East Tacoma
PCB
Investigation

Results & Next Steps

November 20, 2013
City of Tacoma
Environmental Services
Agenda

- Introductions
- Tacoma’s Monitoring Program
- East Tacoma PCB Investigation
- What are PCBs and how do they impact human health?
- Next Steps
Over $100 million invested to clean and cap the waterway.

- Reduce or eliminate contaminant sources to the waterway so that ratepayer investment is protected!
Thea Foss Waterway - Background

1983 – Designated a unit in the Commencement Bay Superfund Cleanup

2001 – City, EPA and Ecology entered an agreement known as the Foss Work Plan

- Aggressive source control paired with monitoring
- Focused on the watershed
- Program intent to prevent recontamination

2006 – Cleanup of the waterway complete

- $105 million

Current – Continuing to find pollutant sources to prevent them from impacting our stormwater
Waterway Pollutant Sources

- **Atmospheric**
- **(LNAPL)**
- **(DNAPL)**
- **In-water groundwater and tar seeps**
- **Marinas**
- **Storm water spills**
- **Upland groundwater and tar seeps**

Diagram showing pollutant sources in waterways, including atmospheric, in-water, and ground/water and tar seeps.
The **Foss Work Plan** is designed to protect the Waterway from impacts of contaminants in stormwater

- Eleven years of work and ongoing
  - Monitor stormwater and sediment,
  - Analyze data,
  - Take field actions, and
  - Repeat.
Field Actions of the Foss Work Plan

- Spill Response
- Source Control Investigations
- System Scrubbing
- Regional Treatment Devices
The Foss Work Plan applied to PCBs and East Tacoma

- Intermittent elevated concentrations in sediment trap between 2005 and 2012
- Source control investigations performed, source not found
- Storm line cleaning in summer 2011
- Elevated in WY2012 sediment trap results
- Intensive investigation initiated in fall 2012
Step 1

- Split up upstream drainage into segments
- Collected sediment from catch basins in each segment and composited
- Results indicated that Segment G was elevated for PCBs
Step 2

- Sampled individual catch basins in Segment G
- 12 catch basins had concentrations greater than 1 ppm PCBs
- Results didn’t indicate a single point source
Step 3

- Additional sampling and investigation

- Sampled:
  - Catch basins beyond Segment G boundaries
  - Manholes
  - Alley dirt, especially under transformers
  - Soil in planting strips
  - Undeveloped right-of-way
  - Asphalt
  - Gravel under road
  - Black tar present in catch basin
  - Dirt in 2-inch side pipes in catch basins
Black Tar

2” Perforated Side Pipe
Investigation Summary

- Tied to 1975 road construction project
- 2-inch side pipes were installed to provide drainage during construction of the road
- Sealant between the asphalt and concrete has PCBs in it
What are PCBs

- Man-made chemicals used for 50 years mostly in electrical components, industrial fluids, caulks, and paints
- Non-flammable, stable for years, and made caulks and paints more pliable
- Banned in the late 1970s due to environmental concerns because they accumulated over time in fatty tissue in seafood, animals, and humans
- Due to their stability they still exist in many products that are now more than 50 years old
How do PCBs get into the Environment?

- Initial Entry
  - Historically approved uses at industrial sites
  - Spills and leaks
  - Degradation of pre-1979 materials, such as the paints and caulks

- Persistence
  - Very stable chemical for decades

- Secondary Cycling in the Environment
  - Dust and wind-blown soil
  - Stormwater entrainment of dust and debris
  - Natural cycling in living systems
Where could the public be exposed?

- Consumption of food containing PCBs
- Inhalation of dust and wind-blown soil
- Direct contact with aging and flaking paints or caulks (the dust)
- Direct contact with spilled PCB-fluids or contaminated soils

- *Drinking water exposure is extremely rare due to insolubility of PCBs in water*
Short Term Health Risks for PCBs

Low-level, short-term exposures to PCBs are unlikely to cause adverse health effects. People eating large amounts of certain sports fish, wild game and marine mammals are at an increased risk for higher exposures and possible adverse health effects.

Source: It’s Your Health: PCBs; Health Canada’s Management of Toxics Substance Division
Long Term Health Risks for PCBs

- Long term (decades) exposures to PCBs may:
  - Increase cancer risk in humans
  - Slightly elevate risk of disorders to the liver, thyroid, reproductive system, and/or immune system
Where would exposure occur on this project?

- The public should not be exposed to PCBs on this project
  - The sealant is within the catch basins where access is limited
  - Sediment in the catch basins is not making it to the bay, but could over time if left uncontrolled
Next Steps

- Work with Ecology and EPA to finalize a cleanup plan
  - May collect more samples
- Remove the PCBs by cutting open the road – target summer 2014
- Will provide more information in coming months as we figure out the details
Contact Information

- Lorna Mauren, P.E. – 253-502-2191
  lmauren@cityoftacoma.org
  Surface Water Assistant Division Manager

- Sue O’Neill – 253-591-5789
  soneill@cityoftacoma.org
  Public Works Assistant Division Manager

- John Sherman – 253-798-6528
  jsherman@tpchd.org
  Tacoma Pierce County Health Department, Program Manager
Questions?