



DEPARTMENT OF  
**ECOLOGY**  
State of Washington

# Everett Smelter Cleanup

## Project Update

October 15, 2015

# Meeting Agenda

- **Presentation**
  - **Project and health information**
  - **Budget update**
  - **Soil Sampling**
  - **Residential & parks cleanup**
  - **Lowlands Area**
- **Question and answer session**
- **Open house**

# Project Staff

- Meg Bommarito
  - Project Manager
- Katie Kulha
  - Uplands Site Manager
- Sandra Matthews
  - Lowlands Site Manager
- Marieke Rack
  - Outreach Coordinator

# Public Comment Period

Supplemental  
Remedial  
Investigation  
Report

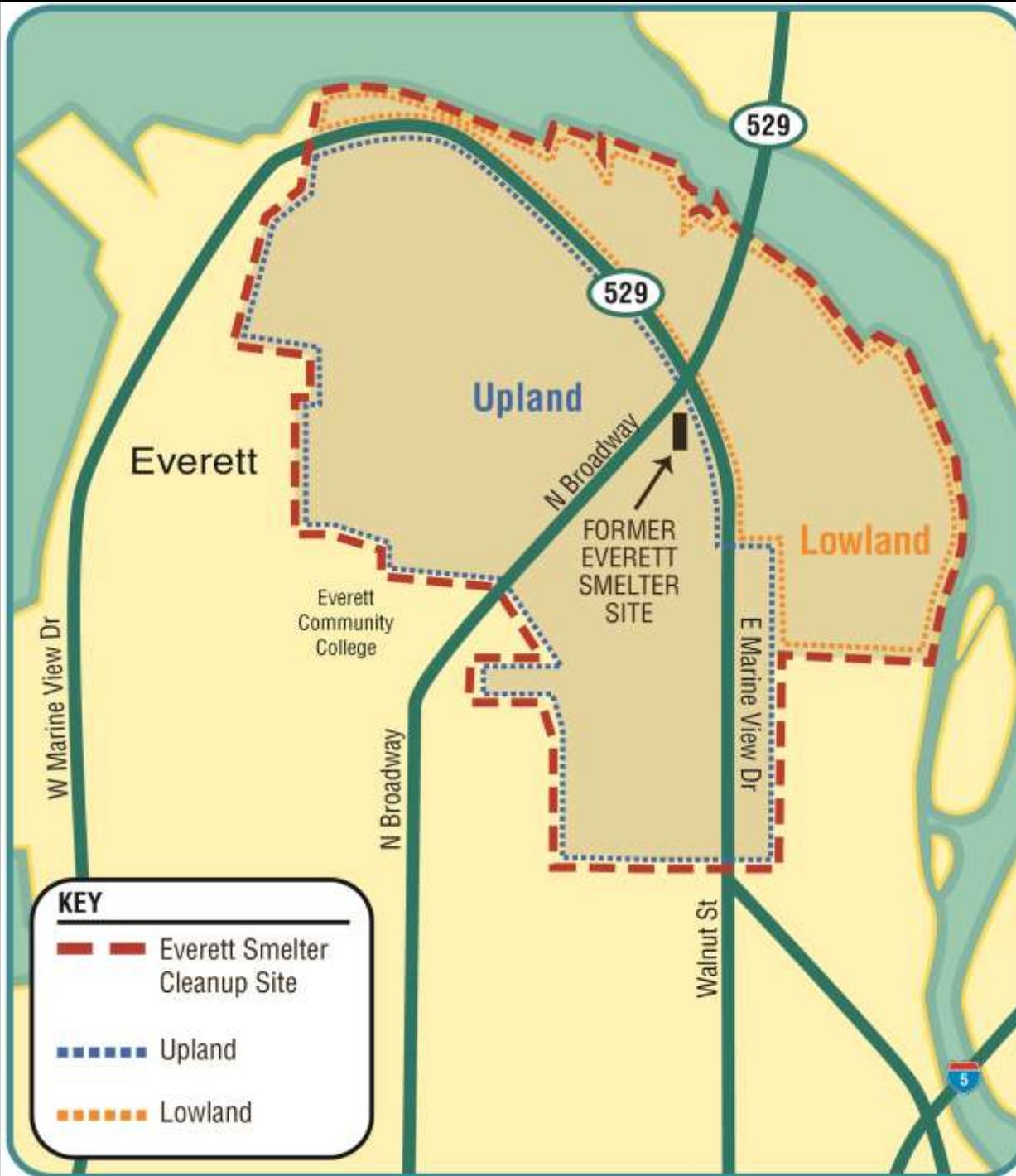
Feasibility  
Study Report

Available for public review and  
comment **October 5 – November 3**

# Background



- 1893-1912 – Smelter operations
- Smokestack emissions resulted in soil contamination
- Most contaminated areas cleaned up



**Uplands:**  
Cleanup  
phase

**Lowlands:**  
Investigation  
phase

# Health Information

- Contamination poses no **immediate** threat to your health but is a long term health concern.
- Primary exposure to contamination is through swallowing soil.
  - Children are the most vulnerable

**Ecology recommends taking simple steps to reduce exposure.**

# Reduce your risk from contaminated soil



**Wash** your hands well after playing in the dirt.



Keep dust down – **Damp mop** and **damp dust** regularly.



Eat fruits and vegetables – but **wash** them first.



**Wear gloves** while you garden.



Take your shoes off! **Don't track dirt** in the house.



**Wash** toys and pacifiers often.



**Bathe** and **brush** your pets often.



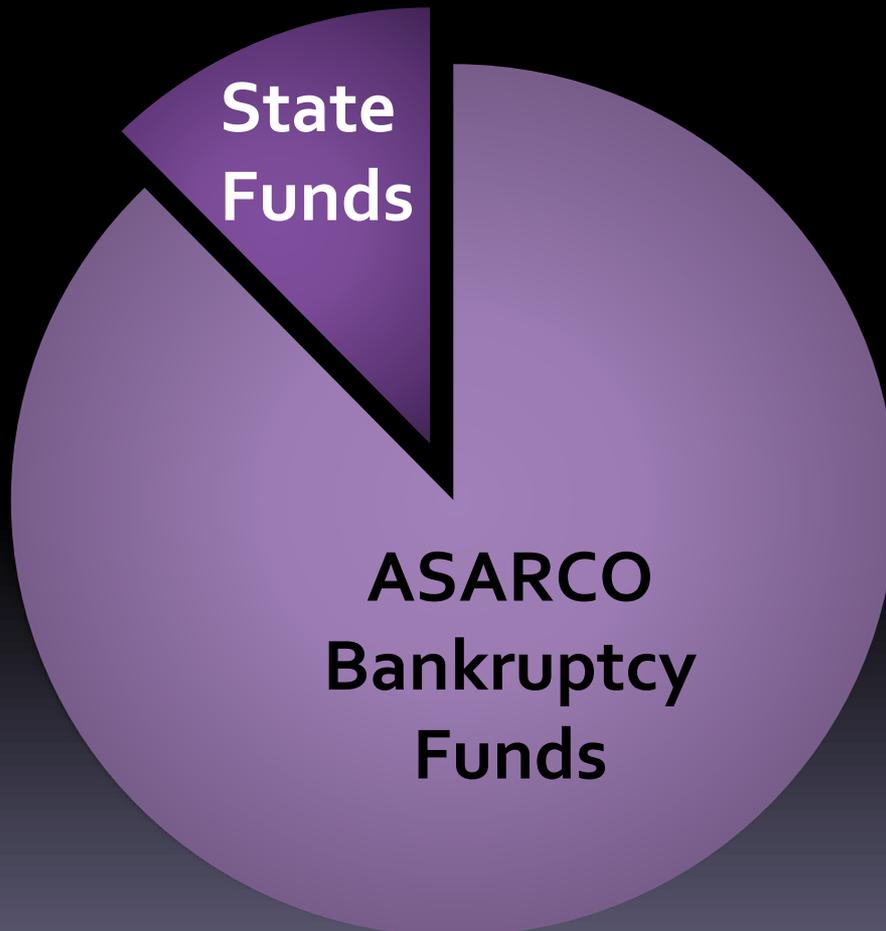
**Garden** in raised beds or containers filled with clean soil.



**Vacuum** often with a machine that has a HEPA filter.

# Project Funding

State funds pay for park cleanups



**Bankruptcy funds pay for:**

- Residential work
- Lowlands work

# ASARCO Bankruptcy Funds

<b>\$33.9 million</b>	<b>Bankruptcy settlement</b>
\$23 million	Spent to date
\$10.9 million	Remaining funds

**Additional funding will be necessary.**

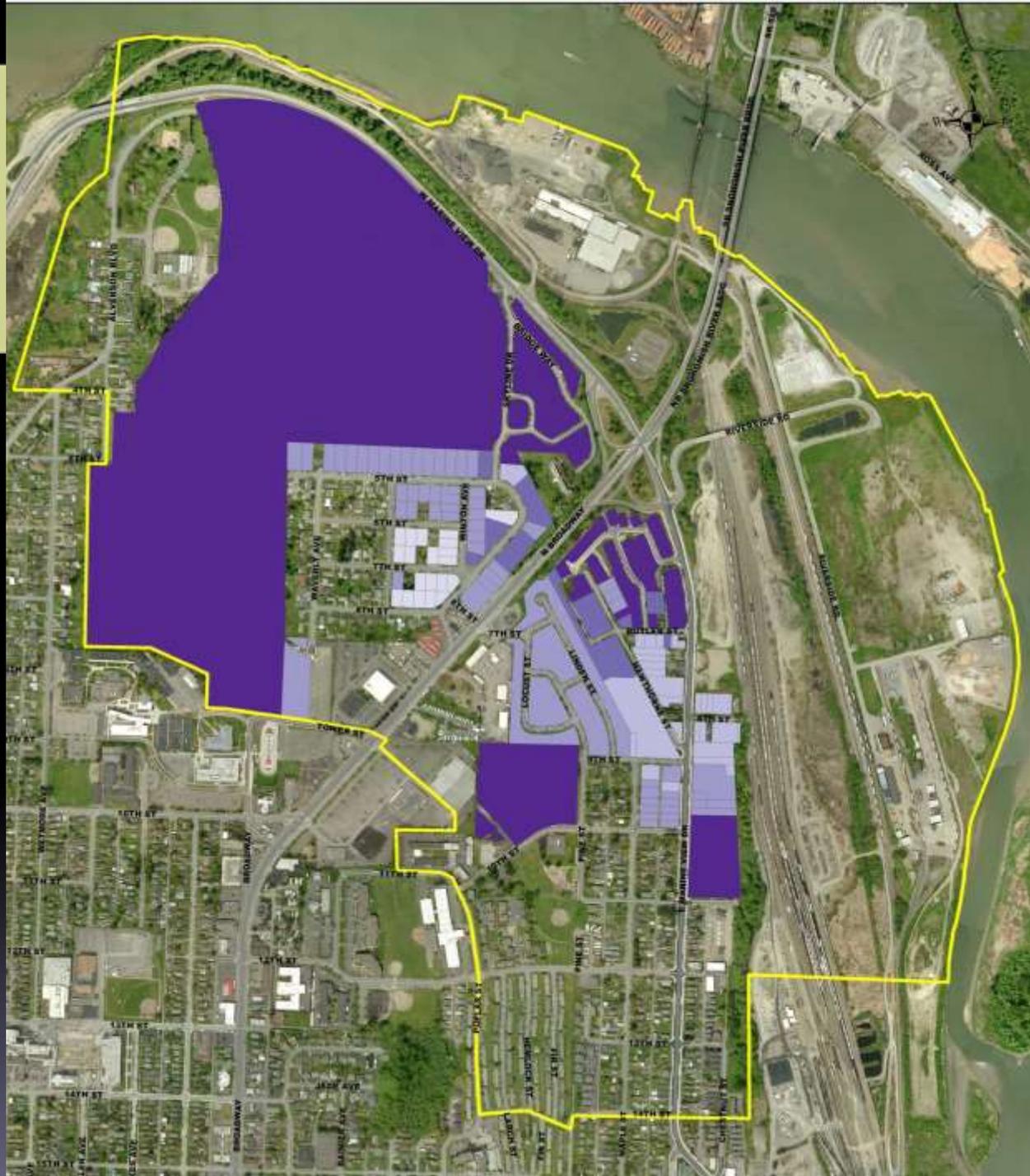
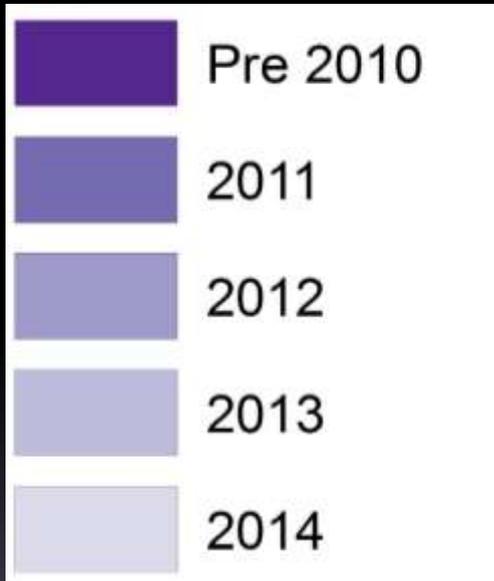


# Uplands Area

# Cleanup Strategy

- **Remove accessible soil**
- **Work in areas closest to the former smelter**
- **Prioritize by level of exposure risk**
  1. Residential areas, child care facilities and schools
  2. Playgrounds and parks
  3. Commercial areas
- **Provide outreach and education**

# Cleanup By Year



# 2015 Uplands Work

**Property  
Sampling**

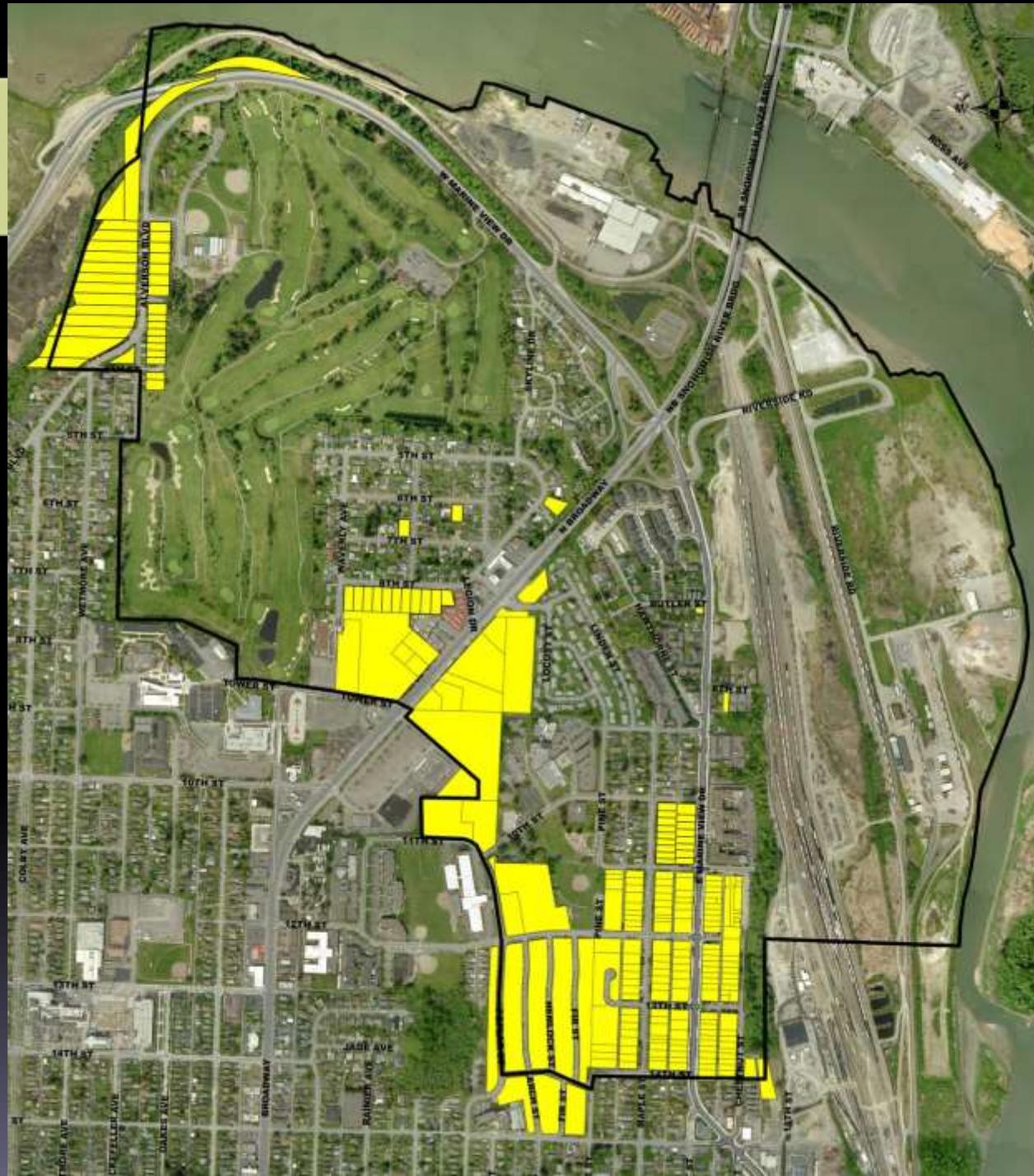
**2015 Cleanup  
Group**

**Planning for  
Future Park  
Cleanups**

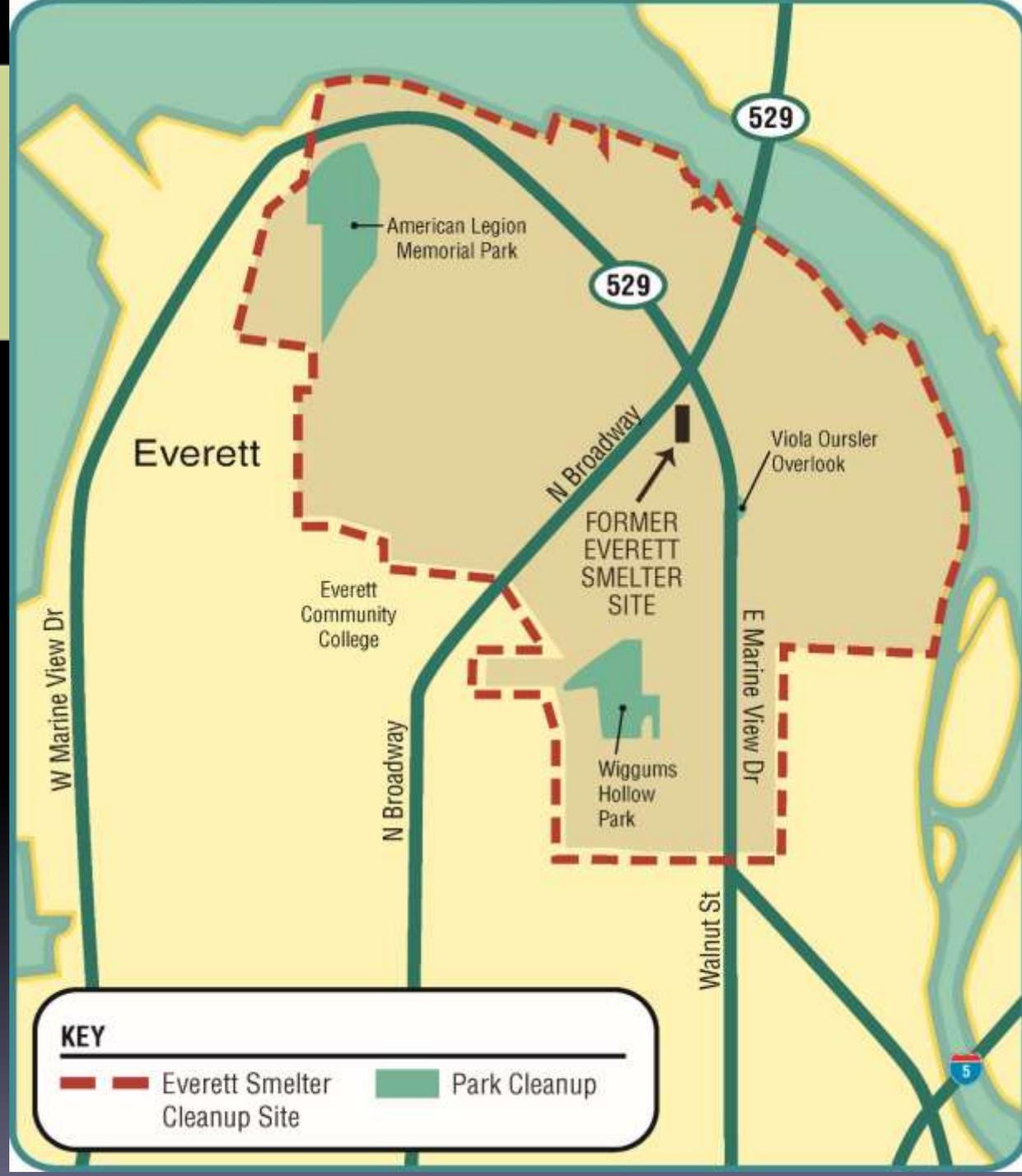
**American Legion  
Memorial Park  
Cleanup**

# Sampling

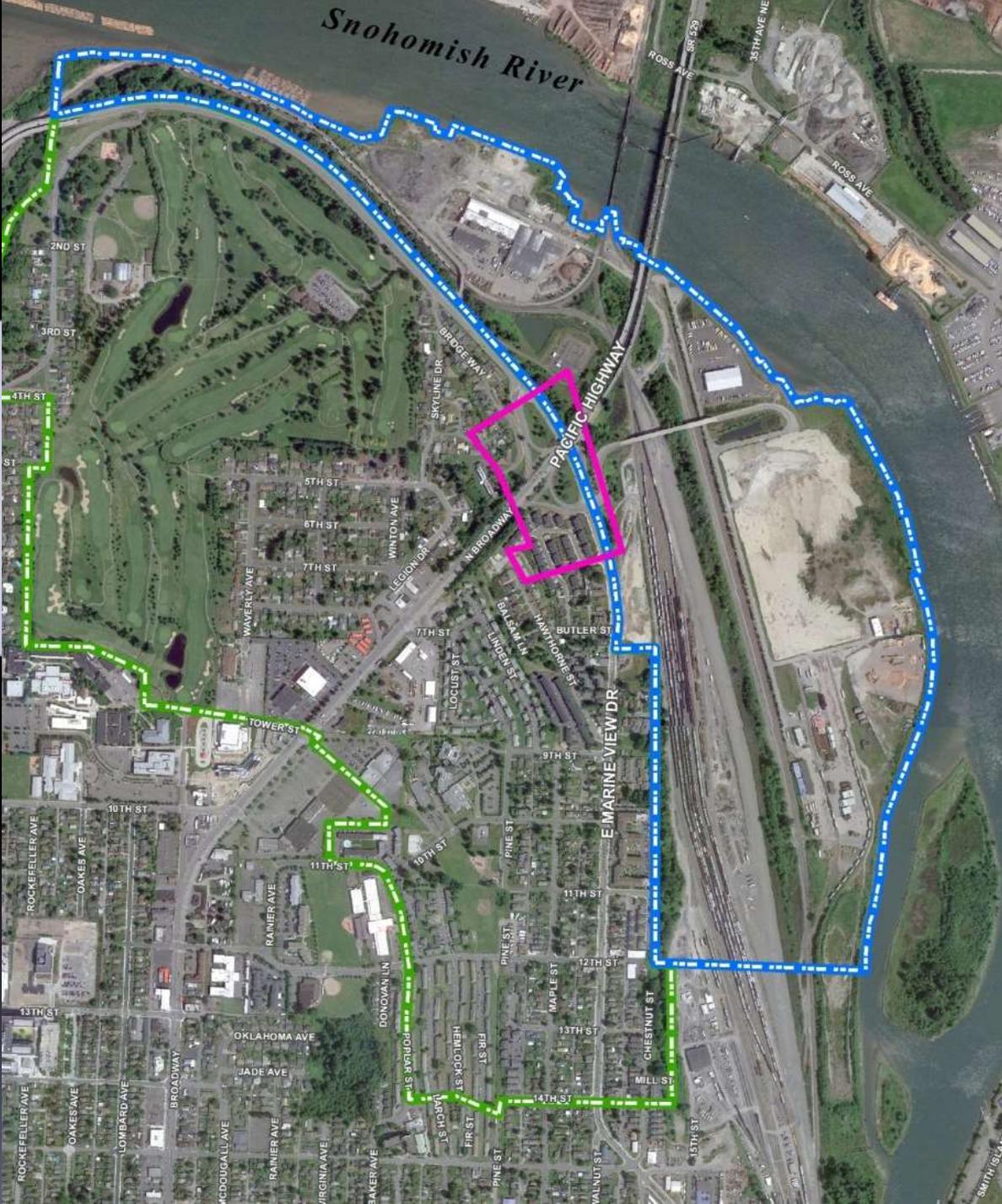
Properties that need to be sampled



# Park Cleanup





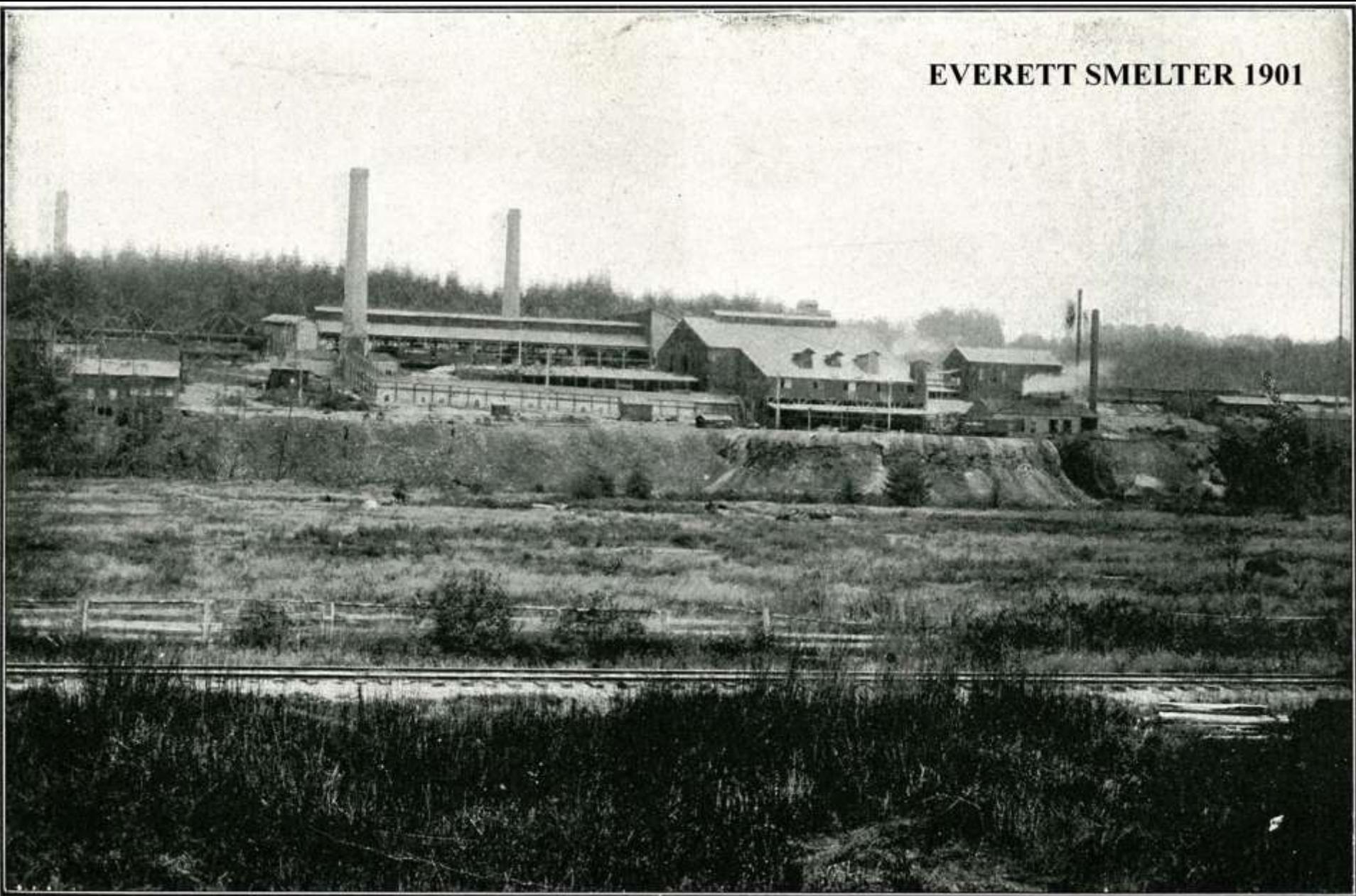


# Lowlands Area

Former smelter facility boundary



**EVERETT SMELTER 1901**





# Cleanup Strategy

- **Prioritize cleanup areas**
  1. Protect Snohomish River
  2. Address remaining source material
- **Develop cleanup options**
- **Determine phased approach**
- **Provide outreach and education**

# Lowlands Work To Date

- Original Remedial Investigation missing data
- Collected samples to fill data gaps
- Identified source material contamination



# Lowlands Work To Date

- Supplemental Remedial Investigation Report
- Feasibility Study



# Supplemental Remedial Investigation

- **What is the nature and extent of contamination?**
- **Where is Everett Smelter contamination?**

# Contamination

## Arsenic

- Soil, shallow and deep groundwater
- Throughout the site

## Lead

- Soil, shallow and deep groundwater
- Some areas in the site

## Mercury

- Shallow groundwater, surface water, sediment below outfalls
- Limited areas of the site

# What is the extent of contamination?



Areas with Everett Smelter contamination



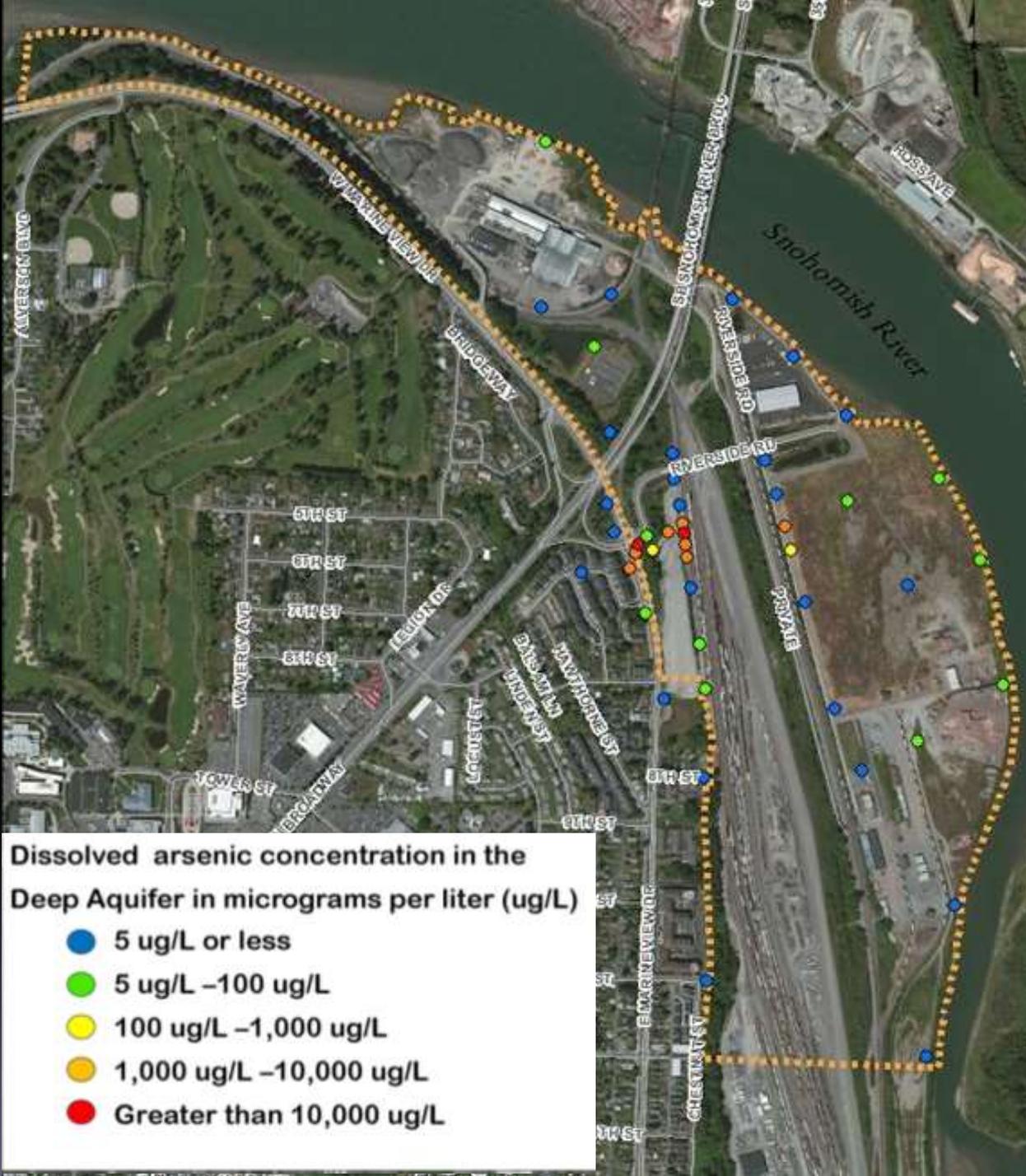
Areas with other contamination



**Where is  
Everett Smelter  
contamination?**



# Deep Groundwater Sample Results

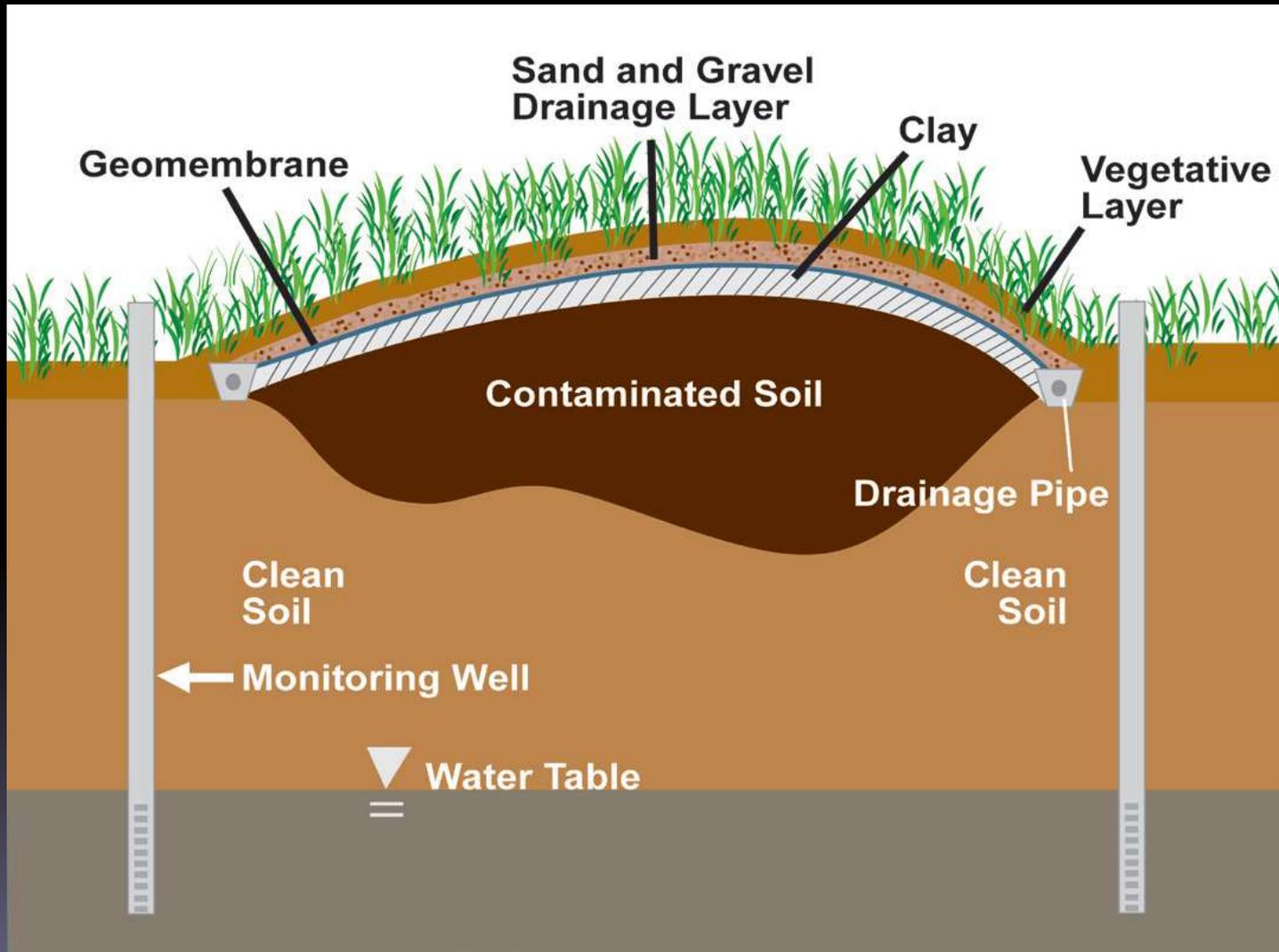


# Feasibility Study

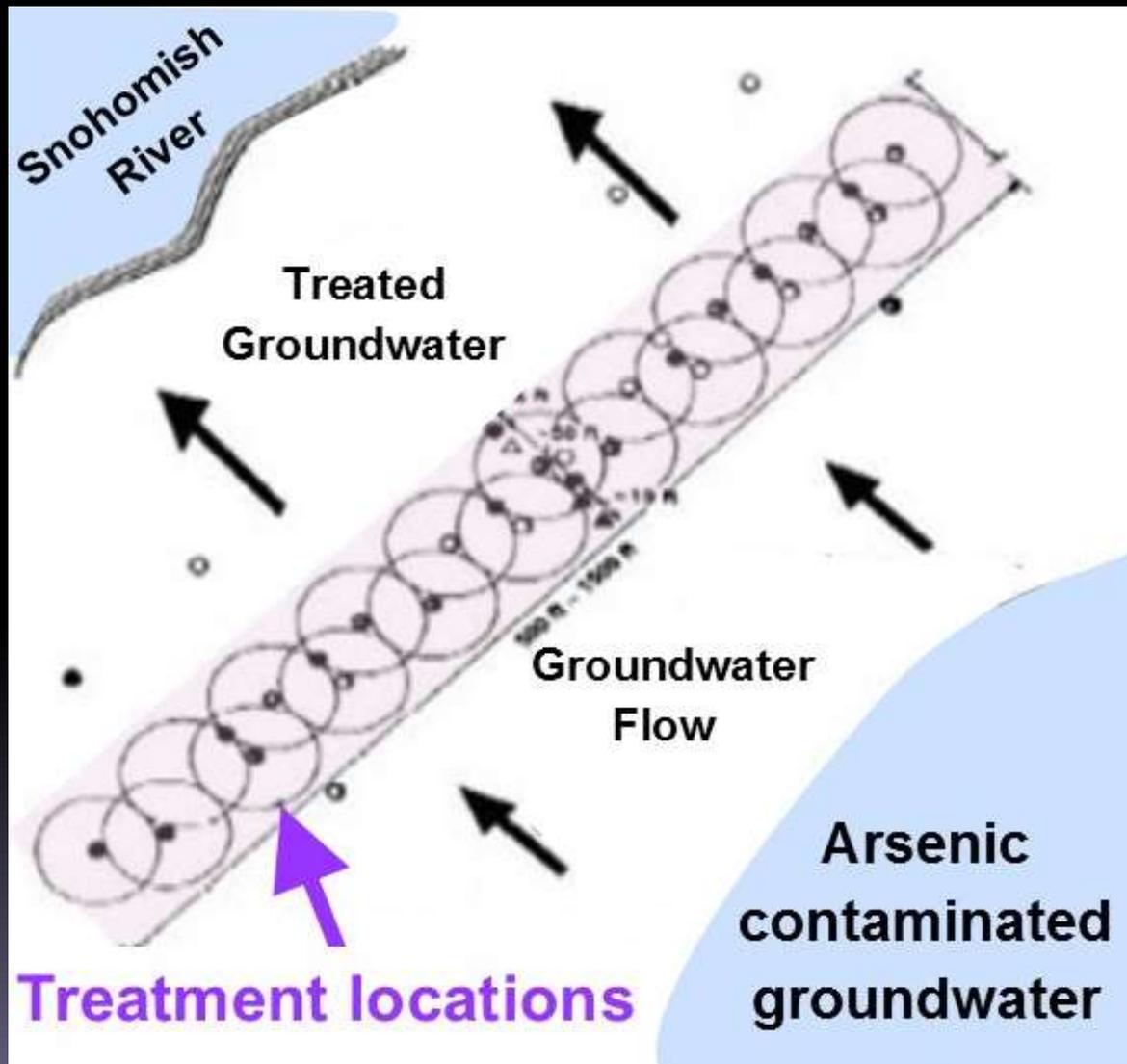
- What are the options for **cleanup**?
- How do we **evaluate cleanup actions**?
- What are the **preferred cleanup actions**?

**What are the options for cleanup?**

# Capping



# On Site Treatment



# Soil Removal



# Institutional Controls



# Other Cleanup Activities

- **Repairs**
- **Monitoring**



# Cleanup Alternatives Developed for Everett Smelter contamination



**How do we evaluate  
cleanup actions?**

# Cleanup Objective

... to eliminate, reduce, or otherwise control to the **extent feasible and practicable**, the unacceptable risks to human health and the environment...

# Minimum Requirements

**Protect human health and the environment**

**Comply with state cleanup standards**

**Comply with state & federal laws**

**Monitor for compliance**

# Other Requirements

**Permanent as possible**

**Occur in a reasonable time frame**

**Consider Public Concerns**

**What are the  
preferred cleanup actions?**

# Evaluation of Cleanup Options

- ▣ Protectiveness
- ▣ Permanence
- ▣ Cost
- ▣ Long Term Effectiveness
- ▣ Management of Short-Term Risk
- ▣ Implementability
- ▣ Consideration of Public Concern

# Areas Requiring Remedial Alternative Evaluation



-  Group A
-  Group B
-  Group C
-  Group D



# Preferred Alternative by Area

 **Group C:**  
Capping,  
institutional  
controls,  
repairs

 **Group D:**  
Institutional  
controls



# Comment Period

## Supplemental Remedial Investigation & Feasibility Study Reports

Review and Comment

October 5 – November 3

Ecology  
website

Ecology Central  
Records in  
Bellevue

Everett Public  
Library (Hoyt)  
Reference desk

# Commenting

- **Do you know about Lowlands historical activities?**
- **Do you have site observations?**
- **Are there future land use interests we should know about?**
- **Do you have concerns about the preferred alternatives?**

# Next Steps

- Close comment period
- Review and respond to comments
- Make changes to documents if needed
- Finalize the reports

# Next Steps

- Draft a Cleanup Action Plan
- Public comment period on draft Cleanup Action Plan
- Finalize the plan
- Cleanup
  - Phased approach
  - Monitor as work is done

# Want More Information?

- Call our local hotline at **425-446-1024**
- Visit our website with an online photo gallery
- Sign up to receive fact sheets
- Sign up for our listserve
- Check out the construction site signs for residential and park work updates.

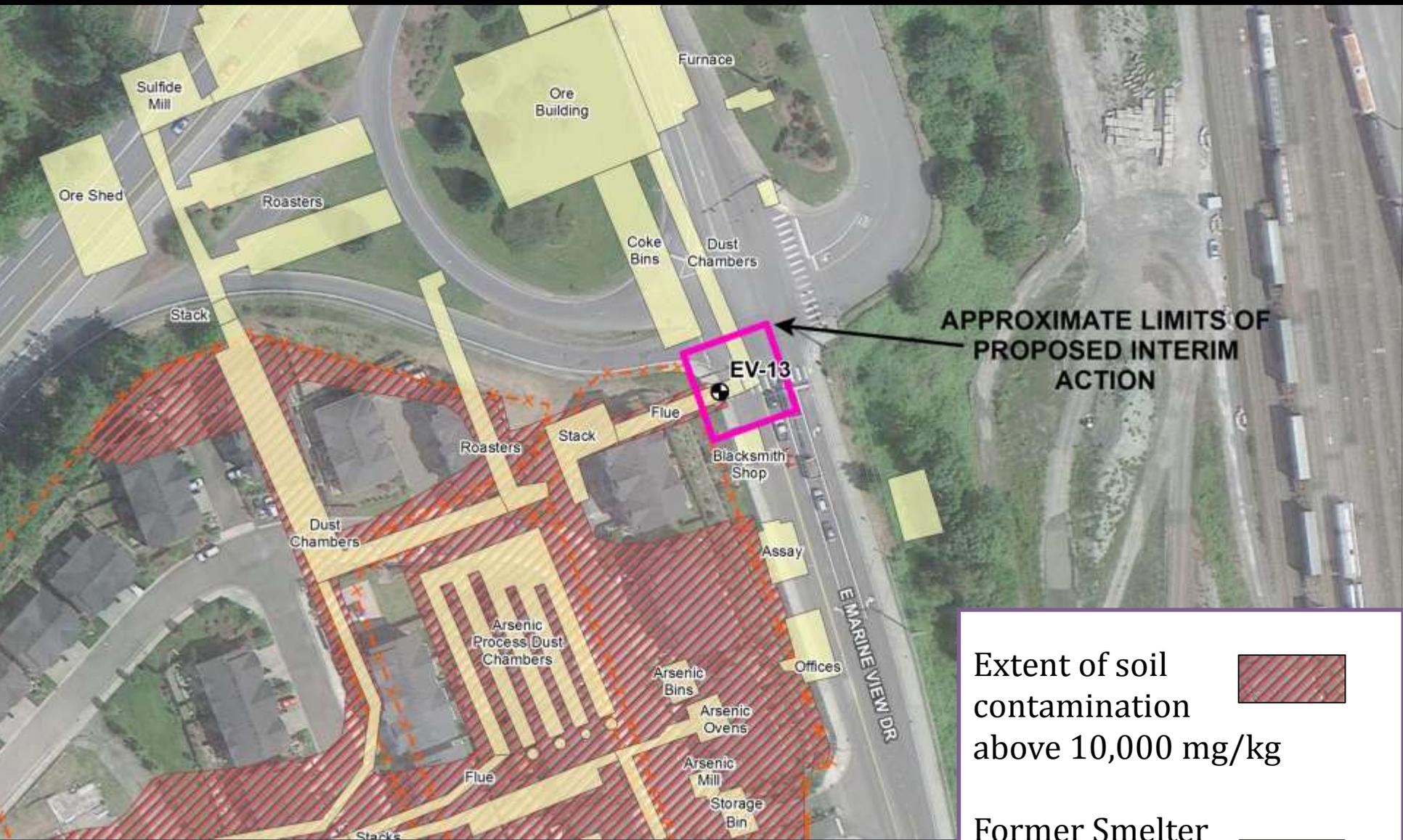
**QUESTIONS?**



# Lowland Area Data



Data collected in 2013 and earlier showed a defined area of groundwater contaminated with high levels of arsenic.

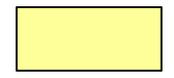


**APPROXIMATE LIMITS OF PROPOSED INTERIM ACTION**

Extent of soil contamination above 10,000 mg/kg



Former Smelter facility

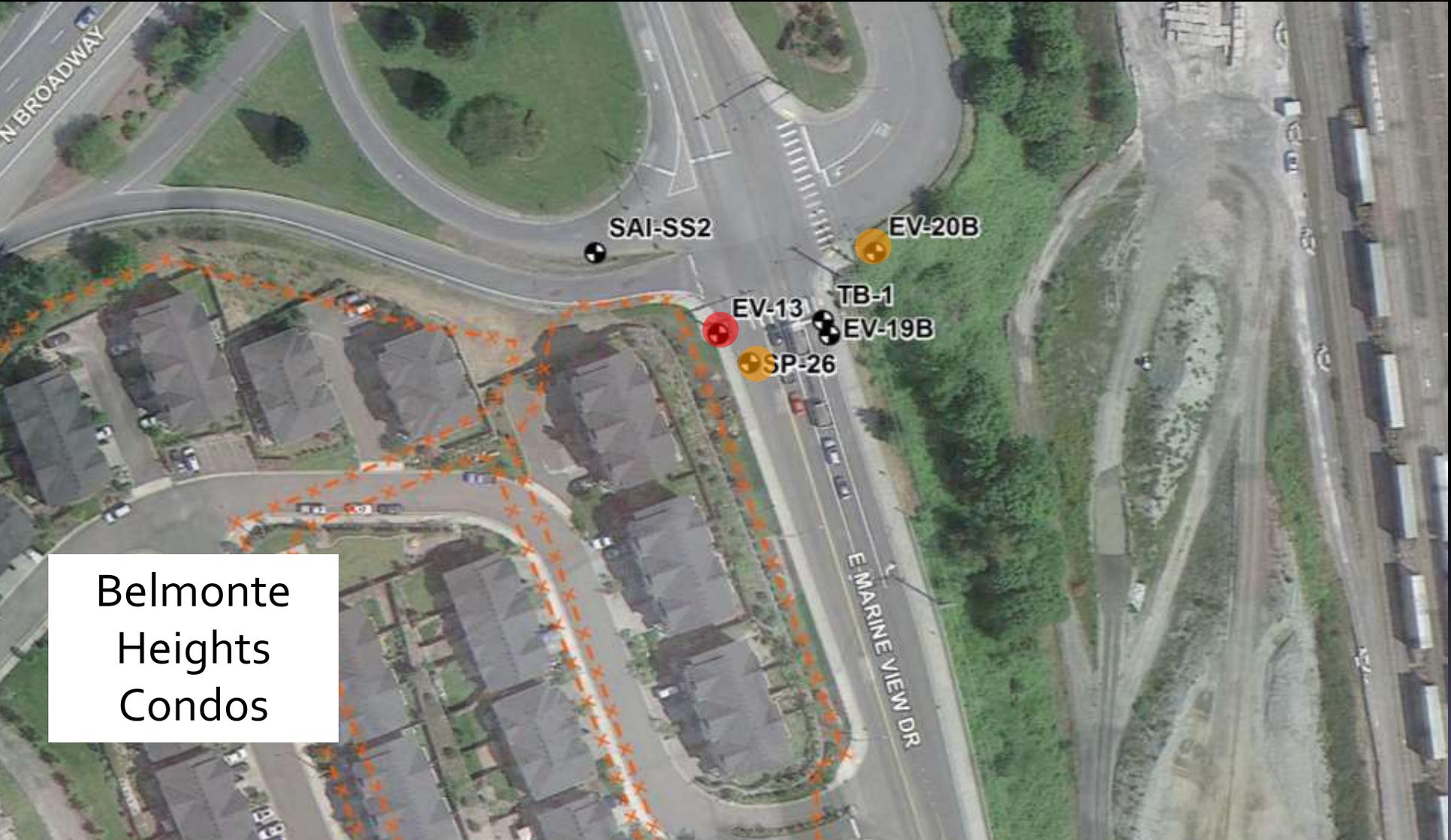


# Deep Groundwater Well Data



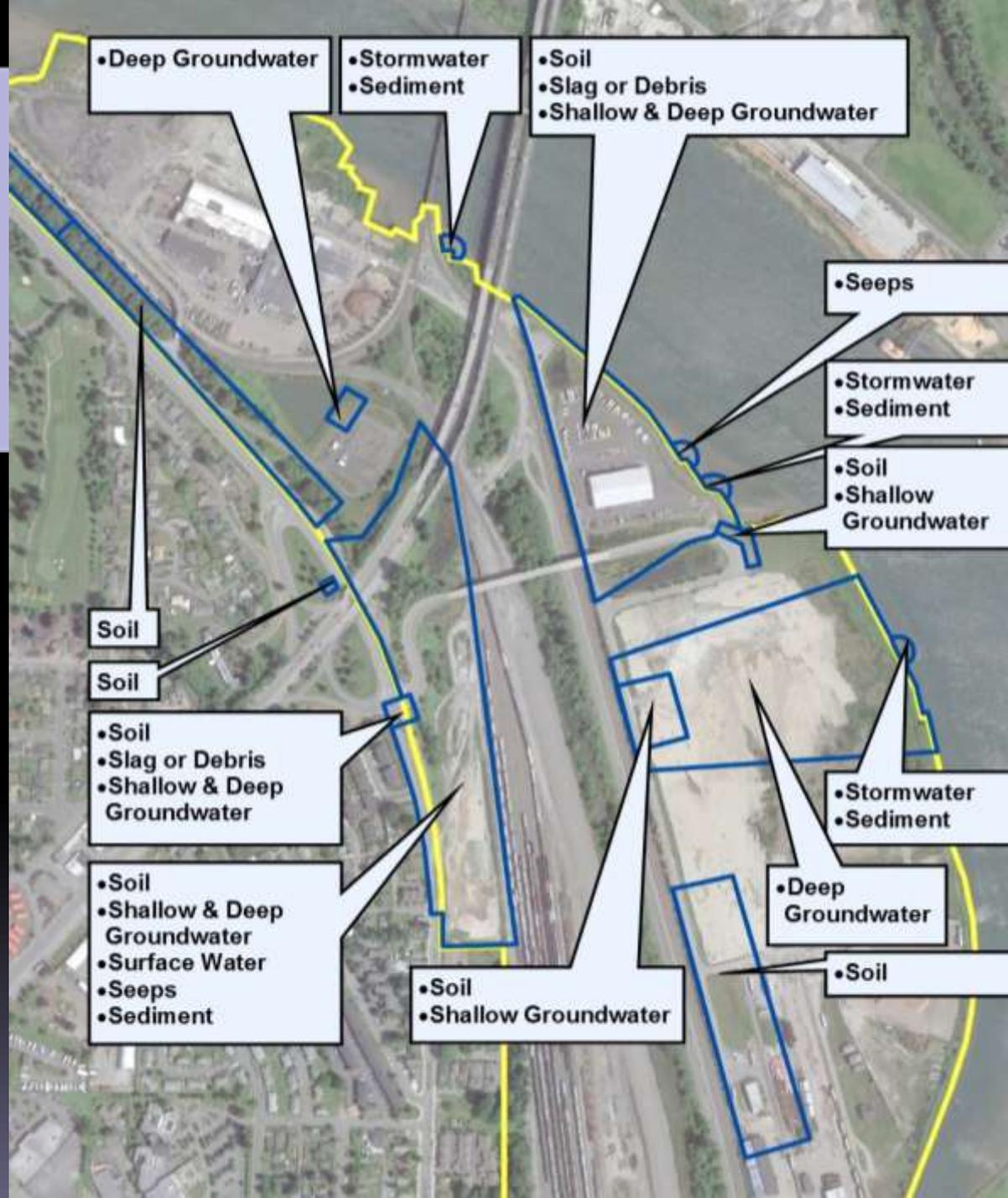
Belmonte  
Heights  
Condos

# Soil Data



Belmonte  
Heights  
Condos

# Contaminated Material



# Areas Requiring Remedial Alternative Evaluation



-  Group A
-  Group B
-  Group C
-  Group D

# Materials Requiring Evaluation

- SW Surface water
- SP Seep water
- O Outfall water
- SE Sediment
- S Soil
- SD Slag or debris
- SG Shallow GW
- DG Deep GW



# Feasibility Study

- **Develop and evaluate cleanup alternatives**
- **Select preferred cleanup actions**

