the sources.
- **Economics:** Some people interviewed are concerned about contamination lowering property values. Others are concerned that businesses will leave the area due to the designation of the Lower Duwamish Waterway as a Superfund site.
- **Cleanup:** Some people are concerned that South Park and the businesses on the water will be affected by cleanup activities, such as increased truck or barge traffic and potential accidents. There are concerns about the costs of damages to natural resources and the possibility that parties responsible for contamination will do some early cleanup activities but nothing more.
- **Information:** Several people expressed concern about a lack of warning signs for

fishermen and recreational users and suggested that such signs should be installed. People are concerned about whether adequate information reaches the Spanish-speaking and other non-English-speaking communities and whether the average person and immigrants understand the risks.

- **Image:** While some people described the Lower Duwamish Waterway neighborhood as an industrial area, others are concerned that it is perceived as a dumping ground.
- **Tribal Rights:** Some community members are concerned that the tribal rights to harvest fish and shellfish in the Lower Duwamish Waterway are not being honored at a level protective of these treaty rights.

Other public concerns may be identified over the course of the cleanup through: public comment periods; further community interviews; surveys; meetings; and other contacts with individuals, community groups, or organizations.

Ecology will work to respond to community concerns through the cleanup process and coordination with other regulatory agencies and property owners as necessary.

Public Participation Activities and Responsibilities

The purpose of this Public Participation Plan is to promote public understanding and participation in the MTCA activities planned for this site. This section of the plan addresses how Ecology will share information and receive public comments and community input on the site activities.

Public Participation Activities

Ecology uses a variety of activities to facilitate public participation in the investigation and cleanup of MTCA sites. Ecology will implement input provided by community residents, businesses, and other stakeholders whenever possible.

The following is a list of the public involvement activities that Ecology will use, their purposes, and descriptions of when and how they will be used during this site's source control investigation and cleanup.

Formal Public Comment Periods

Comment periods are the primary method Ecology uses to get feedback from the public on proposed investigation and cleanup decisions. Comment periods usually last 30 days and are required at key points during the investigation and cleanup process before final decisions are made.

During a comment period, the public can comment in writing and via e-mail. After formal comment periods, Ecology reviews all comments received and will respond in a document called a Responsiveness Summary.

Ecology will consider the need for changes or revisions based on input from the public. If significant changes are made, then a second comment period may be held. If no significant changes are made, then the draft document(s) will be accepted and finalized.

Future public comment periods will be held for other documents and legal agreements that are developed for the site.

Public Meetings and Hearings

Public meetings may be held at key points during the investigation and cleanup process. Ecology also may offer public meetings for actions expected to be of particular interest to the community. These meetings will be held at locations convenient to the community.

Information Repositories

Information repositories are places where the public may read and review site information, including documents that are the subject of public comment.

Ecology has established two repositories for the Fox Avenue Building site.

- Washington State Department of Ecology, 3190 160th Avenue SE, Bellevue, WA 98008, (425) 649-7190. Please call for an appointment.
- South Park Library, 8604 Eight Ave S. at Cloverdale St. Seattle, WA

Site information also will be posted on Ecology's web site at:

http://www.ecy.wa.gov/programs/tcp/sites/foxAve/foxAve_hp.html.

Site Register

Ecology's Toxics Cleanup Program uses its bimonthly *Site Register* to announce all of its public meetings and comment periods, as well as many other activities. To receive the *Site Register* in electronic or hard copy format, contact Linda Thompson at (360) 407-6069 or by e-mail at ltho461@ecy.wa.gov. It is also available on Ecology's web site at:

http://www.ecy.wa.gov/programs/tcp/pub_inv/pub_inv2.html

Mailing List

Ecology has compiled a mailing list for the site. The list includes individuals, groups, public agencies, elected officials, private businesses, potentially affected parties, and other known interested parties. The list will be maintained at Ecology's Northwest Regional Office and will be updated as needed.

To have your address added or deleted from this mailing list, please contact Ecology's site manager **Sunny Becker at (425) 649-7187 or hlin461@ecy.wa.gov**.

Fact Sheets

Ecology will mail fact sheets to persons and organizations interested in the Fox Avenue Building site to inform them of public meetings and comment opportunities and important site activities. Ecology also may mail fact sheets about the progress of site activities.

Newspaper Display Ads

Ecology may place ads in the *Seattle Times* and *Seattle Post Intelligencer*, to announce public comment periods and public meetings or hearings for the site.

Enhanced Public Participation

Ecology will work with EPA and stakeholders according to the enhanced public participation efforts that occur for the Lower Duwamish Waterway Superfund site. Ecology site managers and community involvement coordinators may participate in community meetings and events as needed. Ecology will coordinate with DRCC throughout the public involvement process. This may include such activities as coordination for public meetings and sharing drafts of documents with DRCC for review, as appropriate.

Public Participation Plan Update

This public participation plan may be updated as the project proceeds. If an update is necessary, the revised plan will be submitted to the public for comment.

Points of Contact

If you have questions or need more information about this plan or the Fox Avenue Building site, please contact:

Sunny Becker, Site Manager
Washington State Department of Ecology
3190 160th Avenue SE
Bellevue, WA 98008
Tel: (425) 649-7187
Email: hlin461@ecy.wa.gov

Glossary

Agreed Order: A legal document issued by Ecology which formalizes an agreement between the department and potentially liable persons (PLPs) for cleanup actions needed at a site. Orders are subject to public comment. If an order is substantially changed, an additional comment period may occur.

Cleanup: Actions taken to deal with a release, or threatened release of hazardous substances that could affect public health and/or the environment. The term "cleanup" is often used broadly to describe various response actions or phases of remedial responses such as the remedial investigation/feasibility study.

Cleanup Action Plan: A document which identifies the cleanup action and specifies cleanup standards and other requirements for a particular site. After completion of a comment period on a Draft Cleanup Action Plan, Ecology will issue a final Cleanup Action Plan.

Comment Period: A time period during which the public can review and comment on various documents and proposed actions. For example, a comment period may be provided to allow community members to review and comment on proposed cleanup action alternatives and proposed plans.

Contaminant: Any hazardous substance that does not occur naturally or occurs at greater than natural background levels

Feasibility Study: A study to evaluate alternative cleanup actions for a site. A comment period on the draft report is required. Ecology selects the preferred alternative after reviewing those documents.

Groundwater: Water found beneath the earth's surface that fills pores between materials such as sand, soil, or gravel. In some aquifers, ground water occurs in sufficient quantities that it can be used for drinking water, irrigation and other purposes.

Hazardous Sites List: A list of sites identified by Ecology that requires further remedial action. The sites are ranked from 1 to 5 to indicate their relative priority for further action.

Hazardous Substance: Any material that poses a threat to public health and/or the environment. Typical hazardous substances are materials that are toxic, corrosive, ignitable, explosive, or chemically reactive.

Information Repository: A file containing current information, technical reports, and reference documents available for public review. The information repository is usually located in a public building that is convenient for local residents such as a public school, city hall, or library.

Interim Action: Any remedial action that partially addresses the cleanup of a site. For example, at this site the upland area is currently being addressed, not the sediment portion.

Model Toxics Control Act (MTCA): Legislation passed by citizens of the State of Washington through an initiative in 1988. Its purpose is to identify, investigate, and clean up facilities where hazardous substances have been released. It defines the role of Ecology and encourages public involvement in the decision making process. MTCA regulations are administered by the Washington State Department of Ecology.

Potentially Liable Person: Any individual(s) or company(s) potentially responsible for, or contributing to, the contamination problems at a site. Whenever possible, Ecology requires these PLPs, through administrative and legal actions, to clean up sites.

Public Participation Plan: A plan prepared to encourage coordinated and effective public involvement designed to the public's needs at a particular site.

Remedial Investigation: This study characterizes the site and defines the extent of contamination.

Remedial Investigation/Feasibility Study: Two distinct but related studies. They are usually performed at the same time, and together referred to as the "RI/FS." They are intended to:

- Gather the data necessary to determine the type and extent of contamination;
- Establish criteria for cleaning up the site;
- Identify and screen cleanup alternatives for remedial action; and
- Analyze in detail the technology and costs of the alternatives.

Site: Any building, structure, installation, equipment, pipe or pipeline (including any pipe into a sewer or publicly owned treatment works), well, pit, pond, lagoon, impoundment, ditch, landfill, storage container, motor vehicle, rolling stock, vessel, or aircraft; or any site or area where a hazardous substance, other than a consumer product in consumer use, has been deposited, stored, disposed of, or placed, or otherwise come to be located.

Superfund: The federal government's program to clean up the nation's uncontrolled hazardous waste sites.

SVOCs (semi-volatile organic compounds): This group includes a variety of chemicals that have boiling points higher than water and that may become a gas at temperatures above room temperature. Most of these substances are used as industrial chemicals. They include phenols, polynuclear aromatic hydrocarbons (PAHs), and phthalates. Sites where these potentially toxic chemicals may be found include burn pits, chemical manufacturing plants and disposal areas, electroplating/metal finishing shops, firefighting training areas, hangars/aircraft maintenance areas, solvent degreasing areas, vehicle maintenance areas, and wood preserving pits. These compounds generally evaporate slowly at room temperature. Their water solubility and environmental persistence is highly variable, and they are commonly found as contaminants in soil and water.

TPHs (total petroleum hydrocarbons): Describes a large family of several hundred chemical compounds that originally come from crude oil. Crude oil is used to make petroleum products, which can contaminate the environment. TPH is a mixture of chemicals, but they are all made mainly from hydrogen and carbon, called hydrocarbons. Scientists divide TPH into groups of petroleum hydrocarbons that act alike in soil or water. These groups are called petroleum hydrocarbon fractions. Each fraction contains many individual chemicals.

Toxicity: The degree to which a substance at a particular concentration is capable of causing harm to living organisms, including people, plants and animals.