



# 1997 Air Quality Annual Report for Washington State

Publication Number 97-208



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## Introduction

1997 brought many changes and challenges for those concerned with Washington State's air quality. Several areas that formerly did not meet air quality standards were either redesignated as meeting standards, or were proposed for redesignation. The federal Environmental Protection Agency (EPA) adopted new federal standards for two air pollutants, spurring changes in the way air quality agencies monitor and control those pollutants. The Department of Ecology's Air Quality Program conducted an evaluation of its vehicle Emission Check Program to determine how to achieve maximum air quality benefits with minimum public impact. And Ecology began an initiative to improve the ways we protect and enhance visibility in Washington's scenic areas.

Highlights of 1997 include:

- Monitored air pollutant levels were within federal air quality standards in all areas of the state.
- EPA redesignated the Vancouver-Portland bi-state area to an attainment area for ozone.
- Ecology submitted a plan for the Thurston County area to be redesignated to attainment for particulate matter.
- In the Spokane area, where attainment of the carbon monoxide standard is still an issue, Ecology continued working in cooperation with local agencies and EPA to define controls to help improve and maintain air quality.

This report describes many of the actions taken during 1997 by Ecology and local agencies that have resulted in cleaner air for Washington's citizens.

## Glossary of Terms

*Air monitoring network:* A network of air monitors located around the state to determine levels of criteria pollutants in the air, identify areas with the worst air pollution, identify where health risks may exist, and determine if control strategies are working.

*Attainment area:* An area that meets federal air quality standards.

*Class I area:* All international parks, national wilderness areas, and memorial parks which exceed 5,000 acres, and all national parks which exceed 6,000 acres. Class I areas have restrictions on use of land and resources to prevent damage to visibility, plants, soil, and other resources.

*Control strategies:* Methods used to control emissions of a specific pollutant, usually in a specific area of the state.

*Criteria pollutants:* A limited set of air pollutants for which federal standards have been set to protect human health. Includes carbon monoxide, nitrogen dioxide, sulfur dioxide, ozone, particulate matter, and lead.

*Emission inventory:* A data bank of air pollution statistics which identifies the type, size, and location of various pollution sources. Categories include point sources (sources such as industrial facilities that are located at a specific geographic point) and area sources (sources not confined to one point but spread out over a wider area, such as automobiles and wood stoves).

*Maintenance area:* A geographic region redesignated by EPA from nonattainment to attainment as a result of monitored attainment of the standard and EPA approval of a plan to maintain air quality standards for at least a 10-year period.

*Maintenance plan:* A plan developed by state and/or local air quality agencies to meet air quality standards in an area for at least a 10-year period.

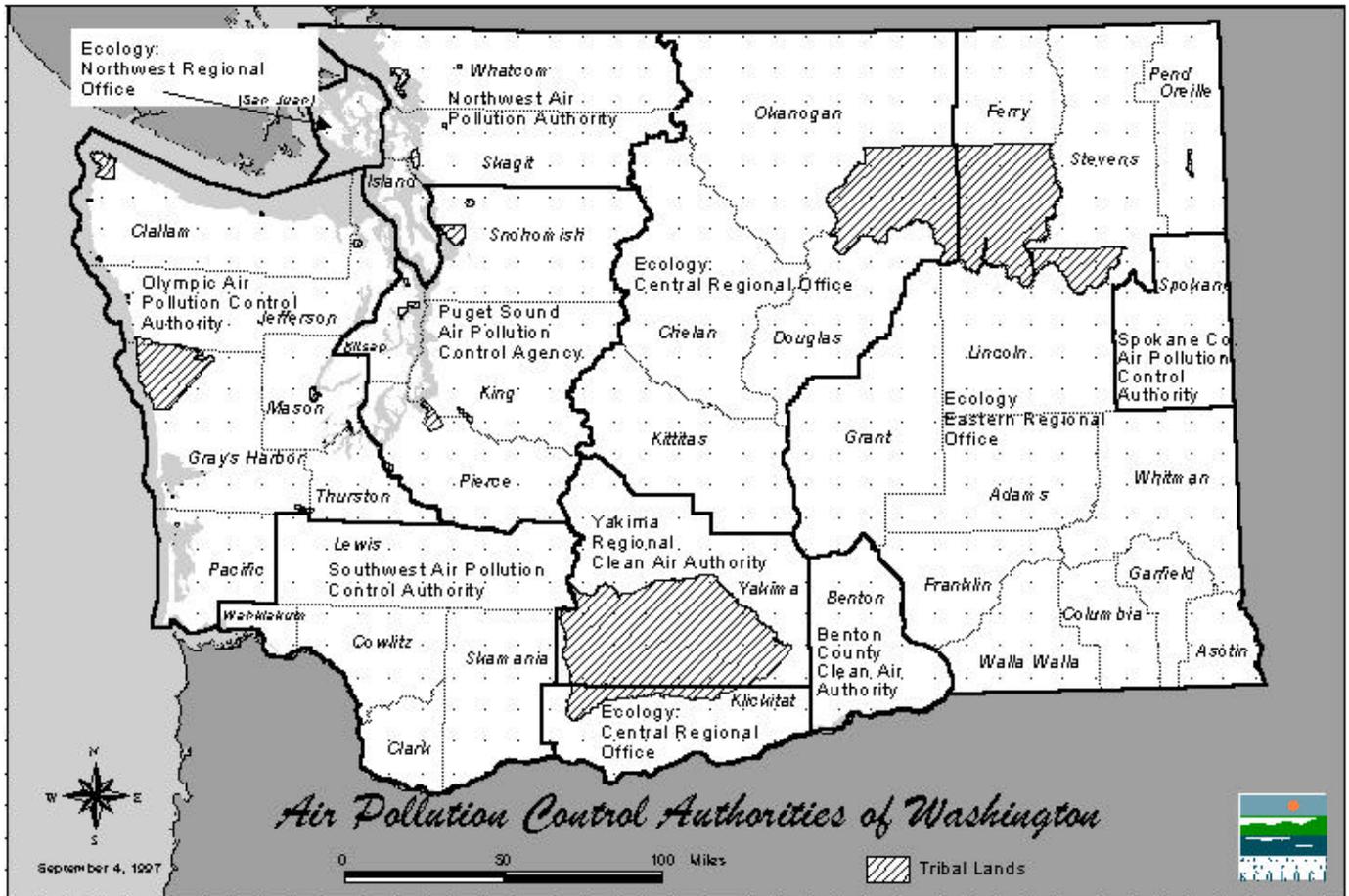
*Nonattainment area:* A geographic region designated by EPA in which federal air quality standards are not or were not met by a certain date. Areas once designated as nonattainment that now meet air quality standards remain nonattainment until EPA has approved a redesignation request and maintenance plan.

*State Implementation Plan (SIP):* A plan the state adopts and implements to ensure the state meets federal and state air quality standards and goals.

*Toxic air pollutants:* Compounds which may cause cancer and/or other health problems at very low concentrations.

# Determining the State of Our Air

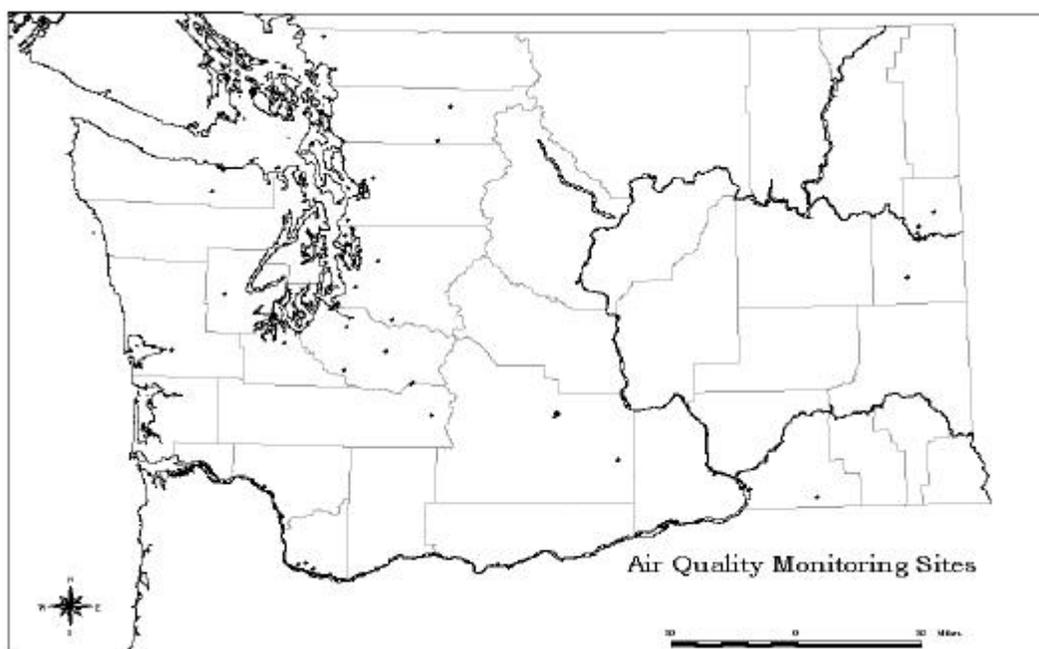
Ecology and seven local air pollution control authorities around the state monitor for carbon monoxide, particulate matter smaller than 10 microns in size (PM<sub>10</sub>), ozone, sulfur dioxide, nitrogen oxides, and lead. In addition to this monitoring network, Ecology and local agencies conduct special monitoring studies for toxic air pollutants, fine particles, carbon monoxide, and ozone. Monitoring data helps determine the state of our air quality, identify the areas with the worst air pollution, identify where health risks may exist, and determine if strategies for controlling pollutants in various areas of the state are working. The map below shows the jurisdictions of Ecology and local agencies.



## Air Monitoring Sites

Washington's air monitoring network measures air quality in selected areas of the state, especially where we suspect high pollution levels. The number and location of air monitors may be adjusted each year based on measured pollution levels; changes in the number, type or characteristics of sources that cause air pollution; federal and state priorities; and available resources. Pollution levels are compared over time to determine air quality trends.

The map below shows where Washington's air monitoring sites are located. Many of these sites monitor for multiple pollutants.



During 1997, several changes to Washington's air monitoring network were made based on measured pollution levels or changes in sources in certain areas of the state.

### **New sites:**

New nitrogen oxides sites were established in Castle Rock and Woodland. New ozone sites were established in Woodland, Hockinson, and Yelm.

### **Discontinued sites:**

A carbon monoxide site was discontinued in Sea-Tac. A particulate matter site was discontinued in Port Angeles.

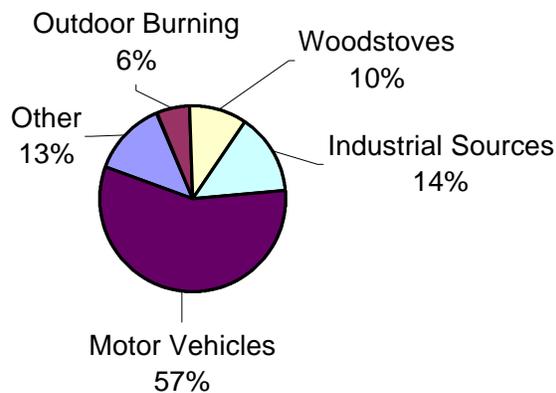
## Identifying Air Pollution Sources

Many air quality decisions are based on information provided by “emission inventories,” data that give us information about the type, size, and location of sources of various air pollutants. An emission inventory categorizes air pollution sources into three main groups: point sources, area sources, and mobile sources.

Point sources are sources that are located at a specific geographical point. They are usually larger commercial or industrial facilities. Area sources are sources that are too small or too numerous to be counted individually, such as wood stoves or house painting. Area sources also include sources that may be spread over a large area, such as windblown dust or wildfires. Mobile sources include motor vehicles, aircraft, trains, boats, and construction.

The information provided by an emission inventory shows whether emissions of an air pollutant are increasing or decreasing in a certain area of the state, as well as where the air pollutant is coming from. This type of information helps state and local air quality agencies determine what strategies work best to control air pollution in certain areas. An example of how an emission inventory was used during 1997 to make decisions about protecting visibility in Washington is described on page 46.

### Washington Air Pollution Sources (1996 Data)



(Data under revision)

# Managing Air Quality

EPA has set health-based standards for criteria air pollutants (see below for an explanation of the standards, and the following page for a description of “criteria” air pollutants). When an area violates one of these standards, EPA designates the area as nonattainment for that pollutant. A nonattainment area must develop and implement a plan that meets the requirements of the Clean Air Act to meet and maintain the specific standard.

## Air Quality Standards

Pollutant	National		Washington State
	Primary	Secondary	
<b>Total Suspended Particulates</b> Annual Geometric Mean 24 - Hour Average	No Standard No Standard	No Standard No Standard	60 $\mu\text{g}/\text{m}^3$ 150 $\mu\text{g}/\text{m}^3$
<b>Lead (Pb)</b> Quarterly Average	1.5 $\mu\text{g}/\text{m}^3$	1.5 $\mu\text{g}/\text{m}^3$	No standard
<b>Particulates (PM<sub>10</sub>)</b> Annual Arithmetic Mean 24 - Hour Average	50 $\mu\text{g}/\text{m}^3$ 150 $\mu\text{g}/\text{m}^3$	50 $\mu\text{g}/\text{m}^3$ 150 $\mu\text{g}/\text{m}^3$	50 $\mu\text{g}/\text{m}^3$ 150 $\mu\text{g}/\text{m}^3$
<b>Sulfur Dioxide (SO<sub>2</sub>)</b> Annual Average 24 - Hour Average 3 - Hour Average 1 - Hour Average	0.03 ppm 0.14 ppm No Standard No Standard	No Standard No Standard 0.50 ppm No Standard	0.02 ppm 0.10 ppm No Standard 0.40 ppm <sup>a</sup>
<b>*Carbon Monoxide (CO)</b> 8 - Hour Average 1 - Hour Average	9 ppm 35 ppm	9 ppm 35 ppm	9 ppm 35 ppm
<b>*Ozone (O<sub>3</sub>)</b> 1 - Hour Average <sup>b</sup>	0.12 ppm	0.12 ppm	0.12 ppm
<b>Nitrogen Dioxide (NO<sub>2</sub>)</b> Annual Average	0.053 ppm	0.053 ppm	0.05 ppm

**a** - 0.25 not to be exceeded more than two times in any 7 consecutive days.

**b** - Not to be exceeded on more than 1.0 days per calendar year as determined under the conditions indicated in Chapter 173-475 WAC.

- ppm = parts per million
- $\mu\text{g}/\text{m}^3$  = micrograms per cubic meter
- Annual Standards never to be exceeded, short-term standards not to be exceeded more than once per year unless noted.

*\* Please note: Primary standards are listed in this table as they appear in the federal regulation. In the charts in this report, ambient concentrations are rounded using the next higher decimal place to determine whether a standard has been exceeded.*

See page 33 for information about new federal air quality standards for fine particulate matter and ozone.

<b>Criteria Pollutants</b>			
<b>Pollutant</b>	<b>Description</b>	<b>Sources</b>	<b>Health Effects</b>
<b>Particulate Matter (PM<sub>10</sub>)</b>	Particles less than 10 microns in size.	Wood stoves, Industry, Dust, Construction, Street sand application, Open burning.	Aggravates ailments such as bronchitis and emphysema, especially bad for those with chronic heart and lung disease, as well as the very young and old, and pregnant women.
<b>Carbon Monoxide (CO)</b>	An odorless, tasteless, colorless gas which is emitted primarily from any form of combustion.	Mobile sources (autos, trucks, buses), Wood stoves, Open burning, Industrial combustion sources.	Deprives the body of oxygen by reducing the blood's capacity to carry oxygen; causes headaches, dizziness, nausea, listlessness and in high doses, may cause death.
<b>Ozone (O<sub>3</sub>)</b>	Formed when nitrogen oxides and volatile organic compounds react with one another in the presence of sunlight and warm temperatures. A component of smog.	Mobile sources, Industry, Power plants, Gasoline storage and transfer, Paint.	Irritates eyes, nose, throat and respiratory system; especially bad for those with chronic heart and lung disease, as well as the very young and old, and pregnant women.
<b>Nitrogen Dioxide (NO<sub>2</sub>)</b>	A poisonous gas produced when nitrogen oxide is a by-product of sufficiently high burning temperatures.	Fossil fuel power, Mobile sources, Industry, Explosives manufacturing, Fertilizer manufacturing.	Harmful to lungs, irritates bronchial and respiratory systems; increases symptoms in asthmatic patients.
<b>Sulfur Dioxide (SO<sub>2</sub>)</b>	A gas or liquid resulting from the burning of sulfur-containing fuel.	Fossil fuel power plants, Non-ferrous smelters, Kraft pulp production.	Increases symptoms in asthmatic patients; irritates respiratory system.
<b>Lead (Pb)</b>	A widely used metal, which may accumulate in the body.	Leaded gasoline, Smelting, Battery manufacturing and recycling.	Affects motor function and reflexes and learning; causes damage to the central nervous system, kidneys and brain. Children affected more than adults.

When a nonattainment area has met air quality standards for a certain length of time, it can be redesignated to attainment. One of the most important requirements for redesignation is a plan for the area to maintain air quality standards for at least a ten-year period. An area that has such a plan in place is called a “maintenance area.”

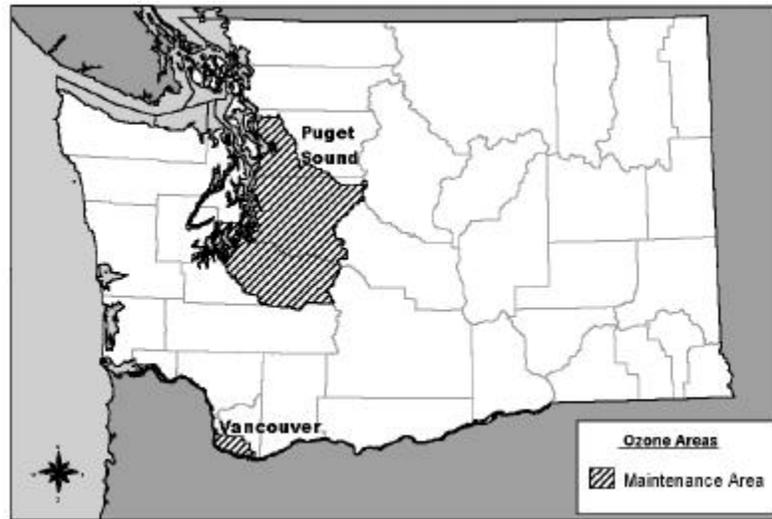
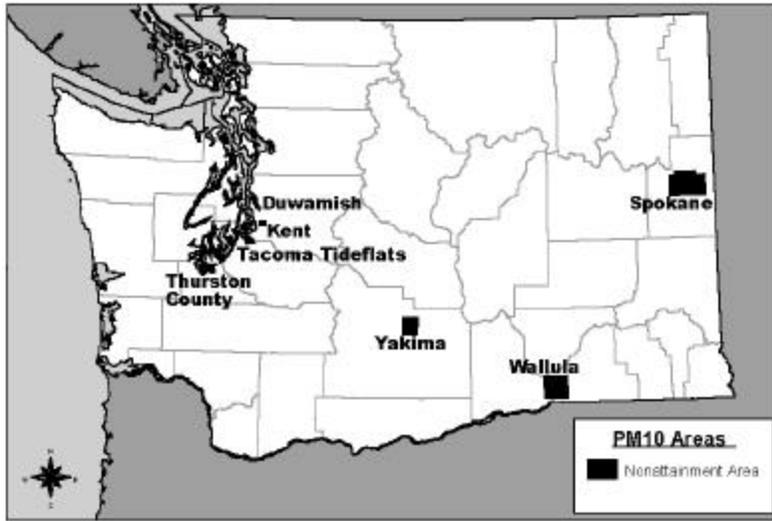
In the 1990 Amendments to the federal Clean Air Act, Congress required EPA to confirm existing nonattainment areas and to classify them according to the severity of pollution. Overall, Washington has 13 nonattainment areas or former nonattainment areas (maintenance areas). These include seven moderate PM<sub>10</sub> nonattainment areas, two marginal ozone nonattainment areas, three moderate carbon monoxide nonattainment areas, and one carbon monoxide nonattainment area that could not be classified. (Yakima, the unclassified carbon monoxide nonattainment area, experienced numerous violations of the carbon monoxide standard earlier in the 1980s but has had no recent violations to serve as a basis for classification.) Of these 13 areas, four have been redesignated to maintenance areas:

- Puget Sound Ozone (redesignated in 1996)
- Puget Sound Carbon Monoxide (redesignated in 1996)
- Vancouver Area Carbon Monoxide (redesignated in 1996)
- Vancouver-Portland Ozone (redesignated in 1997)

Four more areas are in the process of redesignation. They are:

- Olympia-Lacey-Tumwater PM<sub>10</sub>
- Duwamish Valley PM<sub>10</sub>
- Kent Valley PM<sub>10</sub>
- Tacoma Tidelands PM<sub>10</sub>

Washington’s nonattainment and maintenance areas are shown in the maps on the following page.



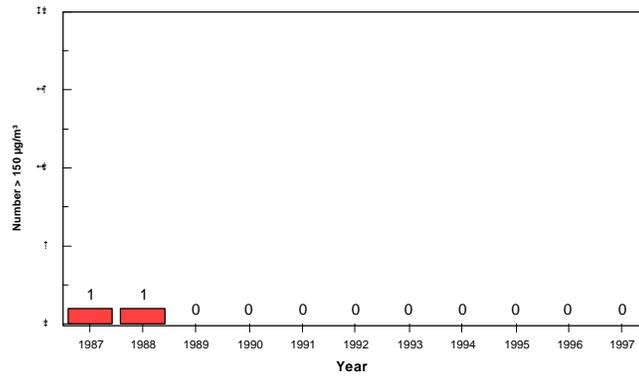
## **PM<sub>10</sub>**

EPA determined that five (Thurston County, Tacoma Tidelands, Kent Valley, Seattle Duwamish, and Yakima) of Washington's seven PM<sub>10</sub> nonattainment areas met the standard by the December 31, 1994 deadline established by the Clean Air Act. The Puget Sound Air Pollution Control Agency prepared maintenance plans for the Tacoma Tidelands, Kent Valley, and Seattle Duwamish areas and submitted them to Ecology in December 1997. When EPA has approved the plans, these areas can be redesignated as attainment. In July 1997, Ecology submitted a redesignation request and maintenance plan to EPA for the Thurston County PM<sub>10</sub> nonattainment area. The maintenance plan, which was prepared by the Olympic Air Pollution Control Authority, projects that continuing the current residential wood stove program will maintain the standard through 2010.

Both the Spokane and the Wallula PM<sub>10</sub> nonattainment areas are impacted by windblown dust coming from outside their boundaries. For this reason, EPA only approved portions of the attainment plans for these areas in January 1997. At the same time, EPA granted a temporary extension of the attainment date to December 31, 1997. This gave the state time to define best available control measures for windblown dust from agricultural lands. Ecology is working to do this through the Columbia Plateau Project, an effort to gain a better understanding of windblown agricultural dust and how to control it. For a more detailed description of the project, see page 49. In addition, EPA's policy on natural events adopted in June 1996 will allow dust storms to be treated as uncontrollable natural events. This means that EPA may not designate areas affected by dust storms as nonattainment. However, the state must still provide public education, notify the public when a dust storm may occur, provide information on how to minimize exposure to particulate matter, and work to reduce levels of particulate matter during these events.

The data shown in the following PM<sub>10</sub> graphs includes exceedances due to natural events.

### Thurston County PM<sub>10</sub> Number of Observations above standard: 1987 - 1997

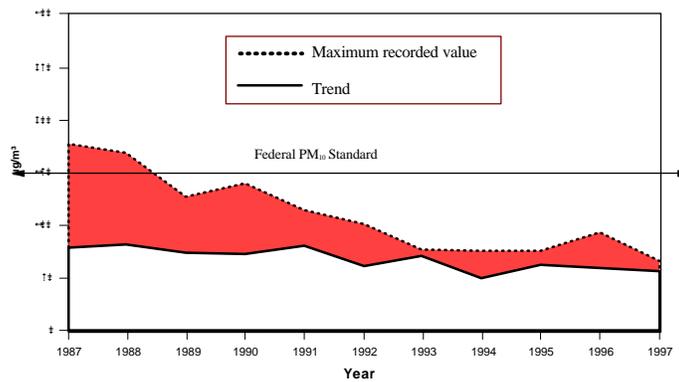


**Notes:**

More than one observation above 150 µg/m<sup>3</sup> during a single year is a violation of the federal PM<sub>10</sub> standard.

Data for 1997 are incomplete and have not been validated.

### Thurston County PM<sub>10</sub> Trends PM<sub>10</sub> Levels: 1987 - 1997

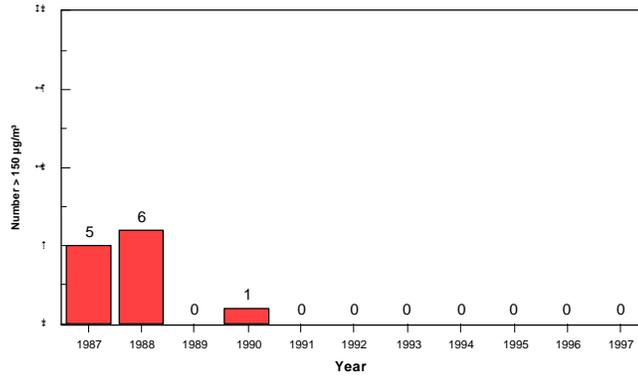


**Notes:**

The trend line represents the average of the PM<sub>10</sub> values that fall within the upper five percent of the observations.

Data for 1997 are incomplete and have not been validated.

### Tacoma Tideflats PM<sub>10</sub> Number of Observations above standard: 1987 - 1997

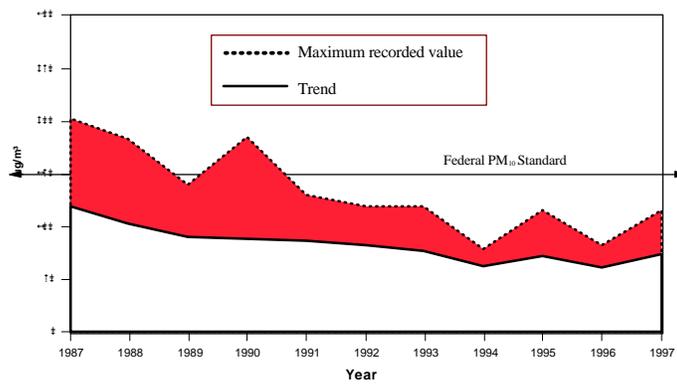


**Notes:**

More than one observation above 150 µg/m<sup>3</sup> during a single year is a violation of the federal PM<sub>10</sub> standard.

Data for 1997 are incomplete and have not been validated.

### Tacoma Tideflats PM<sub>10</sub> Trends PM<sub>10</sub> Levels: 1987 - 1997

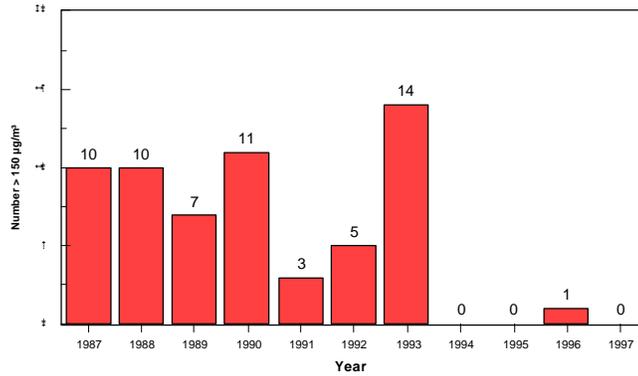


**Notes:**

The trend line represents the average of the PM<sub>10</sub> values that fall within the upper five percent of the observations.

Data for 1997 are incomplete and have not been validated.

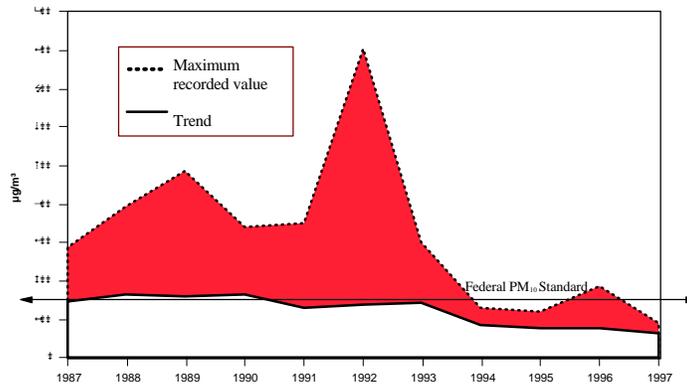
### Spokane PM<sub>10</sub> Number of Observations above standard: 1987 - 1997



**Notes:**

More than one observation above 150 µg/m<sup>3</sup> during a single year is a violation of the federal PM<sub>10</sub> standard.  
Data for 1997 are incomplete and have not been validated.

### Spokane PM<sub>10</sub> Trends PM<sub>10</sub> Levels: 1987 - 1997

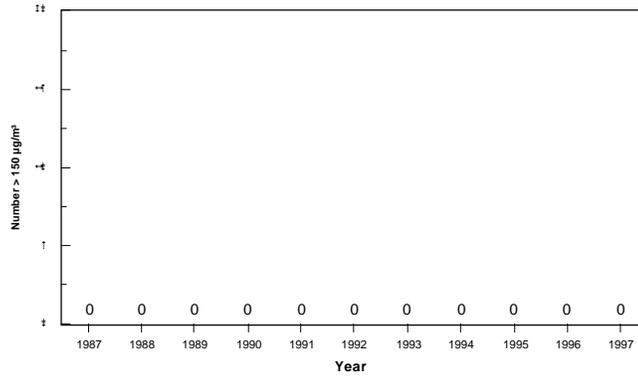


**Notes:**

The trend line represents the average of the PM<sub>10</sub> values that fall within the upper five percent of the observations.  
Data for 1997 are incomplete and have not been validated.

### Kent PM<sub>10</sub>

Number of Observations above standard: 1987 - 1997

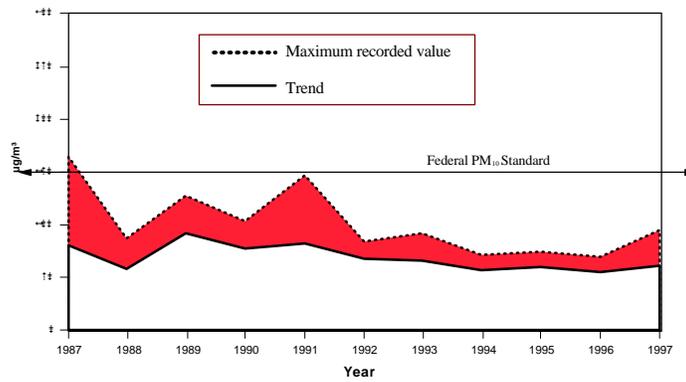


Notes:

More than one observation above 150 µg/m<sup>3</sup> during a single year is a violation of the federal PM<sub>10</sub> standard.  
Data for 1997 are incomplete and have not been validated.

### Kent PM<sub>10</sub> Trends

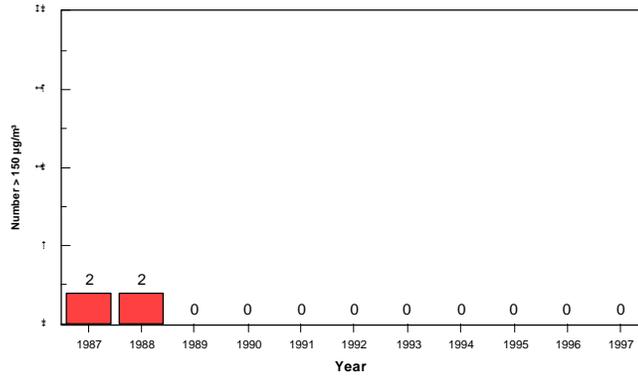
PM<sub>10</sub> Levels: 1987 - 1997



Notes:

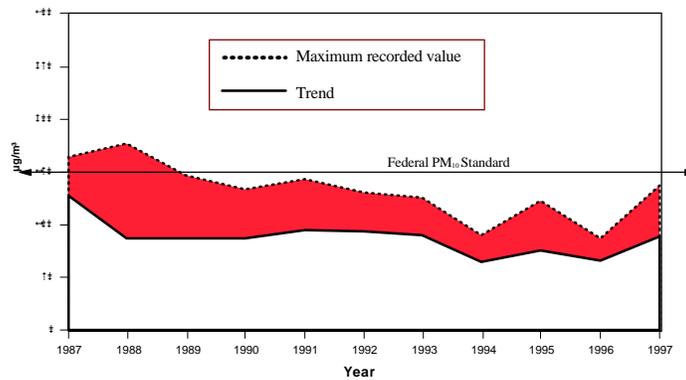
The trend line represents the average of the PM<sub>10</sub> values that fall within the upper five percent of the observations.  
Data for 1997 are incomplete and have not been validated.

### Seattle-Duwamish PM<sub>10</sub> Number of Observations above standard: 1987 - 1997



**Notes:**  
More than one observation above 150 µg/m<sup>3</sup> during a single year is a violation of the federal PM<sub>10</sub> standard.  
Data for 1997 are incomplete and have not been validated.

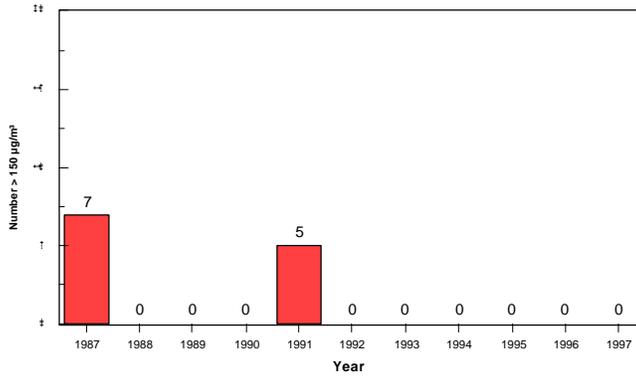
### Seattle-Duwamish PM<sub>10</sub> Trends PM<sub>10</sub> Levels: 1987 - 1997



**Notes:**  
The trend line represents the average of the PM<sub>10</sub> values that fall within the upper five percent of the observations.  
Data for 1997 are incomplete and have not been validated.

### Yakima PM<sub>10</sub>

Number of Observations above standard: 1987 - 1997

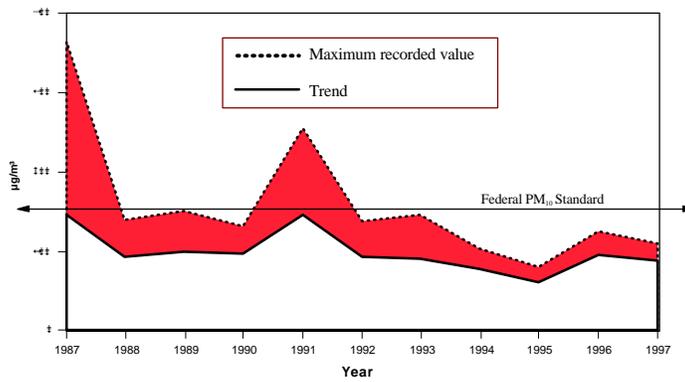


**Notes:**

More than one observation above 150 µg/m<sup>3</sup> during a single year is a violation of the federal PM<sub>10</sub> standard.

Data for 1997 are incomplete and have not been validated.

### Yakima PM<sub>10</sub> Trends PM<sub>10</sub> Levels: 1987 - 1997



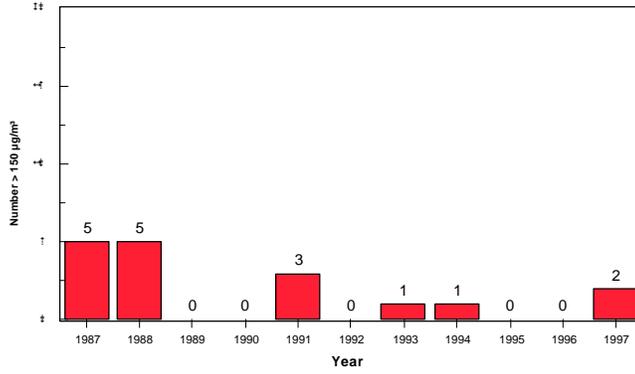
**Notes:**

The trend line represents the average of the PM<sub>10</sub> values that fall within the upper five percent of the observations.

Data for 1997 are incomplete and have not been validated.

### Wallula PM<sub>10</sub>

#### Number of Observations above standard: 1987 - 1997



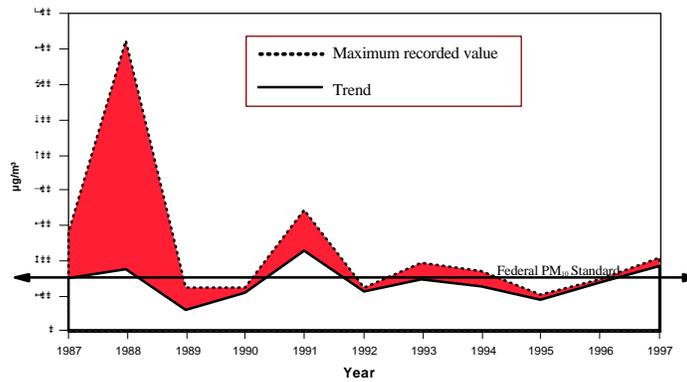
Notes:

More than one observation above 150 µg/m<sup>3</sup> during a single year is a violation of the federal PM<sub>10</sub> standard.

Data for 1997 are incomplete and have not been validated.

### Wallula PM<sub>10</sub> Trends

#### PM<sub>10</sub> Levels: 1987 - 1997

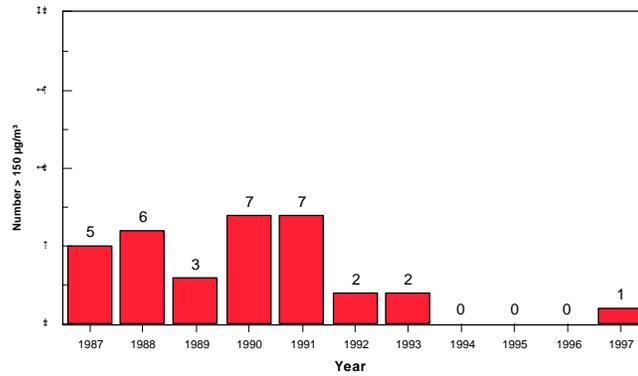


Notes:

The trend line represents the average of the PM<sub>10</sub> values that fall within the upper five percent of the observations.

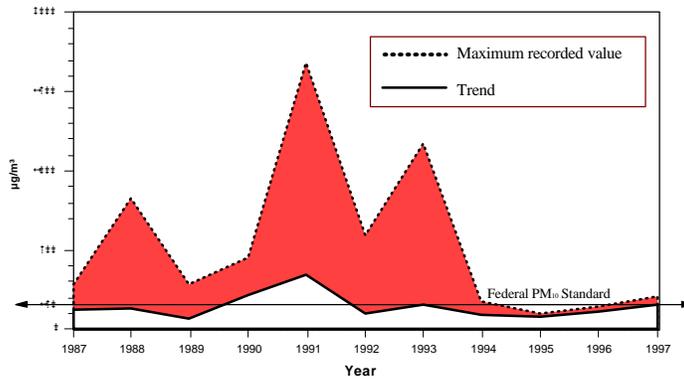
Data for 1997 are incomplete and have not been validated.

### Tri-Cities PM<sub>10</sub> Number of Observations above standard: 1987 - 1997



Notes:  
 More than one observation above 150 µg/m<sup>3</sup> during a single year is a violation of the federal PM<sub>10</sub> standard.  
 Data for 1997 are incomplete and have not been validated.

### Tri-Cities PM<sub>10</sub> Trends PM<sub>10</sub> Levels: 1987 - 1997



Notes:  
 The trend line represents the average of the PM<sub>10</sub> values that fall within the upper five percent of the observations.  
 Data for 1997 are incomplete and have not been validated.

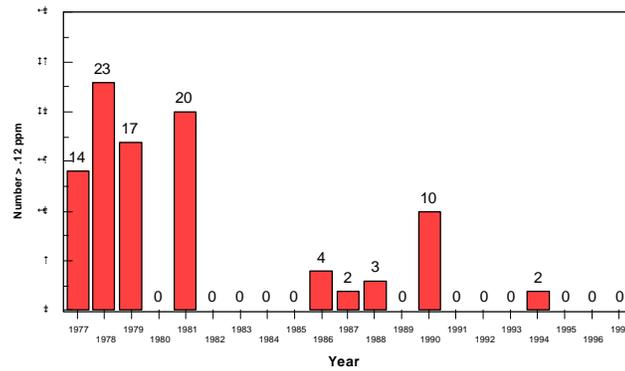
## **Ozone**

The Vancouver-Portland bi-state ozone nonattainment area was redesignated to attainment effective June 18, 1997. The Southwest Air Pollution Control Authority and its advisory committee developed a maintenance plan for Washington's portion of this nonattainment area, in close cooperation with the Oregon Department of Environmental Quality. The plan projects that the area will continue meeting the ozone standard through the year 2006, through use of a wide range of controls for ozone sources. Some of the key controls in the plan include an emission allowance for industrial expansion, extension of the motor vehicle Emission Check Program to north Clark County, and enhanced testing of vehicles.

The Puget Sound area continued as a maintenance area for ozone during 1997. EPA has redesignated it as attainment. Ecology and the Puget Sound Air Pollution Control Agency will continue to implement air pollution control measures that have been successful in improving air quality in the region. The area's maintenance plan projects it will continue to meet the ozone standard through the year 2010.

## Puget Sound Ozone

### Number of Observations above standard: 1977 - 1997

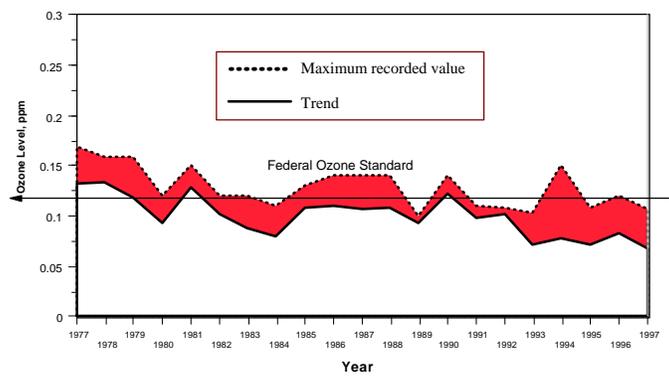


**Notes:**

More than three observations above .12 during a three year period is a violation of the federal ozone standard. The standard prior to 1980 was .08 ppm. The above data was recalculated at the .125 pp level. Data for 1997 are incomplete and have not been validated.

## Puget Sound Ozone Trends

### Ozone Levels: 1977 - 1997

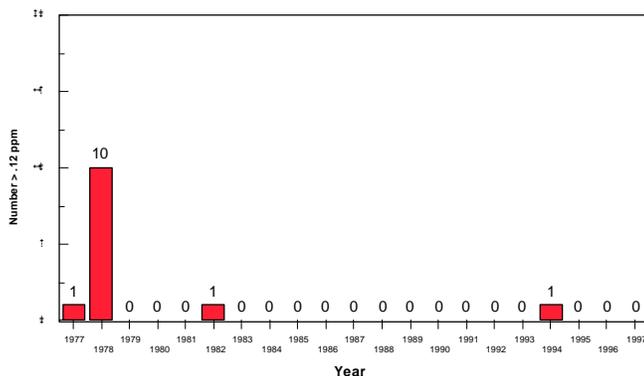


**Notes:**

The trend line represents the average of the ozone values that fall within the upper one percent of the observations. Data for 1997 are incomplete and have not been validated.

## Vancouver Ozone

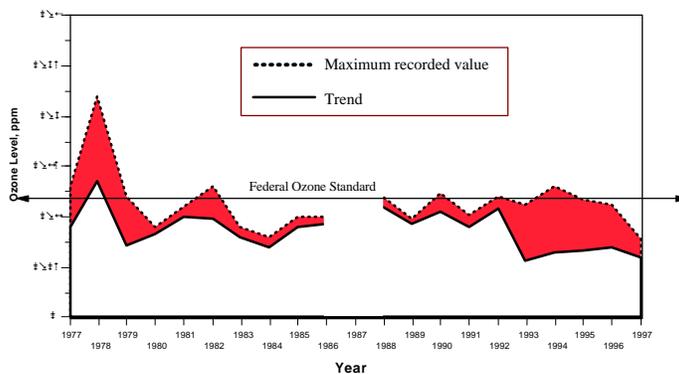
### Number of Observations above standard: 1977 - 1997



Notes:  
 More than three observations above .12 during a three year period is a violation of the federal ozone standard. The standard prior to 1980 was .08 ppm. The above data was recalculated at the .125 ppm level.  
 Data for 1997 are incomplete and have not been validated.

## Vancouver Ozone Trends

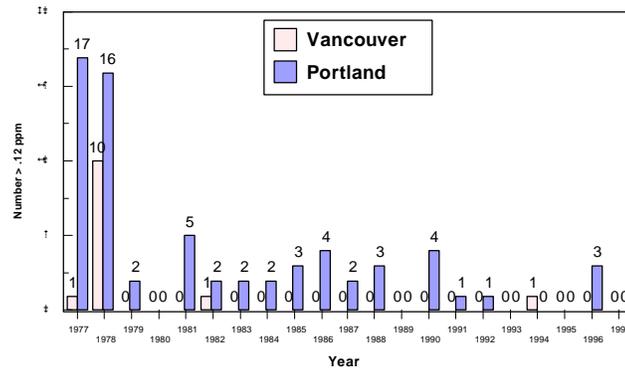
### Ozone Levels: 1977 - 1997



Notes:  
 The trend line represents the average of the ozone values that fall within the upper two percent of the observations.  
 Data for 1997 are incomplete and have not been validated.

## Vancouver - Portland Ozone

### Number of Observations above standard: 1976 - 1997



Notes:

More than three observations above .12 during a three year period is a violation of the federal ozone standard.

Data for 1997 are incomplete and have not been validated

## **Carbon monoxide**

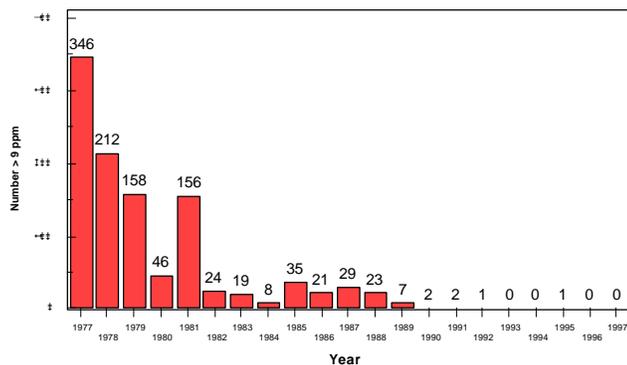
In December 1997, EPA announced it is reclassifying Spokane from a moderate to a serious nonattainment area for carbon monoxide. Spokane's air quality data show that carbon monoxide levels exceeded the standard four times in 1995 and twice in 1996. Spokane had no carbon monoxide exceedances in 1997. As a moderate nonattainment area, Spokane's original deadline to meet the carbon monoxide standard was December 31, 1995. EPA is required to reclassify a moderate area to "serious" if the deadline was missed. The new deadline for meeting the standard then becomes December 31, 2000.

A serious designation means state and local planning agencies must consider whether additional control measures are needed to reduce emissions of carbon monoxide in the area. EPA, Ecology, Spokane County Air Pollution Control Authority (SCAPCA), and Spokane Regional Transportation Council have worked together to develop carbon monoxide controls for Spokane. These include continued implementation of the Emission Check Program, with some changes (see page 40 for a description of the changes to Spokane's program); and use of oxygenated gasoline during the winter months. SCAPCA and the Spokane Regional Transportation Council have worked closely with local citizens to develop possible additional control measures to achieve further emission reductions. These include a public education program asking people to carpool, bus, walk, or bicycle instead of driving on days when high levels of carbon monoxide are predicted. If favorable trends continue, Ecology and SCAPCA may be able to apply for redesignation of Spokane as early as 1999.

The Puget Sound and Vancouver areas continued as carbon monoxide maintenance areas during 1997.

## Puget Sound Carbon Monoxide

### Number of Observations above standard: 1977 - 1997



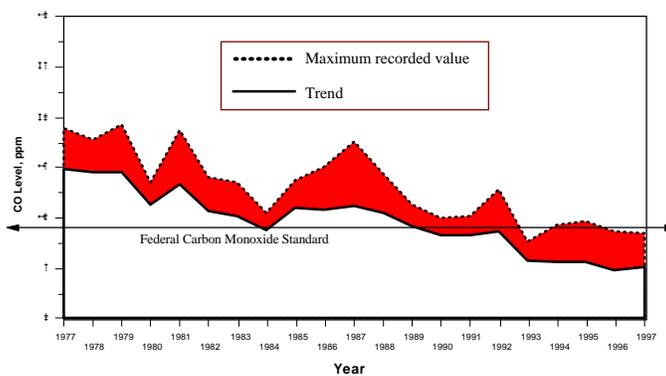
Notes:

More than one exceedance during a single year is a violation of the federal carbon monoxide standard of 9 ppm.

Data for 1997 are incomplete and have not been validated.

## Puget Sound Carbon Monoxide Trends

### CO Levels: 1977 - 1997



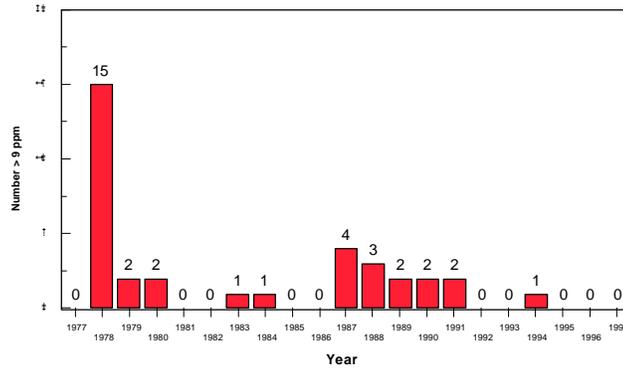
Notes:

The trend line represents the average of the carbon monoxide values that fall within the upper one percent of the observations.

Data for 1997 are incomplete and have not been validated.

## Vancouver Carbon Monoxide

### Number of Observations above standard: 1977 - 1997



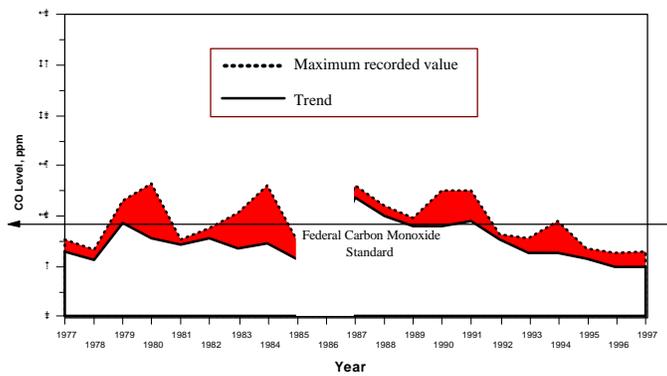
Notes:

More than one exceedance during a single year is a violation of the federal carbon monoxide standard of 9 ppm.

Data for 1997 are incomplete and have not been validated.

## Vancouver Carbon Monoxide Trends

### CO Levels: 1977 - 1997



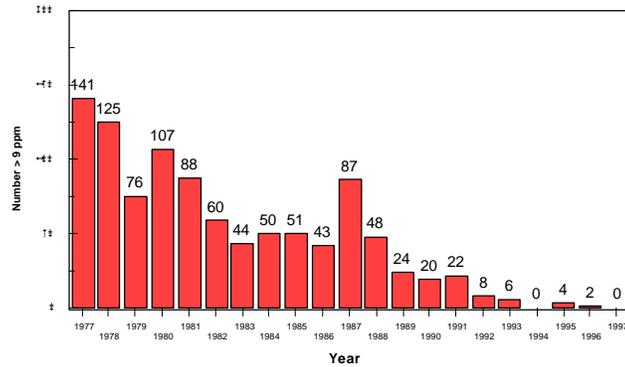
Notes:

The trend line represents the average of the carbon monoxide values that fall within the upper one percent of the observations.

Data for 1997 are incomplete and have not been validated.

## Spokane Carbon Monoxide

Number of Observations above standard: 1977 - 1997



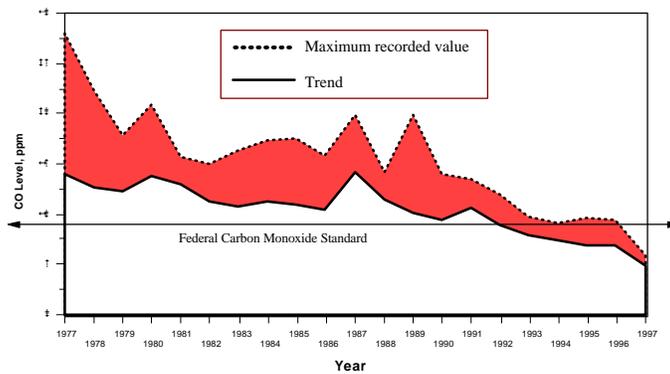
Notes:

More than one exceedance during a single year is a violation of the federal carbon monoxide standard of 9 ppm.

Data for 1997 are incomplete and have not been validated.

## Spokane Carbon Monoxide Trends

CO Levels: 1977 - 1997



Notes:

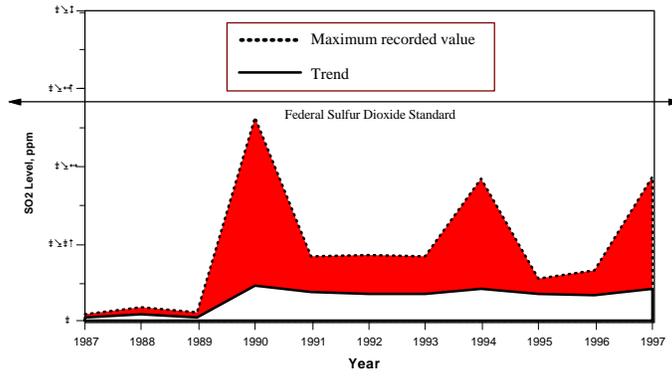
The trend line represents the average of the carbon monoxide values that fall within the upper one percent of the observations.

Data for 1997 are incomplete and have not been validated.

## **Sulfur dioxide**

All areas of Washington meet the sulfur dioxide standard. However, relatively high levels of sulfur dioxide have occurred in some areas of the state, resulting in increasing public concern about this air pollutant. Since sulfur dioxide comes primarily from industrial emissions, it is controlled by regulating industrial facilities that produce it. Trends charts are shown on the following pages.

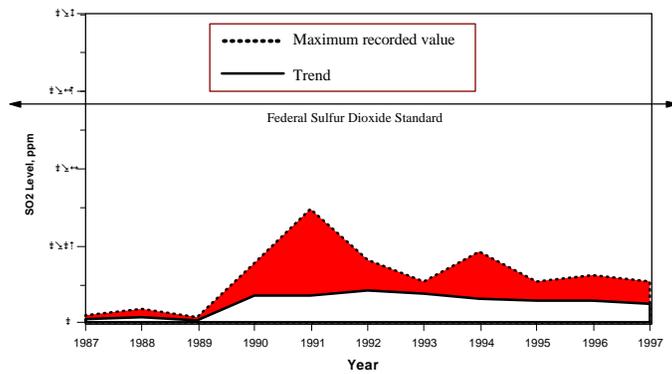
### Sulfur Dioxide (SO<sub>2</sub>) Trends Bellingham/Anacortes Area: 1987 - 1997



Notes:

The trend line represents the average of the SO<sub>2</sub> values that fall within the upper five percent of the observations.  
Data for 1997 are incomplete and have not been validated.

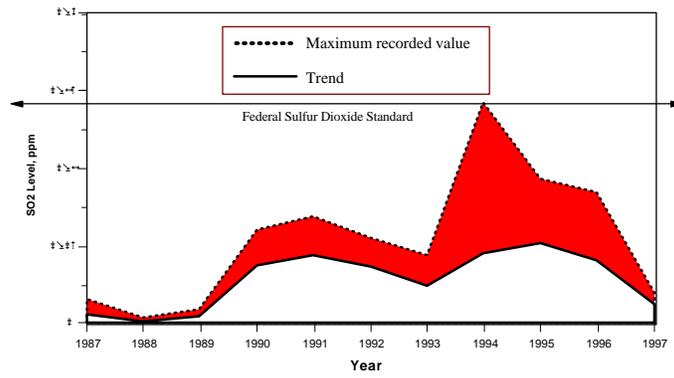
### Sulfur Dioxide (SO<sub>2</sub>) Trends Seattle/Tacoma Area: 1987 - 1997



Notes:

The trend line represents the average of the SO<sub>2</sub> values that fall within the upper five percent of the observations.  
Data for 1997 are incomplete and have not been validated.

## Sulfur Dioxide (SO<sub>2</sub>) Trends Port Angeles Area: 1987 - 1997



**Notes:**

The trend line represents the average of the SO<sub>2</sub> values that fall within the upper five percent of the observations.

Data for 1997 are incomplete and have not been validated.

## **Nitrogen oxides**

All areas of Washington meet the nitrogen oxide standard. Because nitrogen oxides historically have not been a problem in Washington, Ecology has not monitored them for several years. Ecology began monitoring them again in 1995. Nitrogen oxides are of concern largely because they contribute to the formation of ozone.

## **Lead**

Lead was a problem in Washington during the 1960s. Because of controls including the phasing out of leaded gasoline and regulation of industries that produce lead, concentrations of lead have dropped considerably. Lead monitoring is currently done only in the Puget Sound area and no significant concentrations have been found.

## New Federal Air Quality Standards

EPA issued new air quality standards for particulate matter and ozone on July 18, 1997. EPA developed and proposed the new standards in response to research that found particulate matter and ozone are harmful to human health at levels that meet the existing standards.

States will have up to 15 years to bring areas violating the new standards into attainment. Decisions on violations of the new particulate matter standard will be delayed for five to eight years to give states time to develop a monitoring network and obtain three years of data for particulate matter smaller than 2.5 microns in diameter (PM<sub>2.5</sub>).

### Particulate matter

The existing standard for particulate matter (PM<sub>10</sub> standard) has been changed slightly regarding how a violation of the daily standard is determined. The overall result is a relaxation of the PM<sub>10</sub> standard. However, the most significant change is the addition of a new standard for PM<sub>2.5</sub>. PM<sub>2.5</sub> will be limited to 65 micrograms per cubic meter of air (µg/m<sup>3</sup>), averaged over 24 hours; and 15 µg/m<sup>3</sup> averaged over a calendar year. Violations of the standard will be based on an average of three years of data.

The table below shows both the new (PM<sub>2.5</sub>) and revised (PM<sub>10</sub>) standards:

<b>Standard</b>	<b>Level</b>	<b>Form</b>
<b>24-Hour PM<sub>2.5</sub></b>	65 µg/m <sup>3</sup>	3-year average of 98 <sup>th</sup> percentile monitored concentrations
<b>Annual PM<sub>2.5</sub></b>	15 µg/m <sup>3</sup>	3-year average of annual mean concentration
<b>24-Hour PM<sub>10</sub></b>	150 µg/m <sup>3</sup>	3-year average of 99 <sup>th</sup> percentile monitored concentrations
<b>Annual PM<sub>10</sub></b>	50 µg/m <sup>3</sup>	3-year average of annual mean concentration (unchanged)

Monitoring for PM<sub>2.5</sub> will focus on exposures of people to concentrations of PM<sub>2.5</sub> in the air where they live, work, and play. Monitors will be placed in residential, commercial, industrial, or recreational areas where a substantial number of people spend a significant part of their day, and where monitoring is not influenced by a specific source of particulate matter. The data from these monitors will be compared to the standard.

EPA will be supporting much of the cost for the initial nationwide PM<sub>2.5</sub> monitoring network. EPA's proposed plan would provide monitors for over 30 sites in the state of

Washington. In addition, Congress has appropriated sufficient funding for EPA to defray all or some operation and maintenance costs for the first two years.

Ecology and local air pollution control agencies have been controlling PM<sub>10</sub> through a permit program for industrial facilities, limitations on wood stove use, restrictions on backyard and land clearing fires, reductions in slash burning and agricultural burning, and actions that reduce road dust and soil erosion. Air quality agencies may need to change the ways they control particulate matter in some areas of the state in order to control the smaller PM<sub>2.5</sub> particles. While dust and soil erosion are a major cause of PM<sub>10</sub>, PM<sub>2.5</sub> is caused mainly by combustion (diesel-powered vehicles, industry, outdoor burning, and wood stoves). In some areas where controlling dust and soil erosion has been a major focus, wood stoves, outdoor burning, motor vehicles, and industry could become more important.

It is unclear whether areas of Washington that are now designated nonattainment for PM<sub>10</sub> would also be nonattainment for PM<sub>2.5</sub>. Based on very limited data, it appears that a few of Washington's current PM<sub>10</sub> nonattainment areas may remain nonattainment under the proposed new fine particulate standard. Ecology expects that most of the state will meet the new standard.

## Ozone

Like the particulate matter standards, the new 8-hour ozone standard is based on concentrations of ozone in the air rather than on exceedances of the standard. The previous ozone standard limited ozone levels to 0.12 parts per million (ppm) averaged over a one-hour time period. Under the new standard, ozone levels must be no higher than 0.08 ppm averaged over an eight-hour time period (see the table below).

<b>Standard</b>	<i>Level</i>	<i>Form</i>
8-Hour Ozone	0.08 ppm	3-year average of 4 <sup>th</sup> highest monitored daily concentration

According to the last three years of data, Ecology expects all areas of Washington to meet the new ozone standard, although the central Puget Sound and Portland-Vancouver areas may meet it by only a small margin. Population growth and increased motor vehicle use will continue to make meeting the standard a challenge in these areas.

## **Toxic Air Pollutants**

Unlike the more familiar criteria air pollutants, most toxic air pollutants have no ambient air quality standard to meet. Instead, both the federal Clean Air Act and state regulations control emissions of these pollutants by requiring sources of toxic air pollutants to use control technology or other methods to limit their emissions of these pollutants. Many of the actions that reduce emissions of criteria pollutants, such as applying coatings more efficiently, keeping motor vehicles in good repair, and capturing emissions from manufacturing facilities, also reduce emissions of toxics.

The impacts of toxic air pollutants are not very well understood. Frequently, we don't know how much of them are emitted, what their concentrations are in the air, or what specific health effects they cause. Mixtures of toxic air pollutants, which can be expected to occur in urban areas, are even less well understood. Therefore, both state and federal regulations take the "ounce of prevention" approach of minimizing or eliminating emissions wherever practical.

In addition to minimizing emissions of toxic air pollutants, the Air Quality Program would like to better understand how much toxic pollution is in the air, and how it gets there. During 1997, Ecology made progress on both minimizing and understanding emissions.

To minimize emissions, Ecology's Air Quality Program continued to work with EPA to set specific control technology requirements for aluminum smelters, pulp mills, and boat and reinforced plastics manufacturers. Staff worked with local air authorities and with manufacturers to limit emissions of toxics from new or expanding facilities. Staff also worked with EPA on a project to help determine whether or not manufacturing facilities still pose health risks after they have installed required control technology.

Improving our understanding of toxic pollutants in the air we breathe is an ongoing project. During 1997, staff has been gathering data from previous studies, and designing a new study to complement the existing data – looking at different types of toxics at different times of the year than have previously been measured. Staff has also been comparing information from existing databases. For example, some facilities report their emissions to the Toxics Release Inventory annually, and some report their emissions to the Air Quality Program's emissions database. Combining the information on these reported emissions with calculations of predicted emissions from manufacturing processes will give us an idea of what toxics are being emitted into the air. This, along with measurements in the air, will eventually let us know if there are "trouble spots" that need work, or if the "ounce of prevention" approach has been successful.

## **Emission Check Program**

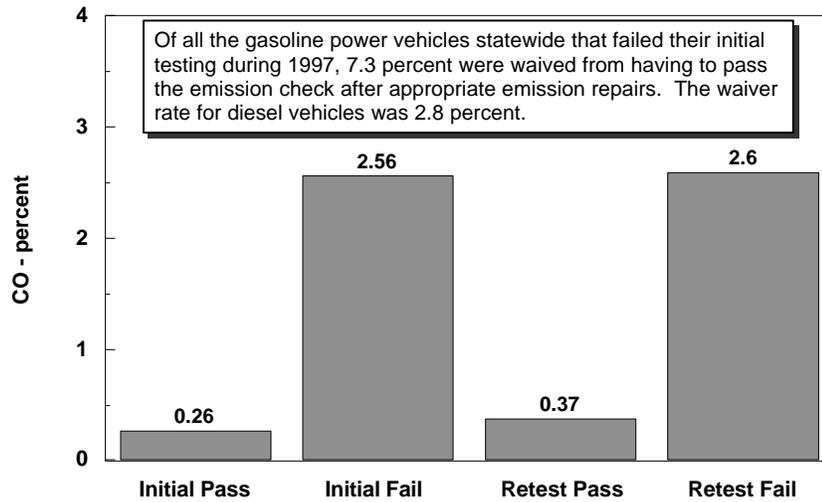
Motor vehicles are Washington's largest air pollution source, accounting for more than 50 percent of the statewide total or nearly 1.3 million tons of air pollution per year. The urban areas of Clark, King, Pierce, Snohomish, and Spokane counties at one time exceeded the federal health-based standards for carbon monoxide, largely because of motor vehicles. Motor vehicles also contributed heavily to past exceedances of the ozone standard.

State and federal laws require the Emission Check Program in areas where it is needed to prevent future violations of the standards. The goal of the program is to ensure that all factory emission control systems are installed and working properly. The emission check identifies the most polluting vehicles and requires proper repair of those vehicles. Every other year, a vehicle must pass an emission test or its owner must spend a given amount in repairs to have the vehicle re-registered. Owners must pay an inspection fee of \$12 in cash at the inspection station. There is no charge for the first re-test of a vehicle that fails the initial test.

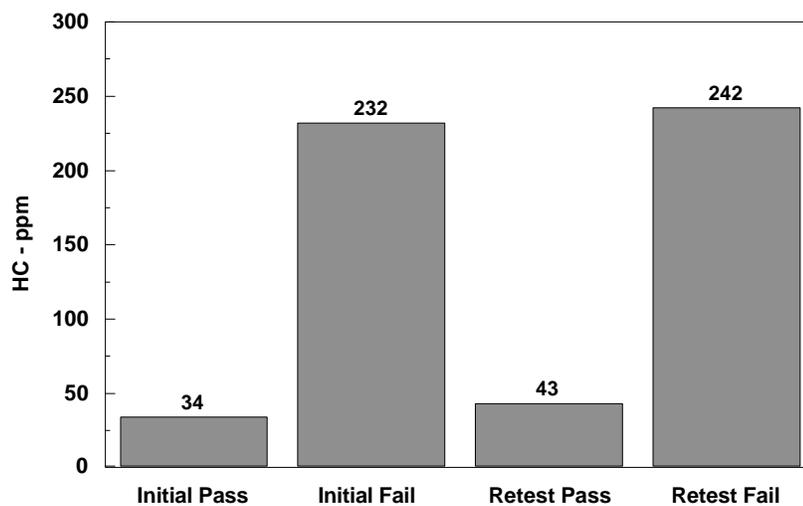
Vehicles that fail an initial emission check may be eligible for a waiver, meaning they do not need to pass the test if specific repair criteria are met. In 1995, 12.1 percent of vehicles that failed their initial test received a waiver. That number was reduced to seven percent in 1997. This reduction in the number of waivers issued is due to increased emphasis by Ecology staff on ensuring vehicles get repaired properly.

The following charts show Emission Check Program data for 1997.

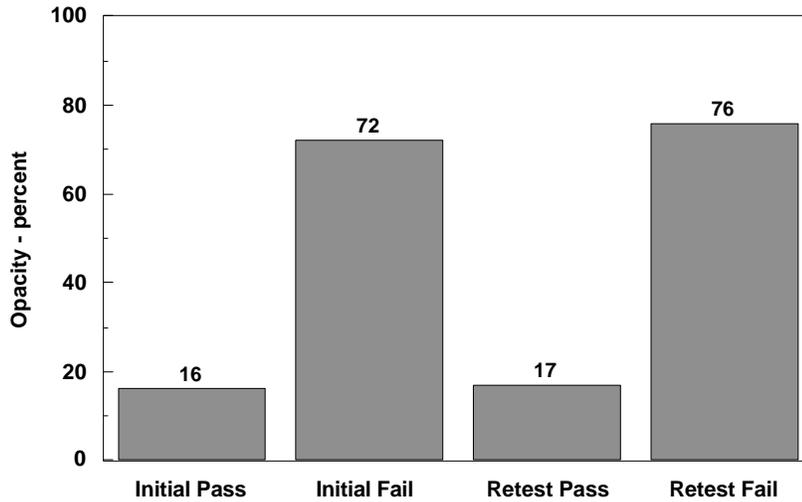
## Gasoline Vehicle Emission Test Averages Carbon Monoxide at Cruise



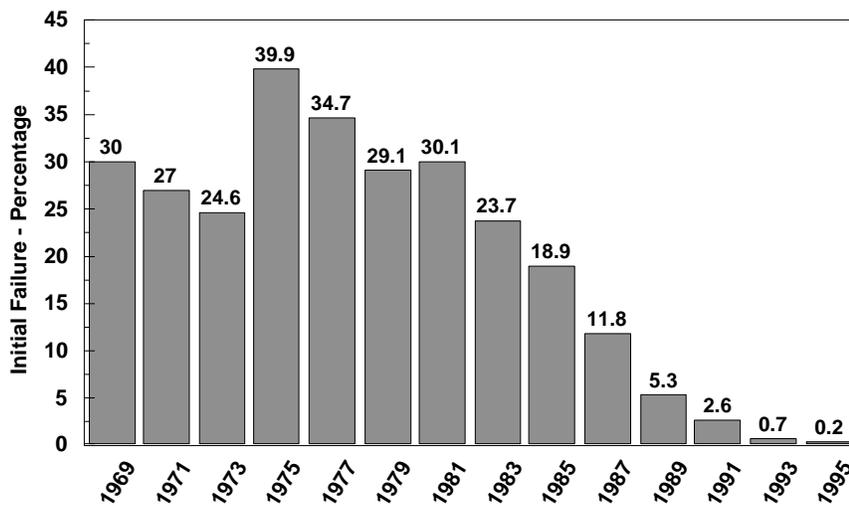
## Gasoline Vehicle Emission Test Averages Hydrocarbons at Cruise



## Diesel Vehicle Smoke Emission Test Averages Peak Reading



## All Vehicle Types - Failure Rate by Model Year



## Program upgrades

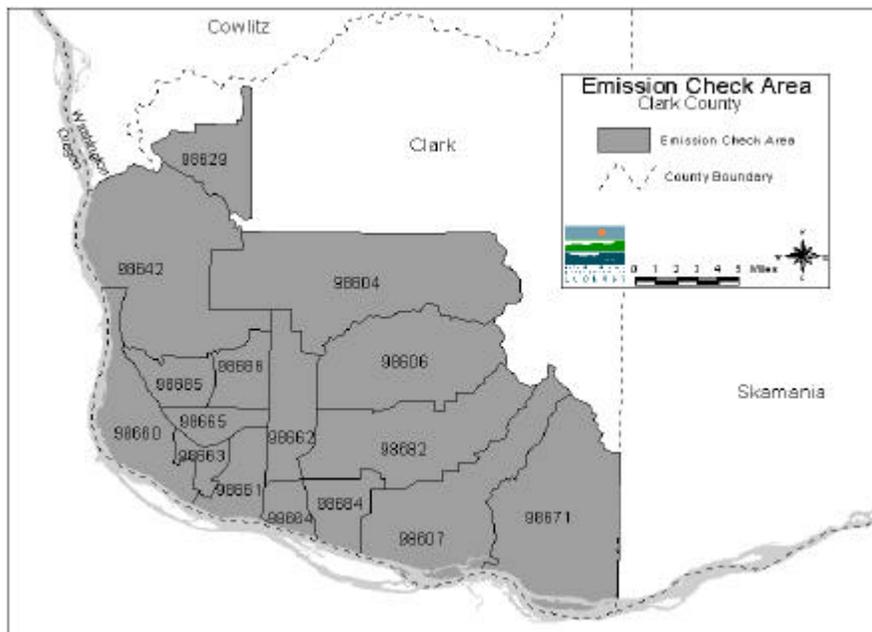
During 1997, Ecology upgraded the Emission Check Program in the Clark County and Spokane areas to obtain greater emission reductions. In the Puget Sound area, the local agency requested an evaluation on how the impact of the Emission Check Program on vehicle owners could be lessened without losing the emission reductions being achieved.

### Clark County

The Vancouver/Portland area's maintenance plan projects that it will continue meeting the ozone standard through the year 2006. Because of the area's increasing population and motor vehicle use, the Southwest Air Pollution Control Authority determined that more emission reductions were needed from the Emission Check Program. The Emission Check Program was upgraded and expanded in both Washington and Oregon during 1997 to ensure the Vancouver/Portland area will continue meeting the standards. The upgrade included the following actions:

- The Emission Check Program was expanded to include more communities surrounding the Vancouver area.
- Emission testing of gasoline cars and light trucks was revised to:
  - Test the vehicles using a procedure that simulates acceleration, when emissions are higher, rather than a steady cruise, when emissions are lower.
  - Test for oxides of nitrogen (NO<sub>x</sub>) emission readings. At this time, NO<sub>x</sub> testing is done for information only. Vehicles will not be failed due to their NO<sub>x</sub> readings unless air quality agencies determine that NO<sub>x</sub> reductions are needed to prevent violations of the ozone standard.
  - Include a gas cap pre-check. Leaky caps allow gasoline vapors that contribute to ozone formation to escape into the air, even when the vehicle is not running.

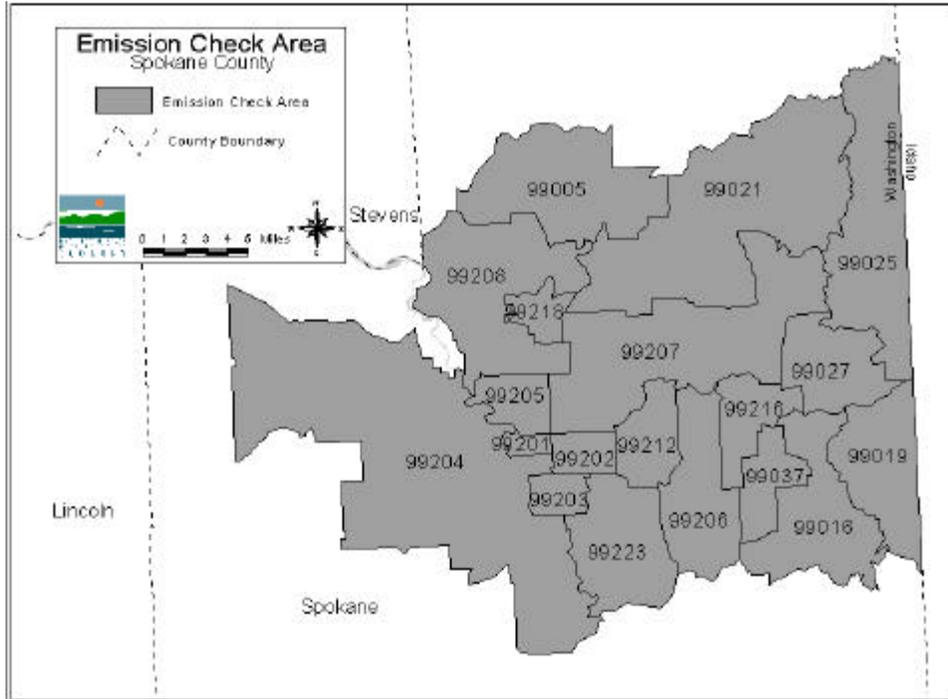
The map below shows the Clark County emission testing area.



## Spokane

The Spokane area needs more reductions in carbon monoxide levels in order to meet the carbon monoxide standard. Spokane's Emission Check Program was upgraded during 1997 to test vehicles using the same acceleration simulation procedure described for the Vancouver/Portland area.

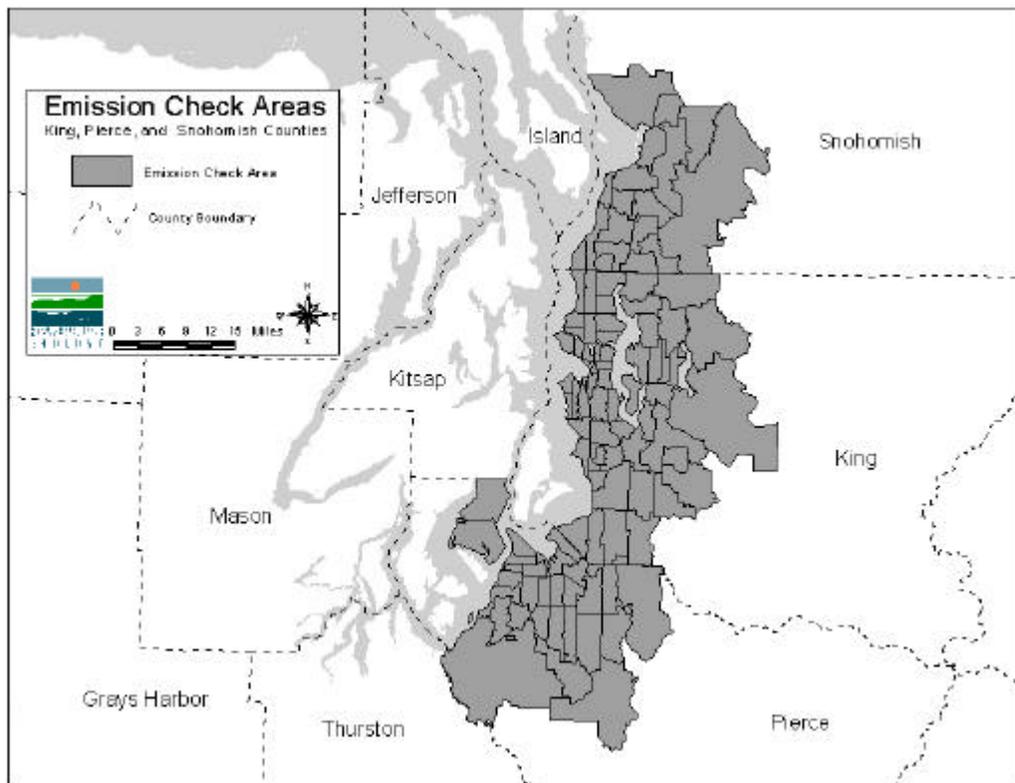
The map below shows the Spokane emission testing area.



## Puget Sound

The Puget Sound area's maintenance plan should allow the area to continue meeting carbon monoxide and ozone standards through the year 2010. One of the plan's control strategies for these pollutants is for the Emission Check Program to continue in the area without the changes being implemented in Clark and Spokane counties (see the following pages). Ecology is currently evaluating the Emission Check Program. Upgrades to the program in the Puget Sound area could be appropriate depending on the results of this evaluation and vehicle, population, and economic growth forecasts. The program would also be upgraded if a violation of the ozone standard occurs in the area.

The map below shows the Puget Sound emission testing area.



## **Program evaluation**

Air Quality Program staff began an evaluation of the Emission Check Program in January 1997. Teams evaluated the program in the areas of:

- selection of vehicles for testing;
- inspection fees;
- testing procedures and standards;
- vehicle repairs;
- customer service;
- compliance; and
- contractor performance.

The objectives of the evaluation were to: (1) evaluate the effectiveness of the current program; (2) propose ways to change the program to minimize its impact on vehicle owners while continuing to benefit air quality; and (3) evaluate the proposed changes for effectiveness and efficiency.

The first phase of the evaluation was a comprehensive review and analysis of the current program. Teams surveyed vehicle owners, the testing contractor, repair shops and technicians, and the Department of Licensing to determine the level of program acceptance and types of changes desired. Some of the survey results are as follows:

- A contractor survey indicates that vehicle owners would prefer a payment method other than cash only for the test. Most preferred to pay by check. However, at the same time, 85 percent of those surveyed are not willing to pay a service charge for the convenience of being able to pay by check.
- Many of the survey comments questioned the need for testing newer cars. Analysis of the test results indicates that newer vehicles could be exempt without significant losses in emission reductions.
- Results of a compliance survey conducted by field staff indicate that the actual percentage of vehicles being tested is about 10 percent less than the 90-96 percent estimate in the State Air Quality Plan.
- A survey of the repair shops indicates that vehicle owners are spending more on repairs than the waiver requirement of \$100 to \$150. A pilot repair assistance project in Clark County proved that many of the worst polluting vehicles can be repaired for under \$300.

In addition to surveys, staff collected data on other states' emission testing programs, including:

- How other states select vehicles for emission testing. Elements of this include exemptions, the use of remote sensing, change of ownership tests, failure rate by

model year for different vehicle types, and the relationship between model year and vehicle manufacturer and emission readings.

- How emission checks are paid for in other states, as well as the costs and ramifications of alternatives to the present cash fee at the test station.
- How Washington's testing procedures and test standards compare with those of other states and EPA recommendations.
- How Washington's training of auto repair technicians compares with that of other states.
- The effectiveness of emission repairs for failed vehicles, and ways repair effectiveness is improved.
- Possible ways to improve customer service by Ecology and the test stations.
- The number of vehicles in emission check areas that have been tested and reasons for exempting those not tested.

The next phase of the evaluation investigated possible program revisions. Possible revisions focus on more accurately targeting those vehicles causing air quality problems; improving cost effectiveness of the program; improving customer convenience; and ensuring the Emission Check Program is effective in improving air quality.

Air Quality Program staff are now working to develop packages of recommended revisions to the program. The evaluation is scheduled to be completed in early 1998. At that time legislators and interested parties will be invited to review and comment on the findings.

## **Stage 2 Gasoline Refueling Vapor Recovery**

Gasoline vapors accumulate within storage tanks in the space above the liquid gasoline. When a tank is refilled with gasoline, the rising liquid pushes accumulated vapors out into the air. These vapors contain volatile organic compounds, which affect human health and contribute to ozone pollution. Stage 2 gasoline vapor recovery systems collect gas fumes from vehicle fuel tanks when gasoline is pumped so the fumes are not released to the atmosphere. If gasoline fumes are not released, they do not turn into ozone, resulting in cleaner air.

The 1996 Washington State Legislature directed Ecology to determine where in western Washington Stage 2 is needed to meet or maintain the ozone standard in ozone maintenance. Maintenance areas of concern are the Central Puget Sound area (King, Pierce, and Snohomish counties) and the Vancouver/Portland area (Clark County).

During 1997, the Air Quality Program conducted a photochemical modeling study of gasoline refueling in western Washington to determine whether and where Stage 2 is important in managing ozone. Based on study findings, Stage 2 will continue in Thurston and Cowlitz counties at gas stations selling more than 1.2 million gallons of gasoline annually, and at stations in Kitsap County selling more than 840,000 gallons annually. Stage 2 may be removed at gas stations in Whatcom, Skagit, Lewis, Wahkiakum, and Island counties. Final adoption of a new regulation took place in late 1997.

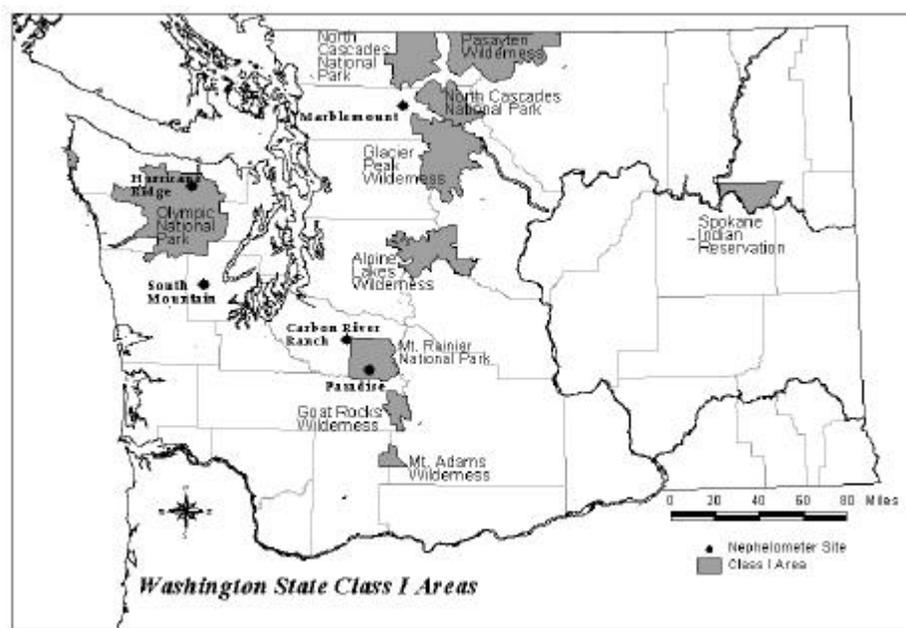
Stage 2 continues at larger stations in Cowlitz, Thurston, and Kitsap counties because vapor controls in these counties are important to maintaining the ozone standard in the Portland/Vancouver and Central Puget Sound ozone maintenance areas. Volatile organic compounds released by gasoline refueling in Whatcom, Skagit, Lewis, Wahkiakum, and Island counties do not appear to increase ozone levels in the maintenance areas.

# Protecting Visibility

Washington's scenic beauty is often hidden by clouds and rain. Weeks can go by without being able to see more than a mile in the distance. Occasionally, however, the weather clears and the views appear. The magnificence of our landscape is never more apparent than on those cold, crisp, clear winter days when it seems one can see forever. The reason the views are so clear is that we are looking through very clean air that has recently come down from the arctic and has almost no suspended particles of any kind obscuring our view.

Sometimes that clear, clean arctic air will stop moving, held by a high pressure inversion. When this happens, the air becomes filled with small particles from a variety of sources. These sources include all types of combustion (oil, wood, gas, coal etc), dust resulting from vehicle tires grinding small particles ever smaller until they literally float in the air, and industrial processes and motor vehicles that release gases which chemically form aerosols in the air. Colors in the distance begin to dull and the edges of objects begin to soften. If the inversion goes on long enough, entire mountain ranges can fade from view and a ceiling will appear, with clean air above and dirty air below. The dirty air below impairs our visibility.

Both the state and the federal Clean Air Acts direct the Department of Ecology to take steps to both stop visibility impairment from getting any worse, and to start making it better. Federal law requires specific attention to certain national parks and wilderness areas. These areas are referred to as federal Class I areas. Class 1 areas in Washington are shown in the map below.



Ecology's plans for protecting and improving visibility in Class 1 areas are contained in the air quality State Implementation Plan (SIP). In 1997, Ecology formally reviewed the visibility portion of the SIP with the help of the Department of Natural Resources, Environmental Protection Agency, U.S. Park Service, and U.S. Forest Service. In reviewing and making determinations about revising the SIP, staff analyzed emission data to pinpoint trends in visibility. Because the period of most concern is June through September (when park and wilderness area visitation is at its highest and warmer air carries pollution to the higher elevations), staff created an emission inventory representing a typical summer weekday. The inventory calculated actual emissions of sulfur dioxide, nitrogen oxides, and particulate matter for 1985 and 1994, and projected emissions for the year 2006. It included the following source categories:

- On-road vehicles (cars, trucks, motorcycles)
- Non-road equipment and vehicles (aircraft, boats, trains, heavy equipment, lawn and garden equipment)
- Agricultural windblown dust
- Prescribed burning (the controlled burning of forest debris)
- Point sources (large commercial/industrial facilities)

Ecology's review of all the above pollutant emissions combined showed no real trend in pollutant emissions from 1985 to 1994. The inventory projects a moderate decrease in emissions from 1994 to 2006. From the emission inventory and various studies about how individual pollutants affect visibility, preliminary indications are that priority should continue to be given to reducing emissions of sulfur dioxide and carbon, and a lesser priority to controlling dust and nitrogen oxides.

The results of Ecology's review were published in a report to the public titled Review of the Washington State Visibility Protection State Implementation Plan Final Report (Publication No. 97-206). The report includes recommendations to revise the SIP. The review concluded that:

- reasonable progress has been made in protecting Class I areas from the impacts of visible plumes from slash burns and other sources; and
- the existing plan will continue to protect Class I areas from these sources, but is not adequate to protect these areas from impairment caused by "regional haze." Regional haze is the result of the combined emissions of all types of pollutants by all types of sources, over a large geographic area.

Also during 1997, Ecology:

- operated and expanded the visibility monitoring network;
- participated in federal efforts to develop a regional haze regulatory program;

- worked with Department of Natural Resources to improve the state's Smoke Management Plan;
- consulted with Federal Land Managers regarding plans to reintroduce fire as a natural and beneficial part of the wildland ecosystem; and
- worked with local air agencies to start urban visibility programs.

Ecology's proposal to revise the visibility SIP to protect and improve visibility in the state marks a significant initiative that will require participation from a wide variety of groups and individuals. Ecology will be asking representatives of all levels of government, various types of industries (including the tourism industry), health organizations, environmental organizations and interested citizens to participate in this initiative. Participants will be asked to weigh the costs and benefits of programs to improve and protect the visibility in our state and make recommendations to the agency on the timing, extent, and focus of a program that would be supported by the state's citizens. In addition to improving visibility, a regional haze program will result in a reduction of emissions that are also of concern for health reasons.

## **Grass Seed Field Burning**

Commercially valuable grasses are grown, primarily in eastern Washington, to produce seed used in lawns, landscaping, and golf courses. Farmers typically burn the fields after the seeds have been harvested, usually during July, August, and September. The burning clears the field of waste straw and may help control weeds, insects, and disease. Some farmers believe the burning helps the plant produce greater amounts of seed. Field burning also produces large amounts of smoke that contains high levels of small particulate matter and compounds that are harmful to human health.

During the burning season, growers have attempted to reduce the impact from smoke by directing smoke away from local population centers and burning only under favorable weather conditions. However, this does not reduce emissions, but only seeks to minimize impacts of burning. Despite these attempts to manage the smoke, smoke from field burning has been a continual problem, particularly in areas near population centers. An intense debate regarding the health impacts and economic benefits of field burning has been going on for several years.

Ecology's Air Quality Program began to phase-down grass seed field burning in 1996 following research findings that fine particulate matter contained in smoke from field burning can cause serious human health problems. Grass burning in 1996 was one-third less than in 1995 (about 37,000 acres in 1996, compared to about 60,000 acres in 1995).

Public pressure continued throughout 1997. Ecology and the Governor's office received over 600 cards and letters demanding an end to grass seed field burning. During 1997, Ecology adopted changes to the agricultural burning regulation which further restricted grass field burning to one-third of the 1995 level (the amount of burning in 1997 is estimated to have been just under 20,000 acres). In the fall of 1997, the Air Quality Program returned to its process of certifying alternatives to grass seed field burning which are generally practical, reasonably available, and economical. The timeline for this process has Ecology announcing its proposal on alternatives in early March of 1998 and making decisions about alternatives by June 1998.

Most farmers complied with burning restrictions. Ecology's stronger compliance and enforcement activities on grass field burning during 1997 resulted in penalties for those who burned more than the allowed amount of acreage.

# Columbia Plateau Project

Through the Columbia Plateau Project, Ecology continues to work on determining how much of the PM<sub>10</sub> in eastern Washington comes from natural rather than human-caused sources. This project is particularly important to both the Spokane and Wallula PM<sub>10</sub> nonattainment areas because they are impacted by windblown dust coming from outside their boundaries.

The Columbia Plateau is a large area in southeastern Washington, northeastern Oregon, and parts of the Idaho panhandle. It is a mostly rural, agricultural area with low rainfall. In the late 1980s and early 1990s, the region experienced a number of dust storms. These were caused by a period of low rainfall throughout the Pacific Northwest. During many of these dust storms, the PM<sub>10</sub> standard was exceeded at several monitors in the area. The Columbia Plateau Project is a cooperative effort of Ecology, EPA, and the U.S. Department of Agriculture. It has helped agency staff, growers, and researchers gain an understanding of the situation and of our ability to control or minimize the impact of dust emissions during these storms.

During 1997, project staff focused on technical research, development of control measures, economic analysis, and air quality planning.

## Technical research

Scientists from Washington State University, the University of Washington, University of Idaho, Agricultural Research Service, and other agencies have analyzed many aspects of the problem of windblown dust. They have:

- identified areas where soils erode the most;
- determined particulate matter concentrations in the air during dust storms using computer modeling;
- evaluated potential control measures that increase residue on fallow fields, increase cropping, and otherwise provide lower emissions of particulate matter from fields; and
- worked toward identifying the source of windblown dust found in Spokane and Kennewick during dust storms.

## Control measures

A very important aspect of the project is the testing of options for controlling dust emissions from agricultural fields and other areas. Numerous control projects have been ongoing for two to three years. These include projects to investigate increasing residue on fallow fields, increasing the amount of time fields are cropped, use of minimum or no-till farming, and use of cover crops. Most of these projects are on-farm tests on large plots with involvement from the growers.

## **Economic analysis**

Staff conducted a large survey of people in the Spokane and TriCities areas regarding dust storms and their willingness to pay for a control program. Results show that people are concerned about the air pollution resulting from dust storms, and are willing to pay to support a control program.

## **Air quality planning**

In response to a request initiated by Ecology, EPA recently released a Natural Events Policy. The policy applies to several types of natural events for which control is limited. Based on this policy, Ecology is writing a Natural Events Action Plan. This plan will provide for public education, health advisories when dust storms occur, and controls in areas where human activities increase emissions of dust.

## **Natural events**

The Natural Events policy applies to exceedances of the PM<sub>10</sub> standard due to natural causes. Natural causes can include volcanic eruptions, wildfires, or high winds. The policy calls for states to analyze and document conditions that show an exceedance was due to natural causes. A copy of the documentation is forwarded to EPA and is available for public review.

Based on this policy, Ecology and local air quality agencies have determined that six events in Washington since January 1994 were natural events. One was due to wildfires and five were due to high winds.

<b>Area</b>	<b>Date</b>	<b>Cause</b>
Wenatchee	July 31 & August 2, 1994	Wildfires which burned over 10% of the total acreage of Chelan County. Includes the Tyee Creek, Hatchery Creek, and Rat Creek fires.
Wallula	June 13, 1994	High winds at Wallula and in the surrounding area. Hourly wind speeds at Wallula were between 25 and 35 miles per hour for much of the day.
Spokane	August 30, 1996	High winds in the Columbia Plateau and Spokane, which caused a widespread dust storm witnessed in several areas.
Kennewick	March 3, 1997	High winds in Kennewick and the surrounding area, which caused blowing dust. Wind gusts during the day were between 30 and 50 miles per hour.
Wallula	June 21, 1997	High winds with average hourly speeds of up to 30 miles per hour, which caused dust from fields and open areas to become airborne.

The exceedances that occurred during these natural events will not be used in determining whether an area is nonattainment. However, controls will be developed for human activities that contribute to exceedances during such events.

## Air Quality Program Internet Site

Ecology's Air Quality Program Internet web page first appeared on October 9, 1996. It was expanded and enhanced during 1997. The Internet address is: <http://www.wa.gov/ecology/air/airhome.html>. This web site is one of the most frequently accessed sites in the Department of Ecology. We believe that by providing information electronically, we can minimize the use of paper. This saves energy as well as an important natural resource.

The Air Quality Program site includes the following information:

- **What's New** - Informs the reader of the most recent additions to the web page.
- **Who's Who** – Contains up-to-date Air Quality Program telephone and e-mail directories. Also includes an expertise directory to help the reader find the appropriate contact person for their specific question.
- **Air Quality News** - Contains an up-to-date listing of recent air quality news.
- **Local Air Pollution Agencies** - Contains an interactive map of Washington State to assist the reader in finding the appropriate air pollution agency for their area. Also provides a viewable and downloadable one-page document entitled “Sources of Information about Air Pollution in Washington State.” Includes appropriate web site and e-mail links to local air pollution agencies.
- **Air Quality Regulations** - Contains links to all Air Quality regulations.
- **Publications** - Contains a listing of Air Quality Program publications and how to get them.
- **Newsletters** - Contains links to the three newsletters published by the Air Quality Program, as well as other Ecology newsletters.
  - *AirLines* (Published quarterly, offering updated information on programs required by the Clean Air Washington Act and other Air Quality Program activities)
  - *Aerations* (A briefing for local air pollution control agencies, published bi-monthly by the Department of Ecology Air Quality Program)
  - *Emission Repair Update* (A newsletter for professional Automotive Technicians and other interested parties)
- **Permit Register** - Provides information on Air Operating Permits for industrial facilities. Includes actions taken on a facility's permit application, including completion of the draft and final permit, scheduling of hearings and public meetings, and modifications to the permit. This publication also provides information about

opportunities for public involvement in the operating permit process. A new Permit Register is issued on the 10th and 25th of each month as needed.

- **Air Quality Related Links** - Contains links to other air quality-related web sites that may be of interest to the reader.
  
- **Agricultural Burning**
  - New Grass Seed Field Burning Regulation - Contains links to background information and documentation relating to the grass seed field burning amendments to Chapter 173-430 WAC, Agricultural Burning, that became effective February 7, 1997.
  - Agricultural Burning Permit Information - Explains who needs a permit and where to get one.
  
- **Wood Stove Information**
  - The Health Effects of Wood Smoke - Links to a downloadable informational brochure.
  - Is My Wood Stove or Fireplace Certified? - Contains answers to frequently asked questions and includes a listing of certified wood stoves, authorized fireplaces, and other solid fuel burning devices.
  
- **Stationary Sources of Air Pollution**
  - Includes the 1996 Washington State Reasonably Available Control Technology (RACT) List and Schedule with links to:
    - Focus Sheet (background and general information)
    - 1996 RACT List and Schedule
    - Group A1 Sources
  
- **Small Business Assistance Program** - Contains links to:
  - an informational brochure entitled “What You Should Know About Washington's Air Quality Business Assistance Program;”
  - local air pollution agencies business assistance web sites; and
  - other industry sectors’ business assistance programs web sites.
  
- **Vehicle Emission Check Program** - Contains information on Washington’s vehicle emission check program and includes locations of vehicle repair facilities and Authorized Emission Specialists (AES).

## Coming Soon!

It is the hope of the Air Quality Program to provide real-time air monitoring data available on the Internet sometime in 1998.

