

# Tacoma Smelter Plume Yard Program Update

June 21, 2022

Tacoma City Council Study Session

Washington Department of Ecology



## Topics

- History
- Project Overview
- Tacoma Smelter Plume Programs
- Search for long-term solutions for the future

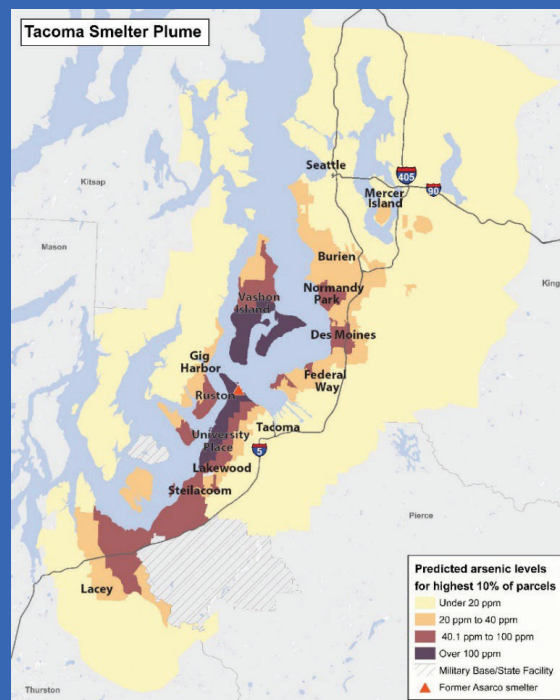


## Asarco Smelter (1890 to 1986)



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## Tacoma Smelter Plume Map



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# Health Impacts

## What are the health risks from arsenic and lead?

Arsenic and lead can contribute to poor health, especially in children. Children are more sensitive because their bodies are smaller and still developing.

**Lead can cause developmental disabilities in children and can permanently lower I.Q.**



**Arsenic can contribute to cancer, diabetes and heart disease later in life.**

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## Ways People Can Be Exposed



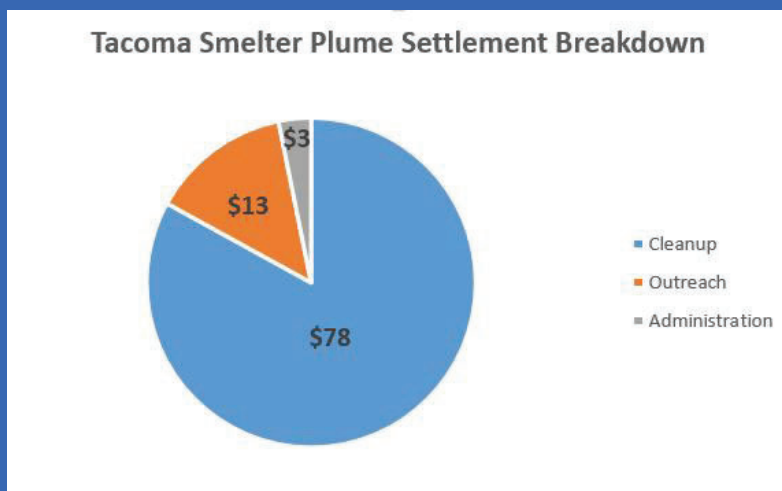
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## Healthy Actions



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## Tacoma Smelter Plume Project

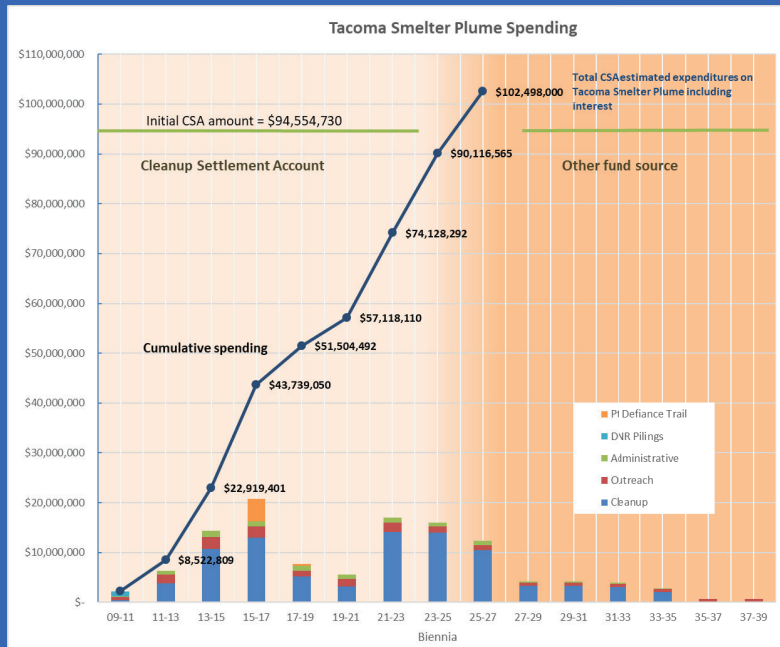


Original breakdown of the \$94.6 million Asarco settlement for the future cost of cleaning up the Tacoma Smelter Plume.

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# Tacoma Smelter Plume Project



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# The Health Department Outreach & Education



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# Working With Residents To Cover Bare Patches Of Soil



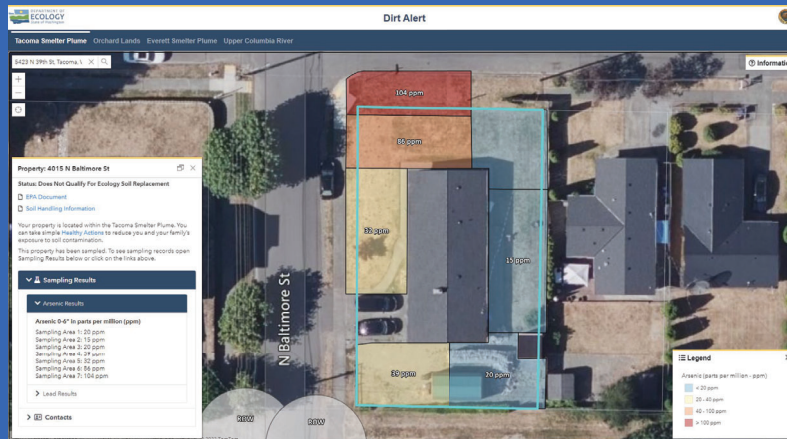
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# Community Garden Outreach



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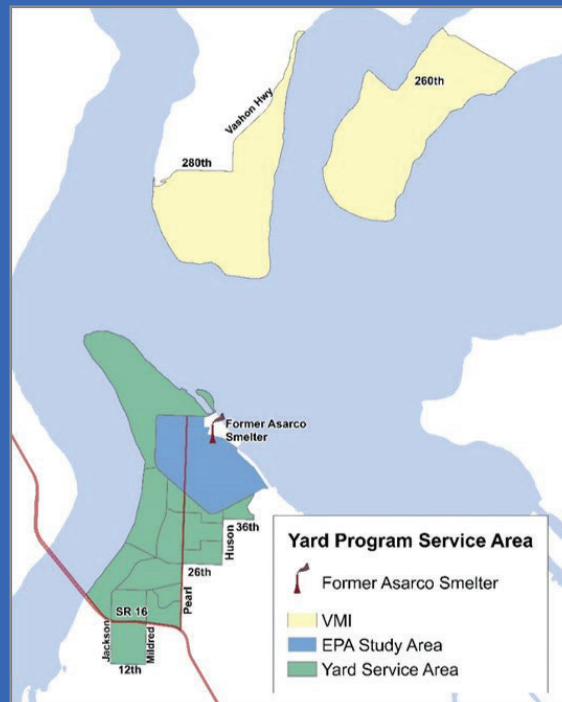
# Dirt Alert Map



[apps.ecology.wa.gov/dirtalert/](https://apps.ecology.wa.gov/dirtalert/)

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# Yard Program Service Area



14

13%

0-20 ppm

74%

21 – 100 ppm

13%

Above 100 ppm

15





## Soil Replacement Work (2022)



- 35 yards completed in 2020-2021
- 49 yards in cleanup in 2022

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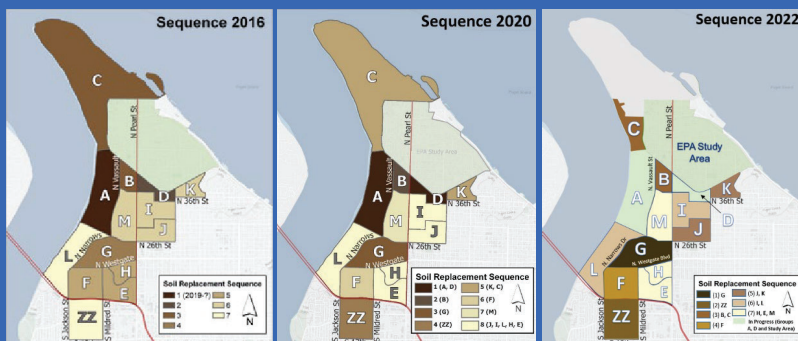
## Soil Replacement



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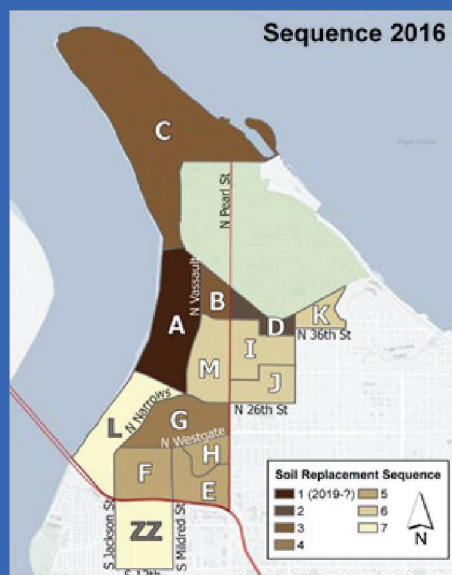
# Soil Replacement Sequence



2016 – 2022: An Evolving Approach

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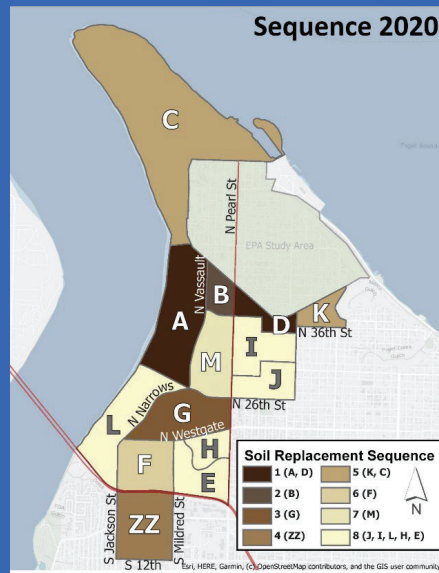
# Soil Replacement Sequence



2016 Sequence – Highest Concentrations

20

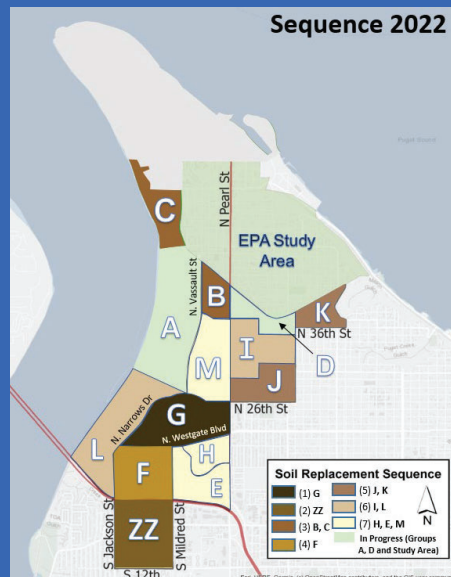
# Soil Replacement Sequence



## First Look at Environmental Health Equity

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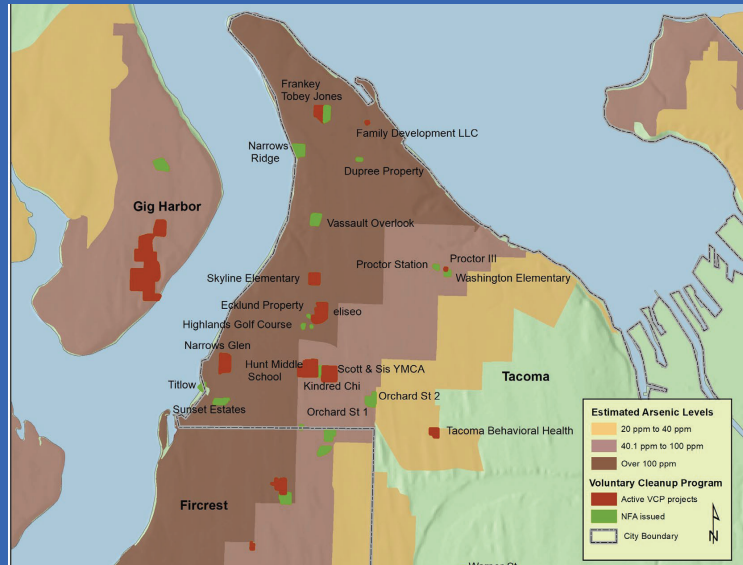
# Soil Replacement Sequence



## Factoring in Environmental Health Equity

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# Technical Assistance



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# Technical Assistance

## Tacoma Smelter Plume Model Remedies Guidance

Sampling and cleanup of arsenic and lead  
contaminated soils

For:

- Formal cleanup sites
- Voluntary Cleanup Program
- Properties under development
- Projects involving soil movement



July 2019  
Toxics Cleanup Program  
Washington State Department of  
Ecology  
Lacey, WA  
Publication Number 19-09.101

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# The Road Ahead

Looking for long-term solutions for

- New residents
- Development



*Photo credit-Bruno Bergher-unsplash.com*

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## Yard Program or Soil Safety Questions

### Contact

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Yard Program Outreach Coordinator  
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Phone: 360-280-2676



Website: <https://ecology.wa.gov/Tacoma-smelter>

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## Soil Sampling and Health Questions

### Contact

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Phone: 253-649-1853



Website: [www.tpchd.org/dirtalert](http://www.tpchd.org/dirtalert)



## Toxics Cleanup Program

June 2022

### Yard cleanup progress

Ecology is using the majority of a \$94.6 million settlement from Asarco to clean up residential yards in Pierce and King counties. The goal is to reduce human health risk by cleaning up the most contaminated areas of the plume-Ruston, North & West Tacoma, and Southern Vashon-Maury Island.

We partner with Tacoma-Pierce County Health Department (Health Department) to sample yards in Tacoma. Since 2013, the Health Department has sampled 3,240 yards (see page 2). Overall, we have data on 5,972 yards in Tacoma, including results from the Environmental Protection Agency's prior Superfund work.

To date, we have replaced soil in 325 yards (with 289 of those yards in the Tacoma area) out of the 1,198 that qualify for soil replacement. In between 2020-2021, despite COVID-19 pandemic and associated slowdowns, we managed to replace soil in 35 yards. This year's Yard Program will see completion of 24 yards in the summer and by late fall we aim to begin a new work group of 25 yards.

### Protecting children where they play

The Soil Safety Program provides free soil sampling and cleanup for child play areas at schools, parks, and childcares. Created through legislation in 2005, the program sampled over 1,000 child play areas. We also addressed over 100 play areas, with 51 of those cleanups in Tacoma. This year we have cleaned up one childcare in Tacoma.

### Funding local health department outreach

The Health Department received \$802,080, this biennium from Ecology to run the "Dirt Alert" program. This program raises awareness and promotes behaviors that reduce soil exposure, such as hand-washing, taking off shoes at the door, and covering bare patches of dirt in the yard. The Health Department initiatives include events, free soil testing, and new home owner outreach.

### Encouraging voluntary cleanup

Property development and redevelopment presents a good opportunity to clean up contaminated soil. Developers sampled 196 acres in Tacoma and already completed 14 cleanups, cleaning up 53 acres of contaminated land. The remaining 143 acres of contaminated land will be cleaned within the next few years. In 2021, six developers joined the Voluntary Cleanup Program with Ecology requesting opinions on proposed or completed cleanups.

Ecology evaluated cleanup of 77 properties within the entire Tacoma Smelter Plume. Developers sampled 3,132 acres of land with 2,030 acres requiring cleanup.

### About the Tacoma Smelter Plume

Asarco's former copper smelter in North Tacoma emitted arsenic, lead, and other heavy metals. These pollutants were carried by the wind and settled on surface soils, creating the Tacoma Smelter Plume (page 5).

**The Asarco settlement:** In 2009, the State of Washington received a settlement from Asarco for environmental damages. Ecology uses the \$94.6 million to manage risks from the Tacoma Smelter Plume through cleanup and outreach.

### Federal, state, and local agencies working together

Since 1993, the U.S. Environmental Protection Agency (EPA) has overseen the Superfund cleanup of thousands of residential yards in Ruston and North Tacoma, and the smelter property itself.

In 2013, Ecology began cleaning up yards that did not qualify for EPA's cleanup. In addition, Ecology and the Health Department took over outreach work in the community. Through the Dirt Alert program we provide outreach and education and raise awareness.

**Online map:** Residents can go to our online map and public database to find out if their yard was part of the Superfund or Ecology soil sampling and soil replacement work.

<https://apps.ecology.wa.gov/dirtalert/>

### Tacoma Smelter Plume website:

<http://ecology.wa.gov/Tacoma-smelter>

### Dirt Alert videos:

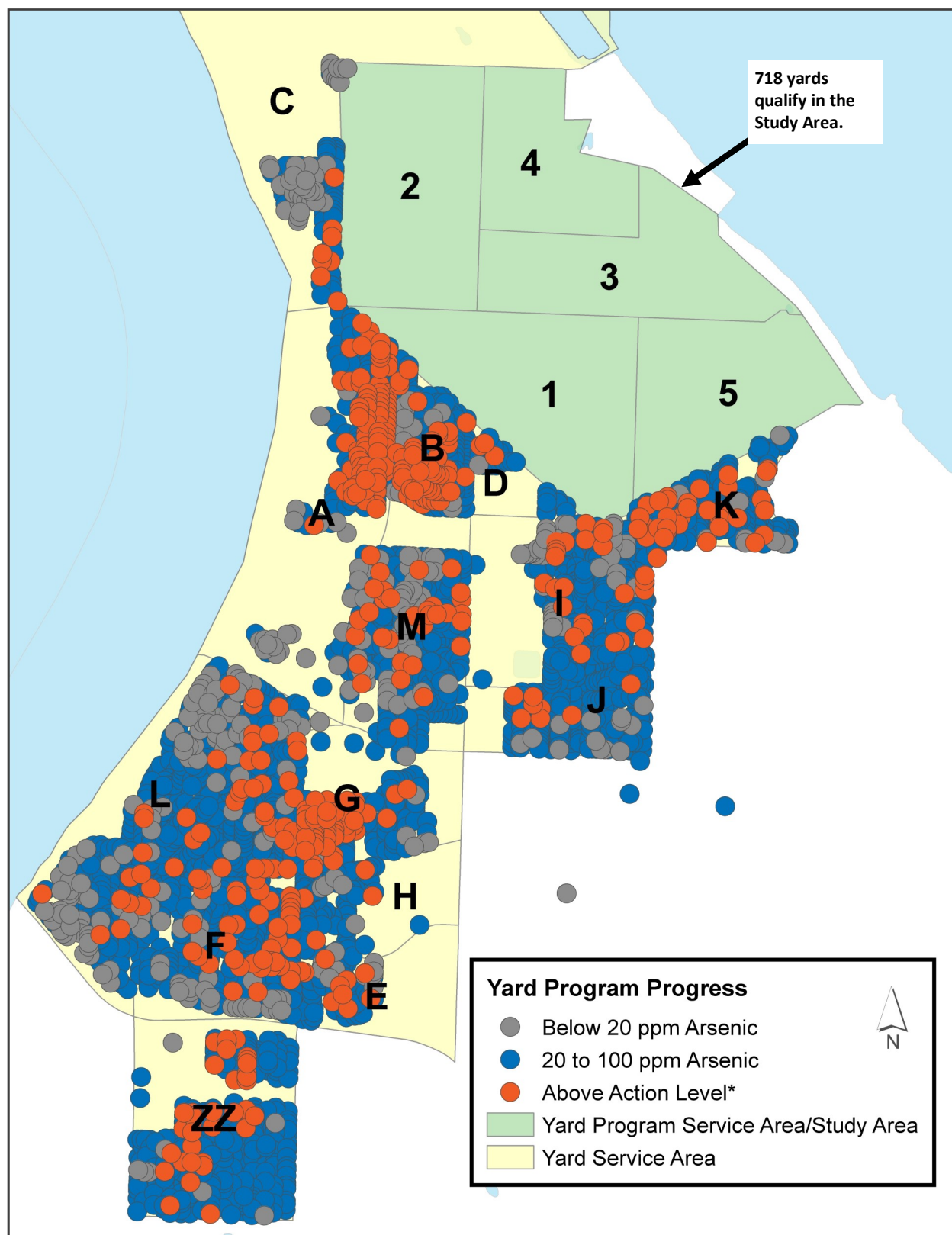
<http://youtu.be/IV4YUdCHjE>

### Contact: Marian Abbett

(360)-489-4569

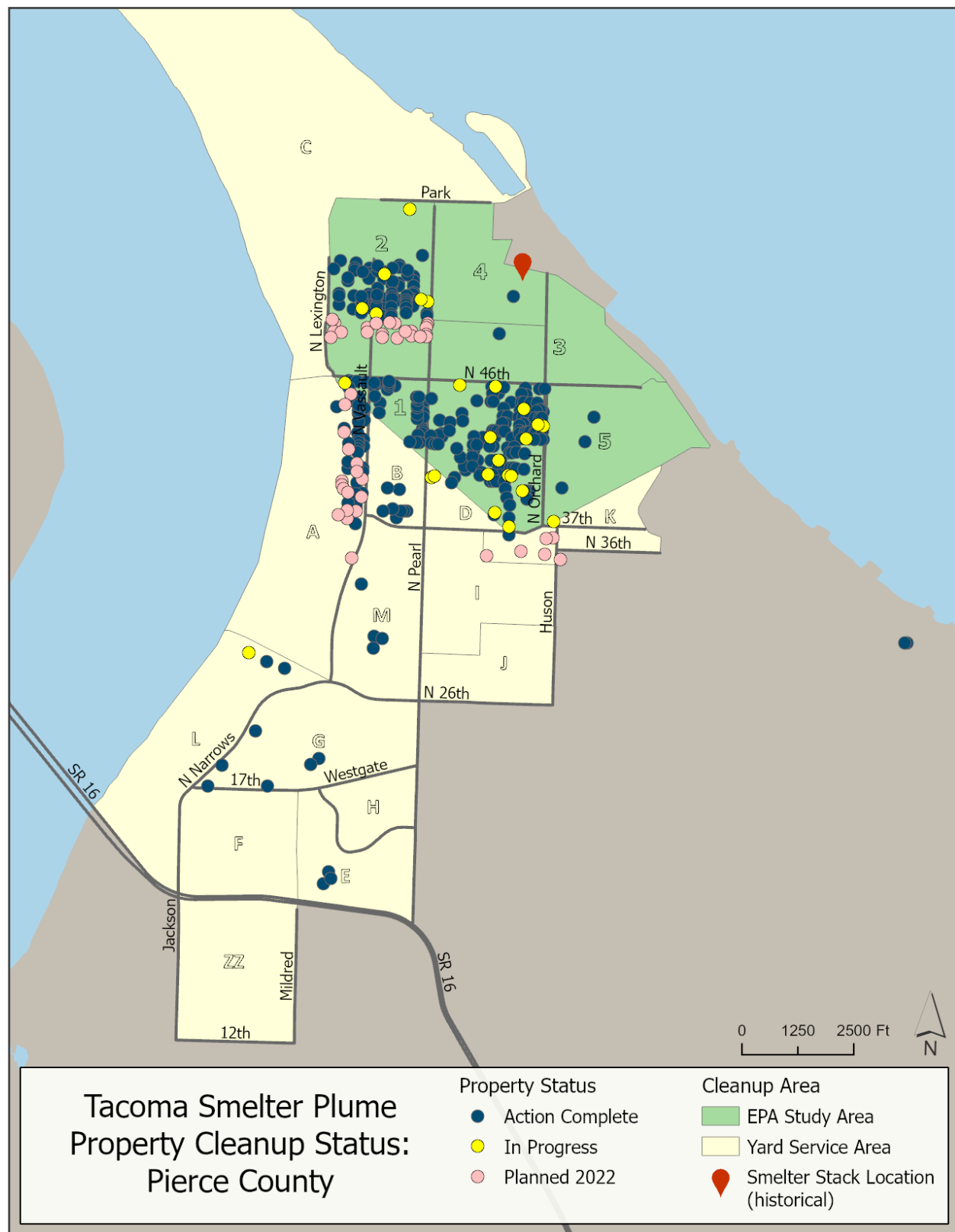
[Marian.Abbett@ecy.wa.gov](mailto:Marian.Abbett@ecy.wa.gov)

## Yard Program — completed soil sampling in Tacoma



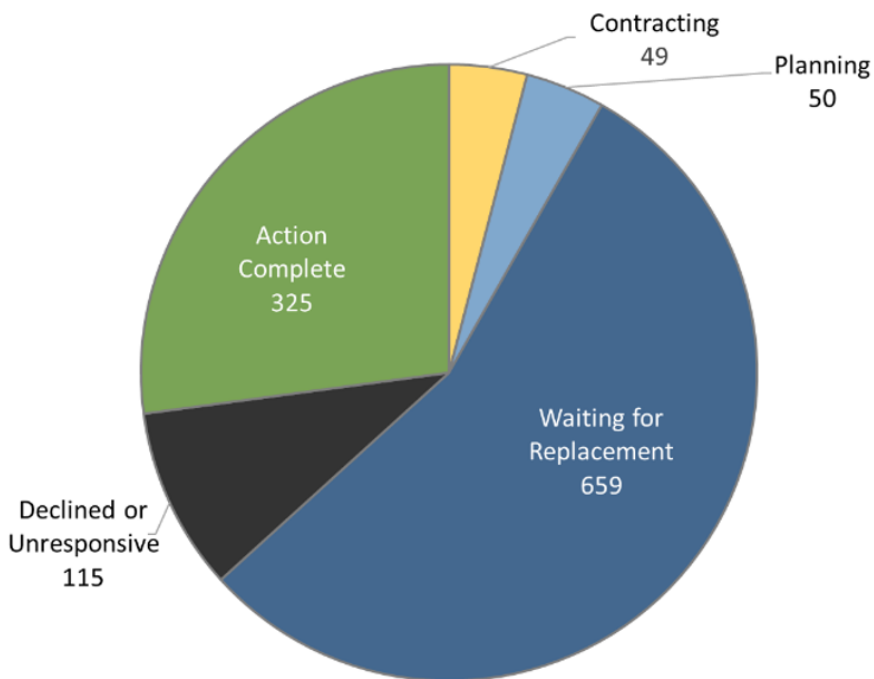
\*Ecology's action level for arsenic is 100 parts per million (ppm) or above; for lead, it is 500 ppm or above. Properties marked "Above Action Level" include those with average arsenic or lead above the action levels. The map displays data from Yard Program Sampling efforts, and does not include EPA sampling data. This map was created in September 2020.

## Yard Program — soil replacement progress in Tacoma through 2021

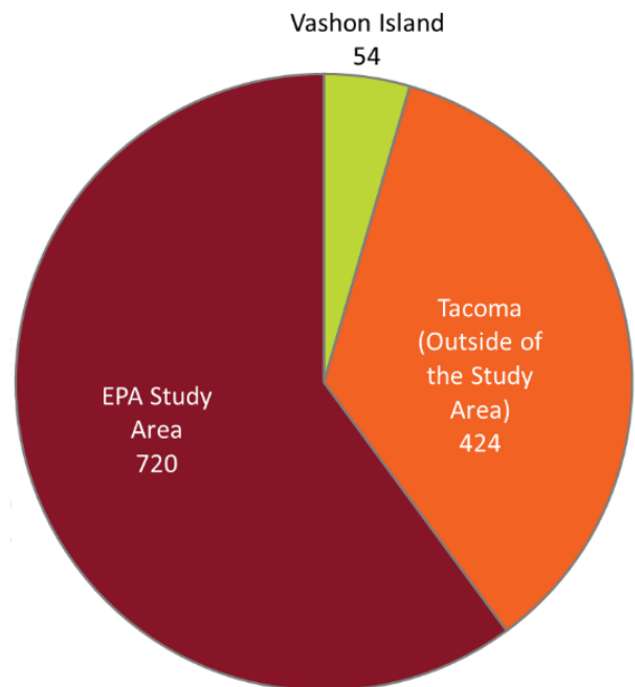


\*\*The Study Area is where the Environmental Protection Agency oversaw the Superfund cleanup of thousands of residential yards in Ruston and north Tacoma (green area on map). Ecology is continuing the work that was started by the EPA over 20 years ago. This map was created in November 2021.

## Yard Program – soil replacement progress



Soil Replacement Progress  
Total Yards = 1,198



Qualify for Soil Replacement  
Total Yards by Location = 1,198

## Tacoma-Pierce County outreach &amp; education efforts

## Get Covered! Toolkits

- For residents of the plume
- Provides two free bags of splinter-free cedar play chips and instructions
- Residents receive coupon and pick up free play chips at the Tacoma Boys Markets
- Nearly 50 kits provided to residents through annual mailer and Peach Jar campaigns
- Redeemable through the end of August



## Peachjar Digital Flyers

- Informational digital ads sent to the inboxes of school parents
- Distributed to all parents of seven schools in plume in Tacoma Public Schools
- Advertising Get Covered! for play areas
- Sent out in early June to hundreds of parents
- Nearly 25 families responded for free chips, almost all in the Yard Program Service area



## Annual Mailer

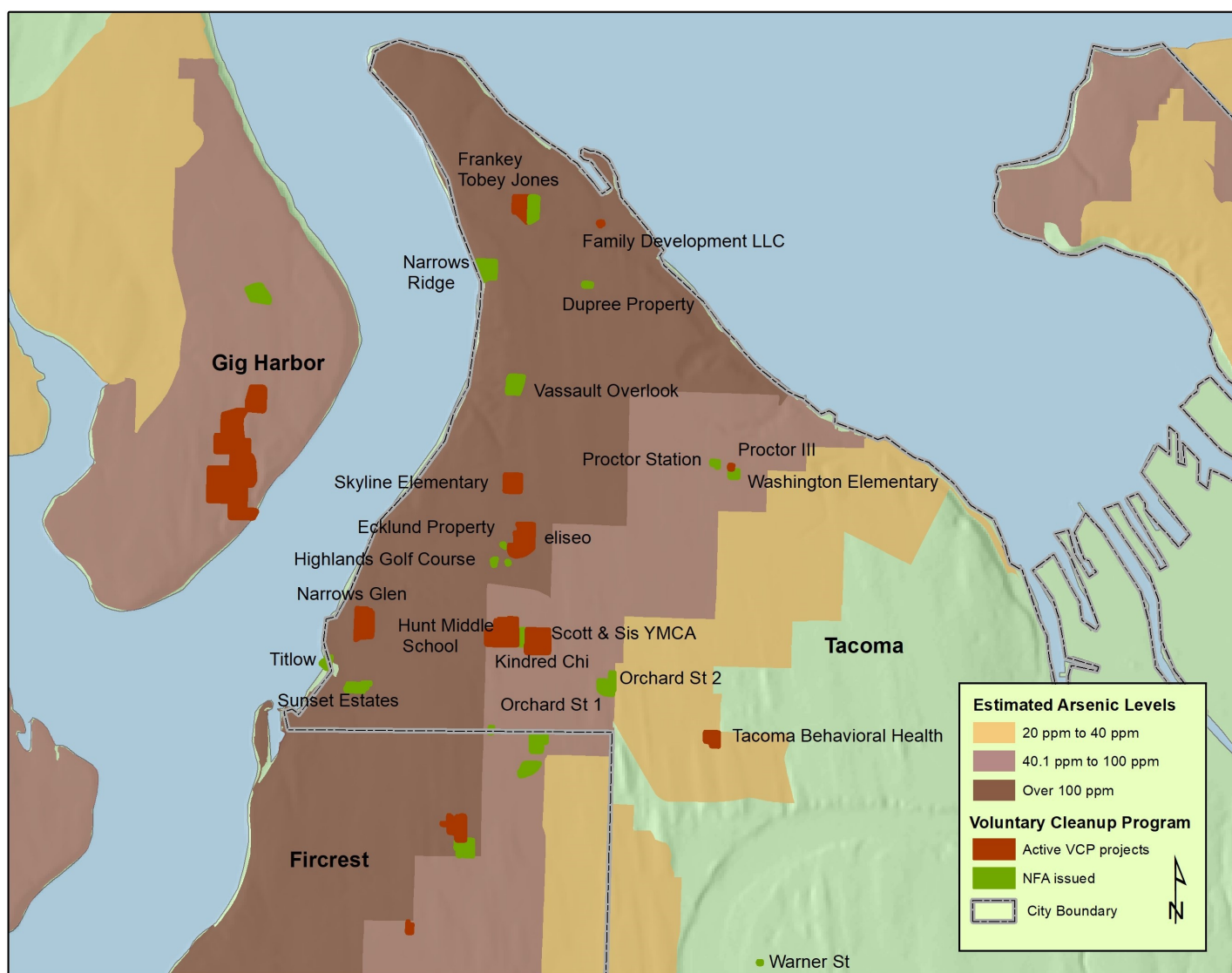
- Sent to 12,240 postal customers in the Yard Program Service Area
- Shared information on Soil Safety Program, Yard Program, Dirt Alert, Healthy Actions and free Get Covered! Toolkits
- Translations available on website in Spanish, Korean, Chinese and Vietnamese
- Tripled traffic on DirtAlert.info website



## Facebook Advertising

- Summer 2022 Campaign
- Targeting geography as well as demographics of Tacoma plume residents
- Third wave of Get Covered! Toolkit campaign to provide residents with free cedar play chips
- Focus on youth, play areas and Healthy Actions for safety with outdoor activities
- Toolkits can include soil sampling results



**Tacoma Smelter Plume –Estimated Arsenic Levels**

With 90% certainty, at least 1 in 10 parcels will have arsenic in soil at or above levels shown. Predictions are based on distance and direction from the former Asarco smelter, and on sampling data from forested and other soils undisturbed by development. Actual arsenic levels may vary greatly from parcel to parcel. Arsenic levels are shown in parts per million (ppm).





Good afternoon Mayor and City Council members,

Justin Zakoren and Marian Abbett from the WA State Department of Ecology, are at this study session today to give their ninth annual update on the Tacoma Smelter Plume project.

The Tacoma Smelter Plume team has been working to address soil contamination from the former Asarco smelter since 2006. The program started by addressing areas where children play most- schools, childcares and parks. Now the program is mainly focused on raising awareness about the Tacoma Smelter Plume, sharing information on individual actions that each of us can do to reduce our exposure to arsenic and lead in the soil, and residential soil replacement- removing and replacing soil in the most contaminated areas of North Tacoma and Vashon-Maury Island.

**Marian Abbett** is the Project Manager for the Tacoma Smelter Plume project. She has over thirty years of experience with cleanup and was part of the Ecology group that negotiated the settlement with Asarco. Her responsibilities include managing the budget and overall team work.

**Justin Zakoren** is the Yard Program Outreach Coordinator for the Tacoma Smelter Plume project. One of the newer members of this team, he is responsible for outreach and communications with property owners and residents in the Yard Program service boundary.

