

Duwamish Valley Regional Air Modeling and Health Risk Assessment

Fact Sheet – September 2008



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Background

The Duwamish Valley is an industrialized area in south Seattle along the Lower Duwamish Waterway. The area also includes two communities - South Park and Georgetown. High levels of traffic, industrial activities, and wood smoke emissions in this area contribute to air pollution, which may impact human health.

Residents of the Georgetown and South Park neighborhoods in south Seattle asked the Washington State Department of Health to look at air pollution impacts to their health. The Department of Health hired a consultant to study air emissions from several sources in south Seattle to identify air pollutants, key air pollution sources, and the areas of south Seattle affected by air pollutants.



Air Modeling Results

Air modeling results showed diesel emissions and wood smoke from fireplaces and woodstoves make a significant contribution to air pollution in the area. The potential health risks are higher for people who live near major pollution sources. For instance, diesel emissions may have greater health impacts on people living near major roadways because they're exposed to more exhaust.

The air modeling results are similar to those in previous studies done by the Puget Sound Clean Air Agency and Department of Ecology in 2003.

Air Pollution & Health Effects

Air pollution is the presence of any undesirable substance in the air we breathe. Pollution can come from human sources like cars or industry, or from natural sources like smoke and gases emitted from wildfires or volcanic eruptions. The impact on health depends on several factors: the length of exposure, genetics, pre-existing health conditions, the type of pollutant, and the amount of pollutants we breathe.

Health impacts from air pollution can include: respiratory irritation, asthma, heart and lung disease, decreased immunity, and increased cancer risk. Young children, the elderly, pregnant women, and people with compromised immune systems may be more at risk.

What can affect our air quality?

There are several factors that can affect the air quality in communities.

Location: Air is usually more polluted in urban areas and near major roadways where emissions from industry and vehicles are closer to communities. Poor air quality may also occur in valleys where airborne chemicals and particulates can settle.

Weather: The summer heat, winter cold, and lack of air movement can cause stagnant weather conditions. An "inversion" is a condition where a layer of warm air sits above a layer of cooler air and prevents the air and pollutants from rising and being dispersed. When inversions happen, airborne pollutants build up and remain in the lower level causing air pollution episode.

What's being done to protect air quality?

- The Puget Sound Clean Air Agency runs an extensive Diesel Solutions program that began in 2001. The program works to reduce diesel emissions in the south Seattle area and throughout its jurisdiction. The program installs equipment on vehicles to reduce their emissions, and encourages use of cleaner fuels and reduced vehicle idling.
- The Port of Seattle, along with local, state, and federal air partners, and other Northwest ports, developed and are implementing its Northwest Ports Strategy to reduce diesel emissions.
- The Puget Sound Clean Air Agency and Washington State Department of Ecology have active programs to reduce harmful wood smoke emissions. These include “burn bans” during unhealthy, stagnant air periods, and education and outreach to encourage clean home heating practices.
- The Puget Sound Clean Air Agency requires industrial sources to control harmful emissions through a permitting process.

Next Steps for Better Air Quality

State and local agencies are working together to establish better air quality for the communities of south Seattle. Some of the actions that have taken place or are planned include:

- The Department of Health will work with other agencies to conduct follow-up assessments and analyses when new emission data become available.
- Department of Health will work with public health agencies to provide information to local communities regarding air toxics and air pollution.
- The department will help to develop strategies involving land use, air pollution exposure prevention, and education.

What can we do to protect our health?

The amount of pollutants in the air is constantly changing due to weather conditions, industrial activities, and vehicle and wood smoke emissions. Here are some things everyone can do to reduce their exposure and improve air quality in our communities.

- Use alternative methods of transportation to cut down on fuel emissions.
- Check the local clean air agency for air quality conditions before planning outdoor activities.
- Limit physical exertion and time spent outdoors when air quality is poor.
- If a woodstove is your source of heat, check to see if the stove is certified for cleaner, more efficient burning.

More Resources

Duwamish Valley Regional Modeling and Health Risk Assessment

- <http://www.doh.wa.gov/Documents/Pubs/334-165.pdf>

Puget Sound Clean Air Agency

- Current Air Quality: <http://www.pscleanair.org/airq/aqi.aspx>
- Wood Stoves & Fireplaces: <http://www.pscleanair.org/actions/woodstoves/default.aspx>
- Puget Sound Air Toxics Evaluation, 2003 Report:
http://www.pscleanair.org/news/library/reports/psate_final.pdf

For more information, please contact the Washington State Department of Health's Site Assessment Program at 1-877-485-7316, www.doh.wa.gov/consults.

For people with disabilities, this document is available on request in other formats. To submit a request, please call 1-800-525-0127 (TDD/TTY call 711).