LRAPA
Lane Regional Air Protection Agency

Annual Report 2007

Lane Regional Air Protection Agency

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Vision

Community partners working together to ensure clean air for everyone

Mission

To protect public health, quality of life and the environment as a leader and advocate for the continuous improvement of air quality in Lane County

Goals

Air Quality

Our goal is to ensure healthful air quality for all Lane County citizens.

Involvement

Our goal is to inform and involve citizens and businesses in improving air quality.

Service

Our goal is to serve citizens and other stakeholders fairly, courteously, and in a timely manner.

Partnerships

Our goal is to work with our partners to leverage resources to make a difference in local air quality.

LRAPA
Lane Regional Air Pollution Authority

Letter from the Director

The past year saw emerging and critical issues come to the forefront as the agency responded to changes in air quality standards at the federal level and new requirements at the state level.

On the federal level, the U. S. Environmental Protection Agency (EPA) tightened the standard for fine particulate ($PM_{2.5}$) to be more protective of public health. Fine particulate from home wood heating is a major source of pollution in Lane County during the winter months. In response to the new standard, LRAPA asked local jurisdictions to change their Home Wood Heating ordinances to reflect the new standards. The revised local ordinances are expected to result in more yellow advisory days (when residential wood burning is cautioned) and possibly a few red advisory days (when visible emissions from residential wood burning is prohibited) in the Eugene-Springfield area. It was anticipated the number of red advisory days would also increase in Oakridge.

In 2007, EPA and the Clean Air Scientific Advisory Committee (the non-EPA group of medical and scientific experts established by Congress) considered a new ozone standard. A more protective ozone standard could result in the need to further reduce local emissions of hydrocarbons and nitrogen oxides that contribute to downwind ozone formation on hot summer days. In an effort to reduce chemicals that contribute to ozone formation, LRAPA partnered with the Oregon Department of Environmental Quality, the Oregon Petroleum Association (gasoline distributors and service stations), and the Oregon Toxics Alliance for voluntary reductions of hydrocarbon vapors from gasoline stations during tanker fuel deliveries. The U.S. EPA is scheduled to adopt vapor control requirements for large throughput gasoline stations that take effect in January 2011.

Involvement in the public process was a focus for the agency as the LRAPA Citizens' Advisory Committee and LRAPA staff began the task of studying an industrial rules streamlining package and a new air toxics rule. Streamlining air permitting procedures will allow the Agency and industrial sources to focus on the most important issues of air quality. Adopting a new air toxics rule will begin the process of identifying geographic areas of concern in Lane County and involving citizens in developing reduction plans for toxic air pollutants.

In July 2007, Governor Kulongoski asked the state's Environmental Quality Commission to consider adopting a mandatory greenhouse gas reporting rule. The rule will help determine the sources of greenhouse gas emissions and provide valuable information to meet state goals to reduce emissions. LRAPA, along with local industries and utilities, are participating in this work. If adopted, the rule will result in requirements for utilities and major industries to routinely report annual greenhouse gas emissions (carbon dioxide, methane, and a few others) beginning in 2009.

Taking action at the local level in response to federal and state changes translates into cleaner air for Lane County communities. In the coming year, LRAPA will continue to focus on its goals of healthful air quality, involvement, service and partnerships.

Merlyn Hough
Director, Lane Regional Air Protection Agency

LRAPA Organization

2007 LRAPA Board of Directors*

The LRAPA Board of Directors is a nine-member board which meets monthly to establish policy and adopt agency regulations. Board members are appointed by their respective city councils and the Lane County Board of Commissioners. Membership includes three representatives from the City of Eugene, one each from Lane County and the City of Springfield, one from either the City of Cottage Grove or City of Oakridge, and one at-large representative appointed by the board. Cities with more than one member may appoint the second or third member from the public within their jurisdictions.

Faye Stewart, Chair
3 yrs. service
Lane County Board of Commissioners

Earl Koenig, Vice Chair
3 yrs. service
Eugene City Council Appointment

Dave Ralston
7 yrs. service
Springfield City Council

Glenn Fortune
3 yrs. service
At-large General Lane County

David Monk
3 yrs. service
Eugene City Council Appointment

Bill Carpenter
3 yrs. service
Springfield City Council Appointment

Betty Taylor
11 yrs. service
Eugene City Council

Drew Johnson
3 yrs. service
Eugene City Council Appointment

Pat Patterson
1 yr. service
Cottage Grove City Council

* This report reflects the 2007 Board and committee members. Changes in memberships have occurred since January 2008.

LRAPA Organization

2007 LRAPA Citizens Advisory Committee*

The LRAPA Citizens Advisory Committee includes local interested citizens representing specific areas of interest, including agriculture, community planning, fire suppression, industry, public health, and the general public. The committee is called upon to advise the board and staff on a variety of air quality issues, rules, and policies.

Russ Ayers - 8 yrs. service — Chair
Representing Major Industry
Maurie Denner - 3 yrs. service
Representing General Public
Larry Dunlap - 9 yrs. service
Representing Public Health
Paul Engelking - 10 yrs. service
Representing General Public
Brian Forge - 1 yr. service
Representing General Public
Hugh Larkin II - 1 yr. service
Representing General Public
Jim Leary - 3 yrs. service
Representing Industry
Marilyn Lowe - 1 yr. service
Representing General Public
Amy Peccia - 1 yr. service
Representing Industry
Rick Rogers - 9 yrs. service
Representing Fire Suppression
John Tamulonis - 10 yrs. service
Representing Planning
Gary Vander Meer - 5 yrs. service
Representing General Public
Agriculture Seat - vacant

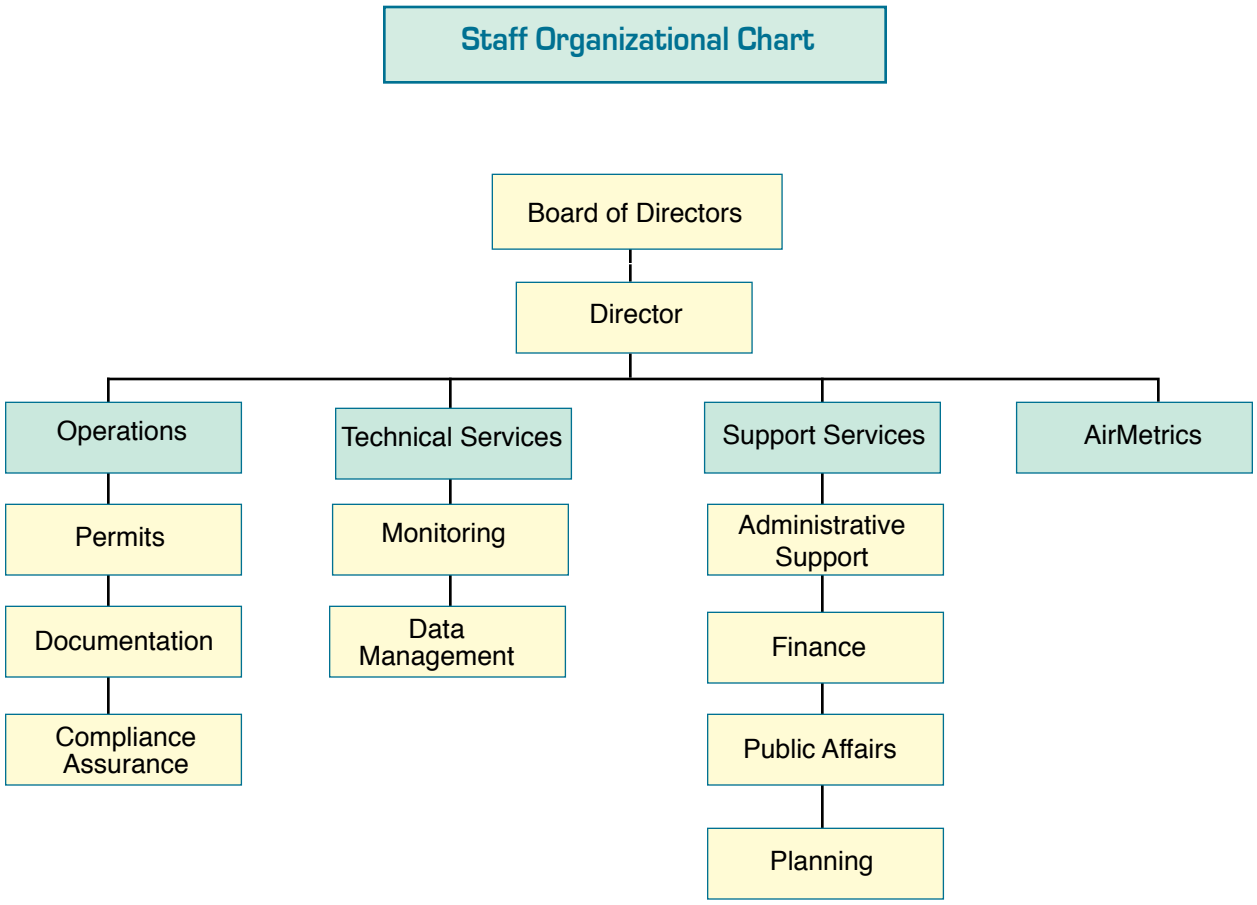
2007 LRAPA Budget Committee*

The LRAPA Budget Committee consists of the LRAPA Board of Directors plus nine board-appointed citizens. The committee meets yearly to review and approve LRAPA's budget request. The nine board-appointed citizens include:

John Woodrow II
Kevin Wells
Landa Gillette
Suzanne Pearce
Kevin Matthews
Eric DeFreest
Don Hampton
Bob Houston
John Ahlen

LRAPA Organization

The board of directors appoints the director of the agency, who has overall authority to appoint and direct the LRAPA staff. The director makes policy recommendations to the board and is responsible for implementing board decisions.



LRAPA Phone Numbers

Business Office	736-1056
Home Wood Heating Advisory Line	746-HEAT
Backyard Burning Advisory Line	726-3976
Florence Backyard Burning Advisory Line	997-1757
24-Hour Complaint Line	726-1930
Toll-Free Line	1-877-285-7272
Website	www.lrapa.org
E-mail	lrapa@lrapa.org

LRAPA Program Operations

The LRAPA staff consists of 22 professional and technical employees who perform permitting, enforcement, planning, clerical, financial, enterprise, and public information and outreach programs.

Operations — Permitting, Compliance and Enforcement

Permitting - establishes conditions under which regulated industrial sources may operate.
Compliance/Enforcement - assures permitted sources comply with permitting requirements; enforces agency rules and regulations through education and enforcement actions.

Technical Services — Monitoring and Data Management

Monitoring- collects ambient air quality data and provides quality assurance.
Data Management - determines whether ambient air quality standards are being met, and provides technical assistance for program priorities and planning.

Administration and Planning — Planning, Finance and Human Resources

Air Quality Planning - identifies present and potential future air quality problems and develops appropriate control strategies.
Finance - provides the agency with full financial management services.
Human Resources - manages agency personnel matters.

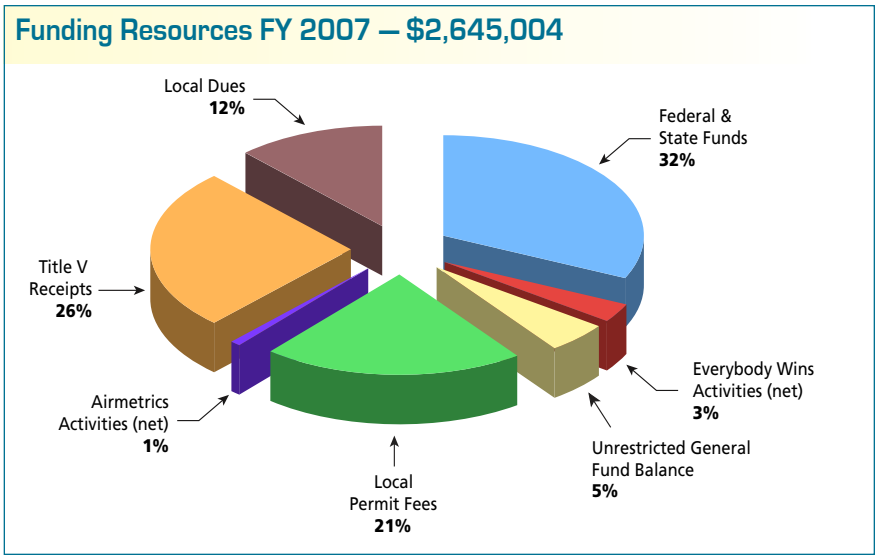
Public Information — Public Affairs Program

Public Information/Education - works with all sections of the agency to promote public understanding, education and awareness of the agency and local air quality issues.

Airmetrics

Manufactures and markets portable air-sampling devices and services.

Funding/Budget



LRAPA's funding sources include: local contributions (Lane County and the cities of Eugene, Springfield, Oakridge and Cottage Grove); state and federal grants; industrial and open burning permit fees; asbestos demolition/ renovation fees; Airmetrics sales and services; and miscellaneous contracts.

Lane County

The Setting, Topography and Meteorology

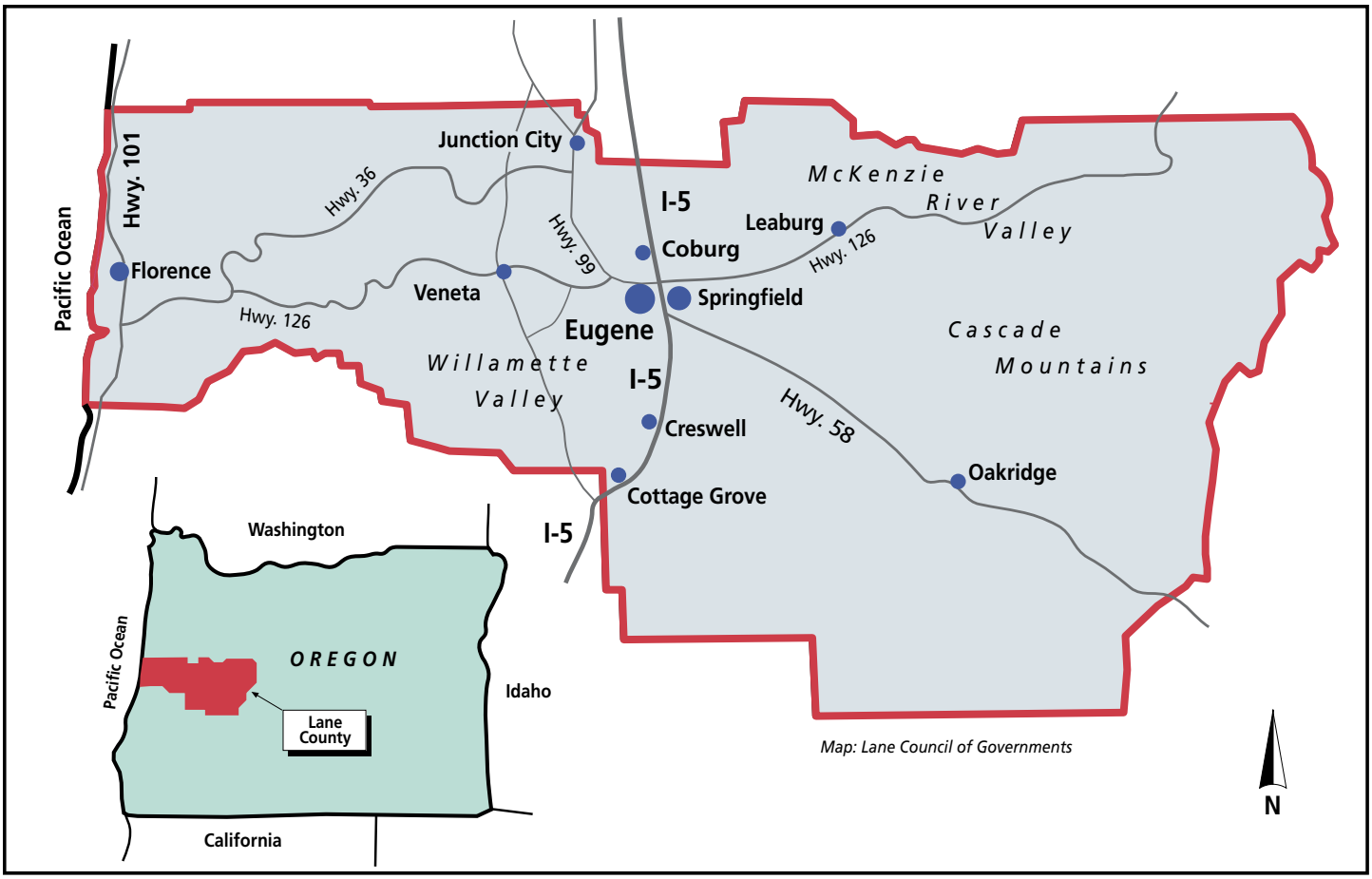
The setting: The Willamette Valley

Lane County is located at the southern end of the Willamette Valley and stretches from the Cascade Mountains to the Pacific Ocean. The county's population is around 330,000 or about 10 percent of the state's total population. The incorporated cities of Eugene and Springfield comprise the second largest urban area in Oregon with an estimated 199,990 residents. (*U.S. Census*)

Stagnant air in the summertime allows pollution to build up in the Willamette Valley. Vehicle exhaust, dust, smoke, and other pollutants form a brown haze, obscuring views and impacting public health. (Photo: Eugene, viewed from the east.)

Topography and Meteorology

Many of the inland areas of Lane County experience periods of air stagnation. When this happens during winter months, cold air often becomes trapped near the valley floor with slightly warmer air aloft, creating temperature inversion conditions. The combination of cold, stagnant air and restricted ventilation causes air pollutants to become trapped near the ground. Wintertime temperature inversions contribute to high particulate levels, while summertime inversions contribute to increases in ozone levels, both causing the local air quality to deteriorate.



Map: Lane Council of Governments

National Ambient Air Quality Standards

The Environmental Protection Agency (EPA) has established health-based National Ambient Air Quality Standards (NAAQS) for six air pollutants (criteria pollutants): particulate matter (PM_{10} and $PM_{2.5}$), ozone (O_3), carbon monoxide (CO), sulfur dioxide (SO_2), nitrogen dioxide (NO_2) and lead (Pb). Three of the six pollutants are monitored in Lane County: particulate matter, ozone and carbon monoxide.

Particulate Matter (PM)- Federal Standards

There are three particulate standards: one for particles 10 microns and smaller in size, and two for fine particulates measuring no larger than 2.5 microns in size.

- **24-hour PM_{10} Standard** — The standard is met when the second highest value at each monitoring site is less than or equal to 150 micrograms per cubic meter.
- **Annual $PM_{2.5}$ Standard** — The standard is met when the three-year annual mean at each monitoring site is less than or equal to 15 micrograms per cubic meter.
- **24-hour $PM_{2.5}$ Standard** — The standard is met when the three-year average of the 98th percentile value at each monitoring site is less than or equal to 35 micrograms per cubic meter.

Ozone - Federal Standard

The ozone standard is attained when the consecutive three-year average of the annual fourth highest daily maximum eight-hour average concentration does not exceed 0.08 parts per million.

Carbon Monoxide - Federal Standard

There are two carbon monoxide standards, a one-hour and an eight-hour standard.

- **One-hour Standard** — The standard is met when the maximum one-hour average concentration does not exceed 35 parts per million.
- **The Eight-hour Standard** — The standard is met when the maximum eight-hour average concentration does not exceed nine parts per million.

Federal Ambient Air Quality Standards

Pollutant	Federal Standard	Monitoring Status in Lane County
Particulate ($PM_{2.5}$)		
24-hour standard	35 ug/m^3	Required
Annual standard	15 ug/m^3	Required
Particulate (PM_{10})		
24-hour standard	150 ug/m^3	Required
Carbon Monoxide (CO)		
8-hour average	9 ppm	Required
1-hour average	35 ppm	Required
Ozone (O_3)		
8-hour average	0.08 ppm	Required
Sulfur Dioxide (SO_2)		
24-hour average	0.14 ppm	Not required
1-hour average	0.10 ppm	Not required
Nitrogen Dioxide (NO_2)		
Annual average	0.05 ppm	Not required
Lead (Pb)	1.5 ug/m^3	Not required

ug/m^3: micrograms per cubic meter

ppm: parts per million

The daily $PM_{2.5}$ standard is 35 micrograms per cubic meter and the three year annual mean standard is 15 micrograms per cubic meter.

NAAQS and Local Air Quality

Lane County Attainment History

In Lane County, three criteria pollutants have historically been of concern: particulate matter, ozone, and carbon monoxide. The Eugene/Springfield area is monitored for all three pollutants, while the city of Oakridge is monitored for particulate matter only.

Particulate Matter (PM)

Particulate matter is measured at three locations in Eugene, one location in Springfield, and one each in Oakridge and Cottage Grove. In Lane County, two areas, the Eugene/Springfield urban area and the city of Oakridge, have been designated "non-attainment" for PM_{10}. Both areas currently meet the standard and are in the process of regaining attainment status.

- The Eugene/Springfield area was designated a "non-attainment" area on January 10, 1980, for exceeding the 24-hour secondary "total suspended particulate" (TSP) standard.
- The TSP standard was changed to the PM_{10} standard (particulate matter 10 microns in size or smaller) in 1987.
- The Eugene/Springfield area was redesignated a PM_{10} "non-attainment" area on August 7, 1987.

  — Last exceeded the standard in 1987.
- Oakridge was proposed a PM_{10} "non-attainment" area in September 1992, and designated on January 20, 1994.

  — Last exceeded the standard in 1993.
- On September 16, 1997, EPA established daily and annual $PM_{2.5}$ standards that were immediately challenged by industry.
- In March 1998, $PM_{2.5}$ monitoring began in Eugene/Springfield.
- In November 1998, $PM_{2.5}$ monitoring began in Oakridge.
- On February 27, 2000, the U.S. Supreme Court unanimously upheld the new standards.
- On December 17, 2006, EPA formally adopted new standards for $PM_{2.5}$. The 2006 standards tighten the 24-hour fine particle standard from 65 micrograms per cubic meter (µg/m3) to 35 µg/m3, and retain the current annual fine particle standard at 15 µg/m3. The EPA also revoked the three year annual standard for PM_{10}, but retained the 24-hour standard of 150 µg/m3.

  — Eugene/Springfield currently meet the $PM_{2.5}$ standards.

  — Oakridge occasionally experiences high concentrations of $PM_{2.5}$ during the winter months, and does not meet the tightened, more protective $PM_{2.5}$ standard on worst days.

Ozone (O3)

Ozone is measured at one site in Eugene and one in Saginaw. Lane County is in attainment with the federal ozone standards.

- In 1970, EPA established a one-hour ozone standard.
- In May 1974, the Eugene/Springfield area began monitoring ozone and has continued to measure ozone, although the area has remained in attainment.
- In 1997, the standard was changed to an eight-hour standard, but this was challenged by industry.
- In 2000, the U.S. Supreme Court unanimously upheld the eight-hour standard.
- In 2007, the U.S. Environmental Protection Agency was reviewing the primary and secondary eight-hour standards for ground level ozone. EPA is considering tightening the standards to be more protective of public health and sensitive plant life. [In March 2008, EPA announced the ozone standard was being tightened from 0.08 parts per million (ppm) to 0.075 ppm.]

NAAQS and Local Air Quality

Carbon Monoxide (CO)

The Eugene/Springfield area was designated a "non-attainment" area for CO in the late 1970s, but was later redesignated an attainment area.

- In 1970, EPA established an eight-hour CO standard.
- In 1971, LRAPA began monitoring CO in downtown Eugene.
- On March 3, 1978, the Eugene/Springfield area was designated a "non-attainment" area for CO.

  — Last exceeded the standard in 1986.
- On February 4, 1994, the Eugene/Springfield area was redesignated an "attainment" area.

Criteria Pollutants

Pollutant	Description	Sources	Health Effects	Environmental Effects
Particulate Matter PM	PM_{10} — Respirable particles less than 10 microns in size $PM_{2.5}$ — Respirable particles less than 2.5 microns in size	Wood burning; industry; fugitive dust; construction activities; street sand application; combustion sources; transportation; open burning; NOx, SO_2, VOC gases	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	Causes reduced visibility and haze
Carbon Monoxide CO	An odorless, colorless gas which is emitted primarily from any form of incomplete combustion	Gasoline and diesel-powered mobile sources, such as autos, trucks, buses and locomotives; wood burning; open burning; Industrial combustion sources	Deprives the body of oxygen by reducing the blood's capacity to carry it; harmful to unborn children; causes headaches, dizziness, nausea; high doses may cause death	(None)
Ozone O_3	A gas associated with smog; formed when nitrogen oxides (NOx) and volatile organic compounds (VOC) react with one another in the presence of sunlight and warm temperatures	VOCs and NOx from gasoline-powered mobile sources; industry; power plants; gasoline transfer and storage; paints and solvents; consumer products	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	Can cause damage to plants and trees; smog can cause reduced visibility; attacks rubber products
Nitrogen Dioxide NO_2	A gas produced as a by-product of high burning temperatures	Combustion processes — fossil fuel power, motor vehicles, industry; home heating; fertilizer manufacturing	Harmful to lungs, irritates bronchial and respiratory systems; increases adverse symptoms in asthmatic patients	Contributes to acid fog and rain, which can damage plant and aquatic life; can cause reduced visibility; precursor to smog
Sulfur Dioxide SO_2	A pungent, colorless gas that combines with water vapor to become sulfurous acid (H_2SO_3), which, when combined with oxygen, produces sulfuric acid (H_2SO_4), a very corrosive and irritating chemical	Fossil fuel power plants; nonferrous smelters; Kraft pulp production	Irritates respiratory system; Increases the risk of adverse symptoms in asthmatic patients	Contributes to acid fog and rain, which can damage plant and aquatic life; dissolves stone and corrodes iron and steel; can contribute to reduced visibility
Lead Pb	A widely used metal, which may accumulate in the body	Leaded gasoline; battery manufacturing; battery recycling; smelting; paint	Causes intestinal distress, anemia and damage to the central nervous system, kidneys and brain; children more adversely affected than adults	Harmful to wildlife

Air Quality Index

The EPA developed the Air Quality Index to provide the public with timely and easy-to-understand information on the health implications of local air quality.

◆ **"Good"**

Air quality is considered satisfactory and air pollution poses little or no risk.

◆ **"Moderate"**

Air quality is acceptable; however, at these levels there may be a moderate health concern for a very small number of individuals.

◆ **"Unhealthy for Sensitive Groups"**

Certain groups of people who are particularly sensitive to the harmful effects of certain pollutants are likely to be affected at this level.

◆ **"Unhealthy"**

The general public may begin to experience adverse health effects. Members of sensitive groups may experience more serious health effects.

Air Quality Index Summary

Eugene/Springfield (number of days)

Year	Good	Moderate	Unhealthy (Sensitive)	Unhealthy
2007	321	40	4	0
2006	339	25	1	0
2005	294	69	2	0
2004	349	17	0	0
2003	343	22	0	0

Totals using CO, $PM_{2.5}$ and O_3 data.

Air Quality Index Summary

Oakridge (number of days)

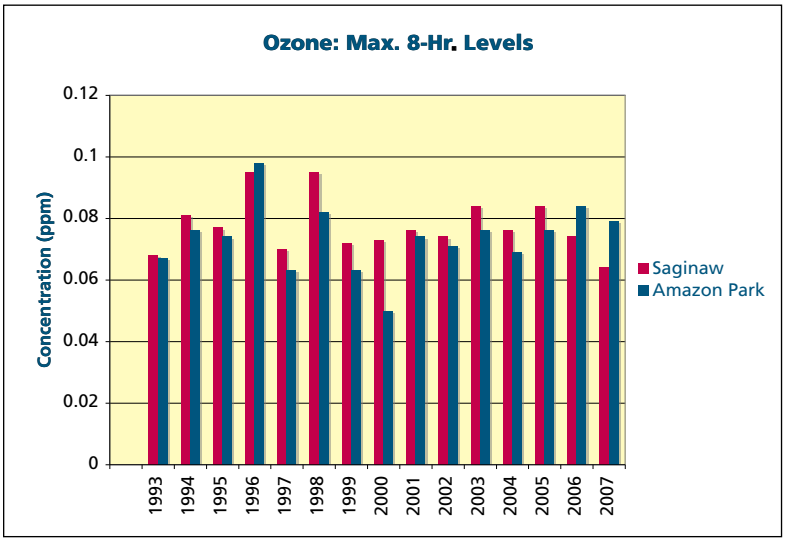
Year	Good	Moderate	Unhealthy (Sensitive)	Unhealthy
2007	295	60	10	0
2006	289	70	6	0
2005	268	76	20	1
2004	277	75	9	1
2003	288	62	12	1

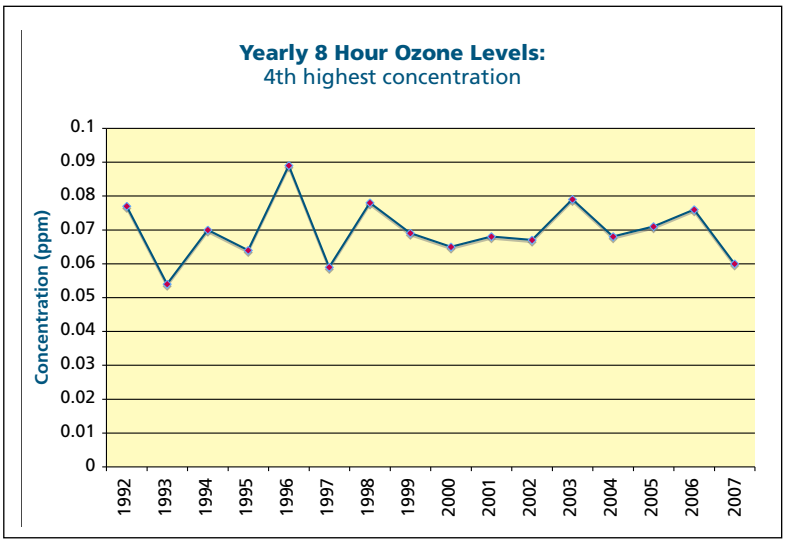
Totals using CO, $PM_{2.5}$ and O_3 data.

Ozone Data

Yearly Eight-Hour Ozone Levels — 1997 - 2007 (ppm)

Site #	Site Name	Notes	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
2000036	Delight Valley School — Saginaw	a	.070	.095	.072	.073	.076	.074	.084	.076	.084	.074	.064
		b	.059	.078	.069	.065	.067	.065	.079	.068	.071	.070	.060
		c	0	2	0	0	0	0	0	0	0	0	0
2018060	Amazon Park	a	.063	.082	.063	.050	.074	.071	.076	.069	.076	.084	.079
		b	.057	.073	.057	.047	.062	.067	.071	.064	.064	.076	.058
		c	3*	0	0	0	0	0	0	0	0	0	0





Standard:

Fourth highest 8-hour average: 0.08 parts per million (technically must be ≥ 0.085 ppm for an exceedance)

Notes:

a	Highest 8-hour concentration
b	4th highest 8-hour concentration
c	Number of exceedances
---	No data collected at site during year
*	Prior to the 1998 established standard; not a formal exceedance

Particulate Matter Data - PM_{10}

Yearly PM_{10} Levels — 1997 - 2007 (ug/m³)

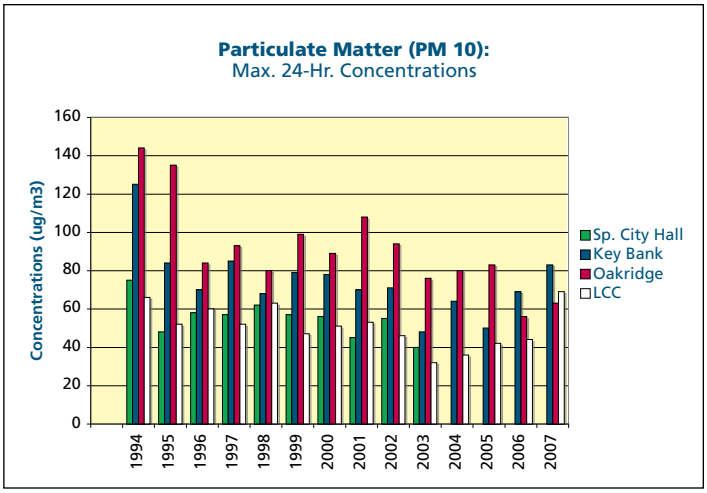
Site #	Site Name	Notes	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
2018056	Lane Community College (dwntwn)	a	21	17	19	19	19	17	15	15	15	14	14
		b	52	63	47	51	53	46	32	36	42	44	69
		c	49	56	45	50	35	45	30	35	40	38	39
		d	0	0	0	0	0	0	0	0	0	0	0
2018058	Key Bank— Hwy 99N	a	22	19	20	21	21	21	19	18	18	20	17
		b	85	68	79	78	70	71	48	64	50	69	83
		c	62	67	67	54	65	67	47	44	47	57	76
		d	0	0	0	0	0	0	0	0	0	0	0
2018060	Amazon Park	a	19	15	18	18	18	---	---	---	---	---	---
		b	54	59	60	58	62	---	---	---	---	---	---
		c	53	49	46	55	35	---	---	---	---	---	---
		d	0	0	0	0	0	---	---	---	---	---	---
2030003	Willamette Activity Ctr.— Oakridge	a	21	19	20	23	24	25	21	18	17	17	15
		b	96	80	99	89	108	94	76	80	83	56	63
		c	90	79	73	73	80	83	63	53	76	50	63
		d	0	0	0	0	0	0	0	0	0	0	0
2033060	Springfield City Hall	a	21	19	16	20	19	17	15	---	---	---	---
		b	57	62	57	56	45	55	40	---	---	---	---
		c	49	59	56	46	38	51	36	---	---	---	---
		d	0	0	0	0	0	0	0	---	---	---	---
2009002	Harrison Elem. Sch. — Cottage Grove	a	20	17	19	18	17	19	16	14	14	15	---
		b	75	50	49	38	44	57	44	38	38	42	---
		c	54	48	41	35	37	54	41	32	36	41	---
		d	0	0	0	0	0	0	0	0	0	0	---
2018063	Santa Clara	a	---	---	---	---	---	---	---	---	---	---	---
		b	56	---	---	---	---	---	---	---	---	---	---
		c	32	---	---	---	---	---	---	---	---	---	---
		d	0	---	---	---	---	---	---	---	---	---	---
2000037	North Coburg Road	a	---	---	---	---	---	---	---	---	15	16	---
		b	---	---	---	---	---	---	---	---	60	62	---
		c	---	---	---	---	---	---	---	---	57	54	---
		d	---	---	---	---	---	---	---	---	0	0	---

Standards:

24-hour average — 150 micrograms/cubic meter
Annual arithmetic mean — 50 micrograms/ cubic meter

Notes:

a Annual arithmetic mean
b Highest 24-hour concentration
c 2nd highest 24-hour concentration
d Number of days over 24-hour standard
--- No data collected at site during year



Particulate Matter Data - $PM_{2.5}$

Standards:

Annual arithmetic mean: 15 micrograms/cubic meter

24-hour average: 35 micrograms/cubic meter of the 98th percentile of measured concentrations*

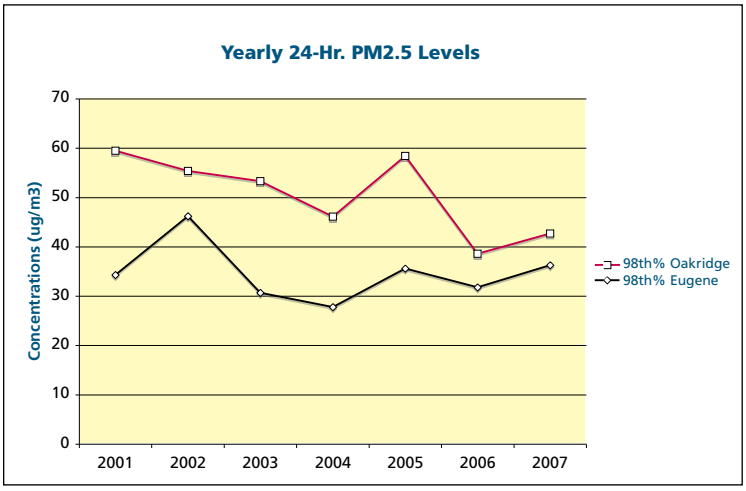
Notes:

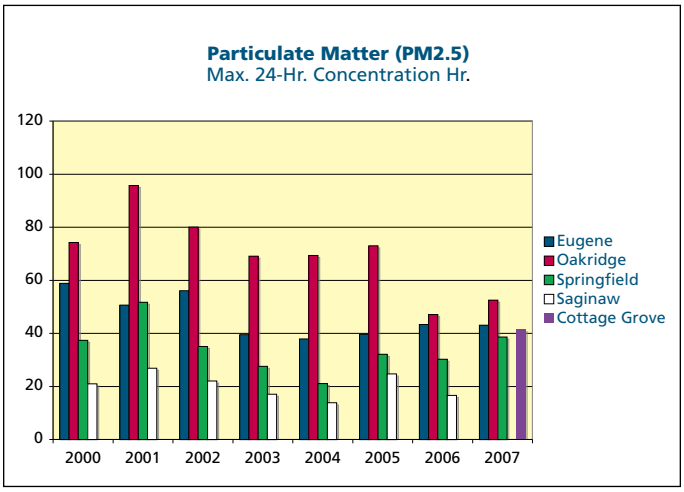
a Annual arithmetic mean
b Highest 24-hour concentration
c 98th percentile concentration
d Number of days over 24-hour standard
--- No data collected at site during year

*Changed to 35 micrograms/cubic meter on December 17, 2006

Yearly $PM_{2.5}$ Levels (ug/m^3)— 2002 - 2007

Site #	Site Name	Notes	2002	2003	2004	2005	2006	2007
2033061	Springfield High School	a	8.3	7.8	---	---	---	---
		b	35.3	27.5	---	---	---	---
		c	26.2	23.2	---	---	---	---
		d	0	0	---	---	---	---
2018060	Amazon Park	a	9.7	8.9	8.7	9.1	8.4	7.3
		b	56.2	39.5	37.9	39.6	43.3	43
		c	46.2	30.7	27.8	35.6	31.8	36.3
		d	0	0	0	0	0	3
2030003	Willamette Activity Ctr. - Oakridge	a	14.1	12.3	12.0	12.8	11.1	10.5
		b	80.3	69.0	69.3	73.0	47.0	52.5
		c	55.4	53.3	46.1	58.4	38.6	42.7
		d	3	1	1	1	0	7
2000036	Delight Valley School - Saginaw	a	6.7	6.2	6.0	6.8	5.5	---
		b	22.0	17.0	13.8	24.7	16.6	---
		c	18.1	15.9	13.1	17.9	16.6	---
		d	0	0	0	0	0	---
2033060	Springfield City Hall	a	---	---	7.6	8	7.4	6.8
		b	---	---	21.0	32.1	30.2	38.6
		c	---	---	20.8	24.5	27.8	18.4
		d	---	---	0	0	0	1
2018058	Key Bank	a	---	---	---	---	---	8.3
		b	---	---	---	---	---	53.5
		c	---	---	---	---	---	33.9
		d	---	---	---	---	---	2
2009002	Harrison Elementary	a	---	---	---	---	---	9.25
		b	---	---	---	---	---	41.5
		c	---	---	---	---	---	38.8
		d	---	---	---	---	---	3





Carbon Monoxide Data

Yearly Carbon Monoxide Levels — 1997 - 2007 (ppm)

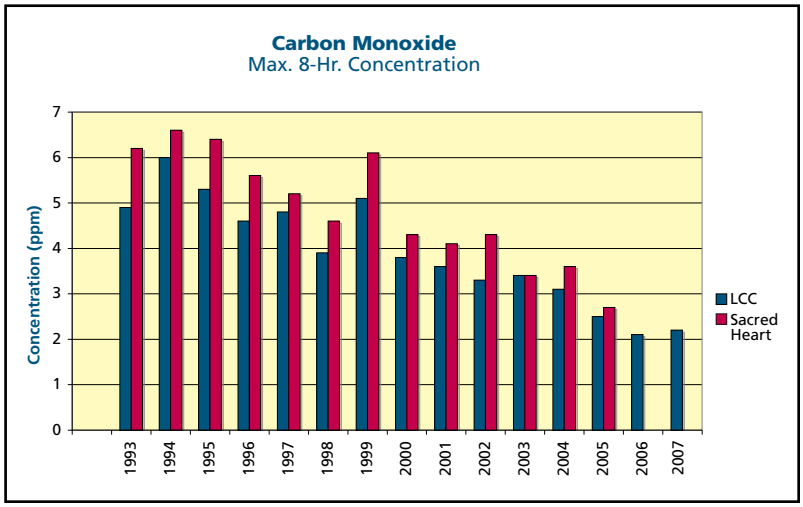
Site #	Site Name	Notes	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
2018056	Lane Comm. College (downtown)	a	4.8	3.9	5.1	3.8	3.6	3.3	3.4	3.1	2.5	2.1	2.2
		b	4.7	3.9	3.9	3.5	3.6	2.9	2.8	2.6	2.3	2.0	2.1
		c	0	0	0	0	0	0	0	0	0	0	0
2018058	Sacred Heart Medical Center	a	5.2	4.6	6.1	4.3	4.1	4.3	3.4	3.6	2.7	---	---
		b	5.2	4.6	4.9	4.3	3.9	4.2	3.3	3.4	2.7	---	---
		c	0	0	0	0	0	0	0	0	0	---	---

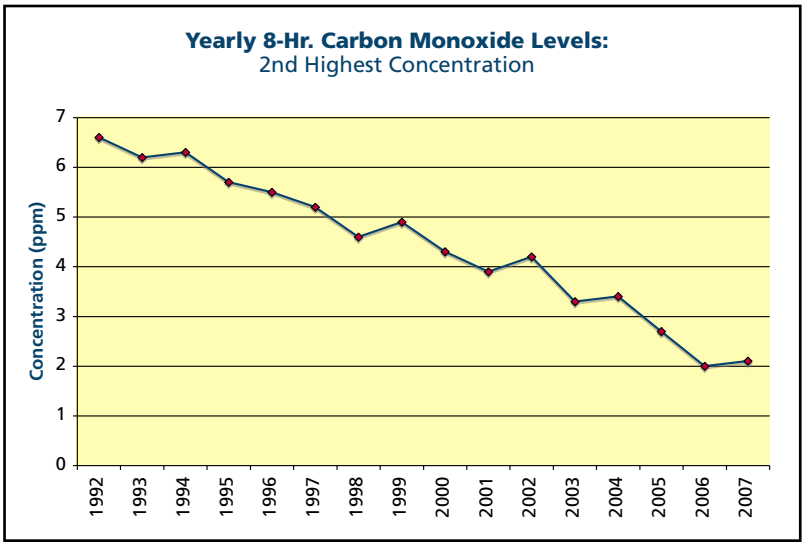
Standard:

8-hour average — 9 parts per million

Notes:

- a Highest 8-hour concentration
- b 2nd highest 8-hour concentration
- c Number of exceedances
- --- No data collected at site during year



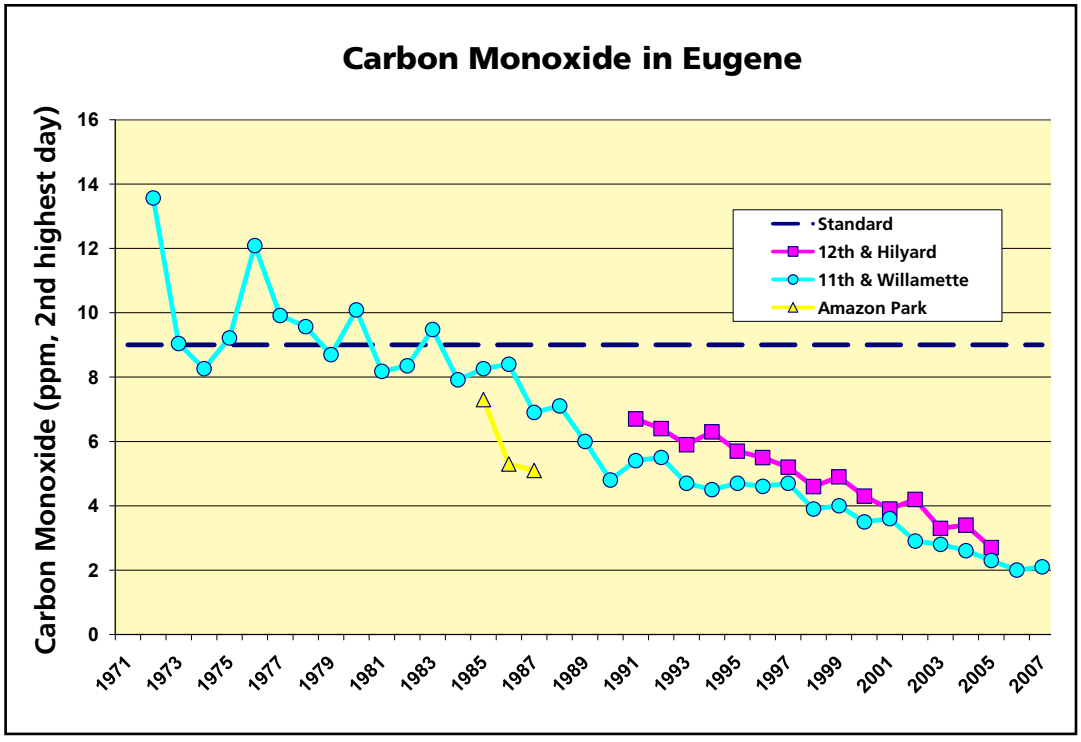


Lane County Trends

LRAPA's air quality monitoring network consists of 8 monitoring sites that include a total of 40 sets of monitoring equipment. The agency collected about 227,750 hours of pollutant-related data in 2007. At an estimated operational cost of $364,200 per year, LRAPA's network provides Lane County with comprehensive data on local air quality. Without the local program, the Lane County network could have as few as four sites, with a total of four to six sets of equipment, and a collection basis of fewer than 40,000 hours of pollutant-related data annually.

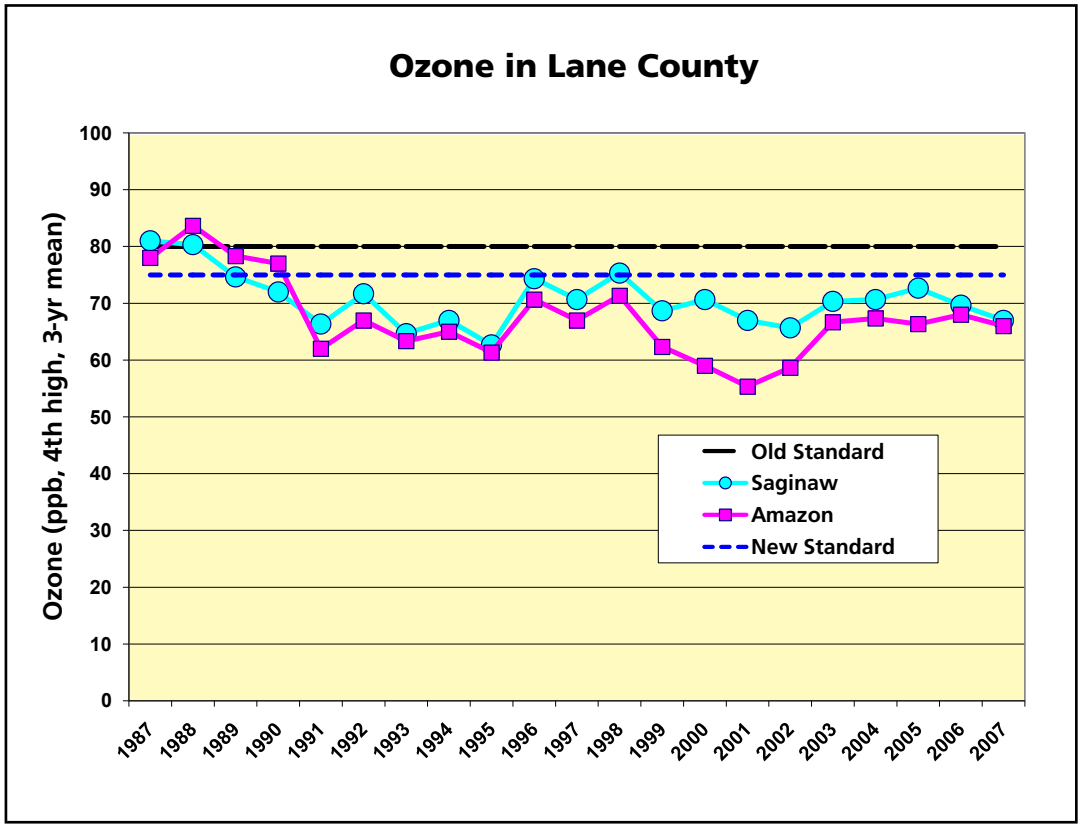
LRAPA's network includes five locations in Eugene, and one each in Springfield, Oakridge, Cottage Grove, and Saginaw. Sites include:

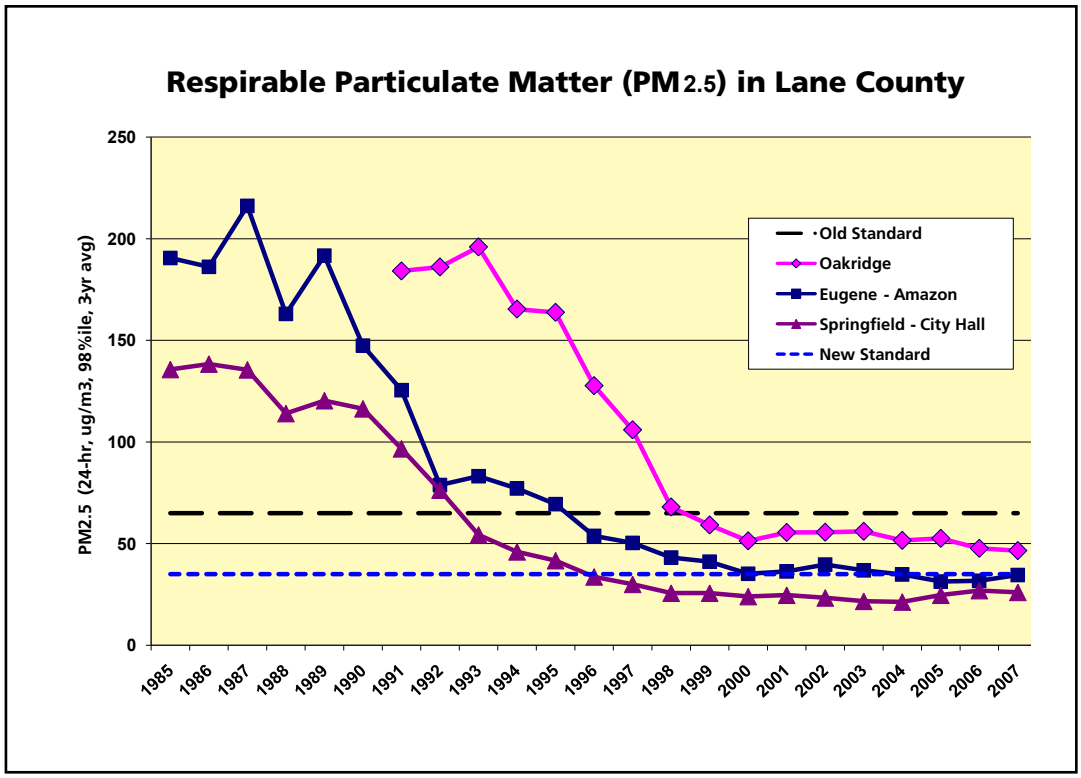
- Amazon Park (South Eugene)
- Cottage Grove (Harrison Elementary School)
- Downtown Eugene (11th /Willamette)
- Four Corners (Highway 99/Roosevelt),
- Oakridge Community Center (Oakridge)
- Saginaw (Delight Valley Elementary School)
- Santa Clara (North Eugene)
- Springfield City Hall (Springfield)



Carbon monoxide levels are measured at 11th and Willamette in downtown Eugene. The chart shows carbon monoxide concentrations in Eugene have steadily decreased due to cleaner fuels and better pollution controls on motor vehicles.

Lane County Trends





Lane County
Home Wood Heating Programs (HWH)

The Eugene/Springfield urban area and the City of Oakridge have home wood heating advisory programs due to episodes of poor wintertime air quality. Residential wood stove smoke is a major source of PM_{10} and $PM_{2.5}$ emissions in these areas. According to LRAPA's emission inventory, residential home wood heating smoke accounts for 40 percent of all particulates emitted in Lane County. Home wood heating advisory programs in Lane County use a simple "green, yellow, red" advisory system to inform residents whether or not wood-burning is allowed. The programs do not generally ban all burning, but rather ban visible emissions during "red" advisory periods. Residents are notified of the daily advisories through local media, such as newspapers, radio and television stations. In addition, LRAPA has a 24-hour advisory line for up-to-date information, a web site, and uses an automated phone notification system with its Oakridge program. While home wood heating is allowed on most days, the agency encourages residents to avoid burning to reduce the health impacts associated with the inhalation of wood smoke.

Eugene/Springfield Program

The Eugene/Springfield urban area began its home wood heating advisory program in 1986 to reduce pollution caused by home wood heating, a major wintertime source of particulates. Eugene/Springfield was designated a federal non-attainment area on August 7, 1987, after violating the federal PM_{10} standards on various occasions in past years. The program changed from voluntary to mandatory in January 1991, as part of LRAPA's federally required implementation plan designed to bring the area back into compliance with the PM_{10} standards.

The Eugene/Springfield mandatory program is now in its 17th season. Residents living within the Eugene/Springfield Urban Growth Boundary (ESUGB) are affected by the program, which runs from November 1 through the end of February. Residents with economic hardship may be granted an exemption from the program on a yearly basis.

Eugene/Springfield HWH Advisories 1997 - 2007 Seasons

Season Year (Nov. - Feb.)	Yellow	Red I	Red II	PM Exceedances
*2007-2008	6	1	0	2
*2006-2007	7	0	0	0
*2005-2006	18	0	0	0
*2004-2005	6	0	0	0
*2003-2004	0	0	0	0
*2002-2003	4	0	0	0
*2001-2002	5	0	0	0
*2000-2001	6	0	0	0
*1999-2000	0	0	0	0
*1998-1999	0	0	0	0
1997-1998	0	0	0	0

**Based on $PM_{2.5}$ monitored levels*

In addition to the visible emissions ban, the mandatory program includes a Phase II "red" advisory, which prohibits all burning in wood stoves (without an exemption) in cases of severe deterioration in air quality. Violations of the program can result in fines up to $500 per incident, issued by LRAPA.

In 2002, local ordinances were amended to:

- Ban burning of garbage in woodstoves/fireplaces,
- Add a 40 percent opacity limit on chimneys, and,
- Incorporate the $PM_{2.5}$ standard into the HWH season program.

The amendments were adopted on 7/22/02 in Eugene, 10/30/02 in Springfield, and 9/24/03 in the Eugene/Springfield UGB by Lane County. In fall 2007, the City of Eugene again revised its ordinance to reflect the recently amended $PM_{2.5}$ standard, which dropped the allowable concentration to 35 ug/m^3.

Save Money,
Be Safer,
Be Warm!

Warm Homes,
Clean Air

An Oakridge Community Project

Oakridge Program

The City of Oakridge adopted a voluntary home wood heating advisory program in 1989, after air quality data showed Oakridge exceeded the federal PM_{10} standard on numerous occasions. Five years later, on January 20, 1994, EPA officially declared Oakridge a PM_{10} non-attainment area. A plan to get the area back into attainment with the standards was adopted by EPA in March 1999, and became effective on May 14th of that year. Unlike Eugene/Springfield's strategies which were mandatory, the Oakridge plan included voluntary measures.

On February 20, 2003, the Oakridge City Council adopted a home wood heating ordinance that:

- Changed their voluntary measures to mandatory,
- Prohibited burning garbage in woodstoves and fireplaces,
- Incorporated a 40 percent opacity limit on chimneys,
- Incorporated the $PM_{2.5}$ standard into the program, and
- Required the removal of uncertified woodstoves from property to be sold or rented.

In fall 2007, the City of Oakridge revised its home wood heating ordinance to reflect the tightened $PM_{2.5}$ standard of 35 ug/m^3.

The Oakridge mandatory program uses the same basic principles as the Eugene/Springfield mandatory program, but is enforced by the city of Oakridge, rather than LRAPA.

LRAPA uses an automated call system in Oakridge to inform residents of yellow and red home wood heating advisories.

In winter of 2006, the Warm Homes, Clean Air program was initiated. The program matches Oakridge and Westfir residents with funding from nine partner agencies to help with heating upgrades, weatherization, and home repairs. As part of the program, LRAPA provided funding for woodstove replacements. Between July of 2006 and December of 2007, 59 uncertified woodstoves were replaced, resulting in a calculated yearly reduction of over 4 tons of particulate matter from the airshed. Further reductions will occur as the result of home weatherization and repairs. Through the partnership, over $650,000 in funding has been made available to the community. The program continues as funding becomes available.

Oakridge HWH Advisories
1997 - 2007 Seasons

Season (Nov. - Feb.)	Yellow	Red	PM Exceedances
*2007-2008	22	5	5
*2006-2007	28	0	0
*2005-2006	20	1	1
*2004-2005	37	0	0
*2003-2004	15	0	1
*2002-2003	29	0	2
*2001-2002	11	0	3
*2000-2001	35	2	2
*1999-2000	11	0	2
*1998-1999	6	0	1
1997-1998	1	0	0

**Based on $PM_{2.5}$ monitored levels*

Wood Burning Advisories
(November — February)

LRAPA uses the $PM_{2.5}$ standard when determining home wood heating advisories. Advisories are determined by comparing current pollution levels to current meteorological conditions and weather forecasts.

Eugene/Springfield and Oakridge

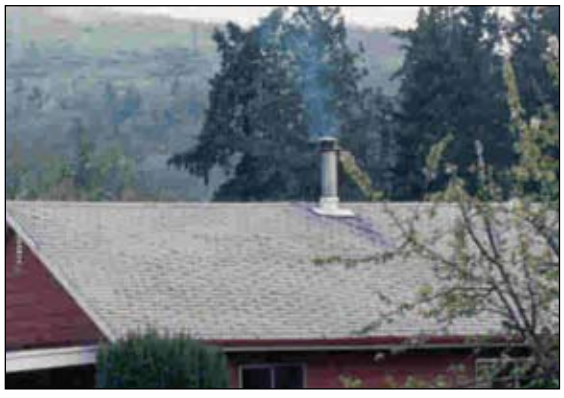
Green— Means air quality is good at this time and unrestricted use of a wood heating device is allowed. Called when pollution levels are forecast to be less than 25 ug/m³ (micrograms per cubic meter) – the standard being 35 ug/m³.

Yellow— Means air quality is deteriorating. Residents are asked to cut back on home wood-heating use. Called when pollution levels are forecast to be greater than or equal to 25 ug/m³, but less than 30 ug/m³.

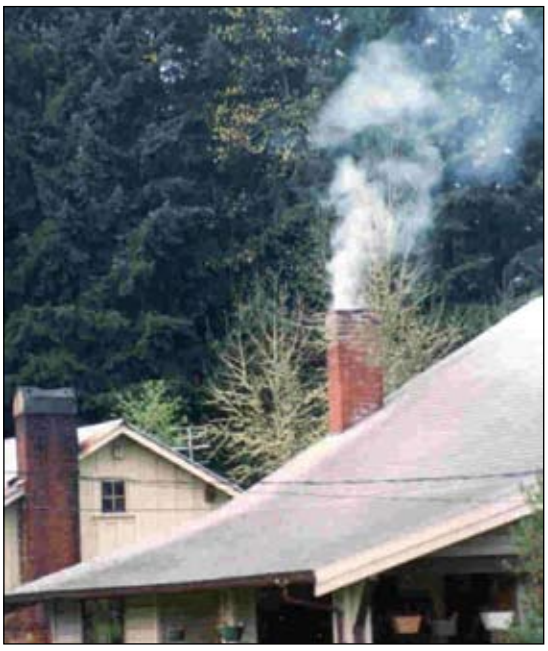
Red I— Means air quality is reaching an unhealthy stage. Visible smoke from a chimney will result in a violation, unless the resident has an exemption. Burning is allowed if done without producing any visible smoke. Called when pollution levels are forecast to be greater than or equal to 30 ug/m³, but less than 35 ug/m³.

Red II— Means all burning must stop. Use of a pellet stove is allowed if no visible smoke is emitted into the air. Called when levels are forecast to be greater than or equal to 35 ug/m³.

Firewood Tree Species	Available Heat Million Btu/Cord 20% Moisture
Alder	20
Apple	35
Ash	27
Birch	24
Cedar	16
Cherry	25
Cottonwood	17
Elm, American	18
Fir, Douglas	23
Fir, White	19
Hemlock	21
Juniper	25
Madrone	34
Oak, Red	29
Oak, White	33
Maple	25
Pine, Lodgepole	20
Pine, Ponderosa	18
Pine, White	18
Poplar	12
Walnut, Black	25
Walnut, English	25
Willow	16



Chimney smoke should be negligible when a wood stove/fireplace is being properly used.



A smoky chimney indicates improper use of a wood stove/fireplace and emits excess pollution into the air.

Program Summaries

Operations

Permitting

LRAPA-issued operating permits are required for a number of industries and businesses in Lane County. Of the 190 permitted sources in Lane County, 171 have basic Air Contaminant Discharge Permits (ACDP), and 19 hold Title V Federal Operating Permits.

ACDPs are issued to all industries required by LRAPA rules to obtain permits, except those "major" sources subject to federal operating permit requirements. Industrial sources are classified as "major" sources if they have the potential to emit more than 100 tons of any criteria pollutant (see pg. 11), or 10 tons or more of any single hazardous air pollutant (HAP) or 25 tons or more of any combination of HAPs on an annual basis.

Industrial source categories in Lane County which require operating permits include: food and agriculture, wood products manufacturing, chemical products manufacturing, mineral products manufacturing, metal products manufacturing; waste treatment, fuel burning, fuel transfer operations, coating operations, sources of toxic air pollutants, and any source emitting more than 10 tons per year of any combination of criteria pollutants.

2007 Permitting Summary –

Permits issued or renewed..... 59
Permits modified..... 29
Industries inspected..... 95
Note: Some industries have multiple inspections in a year.

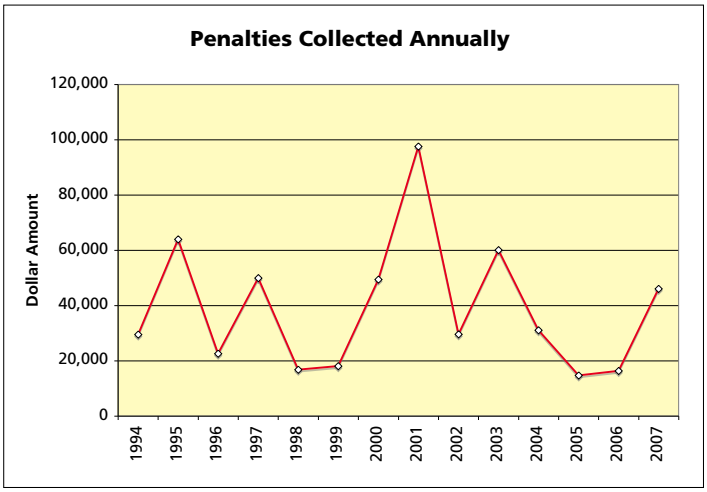
Enforcement

LRAPA initiates enforcement actions in instances of excessive industrial air pollution, illegal open burning activities, improper handling or transport of asbestos-containing materials, and failure to obtain necessary air pollution permits prior to construction or operation.

Typically, the dollar amount of penalties collected annually does not strictly reflect the penalties assessed or settled during the year, due to pending cases and collections received on previous years' penalties.

LRAPA collected $46,050 in penalties during 2007. All penalties collected are forwarded to Lane County; however, attorney fees associated with contested cases are deducted first.

Administrative warnings/
Notices of non-compliance..... 48
Notices of violation with/ civil penalty:..... 47



Enforcement Actions 1997 - 2007

Year	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Administrative warnings and Notices of non-compliance	57	91	118	102	129	103	52	55	51	48
Notices of violation with civil penalty	17	39	80	64	72	67	31	39	33	47

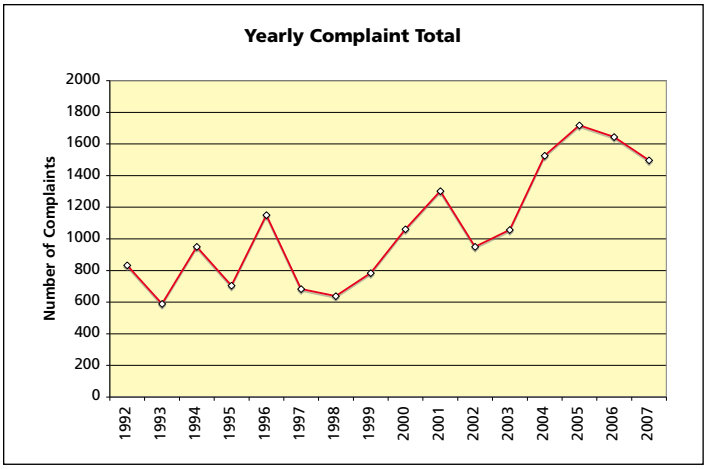
Total civil penalties collected $	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
	49,950	16,775	18,070	49,437	97,584	49,590	31,097	14,700	16,404	46,050

Program Summaries

Asbestos Abatement

Remodeling and renovation projects in Lane County that include asbestos abatement must register with LRAPA. In 2007, LRAPA documented 413 notifications of asbestos abatement projects. LRAPA inspected 85, or 21 percent, of all projects. Fourteen violations were found. By category, the total number of abatement projects included:

Residential 220
Schools 67
Business/Industry 110
Other 16



Complaint Response

It is LRAPA's policy to investigate in a timely manner every complaint called into the agency. Staff investigated 1,087 formal complaints in 2007. Field burning complaints, however, are typically not investigated by staff, but forwarded to the Oregon Department of Agriculture, which has jurisdiction.

The number of complaints, and percent changes from the previously are as follows by category:

Backyard burning ..... -82%
Dust ..... -51%
Field burning ..... -40%
General air quality ..... +800%
Home wood-heating ..... -8%
Industry ..... -30%
Miscellaneous ..... +14%
Open burning ..... +130%
Slash burning ..... -19%
Unknown ..... +18%
Total complaints ..... -9%

Complaints 1997 - 2007

Year	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Backyard burning	77	71	104	91	98	122	104	94	116	63	11
Dust	19	30	17	17	27	25	15	17	35	33	16
Field burning	247	218	279	198	199	294	96	103	330	576	341
General air quality	4	7	11	4	4	4	6	2	8	7	63
Home wood heating	52	45	53	37	58	73	71	82	80	89	82
Industry	111	99	118	492	689	168	530	880	768	465	327
Miscellaneous	27	31	46	46	44	34	32	66	75	95	109
Open burning	91	98	91	91	103	142	90	163	179	169	390
Slash burning	16	13	9	35	18	23	9	8	31	41	33
Unknown	39	26	55	49	61	65	103	110	97	105	124
Total	**683**	**638**	**783**	**1060**	**1301**	**950**	**1056**	**1525**	**1719**	**1643**	**1496**

Program Summaries

Technical Services

Monitoring and Data Management

LRAPA's monitoring network consists of 40 sets of monitoring equipment at 8 sites in Lane County including Eugene, Springfield, Coburg, Saginaw, Cottage Grove and Oakridge. LRAPA's network samples for particulate matter, ozone, carbon monoxide, and hazardous air pollutants. Approximately 227,750 hours of pollutant-related and meteorological data were collected last year.

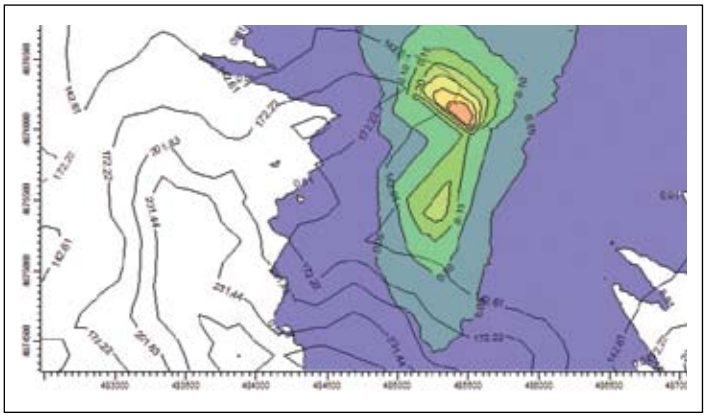
The agency's in-house laboratory analyzes samples collected from the monitoring network, and staff regularly calibrates all network equipment.

Airmetrics

Airmetrics is an LRAPA enterprise which manufactures an inexpensive, portable, battery-operated air sampler patented as the MiniVol. The sampler has been adapted to sample gaseous pollutants, such as carbon monoxide and nitrogen oxides, as well as particulates (PM_{10} and $PM_{2.5}$).

The MiniVol and related products are sold worldwide with nearly 50 percent of annual sales being international. Airmetrics is currently working on an improved model of the sampler to meet the needs of the market.

Sales for the '06-'07 fiscal year totaled $800,484.00 with a net profit to the agency of $78,623. Revenues generated by the enterprise are allocated to help defray capital costs.



Education and Outreach

LRAPA understands that public education is an integral part of any program if lasting behavioral changes to reduce air pollution are to occur.

The agency provides education to the community in a number of different ways, including forming partnerships with local media and other private and public entities; providing written materials such as brochures and fact sheets; making presentations to service-clubs, local, state, and national professional associations; providing education at area schools; participating in local fairs and trade shows; and sharing agency information on its website: www.lrapa.org.

2007 education projects included:

- Classroom presentation program:
  - Oakridge elementary school
  - Kelly Middle School
  - Oakridge outdoor school program
- Earth Day Celebration: Electronic interactive clean air display
- Warm Homes/Clean Air Oakridge Community project
- Home Wood Heating season advisory program
- Oakridge School Air Quality Index (AQI) flag project
- Eco-biz program for auto repair shops
- Ozone Action Day advisory program
- Home Wood Heating ads on Spanish radio
- Regional open burning TV/radio/newspaper ad campaign
- Supplemental Environmental Project outreach (permitting and enforcement)
- Customer satisfaction survey
- Stop-don't-top vehicle emission ad campaign
- No-idle school campaign

Field Burning Summary

The Department of Agriculture has jurisdiction over field burning in Oregon. However, because of local public interest, LRAPA summarizes field burning data in the southern Willamette Valley, including Benton, Linn and Lane counties. Oregon law allows up to 65,000 acres to be open-burned annually — 40,000 acres for normal applications and 25,000 acres for steep terrain and specially identified species, and an additional 37,500 acres of propane flaming. There has been no limitation on stack burning. The total acreage open burned in the southern Willamette Valley in 2007 was 19,738 acres. In addition, 83 acres were propane flamed, all in Linn County. There were no registered intrusions into the area.

Field Burning Year-end Totals

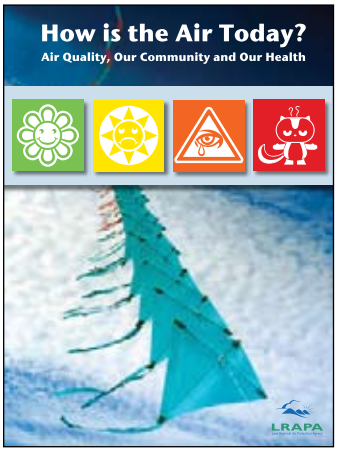
Year end	S. Willamette acres burned	Number of intrusions	Impact hours	Number of complaints
2007	19,738	0/Eug. 0/Spfld.	0/Eug. 0/Spfld.	341
2006	34,045	0/Eug. 0/Spfld.	0/Eug. 0/Spfld.	576
2005	33,702	2/Eug. 3/Spfld.	2/Eug. 6/Spfld.	330
2004	33,830	0/Eug. 0/Spfld.	0/Eug. 0/Spfld.	103
2003	31,654	0/Eug. 0/Spfld.	0/Eug. 0/Spfld.	96

Special Projects

In its continuing effort to address community concerns, LRAPA was involved with a number of special projects in 2007. Special projects may be conducted internally, or in support of planning or community development efforts by other local, state and federal agencies. These projects are conducted in addition to routine agency functions and often require the use of additional temporary staff.

- *Warm Homes/Clean Air Oakridge Community Project* – This LRAPA-sponsored collaborative effort matches residents with funding programs that help with the costs of home repairs, weatherization, and heating system upgrades. Through this effort, organizers work together to bring residents a tailored set of options designed specifically for them using a single application form, eliminating the need for residents to search for available funding programs. LRAPA received funding for a woodstove changeout. As of December 2007, 59 uncertified woodstoves have been upgraded to newer, clean-burning appliances. *(In progress)*
- *Everybody Wins Phase II* – Since the installation of 250 APUs (auxiliary power units) on over the road trucks using the I-5 corridor, LRAPA has worked with project partner LCOG (Lane Council of Governments) to install active GPS data transmitting units on trucks from three small Oregon truck fleets. These trucks are using the APUs made available through the LRAPA program to dramatically reduce main engine idling, which significantly reduces diesel emissions. In the face of today's challenging economy and high diesel fuel prices, the APUs are also a critical asset in keeping independent owner-operators financially solvent and able to work. The data stream from the onboard GPS units will provide valuable information about driver habits, use patterns of the APUs, and the cost effectiveness of this idle reduction strategy. Collection and analysis of the data is underway at LCOG, and more trucks are targeted to be equipped with the GPS data units. *(In progress)*
- *Clean School Bus USA* – School districts in Lane County continue to utilize EPA grant funding for school bus engine retrofit and replacement. LRAPA has also collaborated with the Oregon Department of Environmental Quality (DEQ) in securing another EPA Clean School Bus grant award to upgrade the Oakridge/Westfir School District bus fleet in the 2008-2009 school year. Diesel oxidation catalysts (DOCs) and catalyzed diesel particulate filters (CDPF) will continue to be used for exhaust after-treatment. Recent health studies about exposure levels of diesel exhaust to in-cabin school bus children have also prompted an aggressive effort at the state level to retrofit all 1994 and newer buses with closed crankcase ventilation (CCV) systems. LRAPA will continue to coordinate with Lane County School Districts and DEQ in this campaign, which will retrofit 2,200 Oregon school buses with CCVs by 2013. *(On-going)*
- *Ultra Low Sulfur Diesel Buy-Down Project* - Another statewide partnership with the Oregon DEQ, this project provides a $0.05 per-gallon subsidy toward the purchase of ultra low sulfur diesel. Private and public fleets can apply for the subsidy under this program. *(In progress)*

Special Projects



- *Lane Clean Diesel Project* - The stakeholders participating in this project have succeeded in providing a stable and affordable supply of ultra low sulfur diesel fuel (ULSD) and biodiesel in Lane County. Bulk storage tanks for ULSD have been added to fuel distribution sites in Eugene. ULSD and biodiesel are available at a card lock facility in Oakridge, and the Pacific Northwest's first biofuel retail station opened in Eugene in August 2006. LRAPA continues to assist public and private partners in applying for additional EPA funding that will promote the use of alternative fuels. *(On-going)*
- *School No-Idle Campaign* – Funding was secured to purchase no-idle zone traffic signs for use at local schools. As of December 2007, over 50 no-idle signs were installed at Eugene, Springfield, Junction City, Cottage Grove, and other Lane County elementary and middle schools. In addition, over 4,000 flyers were sent home with students to remind parents of the importance of being idle-free. *(In progress)*
- *Oakridge School Flag Project* – An air quality curriculum was developed for students at Oakridge Elementary School. The curriculum explains the health impacts of air pollution and how the air quality index is used to provide the public with simple information on local air quality. The curriculum includes learning activities and four color-coded air quality "flags" that are displayed by students on the school grounds to show air quality for that day. LRAPA staff also give classroom presentations to support the curriculum. *(On-going)*

1010 Main Street
Springfield, Oregon 97477

Phone: 541-736-1056
Toll-free: 1-877-285-7272
Fax: 541-726-1205

E-mail: lrapa@lrapa.org
www.lrapa.org