

Duwamish Community Action for Clean Air Fact Sheet #1

August 2015

The communities in the Duwamish Valley envision a place to live and work where the air they breathe no longer poses risks to their health and livelihoods (Duwamish Valley Vision Map and Report, 2009). The Duwamish Community Action for Clean Air project is taking action towards this vision, with project partners working together and with the community to better understand the primary sources of air pollution and reduce exposures to these.

Why care about air quality in the Duwamish Valley?

Within Seattle, the Duwamish Valley bears a disproportionate amount of air pollution. The 2013 Duwamish Valley Cumulative Health Impacts Analysis (CHIA), published by Just Health Action and the Duwamish River Cleanup Coalition/TAG (DRCC/TAG), compared air pollution indicators within Beacon Hill, Georgetown, and South Park to other areas in Seattle. **This area ranked highest for air pollution levels in terms of diesel particulates and second highest for benzene.** In addition, the Duwamish Valley contains the highest number of known or suspected contaminated waste sites and Toxic Release Inventory sites.



Figure 1. Trucks are a source of air pollution in the Duwamish Valley

How can air pollution impact your health?

Air pollution can impact everyone's health in various ways, including immediate and long-term impacts to the lungs, respiratory system, and other. Immediate effects include asthma attacks. On average, the Duwamish Valley has double the number of asthma hospitalizations among youth than the rest of King County (CHIA, 2013). Similarly, adults in the valley experience higher rates of asthma hospitalizations. Air pollution also **overly impacts expectant mothers and children**. It is linked to lower birth weights, pre-term deliveries, and possible fetal and infant mortality.

Long-term effects on developing lungs can include asthma, reduced lung function and inflammation, heart and suppressed immune diseases, and cancer. Breathing certain air pollutants, such as tiny particulates (PM 2.5), benzene, and other chemicals, over long periods can lead to cancer. Of all the air pollutants in the Duwamish Valley, diesel exhaust contributes the most to a person's risk for cancer (Figure 2).

Primary sources of air pollution in the Duwamish Valley

Multiple sources contribute to air pollution in the valley, including diesel exhaust, car exhaust, wood smoke, industrial emissions, marine vessels, and natural sources – like dust and sea salt (Figure 3). Of particular concern are trucks and other equipment releasing diesel exhaust and nitrogen dioxide. The University of Washington and Puget Sound Sage (DEEDS, 2013) found that diesel exhaust is highest near busy roadways in the Duwamish Valley. While diesel exhaust is lower in the residential areas of South Park and Georgetown, these areas still have higher levels of diesel exhaust than many other neighborhoods in Seattle.

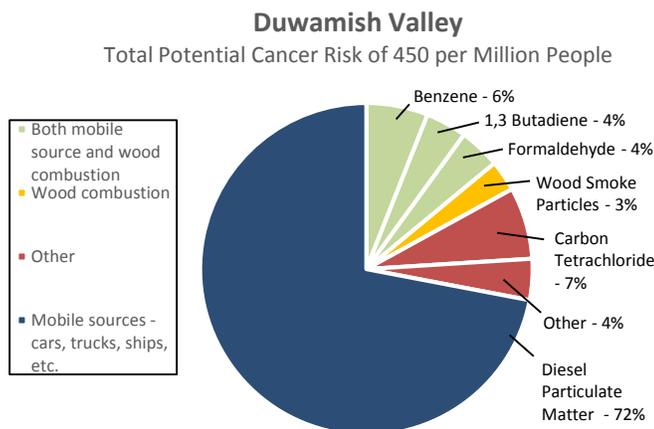


Figure 2. Total potential cancer risk in the Duwamish Valley (adapted from PSCAA, 2010)

How does the Duwamish Valley's outdoor air compare to other areas?

In the national context, the Duwamish Valley has better air quality than large urban areas, such as Los Angeles (Figure 4). However, based on an annual average, the Duwamish Valley experiences worse outdoor air for most types of air pollution than the rest of Washington State. (Air Quality Data Summary, 2013). At the local level, the top of Beacon Hill, which sits within a mile of the Duwamish Valley, has some of the best air quality in Puget Sound. This neighborhood sits on top of a hill with more wind and air mixing while the Duwamish Valley experiences less of this and, in the winter months, stagnant weather. This prevents pollution from leaving the valley.

Average Potential Cancer Risk Per Million People

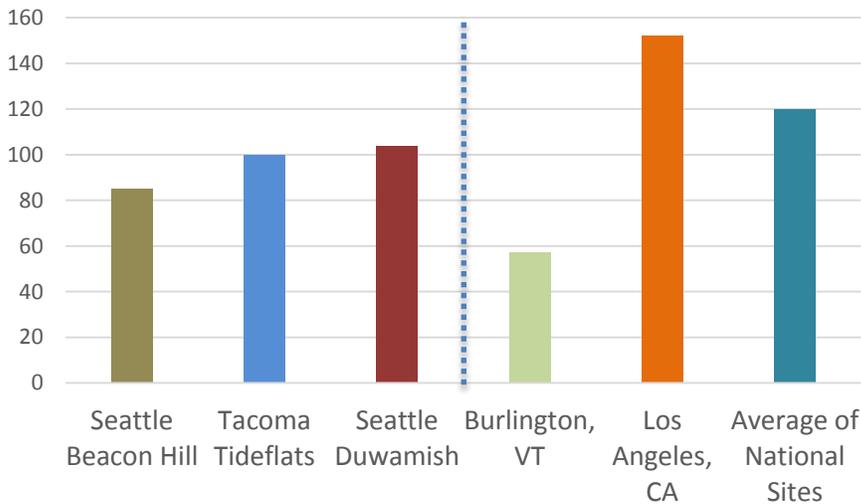
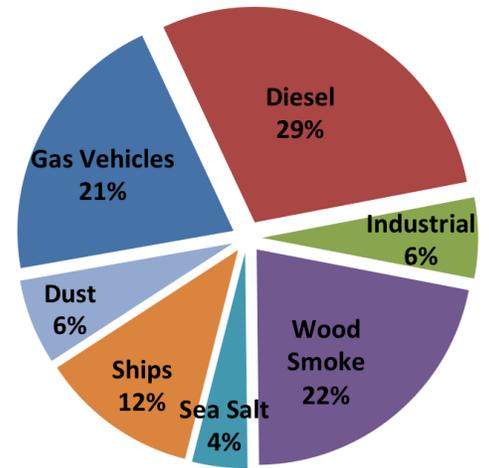


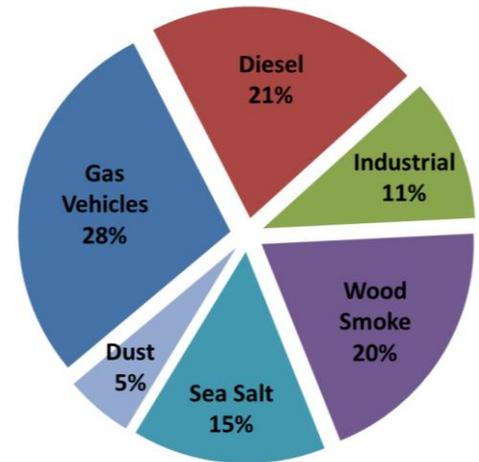
Figure 4. Comparison of potential cancer risks of different industrial and residential areas across the country; a couple of types of pollution were excluded (particularly diesel exhaust) due to lack of consistent estimation methods and consistent time periods across sites (adapted from PSCAA, 2010)

Seattle Corson Ave S & S Warsaw St



Adapted from Kim, Hopke (2008)

Seattle E Marginal Way S & S Idaho St



Adapted from Kotchenruther (2013)

Figure 3. The sources of pollution in the Duwamish Valley at two (2) different locations (PSCAA, 2014)

The quality of indoor air

We know less about air quality inside the homes and buildings of the Duwamish Valley. Typical sources of indoor air pollution include: air pollution from outside; second-hand smoke; mold; dust, bacteria and other allergens; chemicals from cleaning supplies; and new carpets and other furnishings. Less common sources include carbon monoxide from broken furnaces or stoves, radon, and asbestos.

Through spring of 2016, Georgetown and South Park residents can get a **FREE Healthy Home Assessment** from the American Lung Association! You will get an individualized home action plan and free, non-toxic cleaning supplies. Families with members suffering from asthma will get additional supplies. Home assessments are offered in English, Spanish, and Vietnamese. Contact us at contact@duwamishcleanup.org or (206) 453-9803 to schedule yours today!

You can take these actions to reduce air pollution inside your home:

- Remove your shoes at the door
- Use fans when cooking and bathing
- Clean mold away with a mild soap and dry the area. Find and eliminate the source of the dampness!
- Vacuum and dust weekly
- Keep good ventilation in your house

What is being done to address air pollution in the Duwamish Valley?

In the U.S. and in our region, current and new programs and policies will help reduce air pollution, especially diesel exhaust. The Duwamish Valley will continue to benefit from these efforts. In 2007, new national standards for diesel fuel and truck engines took effect. This major change will continue to reduce diesel exhaust, with these newer trucks being 50 to 60 times cleaner than the older ones (Figure 5). In addition, the Puget Sound Clean Air Agency (PSCAA) and the Northwest Ports (Seattle, Tacoma, & Vancouver) aim to reduce diesel exhaust by 80% in our region by 2020. As part of this strategy, all trucks going in and out of the Port of Seattle must have the newer and cleaner engines. Furthermore, ocean-going and harbor vessels, cargo-handling equipment, and rail must also reduce their exhaust. All of this work has reduced diesel exhaust (or black carbon) in the Duwamish Valley (Figure 6).

Over the past few years, PSCAA received over \$9 million in grants to reduce diesel exhaust locally. These efforts have made positive impacts in the Duwamish Valley:

- **The Seaport Truck Scrappage and Replacements for Air in Puget Sound (ScRAPs) Program** assists owners of old diesel trucks to buy newer ones that meet clean air standards. As of August 2015, PSCAA has scrapped 402 trucks with 120 more expected.
- **The “At-Berth Clean Fuels” Program (2009–2014)** gave incentives to ships at the Port of Seattle to use cleaner fuels. This eliminated about 860 metric tons of sulfur dioxide in the Puget Sound region.
- **207 SeaTac Airport taxis** were converted to ones that use compressed natural gas, positively impacting air quality in the Duwamish Valley.
- **650 school buses in Seattle** from private, and public fleets were retrofitted with cleaner engines.
- **Three tugboats**, two serving Elliot Bay and one serving the Duwamish River, were retrofitted and repowered.

In addition, the PSCAA actively works with industry to comply with EPA regulations. Recent compliance projects in the Duwamish Valley include:

- PSCAA has an active case against Ardagh, a glass manufacturer on East Marginal Way S. In 2014, PSCAA provided oral arguments that included comments from South Park and Georgetown neighbors to the federal District Court. PSCAA seeks to use its authority to require Ardagh to install cleaner technologies (or Reasonably Available Control Technology). As of August 2015, the court has not released its decision.
- In response to community activism, PSCAA inspected and is currently working with CDL Recycling in East Marginal Way S. to minimize possible polluting sources leaving the site.

Other partners are also doing their part. For example, as of August 2015, WA Veteran Conservation Corps and Urban Systems Design helped plant more than 170 trees in the valley. They plan to plant 250 to 400 more trees by the end of winter 2016. This will not only increase tree canopy in the valley but will also help improve air quality.

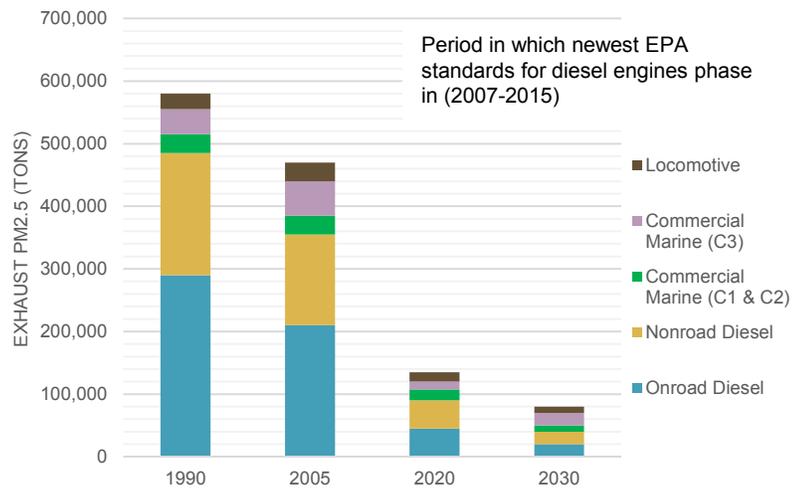


Figure 5. Projected declines in diesel exhaust nationally (adapted from U.S. EPA, 2014)

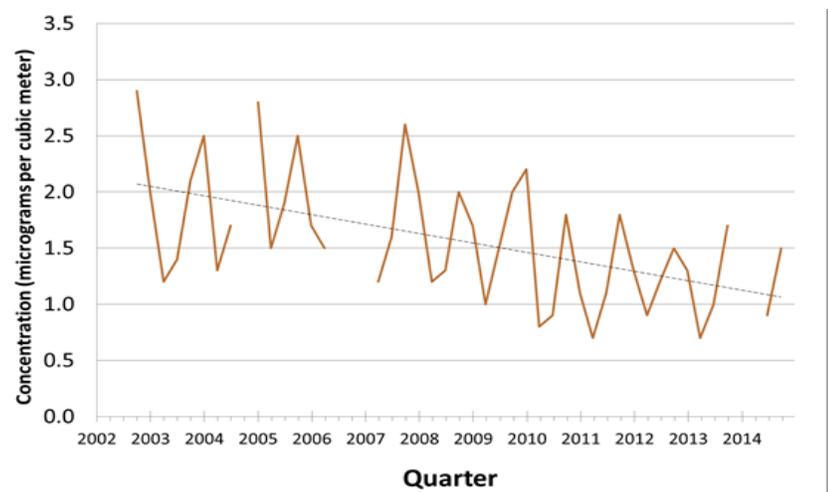


Figure 6. Historical quarterly average diesel exhaust (black carbon) levels (PSCAA, 2015)

Let's work together to improve air quality in the Duwamish Valley!

In the coming months, Duwamish Community Action for Clean Air Project will bring project partners and the community together to identify and take action on air pollution in the Duwamish Valley. Here are a few actions already underway:

- **FREE Healthy Home Assessments** for Georgetown and South Park from the American Lung Association. Residents receive an individualized home action plan to improve indoor air quality and a green cleaning kit!
- **Online map and mobile community monitoring tool** from Western Washington University's Huxley on the Peninsulas Program. The tool will give the community a way to track sources of pollution and highlight trends for the area. WWU received key input from the community through focus groups.
- *Coming Soon!* DRCC/TAG and project partners will hold **"Build Your Own Air Filter" workshops** for the community. *We will provide all materials and instructions.*
- *Stay Tuned!* This fall, DRCC/TAG, partners, and the community will identify **actions and projects that tackle outdoor air pollution** in Georgetown and South Park. We will begin implementing projects this year.
- *Last but not least,* we will host a **volunteer training** for community members who want to learn more about air pollution and who want to help with the project.



Figure 7. Strategic tree planting can help improve air quality in the Duwamish Valley
Photo by Paul Joseph Brown

Thank you to our project partners!

American Lung Association |
Georgetown Community
Council | Just Health Action |
Public Health – Seattle and King
County | Puget Sound Clean Air
Agency | South Park
Neighborhood Association |
U.S. Environmental Protection
Agency | Western Washington
University

About Duwamish Community Action for Clean Air

From June 1, 2014 through May 31, 2016, this project aims to:

- 1) Compile existing information on the sources of diesel and other air pollution in the Duwamish Valley;
- 2) Improve residents' understanding of the primary sources of air pollution in the Duwamish Valley; and
- 3) Take action to reduce exposure to air pollutants and the frequency and severity of asthma among residents

To contact the Duwamish River Cleanup Coalition/TAG:

206-954-0218 | contact@duwamishcleanup.org | www.duwamishcleanup.org

Para información en español, llame al 206-453-9803

Để biết thông tin bằng tiếng Việt xin gọi 206-859-9178