Public Meeting Summary July 18, 2012

Kenmore Industrial Park aka Lakepointe Site &

Kenmore Lakefront Area, Kenmore, Washington

Former Landfill Site

Northeast Lake Washington Sediments

Environmental Concerns

Meeting Comments & Ecology Responses

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Environmental Protection on the City of Kenmore Lakefront

Summary Kenmore Industrial Park & Area Public Meeting - July 18, 2012

Kenmore residents have expressed concern about potential environmental contamination in the City of Kenmore's Lake Washington harbor and waterfront area. These concerns center on two locations:

- An industrial area situated over a former landfill
- An area, of dimensions to be determined, where lake bottom sediments contain dioxin and other contamination

The Department of Ecology (Ecology), other government agencies, and more than 60 citizens met on July 18, 2012, at Kenmore City Hall for discussions of these and related concerns. Audience members provided several comments and recommendations to which Ecology agreed to respond. We preface these responses with an overview, including some general background discussion on the origin and transport of dioxins in the environment.

Former Landfill Site

The old landfill is a formal cleanup site under Washington's environmental cleanup law, the Model Toxics Control Act (MTCA). Ecology oversees the private owner's management of the site under a legal agreement called a Consent Decree (CD). The 44-acre property is called Kenmore Industrial Park (KIP), also referred to as Lakepointe.

KIP underwent a site investigation from 1996 through 2001, prior to signing the Cleanup Action Plan and the CD. The investigation followed federal and state procedures and requirements to identify or rule out hundreds of potential pollutants that could exist in such a site. This process produces a list called the chemicals of concern, substances that bear further monitoring and evaluation. The investigation identified five of these substances: petroleum oil and diesel, and the metals arsenic, barium, and lead.

These materials can dissolve in water and be transported by groundwater. KIP has monitoring wells placed to intercept the path of groundwater under the site in order to detect movement of contaminants by groundwater before they can reach the Lake Washington, Sammamish River, and Navigation Channel - waters on three sides of the property. To date, this monitoring has not detected these chemicals and has only found barium at concentrations well below state cleanup standards set under MTCA.

The landfill is isolated below ground level. It is covered with two or more feet of clean soil and an additional foot of gravel, to prevent people or wildlife from coming into contact with deposited materials. The CD prohibits digging into or otherwise disturbing the old landfill. Should the property undergo redevelopment that involves excavation, the CD requires a systematic process to identify, clean up, and safely dispose of landfill material at an approved waste facility.

KIP has several tenants, all of whom must conduct their activities above ground in a manner that complies with the CD and does not disturb the landfill materials isolated below. The largest current tenant, occupying the 14 westernmost acres, is a joint venture construction firm that is building concrete structures under a contract with the Washington State Department of Transportation (WSDOT) for the Highway 520 bridge replacement project.

The WSDOT contractor also operates under Ecology's construction stormwater general permit, which requires practices to prevent construction-related pollution of stormwater.

Dioxins in Sediments

The second matter of concern involves a discovery last year of contamination in the lake bottom, called sediments, at a boat marina on the opposite side of the lake harbor, at Harbour Village Marina (HVM) in Kenmore. As part of the process for applying for approval to dredge in the marina, the owner's consultant studied samples of the sediment to determine if the lake sediment contained contamination that may require special disposal and handling. This process identified the presence of dioxins, PCBs, and other contaminants.

Dioxins are a group of chemicals that form as unwanted byproducts of burning household or industrial wastes. They also are produced in industrial processes that involve chlorine, such as bleaching wood pulp or manufacturing certain chemicals. Exhaust from vehicles, forest fires, and wood or coal burning can release dioxins into the air. Small amounts, at levels not considered harmful, are found in various paper and pulp products. For more information, see Ecology Publication #10-=09-053 "Natural Background for Dioxins/Furans in Washington Soils" dated August 9, 2010, and "Lower Duwamish Waterway – Seattle Soil Dioxin Study" dated July 6, 2012.

Dioxins can be found at low, but detectable levels throughout the world. They tend to "stick" onto small particles. Soot and other fine airborne particles settle to the ground. Soils near burning sites may contain dioxin contamination. Stormwater carries these particles to storm drains to streams or lakes. Dioxins in water do not readily dissolve and tend to settle to the bottom and "stick" to sediment particles. Places where particles and silt settle or accumulate, such as dips in stream beds or where puddles form may have raised levels of dioxins if the incoming particles carry the chemical. If carried downstream, such particles may accumulate near stream mouths or drain outfalls.

Once it "sticks" to particles, dioxin holds on. It tends not to "let go." Lake or stream bottoms with dioxin contamination may continue to accumulate and it is very unlikely to release dioxin into the water.

Dioxin also bonds to animal fat. It enters the food chain when small creatures eat tiny plants that grow in dioxin-contaminated sediments and ingest some of the fine particles. Dioxin has a stronger "affinity" for fat than for particles, and it accumulates in the fat tissue of whatever eats it. This process works up the food chain. Large fish or mammals that eat smaller creatures with dioxin-contaminated fat will accumulate the highest concentrations of dioxin.

The most common way people are exposed to dioxin is by eating something that contains it. Meats and produce may contain small amounts, but fish tend to have the highest levels. Lake Washington has a state fish consumption warning for PCBs, another pollutant that adheres to sediment particles and accumulates in fat. Urban metropolitan areas tend to have higher background levels of both pollutants. For this reason, many urban areas have advisories or restrictions on the consumption of certain kinds of fish.

Ecology and the City of Kenmore are preparing to conduct additional sediment sampling to test for dioxins, PCBs, and other chemicals of concern in the Kenmore waterfront area. The City is also preparing to test the Navigation Channel for future dredging. This study will begin to define the "footprint" of the location with elevated levels of contamination sediments. Depending on the results, further testing may be needed. The sediment sampling will provide information that will help scientists determine possible risks to public health and to the environment. The sampling may generate evidence to help identify a source(s) for the dioxin contamination.

The landfill material isolated in the ground at KIP does not appear to be a likely source of dioxin in the lake sediments. Even if the landfill material contained some dioxin, it is unlikely to have a path, or means of transport, through the ground and into lake or adjacent channel or river sediments. Groundwater tends not to carry dioxin because the chemical tends to "stick" to the soil particles and not release to the water. Additionally, the movement of groundwater through soil does not dislodge the soil particles. Free-flowing water, like surface water runoff, however can carry dioxin-contaminated particles and deposit them in lakes or adjacent waterways. However, the cap on the landfill is designed to prevent the release of any potential landfill contaminants from entering surface waters.

Nevertheless, to address concerns about the KIP site as a potential source of dioxins to Lake Washington and the Sammamish River, Ecology plans to test sediments adjacent to and offshore of the KIP site.

Environmental Concerns Expressed at the July 18, 2012 Community Meeting

Concerns expressed at the meeting fell into four overarching topic areas:

- Desire for enhanced public communication, engagement, and participation
- Additional toxin sampling to identify locations and sources, with a focus on dioxins and PCBs in the harbor and lakefront, including Log Boom Park
- Additional funding for testing
- Signage at Log Boom Park

Ecology continues its ongoing commitment to work on all of these issues. At the same time, our agency must proceed within legal and regulatory requirements, appropriate scientific procedures, and available funding and resources. In brief overview:

- Public Engagement: The agencies are developing a coordinated public forum approach to provide information, answer questions, and receive input, on a scheduled, ongoing basis.
- Toxin Sampling: Ecology and the City are preparing to conduct additional sampling at the harbor and lakefront including KIP, HVM, and Log Boom Park, with a focus on PCBs, dioxins, and other chemicals of concern, in coordinated studies.
- Funding: Ecology acquired $35,000 for additional targeted testing.
- Signage: The City of Kenmore has posted an advisory at Log Boom Park.

KIP and Sediment Contamination

A conviction that hazardous materials are migrating from the KIP site underpinned many of the questions and comments.

The data to date from the site evaluation and subsequent monitoring indicate that toxics are not migrating from the KIP site. A document, Potential Hazardous Waste Site Preliminary Assessment from EPA dated November 11, 1984, that lists various materials, such as transformers and medical waste, is a checklist used at the time as a tool to describe potential landfill contents. In addition, one waste disposal company, Bayside Disposal, lists food and medical waste and transformers being deposited. However, site testing to date has not identified theses wastes. The site investigation determined that the landfill presented five chemicals of concern for future monitoring: petroleum oil and diesel, and the metals arsenic, barium, and lead.

Ecology appreciates the concerns expressed about the landfill's potential contents. The presence of a landfill on any site is always a serious matter. We acknowledge that it is not possible to know all the contents of a historic landfill. Nevertheless, the Toxics Cleanup Program has developed considerable expertise in evaluating and managing a number of former landfill sites. The KIP landfill went through the protocols that guide the careful investigation needed for all former landfills.

We recognize the amount of time that has passed since the site underwent its Remedial Investigation Feasibility Study in 2001. Whenever a contaminant is isolated below ground, Ecology requires periodic monitoring, which was conducted at the KIP site in 2009-2010. For that reason, KIP has monitoring wells that allow us to access groundwater to detect migration of pollutants from the landfill area. Samples taken and analyzed in 2009, 2010, and April 2012 show no detectable level of contaminants except for barium at levels significantly below state cleanup standards. The groundwater's lack, or low level, of chemicals provides evidence that there is currently no migration of pollutants from the landfill to adjacent waterways.

Could the former landfill be a source of dioxin and PCBs found in sediment at HVM? Dioxins and PCBs tend to also stick or bind to soil and to rarely dissolve in water. Sediment transport from the landfill to the lake is unlikely, if not impossible. The specific responses below provide further detail on this subject.

Even though there is no evidence of contaminant migration from the landfill into the water or sediments, we will address concerns that KIP may be a sediment contamination source by collecting sediment samples offshore of the KIP site. This is part of the sediment sampling and analysis plan being prepared by Ecology and the City to follow up on the contaminants found at HVM. We look forward to providing the sediment sampling plan to the community for their review in the near future.

Lake Washington Use, Recreation and Public Safety

The discovery of contamination in the lake bottom rightly prompts concerns for safety, health, and the environment. The tendency of dioxins and PCBs to bind with sediment and not dissolve freely in to the water argues against classifying the present circumstances in Kenmore as an emergency or crisis**.** With results from the upcoming sediment studies, community members, the City, Ecology and other agencies will be able to proceed on a mutually informed basis.

July 18, 2012 Meeting Comments

Signage

- *Need for signage warning the public of possible exposure risks due to swimming.*
- *Several speakers expressed significant frustration that Ecology and DOH are not providing adequate warning of potential risks to the public. Requests were made for signage, in all languages appropriate for those swimming in the area. Several speakers also expressed the opinion that Ecology should not wait for additional testing before providing warning signage to the public.*

Ecology Remarks:

The City posted an advisory sign at Log Boom Park on July 27, 2012. The sign calls attention to the discovery of contamination in nearby sediments and that follow-up testing is planned.

Public Participation

- *Need for greater public participation in the testing and cleanup processes, including the formation of a citizens' advisory committee.*
- *Several speakers identified the need for public participation in the design and selection of sampling plans and locations.*
- *State Representative Pollet reiterated his request for the formation of a committee/forum for communication between citizens and the agencies involved in these sites. There was notable frustration that the same issues continue to be articulated by the public, but answers are not forthcoming.*

Ecology Remarks:

Ecology is committed to open communication and coordination with all interested people. We welcome comments and recommendations at any time. This applies within the formalized

framework of a public participation plan, or the more general outreach associated with a site investigation. Specifically, citizen comments to Ecology on the KIP, or Kenmore lakefront area, are welcome any time. The proposed Sediment Sampling and Analysis Plan draft will be posted on the webpage and circulated for citizen review and comments.

Recent Ecology outreach efforts related to KIP and the Harbor Village Marina sites include:

- Revised and updated the Public Participation Plan, which applies only to the KIP site.
- Held a public meeting on July 18, 2012, to present detailed information on the KIP site, HVM sediment contaminant discovery, related background information, and listen to citizen comments.
- Maintains and updates websites for KIP site and HVM site.
- Informed the community about the opportunity to apply for public participation grant funds, which can assist with outreach activities and with independent community professional technical support for the KIP site. For more information, please contact Ecology's Waste 2 Resources Public Participation Grants: Allyson Ruppenthal at arup461@ecy.wa.gov or 360-407-6044.
- In addition, Ecology and other agencies active on Kenmore lakefront issues are developing a joint approach for community information and communication forums to facilitate contact and communication between community and agency representatives. This process will incorporate the KIP public participation plan.

PCBs and Dioxins:

- *Several requests were made for Ecology to investigate specific areas as possible sources of PCBs and dioxins: the shores of KIP, storm water outfalls near HVM, Cal Portland, CEMEX asphalt plant, among others.*

Ecology remarks:

Ecology and the City of Kenmore are preparing the Sediment Sampling and Analysis Plan (SSAP) in coordination with Washington Department of Health. Ecology will incorporate as many requested locations and suggestions as feasible, but must follow the site selection requirements of MTCA and WDOH recommendations. The SSAP will be posted on the HVM webpage at http://ecyapps4/gsp/SitPage.aspx?csid=9197.

- *Ecology was asked why it has not previously tested several areas for both PCBs and dioxins. Not testing groundwater samples at KIP for dioxins were identified in particular and several questions attempted to ascertain Ecology's confidence as to whether or not toxics were migrating off-site through groundwater*.

Ecology Remarks:

Some basic scientific information regarding dioxins and PCBs will aid in addressing this issue. Dioxins and PCBs do not dissolve in water. They attach to fine silt and sediment, and to fat

tissue if ingested by aquatic animals and people. Dioxin is transported when contaminated sediment particles are pushed and moved by water. Groundwater generally does not carry these pollutants except when they are attached to suspended particles like silt or clay. PCBs and dioxins, because of their shared characteristics, are commonly found in the same samples.

Dioxin Testing: Per MTCA requirements, Ecology selects contaminants of concern based on evaluation of site history, operational practices, and associated contaminant classes. In the late 1990s and early 2000s, when KIP underwent its site investigation, Ecology's general practice was not to analyze for dioxin unless there was specific reason to believe that dioxin generating industrial activities, such as wood treatment or bleached paper production, had occurred at the site, or at the source of the landfill material. With the recent interest in the site and concerns associated with dioxins, Ecology will be conducting dioxin testing as part of the SSAP.

PCB Testing: PCB analysis has been conducted several times at KIP. The results were summarized at the July 18, 2012, public meeting and have been posted on the KIP site webpage. The KIP Remedial Investigation Report (AMEC 2001) listed soil and groundwater testing for PCBs and all results showed no detection with one exception. The one exception was a wood chip at one boring site. Further testing showed no detection, so that result was dismissed. Soil tests in 2011 and 2012 also showed no detection for PCBs.

Dioxin Testing

- *Need for dioxin to be included in all future sediment and water quality testing*.

Ecology remarks:

Ecology is preparing to conduct sediment sampling, including dioxin/furans, in Kenmore lakefront area sediments in conjunction with the City's Sediment Sampling Plan. Of important note: PCBs are generally found on particles of soil, sediments, and fat tissues, but not in the water itself. We expect results in late fall 2012. These studies will provide a preliminary level of information as a first step in the follow-up to the PCBs and dioxin levels found at HVM. Decisions on future testing will depend on these results.

Funds for Testing

- *Need for greater funding for testing and eventual cleanup.*
- *State Representative Pollet and others indicated that the Ecology budget of $35,000 is inadequate for the [Sediment Sampling and Analysis Plan] testing needs in this area. He and other speakers requested Ecology to seek additional funds, as well as petitioning private parties to contribute towards independent testing if possible*.

Ecology Remarks:

The KIP site underwent investigations that screen for hundreds of substances, under procedures developed for the state Model Toxics Control Act requirements for a site of this type. Follow-up monitoring, including those planned for this fall, also complies with these requirements. Based

on these scientific evaluations, Ecology is confident that the site has undergone appropriate characterization and does not require additional testing at this time, other than periodic monitoring for chemicals of concern.

The City of Kenmore and Ecology are preparing a Sediment Sampling and Analysis Plan to evaluate and follow up on the October 2011 report of dioxins, PCBs, and other contaminants in sediments at HVM. Both the City of Kenmore and Ecology have secured funds for the sediment testing. The City of Kenmore had previously planned sediment testing to prepare to apply for federal dredging to maintain the Kenmore Navigation Channel. Sediments to be dredged must first undergo testing for contamination to determine the proper disposal option.

The City will broaden the scope of its study by extending it to include sediments off Log Boom Park, and by cooperative agreements with other lakefront property owners for additional sample locations. Ecology has secured $35,000 in state Toxics Control Account funds to conduct additional testing at HVM and the Kenmore lakefront vicinity, including locations off KIP shorelines. We estimate that this funding will provide the next step in evaluating dioxin and PCB occurrence at the Kenmore lakefront area including Log Boom Park.

Ecology and the City of Kenmore expect the sediment studies to provide:

- Direct information on sediment conditions off Log Boom Park
- Information to determine – or begin determining – the "footprint" of elevated dioxins, PCBs, and other potential contaminants in area sediments
- Clues from the footprint to identify – or begin identifying –the elevated contaminant source
- Data on navigation channel sediment for proper dredged materials disposal

Such studies at this stage of an initial investigation may indicate or clarify a need for additional study. If so, cooperation among citizens, the City, Ecology, other agencies, and the legislative delegation will be essential in making the case for obtaining funding and support needed to proceed in order to address the community's concerns. If a potential source is identified, Ecology could require that the potentially liable party or parties assume responsibility for further investigation and possible cleanup.

Identify Sources of Toxins

- *Need to identify source(s) of the toxins. Several requests were made for Ecology to investigate specific areas as possible sources of PCBs and dioxins: the shores of KIP, storm water outfalls near HVM, Cal Portland, asphalt/hot mix plant, among others.*

Ecology Remarks:

Ecology agrees on the need to determine the source of toxins that are found at a site and, if possible, whether the contamination is historic or active. Generally, the first step is to determine the "footprint," the area where the contaminant is elevated. In the case of dioxins, part of this

involves a horizontal assessment, particularly if the elevated concentrations are at or near the sediment surface. Shallow findings could suggest an active source. If this were the case, identifying the source would become a higher priority. The horizontal assessment also would evaluate the lateral extent of this contaminant – how far east and west the contaminant occurs, and how best to control and cleanup this contaminant. The next step would be to evaluate a vertical assessment and determine if this is a recent or historic issue.

Stockpiled soils:

- *Speakers presented conflicting observations of stockpile soil movement and possible excavation at the KIP site. Some speakers also identified the fact that Ecology did not propose testing of the stockpile soils until citizens became involved.*

Ecology Remarks:

KIP's proposal to Ecology and Kenmore for the Deferred Industrial Maintenance project in October 2011 addressed proper and safe management of surface soils stockpiled at the site's west area. This included a plan for moving the surface soil from the west to the east area of the KIP site and never included sale of these soils. The surface stockpile soil rested on top of the clean, not-to-be-disturbed fill that covers the landfill site. Moving the stockpile involved no disturbance of the fill cap.

In response to citizen inquiries, Ecology directed KIP to conduct additional sampling. Ecology has posted the 2011 results on the KIP site webpage. Kiewit General Manson (KGM), which now occupies KIP's western 14 acres, sampled additional soil samples in 2012, and Ecology has added the results to the webpage.

All results showed no detection of PCBs and levels below state cleanup standards. Ecology has confirmed with KIP that these soils will be stockpiled at the east area of the site and will not be sold for unrestricted use. The stockpiled material has been contoured to minimize erosion potential and proper stabilization with permanent erosion controls, including mulch and seeding, has been performed.

The 2011 and 2012 samples indicate that the material is well below industrial cleanup levels for all substances tested, and is appropriate for the material to remain on the industrial site. If KIP were to consider future off-site use of the soil for unrestricted land-use applications, the material would require additional sampling, subject to Ecology approval. If KIP undergoes development, and the stockpike dirt remains on-site at the time of redevelopment, it would be relocated in accordance with the KIP Cleanup Action Plan, which addresses testing and disposal for all soil at the site.

Stormwater:

- *Several speakers expressed skepticism regarding the use of infiltration for treatment of stormwater as well as the possibly inadequate sizes of retention basins. They expressed the opinion that adequate safeguards are not in place to ensure that contaminated stormwater does not enter groundwater.*

Ecology Remarks:

Ecology's Construction Stormwater General Permit governs the management of stormwater on KIP's 14 acres leased for the Highway 520 bridge project. This permit allows infiltration of stormwater into the ground. The type of construction at this site generates two pollutants: turbidity and high pH.

Turbidity is the amount of solid particles in the water and for example, comes from runoff water that drains off bare soils, which is common at many construction sites when excavation takes place. This site, though, does not involve such excavation. All work occurs on a layer of crushed rock. Turbid stormwater is a concern if discharged directly to surface water; it is not a concern when discharged to ground as the subsurface soil accumulates the solid particles.

Construction of concrete structures can produce high pH (caustic) runoff water due to the high pH of uncured concrete. The permit does not allow the discharge of high-pH stormwater into the ground. Various practices prevent this. Examples include recovery and proper disposal of water used to rinse concrete forms and the use of rain sheds to prevent stormwater from contacting uncured concrete. At the 520 bridge project at KIP, high-pH stormwater is collected at the concrete forming areas and discharged to the King County sanitary sewer under permit. The high-pH water is not discharged to groundwater.

Concerning the former landfill materials isolated underground at KIP, groundwater monitoring results from April 2012 showed the new stormwater drainage system is working as designed. All of the monitoring results for the entire KIP site showed no detection for KIP chemicals of concern (petroleum diesel and oil, arsenic, barium and lead) and pH and turbidity were normal and not a concern. The testing included additional chemicals - semi-volatile organic compounds, copper, cadmium and zinc - and these results showed no detection or very low levels, substantially below state cleanup levels.

In other words, the April 2012 results show no migration of chemicals to adjacent waterways. The 520 bridge concrete work at Kenmore has not caused changes to the subsurface causing chemicals to migrate to adjacent waterways, and has not caused high pH and turbidity to be discharged to the adjacent waterways. Dioxins and PCBs tend not to be transported in water, and sediment transport from the landfill to the lake is unlikely if not impossible. This monitoring will be repeated in September 2012.

Endangered species:

- *Speakers expressed particular concern about possible impacts of toxic exposure on fish, especially endangered Chinook salmon. One speaker also identified bird species as not receiving adequate environmental consideration.*

Ecology Remarks:

The elevated dioxin and PCB levels found in HVM sediments concerns Ecology and other agencies. The City and Ecology follow-up sediment studies will provide the first information

that will give some indication whether dioxins occur in shallow sediments where they can enter the food chain.

Contaminants in the isolated former landfill at the KIP are unavailable to the food chain. Groundwater monitoring at KIP in 2009, 2010, and 2012 have tested all known chemicals of concern and the results show no migration of these chemicals into adjacent waterways. The groundwater tests will be repeated in September, 2012.

Mitigation:

- *Several speakers expressed the opinion that WSDOT should leave the KIP site better than when it was found. Members of the public requested that WSDOT consider mitigation strategies once construction activities have been completed*.

Ecology Remarks:

Ecology has forwarded these comments to WSDOT.