LANE REGIONAL AIR POLLUTION AUTHORITY

1981 ANNUAL REPORT

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BOARD OF DIRECTORS

1981

Bill Hamel, Chairman.....Eugene
Bill Whiteman, Vice-Chairman.....Cottage Grove
John Lively.....Springfield
Emily Schue.....Eugene
Otto t'Hooft.....Lane County
Sandra Rennie.....Springfield
Cynthia Wooten.....Eugene

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Mitch Steffensen, Vice-Chairman.....Industry
Darrel Spiesschaert.....Fire Suppression
Virgil Nave.....Fire Suppression
Dr. John Minor.....Public Health/Gen. Public
Marj Gossler.....Agriculture
Tom Hunton.....Agriculture
Dennis Cuddeback.....Industry/Planning
Owen Brown.....Industry
Harold Babcock.....Industry
Ted Hurd.....Industry
Fred Garrett.....Industry

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I MESSAGE FROM THE DIRECTOR

The goals of the Lane Regional Air Pollution Authority for the next few years anticipate a positive role in a positive economic climate. Our hope is that the benefits to the community of an organization like LRAPA are not overshadowed by short-term priorities.

LRAPA offers Lane County specific advantages in the area of air pollution control, including flexibility to help find the best solution to air pollution problems (though not necessarily the most conventional solution); attentiveness to prevent excessive emissions through day-to-day contact with regulated industries; and accessibility and accountability through a Board of Directors composed of locally elected officials. In addition, the Authority represents the interests of Lane County during the development of state and national air pollution rules, as well as being regularly consulted on potential amendments to the Clean Air Act being considered by Congress. These qualities have generally been held up as examples of a local community dealing with its own problems.

"Tightening our belts" was the theme which punctuated all programs administered by LRAPA in 1981. The task of coping with scarce resources promises to exert influences for 1982 and beyond. I firmly believe that, despite the current difficulties, the management of our fragile air resource to maintain satisfactory air quality is best accomplished at the local level. I have found a deep-seated community concern for this particular aspect of our environment, and its importance to our quality of life. As we conclude 1981 and look forward to the years ahead, LRAPA will continue to focus on the goal of maintaining a viable local air pollution control program which is responsive to these concerns.

Donald R. Arkell

II ABOUT THE AGENCY

The Lane Regional Air Pollution Authority is a local government agency whose purpose is to protect and maintain the air quality in Lane County in a way that is environmentally sound and consistent with the economic and industrial well-being of the area.

State law provides for the formation of regional authorities through cooperative agreements among cities and counties in a region. In 1968, an Intergovernmental Agreement entered into by the cities of Eugene and Springfield and Lane County, created the Lane Regional Air Pollution Authority. These entities, as well as the City of Cottage Grove, have agreed to provide financial support, and otherwise participate in the Authority through their representatives on the seven-member Board of Directors. The Board consists of three members from Eugene, two from Springfield, and one each from Cottage Grove and Lane County. The Board serves as the policy-making arm of the Authority and adopts rules and regulations necessary to maintain a local air quality program that meets the needs of the area and otherwise fulfills the requirements of federal and state air pollution laws.

III BOARD OF DIRECTORS

Two new representatives replaced two veteran members on the LRAPA Board of Directors in 1981. Sandra Rennie and Cynthia Wooten replaced Bob Adams and Jack Delay as Springfield and Eugene members on the Board. Adams and Delay had a combined total of ten years experience on the Board.

Rennie and Wooten joined holdovers Bill Hamel, Bill Whiteman, Otto t'Hooft, Emily Schue and John Lively on the Board. Hamel and Whiteman were elected Board Chairman and Vice-Chairman, respectively, for 1981.

Open burning in Lane County was perhaps the major issue confronting the Board during the year.

The Oregon Department of Environmental Quality, facing a July 1, 1982 ban on open burning throughout the Willamette Valley, decided to undertake a review of its open burning regulations, examining such things as burning inside the Portland Metropolitan Area, progress in the development of alternatives to burning, and the sometimes ambiguous and confusing wording in the regulations themselves.

The LRAPA Board chose to take the opportunity to suggest changes in the state rules and to amend the Authority's open burning rules to fit the local situation. Participating in the review were representatives from Lane County fire districts and LRAPA staff.

The Board altered the local open burning regulations in three ways. First, the two-season approach was eliminated in favor of one continuous burning season extending from October 1st through June 15th. Permits are still required and burning is allowed only on approved burning days. The second change involved realigning the open burning restriction boundaries in Lane County to be consistent with local fire district boundaries. Previous rules stipulated three areas for burning not consistent with the fire districts

which oftentimes resulted in confusion as to which fire district a citizen would go to obtain a burning permit. This change also provided greater enforcement of the backyard burning regulations by LRAPA and the individual fire districts. Finally, the "fires allowed up to sunset" provision was retained, which, in effect, was a change from the state regulations where fires are to be out two hours before sunset.

The open burning rule changes were seen by the Board as being more responsive to the needs of Lane County citizens, particularly in the rural areas where alternative disposal methods may not be readily available or accessible, and still not significantly impact air quality throughout the country.

In June the Board adopted a regulation controlling industrial air conveying systems, such as cyclones, emitting more than three tons of particulate matter per year. The regulation was necessary to implement a strategy contained in the Air Quality Maintenance Area (AQMA) Plan adopted by the Board in 1980. The regulation requires final compliance by January 1, 1984.

The Board voted unanimously to adopt the regulation, with the provision that it be reviewed in July 1982, taking economic conditions at that time into account.

Planing mills, sander and particleboard operations are examples of local industries using air conveying systems.

Economic conditions figured in another item considered by the Board in 1981. The plywood mill at Westfir (Anderson Plywood) was considered by the Board at three separate meetings during the year.

The mill had been closed since early 1980 when a major fire seriously

damaged the facility. Owners of the mill approached the Board seeking permission to restart the facility without controls on its veneer dryers, provided necessary financing could be obtained. The Board had granted a variance in October of 1980, with the stipulation that the plant operate at a reduced production level until a control system was installed and operational. Start-up did not occur by that time, and the Board, at its January 1981 meeting, referred the matter back to staff, effectively rescinding the variance granted three months earlier. However, the story did not end at that point.

A Portland businessman who also owns a plywood mill in West Eugene, asked the Board for a ruling on whether he would be allowed to operate the mill for 120 days without air pollution controls if his bid to purchase the facility was accepted. The Board heard considerable testimony from other industry representatives opposing the request and, as it turned out, the bid was awarded that same afternoon to a buyer from California. The Board ruled that it would deal in such matters with the site and not with prospective owners.

As of the end of the year, the mill was still to be re-started.

Other Board activities included adoption of a resolution in November supporting a DEQ proposal to restrict the sulfur and volatile content of coal sold for home heating in Oregon's four largest metropolitan areas. The Board also adopted standards for hazardous air pollutants, standards for new or modified sources wishing to locate inside Lane County, and a new permit fee schedule representing a 14% increase to LRAPA permit holders. Finally, the Board approved a $580,000 agency operating budget for the 1981-82 Fiscal Year.

IV PROGRAMS TECHNICAL SERVICES

The Technical Services Program provides information about local air quality through a network of samplers and continuous monitors. This information helps answer three questions: How much pollution there is now; how the pollution levels have changed (providing a measure of effectiveness of LRAPA's programs); and how much control is needed to achieve an acceptable level of air pollution. Technical Services also conducts special monitoring projects throughout the community on an as-needed basis, using the Authority's mobile air sampling van.

Technical Services routinely monitors three pollutants: particulate matter, carbon monoxide and ozone. Meteorological data is also routinely gathered at various sites in the metropolitan area.

Particulate matter consists of solid or liquid particles suspended in the air, ranging in size from 0.1 micrometers to approximately 100 micrometers in diameter. Local sources of particulates include smoke from industry, field/slash/open burning and woodstoves, as well as dust from unpaved and paved roads and agricultural tilling. Particulates are measured on an every-sixth-day schedule. High concentrations can occur at any time of the year, whenever stagnant, high pressure periods dominate the weather pattern. There were 16 sites throughout Lane County measuring particulate concentrations in 1981, though only 11 of those sites were in operation for the full year (see Table 1).

Carbon monoxide is a colorless, odorless, potentially toxic gas created by incomplete combustion processes. The automobile is the primary source, though burning activities such as woodstoves may also be contributing to elevated local carbon monoxide concentrations. Carbon monoxide is monitored continuously 24-hours a day at the Lane Community College building in Downtown

Eugene. It is considered to be a "wintertime pollutant" because of more frequent and persistent periods of stagnant air.

Ozone is a colorless gas with a pungent odor, and is one of the prime constituents of "smog." Ozone is formed through chemical reactions in the atmosphere between oxides of nitrogen and hydrocarbons, in the presence of sunlight. Because sunlight is necessary, high ozone levels tend to occur in the warm summer and early fall months. Once again, the automobile is the primary source, though there are other areawide sources of hydrocarbons, such as evaporation of gasoline from service stations and gasoline storage tank facilities. Ozone is measured continuously 24-hours a day at Edgewood Elementary School in South Eugene.

The Eugene-Springfield area is classified as being in non-attainment of the Federal Secondary Standard for particulates. Such is not the case for carbon monoxide or ozone, though the area is close to being in non-attainment of the Federal Standard for ozone.

Particulate matter and carbon monoxide levels showed marked reductions in 1981 when compared to the previous year. However, ozone levels increased significantly.

Only one site, the Citizens Bank Building in Northwest Eugene, recorded an exceedence of the particulate standards in 1981. This site was established in November 1980 as a "special purpose monitor," at a location predicted to have high levels by the computer model used in the Air Quality Maintenance Area (AQMA) analysis. The high levels did, in fact, occur. The remainder of the sites showed general reductions in particulate levels. The trend data, reflected in Table 2, shows that Springfield recorded the greatest reduction in particulate levels in 1981.

This improvement in the particulate readings can be attributed in part

to reduced road dust emissions due to continued road paving projects and less traffic on paved streets and roads; reductions in industrial emissions due to reduced production, and, in some cases, plant closures due to poor economic conditions. Meteorology also played a role in the reduced levels, primarily due to the excessive rainfall during the year. A total of 55.9 inches of rain fell in 1981, compared to a normal rainfall total of 42.5 inches per year.

There were no exceedences of the carbon monoxide standard recorded in 1981. This represents a continuation of the downward trend registered over the past few years, as shown in Table 3.

Finally, three exceedences of the ozone standard occurred during the year (see Table 4), representing the first exceedences of the current federal ozone standard. The levels were the highest in early August during a period of exceptionally high temperatures (high 90's to low 100's) and light winds; conditions very conducive to high ozone levels. The consequence of the three 1981 exceedences is that one additional exceedence in either 1982 or 1983 will push the Eugene-Springfield area into nonattainment status for ozone, at which time control strategies must be developed and implemented.

Technical Services conducted several special sampling projects during 1981:

* A carbon monoxide study was conducted in Downtown Eugene, as part of a downtown parking and traffic circulation study undertaken by the City of Eugene. Four carbon monoxide monitoring sites as well as one meteorological site were established by LRAPA. The study was conducted during two separate periods of the year, in April and December. A final report on the results of the study, being prepared by City staff, is due in early 1982.

* Data collection for the computer model calibration and validation study (part of the Phase II effort contained in the AQMA Control Plan) was completed in 1981. The data was obtained from five particulate monitoring sites inside the AQMA. Chemical analysis of the filters will be performed and a final report prepared in 1982.
* Surface meteorological data was collected at three sites as part of the same Phase II effort.
* Additional fine particulate data was collected at two sites within the AQMA; again, part of the AQMA Plan Phase II effort.

A new method of reporting daily air quality in the Eugene-Springfield area was instituted by LRAPA in January 1981. The Air Pollution Index is part of a federal effort to use a single standard air pollution reporting system across the country.

The Air Pollution Index is a reporting tool that converts daily air pollution concentrations to a simple number on a scale of 0 to 500: 0-49 indicates good air quality; 50-99 moderate; 100-199 unhealthful; 200-299 very unhealthful; and 300-and up is determined to be hazardous to health. An Air Pollution Index number is calculated separately for particulate matter, carbon monoxide, and ozone. The highest of the three becomes the Air Pollution Index for that time period (an Index is calculated each weekday morning and afternoon covering the previous 24-hours).

The Air Pollution Index is calculated for the Portland, Eugene-Springfield and Medford metropolitan areas.

A great majority of the local readings fell into the "good" range in 1981, though several "unhealthful" readings were recorded in early August during the high ozone/hot weather period.

TABLE 1

1981 PM DATA SUMMARY

Site	Annual Geo. Mean	# of Samples	Peak 24-Hr Avg	2nd High. 24-Hr Avg
Westmoreland Elem. School	43	61	124	110
LCC Downtown Eugene	42	60	110	99
Citizens Bank (Highway 99)	62	59	172	138
Eugene Airport	28	58	96	91
Spfd. Police Admin. Bldg.	43	61	104	90
Spfd. Pacific NW Bell	54	58	128	108
Spfd. Dept. Motor Vehicles	46	59	98	89
Spfd. Fire Station #2	54	60	107	100
Thurston High School	40	58	90	88
Coburg	28	56	81	75
Cottage Grove	39	59	84	82

Primary Standards	Secondary Standards
24-Hour.....260 ug/m^3	24-Hour.....150 ug/m^3
Annual Geom Mean.....75 ug/m^3	Annual Geom Mean.....60 ug/m^3

TABLE 2

PARTICULATE MATTER TREND DATA

(ANNUAL GEOMETRIC MEAN)
(ug/m^3)

Site	1977	1978	1979	1980	1981
○ Downtown Eugene	62	52	51	44	42
△ Downtown Springfield	75	59	60	52	43
□ Eugene Airport	30	28	34	32	28

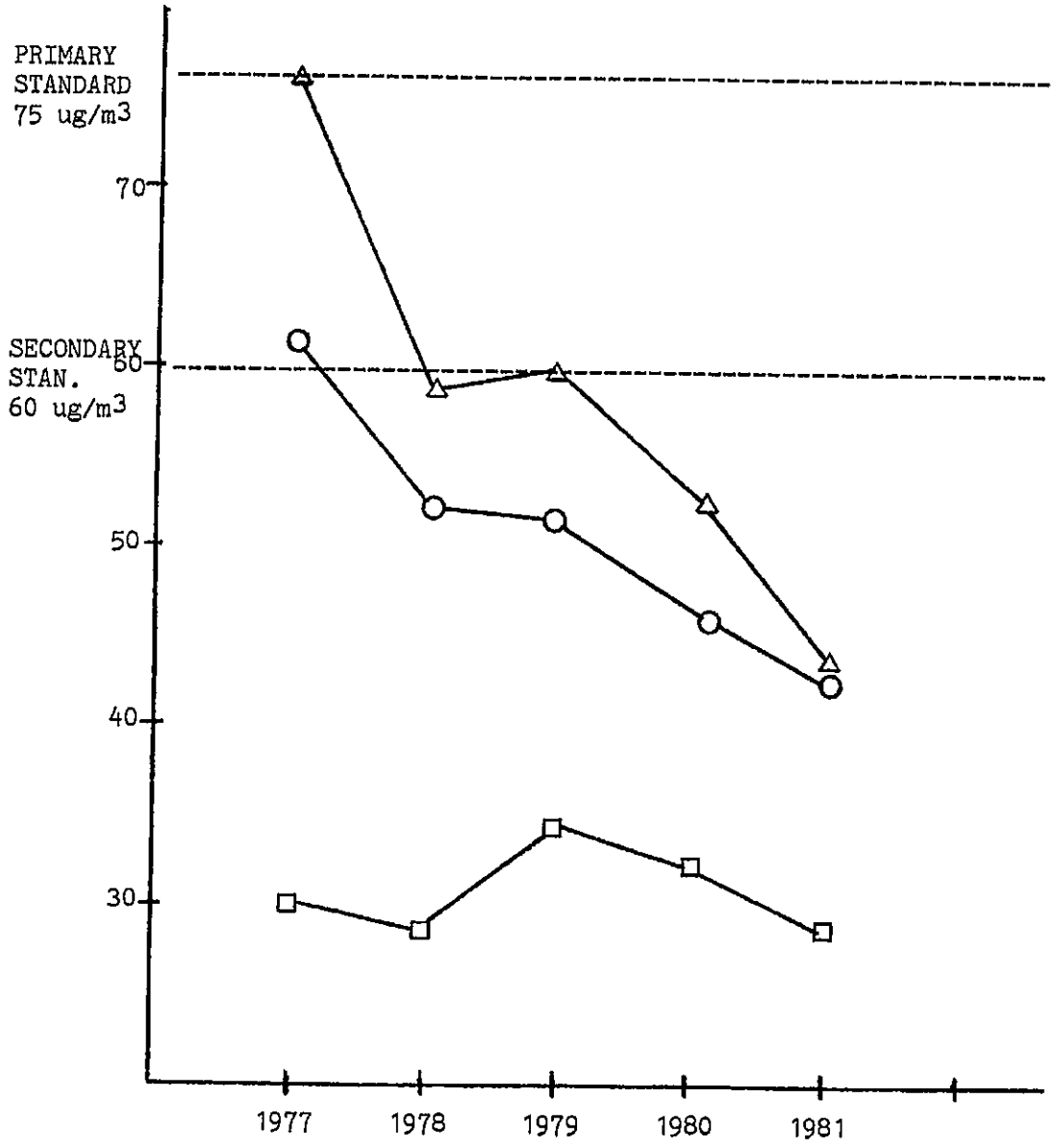

TABLE 3

HISTORICAL EXCEEDENCES

8-HOUR CARBON MONOXIDE STANDARD

January 1977 - December 1981

Date	Peak 8-Hour Avg mg/m3
January 7, 1977	12.0
January 10	10.2
January 20	11.0
January 27	10.3
October 28	10.5
November 4	10.6
December 20	11.3
January 4, 1978	11.9
December 13	11.0
January 10, 1979	13.3
December 12, 1980	11.6
December 16	13.2
1981 No Exceedences	
8-Hour Avg Standard....10.0 mg/m^3	

TABLE 4

HISTORICAL EXCEEDENCES

1-HOUR OZONE STANDARD

January 1977 - December 1981

Date	Peak 1-Hour Avg ug/m^3
No Exceedences 1977-1980	
August 6, 1981	245
August 7	259
August 8	243
1-Hour Avg Standard....235 ug/m^3	

PROGRAMS ENGINEERING SERVICES

The Engineering Services Program enforces the Authority's regulations, conducts routine surveillance of air pollution sources, reviews permits and control equipment for new and existing sources, maintains an air pollution Emissions Inventory for Lane County, responds to citizen complaints, and conducts program planning involving strategy development and development of procedures for field activities designed to maintain an efficient, effective field program.

Significant activities of the Engineering Services Program in 1981 include the following:

Permit Program

* 13 New Industrial Permits Issued (including one temporary permit issued to the Lane County Resource Recovery Facility for the manufacture of Refuse-Derived Fuel to be utilized in a test burning project at the University of Oregon Physical Plant, and one indirect source permit issued for construction of parking lots at the Delta Oaks Shopping Center)
* 4 Existing Source Permits Issued
* 17 Permit Modifications Issued
* 58 Permit Compliance Determinations Completed

Inspections

* 120 for Annual Permit Review
* 180 for New Construction Review
* 100 in Response to Citizen Complaints
* 700 Routine Surveillance Inspections

Other On-Going Activities

* 14 Notices to Proceed with Construction of Control Equipment

* Responses to 490 Complaints (Industry - 115; Backyard Burning - 47 Home Heating - 8; Field/Slash Burning - 261; Miscellaneous - 59)
* 127 Reported Upset Conditions (defined as a breakdown in industrial air pollution control equipment resulting in excessive emissions for a period of three minutes or longer)
* 18 Formal Enforcement Actions (Open Burning Violations - 15; Permit Condition Violations - 3)
* 11 Special Open Burning Permits Issued (Non-Agricultural Debris Clearing - 5; Demolition - 3; Government - 2; Commercial/Industrial - 1)

Emissions Inventory

The industrial source permit program is the basis for most of the activity in the Engineering Services Program. A permit is a written set of conditions under which the source is allowed to discharge air contaminants. Permits are conditioned based upon detailed engineering analysis of the processes and their potential emissions. There are approximately 200 sources in Lane County which require permits. LRAPA's Emissions Inventory, as of June 1981, shows a total of 8,000 tons of particulate matter being emitted each year by these permitted sources.

Other sources outside of LRAPA's permit program also contribute particulate emissions in Lane County. These include open burning, field burning, slash burning, motor vehicles, railroads, aircraft, forest fires, etc., but exclude dust sources. The Emissions Inventory shows a total of 8,300 tons of particulate matter emitted each year by these sources.

Dust sources (paved and unpaved roads, agricultural tilling) are estimated to contribute another 21,000 tons of particulate each year.

Total particulate emissions from all of these sources combined is

estimated to be 37,300 tons per year.

LRAPA assisted in test burning of Refuse-Derived Fuel (RDF) from the Lane County Resource Recovery Facility at the University of Oregon Physical Plant in late October. The Authority observed the preparation of the RDF at the solid waste facility in Glenwood and helped to perform some of the source testing of stack gases during the burn test at the University. The test results indicated that the existing particulate standard was not met, and it is likely that the air pollution control equipment at the University would have to be modified or improved before RDF could be used as a fuel. A final report prepared Tom Miles, consultant to the University, is due in early 1982.

PROGRAMS PROJECTS AND PLANNING

Implementation of Phase I of the Eugene-Springfield Air Quality Maintenance Area Control Plan was initiated in 1981. The purpose of the plan is to provide a blueprint for enabling the metropolitan area to attain and maintain, by 1987, the Federal Secondary Standard for Particulate Matter.

Phase I includes paving ten miles of targeted unpaved roads within the Eugene and Springfield City Limits (5 miles in each city), controlling particulate emissions from industrial air conveying systems, and promotion of an areawide weatherization program to reduce the need for burning wood as a home heating fuel.

As mentioned in the Board of Directors discussion, a regulation controlling industrial air conveying systems was adopted by the Board in June. Nearly six of the ten miles of unpaved roads had been paved by the end of the year. And local progress had been made toward the implementation of a weatherization program in Eugene and Springfield, including the adoption of a home weatherization ordinance by the City of Eugene which anticipated a financial assistance program to be offered by the Eugene Water & Electric Board.

Work also began on Phase II of the Control Plan. Three goals are contained in Phase II: 1) Develop the data base for additional strategies to achieve the particulate standard in those areas which are predicted to remain in nonattainment after Phase I, focusing on strategies to control road dust; 2) Identify fine particulate concentrations and develop an emissions data base; 3) Improve the computer modeling technique for purposes of using the model in future growth management.

LRAPA staff concentrated on Goals 2 and 3 in 1981. Goal 2: On-going monitoring for fine particulate was initiated at two sites within the AQMA,

Lane Community College in Downtown Eugene and the Police Administration Building in Downtown Springfield. Also, for comparison, one site was established in Coburg, just north of the AQMA. Source testing hogged-fuel boilers for fine particulates was also begun. Finally, a public education effort aimed at promoting the use of drier wood as a home heating fuel was initiated. Goal 3: One portion of the model improvement program involves a model validation study; verifying that those previously-unmonitored grids predicted by the model to have high particulate levels do, in fact, record high levels. Monitoring sites were established inside two such grids, on Highway 99 near Roosevelt Blvd. in Northwest Eugene and on East Main Street south of Weyerhaeuser in Springfield. Data compiled at those sites indicate that high particulate levels are being recorded, just as the model predicted. Finally, the model itself was transferred to LRAPA from DEQ-Portland, as proposed in Phase II.

Work on the road dust goal is awaiting results from a similar road dust study conducted in Portland. Other Phase II projects, such as monitoring slash burning activities, are planned for 1982.

V THE FUTURE

LRAPA's commitment to protect our air resource during anticipated future growth, as first outlined in the 1980 Annual Report, remains strong. The Authority believes that when such growth or expansion of existing industries occurs, there will exist tremendous pressure to allow for some degradation of local air quality. However, we believe that such growth can occur without dismantling the gains that we have made over the past decade in cleaning up and managing local air pollution.

The Authority now has the capability, through computer modeling, of assisting local governments and planning groups in assuring that new industries will be located in areas where there is adequate airshed capacity. Growth management tools such as New Source Review, Plant Site Emission Limits, emissions offsetting and banking, are now being developed by the Authority.

There is little question that the Eugene-Springfield area, and Lane County in general, must strive to broaden its economic base. The area's dependence on the wood products industry has been felt in good and, unfortunately, in bad economic times. And each time that we enter into a period of recession it becomes more evident that this dependence must be adjusted; that new and hopefully clean industry must be attracted to our area. The key, then, from an air pollution standpoint, is to accurately predict the impact of future industrial growth, not only in terms of plant site emissions, but on associated air pollution levels affected by increased "people activity" that accompanies such growth. Increased levels of carbon monoxide and other automobile-associated pollutants immediately come to mind.

If we believe that industrial growth and diversification is necessary, we must be prepared to address the numerous types of air pollution that will accompany these changes. Such will be the future mission of the Lane Regional Air Pollution Authority.