1996 Annual Report

Lane Regional
Air Pollution Authority

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Graphic depiction of topography of the greater Eugene/Springfield area and city of Oakridge.

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LRAPA Organization

LRAPA Board of Directors

The LRAPA Board of Directors is a seven-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. Cities with more than one member may appoint the second or third member from the public within their jurisdictions.

Pat Patterson — Chair
Cottage Grove City Council
Al Johnson — Vice Chair
Eugene City Council Appointment
Maureen Maine
Springfield City Council
Steve Cornacchia
Lane County Board of Commissioners
Steve Dodrill
Eugene City Council Appointment
Shawn Boles
Eugene City Council
Gary Whitney
LRAPA Board Appointment

LRAPA Budget Committee

The LRAPA Budget Committee consists of the LRAPA Board of Directors plus seven board-appointed citizens. The committee meets yearly to review and approve LRAPA's budget request. 1995 appointed committee members include:

Dave Balthrop
Don Churnside
Jay Maudlin
Donald Nelson
Vern Stokesberry
Charlie Ward
Hilda Young

Organization, Con't.

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. Up to 15 members may comprise the committee at any one time.

Lorena Young — Chair *Representing General Public*	5 yrs. service
Tamara Davis — Vice Chair *Representing General Public*	3 yrs. service
Steve Allen *Representing Fire Suppression*	2 yrs. service
John Fischer *Representing General Public*	7 yrs. service
Paul Kuhlmann *Representing General Public*	4 yrs. service
William Nagel *Representing General Public*	7 yrs. service
John Santerre *Representing General Public*	2 yrs. service
Dave Seluga *Representing Industry*	3 yrs. service
Dan Shults *Representing Fire Suppression*	4 yrs. service
Fred Walter *Representing General Public*	6 yrs. service

Program Operations

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.

The LRAPA staff consists of 17 professional and technical full-time employees who perform permitting, enforcement, planning, clerical, financial, and public information and outreach programs.

Operations — Permitting, Compliance Assurance and Enforcement

Permitting establishes conditions under which regulated industrial sources may operate to minimize their contribution to air pollution in the area. *Compliance* is assured through inspections of permitted sources.

Enforcement acts to correct violations of rules and regulations related to open burning and asbestos abatement; enforces emission limit regulations; and responds to and resolves public complaints about air quality. Enforcement includes administrating contested case hearings and negotiating settlements.

Monitoring and Data Analysis — Ambient and Source

Ambient monitoring provides measured air quality data through a network of sampling and continuous monitoring equipment. The data is used to determine whether ambient air quality standards are met, and to develop program priorities and program planning. Data also is used to inform the public about current air quality conditions.

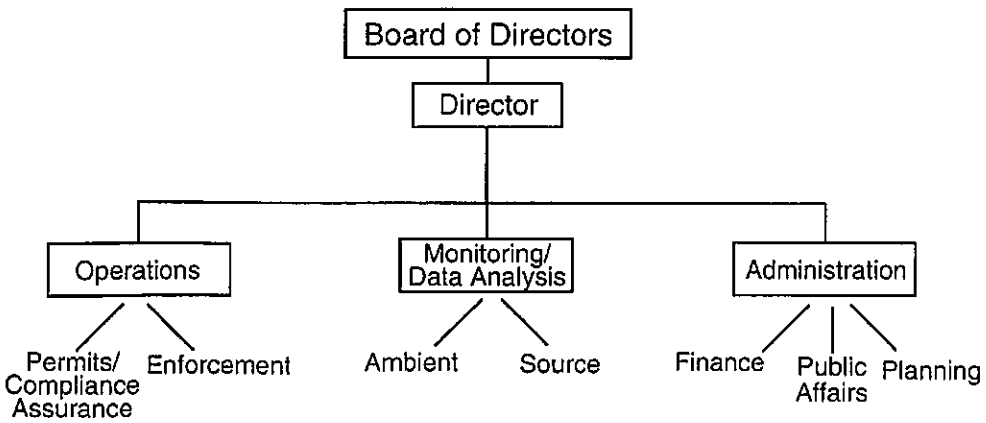
Source monitoring provides a quality assurance program for continuous monitoring at air emission sources.

Administrative

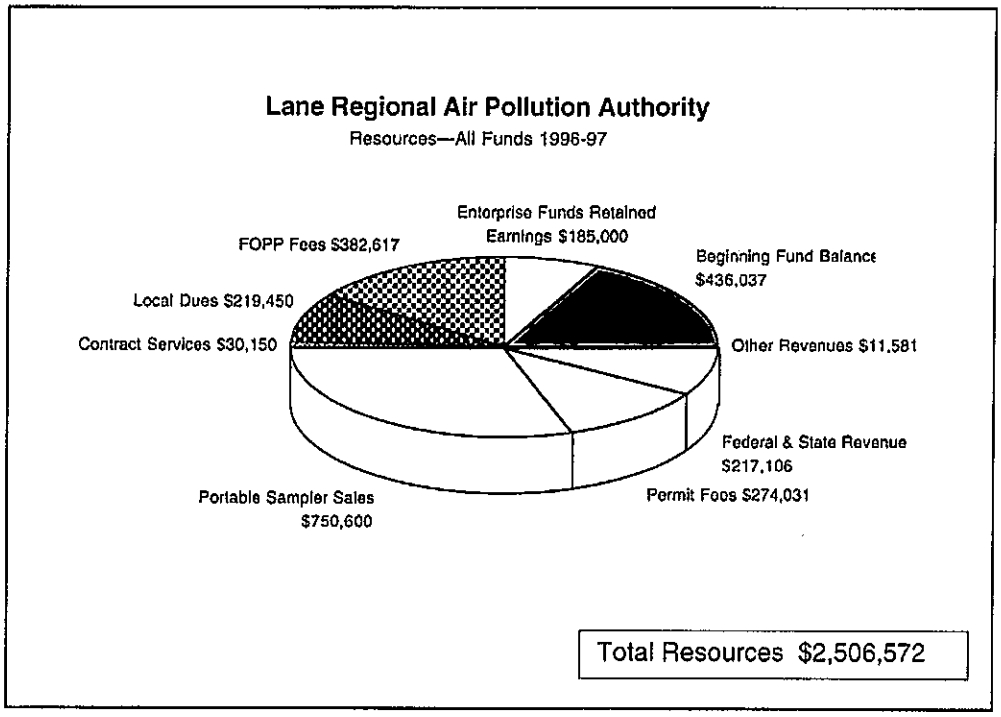
Finance provides the agency with full financial management services, including accounting, budgeting, grant writing and reporting.

Public education and information promotes public understanding of air pollution and methods of prevention through public presentations, media relations, intergovernmental relations, and audio/visual and written materials; designs public education campaigns and programs; produces a quarterly newsletter and yearly report; issues daily air pollution advisories to the media and public; and responds to public complaints and inquiries about air quality.

Air quality planning identifies present and future air quality problems and develops appropriate emission control strategies. Those strategies are designed to achieve and maintain acceptable air quality. One of LRAPA's goals is to forestall or prevent the occurrence of future problems as population growth occurs. LRAPA works together with other local planning, transportation and community development agencies to ensure adequate attention is given to air quality concerns.



Funding / Budget

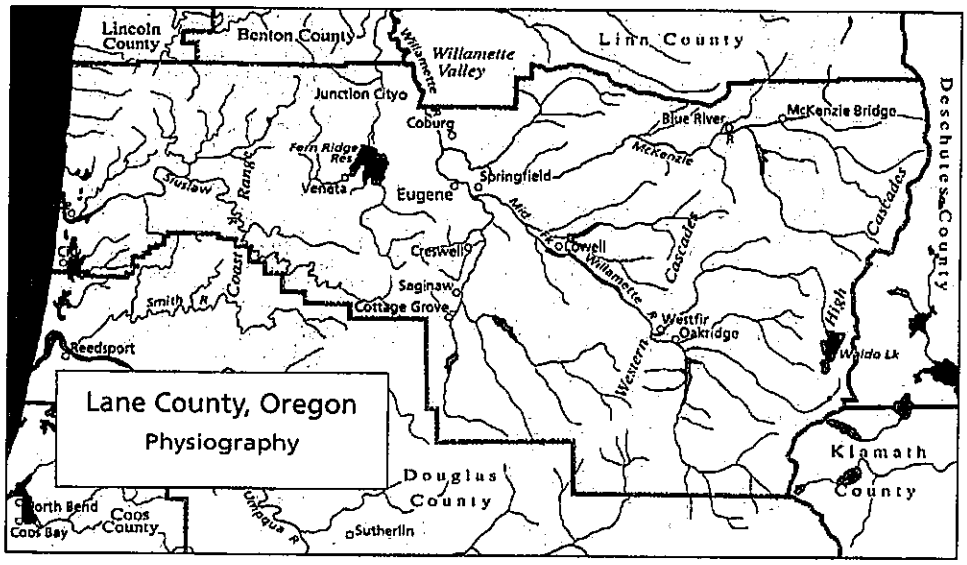


LRAPA's funding comes from many sources, including local contributions (Lane County and the cities of Eugene, Springfield, Oakridge and Cottage Grove), state and federal grants, industrial permit fees and miscellaneous contracts. A beginning fund balance is budgeted to provide for expenses incurred during the early part of the fiscal year, before other revenues are received.

The budget continues to reflect a net growth of LRAPA's regulatory program, primarily due to local implementation of the Clean Air Act requirements. Quality assurance on emissions data supplied to LRAPA by industrial sources have added support functions which also resulted in budget adjustments.

Typical of service-oriented agencies, LRAPA's largest expense item is in the area of personnel costs. Historically, LRAPA has attempted to hold these costs down, and has been successful at holding local member dues constant. Contributions from local member entities were, once again, held constant during FY '96/'97, making this the sixth consecutive year member dues have remained stable.

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 306,000 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 176,500 residents.

The Eugene/Springfield metropolitan area is the most populated portion of Lane County, both in terms of people and industry. Because of this, the area has the greatest potential for air quality degradation as the population continues to grow. Several other areas of Lane County experience seasonal air quality problems due to residential wood burning, forest slash burning and agricultural field burning. Many smaller cities within Lane County are surrounded by large tracts of agricultural and forest land. The city of Oakridge, for example, located about 40 miles southeast of Eugene/Springfield in the Willamette National Forest, receives high concentrations of particulates in the wintertime months from residential home wood heating.

The areas of Cottage Grove, Marcola, Veneta, Elmira, and Junction City experience seasonal air quality problems resulting from slash and agricultural field burning.

Topography and meteorology influence air quality

Much 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 warm air aloft creating temperature inversion conditions. The combination of cold stagnant air and restricted ventilation causes air pollutants to become trapped near the ground. Although temperature inversions can occur anytime, they are most frequent and pose most harm to air quality in the winter when residents are using wood to heat their homes. During these episodes, smoke and gas concentrations climb, deteriorating the local air quality.

Coastal areas of Lane County experience more air movement and fewer inversions.

NAAQS and Local Air Quality

The Environmental Protection Agency (EPA) has established health standards for six outdoor air pollutants (criteria pollutants): particulate matter (PM_{10}), ozone (O_3), carbon monoxide (CO), sulfur dioxide (SO_2), nitrogen dioxide (NO_2) and lead (Pb). These National Ambient Air Quality Standards (NAAQS) are based on protection against adverse health and environmental effects. The concentration of criteria pollutants must be continually measured to ensure the standards are met. Areas that fail to meet the NAAQS are designated as federal "non-attainment" areas by EPA and are required, by law, to have strategic plans developed to bring the areas back into compliance with the standards.

Pollutants

In Lane County, three criteria pollutants are measured: particulate matter (PM_{10}), carbon monoxide (CO) and ozone (O_3). The Eugene/Springfield area is monitored for all three pollutants, while the city of Oakridge is monitored for PM_{10} only.

LRAPA measures pollutants at five locations in Eugene, one location in Springfield, one location in Oakridge (southeast of Eugene/Springfield), one location in Saginaw (south of Eugene/Springfield) and one location in Cottage Grove (south of Saginaw).

During 1996, no NAAQS were violated in Lane County.

Particulate Matter PM_{10}

Both the Eugene/Springfield area and Oakridge have been designated PM_{10} "non-attainment" areas. The Eugene/Springfield area was first designated a "non-attainment" area January 10, 1980, for exceeding the 24-hour secondary "total suspended particulate" (TSP) standard. The TSP standard was changed to the current PM_{10} standard in 1987, which resulted in a PM_{10} "non-attainment" status for the Eugene/Springfield area. Oakridge was proposed a PM_{10} "non-attainment" area in September 1992, and designated in January '94. PM_{10} standards were last exceeded in the Eugene/Springfield area in 1987. Oakridge last exceeded the federal PM_{10} standard in 1993.

Continued

Ambient Air Quality Standards

Pollutant	Federal Standard	Monitoring Status in Lane County
Particulate (PM_{10})		
24-hour standard	150 ug/m³	Required
Annual standard	50 ug/m³	Required
Carbon Monoxide (CO)		
8-hour average	9 ppm	Required
1-hour average	35 ppm	Required
Ozone (O_3)		
1-hour average	0.12 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/m³	Not required

ug/m³ — micrograms per cubic meter
ppm — parts per million

NAAQS and Local Air Quality, Con't.

Carbon Monoxide (CO)
LRAPA began monitoring CO in 1971, and has continued to monitor CO in the downtown Eugene area. The Eugene/Springfield area was designated a "non-attainment" area for CO in 1978, after monitoring data confirmed levels exceeded the federal standards on numerous occasions. The area was redesignated an "attainment" area February 4, 1994. The CO standard was last exceed in 1986 in the Eugene/Springfield area. The standard allows for one eight-hour exceedance per calendar year.

Ozone (O_3)
Ozone has been monitored in the Eugene/Springfield area since May of 1974. The area has remained in attainment with federal standards since that time. Ozone is currently measured at two locations in the metropolitan area. The standard was last exceeded in 1981. One one-hour exceedance per calendar year in any three-year period is allowed without requiring an area being designated as "non-attainment."

New NAAQS Proposed

New health standards were proposed in 1996 by the U.S. Environmental Protection Agency (EPA) for ambient ozone and particulate matter. Review of a number of recent epidemiological studies by EPA revealed the current standards may not be adequately protective of human health. The proposals addressed those concerns.

The EPA is required to set standards for certain pollutants to "protect the public health with a margin of safety," and to review the standards every five years by considering new scientific studies. Based on results of those reviews, EPA proposed the changes.

Particulate Matter (PM)

Proposed changes to the particulate standard place more emphasis on the smaller particles, targeting particulates 2.5 microns in size and smaller. (The human eye is capable of seeing particles 40 microns in size and larger.) Under the proposal, the current PM_{10} standards would be revised and two new $PM_{2.5}$ standards be created. The new standards would include an annual standard of 15 micrograms per cubic meter (ug/m^3), and a 24-hour standard of 50 ug/m^3. EPA has proposed to retain the current PM_{10} annual standard of 50 ug/m^3, and slightly revise the form of the current 24-hour PM_{10} standard (150 ug/m^3).

EPA stated the new levels would provide increased protection against a wide range of PM-related health effects, including premature mortality and increased hospital admissions and emergency room visits, increased respiratory symptoms and disease, decreased lung function, and alterations in lung tissues and structure in respiratory tract defense mechanisms.

Numerous medical studies have concluded that the smallest particles are capable of penetrating deeper into the lungs, causing more damage. The proposed changes have been developed to address those conclusions.

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NAAQS and Local Air Quality, Con't.

Ozone (O_3)

Recent studies on health effects of ozone have concluded that the current ozone standard does not efficiently protect human health. The proposed revisions, which would lower the standard from .12 to .08 parts per million (ppm), and change the standard from a one-hour average to an eight-hour average using the third highest ozone concentration each year for three years, would be protective of health, according to EPA. Revising the standard would provide protection for children and other at-risk populations against a wide range of ozone-induced health effects, many similar to those related to PM exposure.

EPA issued the proposed standards on November 27, 1996, opening up a public comment period to allow interested parties the opportunity to comment on the proposals. Final ruling on the proposal was originally scheduled for June 1997, but was later postponed until July 19. EPA will then have up to three years in which to designate non-attainment areas, with state implementation plans due three years from that date.

How Lane County Measures Up

Although it is too early to make predictions regarding how Lane County will be affected, preliminary analysis of past ozone data suggests the Eugene/Springfield area will be marginal, at best. The trend over the past 10 or so years has been a gradual climb upward, with the 1996 third highest concentration slightly greater than .09 ppm — above the .08 ppm proposed standard. Whether or not the trend continues in the same pattern will determine if the area meets or exceeds the standards.

Local predictions on the effects of the proposed $PM_{2.5}$ standards are even more difficult to determine. EPA has not yet established acceptable (reference) monitoring methods for measuring $PM_{2.5}$, making the examination of possible correlations difficult. However, some preliminary work completed by DEQ using available $PM_{2.5}$ monitoring equipment and nephelometer data has indicated that a number of areas in Oregon, including Lane County, may fail to meet the proposed annual standard, and a few areas in the state, including Oakridge, may have difficulty meeting the proposed daily standard.

Continued

Proposed Ambient Air Quality Standards

Pollutant	Current Federal Standard	Proposed Federal Standard
Particulate		
PM_{10} 24-hour standard	150 ug/m³	150 ug/m³, using 3-year average of 98th percentile
Annual standard	50 ug/m³	No change
$PM_{2.5}$ 24-hour standard	No standard	50 ug/m³, using 3-year average of 98th percentile
Annual standard	No standard	15 ug/m³
Ozone (O_3)		
1-hour standard	0.12 ppm	No standard
8-hour standard	No standard	0.08 ppm, using 3-year average of third-highest daily 8-hour average

ug/m³ — micrograms per cubic meter
ppm — parts per million

NAAQS and Local Air Quality, Con't.

LRAPA Responds

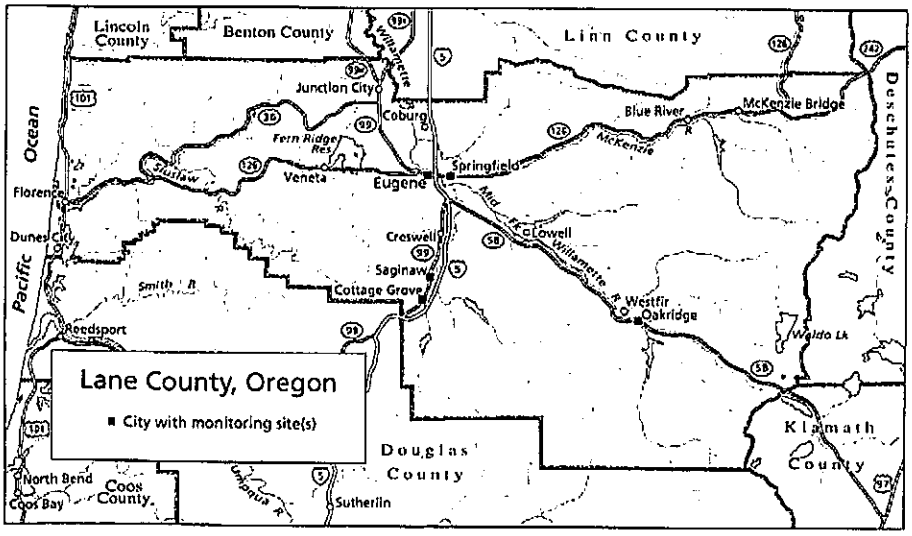
LRAPA is currently discussing possible strategies with which to obtain preliminary $PM_{2.5}$ monitoring data.

The agency is reviewing a couple of strategies, which includes the possibility of modifying some agency-owned monitoring equipment already to begin preliminary monitoring during 1997. The agency is also considering a funding request from EPA for a monitoring study in Oakridge during the '97 home wood heating season. The methods used would not be EPA reference methods, but would give the agency a preliminary look at the situation.

The agency will incorporate new $PM_{2.5}$ strategies and current PM_{10} strategies to protect the area from both pollutants. Many of the current strategies used to reduce PM_{10} also are effective in the reduction of $PM_{2.5}$, such as home wood heating curtailment programs, dust suppression and industrial controls. However, new strategies may be needed, which target gases from combustion sources, such as the automobile and industry. Gases from these sources often can combine to form the very fine particles that contribute to $PM_{2.5}$, making emissions from these sources targets for control.

The agency has recently requested grant funding to develop a comprehensive public education campaign to educate the community about ozone, its causes and associated health effects.

The combination of the new proposed standards and LRAPA's 10-year trend data provide evidence change is necessary. Education will be an integral part of the overall strategy, with much emphasis placed on reducing dependency on the automobile.



Lane County map highlighting locations of cities with air monitoring sites

Criteria Pollutants

Pollutant	Description	Sources	Health Effects
Particulates PM_{10}	Respirable particles less than 10 microns in size	Residential wood burning Industry Fugitive dust Construction activities Street sand application Other combustion sources 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
Carbon Monoxide CO	An odorless, tasteless, colorless gas which is emitted primarily from any form of 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 oxygen; causes headaches, dizziness, nausea, listlessness, and in high doses, may cause death
Ozone O_3	A toxic gas associated with photochemical smog; formed when nitrogen oxides and volatile organic compounds photochemically react with one another in the presence of sunlight and warm temperatures	Volatile organic compounds and nitrogren oxides from gasoline powered mobile sources, etc. Industry Power plants Gasoline transfer and storage 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
Nitrogen Dioxide NO_2	A poisonous gas produced when nitrogen oxide is a by-product of suffficiently high burning temperatures	Combustion processes: fossil fuel power motor vehicles industry Explosives manufacturing Fertilizer manufacturing	Harmful to lungs, irritates bronchial and respiratory systems; increases adverse symptoms in asthmatic patients. Precurser to ozone, contributes to acid fog and rain
Sulfur Dioxide SO_2	A pungent, colorless gas that combines with water vapor to become sulfurous acid (H_2SO_3), a mildly corrosive compound; when sulfurous acid combines with oxygen, it produces sulfuric acid (H_2SO_4), a very corrosive and irritating chemical	Fossil fuel power plants Non-ferrous smelters Kraft pulp production	Increases the risk of adverse symptoms in asthmatic patients; harmful to plant life, irritates respiratory system Dissolves stone and corrodes iron and steel
Lead Pb	A once-widely used metal, which may accumulate in the body	Leaded gasoline Smelting Battery manufacturing Battery recycling	Disturbs motor function and reflexes; impairs learning; causes intestinal distress, anemia and damage to the central nervous system, kidneys and brain Children more adversely affected than adults

Particulate Matter Concentrations

Yearly PM_{10} Levels — 1987 - 1996

Site #	Site Name	Notes	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
2018039	Westmoreland Elementary School	a	---	39	28	20	---	---	---	---	---	---
		b	---	76	120	30	---	---	---	---	---	---
		c	---	74	91	26	---	---	---	---	---	---
		d	---	0	0	0	---	---	---	---	---	---
2018056	Lane Community College (dwntwn)	a	37	29	27	23	27	25	25	21	21	18
		b	129	72	91	50	95	61	68	66	52	60
		c	124	69	79	48	73	54	59	42	49	46
		d	0	0	0	0	0	0	0	0	0	0
2018058	Key Bank — Hwy 99N	a	43	37	34	31	38	31	33	31	27	22
		b	175	129	146	118	126	123	103	125	84	66
		c	174	118	125	102	121	98	92	62	70	60
		d	3	0	0	0	0	0	0	0	0	0
2018060	Amazon Park	a	32	26	26	24	34	25	24	20	19	17
		b	122	95	92	49	73	101	70	71	63	61
		c	117	91	86	46	62	55	64	46	57	45
		d	0	0	0	0	0	0	0	0	0	0
2030003	Willamette Acti. Center— Oakridge	a	---	34	—	33	37	32	32	26	23	22
		b	---	199	165	149	187	178	166	144	142	84
		c	---	177	122	142	184	161	151	143	135	78
		d	---	4	1	0	9	2	1	0	0	0
2033060	Springfield City Hall	a	35	34	28	25	30	27	28	24	22	19
		b	104	75	91	57	97	56	66	74	48	58
		c	96	67	71	56	89	55	61	51	44	55
		d	0	0	0	0	0	0	0	0	0	0
2033061	Springfield High School	a	---	---	---	---	29	31	25	---	---	---
		b	---	---	---	---	99	53	66	---	---	---
		c	---	---	---	---	85	53	60	---	---	---
		d	---	---	---	---	0	0	0	---	---	---
2009002	Harrison Elem. Sch. — Cottage Grove	a	---	---	---	24	29	27	26	23	22	19
		b	---	---	---	77	132	69	68	109	93	52
		c	---	---	---	59	71	60	67	57	46	49
		d	---	---	---	0	0	0	0	0	0	0
2018063	Santa Clara	a	---	---	---	---	---	---	---	20	18	17
		b	---	---	---	---	---	---	---	107	68	59
		c	---	---	---	---	---	---	---	100	63	56
		d	---	---	---	---	---	---	---	0	0	0

Standards:

24-hour average — 150 micrograms/cubic meter

Annual arithmatic 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

Carbon Monoxide Concentrations

Yearly Carbon Monoxide Levels — 1987 - 1996

Site #	Site Name	Notes	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
2018056	Lane Comm. College (downtown)	a	7.1	7.3	6.1	5.1	5.5	6.5	4.9	6.0	5.3	4.6
		b	6.6	7.1	6.0	4.8	5.4	5.5	4.7	4.5	4.7	4.6
		c	0	0	0	0	0	0	0	0	0	0
2018060	Amazon Park *	a	5.3	4.4	---	---	---	---	---	---	---	---
		b	5.1	3.9	---	---	---	---	---	---	---	---
		c	0	0	---	---	---	---	---	---	---	---
2018058	Sacred Heart ** General Hospital	a	---	---	8.3	6.0	7.9	6.6	6.2	6.6	6.4	5.6
		b	---	---	8.2	5.5	6.7	6.4	5.9	6.3	5.7	5.5
		c	---	---	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
- * Site operated January - February 1988
- ** Site began operation in August 1989

Ozone Concentrations

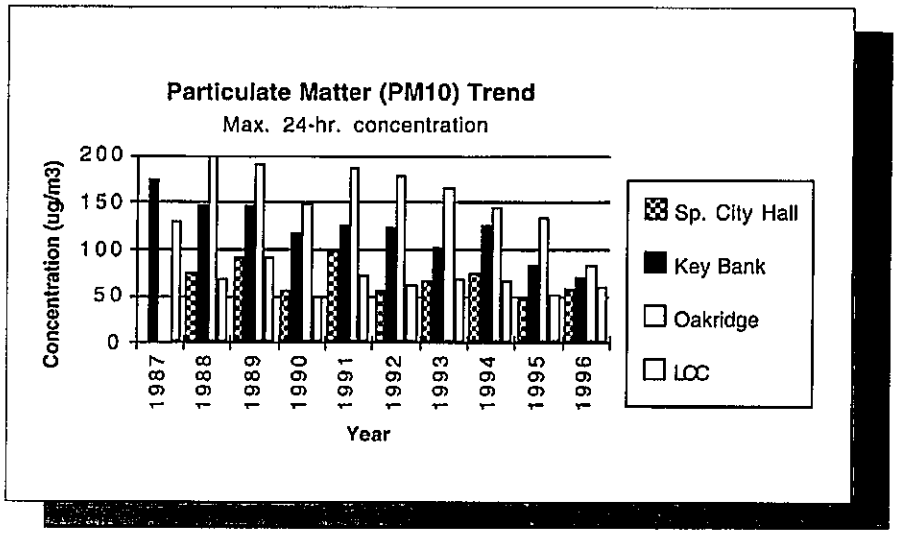
Yearly Ozone Levels — 1987 - 1996

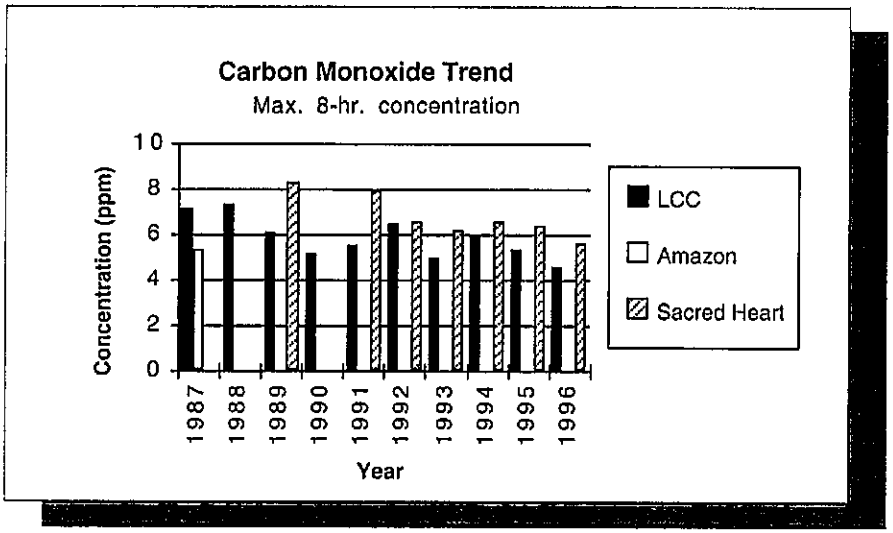
Site #	Site Name	Notes	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
2000036	Delight Valley School — Saginaw	a	.114	.118	.089	.092	.094	.103	.084	.094	.090	.111
		b	.112	.110	.075	.091	.092	.095	.080	.090	.087	.104
		c	0	0	0	0	0	0	0	0	0	0
2018060	Amazon Park	a	.120	.146	.084	---	.089	.099	.081	.085	.089	.111
		b	.111	.123	.078	---	.088	.095	.073	.082	.077	.105
		c	0	2	0	---	0	0	0	0	0	0

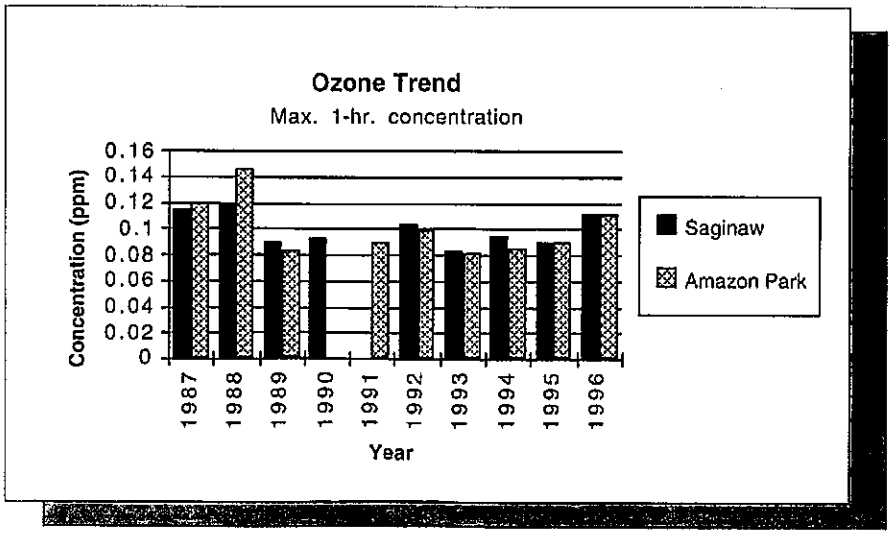
Standard:
1-hour average: 0.12 parts per million

Notes:
- **a** Highest 1-hour concentration
- **b** 2nd highest 1-hour concentration
- **c** Number of exceedances
- **---** No data collected at site during year

Air Quality Trends







Air Pollution Index Summary

Air Pollution Index Summary				
1992 Number of days				
	Good	Moderate	Unhealthful	Total
CO	138	29	0	167
O_3	104	37	0	141
PM_{10}	38	20	0	58
Totals	280	86	0	366

1993 Number of days				
	Good	Moderate	Unhealthful	Total
CO	115	21	0	136
O_3	128	11	0	139
PM_{10}	54	36	0	90
Totals	297	68	0	365

1994 Number of days				
	Good	Moderate	Unhealthful	Total
CO	154	18	0	172
O_3	118	28	0	146
PM_{10}	31	16	0	47
Totals	303	62	0	365

1995 Number of days				
	Good	Moderate	Unhealthful	Total
CO	161	12	0	173
O_3	120	19	0	139
PM_{10}	41	12	0	53
Totals	322	43	0	365

1996 Number of days				
	Good	Moderate	Unhealthful	Total
CO	179	9	0	188
O_3	113	32	0	145
PM_{10}	25	8	0	33
Totals	317	49	0	366

Lane County Home Wood Heating Programs

The Eugene/Springfield area and 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} emissions in these areas. Home wood heating advisory programs in Lane County use a simple "green," "yellow," "red," advisory system to inform residents whether or not residential wood burning is allowed. The programs do not generally ban the practice of burning, but rather ban visible emissions during "red" advisory periods. Residents are notified of the daily advisories through local media, such as newspapers, and radio and television stations. In addition, residents may call a 24-hour advisory line for up-to-date advisory information.

Eugene/Springfield Program

The Eugene/Springfield area began its home wood heating advisory program in 1986 to reduce pollution caused from residential home heating, a major wintertime source of particulates in the Eugene/Springfield area. The area was designated a federal non-attainment area in 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 PM_{10} standards.

The Eugene/Springfield mandatory program is in its fifth 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 each year. Residents who qualify under economic need guidelines may be granted exemptions from the program on a yearly basis.

In addition to the "green," "yellow," "red," advisory, 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.

Because this program is mandatory, residents who violate a red advisory provision may be fined $50 to $500. No "red" advisory periods have been called since inception of the mandatory program, nor have the PM_{10} standards been exceeded since 1987, when levels rose above the standards on three occasions.

Oakridge Program

The city of Oakridge adopted its 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, in January of 1994, EPA officially declared Oakridge a PM_{10} non-attainment area. The 1995-'96 season marked the seventh season of the program.

Like the Eugene/Springfield area, the advisory season runs from November 1 through February of each year. However, unlike Eugene/Springfield, Oakridge's program has remained voluntary pending adoption of its State Implementation Plan (SIP). The SIP, completed in '96, outlines strategies to be used for curbing pollution in Oakridge.

Strategies in the SIP include the reduction of PM_{10} emissions through voluntary curtailment with a provision for mandatory curtailment upon failure to meet a predetermined attainment schedule, continuation of a city-operated program to replace old, uncertified wood stoves with cleaner burning systems, enhanced public education, and measures to reduce road dust. A comparative study of home wood heat use and its relation to changes in heating systems, and a chemical mass balance analysis of air monitoring filters, have helped LRAPA staff analyze the strategies needed for compliance with federal clean air standards.

The Oakridge SIP was adopted by the LRAPA board of directors on August 13, 1996. The SIP was approved by the Oregon Environmental Quality Commission Oct 11, and submitted to EPA December 9.

Home Wood Heating, Con't.

Home wood heating advisories are an integral part of the home wood heating program. Advisories are determined by evaluating current pollution levels and meteorological conditions of past, current and future weather forecasts. Typically, a "green" advisory is called when pollution levels are less than 50 percent of the federal standard. A "yellow" advisory is called when pollution levels are generally between 50-70 percent of the federal standard. A stage one "red" advisory is called when levels rise between 70-85 percent of the standard, while a stage II advisory is called when levels rise above 85 percent of the standard and weather conditions are forecast to remain the same or worsen.

Eugene/Springfield HWH Advisories 1986 - 1996 Season

Season Year	Yellow	Red I	Red II	Exceedances
1986-1987	20	0	0	3
1987-1988	17	1	0	0
1988-1989	14	2	1	0
1989-1990	25	0	0	0
1990-1991	4	1	0	0
1991-1992	1	0	0	0
1992-1993	3	0	0	0
1993-1994	0	0	0	0
1994-1995	0	0	0	0
1995-1996	0	0	0	0
1996-1997	0	0	0	0

Oakridge HWH Advisories 1988 - 1996 Season

Season	Yellow	Red	Exceedances
1988-1989	2	3	—
1989-1990	19	2	—
1990-1991	8	13	8
1991-1992	5	11	3
1992-1993	11	7	1
1993-1994	16	3	0
1994-1995	7	3	0
1995-1996	5	0	0
1996-1997	5	0	0

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, Lodge pole	20
Pine, Ponderosa	18
Pine, White	18
Poplar	12
Walnut, Black	25
Walnut, English	25
Willow	16

Wood Burning Advisories (November — February)

Eugene/Springfield

Green— means air quality is good at this time and unrestricted use of a wood heating device is allowed.

Yellow— means air quality is deteriorating. Residents are asked to cut back on home wood heating use.

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.

Red II— means all burning must stop. Use of a pellet stove is allowed if no visible smoke is emitted into the air.

Oakridge

Green— Burn only dry, well-seasoned wood.

Yellow— Don't burn unless absolutely necessary.

Red— Stop using wood stoves and fireplaces.

1996 Home Wood Heating Exemptions (Eug./Spfld.)

Number of applications received	47
Number of exmptions granted	47
Economic need exemptions	47
*Sole source exemptions	0
Number of exemptions denied	0

*Sole source exemption ended 6/30/96 (prior to the '97 season)

Where to find advisory information

- ✔ Major area radio stations
- ✔ Local television stations during weather portion of newscasts
- ✔ Local newspapers
- ✔ Eugene/Springfield area home wood heating call line — **746-HEAT**
- ✔ Oakridge home wood heating call line — **782-2414**

Operating Permit Program Summary

About 150 Lane County industrial and commercial businesses have LRAPA air permits, allowing them to operate in the county. Typically, two types of permits are issued — operational permits, which allow industrial sources to operate; and construction-type permits, which allow sources to build new facilities or modify existing ones. Both permits are designed to allow an industry or business to operate in a manner consistent with LRAPA's goal to protect the environment.

Operational Permits

LRAPA issues two types of operating permits, the Air Contaminant Discharge Permit (ACDP) and Title V Federal Operating Permit (Title V).

ACDPs are most commonly issued by LRAPA. Of the 150 or so permitted industries in Lane County, about 125 require ACDPs. The remaining permitted industries are required to have Title V permits.

Generally, ACDPs are issued to all permitted industries except those which have the potential to emit into the air more than 100 tons of any criteria pollutant (see pg. 10), or 10 tons or more of any single hazardous air pollutant (HAP) or 25 tons or more of any combination of HAPs (as defined by EPA). In those cases, companies are required to obtain Title V permits.

Companies can choose to opt out of the comprehensive Title V permitting process by agreeing to limit their emissions to levels below the Title V program threshold, thereby avoiding the comprehensive permitting process of the Title V program. About 25 Lane County industries have chosen to do this, thereby reducing their permitting costs, while at the same time, making improvements to the airshed by limiting the amount of pollutants emitted into the air.

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

Construction Permits

Prior to construction of a new industrial source or modification of an existing industrial source, a construction permit is issued to assure that the project complies with applicable LRAPA rules so that the resulting construction will not jeopardize the airshed. Construction permits address such things as pollution control equipment, and operation and maintenance requirements, but do not allow operation without a valid operating permit.

Complaint Summary

LRAPA received 1150 complaints in 1996, a substantially greater number than recorded in 1995, but well within margins documented in past years.

Complaints, compiled on a monthly basis into one of ten categories, were up 63 percent in '96 over '95, according to LRAPA data. Agricultural field burning and industry lead the categories for greatest number of complaints, followed by open burning, backyard burning, and home wood heating. Other categories include dust, slash burning, general air quality, unknown sources and miscellaneous.

Four of the ten categories showed increases in numbers of complaints in '96 over '95, with the greatest increase, at 148 percent, in the field burning category. Backyard burning complaints increased by 70 percent, open burning by 16 percent and dust by 6 percent.

Home wood heating complaints, which rose sharply with the inception of the mandatory advisory program in 1990, have since stayed fairly constant. LRAPA believes this is in part due to increased public education and greater public awareness regarding health implications of wood stove smoke.

The percent changes in numbers of complaints from '96 over '95, by category, are as follows:

- Backyard burning..... +70%
- Dust ..... +6%
- Field burning..... +148%
- General air quality.... -40%
- Home wood heating .... -7%
- Industry ..... -7%
- Miscellaneous..... -29%
- Open burning ..... +16%
- Slash burning..... -45%
- Unknown..... -26%
- Total complaints ..... +63%

Complaints 1989 - 1996

Year	1989	1990	1991	1992	1993	1994	1995	1996
Backyard burning	46	54	46	60	63	88	50	85
Dust	8	0	11	7	14	8	17	18
Field burning	349	508	834	417	187	407	301	747
General air quality	9	24	17	2	5	3	5	3
Home wood heating	29	50	49	40	53	48	41	38
Industry	100	114	146	111	111	134	99	92
Miscellaneous	68	120	59	47	19	45	35	25
Open burning *	---	85	59	69	85	74	77	89
Slash burning	41	247	28	42	16	64	29	16
Unknown	30	36	58	38	36	78	50	37
Total	680	1238	1307	833	589	949	704	1150

* Began calculation in 1990

Enforcement Summary

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, penalties collected from enforcement actions vary from year to year. However, the dollar amount collected does not reflect the penalties assessed or settled during the year, due to pending cases and collections received on previous years' penalties. Several 1996 enforcement actions remained pending as of the close of the year.

LRAPA collected $49,950 in penalties during 1996. All penalties collected are forwarded to Lane County.

Enforcement Actions

Year	1989	1990	1991	1992	1993	1994	1995	1996
Administrative warnings and Notices of non-compliance	14	2	10	10	18	32	47	89
Notices of violation	16	11	19	10	8	3	—*	—*
Notices of violation with civil penalty	8	8	23	11	26	54	33	25
Notices of permit violation	0	0	0	0	0	9	—**	—**
Total $$ collected	4,640	1,250	10,565	5,500	29,560	63,958	22,635	49,950

* Notices of violation without civil penalty assessments are no longer issued.
** Notices of permit violations are not longer issued.

Field Burning Summary

As reported by the Oregon Department of Agriculture, open field burning in 1996 totaled 76,417 acres in western Oregon. In the south Willamette Valley of western Oregon, 49,620 acres were open burned in '96, down slightly from '95 totals.

Open burning of harvested perennial and annual grass seed and cereal grain crops is practiced as a means of straw disposal and ground sanitation. Oregon law allowed up to 125,000 acres to be open burned during '96. Beginning in 1998, open field burning will be restricted to 65,000 acres burned annually.

Acreage propane flamed during the season totaled 3,985, down slightly from the 4,145 acres flamed in '95. Stack/pile burning, which runs through March of '97, has been estimated at 6,070 acres, down substantially from the 14,078 acres stack burned the previous year.

Officially, smoke intruded into the Eugene/Springfield metropolitan area on one occasion for one hour of impact. However, LRAPA staff answered nearly 750 field burning phone complaints during the three-month season.

Total acreage burned in western Oregon collectively was 86,472, down 15 percent from the 101,8169 acres burned in '95. Acreage propane flamed and stack/pile burned is not recorded separately for the south Willamette Valley, making it impossible to determine the total acreage burned in the local area.

Field Burning Year-end Totals

Year end	S. Willamette acres burned	Number of intrusions	Impact hours	Number of complaints
1996	49,620	0/Eug. 1/Spfld.	0/Eug. 1/Spfld.	747
1995	54,025	1/Eug. 0/Spfld.	1/Eug. 0/Spfld.	301
1994	51,740	0/Eug. 0/Spfld.	0/Eug. 0/Spfld.	407
1993	43,114	0/Eug. 0/Spfld.	0/Eug. 0/Spfld.	186
1992	51,813	2/Eug. 1/Spfld.	12/Eug. 11/Spfld.	417
1991	55,205	2/Eug. 2/Spfld.	2/Eug. 3/Spfld.	834
1990	97,106	1/Eug. 3/Spfld.	6/Eug. 23/Spfld.	508

Special Projects

Special projects/studies carried out by LRAPA may be wholly conducted internally, or in support of planning or community development efforts by other local, state and federal agencies. These studies and projects are conducted in addition to routine agency functions and often require the use of additional temporary staff.

A number of special studies/projects were conducted in 1996.

- State Implementation Plan document for the city of Oakridge. Completed and waiting for EPA approval.
- Eugene/Springfield PM_{10} SIP redesignation request. Continued work on SIP redesignation. Project was put on hold in late '96 due to EPA's proposal to change PM_{10} and ozone standards.
- Small Business Assistance Program. Contracted with Lane Community College to partner with the college's Business and Industry Services Development Center. Classroom workshops are scheduled to begin in Fall '97 to help small businesses understand and comply with CAA requirements.
- Enhanced mobile ozone study. Project enhanced a 1995 study to determine whether elevated ozone levels occur in areas not currently monitored. Results of the study confirmed current sites are correctly located.
- Task force committee review/comparison of LRAPA and state air rules. Project revealed similarities and differences between the state and local rules. The LRAPA board of directors plans to complete review of the results in 1997.

Giving tarps to local residents to cover uncovered wood piles is just one of several strategies highlighted in the Oakridge SIP.

Community Outreach

Community outreach and public education are important parts of LRAPA's general program. Increased public awareness about the health effects of poor air quality is essential with a program such as LRAPA's, which depends on individual and community ownership of local air-quality issues.

LRAPA provides these services to the community in several different ways.

- *Local media:* Staff is in daily contact with local media, who, in turn, disseminate air quality information to the general public. Press releases, public service announcements and paid advertising are used to inform the public of important issues.

- *Educational material:* LRAPA provides to the general public educational information in the form of visual aids, video programs, research materials, brochures, fact sheets, newsletters and annual reports on a wide-range of topics produced by LRAPA, the Oregon Department of Environmental Quality (DEQ), Environmental Protection Agency (EPA) and the American Lung Association. An informational catalog is available featuring all educational materials available from the agency.

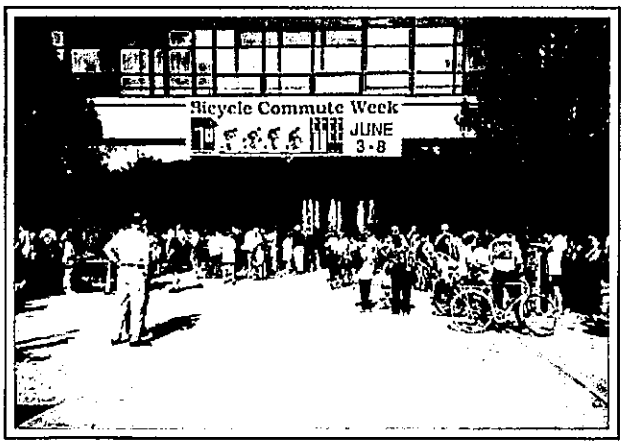
- *Library materials:* The agency has an extensive library of air pollution literature which is open for public use during normal business hours. The Federal Register, case studies, scientific and environmental magazines, text books and statistical information are available in the library.

- *Presentations:* Staff members are frequently asked to speak on air-quality-related issues before service clubs, professional associations, public schools and private corporations.

- *Local fairs/trade shows:* LRAPA takes advantage of local fairs and events whenever possible to enhance the public's awareness of air quality issues.

- *Intergovernmental projects:* Working with other agencies on air-quality-related projects has become commonplace for LRAPA. Several joint transportation-related projects to enhance local awareness have been team efforts by LRAPA, Lane Transit District, Lane Council of Governments, the cities of Eugene and Springfield, and several state agencies.

- *Customer service evaluation:* An ongoing program designed to track agency performance continues to demonstrate agency customer service effectiveness. Customer comment cards are sent rountinely to individuals and businesses that do business with LRAPA. Customers are asked to rate the agency on a number of issues, and to provide any pertinent comments.



One of several intergovernmental community public education clean-air events LRAPA helped sponsor.

LRAPA Phone Numbers

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Business Office	726-2514
Eugene/Springfield Home Wood Heating Advisory Line	746-HEAT
Eugene/Springfield Backyard Burning Advisory Line	726-3976
Oakridge Home Wood Heating Advisory Line	782-2414
24-Hour Complaint Line	726-1930
LRAPA Air Line	485-2000, ext. 4273

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