1995 Annual Report

Lane Regional
Air Pollution Authority

Director's Message

Donald R. Arkell
Director

1995 continued to be a year with much transition for LRAPA, due to Clean Air Act requirements pertaining to industrial sources subject to the federal operating permit system (Title V). During 1995, LRAPA continued to work with industry regarding compliance status in preparation for Title V permits. With help from the agency's citizens advisory committee, LRAPA was successful at implementing its performance feedback project, designed to solicit information to help evaluate performance. We believe this effort benefits both the agency and the community by providing an impartial means to evaluate performance.

We began to feel some of the pressures of growth in the area. Construction of a number of new and/or expanded facilities added to the higher than anticipated workload for the agency. We expect the overall workload to continue to increase, and will continue to work on streamlining the permitting process.

Added industrial growth has triggered heightened local concerns about toxic and hazardous pollutants in the environment. These concerns have challenged the agency to reevaluate its priorities on air quality improvement. Public education regarding all sources of toxic and hazardous pollutants, including transportation and wood burning in addition to industry, will be emphasized in the upcoming year.

We began to reexamine long-term air quality impacts of population growth. Although air quality has improved over the past ten or so years, stresses from population growth will begin to outweigh the improvements, due to our limited airshed, even more so than growth we're experiencing in new industries. Continued public education will be an integral part of the agency's program as we continue to face challenges of growth.

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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.

Mark Hommer — Chair
LRAPA Board Appointment
Ralf Walters
Springfield City Council
Steve Cornacchia
Lane County Board of Commissioners
Steve Dodrill
Eugene City Council Appointment
Kevin Hornbuckle
Eugene City Council
Al Johnson
Eugene City Council Appointment
Pat Patterson
Cottage Grove City Council

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
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*	4 yrs. service
Dan Shults — Vice Chair *Representing Fire Suppression*	3 yrs. service
Steve Allen *Representing Fire Suppression*	1 yr. service
Tamara Davis *Representing General Public*	2 yrs. service
John Fischer *Representing General Public*	6 yrs. service
Paul Kuhlmann *Representing General Public*	3 yrs. service
William Nagel *Representing General Public*	6 yrs. service
John Santerre *Representing General Public*	1 yr. service
Dave Seluga *Representing Industry*	2 yrs. service
Fred Walter *Representing General Public*	5 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 16 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.

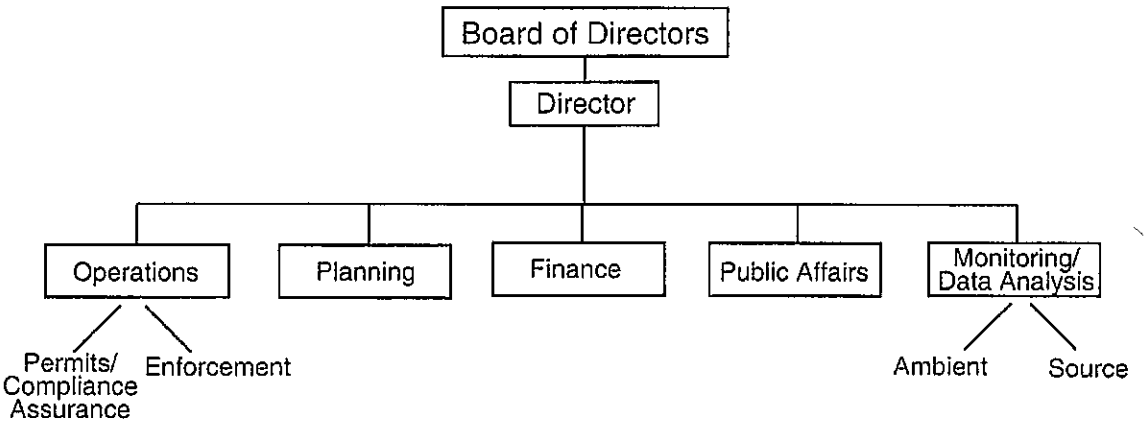
Source monitoring provides a quality assurance program for continuous monitoring at air emission sources.

Administrative

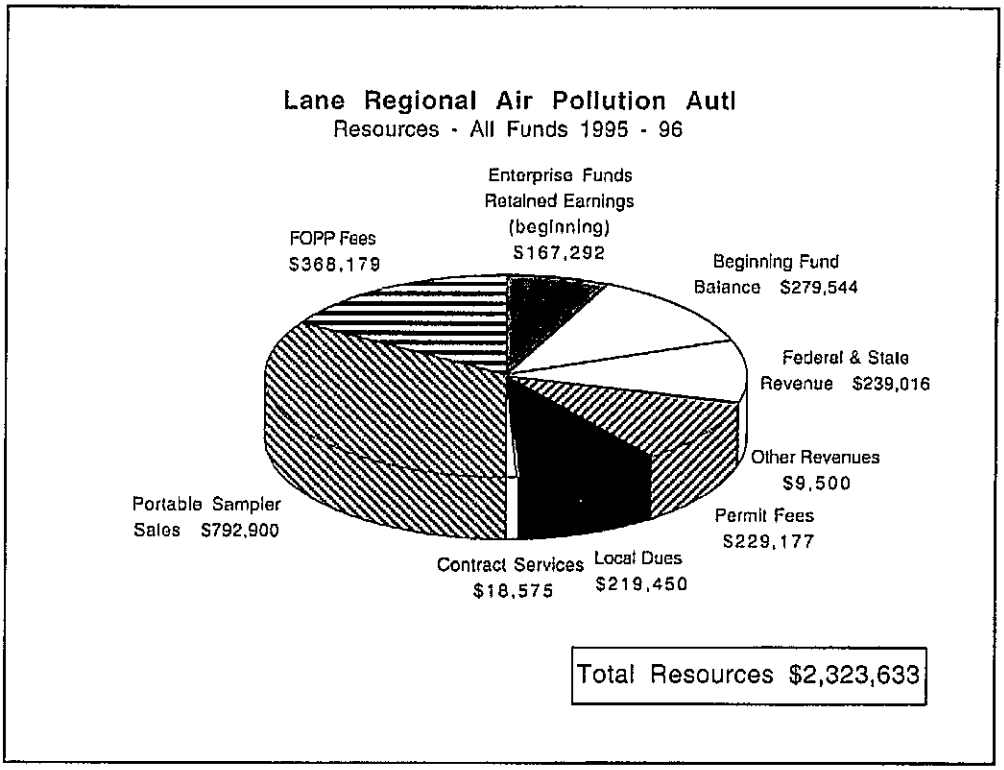
Finance provides the agency with full financial management services, including accounting, budgeting, grant writing and reporting.

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



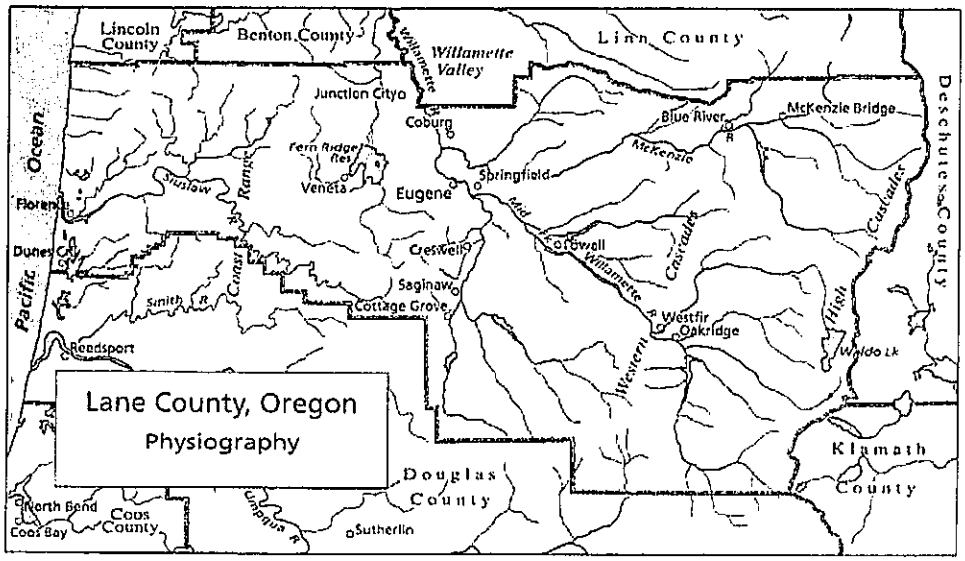
LRAPA's funding comes from many sources, including local contributions (Lane County and the cities of Eugene, Springfield, Oakridge and Cottage Grove), state and federal grants, industrial permit fees and miscellaneous contracts.

The FY '95/'96 budget reflects a net growth of LRAPA's regulatory program, primarily due to local implementation of the Clean Air Act requirements. There has been a substantially higher effort in the permitting and compliance assurance program relating to major facilities. Quality assurance on emissions data supplied by affected industrial sources added support functions which also resulted in budget adjustments.

Beginning in FY '94, the program budget included the Federal Operating Permit Program (FOPP) fund. This fund is required by federal and state law to maintain distinct cost accounting for all activities associated with the Federal Operating Permit Program. This program has been designed to replace regular industrial permit fees from major sources with fees based on actual emissions and program costs. Federal law requires that all direct and indirect costs associated with the program must be entirely funded by flat fees from the affected major sources.

Contributions from local member entities was, once again, held constant during FY '95/'96, making this the fifth 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 302,000 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 171,000 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 four locations in Eugene, two locations 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 1995, no NAAQS were violated in Lane County.

Particulate Matter PM_{10}

Both the Eugene/Springfield area and Oakridge have been designated as 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.

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 designated as "non-attainment."

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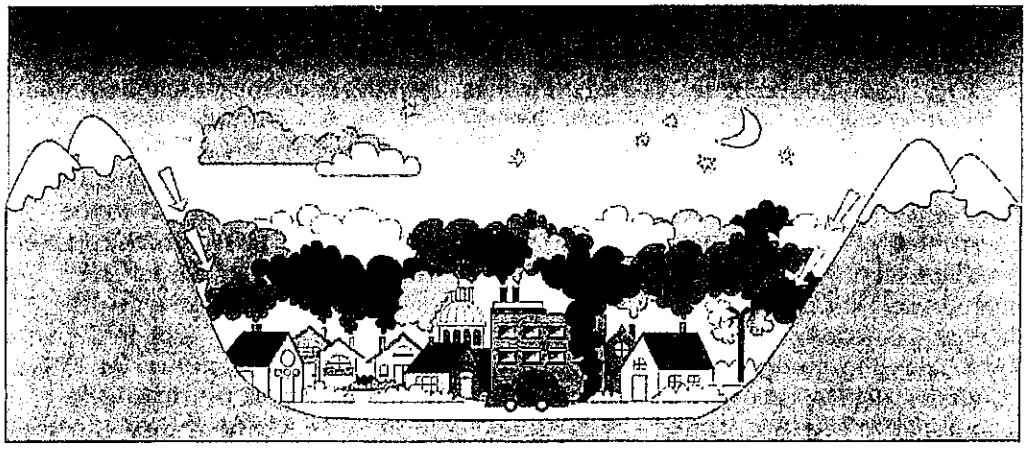
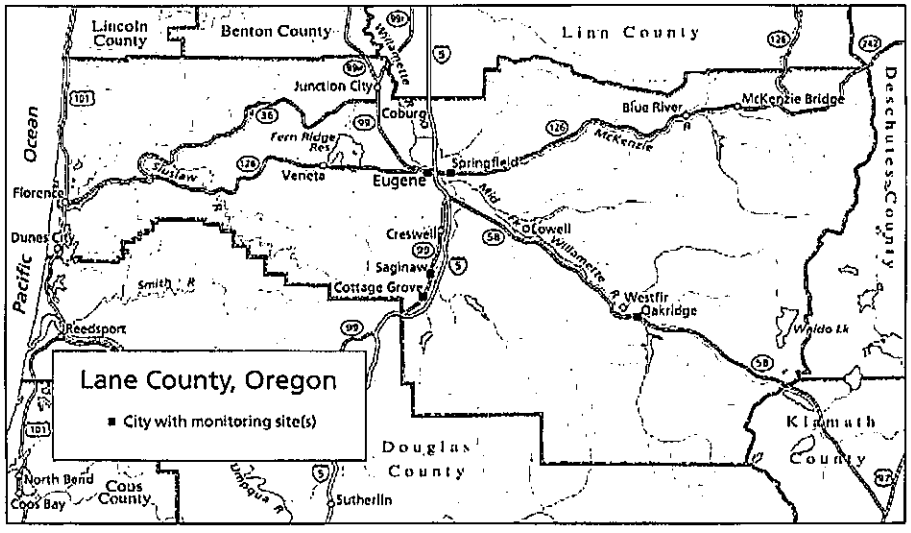
Local Air Quality, Con't.



Graphic depiction of topography of the greater Eugene/Springfield area and city of Oakridge. As demonstrated, the bowl effect often traps air at ground level, causing buildups of air pollutants.



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 nitrogen 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 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

Criteria Pollutants, Con't.

Federal regulations specify requirements for monitoring each criteria pollutant. Monitoring and frequency schedules for states are determined by geographic location and severity of the problem.

PM_{10} (Fine Particulate Matter) Monitoring Requirements, Schedules and Methods

Federal PM_{10} Reporting Requirements

- Sixty to 365 24-hour concentrations must be taken per year on a set schedule. The number of samples required per year depends on the severity of the problem.

- The number of 24-hour concentrations greater than 150 micrograms/cubic meter in any calendar year indicates the number of exceedances of the *daily* standard. The standard allows one 24-hour exceedance per calendar year.

- An arithmetic mean of all 24-hour concentrations measured in a calendar year greater than 50 micrograms/cubic meter indicates an exceedance of the *annual* standard.

Lane County PM_{10} Monitoring Schedule

- Eugene/Springfield: Sampling is required once every six days continuously year-round, and daily during the winter. LRAPA samples daily from October 1 through March 31. Samples are taken over a 24-hour period from midnight to midnight.

- Oakridge: Daily sampling is required from October 1 through March 31. Samples are required once every six days from April 1 through September 30. Samples are taken on a 24-hour basis.

Lane County PM_{10} Monitoring Methods

- *Hi-Volume Sampler:* Samples are collected with "high-volume" samplers which operate somewhat like a vacuum cleaner. Air is drawn through a separator which allows particles less than 10 microns in size to pass at a flow-rate of 40 cubic feet per minute. Samples are collected for 24 hours then weighed, expressed as micrograms of particulate per cubic meter of air sampled.

- *Medium-Volume Sampler:* "Medium-volume" samplers draw air through pre-weighed quartz fiber filters at about 1.13 cubic feet per minute. Samples are collected for 24 hours then weighed, expressed as micrograms of particulate per cubic meter of air sampled.

- *MiniVol Sampler:* "MiniVol" samplers are portable special study samplers. The sampler draws air through a separator, which allows particles less than 10 microns in size to pass onto a filter at a flow-rate of five liters per minute. The sampler can program up to six sampling runs during a 24-hour period.

Continued

Criteria Pollutants, Con't.

Carbon Monoxide (CO)
Monitoring Requirements, Schedules and Methods

Federal Carbon Monoxide Monitoring Requirements

- Hourly concentrations must be measured continuously year-round.
- The number of one-hour concentrations greater than 40 milligrams/cubic meter in any calendar year indicates the number of exceedances of the *one-hour* standard. The standard allows for one one-hour exceedance per calendar year.
- The number of eight-hour concentrations greater than 10 milligrams/cubic meter indicates the number of exceedances of the *eight-hour* standard per calendar year. The standard allows for one eight-hour exceedance per calendar year.

Lane County Carbon Monoxide Monitoring Schedule

- Eugene/Springfield: Monitoring is required continuously during winter. The average hourly concentrations are reported.

Lane County Carbon Monoxide Monitoring Methods

- *Non-dispersive Infrared (NDIR):* Infrared energy from a source is passed through a cell containing the gas sample to be analyzed and simultaneously through a reference cell containing the same gas from which the CO has been removed. Carbon monoxide in the sample absorbs some of the energy, creating an out-of-balance condition in the detector. The imbalance is proportional to the amount of carbon monoxide in the air sample and is electronically amplified and recorded.
- *MiniVol Sampler:* The "MiniVol" sampler samples for CO concentrations using Tedlar bag modules which inflate with air at a constant rate within a programmed period. The pump operates continuously and solenoid valves divert small pulses of ambient air to the bag modules.

Continued

Ozone (O_3)
Monitoring Requirements, Schedules and Methods

Federal Ozone Monitoring Requirements

- Hourly concentrations are measured continuously on a federally determined schedule. Oregon is required to measure ozone levels from May through September.

- The number of one-hour concentrations greater than 235 micrograms/cubic meter in any calendar year indicates the number of exceedances of the *one-hour* standard. The standard allows one one-hour exceedance per calendar year.

Lane County Ozone Monitoring Schedule

- Eugene/Springfield: Monitoring is required continuously during the operating schedule of April 1 through October 31. The average hourly concentrations are reported.

Lane County Ozone Monitoring Methods

- *Ultraviolet Photometry:* The air sample enters a chamber with an ultraviolet source at one end and detector at the other. The ozone in the sample stream absorbs the ultraviolet light at a specific wavelength. The amount absorbed is proportional to the amount of ozone in the air stream. The detector then sends an amplified signal to the recorder.

- *Chemiluminescense:* The air sample enters a chamber where it is mixed with ethylene gas. The ethylene reacts with ozone to produce a light whose intensity is proportional to the concentration of ozone in the air sample.

Lead (Pb)
Monitoring Requirements, Schedules and Methods

Federal Lead Monitoring Requirements

- Samples for lead analysis are collected once every six days throughout the year.

- A composite analysis of samples taken during any calendar-year quarter greater than 1.5 micrograms/cubic meter indicates an exceedance of the *quarterly* standard.

Lane County Lead Monitoring Schedule

- Eugene/Springfield: A composite of all samples taken during a quarter is analyzed. Analyses are required once each calendar quarter.

Lane County Lead Monitoring Methods

- *High-Volume Sampler:* Samples are taken with equipment similar to the PM10 sampler without a size-selective inlet. Glass filters are used to collect suspended particles, which are then analyzed for lead content.

Continued

Criteria Pollutants, Con't.

Nitrogen Dioxide (NO_2) Monitoring Requirements, Schedules and Methods

Federal Nitrogen Dioxide Monitoring Requirements

- Hourly concentrations must be measured continuously year round.
- The arithmetic mean of all the hourly concentrations measured in a calendar year greater than 100 micrograms/cubic meter indicates an exceedance of the *annual* standard.

Lane County Nitrogen Dioxide Monitoring Schedule —
None, no monitoring is required

Sulfur Dioxide (SO_2) Monitoring Requirements, Schedules and Methods

Federal Sulfur Dioxide Monitoring Requirements

- Hourly concentrations must be measured continuously year-round.
- The number of 24-hour concentrations greater than 365 micrograms/cubic meter indicates the number of exceedances of the *24-hour* standard per calendar year. The standard allows for one exceedance per calendar year.
- The arithmetic mean of all the hourly concentrations measured in a calendar year greater than 80 micrograms/cubic meter indicates an exceedance of the *annual* standard.

Lane County Sulfur Dioxide Monitoring Schedule —
None, no monitoring is required

Particulate Matter Concentrations

Yearly PM_{10} Levels — 1987 - 1995

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

Site #	Site Name	Notes	1987	1988	1989	1990	1991	1992	1993	1994	1995
2018056	Lane Comm. College (downtown)	a	8.2	8.3	7.0	5.8	6.3	6.5	5.6	6.9	6.1
		b	7.6	8.2	6.0	5.5	6.2	5.5	5.4	5.1	5.4
		c	0	0	0	0	0	0	0	0	0
2018060	Amazon Park *	a	6.0	5.1	---	---	---	---	---	---	---
		b	5.9	4.5	---	---	---	---	---	---	---
		c	0	0	---	---	---	---	---	---	---
2018058	Sacred Heart ** General Hospital	a	---	---	9.6	6.9	9.1	6.6	7.1	7.6	7.4
		b	---	---	9.5	6.3	7.7	6.4	6.8	7.2	6.6
		c	---	---	0	0	0	0	0	0	0

Standard:
8-hour average — 10 milligrams/cubic meter
1-hour average — 40 milligrams/cubic meter

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

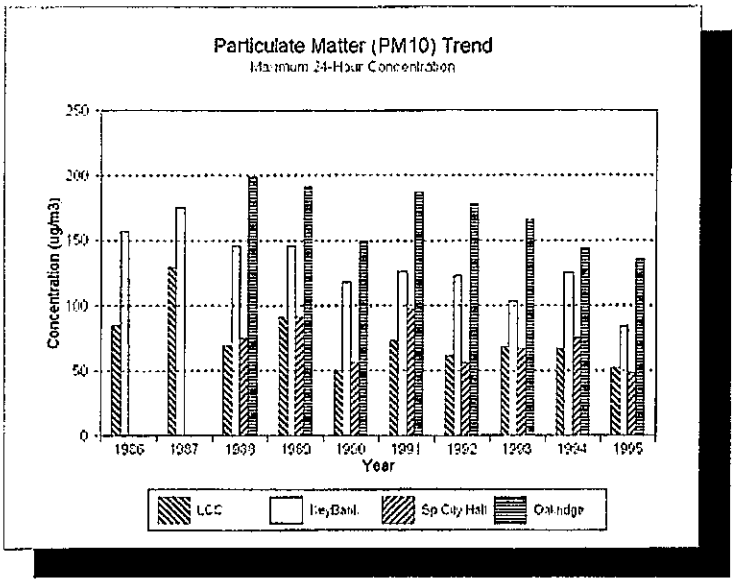
Yearly Ozone Levels — 1987 - 1995

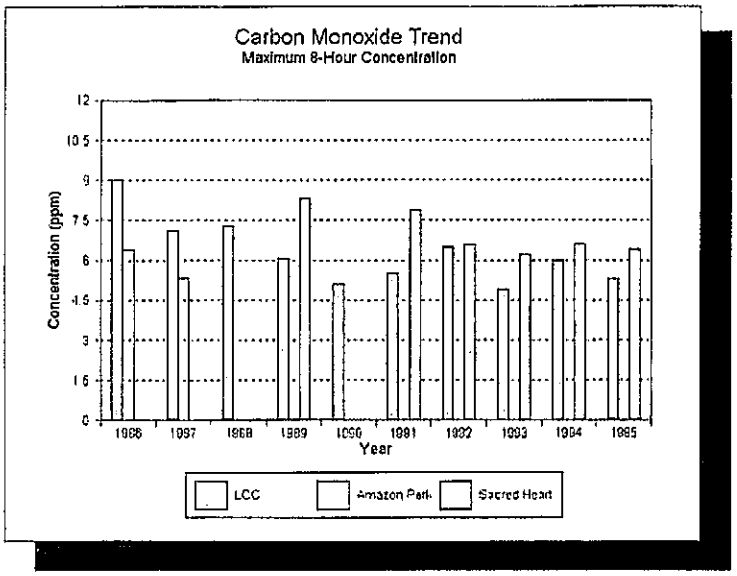
Site #	Site Name	Notes	1987	1988	1989	1990	1991	1992	1993	1994	1995
2000036	Delight Valley School — Saginaw	a	224	232	174	180	184	202	165	184	176
		b	220	216	147	178	180	186	157	176	171
		c	0	0	0	0	0	0	0	0	0
2018060	Amazon Park	a	235	286	165	---	174	194	159	167	174
		b	218	241	149	---	172	186	143	161	151
		c	0	2	0	---	0	0	0	0	0

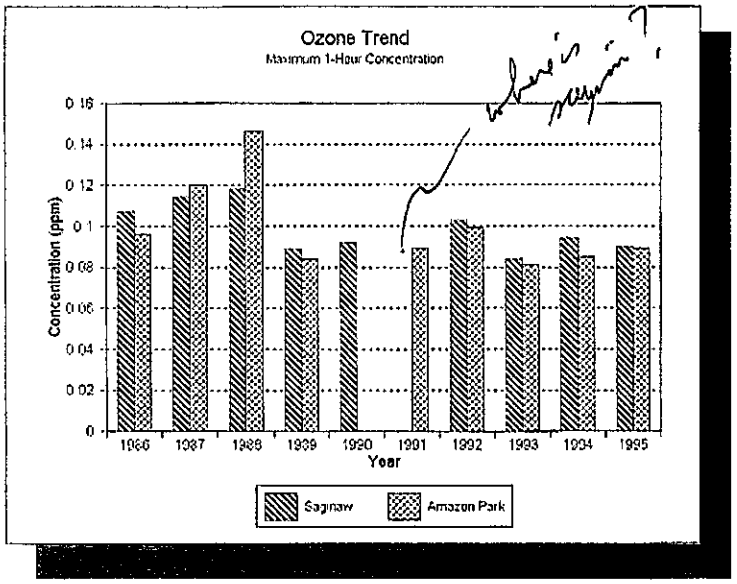
Standard:
1-hour average: 235 micrograms/cubic meter

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				
1991 Number of days				
	Good	Moderate	Unhealthful	Total
CO	135	14	0	149
O_3	107	28	0	135
PM_{10}	37	44	0	81
Totals	279	86	0	365
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

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 fourth 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 whose sole source of heat is wood, and those who qualify under economic need guidelines may be granted exemptions from the program on a yearly basis. However, sole source exemptions will be granted only through June 30, 1996.

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} standards on numerous occasions. Five years later, in January of 1994, EPA officially declared Oakridge a PM_{10} non-attainment area. The 1994-'95 season marked the sixth 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 completion of its State Implementation Plan (SIP). The SIP, drafted in 1995, outlines strategies to be used for curbing pollution in Oakridge.

Strategies in the draft SIP include the reduction of PM_{10} emissions through voluntary curtailment with a provision for mandatory curtailment upon failure to meet a predesignated attainment schedule, continuation of a city-operated program to replace old, uncertified wood stoves with cleaner burning systems, 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.

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 pollutions levels and meteorological conditions of past, current and future weather forecasts. Typically, 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.

Eugene/Springfield HWH Advisories 1986 - 1995

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

Oakridge HWH Advisories 1988 - 1995

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

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.

1995 Home Wood Heating Exemptions (Eug./Spfld.)

Number of applications received	182
Number of exmptions granted	181
Economic need exemptions	50
*Sole source exemptions	131
Number of exemptions denied	1

*Sole source exemption sunsets 6/30/96

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**

Title V: Federal Operating Permit Program Summary

Oregon's Federal Operating Permit Program (Title V) become effective in January '95. The Title V program is directed at industrial sources and requires issuance of federal operating permits. Industrial sources which have the potential to emit 100 tons or more of pollutants into the air, or those which emit 10 tons or more of any hazardous air pollutant (HAP) or 25 tons or more of any combination of HAPs into the air fall into the Title V program.

In 1995, 23 Lane County sources were required to apply for Title V operating permits, which contain detailed information regarding sources' air contaminant emissions, manufacturing processes, emission units and demonstration compliance plans. A number of sources which would have been subject to Title V permits opted out of the program by committing to restrict operations to levels which would keep emissions below levels subject to Title V regulations.

LRAPA received all 23 applications as scheduled for '95. The agency has two years to process the applications, which typically run between 200 and 250 pages.

Title V fees, which were determined by the Oregon Legislature, were assessed at $30.07 per ton for the year. In addition, a $2,500 base fee was collected from all Title V sources. Fees are used to operate the Title V permitting program, as required by federal law under the 1990 Clean Air Act amendments.

Title V source categories in Lane County include the following industry types:

- Coatings manufacturing
- Coatings operations
- Fiberglass operations
- Gas storage and transfer
- Metallurgical
- Power/steam generation
- Wood products
  - — Pulp and paper
  - — Plywood
  - — Particleboard/medium density fiber board
  - — Charcoal

Kelly Conlon reviewing a typical Title V permit application.

Complaint Summary

LRAPA received 704 complaints in 1995, 26 percent fewer than the number recorded in '94, but typical of most years.

Complaints are compiled on a monthly basis into one of ten categories: industry, fugitive dust, open burning, field burning, slash burning, backyard burning, home wood heating, miscellaneous, general and unknown sources. Typically, the greatest number of complaints involves agricultural field burning and industry, as was true for 1995, when the agency received 301 field burning and 99 industry-related complaints. Both categories, however, were down 26 percent from last year.

In all but three categories, complaints were down over the prior year. Complaints increased in the open burning, dust and general air quality categories. Dust and general air quality complaints, while having the largest percentage increases (113 percent and 66 percent respectively), remained the least common types of complaints logged by LRAPA. Open burning complaints were up only slightly (4 percent) over last year's figures.

Slash burning complaints showed the largest drop, down 55 percent from the previous year.

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 percentage changes in numbers of complaints from '95 over '94, by category, are as follows:

Backyard burning ..... -43%
Dust ..... +113%
Field burning ..... -26%
General air quality ..... +66%
Home wood heating ..... -15%
Industry ..... -26%
Miscellaneous ..... -22%
Open burning ..... +4%
Slash burning ..... -55%
Unknown ..... -36%
Total complaints ..... -26%

Complaints 1989 - 1995

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

* Began calculation in 1990

Miscellaneous totals in 1988, 1989 include all complaints logged in categories not listed on this chart

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 1995 enforcement actions remained pending as of the close of the year.

LRAPA collected $22,635 in penalties during 1995, down substantially from the prior year. All penalties collected are forwarded to Lane County.

Enforcement Actions

Year	1989	1990	1991	1992	1993	1994	1995
Administrative warnings and Notices of non-compliance	14	2	10	10	18	32	47
Notices of violation	16	11	19	10	8	3	—*
Notices of violation with civil penalty	8	8	23	11	26	54	33
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

* 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 1995 totaled 83,593 acres in western Oregon. In the south Willamette Valley of western Oregon, 54,025 acres were open burned in '95, up slightly from '94 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 145,000 acres to be open burned during '95.

Acreage propane flamed during the season totaled 4,145, down more than 50 percent from the 8,510 acres flamed in '94. Stack/pile burning, which runs through March of '95, was estimated at 7,883 acres, down substantially from the 13,359 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 more than 300 field burning phone complaints during the three-month season.

Total acreage burned in western Oregon collectively was 95,621, down 8 percent from the 103,659 acres burned in '94. 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

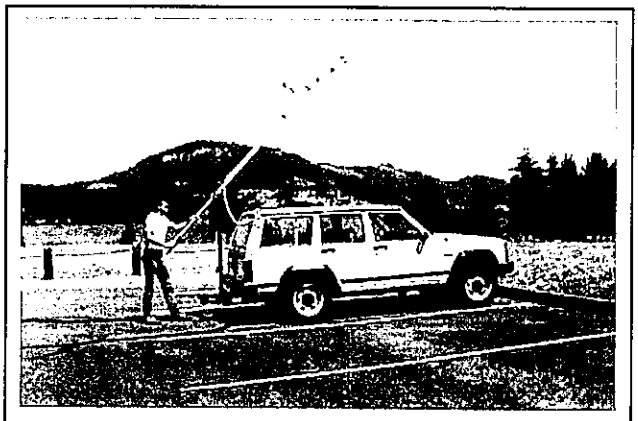
Year end	S. Willamette acres burned	Number of intrusions	Impact hours	Number of complaints
1995	54,025	1/Eug. 0/Spfld.	1/Eug. 0/Spfld.	301
1994	51,740	0/Eug. 0/Spfld.	0/Eug. 0/Spfld.	407
1993	43,114	0/Eug. 0/Spfld.	0/Eug. 0/Spfld.	186
1992	51,813	2/Eug. 1/Spfld.	12/Eug. 11/Spfld.	417
1991	55,205	2/Eug.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

Special Projects

Special 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 1995.

- Finalization of a draft State Implementation Plan document for the city of Oakridge, a federally designated PM_{10} non-attainment area.
- Initial work on the Eugene/Springfield PM_{10} SIP to redesignate the area as an attainment area. Completion is scheduled for 1996.
- Preliminary rule development for hazardous air pollution regulation of non-major sources, in cooperation with the Oregon Department of Environmental Quality.
- Preliminary investigation of hazardous air pollution concentrations around wood-treating facilities to determine potential neighborhood exposure to wood treatment plant emissions.
- Completion of a mobile ozone study designed to determine whether elevated ozone levels occur in areas not currently monitored.
- Completion of a CO study to establish background CO levels in preparation of a Ferry Street bridge redesign.
- Completion of a technical assistance contract awarded to LRAPA by the city of Eugene regarding the city's ozone ordinance, designed to establish use limits on CFC-depleting chemicals/products within the city.
- Draft completion of the "CFC User's Guide" brochure, contracted for development for EPA.



Gordon Griffin collecting air samples for the mobile ozone study

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.

- *Teacher training:* LRAPA hosted its second two-day teacher training workshop to Lane County kindergarten through 12th grade teachers during 1995. Funding for the workshop was granted by the Environmental Protection Agency and the Air and Waste Management Association. LRAPA plans to continue to offer the workshop yearly, provided funding remains available.

- *Customer service evaluation:* An ongoing program designed to track agency performance was developed and implemented in Fall of '95. The program has proved very successful as an evaluation tool. 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.

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

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