

2005 EMISSION INVENTORY PUGET SOUND AREA

The Puget Sound Clean Air Agency conducted a comprehensive inventory of air pollution sources in its jurisdiction for the year 2005. An inventory provides an estimate of air pollutant emissions by source category, and helps the Agency prioritize its efforts to reduce emissions.

The 2005 inventory includes the traditional "criteria" pollutants: fine particles, the ozone precursor volatile organic compounds, nitrogen dioxide, sulfur dioxide, and carbon monoxide, as well as greenhouse gases. The source categories inventoried include cars, trucks, buses, ships, local business and industry, and emissions from residential homes (home heating, etc.). The Agency inventoried sources from King, Snohomish, Pierce, and Kitsap counties.

The 2005 inventory provides a "snapshot" estimate of emission sources in our area. Emission inventory methodologies are continually improved, therefore emission trends are not presented. The entire report, including detailed appendices, is available at <http://www.pscleanair.org/news/library/reports/>.

The inventory confirms that the majority of our air pollution comes from us, individual residents and not industry. Decisions we all make every day – how we commute to work, maintain our vehicles, heat our homes, dispose of yard waste, mow our yards, etc. – affect air pollution. Find ways that you can make a positive difference at <http://www.pscleanair.org/actions/>.

The Agency prioritizes three areas of emissions reduction. These three areas are described briefly in this information sheet, with 2005 inventory overall contribution estimates. A description of pie chart categories is provided on page 5.

Priority #1:

Reduce harmful fine particle emissions and concentrations.

Tiny fine particles, often referred to as soot or “PM_{2.5}”, come primarily from combustion sources and contribute to many health effects, especially lung and heart problems. In the wintertime, our meteorology and wood combustion (especially from residential home heating) contribute to unhealthy elevated levels. Several areas of our jurisdiction are very close to violating the federal health-based standards for fine particles and one area violates this health-based standard.

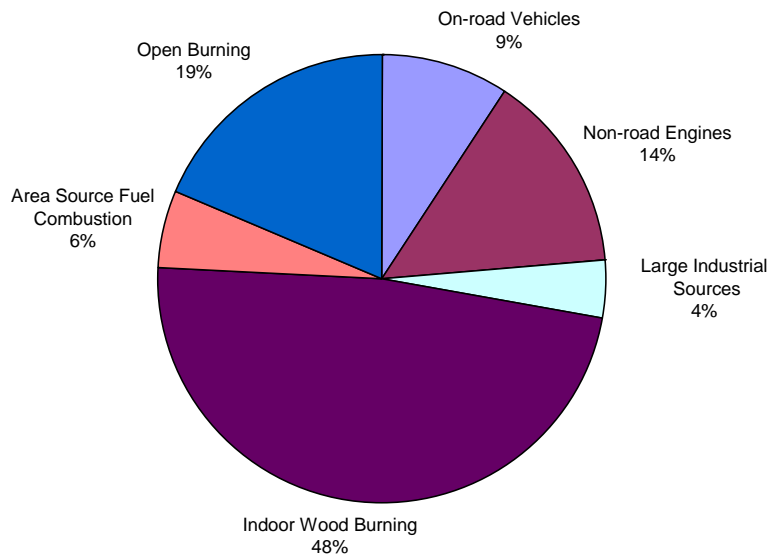
In winter, use of wood stoves and fireplaces (residential indoor wood burning)

contributes almost half of fine particle emissions. The chart on page 2 summarizes the 2005 wintertime inventory estimate. Mobile sources contribute almost a quarter of emissions, and open burning (primarily in rural areas) contributes almost 20%. The 2005 inventory reinforces the current programs that the Agency has in place to reduce emissions from these top three categories.

For more information on our programs focused on reducing fine particles, see:

- Our Woodstoves & Fireplaces page: Provides tips on clean home heating, wood smoke impacts on health, and information on wintertime burn bans.
<http://www.pscleanair.org/actions/woodstoves/default.aspx>.
- Our Diesel Solutions page: Outlines achievements to reduce diesel fine particle emissions (a subset of fine particles). Sources addressed include school buses, public transportation, public fleets, garbage trucks, trains, ships, and other port equipment.
<http://www.pscleanair.org/programs/dieselsolutions/default.aspx>.
- Our outdoor burning page: Highlights recent changes to outdoor burning rules and information on outdoor burn bans.
<http://www.pscleanair.org/actions/outdoorfires/default.aspx>.

2005 Distribution of Wintertime PM_{2.5} Emissions



"wintertime" defined as December, January, February

Priority #2:

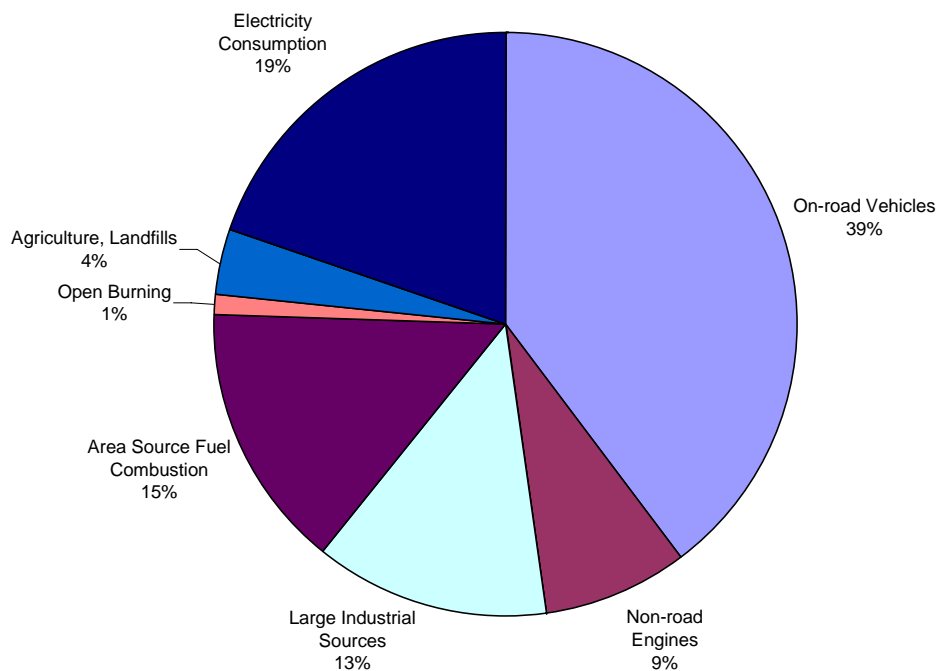
Reduce greenhouse gases that contribute to climate change.

While no federal standards exist for greenhouse gas levels, climate protection is a high priority for our region, our nation, and our world.

Cars, trucks, buses, combined with ships, trains, and aircraft, emit about half of our regional greenhouse gases. The chart below summarizes the 2005 inventory estimate for greenhouse gases (CO₂ equivalents, which includes carbon dioxide [CO₂] and other warming gases). Reducing emissions from transportation (both on-road vehicles and non-road engines) is a major priority to reduce greenhouse gas emissions in our area.

For more information on our programs and actions to reduce greenhouse gas emissions, see our Climate Protection page: <http://www.pscleanair.org/programs/climate/default.aspx>.

2005 Distribution of Greenhouse Gas Emissions



Priority #3:

Reduce harmful ground-level ozone concentrations.

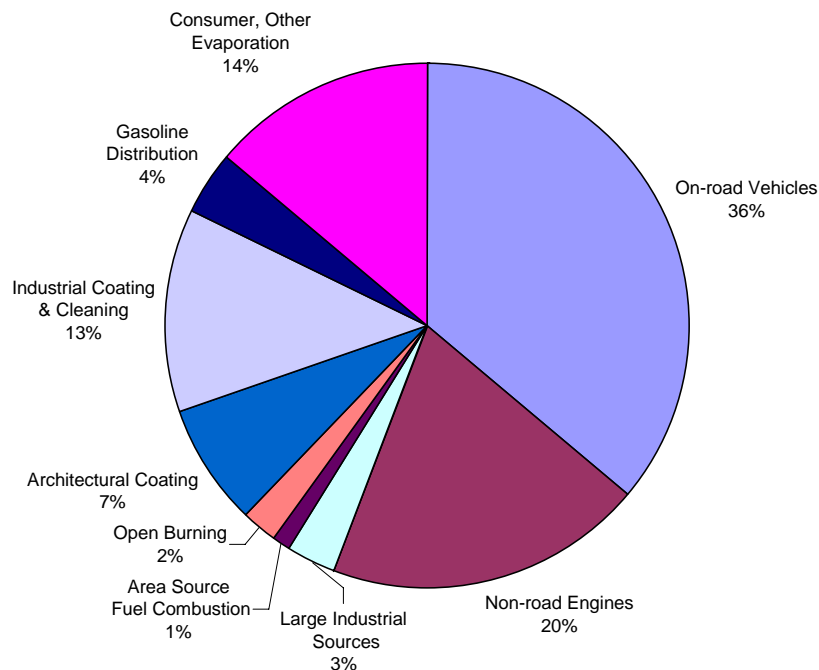
Ozone high in the stratosphere is "good ozone" as it helps to protect us from the sun's intense rays. Ground-level ozone, however, is harmful to both people and plants. Ozone is an irritant that affects peoples' lungs and interferes with plants' ability to "eat" (photosynthesize).

Ozone is formed from precursor pollutants: volatile organic compounds and oxides of nitrogen. Ozone reaches unhealthy levels during the summer months in the Puget Sound area, when sunlight is present (ozone needs sunlight to form). Summertime levels in our region are close to violating the federal health-based standard.

Cars, trucks, buses, combined with ships, trains, and aircraft, emit more than half of our main summertime ozone precursors, volatile organic compounds. The chart below summarizes the 2005 inventory summertime estimate for our main ozone precursor, volatile organic compounds (VOCs). Of these, gasoline-powered vehicles make up the largest contributor. Addressing these gasoline vehicles (possibly through fuels) will be a key area to reduce VOC emissions in our area.

For more information on ozone, see EPA's website on ozone: <http://www.epa.gov/air/ozonepollution/> and our annual Data Summary: <http://www.pscleanair.org/news/library/reports/2006AQDSFinal.pdf>.

2005 Distribution of Summertime VOC Emissions



"summertime" defined as June, July, August

Description of Pie Chart Categories

Major Category in Chart	Categories or Equipment included in the Major Category
On-road Vehicles	Vehicles using public roads (cars, trucks, buses, motorcycles)
Non-road Engines	Aircraft, locomotives, marine vessels, cargo handling, aircraft support, construction vehicles, lawn and garden equipment
Large Industrial Sources	Large facilities required to report emissions to the Agency
Area Source Fuel Combustion	Fossil fuels burned by households and small industries
Open Burning	Burning of land-clearing debris, yard waste, forests, agriculture waste, and buildings
Agriculture, Landfills, Other	Livestock, manure management, landfills, and wastewater treatment
Architectural Coating	Coating of buildings, bridges, and traffic markings
Industrial Coating & Cleaning	Surface coating and metal cleaning by small industries
Gasoline Distribution	Distribution of gasoline and vessel loading/unloading of petroleum products
Consumer, Other Evaporation	Household and consumer items, baking, printing, pesticide application, etc.
Indoor Wood Burning	Burning of wood in fireplaces, inserts, and stoves for heat and ambiance
Electricity Consumption	Electricity consumption and sulfur hexafluoride losses from power equipment such as transformers