



# Tacoma Smelter Plume Annual Report

**Fiscal Year 2020**

For the

**Toxics Cleanup Program**

Washington State Department of Ecology

Southwest Regional Office

Olympia, Washington

April 2021, Publication 20-09-082

## Publication Information

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Cross-referenced or relevant documents:

- [Yard Program action levels Publication 13-09-086](#)
- [TSP 2019 Publication 19-09-082](#)
- [CSA 2019 Publication 19-09-081](#)
- [CSA 2020 Publication 20-09-081](#)
- [Tacoma Smelter Plume](#)
- [Dirt Alert Map](#)

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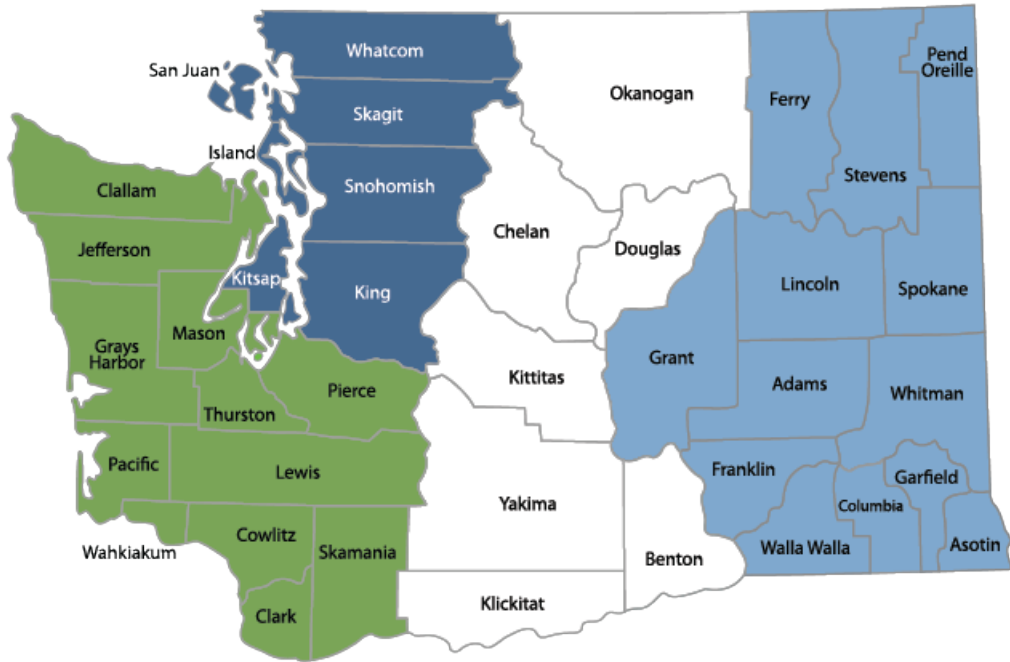
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# Department of Ecology's Regional Offices

## Map of Counties Served



|   |   |                                       |                                       |
|---|---|---------------------------------------|---------------------------------------|
| <b>Southwest Region</b><br>360-407-6300 | <b>Northwest Region</b><br>425-649-7000 | <b>Central Region</b><br>509-575-2490 | <b>Eastern Region</b><br>509-329-3400 |
|---|---|---------------------------------------|---------------------------------------|

| Region              | Counties served  | Mailing Address                         | Phone        |
|---------------------|--|---|--------------|
| <b>Southwest</b>    | Clallam, Clark, Cowlitz, Grays Harbor, Jefferson, Mason, Lewis, Pacific, Pierce, Skamania, Thurston, Wahkiakum           | PO Box 47775<br>Olympia, WA 98504       | 360-407-6300 |
| <b>Northwest</b>    | Island, King, Kitsap, San Juan, Skagit, Snohomish, Whatcom   | 3190 160th Ave SE<br>Bellevue, WA 98008 | 425-649-7000 |
| <b>Central</b>      | Benton, Chelan, Douglas, Kittitas, Klickitat, Okanogan, Yakima   | 1250 W Alder St<br>Union Gap, WA 98903  | 509-575-2490 |
| <b>Eastern</b>      | Adams, Asotin, Columbia, Ferry, Franklin, Garfield, Grant, Lincoln, Pend Oreille, Spokane, Stevens, Walla Walla, Whitman | 4601 N Monroe<br>Spokane, WA 99205      | 509-329-3400 |
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Toxics Cleanup Program  
Washington State Department of Ecology  
Southwest Regional Office  
Olympia, WA

**April 2021 | Publication 20-09-082**



DEPARTMENT OF  
**ECOLOGY**  
State of Washington

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## **Ecology Project Staff**

- Eva Barber, *Technical Assistance Coordinator*
- Crescent Calimpong, *Yard Program Outreach Coordinator*
- Sheila Coughlan, *Outreach Coordinator*
- Amy Hargrove, *Remediation Manager*
- Nancy Davis, *Community Involvement Coordinator*

## **Toxics Cleanup Project Management**

- Rebecca Lawson, *Southwest Region Acting Section Manager*
- Marian Abbett, *Unit Supervisor*

## **Local Health Department Partners**

- Tacoma-Pierce County Health Department
- Public Health-Seattle & King County

**Thanks to the Tacoma Public Library Northwest Room Digital Collections for historical photos.**

# Executive Summary

## Purpose of the report

The purpose of this report is to describe how the Department of Ecology (Ecology) is using the Asarco settlement to manage the risk from the Tacoma Smelter Plume. It provides an update on the cleanup progress and efforts to manage human health risks.

## Contents and time period covered in this report

The report covers the plan for managing the Asarco Settlement, cleanup strategies and priorities, and accomplishments and challenges in 2020.

- 

Most of the data is from the period October 1, 2019, through September 30, 2020.

## Asarco settlement funds assist in cleanup and outreach

We received \$94.6 million from the Asarco bankruptcy settlement, which has funded important services to residents that live within the plume. With these funds we are able to:

- Provide outreach to increase awareness and promote healthy behaviors. Outreach aims to reduce people's contact with contaminated soil.
- Provide free soil sampling and soil replacement to residential yards in areas of highest contamination through the Yard Program.
- Sample and replace contaminated soil in areas where children play.
- Assist developers, local governments, and landowners in cleaning up contamination during property development.

As of Fiscal Year 2020, we have spent \$54,099,000. The Cleanup Settlement Account (CSA) funds for the Tacoma Smelter Plume are expected to be spent by Fiscal Year 2026 or 2027. By then, we estimate that 200 of the nearly 1,200 residential yards qualifying for soil replacement will still need cleanup. With an additional \$14 million in other funds, we will be able to complete the remaining yard cleanups and continue outreach in affected communities.



# Asarco Settlement

## Asarco's legacy in Washington

### Contamination from smelters and mines

The American Smelting and Refining Company (Asarco) was founded in 1899. Asarco operated two smelters and four mines in Washington, leaving a legacy of contamination.

The Tacoma Smelter operated from 1890 to 1986, and the town of Ruston grew up around it. Air emissions from the smelter contaminated over 1,000 square miles of soil in the Puget Sound region. The area with contaminated soil is called the Tacoma Smelter Plume (plume).



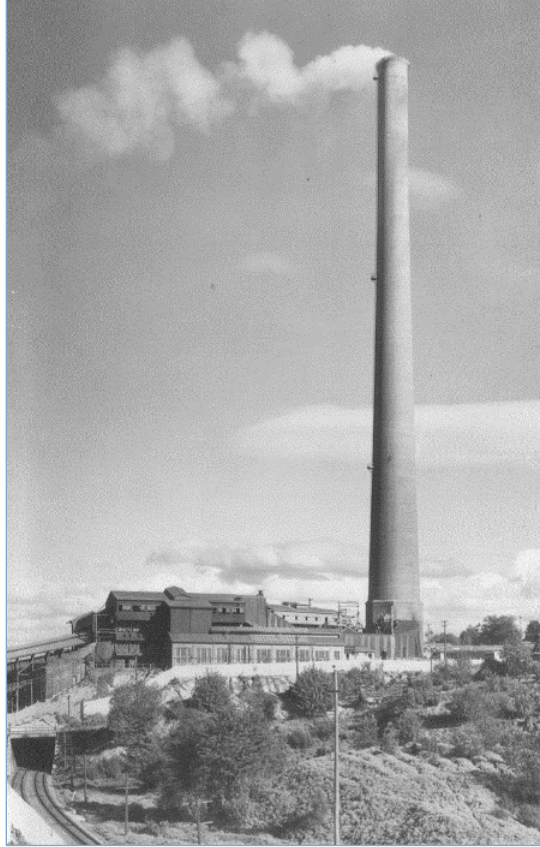
Figure 1. Asarco 50th Anniversary

### The 2009 Asarco bankruptcy settlement

Washington became a part of the nation's largest environmental settlement in history.

In 2005, Asarco declared bankruptcy, largely due to environmental liabilities from its nearly 100 cleanup sites across the country. The State of Washington joined the federal government and other states in a lawsuit against Asarco that spanned four years.

In November 2009, Asarco paid out a \$1.79 billion settlement. The settlement covered past and future cleanup costs, as well as interest earned over the four years it took to settle the lawsuit. Washington's share (\$188.5 million) was deposited into the Cleanup Settlement Account (CSA) in December of 2009.



**Figure 2. Former Asarco Smelter**

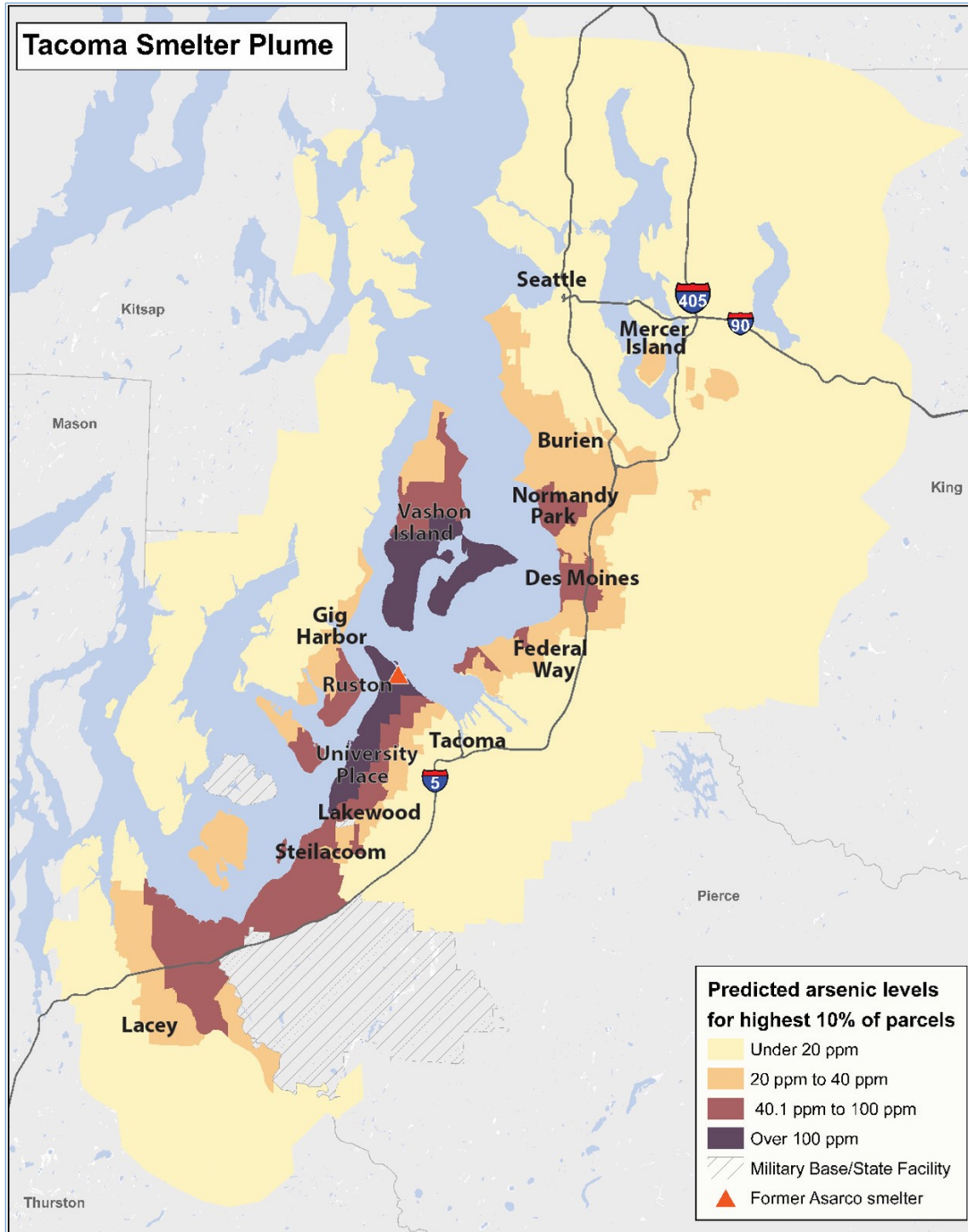
**Tacoma Smelter Plume communities benefit from \$94.6 million for replacing soil and reducing risk**

Asarco settled for \$94.6 million for the future costs of managing the risks of exposure to contaminated soil from the Tacoma Smelter Plume. This money covers soil replacement for play areas and residential yards, ongoing education and outreach, and technical assistance for those voluntarily cleaning up their own properties. See pages 14-15 for planned settlement spending.

**Work moves forward but future funds needed**

We have managed the money received from the settlement resourcefully over the last ten years. As of Fiscal Year 2020, we have spent \$54,099,000. The balance is \$38,976,000, which reflects loans taken and some repayments. Assuming all loans are repaid, the remaining funds (*estimated at more than \$48 million*) will not be enough to cover the cost of cleanup activities.

More information on settlement spending is discussed in the [Cleanup Settlement Fiscal year 2020 Annual Report. CSA 2020 Publication 20-09-081](#)



**Figure 3. Tacoma Smelter Plume Map**

There is 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, sampling data from forested soils, 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).

# Tacoma Smelter Plume

## Tacoma Smelter Plume at a glance

**Total settlement:** \$94.6 million

**Counties:** Pierce, King, Thurston

**Total Size:** Over 1,000 square miles

**Cleanup focus:** Surface soils

## Tacoma Smelter Plume history

In 1890, a lead smelter began operating on the border of North Tacoma and Ruston. In 1905, Asarco purchased it and converted it to a copper smelter in 1912. Its smokestack emissions spread arsenic, lead, and other heavy metals across a 1,000 square mile area—the Tacoma Smelter Plume.

Arsenic and lead pose a potential long-term health risk. Within the plume, people may be exposed by accidentally consuming or inhaling contaminated soil. Children are at highest risk because they put dirty hands and toys in their mouths and their bodies are still growing and developing.



**Figure 4. Children playing near the stack**

*Photo credit: (National Archives, Ruston, 1972)*

## **Understanding patterns of contamination helps to prioritize the work**

The Tacoma smelter used ore rich in arsenic. When it was built, the smelter's 571-foot smokestack was thought to be the tallest in the world. These factors, along with wind patterns and topography, created the broad pattern of contamination (see Figure 3).

Arsenic levels are higher closer to the former smelter and lower farther away from the smelter. Areas of higher contamination pose a greater risk to residents. The majority of the \$94.6 million settlement is going to sample and replace soil in neighborhoods with higher concentrations.

## **Early health risk management focused on community outreach and healthy actions**

Starting in 2000, Ecology funded the health departments in King and Pierce counties for work related to the Tacoma Smelter Plume. The funding covered education and outreach programs, as well as soil sampling to better understand the extent of the plume.

The main goals of outreach were to raise awareness and promote "healthy actions"—behaviors that reduce soil exposure, such as hand washing, vacuuming, taking shoes off at the door, etc. The health departments used surveys, focus groups, and other methods to develop a suite of outreach materials and strategies for reaching people.

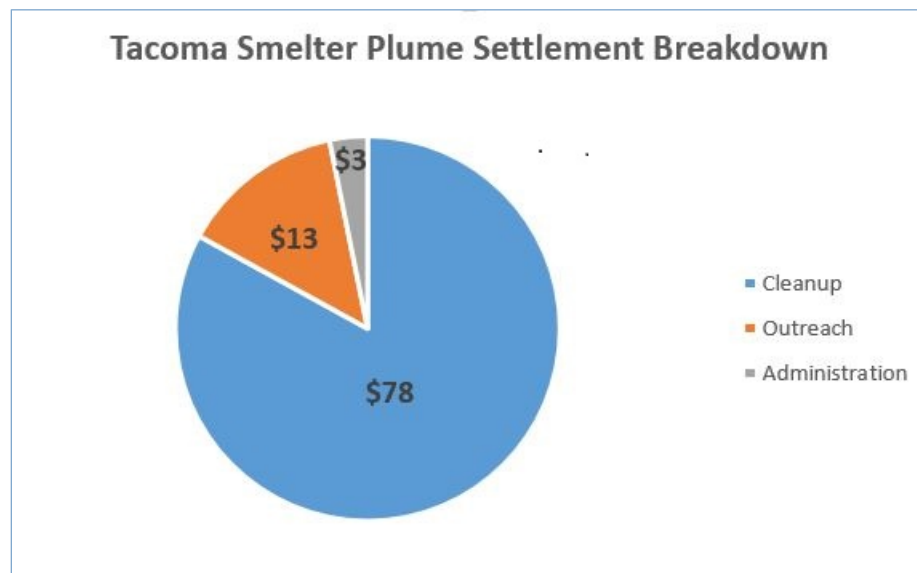
In 2005, the Area-Wide Soil Contamination law [70A.320.010](#) led Ecology to develop the Soil Safety Program. At first, the program provided free soil sampling and replacement for play areas at schools and childcares. In 2010, using funding from the Asarco settlement, we expanded free soil sampling and replacement to parks, camps, and multi-family housing play areas.



## Multi-year plan for managing the Tacoma Smelter Plume

Using lessons learned from earlier outreach and play area healthy actions, Ecology developed a plan in 2012 that focused work in four main areas:

- Yard Program—sample and replace soil from existing residential yards in areas of the highest contamination. (defined on page 16).
- Soil Safety Program—sample and replace soil in child play areas at schools, childcares, parks, and camps.
- Outreach and Education—provide education and outreach through health departments in King and Pierce counties.
- Technical Assistance—Work with local governments and developers to encourage voluntary cleanup. Assist developers with soil cleanup.



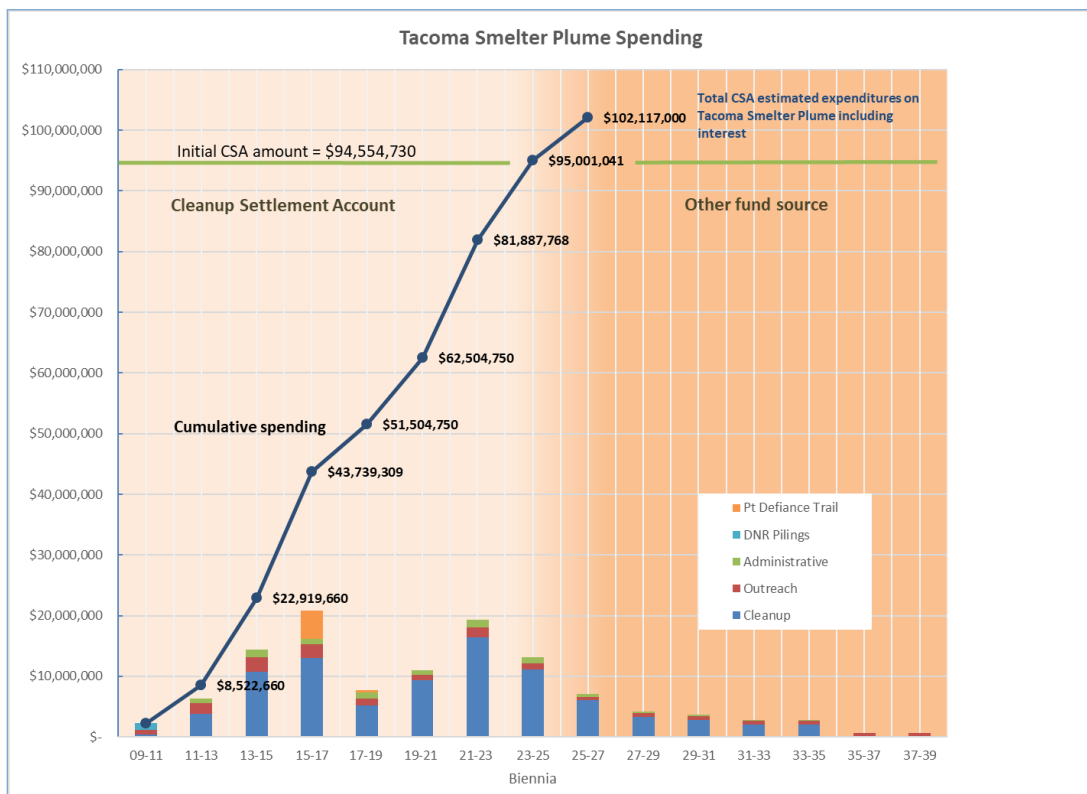
**Figure 5. Categories of expenditures where the \$94.6 million Asarco settlement account (CSA) are spent in millions of dollars.**

(We have consolidated Soil Safety and Yard Programs under cleanup in Figure 5)

## Future Spending

The CSA will be spent by Fiscal Year 2026 or 2027. By then, we estimate that 200 of the nearly 1,200 yards qualifying for soil replacement will still need cleanup.

\$14 million in additional funds will be necessary to complete the remaining soil replacement and continue outreach in the affected communities. As we expect the appropriation from other funds to be for smaller amounts, we plan to reduce staffing and the number of yard soil replacements completed each fiscal year. The work will be spread over the next four biennia (Fiscal Years 2028 through 2033). Ongoing education and outreach will be necessary for the foreseeable future.

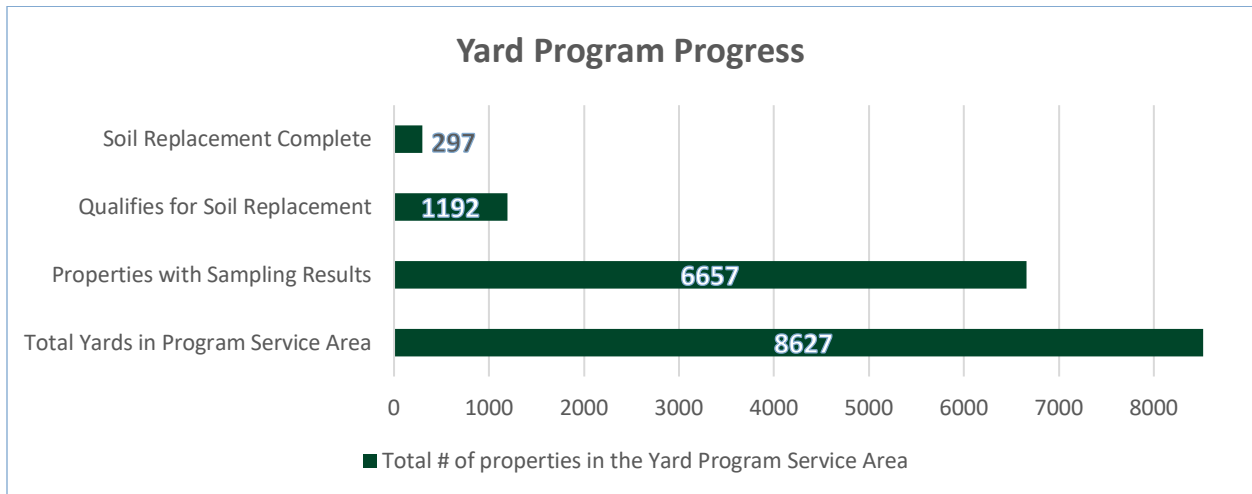


**Figure 6. Tacoma Smelter Plume Spending**

## Yard Program

### Working to sample and replace contaminated soil in yards in Tacoma

The Yard Program offers soil sampling to all properties in our Yard service area. Ecology is offering free cleanup, also known as soil replacement, for portions of yards with levels over 100 parts per million (ppm) for arsenic or 500 ppm for lead. Our program is voluntary, where property owners opt-in for soil sampling and soil replacement. We will continue to offer soil sampling to new homeowners until the program ends.



**Figure 7. Soil sampling and soil replacement progress**

Based on our soil sampling, 1,192 properties qualify for soil replacement (see Figure 7). To date, we have removed and replaced soil on 297 properties. The focus of our program is shifting from soil sampling to soil replacement.

### 2020 soil replacement update

The pandemic has affected the Yard Program. Soil replacement work was delayed in the spring on the two active contracts. The state's contracting and hiring freeze also delayed future contracts. In 2020, we completed soil replacement on a contract with seven properties in North Tacoma. After delays due to the Governor's stay at home order due to the COVID-19 pandemic, in June of 2020 we started work on an additional contract with 29 properties. Work will continue on this group into early 2021.

We continue to evaluate balancing health and safety concerns and state budget constraints as we strive to keep contractors working in the field.

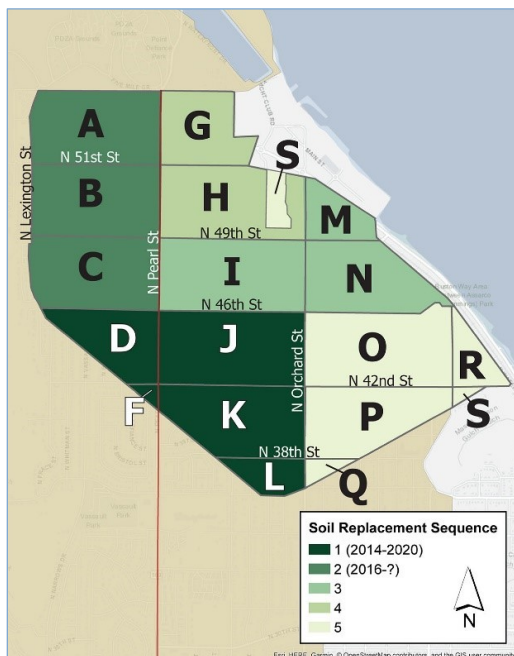
### Cleanup Sequence

Between 2015 and 2019, we sampled an additional 1,370 properties within the Yard Program Service Area. We found 84 properties that qualify for soil replacement in addition to those

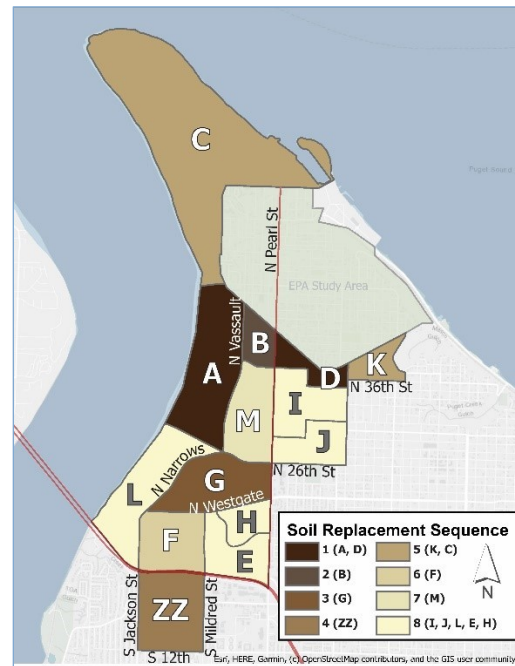


already prioritized for EPA funded cleanup. This new data changed the information that we used to create the soil replacement sequence outside the study area. In 2020, we updated the soil replacement sequence for properties outside the study area (see Figure 8).

The new sequence for outside the EPA study area (a one mile radius around the former Asarco smelter) changes the order of cleanup for some yards designated by the lettered groups. Property owners can find their letter group by entering their address into Ecology’s Dirt Alert map (<https://apps.ecology.wa.gov/dirtalert/>) and downloading documents found under “Soil Sampling Map & Paperwork.”



**Figure 8. Updated soil replacement sequence for outside the study area**



**Figure 9. Updated soil replacement sequence for inside the study area**

Figure 8 shows Ecology’s soil replacement sequence outside the EPA study area. This area is the one mile radius around the former Asarco smelter. The soil replacement sequence is based on average arsenic levels and maximum arsenic for each letter group, average lead levels and maximum lead levels for each letter group, percentage of properties above the criteria for soil replacement and percentage of soil samples above by letter group.

We also considered environmental equity. We used the [Washington Tracking Network’s Environmental Health Disparities Ranking Data](#) in our data set, when we evaluated our new sequence ranking.

Figure 9 shows Ecology’s soil replacement sequence inside the EPA study area. The soil replacement sequence is based on the percentage of properties with the highest levels of soil contamination and properties that had no EPA soil replacement action. There are five areas

within the study area. Each area includes three to five different letter groups. This sequence was not updated.

## Soil Replacement Progress

We have been working since 2013 to remove and replace soil for qualifying properties located in the Yard Program service area. To date we have removed and replaced soil on 297 yards (see Figure 10).

We are beginning the process of contracting for soil replacement on a group of 23 properties and one childcare. We hope to begin work on these properties in Spring, 2021.

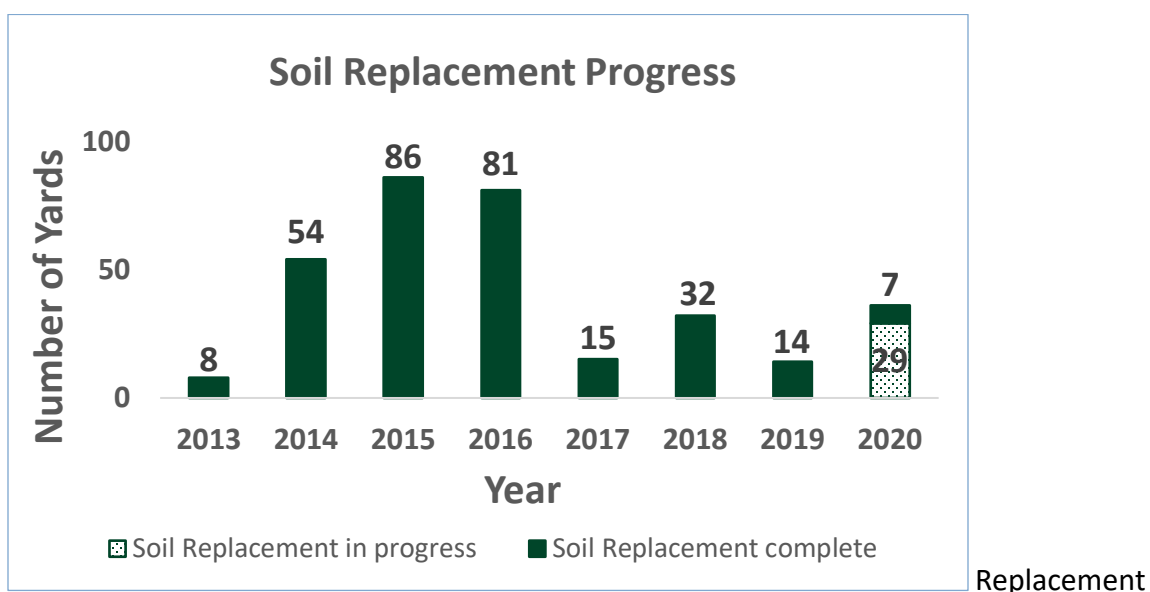
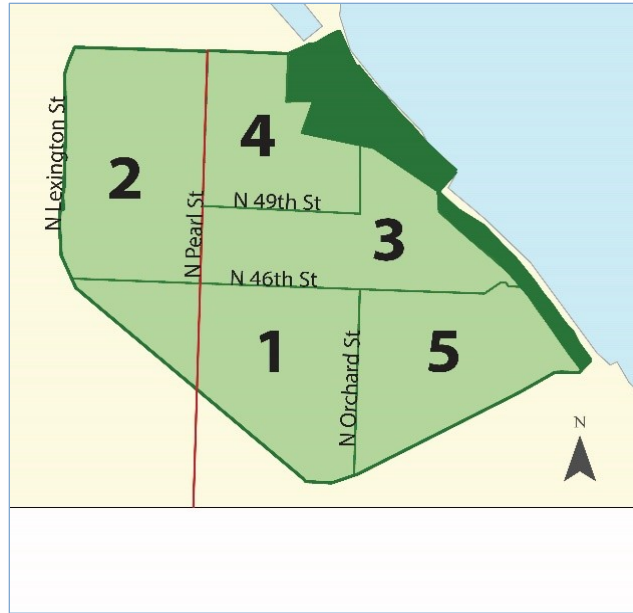


Figure 8. Soil replacement progress in the Yard Program

## Ruston/North Tacoma Superfund area

### After Superfund cleanup, remaining contamination still poses a risk

The EPA Study Area is a federal Superfund site managed by the US Environmental Protection Agency (EPA) (see Figure 12).



**Figure 9. Map of the EPA Study Area**

**Work completed by EPA**

From 1993 to 2012, the EPA oversaw Asarco’s work to sample approximately 2,800 properties and cleanup up of 1,600 properties.

**EPA action level**

Asarco only cleaned up areas that had arsenic levels over 230 ppm.

**Remaining contamination**

Ecology is using Asarco settlement funds to clean up 718 contaminated yards in the EPA Study Area. These yards have average arsenic soil concentrations over 100 ppm. Many more properties are above the state cleanup level of 20 ppm. For those properties, the health department provides education and outreach to encourage healthy behaviors.

Ecology continues to find soil above the EPA action level outside of the EPA Study Area. Ecology identified 53 properties within the Yard Program service area with arsenic over the EPA action level. We have an agreement with the EPA that they will fund the soil replacement for yards that qualify over the EPA action level of 230 ppm, or for yards whose owners had previously refused sampling. Since 2013, we completed soil replacement on 40 properties. In 2020, we met with owners of four more properties to begin planning for soil replacement.

**EPA Study Area Outreach: Local Health Department continues outreach to new homeowners**

The Tacoma-Pierce County Health Department (Health Department) continues to provide important outreach to new residents in the EPA Study Area. Due to the COVID-19 pandemic, the Health Department has not been able to provide in-person, one-on-one contact, and “knock-on talks”. Every few months, staff from the health department knock on doors and talk

to new homeowners about possible soil contamination and options for remediation. Since the COVID\_19 pandemic, only printed information has gone out in the mail

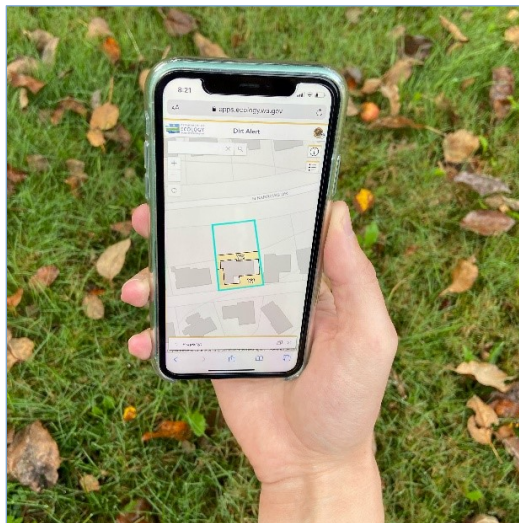
There is no legislation that requires a seller to notify a buyer of a property on contaminated soil. Currently, the health department sends a letter and soil sampling results to new residents within the first six months of their home purchase to create awareness among buyers. They provide important information about arsenic and lead in the soil to new residents. By sending the information by mail, the risk from COVID-19 that may come from in person meetings is eliminated. The Health Department is also available by phone or email for follow-up questions. This includes helping residents understand their soil sampling results. The Health Department shares information about arsenic and lead in the soil and answers health-related questions.

## Soil sampling information at your fingertips

The Dirt Alert application is available on your desktop or mobile device with the following link- <https://apps.ecology.wa.gov/dirtalert/>

Launched in December 2018, the online map makes soil sampling and property-specific cleanup information easily available to everyone (see Figure 13). The map is most useful to residents of North Tacoma, Vashon, and Maury Island.

The map digitally displays sampling results for the top six inches of soil. It also provides property specific information like sampling results, soil replacement documentation and letters. If a resident is located in our service area, and a property doesn't have soil sampling results, they can find information on how to sign up for sampling.



**Figure 10. Dirt Alert application**

We are able to reach more residents with the Dirt Alert application than we were able to do before by phone and email. This application is used by about 1,000 users a month.

## Education and Outreach Programs

### Dirt Alert and partnerships with the health departments

Ecology funds the [Tacoma–Pierce County Health Department](#) and [Public Health-Seattle & King County](#) for public outreach and education about reducing contact with contaminated soil and encouraging healthy actions.

Examples of actions that reduce the risk to human health include:

- Washing hands after playing or working outside.
- Taking off shoes at the door.
- Vacuuming and damp dusting regularly.
- Covering bare patches of soil where children play.

### [Tacoma–Pierce County Health Department](#)

Tacoma–Pierce County Health Department’s outreach includes handwashing demonstrations in schools and childcares, materials distributed at community events, and one-on-one conversations during soil testing and new homeowner meetings. This year, the Health Department started a behavior change program called the “Get Covered” toolkit. The program encourages residents to cover up bare patches of soil where kids commonly play (see Figure 14). The toolkit includes a coupon for free cedar wood chips and how-to instructions for mulching to reduce potential contact with contaminated soil.



Figure 11. Get covered toolkit



## Public Health-Seattle & King County

Public Health-Seattle & King County does outreach at community events and partners with community grantees. The grantees help raise awareness about the Tacoma Smelter Plume and promote healthy actions to residents that might otherwise be hard to reach. This year, Public Health-Seattle & King County is continuing their long-term partnership with [Seattle Tilth](#).

[Seattle Tilth](#) organizes community workshops, provides outreach in English and Spanish, incorporates healthy actions into their Soil and Water Stewardship Training, and manages a Garden Hotline. Their key messages are to prevent children from inadvertently eating soil while playing outside, washing leafy greens and roots crops, and removing garden shoes before going into the home. They teach classes and give raised bed demonstrations to promote safe gardening practice and to educate members of the community about the risks of soil contamination (see Figure 15).



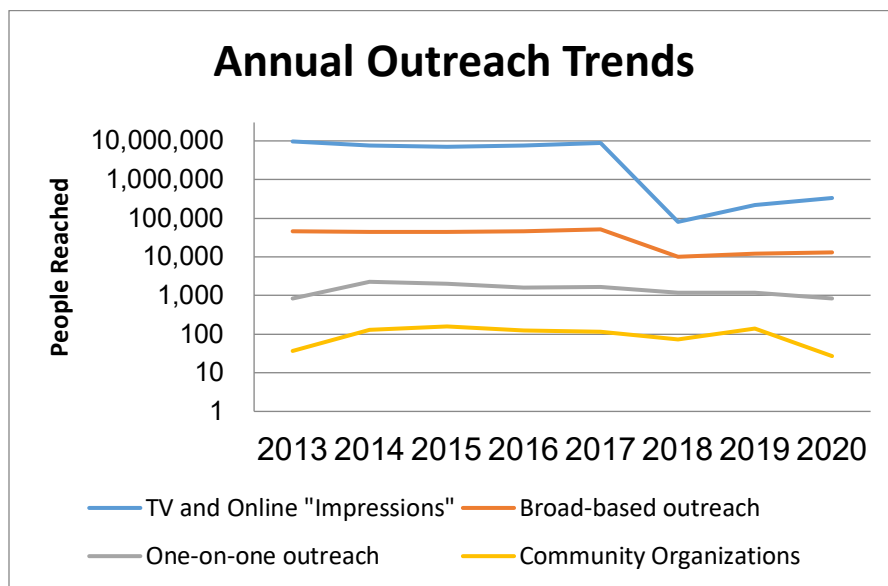
**Figure 12. Vegetables and herbs growing in raised garden beds**

## Dirt Alert outreach statistics

Several Dirt Alert outreach methods are used to increase awareness about contaminated soil and healthy actions. Ecology tracks outreach methods of the health departments by estimating how many people are reached through their efforts.

Figure 16 shows trends of different outreach methods between October 2013 and September 2020. The methods include TV and online impressions, one-on-one outreach, broad based outreach, and community organizations.

- Impressions are the number of times a television or online ad runs multiplied by viewership.
- Broad-based outreach is mailers and events (such as fairs, school hand-washing presentations, and soil SHOP).
- One-on-one outreach is home visits, soil testing, email, and phone inquiries.
- Community organizations includes work with groups that help Ecology and the health departments educate the public about Tacoma Smelter Plume and healthy actions.



**Figure 13. Dirt alert outreach statistics from October 2013 to September 2020**

The biggest change this year was the decrease in people reached by Community organizations. Due to restrictions in place for controlling COVID-19, the health departments were unable to meet with key messengers in organizations. Tacoma-Pierce County Health Department renewed their contract to run commercials on Click! Cable TV and launched streaming radio ads with iHeartMedia. This increased the number of people reached by TV and online impressions. The number of people reached by broad-based and one-on-one outreach has remained relatively steady for the last two years due to a presence in online events and communication by phone and email (see Figure 16).



## Priorities for Outreach

Arsenic and lead are toxic and can be harmful to human health. Children are especially vulnerable, so youth and the adults that care for them are a priority for outreach.

The health departments use a wide range of outreach tools to help children and their parents, teachers, and childcare providers understand these risks. These include soil sampling at childcares, classroom presentations, and home soil testing.



**Figure 14. Handwashing demonstration**

## Impacts of COVID-19

In 2020, since the outbreak of COVID-19, the health departments are working remotely. They are responding to phone calls and emails. [Seattle Tilth](#) is hosting webinars, and Tacoma-Pierce County Health Department launched an online behavior change campaign. The health departments continue to provide effective outreach to the Tacoma Smelter Plume community in innovative ways virtually.

## Soil Safety Program continues work in areas where children play

The Soil Safety Program provides free sampling and soil replacement for child play areas. Created in 2005, the program, has sampled more than 1000 play areas at schools, parks, childcares, camps, and multi-family housing. The program has taken action by removing soil and placing surface coverage at 142 play areas.

In 2020, we completed work on three childcares in Tacoma. The work on these childcares was suspended for 49 days in the middle of construction due to the Governor's stay at home orders and a halt on construction work as a response to controlling the coronavirus pandemic.

The childcares maintained their fencing and had safety checks performed during the suspension. The contractor was able to complete the work under the Phase 1 Construction Restart. There are three childcares in Pierce County and one in King County awaiting planning and soil replacement. This work is delayed due to the state's contracting and hiring freeze. We hope to be able to move forward with this work in early 2021.

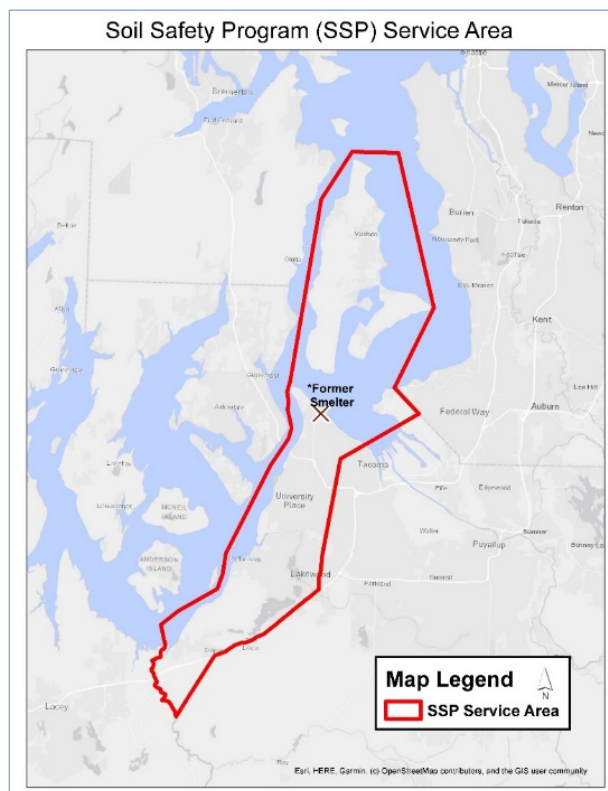


Figure 15. Soil Safety Program Service Area

## Technical Assistance Program

### Encouraging soil cleanup during development

- Property development requires soil disturbance during land clearing and grading. This is an opportunity to test for contamination and to clean it up. It is more cost effective and straightforward to clean up the soil before constructing buildings, roads, and utilities. Our Technical Assistance Coordinator works with local and state governments, developers, and landowners to streamline the cleanup of contaminated soil. We collaborate with 18 local permitting offices in King, Pierce, and Thurston counties to encourage people to sample and clean up before developing their properties.

Progress on the Voluntary Cleanup Program (VCP) projects: 16 are pending cleanup action, seven have undergone cleanup and six have opinions issued on the proposed cleanup.

### Free technical advice for planned and completed cleanup projects

Ecology provides free technical advice on planned and completed cleanup of Tacoma Smelter Plume-related contamination. Landowners, developers, and public agencies doing projects within the Tacoma Smelter Plume test the soil after Ecology comments on the environmental permit review. If sampling shows contamination, property owners enter Ecology's Voluntary Cleanup Program (VCP). In the program, owners receive opinions on proposed cleanups and get No Further Action (NFA) determinations when the cleanups meet state requirements. The opinion letters and NFA determinations help developers obtain necessary permits, loans, or sell the property in the future. To date, Ecology has issued 69 NFA determinations for properties within the Tacoma Smelter Plume.

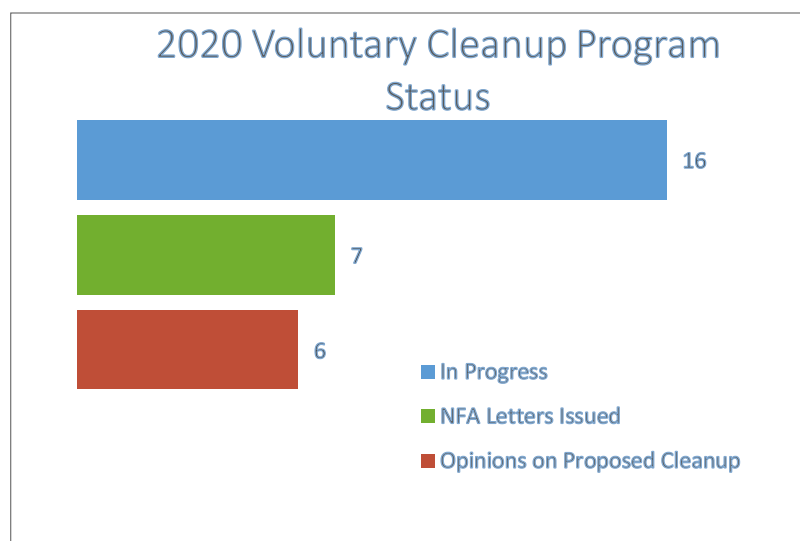
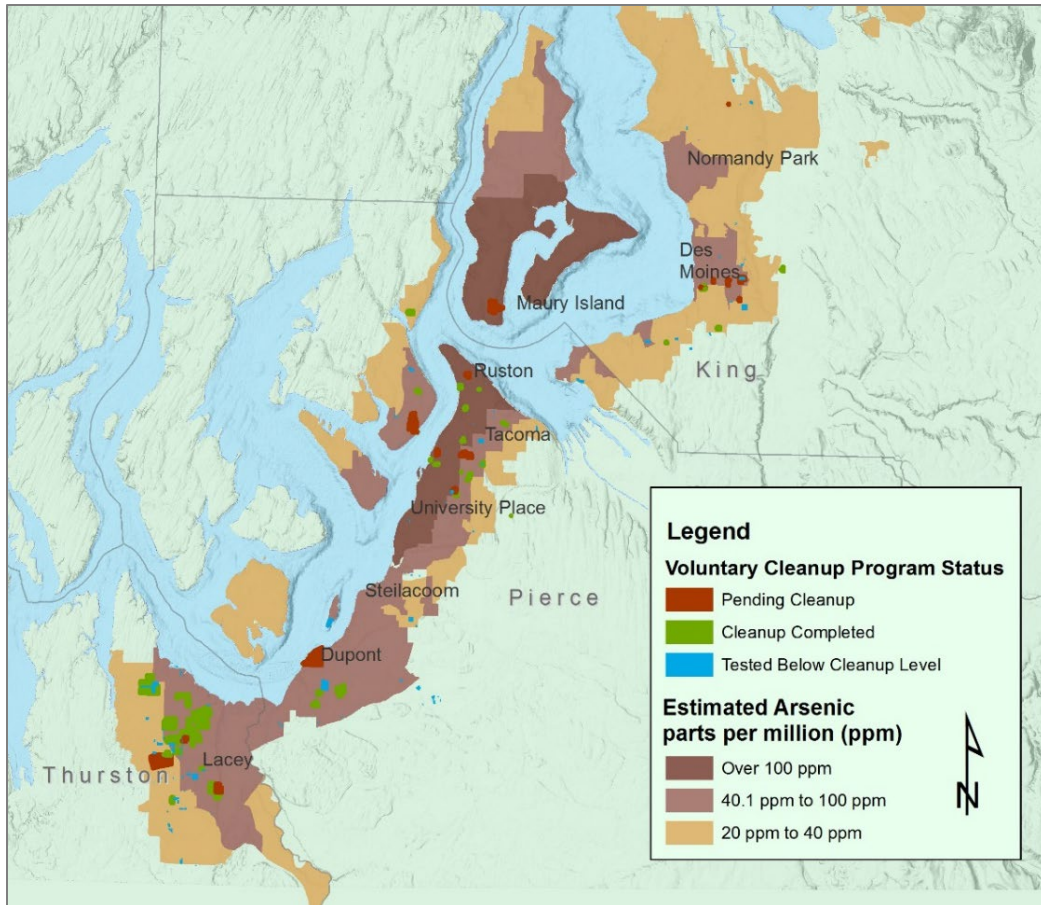


Figure 16. Voluntary Cleanup Program Status in 2020

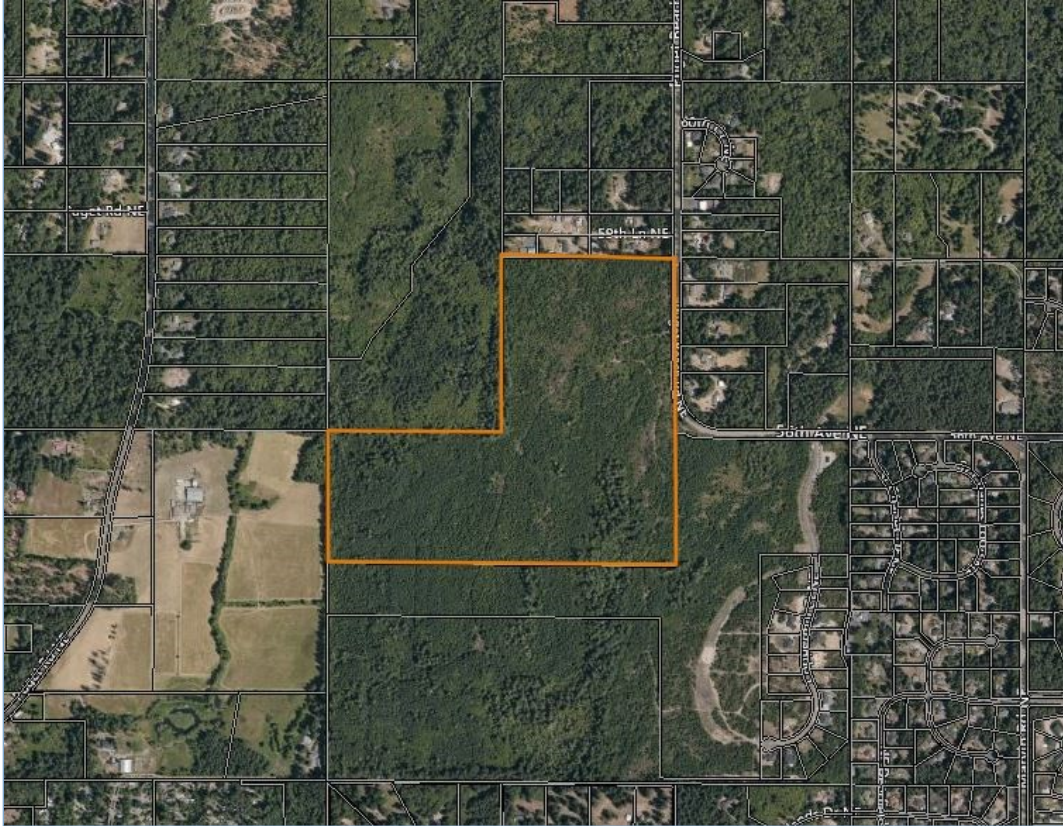
Since 2006, landowners and developers sampled 1,820 acres of land in the plume. Seven hundred acres tested below the cleanup level. Lands that test below the cleanup level do not enroll into the VCP. To date, 69 property owners cleaned 1,119 acres of contaminated soil within the plume and obtained NFA determinations. In the past year, they cleaned 282 acres of contaminated soil through the VCP.



Shadow Creek is a single-family residential development in Lacey, Thurston County. In December 2019, the developer incorporated soil cleanup into the property development. In one area, they mixed the upper contaminated soil layer with deeper, cleaner soil layers. In another area they imported clean soil and mixed it into soil that exceeded the state cleanup level. Mixing cleaner soil with contaminated soil dilutes arsenic and lead concentrations to amounts below state cleanup levels. Mixing works well if the arsenic and lead are below a certain concentration. The contamination at the Shadow Creek development was low enough to qualify for mixing.

The developer submitted a cleanup report to Ecology with the results of the soil sampling after the cleanup. Ecology reviewed the report and determined the cleanup met state cleanup requirements. Ecology issued a NFA determination in April 2020.





**Figure 17. An aerial view of the Shadow Creek development property**

## Interim Action Plan

The Interim Action Plan describes how Ecology will use the \$94 million settlement to address the contamination and manage risk from the Tacoma Smelter Plume. Interim actions will lower risks to human health and the environment by addressing pathways through which children, residents, gardeners, construction workers, and other groups are exposed. Ecology proposed a mix of physical cleanup — digging, mixing, or capping — and institutional controls which restrict access to contaminated soil. Ecology proposed two phases of interim actions.

### Phase One

Phase One focuses on areas where children play and where residential properties are located in areas of highest contamination in the plume. These areas are:

- Yard Program—sample and replace soil from existing residential yards in areas of the highest contamination. (defined on page 16).
- Soil Safety Program—sample and replace soil in child play areas at schools, childcares, parks, and camps.
- Outreach and Education—provide education and outreach through health departments in King and Pierce counties.
- Technical Assistance—Work with local governments and developers to encourage voluntary cleanup. Assist developers with soil cleanup.

### Phase Two

Phase Two looks at areas that are likely to have moderate contamination (average arsenic 20-100 ppm). Ecology will continue outreach efforts to increase people’s awareness of the contamination and to perform healthy behaviors. Our goal is to find sustainable solutions that incorporate managing risk from the Tacoma Smelter Plume into the day-to-day business of local government, development, and real estate. In 2020, we are researching options to address soil contamination through real estate transactions and during development.

Our expectation is to write the supplemental interim action plan and make it available for public comment in 2021.

### Real Estate Transactions

Ecology is focused on informing buyers that there is potential soil contamination before they purchase a home. Some options we are reviewing include:

- Raising awareness about the plume in continuing education courses for real estate agents.
- Creating a handout similar to the one for lead-based paint that is given to buyers at the time of sale.
- Using deed notices for soil contamination remaining on a property.

## **Soil sampling before development**

It is our vital long-term strategy to integrate soil contamination issues into the work of other agencies that manage or regulate land. We will need management support and pass a legislation to do this. Our proposed actions include:

- To require soil sampling and cleanup for projects managed by state agencies and local governments where soil will be moved at the site.
- To provide agencies with outreach tools.
- To help agencies address soil contamination using best management practices.
- To work with agencies to address contamination during construction of new parks and schools.

Key agencies we are working with include the following:

- Department of Children, Youth, and Families (DCYF)
- State Board of Health (SBOH)
- Office of the Superintendent of Public Instruction (OSPI)
- Department of Labor and Industries
- Washington Department of Transportation (WSDOT)

# Conclusion

## Services to the residents within the plume area

With the funding from the Asarco settlement, we provide free soil sampling and replacement through the Yard Program, and in areas where children play. We assist landowners in cleaning up contamination during property development and work to increase awareness about the plume and promote healthy behaviors.

### 2020 Accomplishments and Challenges

#### Yard Program

We completed soil replacement on seven properties in North Tacoma and started work on 29 new properties.

#### Soil Safety Program

We have completed work on three childcares in Tacoma.

#### Outreach and Education

- Since the outbreak of COVID-19 in 2020, the health departments have been working remotely to continue their effective outreach. Seattle Tilth promoted outreach efforts by hosting webinars. Tacoma-Pierce County Health Department launched the “Get Covered” online behavior change campaign. Tacoma-Pierce County Health Department renewed their contract with CLICK! TV and launched ads with I Heart Radio. This increased the volume of people reached by TV and online impressions.

#### Technical Assistance

Ecology reviewed Shadow Creek’s cleanup report and determined that cleanup requirements were met. Ecology issued a No Further Action (NFA) determination in April 2020. Sixteen VCP projects in the plume are pending cleanup actions. Seven projects have completed cleanup and six projects have received Ecology’s opinions on the proposed cleanup.

#### Interim Action Plan and Phase Two

In 2020, we researched options to address soil contamination through real estate transactions and property development.