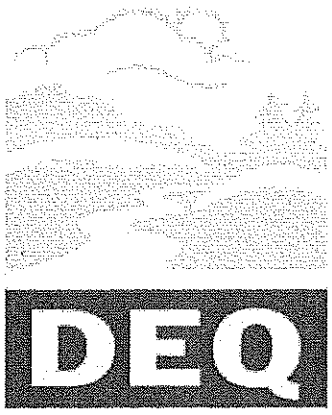
6/8/1979

OREGON
ENVIRONMENTAL QUALITY
COMMISSION MEETING
MATERIALS



State of Oregon
Department of Environmental Quality

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Environmental Quality Commission

522 S.W. 5th AVENUE, P.O. BOX 1760, PORTLAND, OREGON 97207 PHONE (503) 229-5696

MEMORANDUM

To: Environmental Quality Commission

From: Director

Subject: Agenda Item No. B1, June 8, 1979, EQC Meeting

Adoption of Carbon Monoxide and Ozone Control Strategies for the Portland-Vancouver AQMA as a Revision to the State Implementation Plan

BACKGROUND AND PROBLEM STATEMENT

The Clean Air Act Amendments (CAAA) of 1977 require states to submit plans to demonstrate how they will attain and maintain compliance with national ambient air standards for those areas designated as "non-attainment." The CAAA further requires these plans to demonstrate compliance with primary standards not later than December 31, 1982. An extension up to December 31, 1987 is possible if the State can demonstrate that despite implementation of all reasonably available control measures the December 31, 1982 date cannot be met.

The State Implementation Plan (SIP) revisions are to be approved by EPA by July 1, 1979. If an adequate extension request is submitted to EPA by then, states will have until July, 1980 to analyze all alternative control strategies and until July, 1982 to submit a complete attainment strategy.

On March 30, 1979 the EQC authorized a public hearing on proposed revisions to the Carbon Monoxide and Ozone portions of the State Implementation Plan (SIP) for the Portland-Vancouver Interstate AQMA. A hearing was held on May 4, 1979 in accordance with state and federal public notice procedures. Hearing testimony along with the Department's responses are contained in this report along with public testimony received from a separate public hearing conducted on May 10, 1979 by the Metropolitan Service District (MSD). Responses to public testimony received at the MSD hearing are included as an attachment to this report. Comments received on May 15, 1979 from the U.S. Environmental Protection Agency on the proposed SIP revisions are also responded to in this report.

Contains Recycled Materials

EVALUATION AND ALTERNATIVES

The attachments to this report contain: the hearing officer's report for the May 4, 1979 public hearing (Attachment 1); DEQ staff responses to the May 4, 1979 public hearing testimony (Attachment 2); public comments and responses by MSD staff to issues raised prior to their public hearing of May 10th (Attachment 3); comments and responses to testimony received at a MSD public hearing held on May 10, 1979 (Attachment 4); EPA comments and Department responses on SIP revisions received May 15, 1979 (Attachment 5); MSD Resolution adopting MSD's portion of the SIP Revisions (Attachment 6); and the amended carbon monoxide and ozone SIP Revisions (Sections 4.2, 4.3, 5.2, 5.3, 7.2, 7.3) for the Portland-Vancouver Interstate AQMA (Attachment 7).

The purpose of this report will be to respond to only significant issues which were raised at the public hearings and by EPA. As noted above, all other comments made at either the public hearings or received by individuals or agencies prior to the public hearings are included and responded to in the attachments. Where possible, this report will indicate possible alternative approaches available to the Commission on issues raised at the public hearings.

Response to Significant Issues

1. ISSUE: "Existing State Ozone standard is not addressed in proposed ozone SIP Revision."

   Source: Oregon Environmental Council

   Response: This issue was raised at both the MSD and DEQ public hearings by representatives of the Oregon Environmental Council. Section 172 of the Clean Air Act Amendments (CAAA) of 1977 requires that states only have to submit SIP revisions which address national ambient air quality standards (NAAQS). Since both the primary and secondary NAAQS for ozone is 0.12 ppm, the proposed SIP revisions only addressed these standards. However, the Commission has at least two other options available to respond to this issue.

   The Commission could adopt a new ozone ambient air quality standard(s), or maintain the existing standard and not include them as part of the SIP. This approach would allow the state to develop its own timetable for implementing control strategies to meet state ozone ambient air standards. (Refer to "ozone standard" staff report No. A1, for more discussion on this subject).

   Another possible option would be the adoption of new ozone standards or maintain the existing standards and include them as part of the SIP. This option would result in the Department having to make substantial revisions to the Ozone SIP Revision probably resulting in considerable delays in the submission of the Ozone SIP revision. This delay could

result in possible sanctions by EPA against the State for not having an approved SIP by July 1, 1979. In addition, it is questionable as to whether or not funds would be available from EPA to do the necessary planning work to meet more stringent state ozone standards. For the above reasons, the Department does not recommend this option.

Resolution: The Department recommends submitting the SIP based on a .12 ppm federal ozone standard to meet minimum requirements of the Clean Air Act.

2. ISSUE: "The double [ozone] standard would cause confusion and could diminish the public's ability to bring effective civil suits to enforce emission standards as provided by section 304 of the Clean Air Act."

Source: Oregon Environmental Council

Response: Informal advice from legal counsel to the Department indicates that this statement is essentially correct. Present state statutes do not allow the same level of legal redress for the failure of the State of Oregon to enforce any of its air pollution standards and laws. Section 304 allows "persons" to sue EPA for failure to enforce adopted SIP provisions and provides, at the court's discretion, the awarding of costs of litigation to any party. Such provisions do not presently exist in state statutes according to counsel.

Resolution: The Department supports the policy of keeping state programs that are not federally required out of the SIP to maintain maximum flexibility and to minimize paper work.

3. ISSUE: "The Indirect Source Rule is not included in the list of Reasonably Available Control Measures."

Response: It is the Department's opinion that the Rules for Indirect Sources (OAR 340-20-100 through 135) is not a Reasonable Available Control Measure (RACM) as defined in the Clean Air Act (Section 108), but rather a regulatory review mechanism to assess the impacts from motor vehicles.

Resolution: The Rules for Indirect Sources are part of the present Oregon SIP and the fact it did not appear in the Sections 4.2.3 or 4.3.3 of the proposed SIP revisions is not to be construed as a conscious effort to delete them from the SIP. Amendments have been made to Sections 4.2.4 and 4.2.5 of the SIPs to clarify the Department's position on the Rules for Indirect

Sources. The continued need for an indirect source permit program as part of the final control strategy will be evaluated in the control strategy development process.

4. ISSUE: "No alternative plant site analysis requirements as specified by Section 172(b)(11)(A) of the Clean Air Act area included in the Carbon Monoxide and Ozone SIP revisions."

Source: OREGON STUDENT PUBLIC INTEREST RESEARCH GROUP - Letter dated April 26, 1979

Response: Comments regarding the need for an alternative plant site analysis program had been previously discussed with representatives of Region X EPA. Based upon these previous discussions, the Department was led to believe that no such program would be needed for a non-attainment area in the process of developing an attainment plan. However, the Department was officially notified by EPA on May 15, 1979 that such a program is needed as part of the SIP revisions for carbon monoxide and ozone.

Resolution: In response to EPA comments, the "Rules for Special Permit Requirements for Sources Locating in or Near Nonattainment Areas" (OAR 340-20-190 through 195) have been amended to include these requirements. Carbon Monoxide and Ozone SIP Revisions have been amended (Sections 4.2.4, 4.3.4) and new sections added (5.2, 5.3) to indicate the Clean Air Act requirements related to alternative plant site evaluation program as part of an overall new source review (NSR) program.

5. ISSUE: "At this point we are uncertain whether the Oregon (Portland) motor vehicle inspection/maintenance (I/M) program actually does conform to the I/M policy statement issued by EPA Assistant Adminstrator David Hawkins in July, 1978."

Source: EPA - Letter of May 15, 1979

Response: The Department has thoroughly reviewed Mr. Hawkins' memo of July 1978 and believes based upon the methodology provided to DEQ by EPA (as referenced in Appendix 4.2-1) that Oregon's biennial I/M program meets all criteria specified in the memo regarding implementation and operation of an acceptable I/M program. In addition, EPA has since verbally indicated that the Department's I/M program is adequate to qualify for an extension of the December 31, 1982 attainment date.

Resolution: If the biennial I/M emission reduction credit methodology needs revisions due to the results of the EPA sponsored Portland I/M test program, such changes will be considered as part of the comprehensive alternative transportation measures evaluation program.

6. ISSUE: "Where 18 months extensions are being sought for submission of plans to meet secondary standards (pursuant to Section 110(b) of the CAA and 40 CFR Section 51.31), the subject requirements (Section 173 only for TSP) need not be adopted until such time as the control strategy is required. However, in the case of CO/O_x plans where the need for a post 1982 attainment data has been documented, Section 172 of the CAA states that all provisions in subsection (b) must be adopted to void the non-discretionary penalty of no growth of major stationary sources after July 1, 1979. Thus, the interim plans being required at this time for CO and O_x (for areas where post 1982 attainment dates are being identified) must include both permit requirements for major stationary sources (Section 172(b)(6) and Section 173)) and a program for requiring various alternative analyses relating to stationary sources (Section 172(b)(11)(A)."

Source: EPA - Letter of May 15, 1979

Response and Resolution: The Portland-Vancouver Interstate AQMA Carbon Monoxide and Ozone SIP Revisions have been modified (Sections 4.2.4, 4.3.4) and added (Sections 5.2 and 5.3) to address this comment. All applicable new source review (NSR) requirements as specified in the Clean Air Act will be implemented in accordance with EPA requirements. (A more detailed discussion on this subject can be found in the staff report (No. A3) on "Rules for Special Permit Requirements for Sources Locating in or Near Nonattainment Areas" (OAR 340-20-190 through 195).)

In response to the above comments and other comments (included in the attachments to this report) the proposed Carbon Monoxide and Ozone SIP Revisions for the Portland-Vancouver Interstate AQMA have been amended where appropriate. Significant amendments and additions to the proposed Carbon Monoxide and Ozone SIP Revisions are indicated in a cover memo to Attachment 7. It is the Department's opinion these amendments and additions adequately address the comments received from the general public and EPA.

SUMMARY OF MAJOR FINDINGS IN THE CARBON MONOXIDE AND OZONE SIP REVISIONS FOR THE PORTLAND-VANCOUVER INTERSTATE AQMA

1. The Portland-Vancouver Interstate AQMA has been designated a non-attainment area for carbon monoxide and ozone by EPA.

2. The Metropolitan Service District is the lead agency in the development of a transportation control strategy to attain and maintain compliance with the carbon monoxide and ozone ambient air quality standards.

3. An air quality analysis indicates that a few roads in the CBD of Portland and a single road section in the Tigard area are projected to violate the 8-hour carbon monoxide ambient air quality standard by the end of 1982. By the end of 1987, all roads are projected to be in compliance with the CO standard.

4. The analysis also indicates that the recently revised O_3 standard will continue to be exceeded by the end of 1987. These projections were made assuming implementation of committed reasonably available transportation control measures and stationary source VOC control measures.

5. The CO and O_3 SIP revisions consist of a commitment to analyze new control strategies which would insure attainment and maintenance of ambient air standards with MSD remaining in the lead coordinating role. This control strategy analysis will be completed by June 30, 1980.

6. EPA requirements regarding an interim growth management strategy which includes: federal New Source Review requirements, implementation of Reasonable Available Control Technology (RACT) measures, and commitment to implement reasonable available transportation controls, have been fully met.

7. A requested extension to attain the CO and O_3 ambient air standards beyond December 31, 1982 but prior to December 31, 1987 is being included in the SIP revision. The EPA requirements for requesting this extension have been met.

8. A completed attainment/maintenance strategy for CO and O_3 for the Portland AQMA will be submitted to EPA as a SIP revision by July, 1982.

SUMMATION:

1. In accordance with federal and state public notice procedures a public hearing was held on May 4, 1979 for the Carbon Monoxide and Ozone SIP Revisions for the Portland-Vancouver Interstate AQMA.

2. The Metropolitan Service District held a separate public hearing on the carbon monoxide and ozone SIP revisions on May 10, 1979.

3. Public hearing testimony including comments received from EPA on the proposed SIP Revisions are attached and responded to in this report.

4. It is the Department's opinion that all comments received have been adequately addressed.

5. Where appropriate, the proposed carbon monoxide and ozone SIP revisions have been amended to respond to comments received.

6. The amended carbon monoxide and ozone SIP revisions adequately address Clean Air Act Amendment requirements.

DIRECTOR'S RECOMMENDATION

Based upon the Summation, it is recommended that the Commission adopt the Carbon Monoxide and Ozone control strategy for the Portland-Vancouver Interstate AQMA and have the Department forward it to the Environmental Protection Agency as a revision to the State Implementation Plan.

Bill

WILLIAM H. YOUNG

CAS:kmm
229-6279
May 25, 1979
Attachments (7)
A6254.A

Attachment 1

ROBERT W. STRAUB
GOVERNOR

Environmental Quality Commission

522 S.W. 5th AVENUE, P.O. BOX 1760, PORTLAND, OREGON 97207 PHONE (503) 229-5696

MEMORANDUM

To: Environmental Quality Commission

From: Hearing Officer

Subject: Hearing Report on May 4, 1979, hearing. "Proposed revisions to the State Air Quality Implementation Plan (SIP) for the Portland-Vancouver Interstate AQMA Carbon Monoxide and Ozone Control Strategies." (OAR 340-20-047)

Summary of Procedure

Pursuant to public notice, a public hearing was convened at the State Office Building Room 36, located at 1400 SW Fifth Avenue in Portland at 9:00 a.m. on May 4, 1979. The purpose was to receive testimony regarding proposed revisions to the SIP for carbon monoxide and ozone control strategies in the Portland AQMA.

Summary of Testimony

Melinda Renstrom, Oregon Environmental Council Read a prepared position paper which was opposed to portions of the Department's proposed SIP revisions. OEC criticized the Department for not referencing the present state oxidant level of 0.08 ppm in the SIP. OEC stated that by leaving this reference out of the SIP the Department may be prejudicing the outcome of the hearings process just begun on the possible relaxing of this standard (i.e. bringing the state standard into conformance with the new federal standard of 0.12 ppm). Should the state standard not be relaxed the Department would be faced with administering two standards for the same pollutant. OEC expressed concern that the double standard would cause confusion and could diminish the public's ability to bring effective civil suits to enforce emission standards as provided by Section 304 of the CAAA.

OEC also criticized the Department for failing to include the Indirect Source program in the list of Reasonably Available Control Measures (RACM's). OEC also questioned whether the omission of the Indirect Source program from the SIP will lessen its effectiveness and the Department's commitment to it.

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The last comment by OEC deals with the public participation element of the SIP. It is their opinion that the much of the public participation and publicity centering on the SIP revisions was not generated by the Department or MSD but by concerned citizens and OEC. OEC feels that the responsible agencies should make greater financial commitment to the public involvement element of the program.

Gary Coe, Multnomah Hot Rod Council stated that he and his group were opposed to the annual testing of auto emissions in the Portland area. He stated the cost of maintaining older cars in condition to pass the emission tests were greater than the benefits gained. He stated that an annual emission test program would be inflationary and would cause hardships on less affluent people. Mr. Coe made reference to the Portland Aerosol Characterization Study (PACS) study released on particulate sampling and inventory of sources.

Other testimony, received by letter

Jan D. Sokol, Oregon Student Public Interest Research Group, (OSPIRG), states that while OSPIRG generally does not oppose the SIP revisions it feels the Department's request for an extention in time is legally insufficient. OSPIRG bases this claim on the fact that the revisions do not include an alternative analysis program for major emitting facilities proposing to locate in a nonattainment area. Section 172(b)(11)(A) of the CAAA is referenced as requiring this program as a specific element of a SIP revision request for a time extension. OSPIRG has not been satisfied by previous EPA staff responses to this matter.

League of Women Voters of Oregon states it supports "adequate standards for control of all sources of pollution and strict enforcement of established rules and regulations." They note a lack of resolve in part of the Department and the Commission to strengthen present programs and initiate new programs to meet air quality standards. Finally, the League states it is opposed to an extension of the attainment date for the carbon monoxide and ozone ambient air standards beyond 1982.

Oral and written testimony was offered by:

Melinda Renstrom, Oregon Environmental Council

Oral testimony was given by:

Gary Coe, Multnomah Hot Rod Council

Testimony received in written form only:

Jan D. Sokol, Oregon Student Public Interest Research Group
The League of Women Voters of Oregon

Recommendations

The hearing officer has no recommendations.

Respectfully submitted,

Stephen C. Carter
Hearing Officer

CAS:kmm
229-6279
May 8, 1979
Attachments (1) Notice of Public Hearing
(2) Testimony of the Oregon Environmental Council
(3) Testimony of the Oregon Student Public Interest Research Group (OSPIRG)
(4) Testimony of the League of Women Voters of Oregon
A6254.2

ROBERT W. STRAUB
GOVERNOR

Department of Environmental Quality

522 SOUTHWEST 5TH AVE. PORTLAND, OREGON

MAILING ADDRESS: P.O. BOX 1760, PORTLAND, OREGON 97207

Prepared: March 13, 1979
Hearing Date: May 4, 1979

NOTICE OF PUBLIC HEARING

A CHANCE TO BE HEARD ABOUT:

PROPOSED REVISIONS TO THE STATE "CLEAN AIR" ACT
IMPLEMENTATION PLAN (SIP) FOR CARBON MONOXIDE AND OZONE
CONTROL STRATEGIES IN THE PORTLAND AIR QUALITY MAINTENANCE AREA (AQMA)

The Department of Environmental Quality is proposing to amend its State Implementation Plan for carbon monoxide and ozone control strategies in accordance with the federal Clean Air Act Amendments of 1977. The proposed revisions contain an analysis of existing and projected carbon monoxide (CO) and ozone (O_3) air quality levels as well as a program for analyzing potential new CO and O_3 control strategies. A request for extension of the December 31, 1982 EPA attainment date is also included.

WHAT IS THE DEQ PROPOSING?

Interested parties should request a copy of the complete proposed SIP Revision package. Some highlights are:

** Federal Ambient Air Quality standards for Carbon Monoxide and Ozone are projected to be exceeded beyond December 31, 1982.

** The CO and O_3 SIP revisions consist of a commitment to analyze new control strategies which would insure attainment and maintenance of ambient air quality standards. This control strategy analysis would be performed by the Metropolitan Service District (MSD) and would be completed by June 30, 1980.

** The proposed SIP revision contains a request to EPA to extend the attainment date for the CO and O_3 ambient air quality standards beyond December 31, 1982. EPA requirements for requesting this extension have been met.

WHO IS AFFECTED BY THIS INFORMATION:

The residents and industries in the Portland-Vancouver Interstate AQMA.

HOW TO PROVIDE YOUR INFORMATION:

Written comments should be sent to the Department of Environmental Quality, Air Quality Division, P.O. Box 1760, Portland, Oregon 97207, and should be received by May 4, 1979.

Oral and written comments may be offered at the following public hearing:

City	Time	Date	Location
Portland	9:00 a.m.	May 4	State Office Building Room 36, Basement 1400 SW Fifth Portland, OR

WHERE TO OBTAIN ADDITIONAL INFORMATION:

Copies of the proposed rules may be obtained from:

Carl A. Simons
DEQ Air Quality Division
P.O. Box 1760
Portland, Oregon 97207
229-6279

LEGAL REFERENCES FOR THIS PROPOSAL:

Clean Air Act Amendments of 1977 (PL 95-95). This hearing is being proposed under authority of OAR 340-20-047 and ORS 468.305.

FURTHER PROCEEDINGS:

After public hearing the Commission may adopt amendments identical to the proposed amendments, adopt modified amendments on the same subject matter, or decline to act. The adopted regulations may be submitted to the Environmental Protection Agency as part of the State Clean Air Act Implementation Plan. The Commission's deliberation should come on June 8, 1979 as part of the agenda of a scheduled Commission meeting.

CAS:kmm

OREGON ENVIRONMENTAL COUNCIL

2637 S.W. WATER AVENUE, PORTLAND, OREGON 97201 / PHONE: 503/222-1963

ALTERNATIVE FUTURES, Tigard
AMERICAN INSTITUTE OF ARCHITECTS
Portland Chapter
AMERICAN SOCIETY OF LANDSCAPE ARCHITECTS
Oregon Chapter
ASSOCIATION OF NORTHWEST STEELHEADERS
ASSOCIATION OF OREGON RECYCLERS
AUDUBON SOCIETY
Central Oregon, Corvallis, Portland, Salem
BAY AREA ENVIRONMENTAL COUNCIL
Coos Bay
B.R.I.N.G.
CENTRAL CASCADES CONSERVATION COUNCIL
CHEMEKETANS, Salem
CITIZENS FOR A BETTER GOVERNMENT
CITIZENS FOR A CLEAN ENVIRONMENT
CLATSOP ENVIRONMENTAL COUNCIL
CONCERNED CITIZENS FOR AIR PURITY
Eugene
DEFENDERS OF WILDLIFE
ECO-ALLIANCE, Corvallis
ENVIRONMENTAL ACTION CLUB
Parkrose High School
EUGENE FUTURE POWER COMMITTEE
EUGENE NATURAL HISTORY SOCIETY
GARDEN CLUBS of Cedar Mill, Corvallis, McMinnville, Nehalem Bay, Scappoose
GRANT COUNTY CONSERVATIONISTS
H.E.A.L., Azalea
LAND, AIR, WATER, Eugene
LEAGUE OF WOMEN VOTERS
Central Lane, Coos County
McKENZIE GUARDIANS, Blue River
NORTHWEST ENVIRONMENTAL DEFENSE CENTER
OBSIDIANS Eugene
1,000 FRIENDS OF OREGON
OREGON ASSOCIATION OF RAILWAY PASSENGERS
OREGON BASS AND PANFISH CLUB
OREGONIANS COOPERATING TO PROTECT WHALES
OREGON FEDERATION OF GARDEN CLUBS
OREGON GUIDES AND PACKERS
OREGON HIGH DESERT STUDY GROUP
OREGON LUNG ASSOCIATION
Portland Salem
OREGON NORDIC CLUB
OREGON NURSES ASSOCIATION
OREGON PARK & RECREATION SOCIETY
Eugene
OREGON ROADSIDE COUNCIL
OREGON SHORES CONSERVATION COALITION
O.S.P.I.R.G.
PLANNED PARENTHOOD ASSOCIATION INC
Portland
PORTLAND ADVOCATES OF WILDERNESS
PORTLAND RECYCLING TEAM, INC.
RECREATIONAL EQUIPMENT, INC.
SANTIAM ALPINE CLUB
Salem
SIERRA CLUB
Oregon Chapter
Columbia Group, Portland
Klamath Group, Klamath Falls
Many Rivers Group, Eugene
Mary's Peak Group, Corvallis
Mt. Jefferson Group, Salem
Rogue Valley Group, Ashland
SOLV
SPENCER BUTTE IMPROVEMENT ASSOCIATION
STEAMBOATERS
SURVIVAL CENTER
University of Oregon
THE TOWN FORUM, INC.
Cottage Grove
TRAILS CLUB OF OREGON
UMPQUA WILDERNESS DEFENDERS
WESTERN RIVER GUIDES ASSOCIATION, INC.
WILLAMETTE RIVER GREENWAY ASSOCIATION

Statement of Melinda Renstrom on Behalf of Oregon Environmental Council Regarding the Portland Air Quality Maintenance Area Draft State Implementation Plan for Carbon Monoxide and Photochemical Oxidants

May 4, 1979

I am Melinda Renstrom of the Oregon Environmental Council, a coalition of 75 recreational, planning, health, and environmental groups and 2500 individual members. I specialize in matters related to air quality.

My comments today are focused on three areas of the carbon monoxide and ozone portions of the Portland AQMA Draft State Implementation Plan. I will make them brief:

First, the Oregon Environmental Council criticizes the Metropolitan Service District and the Oregon State Department of Environmental Quality for omitting the Oregon state photochemical oxidant standard from the Draft State Implementation Plan. Regardless of new federal standards, the Oregon standard limits photochemical oxidant or ozone levels to .08 ppm, measured hourly, not to be exceeded more than once per year. The Oregon standard should, by law, be referenced in the

State Implementation Plan. It is not. State Hearings addressing the ozone standard have just started. There has been a tacit assumption that the state will relax the ozone standard. How might that assumption and the State Implementation Plan which contains that assumption affect the ozone hearings? Oregon Environmental Council is concerned that treating a changed standard as a foregone conclusion might very well affect the hearing process, in fact we think it already has done just that.

Presuming that the Oregon ozone standard does not change, then the Oregon Environmental Council is critical of what seems to be a new state policy for keeping two sets of books. The OEC does not approve of this policy. Oregonians lose out when the federal State Implementation Plan shows one set of rules and state administrative rules say something else. Government is complicated enough for most of us without doubling the confusion. Furthermore, the OEC is not convinced that state administrative rule provides the same degree of rights to citizens as does the Clean Air Act. Section 304 of the Clean Air Act quite specifically provides for civil suits to enforce emissions standards and provides for attorneys fees and court costs as well. The OEC presumes that Congress made provisions for the very thorough Section 304 for what they felt were good reasons. We would like to take this opportunity to voice our criticism of the double books policy for several aspects of the State Implementation Plan. I will not go into those issues at this time.

Secondly, the Oregon Environmental Council wishes to comment on the so-called "Demonstration of Commitment to Reasonably Available Control Measures" section of the Draft State Implementation Plan for both carbon monoxide and ozone in the Portland AQMA. Nowhere in the Draft document is there any mention of the currently administered Indirect Source

program. Cars are necessarily the target of most efforts to reduce CO and O_3 levels and yet one of the only programs in existence that does planning for parking and traffic patterns and which has significant implications for regional air quality is omitted from this Draft. Does omitting this vital program represent reasonable further progress? Is the state seriously trying to scrap the Indirect Source program or is this another example of keeping two sets of books? The Indirect Source program should be in the State Implementation Plan. If it is omitted the list of "Reasonably Available Control Measures" to which the state and region are supposedly committed is a joke.

Our last comment concerns public participation. In the State Implementation Plan local agencies must, by law, convince EPA that adequate provisions are being made for public participation . While Oregon Environmental Council does not fault the role of the Portland Air Quality Maintenance Area Advisory Committee in the SIP process we must insist that the role of the public relations sub-committee has been overstated. The sub-committee has not been able to do very much because there has been no commitment of financial support. Most of the work hours that have been put into publicizing the AQMA Committee's activities have been donated by the Oregon Environmental Council or one or two committee volunteers. In fact, the newsletter that was mentioned in the Draft State Implementation Plan is not an AQMA Committee activity at all. Clean Air News is a publication of the Oregon Environmental Council.

The Oregon Environmental Council urges a more complete submission of a State Implementation Plan to the U.S. Environmental Protection Agency.

April 26, 1979

Bill Young, Director
Department of Environmental Quality
P.O. Box 1760
Portland, Oregon 97207

RE: Proposed Revisions to the State Air Quality Implementation Plan for the Portland-Vancouver Interstate AQMA Carbon Monoxide and Ozone Control Strategies.

Dear Bill:

The following are the Oregon Student Public Interest Research Group's (OSPIRG) comments on the above-entitled control strategies.

OSPIRG does not oppose in principle the Department's requested extension to attain CO and O_3 ambient air standards. However, OSPIRG believes that the Department has failed to fulfill the requirements of § 172 of the Clean Air Act, 42 USC § 7502, and EPA requirements as set forth in 43 Fed. Reg. 21673 (May 19, 1978) in order to obtain an extension beyond December 31, 1982.

42 USC § 7502 (b)(11)(A) requires the Department to:

> [E]stablish a program which requires, prior to issuance of any permit for construction or modification of a major emitting facility, an analysis of alternative sites, sizes, production processes, and environmental control techniques for such proposed source which demonstrates that the benefits of the proposed source significantly outweigh the environmental and social costs imposed as a result of its location, construction, or modification.

This is in addition to the requirement that the Department "establish a specific schedule for implementation of a vehicle emission control inspection and maintenance program" and "identify other measures necessary to provide for attainment of the applicable national ambient air quality standard no later than December 31, 1987." These three measures are essential prerequisites to any extension beyond December 31, 1982.

The need for an alternative analysis program is further supported by the Joint Explanatory Statement of the Committee of Conference on the Clean Air Act P.L. 95-95:

> A plan submission in 1979 which demonstrates that oxidant or carbon monoxide standards will not be met by 1982 must contain certain specified provisions: (1) it must require alternative site analyses for major emitting facilities proposing to locate in a nonattainment area; (2) it must establish a schedule for implementing a vehicle inspection and maintenance program; and (3) it must require that funds reasonably available to the State or local government be used to improve public transportation. [Emphasis added]

1977 U.S. Code Cong. & Adm. News 1502, 1537-38. In addition, EPA, in its memorandum concerning "Criteria for Approval of 1979 SIP Revisions" clearly mandates such a program. 43 Fed. Reg. 21673, 21675 (May 19, 1978).

No alternative analysis program is provided in the Department's SIP revision for CO and O_3. Nor does the Department have an administrative rule which requires an alternative site analysis prior to the issuance of a permit for construction or modification of a major emitting facility. Without such a program, the Department's request for an extension is legally insufficient.

This is not the first time I have brought this matter to the Department's attention. This issue has been raised during several meetings with DEQ staff as well as during several AQMA Advisory Committee meetings. The response by DEQ staff has been that EPA Region X has informed the Department that such a program is not necessary in order for the EPA Administrator to grant an extension for CO and O_3 compliance. I have never seen such a statement from EPA in writing. OSPIRG submits that, if this is Region X's interpretation, it is in conflict with the clear wording of the law.

OSPIRG urges the Department through the EQC to adopt an alternative site analysis program and include it in the 1979 SIP revisions so that the DEQ's request for an extension can be expeditiously reviewed by the EPA Administrator.

Thank you for the opportunity to comment.

Sincerely,

Jan

Jan D. Sokol
Attorney and OSPIRG's
Representative on the
Portland AQMA Committee

THE LEAGUE OF WOMEN VOTERS OF OREGON
494 STATE STREET - SUITE 216
SALEM, OREGON 97301
581-5722

TESTIMONY TO THE ENVIRONMENTAL QUALITY COMMISSION REGARDING

PROPOSED REVISIONS TO THE STATE "CLEAN AIR" ACT
IMPLEMENTATION PLAN (SIP) FOR CARBON MONOXIDE AND OZONE
CONTROL STRATEGIES IN THE PORTLAND AIR QUALITY MAINTENANCE AREA

April 30, 1979

Members of the League of Women Voters of Oregon and the League of Women Voters of Portland believe that all segments of society must share responsibility for improved air pollution abatement practices. In more specific terms, the League supports adequate standards for control of all sources of pollution and strict enforcement of established rules and regulations.

The Environmental Quality Commission (EQC) has adopted air quality standards for Oregon which the League has supported. We have seen substantial progress toward these goals due in part to the Portland transportation control plan and the permit program for industry. However, some programs have not achieved their potentials, such as the federal control program for automobiles, inspection maintenance, and the indirect source rule. For example, a permit for construction of an indirect source has never been denied. Air quality in the Portland area is still not close to meeting the EQC standards.

We have noted a lack of resolve on the part of the Department and the Commission to strengthen present programs and initiate new programs to meet air quality standards. We understand that industry and developers place enormous pressure on the regulating agency to relax its rules. We would like to exert an equal pressure on the agency not to relax its rules. Citizens in this community support the stricter state standards for clean air. We do not think that the minimum limits required by the Environmental Protection Agency are acceptable.

The League of Women Voters opposes an extension of the attainment date for carbon monoxide and photochemical oxidants beyond 1982. We recognize that this is a tough problem, but we urge you to stand firm for clean air.

State of Oregon
DEPARTMENT OF ENVIRONMENTAL QUALITY
RECEIVED
AIR QUALITY CONTROL

Department Responses to Hearing Officer's Report on the "Proposed Revisions to the State Air Quality Implementation Plan (SIP) for the Portland-Vancouver Interstate AQMA Carbon Monoxide and Ozone Control Strategies.

A. RESPONSES TO TESTIMONY OF OREGON ENVIRONMENTAL COUNCIL

1. ISSUE: "Existing State Ozone standard is not addressed in proposed Ozone SIP Revision."

   Response: Section 172 of the Clean Air Act Amendments (CAAA) of 1977 requires that states only have to submit SIP revisions which address national ambient air quality standards (NAAQS). Since both the primary and secondary NAAQS for Ozone is 0.12 ppm, the SIP proposed revisions only addressed these standards. The above position supports the present Department policy of keeping state programs and requirements that are not federally required out of the SIP so as to maintain maximum administrative flexibility and minimize paper work. (Refer to body of Staff Report on SIP as to possible alternative approaches available to the EQC in response to this issue.)

2. ISSUE: "The double (ozone) standard would cause confusion and could diminish the public's ability to bring effective civil suits to enforce air quality standards and programs as provided by section 304 of the Clean Air Act."

   Response: Informal advice from legal counsel to the Department indicates that this statement is essentially correct. Present state statutes do not allow the same level of legal redress for the failure of the State of Oregon to enforce any air pollution standard and law. Section 304 allows "persons" to sue EPA for failure to enforce adopted SIP provisions and provides, at the court's discretion, the awarding of coats of litigation to any party. Such provisions do not presently exist in state statutes according to legal counsel. (Refer to body of staff report for a more detailed discussion on this issue.)

3. ISSUE: "Indirect Source Rule is not included in the list of Reasonably Available Control Measures"

   Source: Oregon Environmental Council

   Response: It is the Department's opinion that the Rules for Indirect Sources (OAR 340-20-100 through 135) is not a Reasonably Available Control Measure (RACM) as defined in the Clean Air Act (Section 108) but is rather a regulatory review mechanism to assess the air pollution impacts from motor vehicles. While the initiation of a RACM, e.g. improved transit service, may be a condition of approval of an Indirect Source Permit, the Indirect Source Rule in and by itself is not RACM. However, the Rules for Indirect Sources are part of the present Oregon SIP and the fact

it did not appear in Sections 4.2.3 or 4.3.3 of the proposed SIP revisions is not to be construed as a conscious effort by the Department to delete them from the SIP. Amendments have been made to Sections 4.2.4 and 4.3.4 of the proposed SIP to clarify the Department's position on the Rules for Indirect Sources.

4. ISSUE: "The role of the Portland AQMA Advisory Committee in the SIP process . . . has been overstated."

   Response: Within existing resources, public relations efforts have been initiated as explained in sections 4.2.8.4 and 4.3.8.4 of the SIP. To further clarify the programming of future public involvement programs amendments have been added to these sections to indicate the Advisory Committee's role in producing press releases and developing air quality information brochures. In addition, it is now stated in the SIP that as funding becomes available programs and materials listed in the last paragraphs of sections 4.2.8.4 and 4.3.8.4 will be developed. It is expected that funds to support an adequate public relations program should be available through the pooled resources of DEQ and MSD.

B. RESPONSE TO TESTIMONY OF MR. GARY COE, REPRESENTING THE MULTNOMAH HOT ROD COUNCIL

1. ISSUE: "Multnomah Hot Rod Council is opposed to an annual motor vehicle inspection program as being inflationary and would be a hardship on less affluent individuals."

   Response: Due to a misunderstanding Mr. Coe thought that the proposed SIP was requiring that an annual motor vehicle inspection/maintenance (I/M) program replace the existing biennial program. It was explained to Mr. Coe at the hearing that the SIP revision only proposes to evaluate the need for an annual I/M program as part of the alternative transportation measure evaluation program (Sections 4.2.3 and 4.3.3). Until this analysis is completed (June 30, 1980) and it is clearly demonstrated that an annual program is needed to meet the carbon monoxide and/or ozone standards, the Department would not proposed increasing the frequency of the inspection cycle. It was also explained to Mr. Coe that the SIP revisions only address the CO and O_3 ambient air standards and not particulate ambient air standards.

C. RESPONSE TO TESTIMONY OF THE OREGON STUDENT PUBLIC INTEREST RESEARCH GROUP (OSPIRG)

1. ISSUE: "No alternative analysis plant site analysis requirements as specified by Section 172(b)(11)(A) of the Clean Air Act are included in the Carbon Monoxide and Ozone SIP revisions."

   Response: The need for an alternative plant site analysis program had been previously discussed with representatives of Region X EPA. Based upon these previous discussions, the Department was given the impression that no such program would be needed for a non-attainment area in the process of developing an attainment plan.

However, the Department was officially notified by EPA on May 15, 1979 that such a program is needed as part of the SIP revisions for carbon monoxide and ozone.

In response to this EPA position, the "Rules for Special Permit Requirements for Sources Locating in or Near Nonattainment Areas" (OAR 340-20-190 through 195) have been amended to include these requirements. Carbon monoxide and ozone SIP revisions have been amended (Sections 4.2.4, 4.3.4) and new sections added (5.2 and 5.3) to indicate the implementation of an alternative plant site evaluation program as part of an overall new sources review (NSR) program.

D. RESPONSE TO TESTIMONY OF THE LEAGUE OF WOMEN VOTERS OF OREGON

1. ISSUE: "The League is opposed to an extension of the attainment date for the carbon monoxide and ozone ambient air standards beyond 1982.

Response: The Department is committed to meeting the federal primary carbon monoxide and ozone standards as soon as possible but within the restraints of available resources, eg., adopted and implementable control strategies, funding, manpower, etc. As noted in section 4.2.5 of the carbon monoxide SIP Revision, the comprehensive alternative transportation analysis to be completed by June 30, 1980 will lead to "either a request for a specific attainment date extension or a withdrawal of this request." Meeting the Ozone standard by the end 1982 will be much more difficult if not impossible, unless the public is willing to make fairly extreme changes in lifestyles. The Department believes its request related to the extension of the attainment date is valid, both legal, and technically given the magnitude of air pollution problems in this region.

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Metropolitan Service District
527 SW Hall Portland, Oregon 97201 503/221-1646

Memorandum

Date: April 30, 1979

To: Transportation Policy Alternatives Committee (TPAC)

From: MSD Staff

Subject: Council Adoption of Proposed Oregon Air Quality Implementation Plan (SIP) Revisions.

At their May 10 meeting, the MSD Council will hear the first reading of an ordinance and hold a hearing on adoption of MSD's portion of the proposed SIP Revisions. Council adoption of the Revisions is scheduled for May 24, 1979.

A copy of MSD's portion of the SIP Revisions has been mailed to all TPAC members and a special TPAC subcommittee meeting was held on April 24 to review the proposed revisions. The issues and concerns that were raised at the subcommittee meeting have been summarized with MSD staff responses for the Council and are transmitted herewith for your information (attachment "A").

Copies of the ordinance will be available at the May 8 TPAC meeting.

TPAC is now requested to forward MSD's portion of the SIP Revisions to JPACT with their (TPAC's) recommendation. JPACT will review the SIP Revisions and TPAC's recommendation(s) on May 10. Please refer to the proposed SIP Revision document mailed to you for details of the MSD Council's adoption schedule.

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ATTACHMENT "A"

ISSUES AND CONCERNS RELATED TO THE PROPOSED SIP REVISIONS

1. What will Tri-Met's involvement be in terms of manpower requirements, scheduling, etc.?

   MSD Staff Response: Although this kind of information is not contained in the SIP Revisions, it is in the FY 1980 Unified Work Program and will be described in more detail in a forthcoming update of the air quality planning Prospectus (work program). Tri-Met must be involved in certain key stages of the air quality planning effort, as must other implementation agencies, for the area to meet its air quality objectives. MSD is coordinating with the implementation agencies on the update of the Prospectus to insure that their involvement is programmed appropriately. A preliminary schedule for the O_3 control strategy planning has been drafted and is being circulated now for review and comment.

2. Where will Tri-Met's funding come from to support the planning? Are EPA Section 175 funds available? Are there additional EPA monies available?

   MSD Staff Response: Tri-Met's funding support for transportation planning is included in the Unified Work Program. If it is determined that Tri-Met's currently-programmed funding support is insufficient, it may be possible to find additional funds or reprogram some of the existing funds. However, it does not appear likely that EPA 175 funds will be available for Tri-Met's use. MSD will investigate other sources of funds and will welcome any suggestions from Tri-Met or the other implementing agencies as to ways of reducing the burden of the air quality planning program.

3. Will operation and maintenance costs be estimated for planned control strategies? If Tri-Met is required to institute new services, who will fund such services?

   MSD Staff Response: Yes, operation and maintenance costs will be estimated. (Tri-Met should have a major role in estimating these costs.) In some cases, information may already be available from past or current planning efforts. If new Tri-Met bus services are required, funding sources must be identified before any commitments are made to the U.S. Environmental Protection Agency or others for implementation of the services.

4. Why is transportation the overwhelming center of attention in the SIP? There is a need to emphasize VOC rules already instituted, etc.

   MSD Staff Response: Transportation is the center of attention only in MSD's portion of the SIP. The complete SIP, the docu-

ment that the State of Oregon will be adopting, has several chapters describing the rules, regulations, and control measures pertaining to stationary sources. The document that is being circulated by MSD in the Portland metropolitan area consists of only two sections of the entire SIP (Section 4.2 and 4.3), the sections on carbon monoxide and ozone, respectively.

Mobile sources are responsible for 98% of the CO in the AQMA. Thus, there is little discussion of stationary sources in this segment. Stationary sources are responsible for 37 percent of volatile organic compound emissions. This may account for the lesser emphasis placed on this source in the section on control of ozone. However, there is discussion of stationary sources in Sections 4.3.2.1, 4.3.2.3, 4.3.3.2, 4.3.4, and 4.3.7.1 of the SIP.

It is MSD staff's intention to review the section on control of ozone in the draft SIP to determine if additional discussion of stationary source controls should be included in the SIP.

There are discussions in Sections 4.2.3.3. and 4.3.3.3 of factors to be analyzed in the future, including costs and policy implications.

In the future attainment control plans there will be an in-depth discussion of tradeoffs between transportation and industry.

5. Should transportation and industry be assigned targets for reduction or should all strategies be evaluated and then selected?

MSD Staff Response: The work program that MSD and DEQ are now formulating takes the approach of analyzing all control measures that appear to have the highest potential for solving air quality problems. Since non-air quality impacts will also be analyzed, decision makers will then be able to adopt control measures based on a thorough consideration of all relevant criteria.

6. Can more air quality monitors be instituted?

MSD Staff Response: Air quality monitoring is a DEQ responsibility. There is no funding in DEQ's biennium budget for additional air quality monitoring in Portland at this time. The possibility of more monitors will be examined, however, to see if it is warranted compared to monitoring needs elsewhere in the State.

7. Tri-Met suggests that employment projections for downtown Portland are 20 percent too low for the year 2000.

MSD Staff Response: Population, employment, and growth alloca-

tion projections were made for the year 2000 based on two CRAG Technical Memoranda, A Regional Employment, Population and Household Forecast and Second Round Regional Growth Allocation for the CRAG Transportation Study Area Year 2000. Initial comments have been that employment projections for the year 2000 may be low. However, a 20 percent adjustment in the year 2000 forecast would be far less significant for 1982 or 1987, the target years for air quality planning. Revised population and employment projections are to be used in the next round of SIP planning, however.

8. There should be more coordination of the air quality planning process with TPAC.

   MSD Staff Response: A monthly air quality progress report will be submitted to TPAC.

9. MSD should emphasize that emission factors, population and employment projections, and other assumptions used are from the best available information, but are subject to change.

   MSD Staff Response: This has not been emphasized enough in the SIP. A paragraph will be added making this point.

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ISSUES AND CONCERNS RELATED TO THE

PROPOSED SIP REVISIONS

May 9, 1979

1. Has MSD staff estimated the staff time and cost of participation by Tri-Met and other participants in the air quality planning process?

   MSD Staff Response: The work program and schedules for the planning process are still being developed and reviewed to insure coordination between planning for carbon monoxide, ozone and particulate control strategies. When the schedules are complete, MSD staff will coordinate with staff from Tri-Met and other participants to prepare the estimates of staff time and costs.

2. What is the Oregon Department of Environmental Quality (DEQ) staff's schedule for preparing recommendations to the Environmental Quality Commission (EQC) on the state standard(s) for ozone.

   DEQ Staff Response: The DEQ staff is compiling testimony from hearings now and anticipates a submittal of recommendations to the Director of DEQ on May 25 and to EQC on May 30, 1979.

3. Will the MSD Council have a role in establishing policies involving tradeoffs between mobile and stationary or area sources?

   MSD Staff Response: The MSD and DEQ have partnership roles in establishing air quality policies. The MSD Council has charged the Air Quality Maintenance Area (AQMA) Advisory Committee with the responsibility of advising the Council on tradeoffs associated with such policies.

4. Is data available to corroborate the claim in the proposed SIP revisions (p. 25) that prohibiting turns at intersections in the downtown (Portland) transit mall reduces carbon monoxide emissions?

   MSD Staff Response: The Environmental Protection Agency approved this measure in the 1973 SIP. EPA's approval is probably based on the premise that prohibiting turns improves the traffic flow and thereby reduces "idling emissions" from the vehicles waiting for turning movements to be completed.

5. Why are additional bus and carpool lanes given a "low priority" rating on page 31 of the carbon monoxide (CO) section (Section 4.2)?

   MSD Staff Response: This priority reflects MSD staff's initial estimate of the potential of these measures for CO reduction, but is subject to change if there is sufficient evidence that the priority should be raised.

6. The figure in the ozone strategy section (4.3) on emission reduction requirements (Fig. 4.3.3-1, page 17) is unclear as to the basis for the percentages shown.

   MSD Staff Response: These percentages are explained in the text of Section 4.3, but the staff will consider methods of clarifying the figure.

7. The SIP revision priority lists do not include the EQC's indirect source rule or the volatile organic compound (VOC) rules recently adopted by the EQC as alternatives to be studied further.

   MSD Staff Response: Sections 4.2 and 4.3 are predominantly the responsibility of the MSD. The two rules referred to are administered by DEQ and are referred to in other sections of the SIP revisions. However, they may be added to the list of control measures to be evaluated as time and resources will allow. The AQMA Advisory Committee will be considering the addition of such measures to the priority lists in the near future.

8. There is a disproportionately large discussion of the bicycle program in the proposed revisions (p. 11 of Section 4.2).

   MSD Staff Response: The staff concurs and will consider shortening that section.

9. The AQMA Advisory Committee requests MSD and DEQ staff provide the Committee with detailed information on the assumptions and methods used to forecast the mobile source and stationary source emission inventories (Appendices 4.3-1A, 1B, 2A and 2B).

   MSD and DEQ Staff Response: This information will be provided to the Committee as soon as possible.

10. MSD and DEQ should give serious consideration to the possibility of imposing controls on nitrogen dioxide (NO_2).

    DEQ Staff Response: NO_2 is not now, nor is it forecasted to be, a significant air quality problem (existing concentrations are about one-half the levels allowed by federal standards). Therefore, it is staff's judgment that MSD's control strategies should be directed at the pollutants that are violating air quality standards.

11. Do the SIP revisions address the increased demands for parking that will accompany new developments in the City of Portland central business district?

MSD Staff Response: The City of Portland's recently initiated project to develop a Parking and Traffic Circulation Plan will address this issue. The City's planning efforts will be coordinated with the SIP control strategy planning by MSD and DEQ.

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ISSUES AND CONCERNS RAISED AT THE MAY 10, 1979 HEARING ON THE PROPOSED SIP REVISIONS WITH MSD STAFF RECOMMENDATIONS TO THE COUNCIL

May 24, 1979
(Supplement to previous staff reports dated May 3 and May 9, 1979)

Issues and Concerns

1. Why has the current state standard for ozone (0.08 ppm) been omitted from the proposed SIP revisions?

   MSD Staff Response: The MSD staff, in collaboration with the Oregon Department of Environmental Quality staff, are interpreting federal law to require the SIP to address only federal primary standards. The law reads as follows:

   > "Section 110(a)(1) Each State shall, after reasonable notice and public hearings, adopt and submit to the Administrator, within nine months after the promulgation of a national primary ambient air quality standard (or any revision thereof) under Section 109 for any air pollutant, a plan which provides for implementation, maintenance, and enforcement of such primary standard in each air quality control region."

   In addition, MSD staff has been informed that it is the Governor's policy to include in the plan only those elements absolutely required by federal law, thereby preserving the state's authority in matters not addressed by federal requirements.

   Further, MSD staff is concerned about the lack of a sound technical basis for any action on the 0.08 standard by the MSD Council at this time. The Council has been given relatively limited information regarding the implications of adopting a standard more restrictive than the 0.12 standard. Changing the basis for the SIP revisions to the 0.08 standard might make it virtually impossible to meet the federal deadline for attaining the standard. Further, the economic and social implications are unknown.

   Staff also has a budgetary concern that it is questionable whether the air quality planning grants administered by the US Environmental Protection Agency (EPA) can be used for planning that addresses a state standard that is more stringent than the federal standard.

   Therefore, it is MSD staff's recommendation that the proposed SIP revisions should address only the federal standard, with

the understanding that the Council may re-evaluate the standard in the future and exercise the full measure of MSD's powers to ensure that the appropriate level of control is maintained.

2. Are there presently existing federal standards relating to indirect source controls?

MSD Staff Response: No. EPA did promulgate regulations in 1972 purporting to set indirect source standards. These regulations resulted in massive negative comment, adverse congressional reaction and calls for repeal. During 1973, this resistance mounted and resulted in EPA's decision to rescind the early indirect source regulations in 1974. Since that time no federal standard has existed, nor is one contemplated at present.

3. Has the Clean Air Act pre-empted the states with regard to passage and enforcement of indirect source controls?

MSD Staff Response: No. The states remain free to pass and enforce air pollution controls. The only areas where the Clean Air Act pre-empts the state role relate to new car emission standards, airplane engine emissions and non-ferrous smelters. Section 116 of the act speaks for itself:

RETENTION OF STATE AUTHORITY

> Sec. 116. . . . nothing in this Act shall preclude or deny the right of any State or political subdivision thereof to adopt or enforce (1) any standard or limitation respecting emissions of air pollutants or (2) any requirement respecting control or abatement of air pollution; except that if an emission standard or limitaton is in effect under an applicable implementation plan or under section 111 or 112, such State or political subdivision may not adopt or enforce any emission standard or limitaton which is less stringent than the standard or limitation under such plan or section.

4. Does Oregon's State Implementation Plan include provision for indirect source controls?

MSD Staff Response: Yes. Despite the lack of federal standards, Oregon included indirect source controls in its first state implementation plan. In Section 2.2 of the original plan submitted to EPA for approval, the provisions of OAR Chapter 340 were incorporated by reference as the standards adopted by the Environmental Quality Commission. In January of 1972, the EOC adopted an amendment to OAR Chapter 340 dealing with parking facilities in urban areas. This amendment was itself included in the state plan and remains the substantive basis for the indirect source control program run by DEQ.

5. Why has the Indirect Source Review rule been omitted from the list of "Reasonably Available Control Measures (RACM's)" in the proposed SIP revisions?

MSD Staff Response: In MSD staff's judgment, the Indirect Source Review (ISR) rule does not fit the definition of an RACM. The DEQ staff concurs with this judgment and is classifying the ISR rule as a "regulatory review mechanism." However, this does not mean that the ISR rule has been omitted from the SIP; it is already in the previously adopted SIP (1973) and its omission from the proposed SIP revisions, therefore, has no effect.

6. Has DEQ's involvement with indirect source regulation preempted further enactments and enforcement activity by MSD?

MSD Staff Response: This is a gray area at present. The program at DEQ has not been actively or aggressively pursued. The state Environmental Quality Commission, according to John Kowalcyzk at DEQ, has never approved the staff's recommendation for denial of a building permit for lack of adequate indirect source cotrols. It is certain that state law controls the allocation of regulatory power between MSD and DEQ.

The Legislature has mandated that DEQ may:

> ". . . adopt such rules and standards as it considers necessary and proper in performing the functions vested by law in the commission." ORS 468.020(1)
>
> "classify air contamination sources according to levels and types . . . and may require registration or reporting or both for any such sources." ORS 468.320(1)
>
> "Formulate, adopt, promulgate, amend and repeal general rules and regulations which control, reduce or prevent air pollution in such areas of the state as shall or may be affected by air pollution." ORS 449.800(1)

MSD has also been expressly empowered to undertake air pollution control activities such as regulation of indirect sources. MSD's statute permits formation of a functional plan to control effects on air quality of areawide activities. Presumably, the scope of these plans may extend to control over indirect sources in the region. It should be noted, however, that DEQ's enabling legislation is much more explicit in this regard. MSD should exercise caution before contradicting or expanding DEQ's program without cooperation from that agency. MSD's proper role may be a cooperative one, in con- junction with DEQ's efforts. DEQ has been directed to:

"Cooperate with the appropriate agencies of the United States or other states or any interested agencies with respect to the control of air pollution." ORS 449.781(3)

Since MSD is the lead agency on metropolitan aspects of transportation planning for the SIP, it will, however, be expected by DEQ to consider indirect source control strategies as they interrelate with transportation controls.

Recommendations

In response to the issues and concerns raised in previous discussions of the proposed SIP revisions, MSD staff is recommending some minor changes in the SIP revisions as proposed. The recommended changes include the following:

1. The proposed SIP revisions should be amended to indicate that the population and employment data that were used in estimating source emissions will be revised in the next round of SIP planning.

2. The proposed SIP revisions should be amended to indicate the mechanisms for involving elected officials in the transportation air quality planning process (e.g., JPACT, LOAC, etc.).

3. The proposed SIP revisions should be amended to indicate that the Indirect Source Review rule will be evaluated and amended, if necessary, after these SIP revisions are adopted.

Because of the short timeframe available for amending the proposed SIP revisions, a revised draft is being prepared with the changes listed above incorporated in it. If possible, copies of the revised draft will be made available at the May 24 Council meeting.

In addition to the recommended changes to the SIP revisions that are listed above, staff recommends that Ordinance No. 79-71 be amended as follows:

1. The reference to the Oregon Environmental Quality Council in Section 2 of the ordinance should be corrected to read "Environmental Quality Commission."

2. The ordinance should be amended to indicate that the base data and assumptions in the SIP are not intended to control development or growth "at the present time."

3. The ordinance should be amended by addition of the following section:

"Section 4. In recognition of the substantial concerns raised regarding the health and welfare implications of using the federal standard for ozone as the basis for the SIP revisions, the Council may re-evaluate the ozone standard in the future and if necessary, exercise the full measure of MSD's powers to improve and maintain the quality of air resources in the metropolitan area."

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Comments Received from the U.S. EPA on May 15, 1979 on the Carbon Monoxide and Ozone SIP Revisions for the Portland-Vancouver Interstate AQMA and Department Responses.

(NOTE: The EPA comments listed below are edited from a larger list received on May 15, 1979. Only those comments which are directly related to the proposed Portland AQMA Carbon Monoxide and Ozone SIP Revisions requiring a response are listed.)

1. EPA Comment: "Accurate, comprehensive and current emissions inventory.

> Essentially Complete: Documentation describing the way parking lot and parking activity emissions were calculated is required. For example, we are finding that carbon monoxide emissions generated from parking activity could amount to a substantial percent of the emissions generated in the central business district. (Comments pertain to mobile source only, see other comments on stationary sources.)"

Response: In all the guidelines that the Department had received from EPA regarding motor vehicle emission simulations this issue had never been addressed. However, the Department believes it had addressed this issue by using a conservative cold start percentage used as an input into the motor vehicle emission factors. National studies have shown the cold start percentage to be approximately 27%, while the Oregon SIP analyses used 34%. This increase in cold start percentage has the effect of increasing a base year (1977) emissions motor vehicle (CO and VOC) approximately 8 to 15% over that amount simulated if a 27% cold start assumption had been used. This additional amount of emissions should approximate the effect of idle and parking lot circulation emissions in the CBD. For the future years analysis (1982, 1987), the 34% cold start assumption had resulted in an additional 10% to 19% increase in CO and VOC emissions over what would have been simulated if a 27% cold start assumption had been used.

To more directly address this EPA comment on simulation of parking lot emissions, MSD will be modifying its motor vehicle emission simulation models to directly assess the impacts from parking lot/idle emissions versus "running" (VMT related) emissions. These revised models will be used in the comprehensive alternative transportation measure analysis that will be completed by June 1980.

2. EPA Comment: "Schedule for comprehensive analyses of alternatives and demonstration that analysis is underway or completed.

> Incomplete: The only schedule in the submittal is one to complete the alternatives analysis needed by July 1980. Some interim dates are needed for individual measures or packages of measures."

Response: As part of its next quarterly progress report required as part of its Section 175 funding agreement with UMTA/EPA, MSD will provide a detailed work schedule for the carbon monoxide and ozone comprehensive analyses of alternative transportation measures. This work schedule will include interim dates for the development of specific and/or packages of potential transportation control measures.

3. EPA Comment: "Process for public, interest group, and elected official consultation and involvement in defining transportation-air quality issues, establishing the planning process, and development and analyses of alternatives.

Public Participation, Public Information - Complete:
Elected Official Involvement - Incomplete:

The process for public involvement relies largely on the Portland Air Quality Maintenance Area Advisory Committee. This group contains both special interest group representation and that of citizen at large. Does the concerned citizen have an adequate opportunity to be heard through this group? Consideration might be given to other avenues of citizen participation prior to public hearings on the phase II SIP submission.

The public information program appears to be well planned and innovative.

The submission does not address how publicly elected officials will be brought into the process (for example the mayors of Portland and Vancouver)."

Response: In response to the question, "Does the concerned citizen have an adequate opportunity to be heard through this group? (Portland AQMA Advisory Committee)" it was stated in Section 4.2.8.4 of the proposed carbon monoxide SIP revision that,

> "All committee meetings are open to the public. At every meeting, there is an opportunity for interested citizens to comment on the activities of the committee or any other matter pertaining to air quality."

Other avenues of citizen participation and education, e.g. public forums, are noted in Section 4.2.8.4 of the carbon monoxide SIP.

Regarding the comment how local elected officials will be brought in the SIP revision process, statements have been added to Sections 4.2.8.4 and 4.3.8.4 of the CO and O_3 SIP Revisions to address this issue.

4. EPA Comment: "Identification of estimated financial and manpower resources necessary to carry out the process described by these guidelines. A commitment to the first year of this process should be demonstrated in the UPWP.

Complete-Documentation Needed:

The submission implies that the funding requested in the Section 175 grant application ($384,915) will be sufficient to complete the phase II SIP submission. This needs to be explicitly addressed."

Response: MSD is presently updating its Air Quality Prospectus which will contain a detail accounting of costs associated with completing the phase II SIP submission. This revised document will be submitted to EPA within the next two months.

5. EPA Comment: "Evidence that the SIP was adopted by the State after reasonable notice and public hearing.

Documentation Required: We note that the public hearing is being held currently. The final SIP submission should contain the public notice for the hearing (and where it was published), certification the hearing has taken place, and a summary of hearing proceedings. Evidence as State and local A-95 clearinghouse review should also accompany the final submission."

Response: The required documentation is contained in the appendices 4.2-4 and 4.3-3 of the SIP Revisions.

6. EPA Comment: "Provisions for progress reporting throughout the planning and implementation period.

Incomplete-Integration with 175 Grant Reporting Needed: The annual progress reports must separate the inventory, growth, and reduction needed for mobile sources from those for stationary sources. Hopefully, this will be done in the future as it has been in the past.

The submission does not address how to integrate progress reporting for the air quality portions of the UPWP (the Section 175 program quarterly reports) with progress reporting on the SIP (annual report)."

Response: Annual reports will address the issue of accounting for existing emissions, growth and emission reductions from implemented control strategies. Where appropriate, Section 175 funding quarterly reports will be integrated into the annual reporting format. At a minimum, Section 175 quarterly reports will be made an attachment to the annual report.

7. EPA Comment: "Schedule of activities leading to implementation of I/M (if attainment after 1982).

Conditionally Complete: At this point in time we are uncertain whether the Oregon (Portland) inspection/ maintenance (I/M) program actually does conform to the

I/M policy statement that was issued by EPA Assistant Administrator David Hawkins in July 1978. We agree that future analysis is necessary as described in the alternative analysis schedule to determine if an annual I/M program is necessary. As new information is gathered we will work jointly with DEQ to determine the existing program's acceptability."

Response: The Department has thoroughly reviewed Mr. Hawkins' memo of July 1978 and believes based upon the methodology provided to DEQ by EPA (as referenced in Appendix 4.2-1) that Oregon's biennial I/M program meets all criteria specified in the memo regarding an acceptable I/M program. However, if the biennial I/M emission reduction credit methodology needs revision based upon the results of the EPA sponsored Portland I/M Evaluation Program, the Department will include such information in its alternative transportation measures evaluation program if such information is made available in a reasonable time before June 1980.

8. EPA Comment: "The Emission inventories for VOC in Portland and Salem appear to meet the requirements of the Act and our Guidelines. We do note, however, that they do not include emissions from bulk plants or degreasers. . ."

Response: Estimated emissions from bulk plants and degreasers have been included in the VOC inventories (Appendices 4.3-1A and 4.3-1B.)

9. EPA Comment: The emission inventory for VOC for Portland includes emissions from sources in Clark County, Washington. Such emissions are not discussed anywhere else in the plan. The effects of these emissions on the control strategies and attainment demonstration should be noted.

Response: Section 4.3.2.1 of the Ozone SIP Revision discusses the sources and quality of Washington State emission estimates. The effects of Washington emissions as the relate to potential control strategies as listed in Sections 4.2.3.3 and 4.3.3.3 of the SIP will be evaluated as part of the comprehensive alternatives control strategy analysis.

10. EPA Comment: "For each of the nonattainment areas, the NMHC/NO_x ratios are lower than the 9.5:1 default value recommended in Mr. Rhoads' memorandum of February 21, 1978 entitled "Determination of Reductions Necessary to Attain the Ozone Standard." The high NO_x data should be carefully reviewed to determine its representatives before accepting the low NMHC/NO_x ratio . . . Such low ratios would result in the control agency underpredicting the amounts of reduction needed to meet the ambient standards. . ."

Response: As explained in technical Appendix 4.3-1 the method used to determine the appropriate $NMHC/NO_x$ ratio for the Portland AQMA was discussed with Ned Meyer, ozone modeling expert of EPA. According to our notes of that discussion, Mr. Meyer concurred with the Department's methodology for developing the $NMHC/NO_x$ ratio used in the EKMA modeling process. Based on our discussions with EPA staff and review of EPA modeling guidelines, we believe the methodology used to develop the Portland $NMHC/NO_x$ ratio is technically sound.

11. EPA Comment: "Where 18 month extensions are being sought for submission of plans to meet secondary standards (pursuant to Section 110(b) of the CAA and 40 CFR Section 51.31), the subject requirements (Section 173 only for TSP) need not be adopted until such time as the control strategy is required. However, in the case of CO/O_x plans where the need for a post 1982 attainment date has been documented, Section 172 of the CAA states that all provisions in subsection (b) must be adopted to void the nondiscretionary penalty of no growth of major stationary sources after July 1, 1979. Thus, the interim plans being required at this time for CO and O_x (for areas where post 1982 attainment dates are being identified) must include both permit requirements for major stationary sources (Section 172(b)(6) and Section 173)) and a program for requiring various alternative analyses relating to stationary sources (Section 172(b)(11)(A)."

Response: The Portland-Vancouver Interstate AQMA Carbon Monoxide and Ozone SIP Revisions have been modified (Sections 4.2.4, 4.3.4) and added (Sections 5.2 and 5.3) to address this comment. All applicable new source review (NSR) requirements as specified in the Clean Air Act will be implemented in accordance with EPA requirements. (A more detailed discussion on this subject can be found in the staff report (No. A3) on the "Rules for Special Permit Requirements for Sources Locating in or Near Nonattainment Areas" (OAR 340-20-190 through 195.))

CAS:kmm
A6254.B1

BEFORE THE COUNCIL OF THE

METROPOLITAN SERVICE DISTRICT

FOR THE PURPOSE OF ADOPTING MSD'S PORTION OF THE OREGON CLEAN AIR IMPLEMENTATION PLAN (SIP REVISIONS, SECTIONS 4.2 AND 4.3)	)))))	ORDINANCE NO. 79-71 Introduced by Transportation Committee

WHEREAS, The Metropolitan Service District (MSD) is the designated lead agency for transportation/air quality planning in the Oregon portion of the Portland/Vancouver Air Quality Maintenance Area (AQMA) for carbon monoxide (CO) and ozone (O_3); and

WHEREAS, The MSD, in cooperation with the Oregon Department of Environmental Quality (DEQ), has prepared revisions to the Oregon Clean Air Implementation Plan (SIP) to meet requirements of the Federal Clean Air Act, as amended; and

WHEREAS, Said revisions are contained in Sections 4.2 and 4.3 of the proposed statewide SIP Revisions published by DEQ April 5, 1979; and

WHEREAS, Said revisions must be approved by the U.S. Environmental Protection Agency by June 30, 1979.

THE COUNCIL OF THE METROPOLITAN SERVICE DISTRICT ORDAINS AS FOLLOWS:

Section 1. Sections 4.2 and 4.3 of the proposed SIP Revisions, copies of which are attached as Exhibit "A", are hereby adopted and endorsed by the Council for inclusion in the statewide SIP Revisions prepared by DEQ;

Section 2. Sections 4.2 and 4.3 shall be referred to the Oregon Environmental Quality Commission for adoption in the statewide SIP;

Section 3. Neither the contents of Sections 4.2 and 4.3 nor the projections referenced therein shall be construed by MSD as a regulation of development in the AQMA nor as an absolute limit on growth in the AQMA at the present time.

Section 4. In recognition of the substantial concerns raised regarding the health and welfare implications of using the federal standard for ozone as the basis for the SIP revisions, the Council may re-evaluate the ozone standard in the future and if necessary, exercise the full measure of MSD's powers to improve and maintain the quality of air resources in the metropolitan area.

ADOPTED by the Council of the Metropolitan Service District this 24th day of May, 1979.

Presiding Officer

ATTEST:

Clerk of the Council

TW/gl
3440A
0033A

ORDINANCE NO. 79-71

TITLE Adopting MSD's Portion of the Oregon Clean Air Implementation Plan (SIP Reviions Sections 4.2 & 4.3

DATE INTRODUCED 5-10-79

FIRST READING 5-10-79

SECOND READING 5-24-70

DATE ADOPTED 5/24/79

DATE EFFECTIVE 6/24/79

ROLLCALL

	Yes	No	Abst.	
Burton	x			
Stuhr	x			
Williams	x			
Berkman				absent
Kirkpatrick	x			
Deines	x			
Rhodes				
Schedeen	x			
Miller				absent
Banzer	x			
Peterson	x			
Kafoury	x			

ROBERT W. STRAUB
GOVERNOR

Environmental Quality Commission

522 S.W. 5th AVENUE, P.O. BOX 1760, PORTLAND, OREGON 97207 PHONE (503) 229-5696

MEMORANDUM

To: Environmental Quality Commission

From: Director

Subject: Significant Amendments to the Carbon Monoxide and Ozone SIP Revisions for the Portland-Vancouver Interstate AQMA

CARBON MONOXIDE SIP REVISION (4.2)

Section 4.2.4 - Rules and Regulations

Add new paragraph (1st paragraph) referring to the need for new source review rule (OAR 340-20-190 to 195) per comments of EPA.

Delete: Sections (original first paragraph) indicating no new rules or regulations would be needed at this time for the Portland Area.

Delete: reference to federal offset interpretive ruling requirements since they are being replaced by Clean Air Act Amendment New Source Review requirements.

Add: New paragraph (last paragraph in section) referring to Department position on Indirect Source rules.

Section 4.2.8.3 Interagency Agreements and Coordination

Add: Section (last paragraph) on how local elected officials will be involved in the SIP revision process.

OZONE SIP REVISION (4.3)

Section 4.3.4 - Rules and Regulations

Changes made to this section are identical to those made to Section 4.2.4.

Section 4.3.8.3 - Interagency Agreements and Coordination

Changes made to this section are identical to those made to Section 4.2.8.3.

Contains Recycled Materials

VOC Emission Inventories

Add emissions for bulk plants and degreasing operations. Revise emission reductions to certain VOC sources based on changes to VOC rules.

Add separate Oregon source only VOC emission inventories (Appendices 4.3-1B and 4.3-1D.

SECTION 5.2 - PORTLAND-VANCOUVER INTERSTATE AQMA NEW SOURCE REVIEW - CARBON MONOXIDE

This is a new section added to SIP to respond to EPA comments regarding the need for a new source review program for carbon monoxide sources in the Portland AQMA.

SECTION 5.3 - PORTLAND-VANCOUVER INTERSTATE AQMA NEW SOURCE REVIEW - OZONE

This is a new section added to SIP to respond to EPA comments regarding the need for a new source review program for stationary VOC sources in the Portland AQMA.

WILLIAM H. YOUNG

CAS:kmm
229-6279
May 23, 1979
A6254.C

SECTION 4.2

CONTROL STRATEGY FOR

PORTLAND-VANCOUVER INTERSTATE

AIR QUALITY MAINTENANCE AREA (AQMA) (Oregon Portion)

1979 STATE IMPLEMENTATION PLAN REVISION

FOR CARBON MONOXIDE

(Request for Extension of the December 31, 1982 Attainment Date)

June 8, 1979

Metropolitan Service District

Oregon Department of Environmental Quality

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4.2.0 PORTLAND-VANCOUVER AIR QUALITY MAINTENANCE AREA STATE IMPLEMENTATION PLAN FOR CARBON MONOXIDE

4.2.0.1 Introduction

The Clean Air Act Amendments of 1977 require states to submit plans to demonstrate how they will attain and maintain compliance with national ambient air standards for those areas designated as "non-attainment". The Clean Air Act Amendments further requires these plans to demonstrate compliance with primary standards not later than December 31, 1982. An extension up to December 31, 1987, is possible if the State can demonstrate that despite implementation of all reasonably available control measures the December 31, 1982, date cannot be met.

The State Implementation Plan revisions are to be approved by the Environmental Protection Agency by July 1, 1979. If an adequate extension request is submitted to the Environmental Protection Agency by then, states will have until July 1980 to analyze all alternative control strategies and until July 1982 to submit a complete attainment strategy.

On March 3, 1978, the Oregon portion of the Portland-Vancouver Interstate Air Quality Maintenance Area was designated by Environmental Protection Agency as a non-attainment area for carbon monoxide. In accordance with Section 174 of the Clean Air Act

Amendments of 1977, former Governor Straub designated the Columbia Regional Association of Governments as the lead agency for the development of the carbon monoxide State Implementation Plan revisions for the Portland Air Quality Maintenance Area. On December 12, 1978, Governor Straub redesignated the Metropolitan Service District as lead agency, effective January 1, 1979, in accordance with the voter approved May 23, 1978 ballot measure which abolished Columbia Region Association of Governments and transferred its responsibilities and powers to a reorganized Metropolitan Service District.

Since mid-1978 the staff of Metropolitan Service District (formerly Columbia Region Association of Governments), working in cooperation with Department of Environmental Quality has spent considerable time projecting emissions and air quality trends which are documented in this State Implementation Plan revision.

4.2.0.2 Summary

1. It is estimated that carbon monoxide motor vehicle emissions represent 97% of the total carbon monoxide emissions generated in the Portland area in 1977.

2. The air quality analysis in this State Implementation Plan revision indicates that a few roads in the Central Business District of Portland and a single road section in Tigard are projected to violate the 8-hour carbon monoxide ambient air

quality standard by the end of 1982. By the end of 1987 all roads are projected to be in compliance with the carbon monoxide standard.

3. A description of previously implemented transportation control measures is included in this State Implementation Plan revision.

4. The carbon monoxide State Implementation Plan revision consists of a commitment to analyze new control strategies which would insure attainment and maintenance of ambient air standards with Metropolitan Service District remaining in the lead coordinating role. This control strategy analysis will be completed by June 30, 1980.

5. Environmental Protection Agency requirements regarding an interim growth management strategy which includes: New Source Review requirements of the Clean Air Act Amendments of 1977, and a commitment to implement reasonably available transportation controls, have been fully met.

6. A requested extension to attain the carbon monoxide ambient air standard beyond December 31, 1982 but prior to December 31, 1987 is being included in this proposed State Implementation Plan revision. The Environmental Protection Agency requirements for requesting this extension have been met.

7. A completed attainment/maintenance strategy for carbon monoxide for the Oregon portion of the Portland-Vancouver Interstate Air Quality Maintenance Area will be submitted to Environmental Protection Agency as a State Implementation Plan revision by July, 1982.

4.2.0.3 Geographic Description of the Non-attainment Area

On March 3, 1978, the Oregon portion of the Portland-Vancouver Interstate Air Quality Maintenance Area was designated as a non-attainment area for carbon monoxide by the United States Environmental Protection Agency (Volume 43, Federal Register, page 8962). This designation means that the area identified in Figure 4.2.0 has carbon monoxide air quality concentrations exceeding the national ambient air quality standard. This area contains the urbanized portions of three counties - Clackamas, Multnomah and Washington - having an estimated combined population of 851,000 covering 1800 km^2 (695 mi^2) of land.

Geographically, this non-attainment area lies at the north end of the Willamette Valley and is almost completely surrounded by mountains and hills. Temperature inversions frequently occur, trapping emissions in the valley, resulting in elevated levels of air pollutants.

Oregon Portion of the

PORTLAND-VANCOUVER AIR QUALITY MAINTENANCE AREA

Designated CO Non-Attainment Area

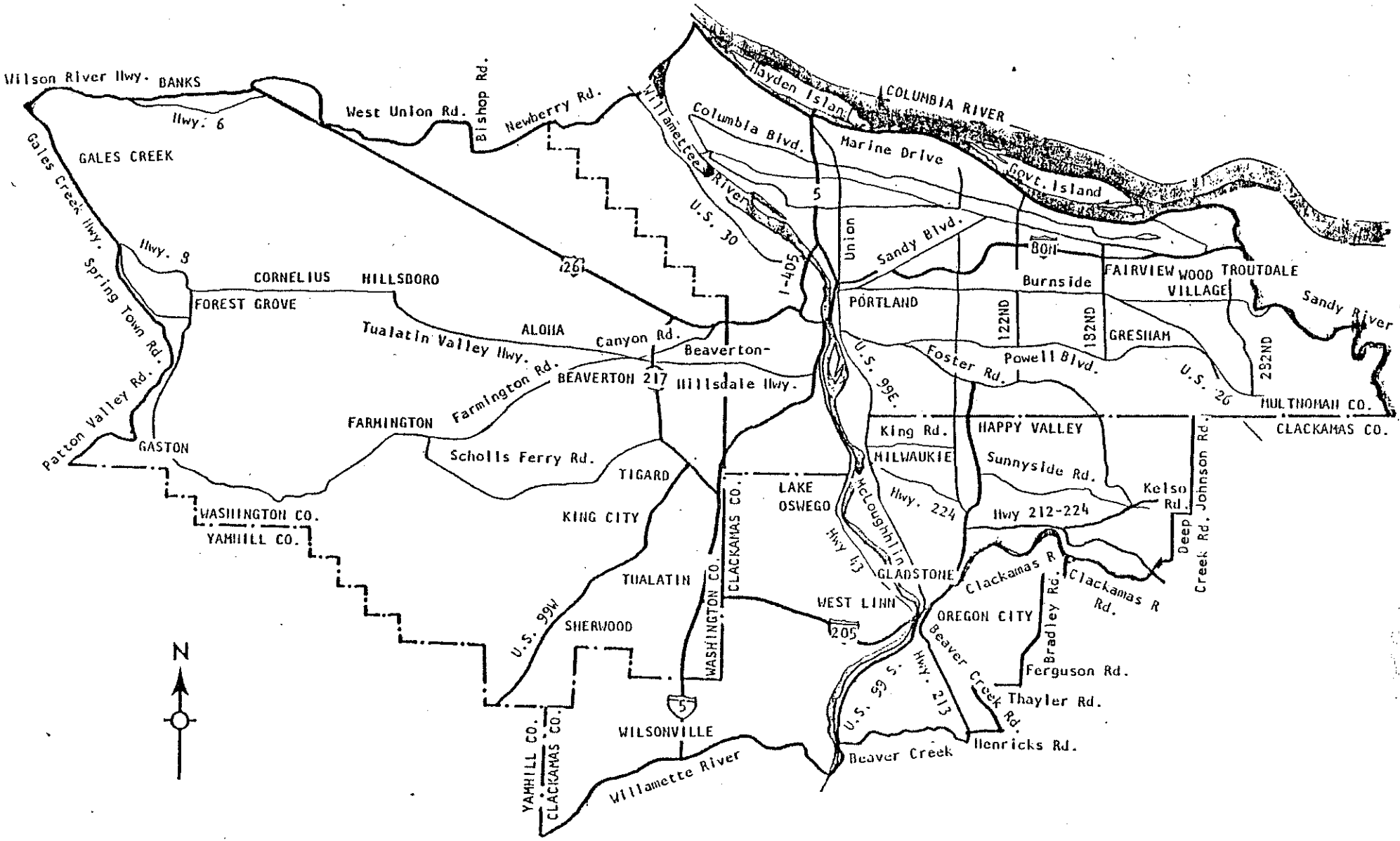


Figure 4.2.0.5

4.2.1 AMBIENT AIR QUALITY

The federal and state carbon monoxide primary ambient air quality standards related to health effects are: 10 milligrams/cubic meter (mg/m^3), maximum 8 hour average and 40 milligrams/cubic meter, maximum 1 hour average. Both standards are not to be exceeded more than once per year at any monitoring location.

Carbon monoxide air quality standard violations have been recorded at all four carbon monoxide monitoring locations (refer to Section 7.2 for more details). Table 4.2.1-1 is a summary of data collected at each site since 1970 indicating second highest carbon monoxide concentrations and Table 4.2.1-2 shows the number of days per month with 8-hour concentrations greater the carbon monoxide air quality standard (10 mg/m^3).

Carbon monoxide air quality has improved substantially since implementation of the Portland Transportation Control Strategy, with the number of health standard exceedances reduced by 62% between 1971 and 1977. The 1-hour carbon monoxide standard (40 mg/m^3) has not been exceeded at any monitored site since 1971. Second worst day air quality based on the 8-hour standard has not improved as dramatically, showing only a 20% reduction during the same period at the West Burnside location.

TABLE 4.2.1-1

CARBON MONOXIDE SUMMARY (mg/m^3)*

LOCATION	ANNUAL STATISTICS		1 HOUR AVERAGES		8 HOUR AVERAGES			
	YEAR	GEOMETRIC MEAN	MAXIMUM	2ND HIGHEST	NO. OF DAYS > 10mg/m³	PERCENT	MAXIMUM	2ND HIGHEST
Portland								
718 W. Burnside (CAMS) 2614176	1970	3.11	50.6	48.3	89	24	25.5	20.8
	1971	3.47	48.3	41.4	116	32	22.1	21.8
	1972	3.76	42.6	39.1	120	33	28.9	27.0
	1973	3.72	39.1	36.8	109	30	25.6	22.4
	1974	3.06	27.6	27.6	75	21	18.7	17.8
	1975	1.74	39.1	36.8	51	14	21.6	21.1
	1976	1.76	34.5	33.3	25	7	17.2	15.2
	1977	2.80	25.3	25.3	44	12	17.5	17.4
4112 N.E. Sandy Blvd. 2614060 Began 12/72	1973	3.85	32.2	30.0	120	40	23.4	21.5
	1974	3.08	47.3	33.4	58	17	25.5	22.0
	1975	2.01	27.6	27.6	39	11	21.3	19.1
	1976	2.03	23.0	23.0	27	7	16.6	14.2
	1977	2.46	25.3	24.1	33	10	17.4	16.5
600 S. W. 5th 2614185 Began 9/75	1975[2]	--	32.2	25.3	14	9	14.9	12.7
	1976	2.24	24.1	21.8	32	9	15.9	14.7
	1977	2.42	23.0	23.0	14	4	14.9	14.8
1420 NE Halsey 2614186 Began 10/75	1975[2]	--	23.0	23.0	14	20	17.8	13.6
	1976	--	28.8	26.4	26	7	17.6	16.3
	1977	2.06	24.1	23.0	23	6	15.9	15.7

Note: 1 - No data for 1-4/71, 3-4/73, 2-6/74, 2-8/75, 1-6/76.
2 - Partial year data

* milligrams per cubic meter

TABLE 4.2.1-2

NUMBER OF DAYS PER MONTH WITH 8-HOUR CARBON MONOXIDE CONCENTRATIONS GREATER THAN 10 mg/m^3 (PORTLAND)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC	YEAR TOTAL
718 W. Burnside (CAMS) 2614176													
1967	16	7	10	8	1	2	0	3	11	20	14	15	107
1968	17	10	17	8	14	3	4	12	12	24	27	19	167
1969	23	20	15	10	5	5	0	3	10	15	14	--	120
1970	15	9	9	2	1	5	1	2	6	7	12	19	88
1971	16	11	9	6	1	6	2	5	11	15	16	18	116
1972	15	15	12	10	3	5	6	3	11	10	19	11	120
1973	14	10	11	4	4	4	2	3	8	12	21	16	109
1974	7	6	6	6	2	3	1	3	1	9	16	15	75
1975	10	6	1	1	1	3	0	6	1	11	9	2	51
1976	6	1	0	0	0	0	0	1	1	5	2	9	25
1977	5	3	2	0	1	1	0	2	8	7	6	9	44
S. W. 4th & Alder* 2614185													
1972	*	*	*	*	*	0	0	4	2	6	18	21	51
1973	16	16	10	8	9	18	10	19	12	19	18	15	170
1974	4	4	3	6	3	1	3	6	9	13	17	10	79
1975	1	7	1	1	0	0	2	--	3	4	3	5	27
1976	1	1	2	0	0	1	0	0	3	7	8	10	33
1977	8	2	1	1	0	1	0	1	0	0	0	0	14
4112 N. E. Sandy Blvd. 2614069													
1972	Station started December 1972											18	18
1973	20	19	11	3	6	2	2	1	7	15	19	15	120
1974	0	7	1	2	0	0	0	2	4	13	14	15	58
1975	8	7	4	0	0	0	0	0	2	7	6	5	39
1976	3	1	0	0	0	0	0	1	0	2	7	13	27
1977	9	3	0	0	0	0	0	1	0	4	7	9	33
1420 N. E. Halsey 2614186													
1975	Station started October 1975									1	4	9	14
1976	1	1	0	0	0	0	0	0	0	2	7	15	26
1977	8	1	0	1	0	0	0	0	0	2	3	8	23
Month Total	223	167	125	77	51	60	33	78	122	230	287	301	Grand Total 1754

*Prior to Sept. 75, site was located at 600 SW 4th (No. 2614066)

4.2.2 EMISSION INVENTORY

The carbon monoxide emission inventory consists of estimates of carbon monoxide emissions for the base year of 1977 along with projections for the years 1982 and 1987. The following sections describe the methodology used to calculate industrial and area source (except motor vehicles) carbon monoxide emissions (Section 4.2.2.1) and transportation activity related carbon monoxide emissions (Section 4.2.2.2). Section 4.2.2.3 summarizes the emissions on a tons/year basis from all of the above sources.

4.2.2.1 Industrial and Area Source (Except Motor Vehicles) Emissions

Industrial and area source carbon monoxide emissions for the base year (1977) were obtained from Department of Environmental Quality's emission inventory which is updated on a quarterly basis. Emission and activity factors used to develop the base year carbon monoxide emission inventory were based on the latest available information provided by Environmental Protection Agency and other appropriate sources. In accordance with Environmental Protection Agency guidelines, all industrial sources having the potential to emit 100 tons per year or more have been included in the inventory. Based upon the 1977 carbon monoxide emission inventory, industrial and area source (eg. commercial and residential space heating, open burning, etc.) emissions represent only 3% of total carbon monoxide emissions within the Oregon portion of the Portland-Vancouver Interstate Air Quality Maintenance Area.

Growth factors used to project industrial emissions for the years 1982 and 1987 were based upon forecasts of employment developed by the former Columbia Region Association of Governments in A Regional Employment, Population and Household Forecast, (Technical Memorandum #23, April, 1978). Area source (except motor vehicles) carbon monoxide emission growth was based upon projections of population, households, and where appropriate, employment derived from the above cited Columbia Region Association of Governments technical memorandum.

4.2.2.2 Motor Vehicle Emissions

Methodology. A relatively sophisticated computer modeling technique was used to determine emissions from motor vehicles. The technique requires, as inputs, such parameters as population and employment levels, land use patterns, average vehicle emission data and a network of major roadways. In order to determine the variability of emissions by location within the region, the Air Quality Maintenance Area was divided into 493 grids where each grid is 2 km by 2 km in size. The modeling technique that was used amounts to a two step procedure where the first step is the determination of vehicle miles traveled on roadways located in each grid. The Urban Transportation Planning System package of transportation models developed by the Urban Mass Transportation Administration was used to make this determination. The second step is the determination of total daily emissions for each grid, given its vehicle miles of travel. This was done using the computer program SAPOLLUT which is part of the software package PLANPAC-BACKPAC developed by the Federal Highway Administration.

Assumptions. The inventory is based upon assumptions relative to present and future conditions in three general categories: (1) population, employment and land use patterns, (2) network assumptions, and (3) vehicle emission factors.

It is important to note that all of the assumptions that went into the analysis of future air quality were based on the best and most current information available. However, as the analysis is refined population and employment projections will be revised. This revision would most likely affect the results of the emissions analysis to a small extent in 1982 and 1987. In addition, vehicle emission factors and network assumptions may also change. If these revisions do occur, then emissions projections may change as may the corresponding control strategy to be developed by June 1980.

No direct forecast of population and employment levels and land use was made for the specific years 1982 and 1987; rather, it was decided to forecast conditions for the year 2000 and to interpolate using the base year 1977 to estimate conditions for the two future years. To determine population and employment levels for the year 2000, a shift and share approach was taken to estimate employment in the region. The approach requires a projection of national employment levels and is based on the assumption that any differences between regional and national employment rates that have been observed in the past will continue into the future. With future employment levels in the region determined in this fashion, total population was derived from combined assumptions of family size and age distribution. The

entire process is described in detail in A Regional Employment, Population and Household Forecast, published by the Columbia Region Association of Governments in 1978 (Technical Memorandum #23).

Growth allocation within the region was based upon such factors as existing land use, vacant available land, accessibility of the vacant available land to the population and employment centers of the region, and availability of transportation systems. The process is described in detail in Second Round Regional Growth Allocation for the CRAG Transportation Study Area Year 2000, published by the Columbia Region Association of Governments in 1978 (Technical Memorandum #26).

The highway network that the emission inventory for 1977 is based upon consists of an amalgamation of all major and minor arterials in the Air Quality Maintenance Area. The network for the future years of 1982 and 1987 is the same with the following additions:

Project	Type	Length (km)
Completion of I-205	Six lane freeway with a proposed busway and bikeway	9.2
Connection of I-405-US 30	Four lane arterial	3.1
Oregon City Bypass	Arterial	6.2

Vehicle emission factors were based upon the Environmental Protection Agency publications Mobile Source Emission Factors for Low Altitude Areas - Final Document (EPA-400/9-78-006 March 1978). Emission reduction credits for Oregon's biennial motor vehicle inspection/ maintenance program were based upon a methodology developed by EPA's

Office of Emission Control Technology. Assumptions regarding inputs, e.g. vehicle distributions, hot/cold start ratio, ambient temperature, etc., to motor vehicle emission factors are documented in Appendix 4.2-1.

4.2.2.3 Summary of Carbon Monoxide Emissions

The calendar years 1977, 1982 and 1987 emission inventories are summarized by source category in Table 4.2.2-1 below. A detailed emission inventory is contained in Appendix 4.2-3.

Table 4.2.2-1

Summary of Carbon Monoxide Emissions (Tons per Year)
Within the Oregon Portion of the Portland-Vancouver Interstate AQMA

Source	1977	1982	1987
Industrial and other Area Sources	13,758	15,251	16,001
Motor Vehicles	764,727	429,592	342,361
Total	778,485	444,780	358,362

4.2.3 CONTROL STRATEGY

4.2.3.1 Level of Control Required

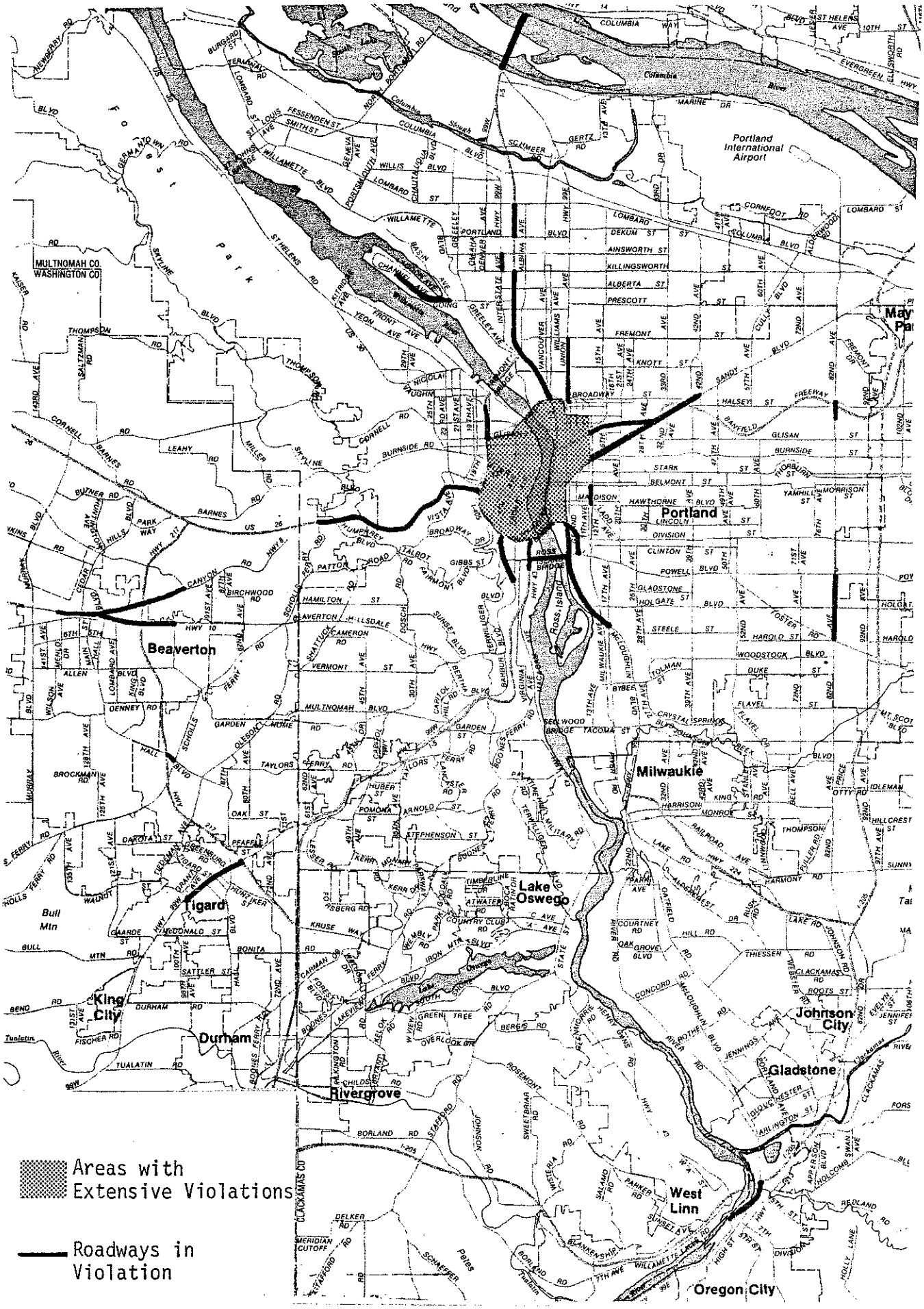
The determination of the extent of the carbon monoxide problems in the Portland Air Quality Maintenance Area in 1982 is based upon a modeling technique that makes use of air quality data. The models described in Section 4.2.2.2. were used to generate carbon monoxide emission rates for each grid in the Air Quality Maintenance Area and to determine traffic volumes and associated speeds on all major and minor arterials in the area. Each arterial was then tested for potential violation of the eight hour carbon monoxide standard by developing conservative meteorological conditions typical of second highest measured carbon monoxide concentrations in 1977. Carbon monoxide concentration is very sensitive to distance from the roadway. The determination of potential violations was based upon the following distances from the edge of the roadway.

Streets in the Central Business District	12 feet
Arterials	25 feet
Freeways	75 feet

The methodology is described in detail in Appendix 4.2-2.

Figure 4.2.3-1 indicates the extent of potential carbon monoxide problems using emission factors and traffic volumes for 1977. The shaded area in the figure is intended to show widespread violations of the standard. It can be seen that much of the central business

Figure 4.2.3 -1
Extent of CO Problem in the Portland AQMA in 1977



district and adjacent areas on the east side of the Willamette River were determined to be in violation. In addition, problems were identified along I-5, Sandy Boulevard, I-80, 82nd Avenue, McLoughlin Boulevard, US 26, and Channel Avenue/Going Street in Portland and in isolated areas in Oregon City, Tigard and Beaverton.

The extent of the problem is very much diminished in 1982 as can be seen in Figure 4.2.3-2. Figure 4.2.3-3 shows these potential carbon monoxide violation areas in more detail. The reduction in number of roads in violation of the 8-hour carbon monoxide standard in 1982 is due to the fact that large decreases in emissions on a per vehicle basis dominates over the slight increases in traffic volumes to produce a net improvement in air quality.

These figures do, however, indicate that the carbon monoxide problem will not completely disappear in 1982. A number of roadways, mostly in the central business district, are estimated to be potential violators of only the 8-hr carbon monoxide standard. In addition, a very short section of Highway 99W in the city of Tigard is identified as a potential violator. For this reason, an extension for compliance with the eight hour carbon monoxide ambient air quality standard beyond the December 31, 1982 attainment date is requested. (Please refer to Section 4.2.5)

Figure 4.2.3 -2
Potential Violations of the CO Standard in 1982

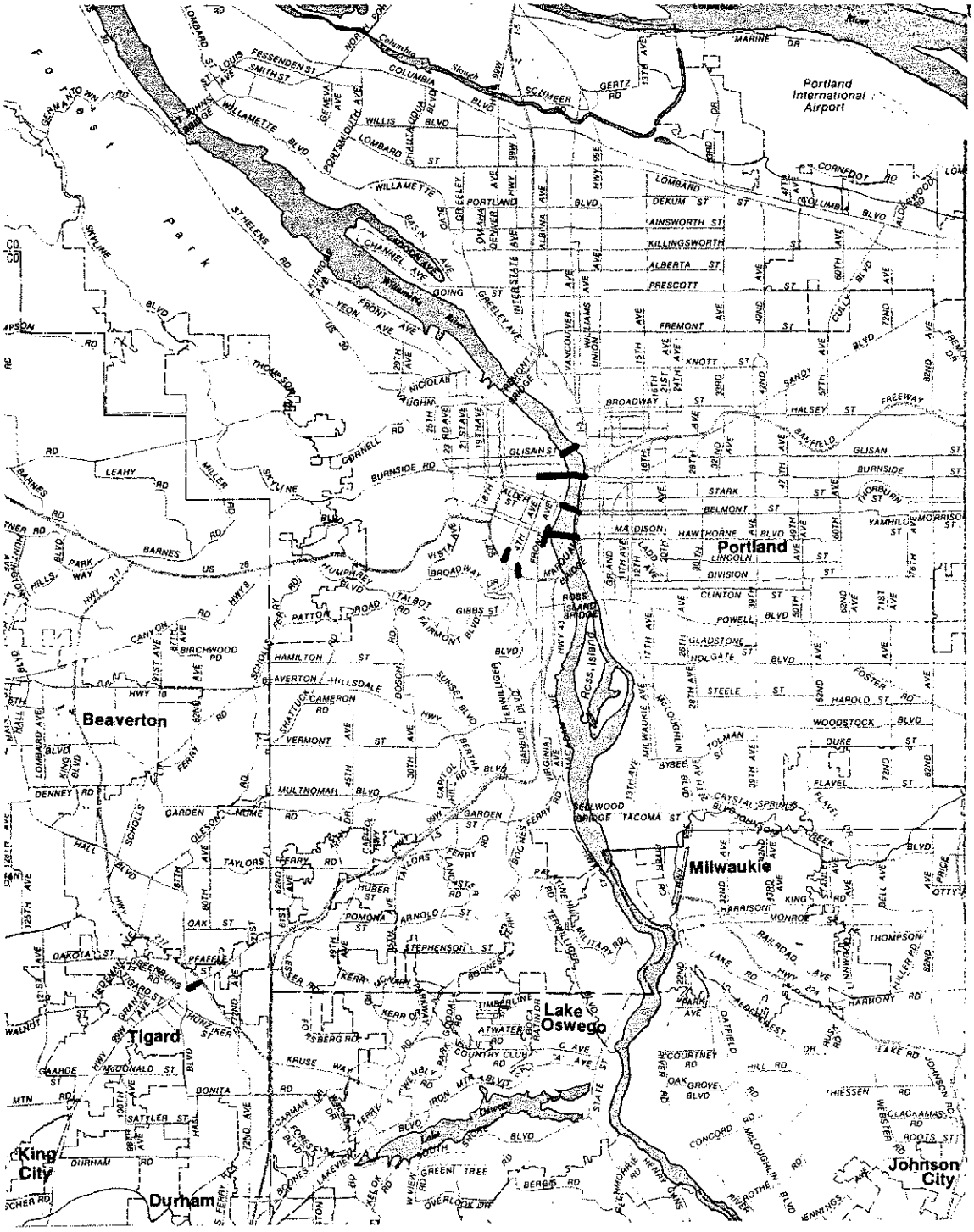
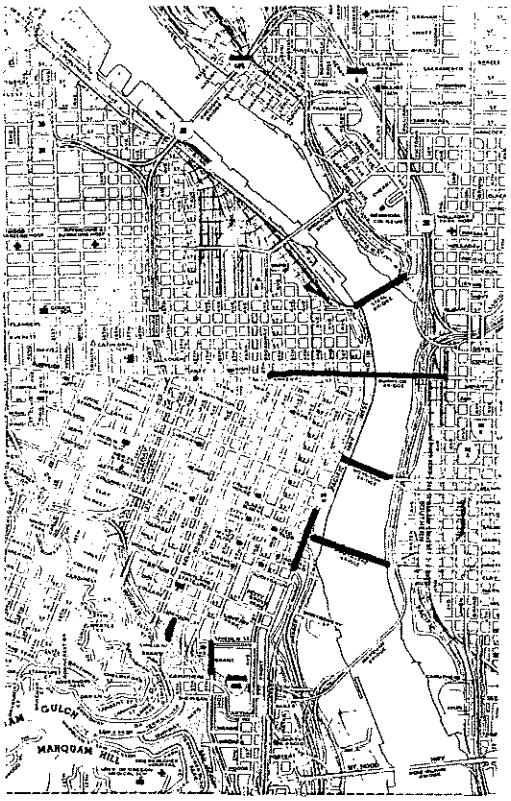


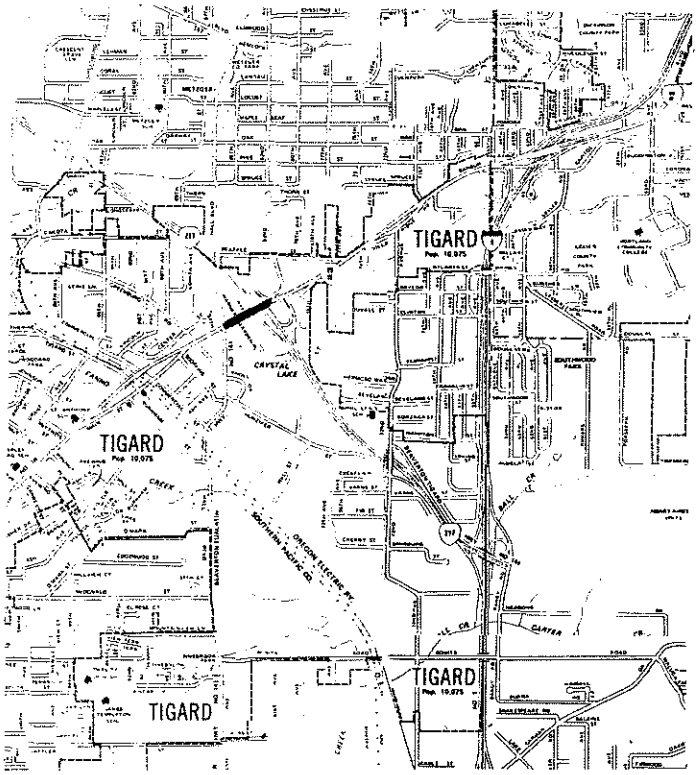
Figure 4.2.3. -3 Detailed Maps for Potential CO Violations in 1982



PORTLAND CENTRAL
BUSINESS DISTRICT

Potential Violation of CO Standard

TIGARD



4.2.3.2 Demonstration of Commitment to Reasonably Available Control Measures

4.2.3.2.1 Projects Already Implemented

The region has already taken many major steps to reduce air pollution from transportation related sources. In response to the requirements of the Clean Air Act of 1970 and the previous State Implementation Plan, many of the Reasonably Available Control Measures specified in the Clean Air Act Amendments of 1977 have already been implemented in the region. The following is a summary of those measures:

1. Inspection/Maintenance. The 1975 Legislative Assembly enacted legislation implementing a mandatory biennial motor vehicle emission control inspection program. The legislation requires that vehicles registered within the old Metropolitan Service District boundary around the City of Portland show evidence of compliance with emission control requirements prior to license renewal. The program operated on a voluntary basis during 1974 and 1975, until a mandatory program began on July 1, 1975. The Oregon Department of Environmental Quality administers the program. It is estimated that in 1977 inspection/maintenance was responsible for a 14 percent reduction in carbon monoxide concentrations and a seven percent reduction in hydrocarbons in the Portland metropolitan area.

2. Improved Public Transit. Commitment to public transit is very high in the region. A regional transportation policy states that no new urban freeways will be built and emphasizes much improved transit services.

Tri-Met, the major transit agency in the region, has made substantial improvements in service during the last several years. Since its inception in 1970, bus ridership has increased 100 percent. There has been a 31 percent increase in the last three years alone. Some of the major improvements made by Tri-Met since 1975 include:

a. Downtown Transit Mall. The transit mall is composed of approximately 22 blocks in downtown Portland giving public transit exclusive right-of-way on two of three lanes. The project was completed during 1978 and has made it easier for buses to enter and leave the Central Business District, thus reducing delays in routings and minimizing cost and congestion, with the resultant reduction of pollution in the downtown area.

b. Bus Purchase. In 1977 Tri-Met purchased 100 new buses. In addition, in 1980 eighty-five older buses will be replaced by new buses.

c. Bus Shelters. As of 1977, about 615 bus shelters had been installed in the Portland metropolitan area as part of a $1,100,000 Urban Mass Transportation Administration capital grant.

d. Fareless Square. Fareless Square was instituted in Portland in January, 1975. The Square is an area in the central business district where passengers may ride at no charge. In 1977, Fareless Square was expanded to include all of downtown Portland in an effort to reduce auto vehicle use in the area. The program has been very successful. There are approximately 6,500 free trips being made per average weekday in the zone. Traffic data has shown that there has been no increase in vehicle miles traveled in downtown Portland during the last five years. There is no question that Fareless Square and the transit mall are factors in this trend.

3. Exclusive Bus and Carpool Lanes. In late 1975, a combination carpool and bus only lane was established on the Banfield Freeway at a cost of approximately $1,700,000. The project also consists of park and ride facilities and a special express transit service. It was designed to relieve traffic congestion within the corridor and to decrease use of the automobile for commuting.

During 1978, a regional suburban transit station was developed on Barbur Boulevard. The station has park and ride facilities for over 300 vehicles. The project also includes a reversible bus lane and serves as a focal point for transit service to nearby suburban communities.

4. Areawide Carpool Programs. Since 1974, Tri-Met has offered a carpool program that encourages the shared ride as opposed to single occupant vehicle travel. The program includes a matching service, various incentives, and a continuing promotional effort. A 1978 survey shows that eight percent of the region's commuting population now carpools in groups of three or more and another eleven percent are sharing rides in two-person carpools. This compares to a nationwide estimate of ten percent for ridesharing using the definition of two or more persons commuting together. However, there is no provision for funding this program when the current funding expires in June 1980. Unless a new source of funds is obtained, the program will be terminated.

5. Long Range Transit Improvements. Approximately $152 million in Interstate Transfer Funds were set aside by the Columbia Region Association of Governments CRAG Board in 1977 for three transitway corridors. Of this amount, about $70 million has been earmarked for the Banfield Corridor Transitway. Current plans are to fund the development of a light rail line which will link downtown Portland with Gresham. It is planned that the project will include a number of park and ride lots and improved bus feeder service. The project has the approval of all the required local jurisdictions. The final environmental impact statement is now being prepared.

6. Parking Controls. As part of the Portland Transportation Control Strategy, there is a "lid" of 38,870 parking spaces in downtown Portland. As of February 1, 1979, the number of spaces in the current inventory is 37,211. With another 1,416 spaces committed, the total will be 243 spaces less than the maximum allowed. The adequacy of the current lid will be evaluated in the consultant study of the of the Downtown Parking and Traffic Circulation Plan. The Parking and Traffic Circulation Plan work program is currently being developed by City of Portland staff.

7. Park and Ride Lots. Tri-Met currently has reserved approximately 4,000 park and ride spaces in 75 park and ride lots throughout the region. Of these, 11 are major lots with over 100 stalls. These major lots are well distributed throughout the region in the following locations: Beaverton, Forest Grove, Gresham, Hillsboro, Oregon City, North Portland (Hayden Island), Northeast Portland (at 102nd Avenue and Sandy Boulevard), Southeast Portland (Mall 205), and Southwest Portland (at Sunset Boulevard and at Barbur Boulevard). Although Tri-Met actually owns only one of these lots (Barbur Boulevard), negotiations are in progress for development of another park and ride facility with transfer station in Beaverton. Stations in other areas will be developed as funds become available. There is direct express service from these stations to downtown Portland.

8. Pedestrian Malls. Five alternatives for treating SW Ninth and SW Park Avenues have been developed by the Portland Bureau of Traffic Engineering. One of those alternatives is to create a

pedestrian way on those streets. A schedule for choosing and developing these plans should be made soon. The feasibility of pedestrian malls as solutions to carbon monoxide hotspots in other areas may be studied as part of the comprehensive alternative transportation analysis to be completed by June 30, 1980.

9. Employer Programs to Encourage Carpooling and Vanpooling.

a. Employer programs to encourage car and vanpooling are part of Tri-Met's overall regional ride sharing program. Tri-Met looks at major employers in the region on an individual basis. Then, depending on their size, location and accessibility to transit, they offer various transportation packages to employers. The packages consist of various options such as carpooling, vanpooling or transit; and they recommend incentives to be provided to employers. As a result of this program, 76 employers are subsidizing bus fares. The subsidies range from 20 percent to 100 percent. Other subsidies provided include preferred parking and reduced parking rates for carpools.

b. Swan Island is a major industrial center in North Portland. Tri-Met is currently involved in promoting carpooling, vanpooling and expanded bus service in the area in an employer sponsored program. The City of Portland has recently received a demonstration program grant from Environmental Protection Agency which would give direct transit subsidies to employees of firms on the island who

agree to participate in a long-range transit marketing program. An Employer Transportation Committee has been meeting every two weeks with Tri-Met, the Port of Portland and the City of Portland to develop the project. Forty of the sixty-five firms in the area are members of the Transportation Committee, representing approximately 90 percent of the island's employees.

c. Portland State University is actively promoting the sale of subsidized Tri-Met monthly passes and books. This year, the administration is offering discounted "packages" containing two passes and three ticket books -- enough to last a student for an entire term. In addition, Portland State University is actively participating in the carpool matching program.

10. Traffic Flow Improvements. There have been numerous traffic flow improvements in Portland during the last few years. Some of the major improvements are:

a. Computerized traffic signals have been instituted on several major arterials and the transit mall, with other areas scheduled for computerization by August, 1979.

b. There is a voluntary program with downtown stores which encourages delivery of retail merchandise in the off-peak hours to help ease peak hour congestion.

c. Turns have been prohibited at many intersections on the downtown transit mall where there is heavy pedestrian traffic. This helps eliminate excessive idling while waiting for pedestrians to cross the street.

d. As has been previously discussed, on-street parking has been banned or limited on several streets in downtown Portland as a measure to help traffic flows.

11. Bicycle Program. Legislation passed in 1971 authorizes the expenditure of not less than one percent of the State of Oregon Highway Fund monies for the establishment of bicycle trails and footpaths. The program has resulted in development of approximately 120 km (74 miles) of bikeways in the Air Quality Maintenance Area. This figure includes bikeways separate from, adjacent to, or shared with roadways as well as sidewalk bikeways.

In addition, the City of Portland has an ongoing program to promote and encourage the use of bicycles for any trip. The emphasis of the program is to make the street system safer for bicycle riders rather than to provide separate bicycle routes.

12. Other Measures to Reduce Vehicle Miles of Travel. The City of Portland is committed to the adoption of coordinated urban development policies involving housing, economic development, transportation, air quality and energy. These policies focus

on the allocation of resources and delivery of services for the urban area. An underlying goal of city programs and policies is reducing vehicle miles of travel in the home/work trip. The two approaches being promoted to reduce vehicle miles of travel are matching residential location to work location and utilizing transit service or other alternatives to the single occupant auto trip to the greatest degree possible.

4.2.3.2.2 Commitment to Transportation Control Measures in the 1979 Annual Element

The process of planning and implementing transportation control measures in the metropolitan Portland area will continue. Listed below are projects in the current Annual Element of the Metropolitan Service District's Transportation Improvement Program that implement generally recognized transportation control measures.

1. Final Link of I-205 Freeway. A 9.2 km (5.7 mile) section will complete this north-south freeway. The section under construction is located near the eastern city limits of Portland. Included in the project are provisions for an exclusive busway for approximately two-thirds of the length and a bikeway for the entire length. There is $55,000,000 budgeted for fiscal year 1979 with completion planned for 1983.

2. Carpool Project. Tri-Met will continue management of the Portland Metropolitan Carpools Project, which promotes the use of carpools and vanpools. The level of funding is $228,000. However, this program will not be funded after June, 1980, unless other funds are obtained.

3. Beaverton Park and Ride Station. There is $750,000 programmed for a major park and ride facility west of Portland in Beaverton. It is planned that capacity will be about 500 vehicles.

4. Tri-Met-Operating Assistance. There is $5,700,000 in federal funds budgeted in Fiscal Year 1979 to support operational deficits of the area's transit system.

5. Expanded Bus Service on I-5 Corridor. This project is designed to encourage wider use of buses and thereby reduce auto traffic between Portland and Vancouver.

6. Numerous Projects to Improve Traffic Flow. A large number of projects, including the bulk of the Annual Elements of Metropolitan Service District's Transportation Improvement Program, are designed to improve traffic flow. These projects thus have the potential to mitigate localized carbon monoxide problems.

4.2.3.3 Strategy Alternatives/Strategies Selected for Additional Study

Although the region has made considerable progress in implementing programs that reduce emissions either directly through the Motor Vehicle Emissions inspection program, or indirectly by reducing vehicle miles traveled, additional efforts may be necessary. The Clean Air Act lists 18 control measures for transportation-related sources that must be analyzed as part of the requisite needed to justify an extension request to meet the national ambient carbon monoxide standards beyond December 31, 1982. The air quality impact analysis has identified potential carbon monoxide problems by the end of 1982 in the central business district of Portland and in the city of Tigard. A detailed analysis will be performed in the next few months to verify these results. After these problem areas have been verified, transportation control measures will be analyzed so as to determine the most effective way to eliminate the problems. A list of the control measures to be analyzed can be found in Table 4.2.3-1. Also included in this table is an approximate "for further study" rating for each measure. This determination was based upon past experience in addressing localized carbon monoxide problems. Initial efforts will be devoted to those measures assigned high priority. If these measures are not sufficient to attain standards, then those measures with a lower priority will be analyzed. The selection of a strategy to eliminate any carbon monoxide problems will not be based solely on air quality considerations. Among the other factors that will be considered in determining an optimum strategy are:

- Non-air quality environmental impacts
- Energy consumption
- Community impacts
- Financial practicality
- Economic feasibility
- Economic impacts
- Travel impacts
- Political feasibility
- Institutional feasibility
- Social, health and welfare considerations
- Policy implications

In the case of the City of Portland, efforts are underway to develop a parking and circulation plan in the affected area. Thus, strategy selection will be performed in cooperation with all affected municipalities in order to eliminate duplication of efforts.

The analysis to determine a package of control measures that eliminate the carbon monoxide problem will be completed by June 30, 1980. A commitment to implement these measures will be a future revision to this State Implementation Plan. This document will be submitted as soon as possible after July, 1980 and no later than July 30, 1982.

Table 4.2.3-1

Control Measures to Eliminate Potential Carbon Monoxide Problems

Control Measure	Priority
Inspection and Maintenance on Annual Basis	High
Additional Public Transit Improvements	High
Additional Bus and Carpool Lanes	Low
Expanded Carpool Programs	High
Limitations on Use of Road Surfaces	Low
Additional Long-Range Transit Improvements	High
Parking Restrictions	High
Additional Park and Ride Lots	High
Pedestrian Malls	Low
Additional Employer Programs to Encourage Carpooling, Vanpooling, Mass Transit, etc.	High
Additional Programs to Encourage Use of Bicycles	Low
Staggered Work Hours	Low
Road User Charges	Low
Idle Controls	Low
Traffic Flow Improvements	High
Conversion of Fleet Vehicles to Cleaner Engines and Fuels	Low
Retrofit for Other than Light Duty Vehicles	Low
Programs to Minimize Cold Start Conditions	Low

4.2.4 RULES AND REGULATIONS

Sections 172 and 173 of the Clean Air Act Amendments of 1977 require certain permiting procedures for new or modified stationary sources having the potential to emit 100 tons/year or more of carbon monoxide. These requirements are incorporated into OAR 340-20-190 to 195 and are included in Section 3.0 of this State Implementation Plan. A brief discussion of these rules is included in Section 5.2 of this State Implementation Plan.

The State of Oregon has adopted and has previously included in its State Implementation Plan Rules for Indirect Sources (OAR 340-20-100 to 135). These rules apply to certain indirect sources of air pollution eg. parking lots, highways, airports, etc., and are designed to evaluate and if necessary reduce air pollution impacts from these sources. As part of the State Implementation Plan revision planning process, these rules will be evaluated for their usefulness in the final control strategy and amended if necessary. It is expected this Indirect Source Rule evaluation and potential revision process will be completed on or before June 30, 1980.

4.2.5 REQUEST FOR EXTENSION OF ATTAINMENT DATE TO MEET THE FEDERAL CARBON MONOXIDE AMBIENT AIR QUALITY STANDARD AND REASONABLE FURTHER PROGRESS

Because a number of roadways are identified as potential violators of the 8-hour carbon monoxide ambient air quality standard beyond December 31, 1982, and because extensive Reasonably Available Control Measures have already been implemented in this area, a request is being made to extend the compliance date with the carbon monoxide ambient air quality standard beyond December 31, 1982.

Joint Environmental Protection Agency - Department of Transportation planning guidelines issued in June, 1978 indicate that an extension request must be justified by providing that the 1979 State Implementation Plan revision submittal must:

1. Contain procedures and criteria adopted into the State Implementation Plan by which it can be determined whether the outputs of the Department of Transportation planning process conform to the State Implementation Plan.

2. Provide for the expeditious implementation of currently planned reasonable transportation control measures.

3. Present a program for evaluating a range of alternative packages of transportation options that includes, as a minimum, those measures for which the Environmental Protection Agency will develop information documents.

4. Provide for the evaluation of long range (post-1982) transportation and growth policies.

5. Include a schedule for analysis and adoption of transportation control measures as expeditiously as practicable.

Regarding the first condition, integration of the outputs of the DOT transportation planning process and State Implementation Plan process has existed within the region for some time. A description can be found in the Unified Work Program developed by the Metropolitan Service District. The second condition is addressed in Section 4.2.3.2 which describes past efforts and currently funded projects that seek to improve air quality. The third and fifth conditions are addressed in Section 4.2.7. The fourth condition requires that alternative growth policies and/or development patterns be examined to determine the potential for modifying total travel demand. Such considerations are an integral part of the transportation modeling effort that is the basis of the State Implementation Plan revision analysis for the Portland metropolitan area. A description of land use/transportation planning efforts can be found in the Prospectus for Regional Transportation Planning in the Portland/Vancouver Metropolitan Area that was drafted in April, 1978, by the Columbia Region Association of Governments.

An additional condition for extension approval that is listed in the Clean Air Act is the establishment of a specific schedule for implementation of a vehicle emission control and maintenance program. A mandatory

inspection/maintenance program is already in effect and is described in Section 4.2.3.2. This program conforms to the inspection/maintenance policy statement that was issued by Environmental Protection Agency Assistant Administrator David Hawkins in July, 1978.

While an extension request is being made at this time to conform to 1977 Clean Air Act requirements, further microscale analysis and/or the implementation of minor control measures may lead to a projection of attainment with the 8-hour carbon monoxide standard by December 31, 1982. Therefore, this extension request may be withdrawn at a later date.

While no specific attainment extension date between December 31, 1982, and December 31, 1987, is being requested at this time, the comprehensive alternative transportation analysis (item #3 above) to be completed by June 30, 1980, will lead to either a request for a specific attainment date extension or a withdrawal of this request.

It is concluded that all Environmental Protection Agency requirements to justify a requested extension of the attainment date for the 8-hour carbon monoxide ambient air quality standard have been met.

The Clean Air Act requires a demonstration that Reasonable Further Progress is being made each year toward the attainment of all air quality standards. Reasonable Further Progress is defined as annual incremental reductions in emissions for each pollutant that are sufficient for compliance by the required date. The two figures (4.2.5-1 and 4.2.5-2)

Figure 4.2.5-1 CO Emissions vs. Time in the Central Business District of Portland

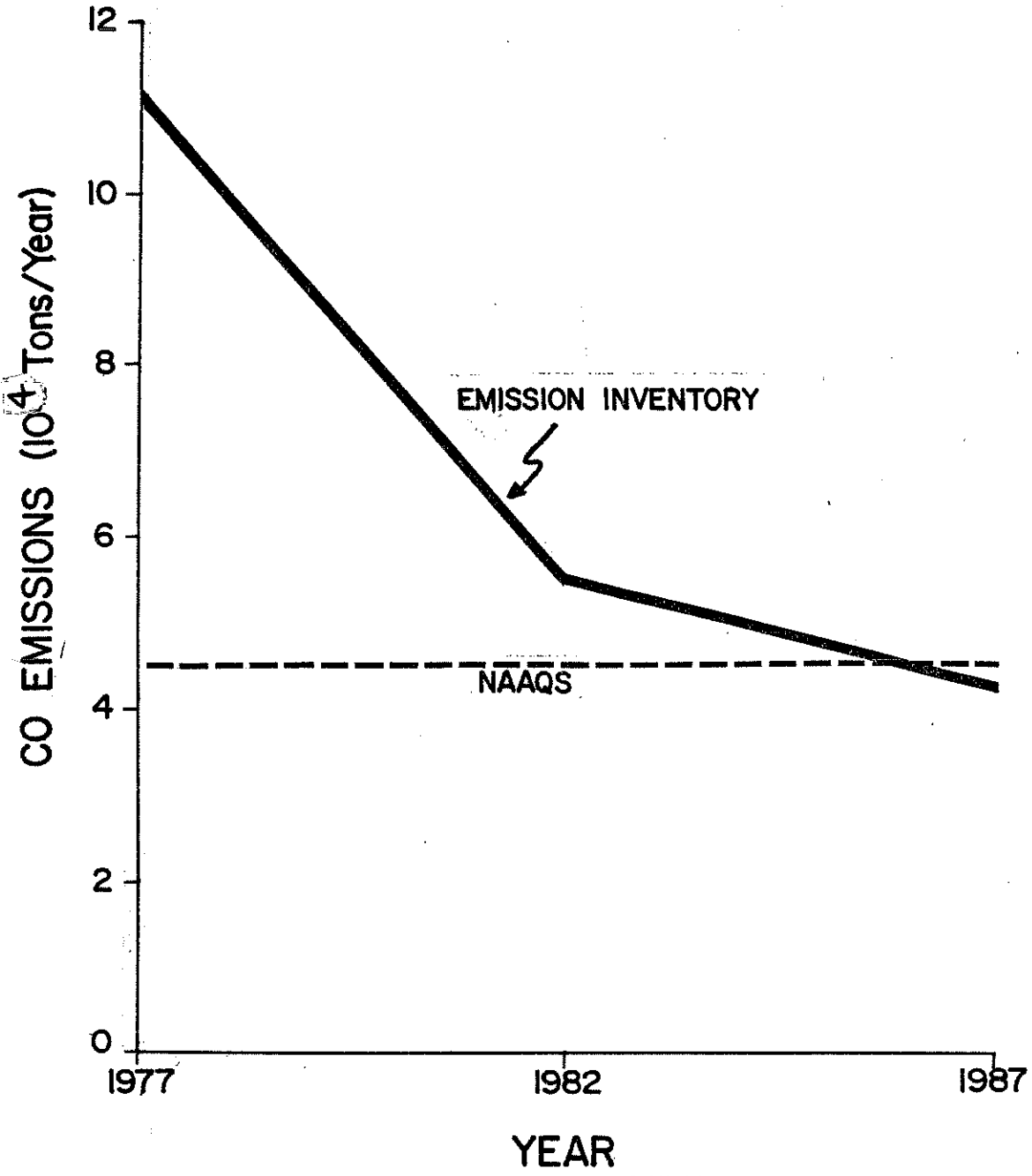
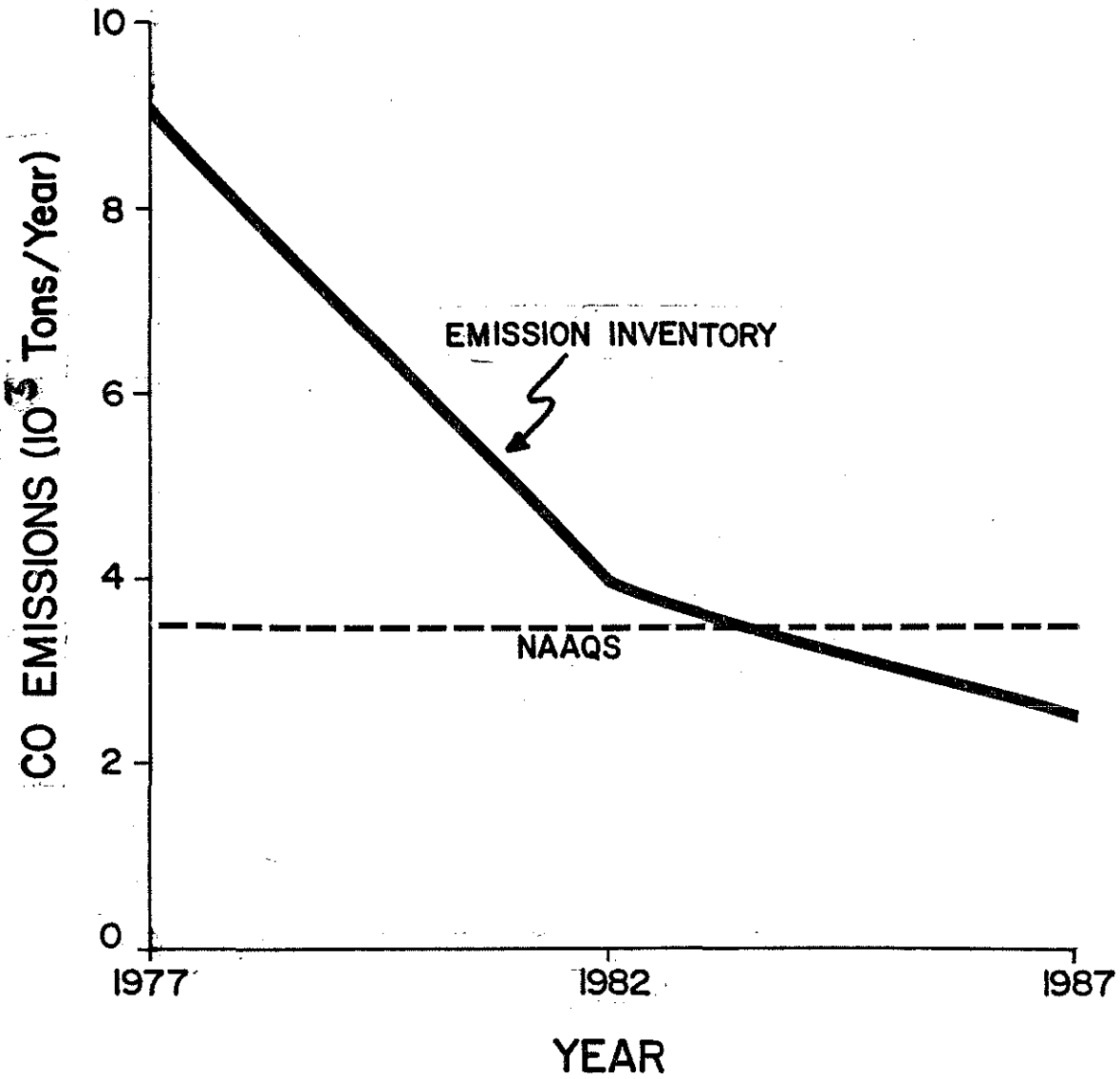


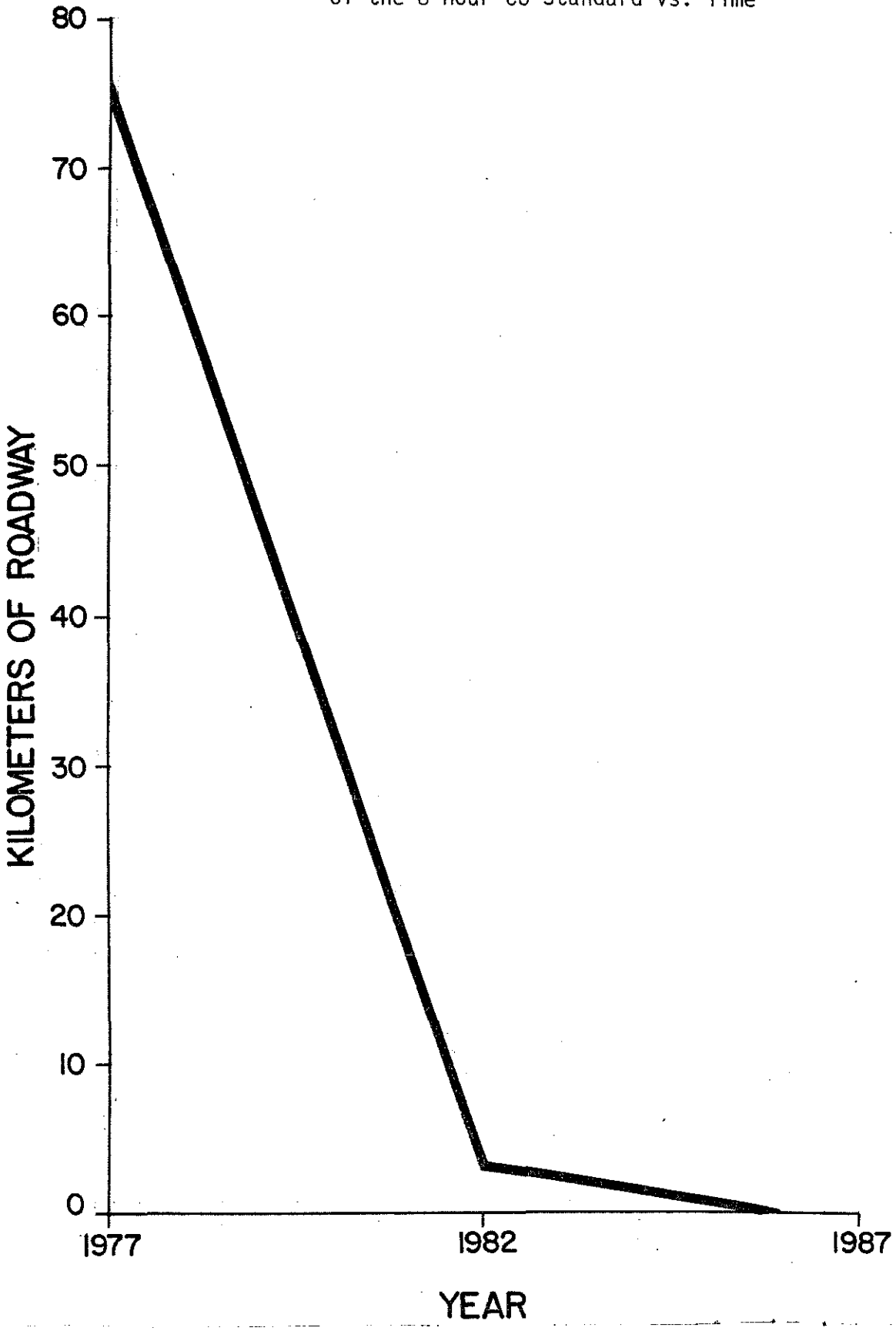
Figure 4.2.5-2 CO Emissions vs. Time in the Vicinity of 99W in Tigard



give carbon monoxide emissions as functions of time in the Portland Central Business District and in the Tigard area respectively. These figures are based upon the emission inventories that are described in Section 4.2.3.

Emission reduction trends shown in Figures 4.2.5-1 and 4.2.5-2 are possibly not the best way of conveying the extent of the problem as projected in 1982. These figures imply that areawide reductions in emissions will be necessary; however, much can be done by simply reducing traffic or improving traffic flow in the problem areas. Reasonable further progress based on this concept can be found in Figure 4.2.5-3. The extent of the problem as estimated in 1977 and projected for 1982-1987 is indicated by the number of kilometers of roadway estimated to be in violation of the 8 hour standard for the entire Air Quality Maintenance Area. It is proposed that progress in reducing carbon monoxide pollution be measured against this schedule.

Figure 4.2.5-3 Total Length of all Roadways in Violation of the 8 Hour CO Standard vs. Time



4.2.6 ANNUAL REPORTING

The Department of Environmental Quality and Metropolitan Service District will jointly submit a report each July 1 for the preceding calendar year which will comply with the following Environmental Protection Agency requirements:

a. Progress towards adoption of legally enforceable control measures;
b. Identification of growth of major new or modified existing sources, minor new sources (less than 100 tons/year), and mobile sources;
c. Reduction in emissions for existing sources;
d. Update of the emission inventory; and
e. Conclusions of studies to quantify the air quality problem.

4.2.7 RESOURCE ANALYSIS/COMMITMENT

4.2.7.1 Resource Analysis

Under existing funding arrangements, planning funds are available to Metropolitan Service District to continue the State Implementation Plan revision process through July, 1979. Grant application efforts are now underway to obtain additional Section 175 funds to continue State Implementation Plan revision work beyond July, 1979. A more detailed analysis of Metropolitan Service District's financial commitments to the carbon monoxide State Implementation Plan revision process can be found in the Columbia Region Association of Governments publication, Prospectus - Portland-Vancouver Air Quality Maintenance Area Regional Air Quality Program, June, 1978.

The Department of Environmental Quality (DEQ) has a biennial budget beginning July 1 of odd numbered years. For the biennium beginning July 1, 1979, Department of Environmental Quality has proposed to the Legislature the same level of support to continue development of its portion of the carbon monoxide attainment strategy.

4.2.7.2 Commitment to Air Quality Planning and Implementation of Control Measures

If microscale analysis of areas projected to be in violation of the 8-hour carbon monoxide ambient air quality standard confirms the findings as described in Section 4.2.3.1, then it is anticipated that

the cities of Portland and Tigard, in conjunction with Washington County and the Oregon Department of Transportation, will participate in carbon monoxide planning efforts. Appropriate interagency agreements will be made if deemed necessary to develop an adequate carbon monoxide attainment plan. More specific implementation commitments will be included in an adopted carbon monoxide attainment/maintenance plan.

The commitment of this region towards the improvement of air quality is very high. The fruits of past efforts to implement control measures are described in Section 4.2.3.2. A continuing interest in air quality improvement is seen in the extent that transportation control measures are funded in the 1979 Annual Element of Metropolitan Service District's Transportation Improvement Program (also in Section 4.2.3.2). Based upon these efforts, the region should be able to attain and maintain the carbon monoxide ambient quality standard in the mid-1980's.

4.2.8 INTERGOVERNMENTAL COOPERATION AND PUBLIC INVOLVEMENT

4.2.8.1 Designation of Lead Agency

On March 3, 1978, the Oregon portion of the Portland-Vancouver Interstate Air Quality Maintenance Area was designated as a non-attainment area for carbon monoxide. In accordance with Section 174 of the Clean Air Act Amendments of 1977, former Governor Straub designated the Columbia Region Association of Governments as the lead planning agency for the development of revisions to the carbon monoxide portion of the State Implementation Plan. On December 12, 1978, Governor Straub redesignated the Metropolitan Service District as lead agency, effective January 1, 1979. This change occurred because of the May 23, 1978, voter approved ballot measure which abolished Columbia Region Association of Governments and transferred its responsibilities and powers to a reorganized Metropolitan Service District.

4.2.8.2 Organization Responsibility

In brief, the Metropolitan Service District is the A-95 review agency and the lead agency for air quality planning in the Oregon portion of the Air Quality Maintenance Area with respect to carbon monoxide air quality. The Metropolitan Service District estimated the carbon monoxide motor vehicle emissions for this State Implementation Plan revision.

The Department of Environmental Quality (DEQ) estimated all stationary point and area source carbon monoxide emissions in the Oregon portion of the interstate Air Quality Maintenance Area. The Department of Environmental Quality also developed a method for identifying roadways which have the potential for violating the 8-hour carbon monoxide ambient air quality standard in 1982 and 1987 (refer to Appendix 4.2-2 for details). Metropolitan Service District incorporated this methodology into a computer program which identified the actual roadways having the potential to violate the 8-hour carbon monoxide standard.

4.2.8.3 Interagency Agreements and Coordination

The 1979 State Implementation Plan revision for the Portland-Vancouver Interstate Air Quality Maintenance Area is the result of a coordinated intergovernmental air quality planning effort. The specific activities and funding that each agency in the Oregon portion of the Air Quality Maintenance Area is responsible for are detailed in the CRAG publication, Prospectus Regional Air Quality Program Work Agreement which was submitted to Environmental Protection Agency on June 22, 1978. The Prospectus defines the responsibilities of Department of Environmental Quality, the City of Portland, and Metropolitan Service District over a two year planning period. The Prospectus will be revised to incorporate the work mandated by the analysis to date.

Coordination Activities

Carbon monoxide coordination planning activities have been extensive to date. At a minimum, weekly meetings were held between staff from Metropolitan Service District, Department of Environmental Quality, and the City of Portland. At Metropolitan Service District's request, staff from Environmental Protection Agency have also attended several of these meetings.

Several other major coordination meetings were held during the planning period. These meetings included all parties involved in air quality planning for both carbon monoxide and ozone in the Oregon and Washington portions of the Air Quality Maintenance Area. Agencies represented at these meetings included the Washington Departments of Transportation and Ecology, the Southwest Air Pollution Control Authority, the Clark County Regional Planning Council, the Port of Portland, Tri-Met, the Federal Highway Administration, the Oregon Department of Transportation, the Oregon Department of Environmental Quality, the City of Portland, the Environmental Protection Agency, the Urban Mass Transportation Administration, and the Columbia Region Association of Governments (now Metropolitan Service District). These meetings were designed to give all concerned parties the opportunity to discuss issues and resolve problems related to the State Implementation Plan revision process.

In addition to the above activities, Metropolitan Service District's Transportation Policy Alternatives Committee was consulted regarding the development of the carbon monoxide State Implementation Plan revision. This committee is composed of officials from the metropolitan area representing local, regional, and state agencies involved in transportation services. The Transportation Policy Alternatives Committee is charged with advising the Metropolitan Service District Council on policy matters relating to planning and funding of transportation projects. There are fourteen members on the committee. The responsibilities of Transportation Policy Alternatives Committee with respect to air quality planning are to:

1. Develop recommendations to Metropolitan Service District for controlling mobile sources of particulates, carbon monoxide, hydrocarbons and oxides of nitrogen;
2. Conduct an in-depth review of travel, social, economic, and environmental impacts of proposed transportation control measures: and
3. Provide a critique of the proposed plan for meeting particulate standards as they relate to mobile sources.

4.2.8.4 Public Involvement

The Portland Air Quality Maintenance Area Advisory Committee has been the primary focal point of the citizen involvement effort in the Oregon portion of the Portland-Vancouver Interstate Air Quality Maintenance Area. The committee is a 23 member body whose primary mission is to advise Department of Environmental Quality and

Metropolitan Service District of an air quality control strategy which is implementable and is designed to attain and maintain state and federal ambient air quality standards. (A list of the members of this committee is shown in Table 4.2.8-1) The specific charge of the committee is to review the inter-relationships between planning for total suspended particulates, carbon monoxide and ozone control strategies and to provide advice on the compatibilities and tradeoffs between actions involved in controlling stationary and transportation sources of these pollutants. In formulating such advice, the committee has and will be taking into account many factors besides air quality impacts. These include non-air quality environmental factors, energy consumption, economic and social impacts, and political and institutional feasibility.

There was a concerted effort to make this committee representative of both the community at large and of those with a specific interest in air quality planning. This is an important prerequisite which ensures that the recommended strategies which evolve will have taken into account many divergent points of view. Thus, members of the committee represent the general public (i.e., no specific interest group), industry, environmental groups, the business community, citizen organizations, and state and local officials involved in air quality planning from both Washington and Oregon.

All committee meetings are open to the public. At every meeting, there is an opportunity for interested citizens to comment on the activities of the committee or any other matter pertaining to air quality.

Table 4.2.8-1

Membership for the Portland AQMA Advisory Committee

1. City of Portland
2. Metropolitan Service District
3. Multnomah County
4. Clackamas County
5. Washington County
6. Oregon Department of Transportation
7. Port of Portland
8. Western Oil and Gas Association
9. Associated Oregon Industries (A.O.I.)
10. Portland Chamber of Commerce
11. Oregon Environmental Council
12. League of Women Voters
13. Oregon Student Public Interest Research Group (OSPIRG)
14. Public-at-Large*
15. Public-at-Large*
16. Public-at-Large*
17. Public-at-Large*
18. Representative from Academic Institution
19. Labor Council Representative
20. Tri-Met (Public Transit Agency)
21. Washington Department of Ecology**
22. Southwest Air Pollution Control Authority**
23. Clark County Regional Planning Council**

* One each from the City of Portland and Multnomah, Clackamas, and Washington Counties

** Non-voting member

In addition to the activities of the advisory committee, there are other ongoing measures which ensure public participation. A public relations subcommittee has been formed to communicate to the public the activities of the advisory committee and the status of air quality planning in the region. This committee is a volunteer committee, which has issued press releases, public notices and an air quality brochure. There are currently about 325 individuals and groups on the mailing list. Included on the list are affected industries, businesses, public health organizations, environmental groups, and concerned citizens.

Agendas of all committee meetings are sent to local newspapers, including the region's major newspapers. Thus, when major issues come before the committee, the general public is informed almost immediately through the local press. Local television stations have also been cooperative and have aired several stories regarding air quality problems in the Portland-Vancouver Interstate Air Quality Maintenance Area.

Another device that has been used in developing public awareness of air quality problems is the broadcasting of Public Service Announcements. So far, six Public Service Announcements have been aired on Portland television stations. These TV spots were produced by Keep Oregon Liveable with assistance from the Oregon Department of Transportation and the Department of Environmental Quality. The first round of Public Service Announcements has dealt only with

defining air quality problems. The Public Service Announcements are humorous, are of high technical quality, and are having much exposure during prime air time. Another series of Public Service Announcements will be produced soon. They will recommend ways that the public can help improve air quality.

At a more technical level, Metropolitan Service District sponsored a series of Transportation Systems Planning Workshops which have been held throughout the region since July, 1978. These workshops have focused on identifying problems and developing alternatives for the region's long range transportation plan. Air quality has been identified as a factor to be taken into consideration as new alternatives are defined. As air quality problems and potential solutions are more clearly identified, this information will be provided to future workshop participants. Comments will be solicited from workshop participants regarding the feasibility of potential air quality control strategies. Participants will also have the opportunity to provide alternative solutions.

In the next phase of the air quality planning program, all public involvement activities that are now ongoing will continue. In addition, Metropolitan Service District and Department of Environmental Quality will be holding public forums and hearings. The Public Relations Subcommittee of the Portland Advisory

Committee is also in the process of developing a more extensive public involvement program. At this time the program is not finalized, but the committee plans to produce a slide show and three television public service announcements, and also plans to distribute brochures and pamphlets to the public. These activities will commence when funds become available.

Elected Official Involvement

Elected officials will be involved in the planning process through several mechanisms. The Metropolitan Service District Council, the MSD's governing body, is composed of 12 elected officials representing the majority of citizens in the tri-county area surrounding Portland. The Council must adopt the State Implementation Plan before it can be forwarded to the governor for approval.

Other elected officials will be represented through their participation on two committees which serve in an advisory capacity to the Metropolitan Service District Council. These committees are the Joint Policy Advisory Committee on Transportation, which is charged with transportation and air quality advisory responsibilities, and the local officials Advisory Committee, which is charged with advising the Council on matters affecting local governments.

In addition, elected officials from the City of Portland, Multnomah County, and Clark County, Washington, are represented on the Portland Air Quality Maintenance Area Advisory Committee. Similarly, elected officials from other local jurisdictions in Washington sit on or are represented on the Clark County Regional Council Air Quality Advisory Committee.

4.2.9 PUBLIC NOTICE AND HEARINGS

A public hearing on Section 4.2 of this State Implementation Plan (SIP) was held on May 4, 1979. Public Notices and comments on this State Implementation Plan revision are included in Appendix 4.2-4.

APPENDIX 4.2-1

METHODOLOGY USED TO DEVELOP MOTOR VEHICLE EMISSION FACTORS

Motor vehicle emission factors were calculated for 1977, 1982 and 1987 using the Department of Environmental Quality's computer program, EMFAC-8. EMFAC-8 is based on EPA's Mobile Source Emission Factors, Final Document, March, 1978. This computer program calculates emission reduction credits associated with Oregon's biennial I/M program based upon a methodology developed by EPA's Office of Emission Control Technology.(1) It also has the capability of calculating annual I/M emission reduction credits based upon revised Appendix N (refer to Federal Register May 2, 1977).

The program calculates emission factors for automobiles, light duty trucks, heavy duty gasoline powered vehicles, and heavy duty diesel powered vehicles. The input factors used in computing the emissions of carbon monoxide, hydrocarbons, and oxides of nitrogen for each class of vehicle are summarized in Table 1.

Table 1
Input Factors Used in Development of Motor Vehicle Emission Factors

Input Parameter	CO Emission Factor	HC & NO_x Emission Factors
Hot Start	28%	28%
Cold Start	34%	34%
Ambient Temperature	40°F	72°F
Humidity	51 grains/m^3	41 grains/m^3
# Model Years	20	20
Mileage/Model Year	National Average	National Average
Air/Use	0.81/0.0	0.81/0.0
Load	0.03	0.03
Trailer	0.00	0.00
Vehicle Distribution	Based on Oregon Department of Motor Vehicles registration	

Footnote:
(1) Letter and Attachment from John P. Dekany (EPA) to William H. Young (Director of DEQ), dated April 18, 1977.

APPENDIX 4.2-2

ANALYSIS METHODOLOGY FOR THE OREGON PORTION OF

THE PORTLAND-VANCOUVER INTERSTATE AQMA

1.0 Introduction

This report documents the methodology that was used for determining the extent that the Portland-Vancouver Interstate Air Quality Maintenance Area will be in non-attainment with the Federal Ambient Air Quality Standards for carbon monoxide by the end of 1982. The report consists of two main sections: Section 2.0 explains the methodology that was employed, and Section 3.0 contains the Technical Appendix with supporting documentation.

2.0 Methodology

2.1 Background

CO concentrations (C) measured near an urban roadway can be expressed as the sum of two terms:

$$C = C_l + C_g \quad (1)$$

where C_l is the microscale CO concentration resulting from local traffic adjacent to the monitor, and C_g is the mesoscale concentration which is related to all other sources of CO in the

vicinity of the monitor. Under the stable conditions which characterize CO violations days, areawide CO levels accumulate and the C_g term becomes significant.

To effectively design a transportation control strategy for CO, all possibly violating roadways should be identified. However, Portland has only four continuous air monitoring (CAM) sites measuring CO. To identify non-monitored roadways potentially violating the 8-hour CO standard two simulation models (SAPOLLUT and AIRPOL-4A) were used. AIRPOL-4A calculates local CO concentrations from a specific roadway and thus can be used to determine the C_1 term in equation (1) for any roadway. To use SAPOLLUT, the Portland-Vancouver AQMA has been divided into 493 grids, 2 km on each side. SAPOLLUT interfaces directly with transportation models and calculates total CO emission per grid as a function of vehicle miles traveled by vehicle class and speed. This information has been used to calculate the C_g term for the CAM site as described in Section 2.3 and to estimate the C_g term for other areas as described in Section 2.4.

2.2 Determination of base CO concentration (C)

The EPA stipulates that the CO value used for attainment calculations be the highest of the second highest 8-hour average CO concentrations observed during 1975, 1976, or 1977, unless significant emissions reductions occurred during this time. The second highest 8-hour CO value for the three years of interest are contained in Table 1.

Table 1

Nonattainment Area	Second Highest 8-hour CO concentration (mg/m^3) 2nd Highest 8-hour CO concentration (mg/m^3) 1975	1976	1977
Portland-Vancouver	21.1	15.2	17.4

Based on the EPA guidance, the 1977 CO concentration of 17.4 mg/m^3 was chosen as the design value. The reasons for this decision are:

a) A mandatory motor vehicle inspection and maintenance program went into effect in January, 1976.

b) There have been major changes in the traffic patterns and transit ridership in the Portland area over the past 5 years due to implementation of the Portland Transportation Control Strategy resulting in significant decreases in CO emissions and an improvement in CO ambient air quality.

For the above reasons EPA Region X, in a letter dated November 3, 1978, has agreed to the use of 17.4 mg/m^3 as the design value and 1977 as the base year.

2.3 Determination of C_g at the CAM sites

To scale the CO concentrations observed at the CAM sites to non-monitored areas of potentially high concentrations, an estimation of C_g at the CAM sites is necessary. This can be done

through the use of the AIRPOL-4A model. This model uses traffic volumes and emission factors combined with physical and meteorological conditions to determine traffic-generated CO concentrations. The traffic volume input for the model at the CAM site is based on actual average weekday traffic counts. Monitoring site and roadway geometries of each CO monitoring station were also entered as inputs to the AIRPOL-4A model.

The meteorological input is the result of an analysis of the reaction of AIRPOL to a variety of parameters and the actual meteorological conditions typical of CO violations in Portland. Since the C_g concentration calculated for the CAM station is later modified and applied to other sites (Sections 2.4 and 2.5), a standardized set of "worst case" meteorological conditions had to be identified. Although the general conditions of D stability and low wind speeds are typical of CO violation days at any site in Portland, wind direction effects are not constant. To measure the maximum concentration of CO from a designated link at receptor distances less than 135 feet, AIRPOL-4A requires that the wind be parallel to that link. Based on these considerations, 1.2 mph wind speed, D stability, and parallel wind direction were identified as typical second highest day "worst case" meteorology. Using these input parameters to the AIRPOL-4A model, a conservative analysis is assured.

These meteorological conditions must be applied to both the C_g calculations and the screening technique (Section 2.5) to provide a common basis for the estimation of the CO concentrations at sites other than the CAM station.

The output of AIRPOL-4A is representative of the CO concentrations produced by traffic on the roadway adjacent to the monitoring station. Since total CO concentration is assumed to be caused by the sum of adjacent roadway and grid CO emissions, the AIRPOL-4A modeled concentration is subtracted from the observed second highest CO concentration (C) to estimate C_g at the monitoring site:

$$C_g = C - C_{1(mod)} \qquad (2)$$

where C_g is the grid CO concentration, C is the monitored CO concentration at a particular site and $C_{1(mod)}$ is the CO concentration obtained from AIRPOL-4A. It is assumed that the grid CO concentration calculated at one site within a grid is typical of the entire grid.

2.4 Expansion of CAM's C_g to other grids

To scale the C_g concentrations for monitored grids to non-monitored grids, the assumption was made that C_g for a grid is proportioned to the emission density of that grid. To check

this assumption and derive a mathematical relationship between C_g and emission density, several high CO days with meteorological conditions similar to those on the day the base value occurred were chosen. C_g and C_l were calculated as described above for the monitoring sites operating in the Portland area. Of these sites the Halsey St. monitoring site was eliminated due to its proximity to a parking lot. For the remaining sites the link contribution (C_l) was subtracted from the monitored 8-hour CO concentration to estimate C_g in each monitored grid.

Each C_g was plotted against its corresponding 1977 grid emission density and a best fit line drawn. This analysis indicated that on days with meteorological conditions similar to those occurring on the 1977 second highest CO day, C_g is proportional to emission density.

Equation (3) describes the best fit line for the worst CO day in 1977:

$$C_g = 7.287 \times 10^{-5} (ED_n) + 1.47 \qquad (3)$$

where C_g is the background CO concentration for any grid "n" and ED_n is the emission density for that grid. The decision was made to use the highest days' equation to calculate C_g in in non-monitored grids because the second highest day,

November 23, 1977, was the day before Thanksgiving. Traffic patterns would not have been "typical" on that day, thus making our C_1 estimates inaccurate. It was felt that since October 23 was a "typical" traffic day and had an average 8-hour CO concentration of only 0.1 mg/m^3 greater than November 23 (17.5 and 17.4 mg/m^3, respectively) it would be more technically sound to use the October 23 data.

Since CO emission densities will be calculated by SAPOLLUT for the base year 1977 and future years 1982 and 1987 for each two kilometer square grid in the AQMA, the grid CO values for any of these years can be found by substituting the appropriate year's grid emissions into equation (3).

After C_g for every grid is known, the links within the grids can be analyzed using a screening technique.

2.5 Screening technique

A screening technique has been developed to streamline the calculation of C_1 for all non-monitored roadways. The Oregon Department of Transportation developed a standardized equation for estimating CO concentration by running AIRPOL-4A to determine how changes in input parameters affected the output CO concentrations. Correction factors were derived for roadway length, perpendicular distance of the receptor from the roadway, stability class, wind direction, and wind speed.

If these factors are held constant, CO concentration at any given site is a function only of speed (which determines emission factors) and average weekday traffic volume (AWDT):

$$C_1 = k \text{ (Emission Factor)(AWDT)} \qquad (4)$$

where k is the product of the correction factors and varies only with the different roadway types (CBD, arterial or freeway).

By using the standardized assumptions listed below, C_1 can be calculated solely from peak 8-hour speed and AWDT:

	Roadway Type		
Characteristic	CBD	Arterials	Freeways
Receptor height	10 ft.	10 ft.	10 ft.
Receptor distance	12 ft.	25 ft.	75 ft.
Stability class	D	D	D
Wind speed	1.2 mph	1.2 mph	1.2 mph
Wind direction	parallel	parallel	parallel
Lane configuration	4 lanes	4 lanes	6 lanes
Length upwind	1000 ft.	1000 ft.	1000 ft.

Screening tables were developed to include all grid CO concentrations (C_g) from 0 to 9 mg/m^3. The grid concentration

was subtracted from the standard of 10 mg/m^3, leaving a C_l term from 9 to 1 mg/m^3.

$$C_l = (10 - C_g) \text{ mg/m}^3 \qquad (5)$$

To obtain the AWDT which would cause the total of $C_g + C_l$ to equal 10 mg/m^3, equation (5) can be rearranged as follows:

$$\text{AWDT} = \frac{C_l}{k(\text{Emission Factor})}$$

The AWDT resulting in CO concentrations up to 10 mg/m^3 has been calculated for each possible grid CO concentration and speeds from 5 to 55 mph. An example of the resulting tables are contained in Attachment 3.1.

To screen a given link having an associated volume, speed, and grid CO level, the appropriate table (CBD, freeway, arterial) will be entered at the same grid CO concentration and speed. If the projected volume on the link is greater than the tabulated volume, the link will be flagged as potentially violating the 8-hour CO standard. An example of this process is contained in Attachment 3.2.

3.0 Technical Documentation

The following documents are contained in this Technical Appendix:

Attachment 3.1 - CO Screening Table

Attachment 3.2 - Example of Screening Technique

Attachment 3.3 - Example of the Computerized Screening Technique

CO Screening Tables for Portland Arterial
Biennial I/M

Average 8-hr speed in mph	Grid CO Concentration (mg/m^3) 0	1	2	3	4	5	6	7	8	9
	Allowable AWDT									
	1983									
5	24,300	21,900	19,500	17,000	14,600	12,200	9,700	7,300	4,900	2,400
10	45,000	40,500	36,000	31,500	27,000	22,500	18,000	13,500	9,000	4,500
15	64,200	57,800	51,300	44,900	38,500	32,100	25,700	19,300	12,800	6,400
20	81,600	73,400	65,200	57,100	48,900	40,800	32,600	24,500	16,300	8,200
25	95,500	85,900	76,400	66,800	57,300	47,700	38,200	28,600	19,100	9,500
30	111,800	100,700	89,500	78,300	67,100	55,900	44,700	33,600	22,400	11,200
35	126,300	113,700	101,000	88,400	75,800	63,100	50,500	37,900	25,300	12,600
40	139,800	125,800	111,800	97,900	83,900	69,900	55,900	41,900	28,000	14,000
45	145,000	130,500	116,000	101,500	87,000	72,500	58,000	43,500	29,000	14,500
50	150,600	135,500	120,400	105,400	90,300	75,300	60,200	45,200	30,100	15,100
55	156,600	140,900	125,300	109,600	94,000	78,300	62,600	47,000	31,300	15,700
	1987									
5	38,800	34,900	31,000	27,100	23,300	19,400	15,500	11,600	7,800	3,900
10	71,200	64,100	56,900	49,800	42,700	35,600	28,500	21,400	14,200	7,100
15	100,400	90,300	80,300	70,300	60,200	50,200	40,100	30,100	20,100	10,000
20	126,300	113,700	101,000	88,400	75,800	63,100	50,500	37,900	25,300	12,600
25	145,000	130,500	119,100	101,500	87,000	72,500	58,000	43,500	29,000	14,500
30	> 150,000	> 150,000	137,000	119,100	102,100	85,100	68,100	51,100	34,000	17,000
35	"	"	> 150,000	137,000	117,400	97,900	78,300	58,700	39,100	19,600
40	"	"	"	> 150,000	130,500	108,700	87,000	65,200	43,500	21,700
45	"	"	"	"	138,200	115,100	92,100	69,100	46,100	23,000
50	"	"	"	"	141,500	117,900	94,300	70,700	47,200	23,600
55	"	"	"	"	146,800	122,300	97,900	73,400	48,900	24,500

Attachment 3.2

Example of Screening Method

Assume: $C_{g(cam)} = 6.0 \text{ mg/m}^3$

ED_{cam} (1977) = 18,000

ED_n (1977) = 4000

ED_n (1983) = 3000

Projected AWDT (1983) = 36,000

Receptor distance = 25 feet

Average speed = 20 mph

$$C_{g(n)} \text{ (1977)} = \frac{6.0 \times 4000}{18{,}000} = 1.3 \text{ mg/m}^3$$

$$C_{g(n)} \text{ (1983)} = \frac{1.3 \times 3000}{4{,}000} = 1.0 \text{ mg/m}^3$$

From Attachment 3.1, allowable traffic in 1983 with a background of 1.0 mg/m^3 and an average speed of 20 mph = 73,400 vehicles/day. Since the projected Average Weekday Traffic (AWDT) for 1983 is only 36,000, this link should not be in violation.

ATTACHMENT 3.3

SPEED	SKETCH VOLUME	F	DETAIL VOLUME	THRESH. VOLUME	CELL	1982 EMIS DENSITY	BACK-GROUND	LINK STATUS -- PERCENT ABOVE(+) OR BELOW(-) THRESHOLD
100 101 4617 4618 PACIFIC (WEST)/8 ST-NEHALEM HWY AREA= 2 FUNC= 4								
22.0	0	0.50	0.	73866.	(5,15)	706304.	1.52	-100.00
101 102 4620 4618 PACIFIC/NEHALEM HWY/SPRING HILL AREA= 2 FUNC= 2								
43.0	18137	0.50	9069.	192646.	(5,15)	706304.	1.52	-95.29
101 102 4634 4620 PACIFIC/NEHALEM HWY/SPRING HILL AREA= 2 FUNC= 2								
43.0	18137	0.50	9069.	192646.	(5,15)	706304.	1.52	-95.29
102 103 4620 4732 PACIFIC/EAST OF SPRING HILL AREA= 3 FUNC= 2								
41.0	25614	1.00	25614.	188380.	(6,15)	1675172.	1.59	-86.40
103 132 4676 4732 TV HWY/S OF E-W TV HWY AREA= 5 FUNC= 6								
26.0	6647	1.00	6647.	83842.	(5,14)	570458.	1.51	-92.07
103 136 4622 4626 BASELINE/E OF TV HWY AREA= 3 FUNC= 2								
40.0	27893	0.50	13947.	185705.	(7,15)	2504929.	1.65	-92.49
103 136 4626 4622 ADAIR/E OF TV HWY AREA= 3 FUNC= 2								
40.0	27893	0.50	13947.	185705.	(7,15)	2504929.	1.65	-92.49
104 134 4685 4688 TV HWY/S OF 133-134 AREA= 5 FUNC= 6								
26.0	6647	1.00	6647.	84038.	(4,11)	265910.	1.49	-92.09
105 106 4631 4630 BASELINE/1ST-5TH AREA= 4 FUNC= 4								
23.0	27398	0.27	7397.	75063.	(10,15)	2494270.	1.65	-90.14
105 106 4608 4609 GRANT/1ST-5TH AREA= 4 FUNC= 4								
23.0	27398	0.36	9863.	75063.	(10,15)	2494270.	1.65	-86.86
105 106 4640 4641 OAK/1ST-5TH AREA= 4 FUNC= 4								
23.0	27398	0.38	10411.	75063.	(10,15)	2494270.	1.65	-86.13

APPENDIX 4.2-3A
Oregon Portion of the
Portland-Vancouver Interstate AQMA
Emission Inventory - Carbon Monoxide, Tons Per Year
1977 and 1982

Source	Baseline Year 1977	1982 Projected Emissions		
		Emissions from sources existing in 1977	Growth Since 1977	Projected 1982 Total Emissions
1. Fuel Combustion External				
A. Residential Fuel (Area)				
1. Anthracite Coal	0	0	0	0
2. Bituminous Coal	0	0	0	0
3. Distillate Oil	232.0	232.0	26.0	258.0
4. Residual Oil	0	0	0	0
5. Natural Gas	102.0	102.0	11.0	113.0
6. Wood	?	?	?	?
7. Total	334.0	334.0	37.0	371.0
B. Electric Generation (Point)				
1. Antracite Coal	0	0	0	0
2. Bituminous Coat	0	0	0	0
3. Lignite	0	0	0	0
4. Residual Oil	0	0	0	0
5. Distillate Oil	0	0	0	0
6. Natural Gas	0	0	0	0
7. Process Gas	0	0	0	0
8. Coke	0	0	0	0
9. Sawdust	0	0	0	0
10. Total	0	0	0	0
C. Industrial Fuel (Point)				
1. Anthracite Coal				
a. area	0	0	0	0
b. point	0	0	0	0
2. Bituminous Coal				
a. area	0	0	0	0
b. point	0	0	0	0
3. Lignite				
a. point	0	0	0	0
4. Residual Oil				
a. area	23.0	23.0	5.0	28.0
b. point	0	0	0	0
5. Distillate Oil				
a. area	10.0	10.0	2.0	12.0
b. point	0	0	0	0

APPENDIX 4.2-3A
Oregon Portion of the
Portland-Vancouver Interstate AQMA
Emission Inventory - Carbon Monoxide, Tons Per Year
1977 and 1982

Source	Baseline Year 1977	1982 Projected Emissions		
		Emissions from sources existing in 1977	Growth Since 1977	Projected 1982 Total Emissions
6. Natural Gas				
a. area	112.0	112.0	22.0	134.0
b. point	179.0	179.0	14.0	193.0
7. Process Gas				
a. area	0	0	0	0
b. point	0	0	0	0
8. Coke				
a. point	0	0	0	0
9. Wood				
a. area	134.0	134.0	27.0	161.0
b. point	0	0	0	0
10. Liquid Petro Gas				
a. point	0	0	0	0
11. Bagasse				
a. point	0	0	0	0
12. Other				
a. point	0	0	0	0
13. Total				
a. area	279.0	279.0	56.0	335.0
b. point	179.0	179.0	14.0	193.0
D. Commercial/Institutional Fuel				
1. Anthracite Coal				
a. area	0	0	0	0
b. point	0	0	0	0
2. Bituminous Coal				
a. area	0	0	0	0
b. point	0	0	0	0
3. Lignite				
a. point	0	0	0	0
4. Residual Oil				
a. area	61.0	61.0	7.0	68.0
b. point	0	0	0	0
5. Distillate Oil				
a. area	2.0	2.0	0	2.0
b. point	0	0	0	0

APPENDIX 4.2-3A
Oregon Portion of the
Portland-Vancouver Interstate AQMA
Emission Inventory - Carbon Monoxide, Tons Per Year
1977 and 1982

Source	Baseline Year 1977	1982 Projected Emissions		
		Emissions from sources existing in 1977	Growth Since 1977	Projected 1982 Total Emissions
6. Natural Gas				
a. area	8.0	8.0	1.0	9.0
b. point	0	0	0	0
7. Wood				
a. area	0	0	0	0
b. point	0	0	0	0
8. Liquid Petrol Gas				
a. point	0	0	0	0
9. Other				
a. point	0	0	0	0
10. Total				
a. area	71.0	71.0	8.0	79.0
b. point	0	0	0	0
E. Other				
1. Point	0	0	0	0
F. Total External Combustion				
1. Area	684.0	684.0	101.0	785.0
2. Point	179.0	179.0	14.0	193.0
2. Fuel Combustion Internal				
A. Electric Generator				
1. Distillate Oil	0	0	0	0
2. Natural Gas	0	0	0	0
3. Diesel	2.0	2.0	0	2.0
4. Other	78.0	78.0	9.0	87.0
5. Total	80.0	80.0	9.0	89.0
B. Industrial Fuel				
1. Distillate Oil	0	0	0	0
2. Natural Gas	0	0	0	0
3. Gasoline	0	0	0	0

APPENDIX 4.2-3A
Oregon Portion of the
Portland-Vancouver Interstate AQMA
Emission Inventory - Carbon Monoxide, Tons Per Year
1977 and 1982

Source	Baseline Year 1977	1982 Projected Emissions		
		Emissions from sources existing in 1977	Growth Since 1977	Projected 1982 Total Emissions
4. Diesel	0	0	0	0
5. Other	0	0	0	0
6. Total	0	0	0	0
C. Commercial/Institutional Fuel				
1. Diesel	0	0	0	0
2. Total	0	0	0	0
D. Engine Testing Aircraft	0	0	0	0
E. Total Internal Combustion	80.0	80.0	9.0	89.0
Total Fuel Combustion				
Area	764.0	764.0	110.0	874.0
Point	179.0	179.0	14.0	193.0
3. Industrial Process (Point)				
A. Chemical Manufacturing	0	0	0	0
B. Food/Agriculture	0	0	0	0
C. Primary Metal	209.0	209.0	23.0	232.0
D. Secondary Metals	0	0	0	0
E. Mineral Products	40.0	40.0	4.0	44.0
F. Petroleum Industry	32.0	32.0	3.0	35.0
G. Wood Products	121.0	121.0	10.0	131.0
H. Metal Fabrication	0	0	0	0
I. Leather Products	0	0	0	0
J. Textile Manufacturing	0	0	0	0
K. Inprocess Fuel	0	0	0	0
L. Other	0	0	0	0
M. Total	402.0	402.0	40.0	424.0

APPENDIX 4.2-3A
Oregon Portion of the
Portland-Vancouver Interstate AQMA
Emission Inventory - Carbon Monoxide, Tons Per Year
1977 and 1982

Source	Baseline Year 1977	1982 Projected Emissions		
		Emissions from sources existing in 1977	Growth Since 1977	Projected 1982 Total Emissions
4. Solid Waste Disposal				
A. Government (Point)				
1. Municipal Incin.	0	0	0	0
2. Open Burning	0	0	0	0
3. Other	0	0	0	0
4. Total	0	0	0	0
B. Residential (Area)				
1. Onsite Incin.	16.0	16.0	2.0	18.0
2. Open Burning	995.0	995.0	109.0	1104.0
3. Total	1011.0	1011.0	111.0	1122.0
C. Commercial Institutional				
1. Onsite Incin.				
a. area	9.0	9.0	1.0	10.0
b. point	0	0	0	0
2. Open Burning				
a. area	0	0	0	0
b. point	0	0	0	0
3. Apartment				
a. point	0	0	0	0
4. Other				
a. area	0	0	0	0
b. point	0	0	0	0
5. Total				
a. area	9.0	9.0	1.0	10.0
b. point	0	0	0	0
D. Industrial				
1. Onsite Incin.				
a. area	9.0	9.0	1.0	10.0
b. point	0	0	0	0
2. Open Burning				
a. area	0	0	0	0
b. point	0	0	0	0
3. Auto Body Incin.				
a. point	0	0	0	0

APPENDIX 4.2-3A
Oregon Portion of the
Portland-Vancouver Interstate AQMA
Emission Inventory - Carbon Monoxide, Tons Per Year
1977 and 1982

Source	Baseline Year 1977	1982 Projected Emissions		
		Emissions from sources existing in 1977	Growth Since 1977	Projected 1982 Total Emissions
4. Other				
a. area	0	0	0	0
b. point	0	0	0	0
5. Total				
a. area	9.0	9.0	1.0	10.0
b. point	0	0	0	0
E. Total Solid Waste Disposal				
1. area	1029.0	1029.0	115.0	1160.0
2. point	0	0	0	0
5. Transportation (Area)				
A. Land Vehicles				
1. Gasoline				
a light duty*	721,902.0	218,233.0	187,302.0	405,535.0
b. heavy duty*	16,824.0	5,585.0	3,866.0	9,451.0
c. off highway	5,413.0	5,413.0	595.0	6,008.0
d. total	744,139.0	229,231.0	191,763.0	420,994.0
2. Diesel				
a. heavy duty*	26,001.0	4,725.0	9,881.0	14,606.0
b. off highway	107.0	107.0	12.0	119.0
c. rail	512.0	512.0	0	512.0
d. total	26,620.0	5,344.0	9,893.0	15,237.0
3. Total	770,759.0	234,575.0	201,656.0	436,231.0
B. Aircraft Total	4,076.0	4,076.0	408.0	4,484.0
C. Vessels Total	164.0	164.0	16.0	180.0
D. Total Transportation	774,999.0	238,815.0	202,080.0	440,895.0

APPENDIX 4.2-3A
Oregon Portion of the
Portland-Vancouver Interstate AQMA
Emission Inventory - Carbon Monoxide, Tons Per Year
1977 and 1982

Source	Baseline Year 1977	1982 Projected Emissions		
		Emissions from sources existing in 1977	Growth Since 1977	Projected 1982 Total Emissions
6. Miscellaneous (Area)				
A. Fires				
1. Structural	1,112.0	1,112.0	122.0	1,234.0
2. Frost Control	0	0	0	0
3. Slash Burning	0	0	0	0
4. Wild Forest	0	0	0	0
5. Agricultural	0	0	0	0
6. Total	1,112.0	1,112.0	122.0	1,234.0
AREA TOTAL	777,904.0	241,720.0	202,426.0	444,145.0
POINT TOTAL	581.0	581.0	54.0	635.0
GRAND TOTAL	778,485.0	242,301.0	202,480.0	444,780.0

* Include Clark Co. Vehicle Emissions

APPENDIX 4.2-3B
Oregon Portion of the
Portland-Vancouver Interstate AQMA
Emission Inventory - Carbon Monoxide, Tons Per Year
1977 and 1987

Source	Baseline Year 1977	1987 Projected Emissions		
		Emissions from sources existing in 1977	Growth Since 1977	Projected 1987 Total Emissions
1. Fuel Combustion External				
A. Residential Fuel (Area)				
1. Anthracite Coal	0	0	0	0
2. Bituminous Coal	0	0	0	0
3. Distillate Oil	232.0	232.0	49.0	281.0
4. Residual Oil	0	0	0	0
5. Natural Gas	102.0	102.0	21.0	123.0
6. Wood	?	?	?	?
7. Total	334.0	334.0	70.0	404.0
B. Electric Generation (Point)				
1. Antracite Coal	0	0	0	0
2. Bituminous Coat	0	0	0	0
3. Lignite	0	0	0	0
4. Residual Oil	0	0	0	0
5. Distillate Oil	0	0	0	0
6. Natural Gas	0	0	0	0
7. Process Gas	0	0	0	0
8. Coke	0	0	0	0
9. Sawdust	0	0	0	0
10. Total	0	0	0	0
C. Industrial Fuel (Point)				
1. Anthracite Coal				
a. area	0	0	0	0
b. point	0	0	0	0
2. Bituminous Coal				
a. area	0	0	0	0
b. point	0	0	0	0
3. Lignite				
a. point	0	0	0	0
4. Residual Oil				
a. area	23.0	23.0	6.0	29.0
b. point	0	0	0	0
5. Distillate Oil				
a. area	10.0	10.0	3.0	13.0
b. point	0	0	0	0

APPENDIX 4.2-3B
Oregon Portion of the
Portland-Vancouver Interstate AQMA
Emission Inventory - Carbon Monoxide, Tons Per Year
1977 and 1987

Source	Baseline Year 1977	1987 Projected Emissions		
		Emissions from sources existing in 1977	Growth Since 1977	Projected 1987 Total Emissions
6. Natural Gas				
a. area	112.0	112.0	30.0	142.0
b. point	179.0	179.0	16.0	195.0
7. Process Gas				
a. area	0	0	0	0
b. point	0	0	0	0
8. Coke				
a. point	0	0	0	0
9. Wood				
a. area	134.0	134.0	36.0	170.0
b. point	0	0	0	0
10. Liquid Petro Gas				
a. point	0	0	0	0
11. Bagasse				
a. point	0	0	0	0
12. Other				
a. point	0	0	0	0
13. Total				
a. area	279.0	279.0	75.0	354.0
b. point	179.0	179.0	16.0	195.0
D. Commercial/Institutional Fuel				
1. Anthracite Coal				
a. area	0	0	0	0
b. point	0	0	0	0
2. Bituminous Coal				
a. area	0	0	0	0
b. point	0	0	0	0
3. Lignite				
a. point	0	0	0	0
4. Residual Oil				
a. area	61.0	61.0	9.0	70.0
b. point	0	0	0	0
5. Distillate Oil				
a. area	2.0	2.0	0	2.0
b. point	0	0	0	0

APPENDIX 4.2-3B
Oregon Portion of the
Portland-Vancouver Interstate AQMA
Emission Inventory - Carbon Monoxide, Tons Per Year
1977 and 1987

Source	Baseline Year 1977	1987 Projected Emissions		
		Emissions from sources existing in 1977	Growth Since 1977	Projected 1987 Total Emissions
6. Natural Gas				
a. area	8.0	8.0	1.0	9.0
b. point	0	0	0	0
7. Wood				
a. area	0	0	0	0
b. point	0	0	0	0
8. Liquid Petrol Gas				
a. point	0	0	0	0
9. Other				
a. point	0	0	0	0
10. Total				
a. area	71.0	71.0	10.0	81.0
b. point	0	0	0	0
E. Other				
1. Point	0	0	0	0
F. Total External Combustion				
1. Area	684.0	684.0	155.0	839.0
2. Point	179.0	179.0	16.0	195.0
2. Fuel Combustion Internal				
A. Electric Generator				
1. Distillate Oil	0	0	0	0
2. Natural Gas	0	0	0	0
3. Diesel	2.0	2.0	0	2.0
4. Other	78.0	78.0	12.0	90.0
5. Total	80.0	80.0	12.0	92.0
B. Industrial Fuel				
1. Distillate Oil	0	0	0	0
2. Natural Gas	0	0	0	0
3. Gasoline	0	0	0	0

APPENDIX 4.2-3B
Oregon Portion of the
Portland-Vancouver Interstate AQMA
Emission Inventory - Carbon Monoxide, Tons Per Year
1977 and 1987

Source	Baseline Year 1977	1987 Projected Emissions		
		Emissions from sources existing in 1977	Growth Since 1977	Projected 1987 Total Emissions
4. Diesel	0	0	0	0
5. Other	0	0	0	0
6. Total	0	0	0	0
C. Commercial/Institutional Fuel				
1. Diesel	0	0	0	0
2. Total	0	0	0	0
D. Engine Testing Aircraft	0	0	0	0
E. Total Internal Combustion	80.0	80.0	12.0	92.0
Total Fuel Combustion				
Area	764.0	764.0	167.0	931.0
Point	179.0	179.0	16.0	195.0
3. Industrial Process (Point)				
A. Chemical Manufacturing	0	0	0	0
B. Food/Agriculture	0	0	0	0
C. Primary Metal	209.0	209.0	38.0	247.0
D. Secondary Metals	0	0	0	0
E. Mineral Products	40.0	40.0	6.0	46.0
F. Petroleum Industry	32.0	32.0	8.0	40.0
G. Wood Products	121.0	121.0	12.0	133.0
H. Metal Fabrication	0	0	0	0
I. Leather Products	0	0	0	0
J. Textile Manufacturing	0	0	0	0
K. Inprocess Fuel	0	0	0	0
L. Other	0	0	0	0
M. Total	402.0	402.0	64.0	466.0

APPENDIX 4.2-3B
Oregon Portion of the
Portland-Vancouver Interstate AQMA
Emission Inventory - Carbon Monoxide, Tons Per Year
1977 and 1987

Source	Baseline Year 1977	1987 Projected Emissions		
		Emissions from sources existing in 1977	Growth Since 1977	Projected 1987 Total Emissions
4. Solid Waste Disposal				
A. Government (Point)				
1. Municipal Incin.	0	0	0	0
2. Open Burning	0	0	0	0
3. Other	0	0	0	0
4. Total	0	0	0	0
B. Residential (Area)				
1. Onsite Incin.	16.0	16.0	2.0	18.0
2. Open Burning	995.0	995.0	149.0	1144.0
3. Total	1011.0	1011.0	151.0	1162.0
C. Commercial Institutional				
1. Onsite Incin.				
a. area	9.0	9.0	1.0	10.0
b. point	0	0	0	0
2. Open Burning				
a. area	0	0	0	0
b. point	0	0	0	0
3. Apartment				
a. point	0	0	0	0
4. Other				
a. area	0	0	0	0
b. point	0	0	0	0
5. Total				
a. area	9.0	9.0	1.0	10.0
b. point	0	0	0	0
D. Industrial				
1. Onsite Incin.				
a. area	9.0	9.0	1.0	10.0
b. point	0	0	0	0
2. Open Burning				
a. area	0	0	0	0
b. point	0	0	0	0
3. Auto Body Incin.				
a. point	0	0	0	0

APPENDIX 4.2-3B
Oregon Portion of the
Portland-Vancouver Interstate AQMA
Emission Inventory - Carbon Monoxide, Tons Per Year
1977 and 1987

Source	Baseline Year 1977	1987 Projected Emissions		
		Emissions from sources existing in 1977	Growth Since 1977	Projected 1987 Total Emissions
4. Other				
a. area	0	0	0	0
b. point	0	0	0	0
5. Total				
a. area	9.0	9.0	1.0	10.0
b. point	0	0	0	0
E. Total Solid Waste Disposal				
1. area	1029.0	1029.0	153.0	1198.0
2. point	0	0	0	0
*5. Transportation (Area)				
A. Land Vehicles				
1. Gasoline				
a light duty	721,902.0	92,437.0	230,752.0	323,189.0
b. heavy duty	16,824.0	1,369.0	6,163.0	7,532.0
c. off highway	5,413.0	5,413.0	812.0	6,225.0
d. total	744,139.0	99,219.0	237,727.0	336,946.0
2. Diesel				
a. heavy duty	26,001.0	1,369.0	10,271.0	11,640.0
b. off highway	107.0	107.0	16.0	123.0
c. rail	512.0	512.0	0	512.0
d. total	26,620.0	1,988.0	10,287.0	12,275.0
3. Total	770,759.0	234,575.0	201,656.0	436,231.0
B. Aircraft Total	4,076.0	4,076.0	815.0	4,891.0
C. Vessels Total	164.0	164.0	33.0	197.0
D. Total Transportation	774,999.0	105,447.0	248,862.0	354,309.0

* Contains Clark County Emissions

APPENDIX 4.2-3B
Oregon Portion of the
Portland-Vancouver Interstate AQMA
Emission Inventory - Carbon Monoxide, Tons Per Year
1977 and 1987

Source	Baseline Year 1977	1987 Projected Emissions		
		Emissions from sources existing in 1977	Growth Since 1977	Projected 1987 Total Emissions
6. Miscellaneous (Area)				
A. Fires				
1. Structural	1,112.0	1,112.0	167.0	1,279.0
2. Frost Control	0	0	0	0
3. Slash Burning	0	0	0	0
4. Wild Forest	0	0	0	0
5. Agricultural	0	0	0	0
6. Total	1,112.0	1,112.0	167.0	1,279.0
AREA TOTAL	777,904.0	108,352.0	249,349.0	357,701.0
POINT TOTAL	581.0	581.0	80.0	661.0
GRAND TOTAL	778,485.0	108,933.0	249,429.0	358,362.0

A6205.K

APPENDIX 4.2-4

Documentation of Public Notice and Hearings for the Carbon Monoxide State Implementation Plan Revisions

A public hearing on "Proposed Revisions to the State 'Clean Air' Act Implementation Plan (SIP) for Carbon Monoxide and Ozone Control Strategies in the Portland Air Quality Maintenance Area (AQMA)" was held in Portland on May 4, 1979. The public notice for the hearing was mailed to interested and affected citizens on March 30. Newspaper advertisements for this hearing were published the Oregonian and the Oregon Journal on March 30, 1979 and April 9, 1979. Three individuals submitted testimony. A summary of these comments is in the hearing report. Copies of the public notice and the newspaper advertisements are in this appendix.

Copies of the State Implementation Plan were sent to the State A-95 Clearinghouse and to fourteen areawide clearinghouses for review, as well as to the U.S. Department of Interior, the U.S. Fish and Wildlife Service, and the U.S. Forest Service. Copies of comments received are also in this appendix.

CAS:kmm

A6197.A1

INTERGOVERNMENTAL REVIEW

Copies of the complete State Implementation Plan were sent to the State A-95 Clearinghouse, fourteen areawide clearinghouses, and various federal and state agencies which might be affected by the Plan. Since no significant comments were received, no responses were deemed necessary.

YOUR OPPORTUNITY TO COMMENT ON PROPOSED DEPARTMENT OF ENVIRONMENTAL QUALITY AIR POLLUTION EMISSION RULES FOR

PORTLAND OZONE AND CARBON MONOXIDE CONTROL

The proposed revisions contain an analysis of existing and projected carbon monoxide (CO) and ozone air quality levels as well as a program for analyzing potential new CO and ozone control strategies. A request for extension of the December 31, 1982 EPA standards attainment date is also included. The revisions would be submitted to EPA as a change to Oregon's Clean Air Act Implementation Plan. You may comment orally at:

9:00 A.M.
PUBLIC HEARING, MAY 4
STATE OFFICE BLDG. RM. 36
1400 S. W. Fifth Avenue
PORTLAND, OREGON

Copies of the proposed rule are available for your study and comment by writing or phoning Carl. A. Simons, 229-6279 DEQ Air Quality Division, P. O. Box 1760, Portland, Or. 97207. You can call toll-free 1-800-452-7813 and ask for DEQ-229-6279.

Written comments may be submitted until May 4 at the above address.

the Oregonian March 30, 1979

the Oregonian 4/9/79

YOUR OPPORTUNITY TO COMMENT ON PROPOSED DEPARTMENT OF ENVIRONMENTAL QUALITY AIR POLLUTION EMISSION RULES FOR

PORTLAND OZONE AND CARBON MONOXIDE CONTROL

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Written comments may be submitted until May 4 at the above address.

OREGON JOURNAL
MARCH 30, 1979

Oregon Journal 4/9/79

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Written comments may be submitted until May 4 at the above address.

ROBERT W. STRAUB
GOVERNOR

Environmental Quality Commission

522 S.W. 5th AVENUE, P.O. BOX 1760, PORTLAND, OREGON 97207 PHONE (503) 229-5696

MEMORANDUM

To: Environmental Quality Commission

From: Hearing Officer

Subject: Hearing Report on May 4, 1979, hearing.
"Proposed revisions to the State Air Quality Implementation Plan (SIP) for the Portland-Vancouver Interstate AQMA Carbon Monoxide and Ozone Control Strategies." (OAR 340-20-047)

Summary of Procedure

Pursuant to public notice, a public hearing was convened at the State Office Building Room 36, located at 1400 SW Fifth Avenue in Portland at 9:00 a.m. on May 4, 1979. The purpose was to receive testimony regarding proposed revisions to the SIP for carbon monoxide and ozone control strategies in the Portland AQMA.

Summary of Testimony

Melinda Renstrom, Oregon Environmental Council Read a prepared position paper which was opposed to portions of the Department's proposed SIP revisions. OEC criticized the Department for not referencing the present state oxidant level of 0.08 ppm in the SIP. OEC stated that by leaving this reference out of the SIP the Department may be prejudicing the outcome of the hearings process just begun on the possible relaxing of this standard (i.e. bringing the state standard into conformance with the new federal standard of 0.12 ppm). Should the state standard not be relaxed the Department would be faced with administering two standards for the same pollutant. OEC expressed concern that the double standard would cause confusion and could diminish the public's ability to bring effective civil suits to enforce emission standards as provided by Section 304 of the CAAA.

OEC also criticized the Department for failing to include the Indirect Source program in the list of Reasonably Available Control Measures (RACM's). OEC also questioned whether the omission of the Indirect Source program from the SIP will lessen its effectiveness and the Department's commitment to it.

The last comment by OEC deals with the public participation element of the SIP. It is their opinion that the much of the public participation and publicity centering on the SIP revisions was not generated by the Department or MSD but by concerned citizens and OEC. OEC feels that the responsible agencies should make greater financial commitment to the public involvement element of the program.

Gary Coe, Multnomah Hot Rod Council stated that he and his group were opposed to the annual testing of auto emissions in the Portland area. He stated the cost of maintaining older cars in condition to pass the emission tests were greater than the benefits gained. He stated that an annual emission test program would be inflationary and would cause hardships on less affluent people. Mr. Coe made reference to the Portland Aerosol Characterization Study (PACS) study released on particulate sampling and inventory of sources.

Other testimony, received by letter

Jan D. Sokol, Oregon Student Public Interest Research Group, (OSPIRG), states that while OSPIRG generally does not oppose the SIP revisions it feels the Department's request for an extention in time is legally insufficient. OSPIRG bases this claim on the fact that the revisions do not include an alternative analysis program for major emitting facilities proposing to locate in a nonattainment area. Section 172(b)(11)(A) of the CAAA is referenced as requiring this program as a specific element of a SIP revision request for a time extension. OSPIRG has not been satisfied by previous EPA staff responses to this matter.

League of Women Voters of Oregon states it supports "adequate standards for control of all sources of pollution and strict enforcement of established rules and regulations." They note a lack of resolve in part of the Department and the Commission to strengthen present programs and initiate new programs to meet air quality standards. Finally, the League states it is opposed to an extension of the attainment date for the carbon monoxide and ozone ambient air standards beyond 1982.

Oral and written testimony was offered by:

Melinda Renstrom, Oregon Environmental Council

Oral testimony was given by:

Gary Coe, Multnomah Hot Rod Council

Testimony received in written form only:

Jan D. Sokol, Oregon Student Public Interest Research Group
The League of Women Voters of Oregon

Recommendations

The hearing officer has no recommendations.

Respectfully submitted,

Stephen C. Carter
Hearing Officer

CAS:kmm
229-6279
May 8, 1979
Attachments (1) Notice of Public Hearing
(2) Testimony of the Oregon Environmental Council
(3) Testimony of the Oregon Student Public Interest Research Group (OSPIRG)
(4) Testimony of the League of Women Voters of Oregon
A6254.2

ROBERT W. STRAUB
GOVERNOR

Department of Environmental Quality

522 SOUTHWEST 5TH AVE. PORTLAND, OREGON

MAILING ADDRESS: P.O. BOX 1760, PORTLAND, OREGON 97207

Prepared: March 13, 1979
Hearing Date: May 4, 1979

NOTICE OF PUBLIC HEARING

A CHANCE TO BE HEARD ABOUT:

PROPOSED REVISIONS TO THE STATE "CLEAN AIR" ACT IMPLEMENTATION PLAN (SIP) FOR CARBON MONOXIDE AND OZONE CONTROL STRATEGIES IN THE PORTLAND AIR QUALITY MAINTENANCE AREA (AQMA)

The Department of Environmental Quality is proposing to amend its State Implementation Plan for carbon monoxide and ozone control strategies in accordance with the federal Clean Air Act Amendments of 1977. The proposed revisions contain an analysis of existing and projected carbon monoxide (CO) and ozone (O_3) air quality levels as well as a program for analyzing potential new CO and O_3 control strategies. A request for extension of the December 31, 1982 EPA attainment date is also included.

WHAT IS THE DEQ PROPOSING?

Interested parties should request a copy of the complete proposed SIP Revision package. Some highlights are:

** Federal Ambient Air Quality standards for Carbon Monoxide and Ozone are projected to be exceeded beyond December 31, 1982.

** The CO and O_3 SIP revisions consist of a commitment to analyze new control strategies which would insure attainment and maintenance of ambient air quality standards. This control strategy analysis would be performed by the Metropolitan Service District (MSD) and would be completed by June 30, 1980.

** The proposed SIP revision contains a request to EPA to extend the attainment date for the CO and O_3 ambient air quality standards beyond December 31, 1982. EPA requirements for requesting this extension have been met.

WHO IS AFFECTED BY THIS INFORMATION:

The residents and industries in the Portland-Vancouver Interstate AQMA.

HOW TO PROVIDE YOUR INFORMATION:

Written comments should be sent to the Department of Environmental Quality, Air Quality Division, P.O. Box 1760, Portland, Oregon 97207, and should be received by May 4, 1979.

Oral and written comments may be offered at the following public hearing:

City	Time	Date	Location
Portland	9:00 a.m.	May 4	State Office Building Room 36, Basement 1400 SW Fifth Portland, OR

WHERE TO OBTAIN ADDITIONAL INFORMATION:

Copies of the proposed rules may be obtained from:

Carl A. Simons
DEQ Air Quality Division
P.O. Box 1760
Portland, Oregon 97207
229-6279

LEGAL REFERENCES FOR THIS PROPOSAL:

Clean Air Act Amendments of 1977 (PL 95-95). This hearing is being proposed under authority of OAR 340-20-047 and ORS 468.305.

FURTHER PROCEEDINGS:

After public hearing the Commission may adopt amendments identical to the proposed amendments, adopt modified amendments on the same subject matter, or decline to act. The adopted regulations may be submitted to the Environmental Protection Agency as part of the State Clean Air Act Implementation Plan. The Commission's deliberation should come on June 8, 1979 as part of the agenda of a scheduled Commission meeting.

CAS:kmm

OREGON ENVIRONMENTAL COUNCIL

2637 S.W. WATER AVENUE, PORTLAND, OREGON 97201 / PHONE: 503/222-1963

ALTERNATIVE FUTURES, Tigard
AMERICAN INSTITUTE OF ARCHITECTS
Portland Chapter
AMERICAN SOCIETY OF LANDSCAPE ARCHITECTS
Oregon Chapter
ASSOCIATION OF NORTHWEST STEELHEADERS
ASSOCIATION OF OREGON RECYCLERS
AUDUBON SOCIETY
Central Oregon, Corvallis, Portland, Salem
BAY AREA ENVIRONMENTAL COUNCIL
Coos Bay
B.R.I.N.G.
CENTRAL CASCADES CONSERVATION COUNCIL
CHEMEKETANS, Salem
CITIZENS FOR A BETTER GOVERNMENT
CITIZENS FOR A CLEAN ENVIRONMENT
CLATSOP ENVIRONMENTAL COUNCIL
CONCERNED CITIZENS FOR AIR PURITY
Eugene
DEFENDERS OF WILDLIFE
ECO-ALLIANCE, Corvallis
ENVIRONMENTAL ACTION CLUB
Parkrose High School
EUGENE FUTURE POWER COMMITTEE
EUGENE NATURAL HISTORY SOCIETY
GARDEN CLUBS of Cedar Mill, Corvallis, McMinnville, Nehalem Bay, Scappoose
GRANT COUNTY CONSERVATIONISTS
H.E.A.L., Azalea
LAND, AIR, WATER, Eugene
LEAGUE OF WOMEN VOTERS
Central Lane, Coos County
McKENZIE GUARDIANS, Blue River
NORTHWEST ENVIRONMENTAL DEFENSE CENTER
OBSIDIANS Eugene
1,000 FRIENDS OF OREGON
OREGON ASSOCIATION OF RAILWAY PASSENGERS
OREGON BASS AND PANFISH CLUB
OREGONIANS COOPERATING TO PROTECT WHALES
OREGON FEDERATION OF GARDEN CLUBS
OREGON GUIDES AND PACKERS
OREGON HIGH DESERT STUDY GROUP
OREGON LUNG ASSOCIATION
Portland Salem
OREGON NORDIC CLUB
OREGON NURSES ASSOCIATION
OREGON PARK & RECREATION SOCIETY
Eugene
OREGON ROADSIDE COUNCIL
OREGON SHORES CONSERVATION COALITION
O.S.P.I.R.G.
PLANNED PARENTHOOD ASSOCIATION INC
Portland
PORTLAND ADVOCATES OF WILDERNESS
PORTLAND RECYCLING TEAM, INC.
RECREATIONAL EQUIPMENT INC.
SANTIAM ALPINE CLUB
Salem
SIERRA CLUB
Oregon Chapter
Columbia Group, Portland
Klamath Group, Klamath Falls
Many Rivers Group, Eugene
Mary's Peak Group, Corvallis
Mt. Jefferson Group, Salem
Rogue Valley Group, Ashland
SOLV
SPENCER BUTTE IMPROVEMENT ASSOCIATION
STEAMBOATERS
SURVIVAL CENTER
University of Oregon
THE TOWN FORUM, INC.
Cottage Grove
TRAILS CLUB OF OREGON
UMPQUA WILDERNESS DEFENDERS
WESTERN RIVER GUIDES ASSOCIATION, INC.
WILLAMETTE RIVER GREENWAY ASSOCIATION

Statement of Melinda Renstrom on Behalf of Oregon Environmental Council Regarding the Portland Air Quality Maintenance Area Draft State Implementation Plan for Carbon Monoxide and Photochemical Oxidants

May 4, 1979

I am Melinda Renstrom of the Oregon Environmental Council, a coalition of 75 recreational, planning, health, and environmental groups and 2500 individual members. I specialize in matters related to air quality.

My comments today are focused on three areas of the carbon monoxide and ozone portions of the Portland AQMA Draft State Implementation Plan. I will make them brief:

First, the Oregon Environmental Council criticizes the Metropolitan Service District and the Oregon State Department of Environmental Quality for omitting the Oregon state photochemical oxidant standard from the Draft State Implementation Plan. Regardless of new federal standards, the Oregon standard limits photochemical oxidant or ozone levels to .08 ppm, measured hourly, not to be exceeded more than once per year. The Oregon standard should, by law, be referenced in the

State Implementation Plan. It is not. State Hearings addressing the ozone standard have just started. There has been a tacit assumption that the state will relax the ozone standard. How might that assumption and the State Implementation Plan which contains that assumption affect the ozone hearings? Oregon Environmental Council is concerned that treating a changed standard as a foregone conclusion might very well affect the hearing process, in fact we think it already has done just that.

Presuming that the Oregon ozone standard does not change, then the Oregon Environmental Council is critical of what seems to be a new state policy for keeping two sets of books. The OEC does not approve of this policy. Oregonians lose out when the federal State Implementation Plan shows one set of rules and state administrative rules say something else. Government is complicated enough for most of us without doubling the confusion. Furthermore, the OEC is not convinced that state administrative rule provides the same degree of rights to citizens as does the Clean Air Act. Section 304 of the Clean Air Act quite specifically provides for civil suits to enforce emissions standards and provides for attorneys fees and court costs as well. The OEC presumes that Congress made provisions for the very thorough Section 304 for what they felt were good reasons. We would like to take this opportunity to voice our criticism of the double books policy for several aspects of the State Implementation Plan. I will not go into those issues at this time.

Secondly, the Oregon Environmental Council wishes to comment on the so-called "Demonstration of Commitment to Reasonably Available Control Measures" section of the Draft State Implementation Plan for both carbon monoxide and ozone in the Portland AQMA. Nowhere in the Draft document is there any mention of the currently administered Indirect Source

program. Cars are necessarily the target of most efforts to reduce CO and O_3 levels and yet one of the only programs in existence that does planning for parking and traffic patterns and which has significant implications for regional air quality is omitted from this Draft. Does omitting this vital program represent reasonable further progress? Is the state seriously trying to scrap the Indirect Source program or is this another example of keeping two sets of books? The Indirect Source program should be in the State Implementation Plan. If it is omitted the list of "Reasonably Available Control Measures" to which the state and region are supposedly committed is a joke.

Our last comment concerns public participation. In the State Implementation Plan local agencies must, by law, convince EPA that adequate provisions are being made for public participation . While Oregon Environmental Council does not fault the role of the Portland Air Quality Maintenance Area Advisory Committee in the SIP process we must insist that the role of the public relations sub-committee has been overstated. The sub-committee has not been able to do very much because there has been no commitment of financial support. Most of the work hours that have been put into publicizing the AQMA Committee's activities have been donated by the Oregon Environmental Council or one or two committee volunteers. In fact, the newsletter that was mentioned in the Draft State Implementation Plan is not an AQMA Committee activity at all. Clean Air News is a publication of the Oregon Environmental Council.

The Oregon Environmental Council urges a more complete submission of a State Implementation Plan to the U.S. Environmental Protection Agency.

April 26, 1979

Bill Young, Director
Department of Environmental Quality
P.O. Box 1760
Portland, Oregon 97207

RE: Proposed Revisions to the State Air Quality Implementation Plan for the Portland-Vancouver Interstate AQMA Carbon Monoxide and Ozone Control Strategies.

Dear Bill:

The following are the Oregon Student Public Interest Research Group's (OSPIRG) comments on the above-entitled control strategies.

OSPIRG does not oppose in principle the Department's requested extension to attain CO and O_3 ambient air standards. However, OSPIRG believes that the Department has failed to fulfill the requirements of § 172 of the Clean Air Act, 42 USC § 7502, and EPA requirements as set forth in 43 Fed. Reg. 21673 (May 19, 1978) in order to obtain an extension beyond December 31, 1982.

42 USC § 7502 (b)(11)(A) requires the Department to:

> [E]stablish a program which requires, prior to issuance of any permit for construction or modification of a major emitting facility, an analysis of alternative sites, sizes, production processes, and environmental control techniques for such proposed source which demonstrates that the benefits of the proposed source significantly outweigh the environmental and social costs imposed as a result of its location, construction, or modification.

This is in addition to the requirement that the Department "establish a specific schedule for implementation of a vehicle emission control inspection and maintenance program" and "identify other measures necessary to provide for attainment of the applicable national ambient air quality standard no later than December 31, 1987." These three measures are essential prerequisites to any extension beyond December 31, 1982.

The need for an alternative analysis program is further supported by the Joint Explanatory Statement of the Committee of Conference on the Clean Air Act P.L. 95-95:

> A plan submission in 1979 which demonstrates that oxidant or carbon monoxide standards will not be met by 1982 must contain certain specified provisions: (1) it must require alternative site analyses for major emitting facilities proposing to locate in a nonattainment area; (2) it must establish a schedule for implementing a vehicle inspection and maintenance program; and (3) it must require that funds reasonably available to the State or local government be used to improve public transportation. [Emphasis added]

1977 U.S. Code Cong. & Adm. News 1502, 1537-38. In addition, EPA, in its memorandum concerning "Criteria for Approval of 1979 SIP Revisions" clearly mandates such a program. 43 Fed. Reg. 21673, 21675 (May 19, 1978).

No alternative analysis program is provided in the Department's SIP revision for CO and O_3. Nor does the Department have an administrative rule which requires an alternative site analysis prior to the issuance of a permit for construction or modification of a major emitting facility. Without such a program, the Department's request for an extension is legally insufficient.

This is not the first time I have brought this matter to the Department's attention. This issue has been raised during several meetings with DEQ staff as well as during several AQMA Advisory Committee meetings. The response by DEQ staff has been that EPA Region X has informed the Department that such a program is not necessary in order for the EPA Administrator to grant an extension for CO and O_3 compliance. I have never seen such a statement from EPA in writing. OSPIRG submits that, if this is Region X's interpretation, it is in conflict with the clear wording of the law.

OSPIRG urges the Department through the EQC to adopt an alternative site analysis program and include it in the 1979 SIP revisions so that the DEQ's request for an extension can be expeditiously reviewed by the EPA Administrator.

Thank you for the opportunity to comment.

Sincerely,

Jan

Jan D. Sokol
Attorney and OSPIRG's
Representative on the
Portland AQMA Committee

THE LEAGUE OF WOMEN VOTERS OF OREGON
494 STATE STREET - SUITE 216
SALEM, OREGON 97301
581-5722

TESTIMONY TO THE ENVIRONMENTAL QUALITY COMMISSION REGARDING

PROPOSED REVISIONS TO THE STATE "CLEAN AIR" ACT
IMPLEMENTATION PLAN (SIP) FOR CARBON MONOXIDE AND OZONE
CONTROL STRATEGIES IN THE PORTLAND AIR QUALITY MAINTENANCE AREA

April 30, 1979

Members of the League of Women Voters of Oregon and the League of Women Voters of Portland believe that all segments of society must share responsibility for improved air pollution abatement practices. In more specific terms, the League supports adequate standards for control of all sources of pollution and strict enforcement of established rules and regulations.

The Environmental Quality Commission (EQC) has adopted air quality standards for Oregon which the League has supported. We have seen substantial progress toward these goals due in part to the Portland transportation control plan and the permit program for industry. However, some programs have not achieved their potentials, such as the federal control program for automobiles, inspection maintenance, and the indirect source rule. For example, a permit for construction of an indirect source has never been denied. Air quality in the Portland area is still not close to meeting the EQC standards.

We have noted a lack of resolve on the part of the Department and the Commission to strengthen present programs and initiate new programs to meet air quality standards. We understand that industry and developers place enormous pressure on the regulating agency to relax its rules. We would like to exert an equal pressure on the agency not to relax its rules. Citizens in this community support the stricter state standards for clean air. We do not think that the minimum limits required by the Environmental Protection Agency are acceptable.

The League of Women Voters opposes an extension of the attainment date for carbon monoxide and photochemical oxidants beyond 1982. We recognize that this is a tough problem, but we urge you to stand firm for clean air.

State of Oregon
Department of Environmental Quality
AIR QUALITY

Department Responses to Hearing Officer's Report on the "Proposed Revisions to the State Air Quality Implementation Plan (SIP) for the Portland-Vancouver Interstate AQMA Carbon Monoxide and Ozone Control Strategies.

A. RESPONSES TO TESTIMONY OF OREGON ENVIRONMENTAL COUNCIL

1. ISSUE: "Existing State Ozone standard is not addressed in proposed Ozone SIP Revision."

   Response: Section 172 of the Clean Air Act Amendments (CAAA) of 1977 requires that states only have to submit SIP revisions which address national ambient air quality standards (NAAQS). Since both the primary and secondary NAAQS for Ozone is 0.12 ppm, the SIP proposed revisions only addressed these standards. The above position supports the present Department policy of keeping state programs and requirements that are not federally required out of the SIP so as to maintain maximum administrative flexibility and minimize paper work. (Refer to body of Staff Report on SIP as to possible alternative approaches available to the EQC in response to this issue.)

2. ISSUE: "The double (ozone) standard would cause confusion and could diminish the public's ability to bring effective civil suits to enforce air quality standards and programs as provided by section 304 of the Clean Air Act."

   Response: Informal advice from legal counsel to the Department indicates that this statement is essentially correct. Present state statutes do not allow the same level of legal redress for the failure of the State of Oregon to enforce any air pollution standard and law. Section 304 allows "persons" to sue EPA for failure to enforce adopted SIP provisions and provides, at the court's discretion, the awarding of coats of litigation to any party. Such provisions do not presently exist in state statutes according to legal counsel. (Refer to body of staff report for a more detailed discussion on this issue.)

3. ISSUE: "Indirect Source Rule is not included in the list of Reasonably Available Control Measures"

   Source: Oregon Environmental Council

   Response: It is the Department's opinion that the Rules for Indirect Sources (OAR 340-20-100 through 135) is not a Reasonably Available Control Measure (RACM) as defined in the Clean Air Act (Section 108) but is rather a regulatory review mechanism to assess the air pollution impacts from motor vehicles. While the initiation of a RACM, e.g. improved transit service, may be a condition of approval of an Indirect Source Permit, the Indirect Source Rule in and by itself is not RACM. However, the Rules for Indirect Sources are part of the present Oregon SIP and the fact

it did not appear in Sections 4.2.3 or 4.3.3 of the proposed SIP revisions is not to be construed as a conscious effort by the Department to delete them from the SIP. Amendments have been made to Sections 4.2.4 and 4.3.4 of the proposed SIP to clarify the Department's position on the Rules for Indirect Sources.

4. ISSUE: "The role of the Portland AQMA Advisory Committee in the SIP process . . . has been overstated."

Response: Within existing resources, public relations efforts have been initiated as explained in sections 4.2.8.4 and 4.3.8.4 of the SIP. To further clarify the programming of future public involvement programs amendments have been added to these sections to indicate the Advisory Committee's role in producing press releases and developing air quality information brochures. In addition, it is now stated in the SIP that as funding becomes available programs and materials listed in the last paragraphs of sections 4.2.8.4 and 4.3.8.4 will be developed. It is expected that funds to support an adequate public relations program should be available through the pooled resources of DEQ and MSD.

B. RESPONSE TO TESTIMONY OF MR. GARY COE, REPRESENTING THE MULTNOMAH HOT ROD COUNCIL

1. ISSUE: "Multnomah Hot Rod Council is opposed to an annual motor vehicle inspection program as being inflationary and would be a hardship on less affluent individuals."

Response: Due to a misunderstanding Mr. Coe thought that the proposed SIP was requiring that an annual motor vehicle inspection/maintenance (I/M) program replace the existing biennial program. It was explained to Mr. Coe at the hearing that the SIP revision only proposes to evaluate the need for an annual I/M program as part of the alternative transportation measure evaluation program (Sections 4.2.3 and 4.3.3). Until this analysis is completed (June 30, 1980) and it is clearly demonstrated that an annual program is needed to meet the carbon monoxide and/or ozone standards, the Department would not proposed increasing the frequency of the inspection cycle. It was also explained to Mr. Coe that the SIP revisions only address the CO and O_3 ambient air standards and not particulate ambient air standards.

C. RESPONSE TO TESTIMONY OF THE OREGON STUDENT PUBLIC INTEREST RESEARCH GROUP (OSPIRG)

1. ISSUE: "No alternative analysis plant site analysis requirements as specified by Section 172(b)(11)(A) of the Clean Air Act are included in the Carbon Monoxide and Ozone SIP revisions."

Response: The need for an alternative plant site analysis program had been previously discussed with representatives of Region X EPA. Based upon these previous discussions, the Department was given the impression that no such program would be needed for a non-attainment area in the process of developing an attainment plan.

However, the Department was officially notified by EPA on May 15, 1979 that such a program is needed as part of the SIP revisions for carbon monoxide and ozone.

In response to this EPA position, the "Rules for Special Permit Requirements for Sources Locating in or Near Nonattainment Areas" (OAR 340-20-190 through 195) have been amended to include these requirements. Carbon monoxide and ozone SIP revisions have been amended (Sections 4.2.4, 4.3.4) and new sections added (5.2 and 5.3) to indicate the implementation of an alternative plant site evaluation program as part of an overall new sources review (NSR) program.

D. RESPONSE TO TESTIMONY OF THE LEAGUE OF WOMEN VOTERS OF OREGON

1. ISSUE: "The League is opposed to an extension of the attainment date for the carbon monoxide and ozone ambient air standards beyond 1982.

Response: The Department is committed to meeting the federal primary carbon monoxide and ozone standards as soon as possible but within the restraints of available resources, eg., adopted and implementable control strategies, funding, manpower, etc. As noted in section 4.2.5 of the carbon monoxide SIP Revision, the comprehensive alternative transportation analysis to be completed by June 30, 1980 will lead to "either a request for a specific attainment date extension or a withdrawal of this request." Meeting the Ozone standard by the end 1982 will be much more difficult if not impossible, unless the public is willing to make fairly extreme changes in lifestyles. The Department believes its request related to the extension of the attainment date is valid, both legal, and technically given the magnitude of air pollution problems in this region.

CAS:kmm
A6254.A1

Comments Received from the U.S. EPA on May 15, 1979 on the Carbon Monoxide and Ozone SIP Revisions for the Portland-Vancouver Interstate AQMA and Department Responses.

(NOTE: The EPA comments listed below are edited from a larger list received on May 15, 1979. Only those comments which are directly related to the proposed Portland AQMA Carbon Monoxide and Ozone SIP Revisions requiring a response are listed.)

1. EPA Comment: "Accurate, comprehensive and current emissions inventory.

   Essentially Complete: Documentation describing the way parking lot and parking activity emissions were calculated is required. For example, we are finding that carbon monoxide emissions generated from parking activity could amount to a substantial percent of the emissions generated in the central business district. (Comments pertain to mobile source only, see other comments on stationary sources.)"

   Response: In all the guidelines that the Department had received from EPA regarding motor vehicle emission simulations this issue had never been addressed. However, the Department believes it had addressed this issue by using a conservative cold start percentage used as an input into the motor vehicle emission factors. National studies have shown the cold start percentage to be approximately 27%, while the Oregon SIP analyses used 34%. This increase in cold start percentage has the effect of increasing a base year (1977) emissions motor vehicle (CO and VOC) approximately 8 to 15% over that amount simulated if a 27% cold start assumption had been used. This additional amount of emissions should approximate the effect of idle and parking lot circulation emissions in the CBD. For the future years analysis (1982, 1987), the 34% cold start assumption had resulted in an additional 10% to 19% increase in CO and VOC emissions over what would have been simulated if a 27% cold start assumption had been used.

   To more directly address this EPA comment on simulation of parking lot emissions, MSD will be modifying its motor vehicle emission simulation models to directly assess the impacts from parking lot/idle emissions versus "running" (VMT related) emissions. These revised models will be used in the comprehensive alternative transportation measure analysis that will be completed by June 1980.

2. EPA Comment: "Schedule for comprehensive analyses of alternatives and demonstration that analysis is underway or completed.

   Incomplete: The only schedule in the submittal is one to complete the alternatives analysis needed by July 1980. Some interim dates are needed for individual measures or packages of measures."

Response: As part of its next quarterly progress report required as part of its Section 175 funding agreement with UMTA/EPA, MSD will provide a detailed work schedule for the carbon monoxide and ozone comprehensive analyses of alternative transportation measures. This work schedule will include interim dates for the development of specific and/or packages of potential transportation control measures.

3. EPA Comment: "Process for public, interest group, and elected official consultation and involvement in defining transportation-air quality issues, establishing the planning process, and development and analyses of alternatives.

Public Participation, Public Information - Complete:
Elected Official Involvement - Incomplete:

The process for public involvement relies largely on the Portland Air Quality Maintenance Area Advisory Committee. This group contains both special interest group representation and that of citizen at large. Does the concerned citizen have an adequate opportunity to be heard through this group? Consideration might be given to other avenues of citizen participation prior to public hearings on the phase II SIP submission.

The public information program appears to be well planned and innovative.

The submission does not address how publicly elected officials will be brought into the process (for example the mayors of Portland and Vancouver)."

Response: In response to the question, "Does the concerned citizen have an adequate opportunity to be heard through this group? (Portland AQMA Advisory Committee)" it was stated in Section 4.2.8.4 of the proposed carbon monoxide SIP revision that,

> "All committee meetings are open to the public. At every meeting, there is an opportunity for interested citizens to comment on the activities of the committee or any other matter pertaining to air quality."

Other avenues of citizen participation and education, e.g. public forums, are noted in Section 4.2.8.4 of the carbon monoxide SIP.

Regarding the comment how local elected officials will be brought in the SIP revision process, statements have been added to Sections 4.2.8.4 and 4.3.8.4 of the CO and O_3 SIP Revisions to address this issue.

4. EPA Comment: "Identification of estimated financial and manpower resources necessary to carry out the process described by these guidelines. A commitment to the first year of this process should be demonstrated in the UPWP.

Complete-Documentation Needed:

The submission implies that the funding requested in the Section 175 grant application ($384,915) will be sufficient to complete the phase II SIP submission. This needs to be explicitly addressed."

Response: MSD is presently updating its Air Quality Prospectus which will contain a detail accounting of costs associated with completing the phase II SIP submission. This revised document will be submitted to EPA within the next two months.

5. EPA Comment: "Evidence that the SIP was adopted by the State after reasonable notice and public hearing.

Documentation Required: We note that the public hearing is being held currently. The final SIP submission should contain the public notice for the hearing (and where it was published), certification the hearing has taken place, and a summary of hearing proceedings. Evidence as State and local A-95 clearinghouse review should also accompany the final submission."

Response: The required documentation is contained in the appendices 4.2-4 and 4.3-3 of the SIP Revisions.

6. EPA Comment: "Provisions for progress reporting throughout the planning and implementation period.

Incomplete-Integration with 175 Grant Reporting Needed: The annual progress reports must separate the inventory, growth, and reduction needed for mobile sources from those for stationary sources. Hopefully, this will be done in the future as it has been in the past.

The submission does not address how to integrate progress reporting for the air quality portions of the UPWP (the Section 175 program quarterly reports) with progress reporting on the SIP (annual report)."

Response: Annual reports will address the issue of accounting for existing emissions, growth and emission reductions from implemented control strategies. Where appropriate, Section 175 funding quarterly reports will be integrated into the annual reporting format. At a minimum, Section 175 quarterly reports will be made an attachment to the annual report.

7. EPA Comment: "Schedule of activities leading to implementation of I/M (if attainment after 1982).

Conditionally Complete: At this point in time we are uncertain whether the Oregon (Portland) inspection/ maintenance (I/M) program actually does conform to the

I/M policy statement that was issued by EPA Assistant Administrator David Hawkins in July 1978. We agree that future analysis is necessary as described in the alternative analysis schedule to determine if an annual I/M program is necessary. As new information is gathered we will work jointly with DEQ to determine the existing program's acceptability."

Response: The Department has thoroughly reviewed Mr. Hawkins' memo of July 1978 and believes based upon the methodology provided to DEQ by EPA (as referenced in Appendix 4.2-1) that Oregon's biennial I/M program meets all criteria specified in the memo regarding an acceptable I/M program. However, if the biennial I/M emission reduction credit methodology needs revision based upon the results of the EPA sponsored Portland I/M Evaluation Program, the Department will include such information in its alternative transportation measures evaluation program if such information is made available in a reasonable time before June 1980.

8. EPA Comment: "The Emission inventories for VOC in Portland and Salem appear to meet the requirements of the Act and our Guidelines. We do note, however, that they do not include emissions from bulk plants or degreasers. . ."

Response: Estimated emissions from bulk plants and degreasers have been included in the VOC inventories (Appendices 4.3-1A and 4.3-1B.)

9. EPA Comment: The emission inventory for VOC for Portland includes emissions from sources in Clark County, Washington. Such emissions are not discussed anywhere else in the plan. The effects of these emissions on the control strategies and attainment demonstration should be noted.

Response: Section 4.3.2.1 of the Ozone SIP Revision discusses the sources and quality of Washington State emission estimates. The effects of Washington emissions as the relate to potential control strategies as listed in Sections 4.2.3.3 and 4.3.3.3 of the SIP will be evaluated as part of the comprehensive alternatives control strategy analysis.

10. EPA Comment: "For each of the nonattainment areas, the NMHC/NO_x ratios are lower than the 9.5:1 default value recommended in Mr. Rhoads' memorandum of February 21, 1978 entitled "Determination of Reductions Necessary to Attain the Ozone Standard." The high NO_x data should be carefully reviewed to determine its representatives before accepting the low NMHC/NO_x ratio . . . Such low ratios would result in the control agency underpredicting the amounts of reduction needed to meet the ambient standards. . ."

Response: As explained in technical Appendix 4.3-1 the method used to determine the appropriate NMHC/NO_x ratio for the Portland AQMA was discussed with Ned Meyer, ozone modeling expert of EPA. According to our notes of that discussion, Mr. Meyer concurred with the Department's methodology for developing the NMHC/NO_x ratio used in the EKMA modeling process. Based on our discussions with EPA staff and review of EPA modeling guidelines, we believe the methodology used to develop the Portland NMHC/NO_x ratio is technically sound.

11. EPA Comment: "Where 18 month extensions are being sought for submission of plans to meet secondary standards (pursuant to Section 110(b) of the CAA and 40 CFR Section 51.31), the subject requirements (Section 173 only for TSP) need not be adopted until such time as the control strategy is required. However, in the case of CO/O_x plans where the need for a post 1982 attainment date has been documented, Section 172 of the CAA states that all provisions in subsection (b) must be adopted to void the nondiscretionary penalty of no growth of major stationary sources after July 1, 1979. Thus, the interim plans being required at this time for CO and O_x (for areas where post 1982 attainment dates are being identified) must include both permit requirements for major stationary sources (Section 172(b)(6) and Section 173)) and a program for requiring various alternative analyses relating to stationary sources (Section 172(b)(11)(A)."

Response: The Portland-Vancouver Interstate AQMA Carbon Monoxide and Ozone SIP Revisions have been modified (Sections 4.2.4, 4.3.4) and added (Sections 5.2 and 5.3) to address this comment. All applicable new source review (NSR) requirements as specified in the Clean Air Act will be implemented in accordance with EPA requirements. (A more detailed discussion on this subject can be found in the staff report (No. A3) on the "Rules for Special Permit Requirements for Sources Locating in or Near Nonattainment Areas" (OAR 340-20-190 through 195.))

CAS:kmm
A6254.B1

NOTIFICATION OF INTENT TO APPLY FOR FEDERAL AID

For Internal Use Only	1-8] PNRS #	22	Page One

12] APPLICANT [45	46] DIVISION [79		
State of Oregon Dept. of Environmental Quality	Air Quality		
12] APPLICANT ADDRESS STREET [45	46] CITY [60	76] ZIP [80	
P.O. Box 1760 522 S.W. Fifth	Portland OR	97207	
12] CONTACT PERSON [45	46] AREA CODE [48	49] PHONE [55	56] EXTENSION [59
Marianne E. Fitzgerald	503	229-5353	

12] PROJECT TITLE [71
Revisions to the Oregon State Clean Air Act Implementation Plan

12] PROJECT LOCATION—CITY	PROJECT LOCATION—COUNTY	PROJECT LOCATION [79
	Statewide	SEC: T: R:

SUMMARY PROJECT DESCRIPTION (ATTACH SUPPORTING DOCUMENTS AS NECESSARY—SEE INSTRUCTIONS ON BACK)

12] To meet Clean Air Act requirements, the DEQ is revising its State Implementation Plan. Included in the revision are strategies to attain air quality standards in Portland, Salem, Eugene and Medford; rules on the Prevention of Significant Deterioration of air quality, plant site emission limits, stack heights to be used in modeling; and miscellaneous other rules. The pollutants of concern in this revision are carbon monoxide, total suspended particulate and ozone (and its precursors).

12] Also enclosed are proposed revisions to the ambient air quality standard for ozone.

AMOUNT REQUESTED—FEDERAL FUNDS		NON-FEDERAL MATCHING FUNDS		OTHER	TOTAL
12] (A) Grant [19	20] (B) Other [27	28] (C) State [35	36] (D) Local [43	44] (E) FUNDS [51	52] (F) FUNDS [60
N/A	N/A	N/A	N/A	N/A	

12] TYPE OF OTHER FEDERAL FUNDS (See 12B) [45	46] TYPE OF OTHER NON-FEDERAL FUNDS (See 12E) [79

12] FEDERAL PROGRAM TITLE [71

12] FEDERAL AGENCY NAME [45	46] FEDERAL SUB-AGENCY NAME [79
Environmental Protection Agency	

(A) TYPE OF APPLICANT: (Check (X) the single most applicable box)

STATE	INTER-STATE	COUNTY	CITY	SCHOOL DISTRICT	SPECIAL DISTRICT	COMMUNITY ACTION	SPONSORED ORGANIZATION	OTHER
[X] 12	[ ] 13	[ ] 14	[ ] 15	[ ] 16	[ ] 17	[ ] 18	[ ] 19	[ ] 20

(B) TYPE OF ACTION: (Check (X) as many boxes as apply to this action)

NEW GRANT	CONT. GRANT	SUPPL'T GRANT	INCREASE DURATION	DECREASE DURATION	CANCELLATION	INCREASE DOLLARS	DECREASE DOLLARS
[ ] 21	[ ] 22	[ ] 23	[ ] 24	[ ] 25	[ ] 26	[ ] 27	[ ] 28

(C) HAS DISTRICT CLEARINGHOUSE BEEN NOTIFIED?			(D) REVIEW REQUIRED by A-95		(E) ENVIRONMENTAL IMPACT		(F) HOUSING RELOCATION REQUIRED	
Yes	No	Date:	Yes	No	Yes	No	Yes	No
[X] 29	[ ] 30	April 10, 1979	[X] 31	[ ] 32	[ ] 33	[X] 34	[ ] 35	[X] 36

(G) ESTIMATED APPLICATION FILING DATE:	41] MONTH [42	43] DAY [44	45] YEAR [46

OREGON PROJECT NOTIFICATION AND REVIEW SYSTEM

STATE CLEARINGHOUSE

Intergovernmental Relations Division
Room 306, State Library Building
Salem, OR. 97310, Phone: 378-3732

PROJECT ACKNOWLEDGEMENT

APPLICANT: DEQ

PROJECT TITLE: Revised Clean Air Act Implementation Plan

DATE RECEIVED: April 18, 1979

PNRS #: 7904 6 780

Your project has been assigned the file title and number that appear above. Use this reference in all future correspondence regarding this project.

[ ] Initial 30-day State Clearinghouse review of your Notice of Intent began on the above date.

[ ] The 30-day State Clearinghouse review of your final application began on the above date.

[ ] Initial 30-day State Clearinghouse review of this HUD Housing project began on the above date.

[ ] Initial 30-day State Clearinghouse review of your Direct Federal Development project began on the above date.

[ ] The 30-day State Clearinghouse review of your final Environmental Impact Statement began on the above date.

[ ] Initial 45-day State Clearinghouse review of your draft Environmental Impact Statement began on the above date.

[X] The 45-day State Clearinghouse review of your State Plan/ Amendment began on the above date.

Your project must also be submitted to the affected area-wide clearinghouses for review.

If you have questions or need assistance, contact the State Clearinghouse at the above address and telephone number.

SECTION 4.3

CONTROL STRATEGY FOR

PORTLAND-VANCOUVER INTERSTATE

AIR QUALITY MAINTENANCE AREA (AQMA) (Oregon Portion)

STATE IMPLEMENTATION PLAN REVISION

FOR OZONE

(Request for Extension of the December 31, 1982 Attainment Date)

June 8, 1979

Metropolitan Service District

Oregon Department of Environmental Quality

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APPENDICES

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4.3.0 PORTLAND-VANCOUVER INTERSTATE AIR QUALITY MAINTENANCE AREA STATE IMPLEMENTATION PLAN FOR OZONE

4.3.0.1 Introduction

The Clean Air Act Amendments of 1977 require states to submit plans to demonstrate how they will attain and maintain compliance with national ambient air standards for those areas designated as "non-attainment". The Clean Air Act Amendments further requires these plans to demonstrate compliance with primary standards not later than December 31, 1982. An extension up to December 31, 1987 is possible if the State can demonstrate that despite implementation of all reasonably available control measures the December 31, 1982 date cannot be met.

The State Implementation Plan revisions are to be approved by Environmental Protection Agency by July 1, 1979. If an adequate extension request is submitted to Environmental Protection Agency by then, states will have until July, 1980 to analyze all alternative control strategies and until July, 1982 to submit a complete attainment strategy.

On March 3, 1978, the entire Portland-Vancouver Interstate Air Quality Maintenance Area was designated by Environmental Protection Agency as a non-attainment area for ozone. In accordance with section 174 of the Clean Air Act Amendments of 1977, former Governor Straub designated the Columbia Regional Association of Governments as the

lead agency for the development of the Ozone State Implementation Plan revisions for the Oregon portion of the interstate Air Quality Maintenance Area. On December 12, 1978, Governor Straub redesignated the Metropolitan Service District as lead agency, effective January 1, 1979, in accordance with the voter approved May 23, 1978 ballot measure which abolished CRAG and transferred its responsibilities and powers to a reorganized Metropolitan Service District.

Since mid-1978 the staff of Metropolitan Service District (formerly Columbia Region Association of Governments), working in cooperation with Department of Environmental Quality has spent considerable time projecting emissions and air quality trends which are documented in this State Implementation Plan revision.

4.3.0.2 Summary

1. Most ozone, unlike carbon monoxide, is not directly emitted into the atmosphere but results from a reaction between volatile organic compounds and oxides of nitrogen in the presence of sunlight. Generally, highest concentrations of ozone are found downwind of the area producing the majority of the precursor emissions.

2. In 1977 motor vehicle sources were responsible for 65% of the total volatile organic compound emissions within the Air Quality Maintenance Area. The remainder of volatile organic compound emissions result from primarily from industrial, commercial and

other area sources, eg. bulk fuel storage terminals, industrial coating operations, gasoline stations, etc. In 1977, emissions from motor vehicles represented approximately 76% of total Air Quality Maintenance Area oxides of nitrogen emissions.

3. A description of previously implemented or committed transportation control measures is included in this SIP revision.

4. The volatile organic compound emission inventory indicates that existing transportation control measures (eg. federal motor vehicle emission control program, state biennial inspection/maintenance program, etc.) coupled with state industrial volatile organic compound regulations will result in a 37% reduction in volatile organic compound emissions by 1982 and 42% reduction by 1987 as compared to 1977 emissions.

5. The air quality modeling analysis included in this State Implementation Plan revision indicates that a 50% reduction in 1977 volatile organic compound emissions will be needed to meet the 0.12 ppm federal ozone standard by December 31, 1982.

6. Based on the statements in #4 and #5 above, approximately a 13% reduction (14,200 ton/year) of 1977 volatile organic compound emission levels will be needed to meet the federal ozone standard by December 31, 1982. By December 31, 1987 approximately an 8% (9,200 tons/year) reduction of 1977 volatile organic compound emission levels will be needed to meet the federal ozone standard by December 31, 1987.

7. This ozone State Implementation Plan revision consists of a commitment to analyze new control strategies which would insure attainment and maintenance of ambient air standards with Metropolitan Service District remaining in the lead coordinating role. This control strategy analysis will be completed by June 30, 1980.

8. Environmental Protection Agency requirements regarding an interim growth management strategy which includes: New Source Review requirements of the Clean Air Act Amendments of 1977, implementation of Reasonable Available Control Technology measures, and commitment to implement reasonable available transportation controls, have been fulfilled.

9. A requested extension to attain the ozone ambient air standard beyond December 31, 1982 but prior to December 31, 1987 is being included in the proposed State Implementation Plan revision. The Environmental Protection Agency requirements for requesting this extension have been met.

10. A completed attainment/maintenance strategy for ozone for the Portland Air Quality Maintenance Area will be submitted to Environmental Protection Agency as a State Implementation Plan revision by July 1, 1982.

4.3.0.3 Geographic Description of the Designated Ozone Non-Attainment Area

On March 3, 1978 the Portland-Vancouver Interstate Air Quality Maintenance Area was designated as a non-attainment area for ozone by the U. S. Environmental Protection Agency (43 CFR 8962). This designation means that the area identified in Figure 4.3.0-1 has ozone air quality concentrations exceeding the national ambient air quality standard. The Portland-Vancouver Interstate Air Quality Maintenance Area contains the urbanized portions of three counties in Oregon (Clackamas, Multnomah and Washington) and one county (Clark) in the State of Washington. This area has a population estimated to be 1,100,000 covering 2,230 km^2(861 mi^2) of land.

Geographically, this non-attainment area lies at the north end of the Willamette Valley and is almost completely surrounded by mountains and hills. Temperature inversions frequently occur, trapping emissions in the valley, resulting in elevated levels of air pollutants.

Designated Ozone
Non-attainment Area

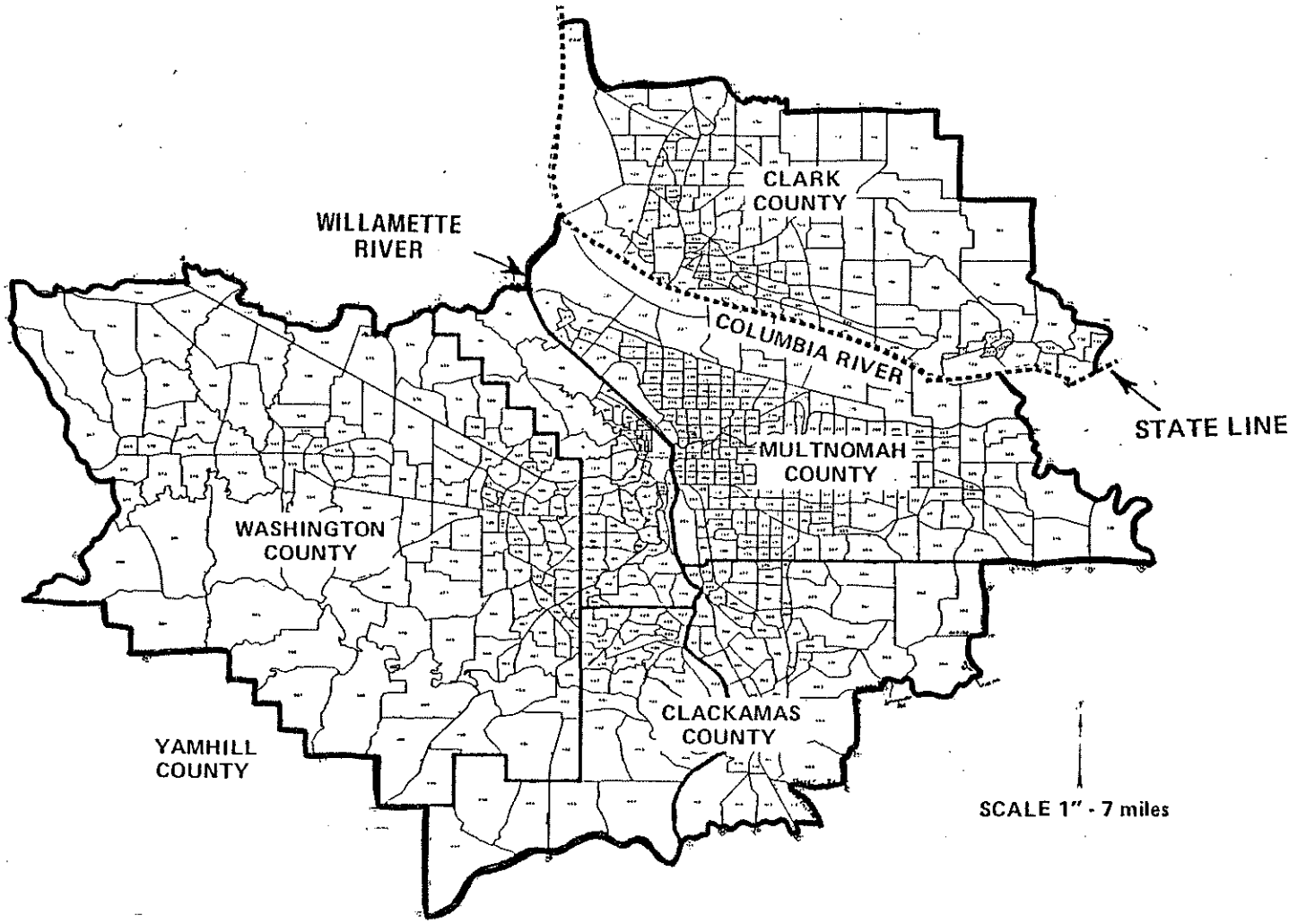


Figure 4.3.0-1

4.3.1 OZONE AMBIENT AIR QUALITY

Ozone is a clear and toxic gas. It is mostly formed by atmospheric photochemical reactions between oxides of nitrogen and volatile organic compounds in the presence of sunlight. Due to the photochemical nature of ozone formation, ozone ambient air quality levels are highly seasonal in nature, with the highest concentrations typically occurring in the summer months.

The ozone precursor, volatile organic compounds, is largely emitted by motor vehicle sources (65% in 1977), with the remainder from industrial and commercial sources such as fuel storage plants, dry cleaning, surface coatings operations, gasoline stations, natural sources and fuel combustion. The other precursor, oxides of nitrogen, is emitted largely from motor vehicles (76% in 1977), with the remainder primarily from external fuel combustion sources.

The Federal primary (health related) and secondary (welfare related) ambient air quality standards for photochemical oxidant (as promulgated in 1971) were set at 160 ug/m^3 (0.08 ppm), maximum 1-hour concentration not to be exceeded more than once per year. This standard was revised on February 8, 1979, to 235 ug/m^3 (0.12 ppm) of ozone.

Ozone air quality within the Portland portion of Portland-Vancouver Interstate Air Quality Maintenance Area is summarized in Table 4.3.1-1. The frequency of exceedences recorded at the Carus site reflects the fact that it is located in an area of maximum measured downwind ozone air quality impact.

Table 4.3.1-1
Ozone Ambient Air Quality Summary (ug/m^3)

Location	Year	1 hour averages		Days 235>ug/m^3
		Maximum	Second Highest	Number
Canby Area	1975[1]	69	69	0
(Carus)	1976	278	267	4
0300101	1977	451	443	14
Portland Area				
718 W.Burnside	1974	157	--	0
(CAMS)	1975	206	147	0
2614176	1976	204	196	0
	1977	184	165	0
11300 SE 23rd	1974[2]	372	--	1
Milwaukie High	1975	304	255	3
0343111	1976	208	198	0
	1977	310	302	5
Sauvie Island	1976[3]	225	216	0
0500103	1977	208	208	0

Notes: 1 - Began operation 10/75
2 - Began operation 6/74
3 - No data 1-6/76

Air quality trends in downtown Portland (CAMS) suggest an improvement in ozone air quality, but measurements from this location are known to be suppressed by locally generated nitrogen oxides from automobiles. No clear trend in levels is apparent from the sites south of Portland.

4.3.2 EMISSION INVENTORY

The volatile organic compounds and oxides of nitrogen emission inventories (precursor of ozone) consist of estimates of emissions for the base year 1982 and 1987. Section 4.3.2.1 describes the methodology used to calculate volatile organic compound and oxides of nitrogen emissions from industrial and area sources, except motor vehicles. Section 4.3.2.2 pertains to motor vehicle emissions.

Section 4.3.2.3 summarizes volatile organic compounds and oxides of nitrogen emissions on a ton/year basis from the above sources.

4.3.2.1 Industrial and Area Source (Except Motor Vehicles) Emissions

BASE YEAR (1977)

The base year emission inventories for volatile organic compounds and oxides of nitrogen for the Oregon Portion of the Air Quality Maintenance Area were primarily developed from two sources:

a. "Emission Inventory for Enforcement of New Source Review Policies" prepared by Pacific Environmental Services, Inc., (Nov. 1978), under Environmental Protection Agency Contract No. 68-01-4140 and,

b. Department of Environmental Quality's Source Registration Files (1977 Historical File).

Emission and activity factors used in the development of emission estimates of volatile organic compound and oxides of nitrogen emissions from the above sources are based on the latest available

information provided by Environmental Protection Agency and other appropriate sources. Source test data and published emission factors were used to develop these emission inventories. Volatile organic compound emission reductions due to the Department's volatile organic compound Rules (OAR 340-22-100 through 150) were calculated and are shown in Appendix 4.3-1B and 4.3-1D.

Emissions identified in Appendices 4.3-1A and 4.3-1C include sources in the Clark County portion of the Portland-Vancouver Interstate Air Quality Maintenance Area. Only preliminary information regarding 1977 emissions from Clark County sources was provided by the Southwest Air Pollution Control Authority (SWAPCA). Since SWAPCA or the Washington Department of Ecology could not provide the Department of Environmental Quality estimates of future emissions (1982, 1987), Department of Environmental Quality staff estimated Washington stationary source volatile organic compound emission reductions based upon the assumption that the same level of emission controls would be applied to Washington volatile organic compound emission sources as were applied to Oregon volatile organic compound emission sources. Therefore, while Clark County volatile organic compound and oxides of nitrogen emissions are included in this inventory, the State of Oregon does not assume any responsibility for the accuracy of Washington State emission estimates.

In response to Environmental Protection Agency guidelines, all known volatile organic compound and oxides of nitrogen sources having the

potential to emit 100 tons/year or more have been included for the base year emission inventory along with other area sources.

Projections (1982, 1987) Estimated volatile organic compound and oxides of nitrogen emissions in 1982 and 1987 were developed by adjusting the 1977 emission inventories using growth factors based upon employment, population, and household forecasts. A complete description of the forecasting process is contained in the Columbia Region Association of Governments' 1978 publication, A Regional Employment, Population, and Household Forecast (Technical Memorandum #23). Specific growth rates were developed for different industries based upon their Standard Industrial Code classification.

Area source (except motor vehicles) volatile organic compound and oxides of nitrogen projected emissions were based upon projections of population, households and where appropriate employment derived from the above cited Columbia Region Association of Governments technical memorandum.

Section 4.3.2.3 summaries volatile organic compound and oxides of nitrogen emissions from these sources.

4.3.2.2 Motor Vehicles

Methodology A relatively sophisticated computer modeling technique was used to determine emissions from motor vehicles. The technique requires as input such parameters as population and employment levels,

land use patterns, average vehicle emission data and a network of major roadways. In order to determine the variability of emissions by location within the region, the Interstate Air Quality Maintenance Area was divided into 676 grids where each grid is 2 km by 2 km in size. The modeling technique that was used amounts to a two-step procedure where the first step is the determination of vehicle miles traveled on roadways. The Urban Transportation Planning System package of transportation models developed by the Urban Mass Transportation Administration was used to make this determination. The second step is the determination of total daily emissions for each grid, given its vehicle miles of travel. This was done using the computer program SAPOLLUT which is part of the software package PLANPAC-BACKPAC developed by the Federal Highway Administration.

Assumptions The inventory is based upon assumptions relative to present and future conditions in three general categories: (1) population, employment and land use patterns; (2) highway network assumptions; and (3) vehicle emission factors.

It is important to note that all of the assumptions that went into the analysis of future air quality emissions were based on the best and most current information available. However, as the analysis is refined, population and employment projections may be revised. These revisions would most likely affect the results of the emissions analysis to a small extent in 1982 and 1987. In addition, vehicle emission factors and network assumptions may also change. If these revisions do occur, then emissions projections may change as may the corresponding control strategy to be developed by June 1980.

No direct forecast of population and employment levels and land use was made for the specific years 1982 and 1987; rather, it was decided to forecast conditions for the year 2000 and to interpolate using the base year 1977 to estimate conditions for the two future years. In order to determine conditions for the year 2000, a shift and share approach was taken in order to estimate future employment in the region. The approach requires a projection of national employment levels and is now based on the assumption that any differences between regional and national employment rates that have been observed in the past will continue into the future. With future employment levels in the region determined in this fashion, total population was derived from combined assumptions of family size and age distribution. The entire process is described in detail in A Regional Employment, Population and Household Forecast published by the Columbia Region Association of Governments in 1978 (Technical Memorandum #23).

Growth allocation within the region was based upon such factors as existing land use, vacant available land, accessibility of the vacant available land to the population and employment centers of the region, and availability of transportation systems. The process is described in detail in Second Round Regional Growth Allocation for the CRAG Transportation Study Area Year 2000, published by the Columbia Region Association of Governments in 1978 (Technical Memorandum #26).

The highway network that the emission inventory for 1977 is based on consists of an amalgamation of all major and minor arterials in the Air Quality Maintenance Area. The network for the future years of 1982 and 1987 is the same with the following additions:

Project	Type	Length (km)
Completion of I-205	Six lane freeways designed to accommodate a busway and bikeway	9.2
Connection I-405-US-30	Four lane arterial	3.1
Oregon City Bypass	Arterial	6.2
Completion of SR 500	Six lane expressway	6.5

Vehicle emission factors were based upon the Environmental Protection Agency publication Mobile Source Emission Factors for Low Altitude Areas -- Final Document (EPA-400/9/78-006, March 1978). Emission reduction credits for Oregon's biennial motor vehicle inspection/maintenance program were based upon a methodology developed by Environmental Protection Agency's Office of Emission Control Technology. Assumptions regarding inputs to motor vehicle emission factors eg. hot/cold start ratio, vehicle distribution, ambient temperature, etc., are documented in Appendix 4.2-1.

4.3.2.3 Summary of Volatile Organic Compound and Oxides of Nitrogen Emissions

Volatile organic compound and oxides of nitrogen emissions for 1977, 1982, and 1987 are summarized by source category in Tables 4.3.2-1 and 4.3.2-2. As shown in these tables, motor vehicle emissions represent 65% of total volatile organic compound emissions within the Air Quality Maintenance Area in 1977.

The effect of the Federal Motor Vehicle Emission Control Program (FMVECP), coupled with Oregon's biennial inspection/maintenance

program, is expected to reduce volatile organic compound emissions from this source by 47% by 1982. By 1987, emissions from motor vehicles are projected to be reduced by 56% as compared to 1977 emissions. Industrial and commercial sources contributed most of the remaining volatile organic compound emissions. The recently adopted Oregon volatile organic compound emissions regulations are projected to reduce 1977 Oregon industrial and commercial source volatile organic compound emissions by 9,241 tons/year by the end of 1982. By 1982, volatile organic compound emissions from industrial, commercial and other area sources (except motor vehicles) will represent 45% of total Interstate Air Quality Maintenance Area emissions as compared to 35% in 1977. The volatile organic compound emission reductions indicated in Table 4.3.2-1 assume continuation of the Oregon biennial motor vehicle inspection/maintenance program, implementation of stationary source volatile organic compound regulations, no inspection/maintenance programs in Washington, and no changes in the new car federal motor vehicle emission control program.

In 1977, emissions from motor vehicles represented approximately 76% of total Interstate Air Quality Maintenance Area oxides of nitrogen emissions. By 1982, emissions from this source are projected to be reduced 13% due to the Federal Motor Vehicle Emission Control Program. However, due to an increase in oxides of nitrogen emissions from other sources, the overall decrease in oxides of nitrogen

emissions in the entire Air Quality Maintenance Area is projected to be only 7% in 1982 as compared to 1977 emissions. Since Environmental Protection Agency guidance indicates that the key to achieving the ozone ambient air quality standard is the reduction of volatile organic compound emissions, no additional control programs for oxides of nitrogen emissions are being proposed for the Oregon portion of the Portland-Vancouver Interstate Air Quality Maintenance Area at this time.

Appendices 4.3-1A, 1B, 1C, 1D and 4.3-2A, 2B contain more detailed emission inventories for volatile organic compound and oxides of nitrogen emissions for 1977, 1982 and 1987.

TABLE 4.3.2-1

Summary of Volatile Organic Compound Emissions

(Tons/year)

	1977	1982	1987
Motor Vehicles	72,403	38,569	31,951
Industrial and Other Area Sources	38,637	31,187	32,759
Total	111,040	69,756	64,710

TABLE 4.3.2-2

Summary of Oxides of Nitrogen Emissions

(Tons/year)

	1977	1982	1987
Motor Vehicles	40,952	35,849	32,293
Industrial and Other Area Sources	13,285	14,352	15,138
Total	54,237	50,201	47,431

4.3.3 CONTROL STRATEGY

4.3.3.1 Level of Control

The level of volatile organic compound emission reduction needed for compliance with the 0.12 ppm federal ozone standard was calculated using the Environmental Protection Agency city specific isopleth version of the Emperical Kinetic Modeling Approach (EKMA).

Using EKMA, a reduction of 50% of 1977 volatile organic compound emissions will be needed to attain the 0.12 ppm ozone ambient air quality standard. (Refer to Appendix 4.3-1 for a complete description of the modeling process and results.)

Since only a 37% reduction of total 1977 volatile organic compound emissions is projected by end of 1982, an approximate 13% reduction (or 14,236 tons/year) will still be needed just to meet the ozone ambient air quality standard. By 1987, despite additional reductions in motor vehicle and stationary source volatile organic compound emissions, it is projected that the ozone standard will be exceeded since total volatile organic compound emissions are projected to be reduced only to 42% of 1977 volatile organic compound emissions. Therefore, new volatile organic compound emission control programs will have to be implemented to attain and maintain compliance with the federal ozone standard.

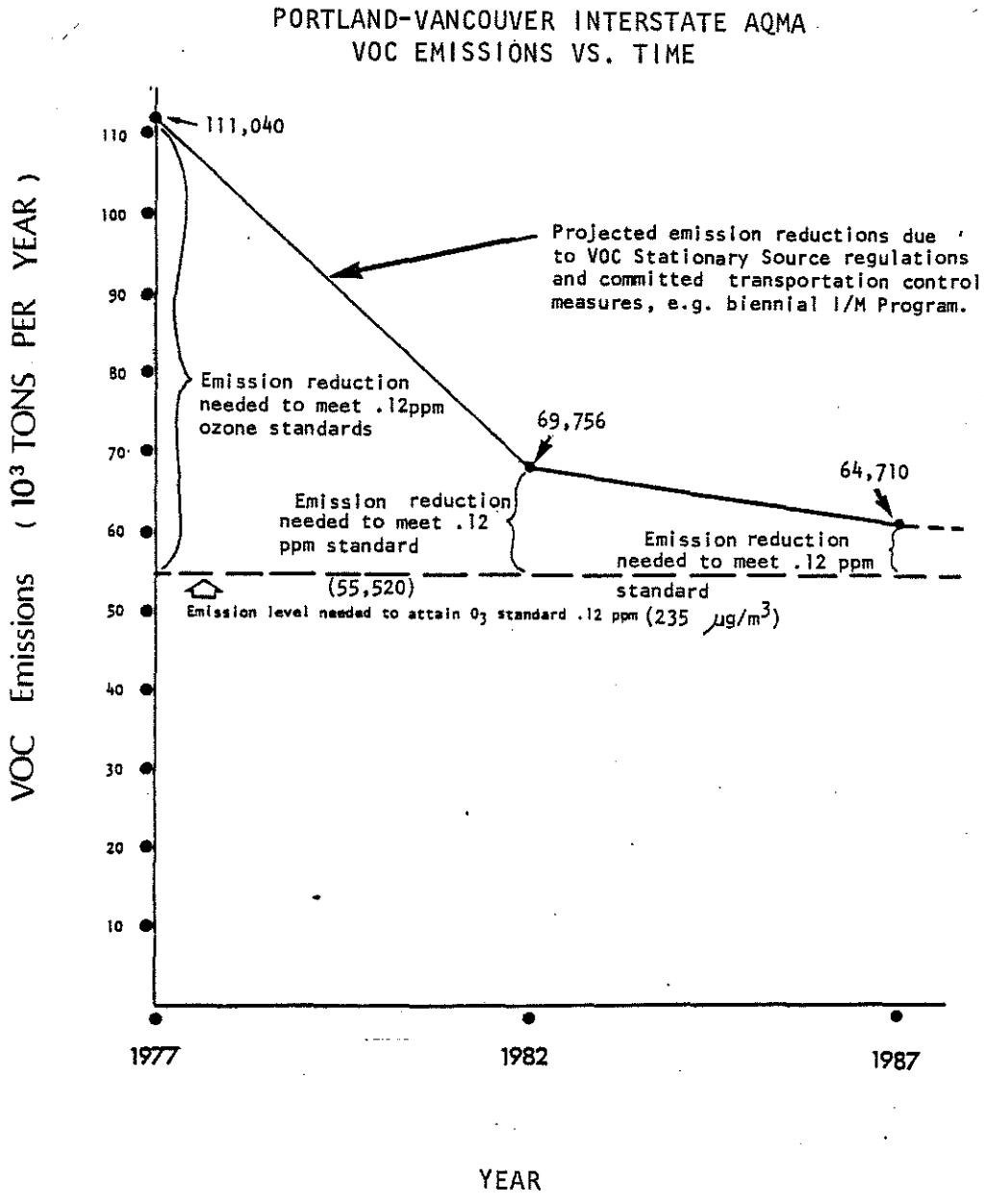
Figure 4.3.3-1 shows the needed reduction in volatile organic compound emissions to meet the federal ozone standard and the expected reductions from volatile organic compound emission reduction measures described in sections 4.3.2.3 and 4.3.3.2.

4.3.3.2 Demonstration of Commitment to Reasonably Available Control Measures

A number of major steps have already been taken in response to the nonattainment status for ozone in the Portland-Vancouver Air Quality Maintenance Area. Among the specific projects already implemented that, directly or indirectly, seek to reduce ozone levels are the following:

- Inspection/Maintenance
- Improved Public Transit
- Exclusive Bus and Carpool Lanes
- Areawide Carpool Programs
- Long-Range Transit Improvements
- Parking Controls
- Park and Ride Lots
- Employer Programs to Encourage Carpooling and Vanpooling
- Traffic Flow Improvements
- Bicycle Programs
- Economic and Housing Policies that Seek to Reduce VMT from Home/Work Trips

FIGURE 4.3.3-1


PORTLAND-VANCOUVER INTERSTATE AQMA
VOC EMISSIONS VS. TIME
VOC Emissions (10^3 TONS PER YEAR)
110
100
90
80
70
60
50
40
30
20
10
111,040
Projected emission reductions due to VOC Stationary Source regulations and committed transportation control measures, e.g. biennial I/M Program.
Emission reduction needed to meet .12ppm ozone standards
69,756
64,710
Emission reduction needed to meet .12 ppm standard
(55,520)
Emission reduction needed to meet .12 ppm standard
Emission level needed to attain O_3 standard .12 ppm (235 $\mu g/m^3$)
1977
1982
1987
YEAR

These measures are described in detail in the carbon monoxide portion of the State Implementation Plan (Section 4.2.3.2). Additionally, the Department of Environmental Quality has established regulations that control volatile organic compounds from industrial and commercial sources (OAR 340-22-100 through 150). These regulations will result in significant volatile organic compound emission reductions due to improved pollution controls associated with gasoline marketing and industrial surface coating operations. Other reductions will result from reductions in volatile organic compound emissions from cutback asphalt paving, metal cleaning and printing operations. A copy of these regulations are included in Section 3.2.

4.3.3.3 Strategy Alternatives/Strategies Selected for Additional Study

Although the region has made major commitments to reducing emissions either directly, through the Motor Vehicle Inspection/Maintenance Program and industrial volatile organic compound regulations, or indirectly, through programs that seek to reduce vehicle miles of travel, additional efforts will be necessary. The emission inventory indicates that reduction in volatile organic compound emissions needed to meet the ozone standard will fall short by approximately 14,236 tons in 1982 and 9,190 tons in 1987.

The Clean Air Act lists 18 control measures that must be analyzed if an area projects to be in nonattainment with national ambient air

standards in 1982. These measures will be analyzed in subsequent State Implementation Plan revision work in order to determine the most effective means of eliminating the region's ozone problem. A list of the control measures can be found in Table 4.3.3-1. Initial evaluation efforts will be devoted to those measures assigned high priority. If these measures are insufficient, then those measures with a lower priority will be analyzed. The selection of a strategy to eliminate the problem will not be based solely on air quality considerations. Other factors that will be considered in determining an optimum strategy are the following:

- Non-air quality environmental impacts
- Energy consumption
- Community impact
- Financial practicality
- Economic feasibility
- Economic impacts
- Travel impacts
- Political feasibility
- Institutional feasibility
- Social, health and welfare considerations
- Policy implications

The analysis to determine a package of control measures that will bring the region into compliance with the ozone standard as expeditiously as possible but not later than December 31, 1987 will be completed by June 30, 1980. A commitment to implement these measures will be made in a future revision to this State

Implementation Plan. This attainment strategy will be submitted as soon as possible after June 30, 1980, and no later than July 1, 1982.

Table 4.3.3-1

Control Measures to be Examined for Strategy Development

CONTROL MEASURE	PRIORITY
Inspection and Maintenance on Annual Basis in Oregon Portion of Air Quality Maintenance Area	High
Inspection and Maintenance in Washington Portion of Air Quality Maintenance Area	High
Additional Volatile Organic Compound Regulations	High
Additional Public Transit Improvements	High
Additional Bus and Carpool Lanes	Low
Expanded Carpool Programs	High
Limitations on Use of Road Surfaces	Low
Additional Long-Range Transit Improvements	High
Parking Restrictions	High
Additional Park and Ride Lots	High
Pedestrian Malls	Low
Additional Employer Programs to Encourage Carpooling Vanpooling, Mass Transit, etc.	High
Additional Programs to Encourage Use of Bicycles	Low
Staggered Work Hours	Low
Road User Charges	Low
Idle Controls	Low
Traffic Flow Improvements	High
Conversion of Fleet Vehicles to Cleaner Engines and Fuels	Low
Retrofit for Other than Light Duty Vehicles	Low
Programs to Minimize Cold Start Conditions	Low

4.3.4 RULES AND REGULATIONS

Sections 172 and 173 of the Clean Air Act Amendments of 1977 require certain permiting procedures for new or modified stationary sources having the potential to emit 100 tons/year or more of volatile organic compounds. These "New Source Review" requirements are incorporated into OAR 340-20-190 to 195 and is included in Section 3.2 of this State Implementation Plan. A brief discussion of these rules is included in Section 5.3 of this State Implementation Plan.

In addition, volatile organic compound emission standard rules (OAR 340-22-100 through 150 included in Section 3.2 of this State Implementation Plan) which apply to all ozone non-attainment areas are estimated to reduce 1977 industrial and commercial source volatile organic compound emissions by 9,910 tons/year by the end of 1982. Compliance schedules for the implementation of required volatile organic compound emission controls are presently being developed. In addition, Department of Environmental Quality is committed to adopt in accordance with Environmental Protection Agency requirements, new cost effective volatile organic compound stationary source emission regulations.

The State of Oregon has adopted and has previously included in its State Implementation Plan Rules for Indirect Sources (OAR 340-20-100 to 135). These rules apply to certain indirect sources of air pollution eg. parking

lots, highways, airports, etc., and are designed to minimize air pollution impacts from these sources. As part of the State Implementation Plan revision planning process these rules will be evaluated for their usefulness in the final control strategy and amended if necessary. It is expected this Indirect Source Rule evaluation and revision process will be completed on or before June 30, 1980.

4.3.5 REQUEST TO EXTEND THE OZONE AMBIENT AIR QUALITY STANDARD ATTAINMENT DATE AND REASONABLE FURTHER PROGRESS

Because it is projected that the region will not be in attainment with respect to the ozone ambient air quality standard in 1982 with existing programs, an extension of the December 31, 1982 attainment date is requested. Environmental Protection Agency guidelines indicate that an extension request must be justified by requiring that the 1979 State Implementation Plan revision must:

1. Contain procedures and criteria adopted into the State Implementation Plan by which it can be determined whether the outputs of the Department of Transportation process conform to the State Implementation Plan.
2. Provide for the expeditious implementation of currently planned reasonable transportation control measures.
3. Present a program for evaluating a range of alternative packages of transportation options that includes, as a minimum, those measures for which the Environmental Protection Agency will develop information documents.
4. Provide for the evaluation of long range (post-1982) transportation and growth policies.
5. Include a schedule for analysis and adoption of transportation control measures as expeditiously as practicable.

Regarding the first condition, integration of the outputs of the Department of Transportation transportation planning process and State Implementation Plan process has existed within the region for some time. A description can be found in the Unified Work Program developed by the Metropolitan Service District. The second condition is addressed in Section 4.3.3.2 which describes past efforts and currently funded projects that seek to improve air quality. The third and fifth conditions are addressed in Section 4.3.7. The fourth condition requires that alternative growth policies and/or development patterns be examined to determine the potential for modifying total travel demand. Such considerations are an integral part of the transportation modeling effort that is the basis of the State Implementation Plan revision analysis for the Portland metropolitan area. A description of land use/transportation planning efforts can be found in the Prospectus for Regional Transportation Planning in the Portland-Vancouver Metropolitan Area that was drafted in April, 1978, by the Columbia Region Association of Governments.

An additional condition for extension approval that is listed in the Clean Air Act is the establishment of a specific schedule for implementation of a vehicle emission control and maintenance program. A mandatory inspection/maintenance program is already in effect and is described in Section 4.2.3.2. This program conforms to the inspection/maintenance policy statement that was issued by Environmental Protection Agency Assistant Administrator, David Hawkins, in July of 1978.

While no specific attainment extension date between December 31, 1982 and December 31, 1987 is being requested at this time, the comprehensive alternative transportation analysis (item #3 above) to be completed by June 30, 1980 will lead to a specific attainment date extension request. It is concluded that all Environmental Protection Agency requirements to justify a requested extension of the attainment date for the ozone ambient air quality standard have been met.

The Clean Air Act requires a demonstration that reasonable further progress is being made each year toward the attainment of all air quality standards. Reasonable Further Progress is defined as annual incremental reductions in emissions for each pollutant that are sufficient for compliance by the required date. Projected reductions in volatile organic compound emissions is shown in Figure 4.3.3.1. This figure gives anticipated volatile organic compound emissions reductions based upon the inventory described in Section 4.3.2. It can be seen that the reduction in volatile organic compound emissions that is needed to meet the ozone standard falls short by an estimated 14,236 tons in 1982 and 9,190 tons in 1987. As previously stated, an attainment/ maintenance control strategy will be submitted on or before July 1, 1982 to meet the 0.12 ppm standard on or before December 31, 1987.

4.3.6 ANNUAL REPORTING

Department of Environmental Quality and Metropolitan Service District will jointly submit a report each July 1 for the preceding calendar year which will comply with the following Environmental Protection Agency requirements:

a. Progress towards adoption of legally enforceable control measures;
b. Identification of growth of major new or modified existing sources, minor (less than 100 tons/year) new sources, and mobile sources;
c. Reduction in emissions for existing sources;
d. Update of the emission inventory; and
e. Conclusions of studies to quantify the air quality problem.

4.3.7 RESOURCE ANALYSIS/COMMITMENT

4.3.7.1 Resource Analysis

Under existing funding arrangements, planning funds are available to Metropolitan Service District to continue the State Implementation Plan revision process through July of 1979. Grant application efforts are now underway to obtain additional Section 175 funds to continue State Implementation Plan revision work beyond July, 1979.

Department of Environmental Quality has a biennial budget beginning July 1, of odd numbered years. For the biennium beginning July 1, 1979, Department of Environmental Quality has proposed to the Legislature the same level of support to continue development of its portion of the ozone attainment strategy.

A more detailed analysis of Metropolitan Service District's financial commitments to the ozone State Implementation Plan revision process can be found in the Columbia Region Association of Governments publication, Prospectus - Portland-Vancouver Air Quality Maintenance Area Regional Air Quality Program - June, 1978.

4.3.7.2 Commitment to Air Quality Planning and Implementation of Control Measures

Analysis has indicated that significant efforts will be required in order for the Air Quality Maintenance Area to attain the ozone ambient air quality standard by 1987. The purpose of this section is to

describe the methodology that will be used to select a control strategy. The overall process can be summarized by the following seven steps:

1. Specify control measure at the project level. Specific projects will be identified that implement each of the control measures in Table 4.3.3.3. An example of the process could be the definition of a project that increases the availability of bus service in a portion of the region as a form of improved mass transit.
2. For transportation control measures, determine the effect of the measure on parameters required by the transportation models. This step will be performed using guidance already provided or to be provided by Environmental Protection Agency or other reliable sources.
3. Determine vehicle miles of travel and emissions of volatile organic compound and oxides of nitrogen resulting from identified transportation measures using the transportation and mobile emission models described in Section 4.3.2.2.
4. Compare required and projected volatile organic compound reductions emissions using the method described in Appendix 4.3-1.
5. If the project has a significant positive impact on air quality, determine the non-air quality impacts as listed in Section 4.3.3.3.
6. If the project is sufficient to attain standards as expeditiously as possible, then proceed to step 7. If it is not sufficient, then go to step 1 and specify additional control measures. The

subsequent analysis will be in conjunction with all other measures retained at this stage of the process. The final result is a complete package of measures that would result in the attainment of the standard.

7. Implement the package. This is, of course, the most difficult step as it requires acceptance by elected officials, federal, state, and local governmental agencies, and the public at large.

The air quality planning process for an ozone attainment/maintenance plan will continue to involve the coordinated efforts of several agencies in the region. It is anticipated that major roles in the development of an attainment plan will be played by the Metropolitan Service District, the Department of Environmental Quality, the City of Portland, the Regional Planning Council of Clark County, the Oregon and Washington Departments of Transportation and Tri-Met. In addition, the other jurisdictions and agencies within the Metropolitan Service District jurisdiction will be kept informed of all developments, as well as key legislators.

Appropriate interagency agreements will be developed if deemed necessary to implement an adequate ozone attainment/maintenance plan. More specific commitments will be contained in an adopted ozone attainment/maintenance plan.

The commitment of the region toward the improvement of air quality is very high. The fruits of past efforts to implement control measures are described in Section 4.2.3.2. A continuing interest

in air quality is seen in the extent that transportation control measures are funded in the 1979 Annual Element of Metropolitan Service District's Transportation Improvement Program and in the recent enactment of volatile organic compound regulations.

4.3.8 INTERGOVERNMENTAL COOPERATION AND PUBLIC INVOLVEMENT

4.3.8.1 Designation of Lead Agency

On March 3, 1978, the entire Portland-Vancouver Interstate AQMA was designated as a non-attainment area for ozone. In accordance with section 174 of the Clean Air Act Amendments of 1977, former Governor Straub designated the Columbia Region Association of Governments as the lead planning agency for the development of revisions to the ozone portion of the State Implementation Plan. On December 12, 1978, Governor Straub redesignated the Metropolitan Service District as lead agency, effective January 1, 1979. This change occurred because of the May 12, 1978, voter approved ballot measure which abolished CRAG and transferred its responsibilities and powers to a reorganized MSD.

4.3.8.2 Organization Responsibility

In brief, the Metropolitan Service District is the A-95 review agency and the lead agency for air quality planning in the Oregon portion of the Air Quality Maintenance Area with respect to ozone. Metropolitan Service District estimated volatile organic compound and oxides of nitrogen motor vehicle emissions for both the Oregon and Washington portions of the Air Quality Maintenance Area.

The Department of Environmental Quality estimated all stationary point and area source volatile organic compound and oxides of nitrogen

emissions in Oregon portion of the Interstate Air Quality Maintenance Area. Estimates of 1977 stationary point and area source volatile organic compound and oxides of nitrogen emissions data was obtained from the Southwest Air Pollution Control Authority for Clark County emission sources. (Refer to Section 4.3.2.1 as to how 1982 and 1987 Washington Source volatile organic compound emission estimates were developed.) After compiling all the data, the Department of Environmental Quality then made projections of needed volatile organic compound emission reductions. The methodology used in making these estimates has been previously discussed in sections 4.3.2.2 and 4.3.3.1.

4.3.8.3 Interagency Agreements and Coordination

The 1979 State Implementation Plan revision for the Portland-Vancouver Interstate Air Quality Maintenance Area is the result of a coordinated intergovernmental air quality planning effort. The specific activities and functions that each agency in the Oregon portion of the Air Quality Maintenance Area is responsible for are detailed in the Columbia Region Association of Governments publication Prospectus Regional Air Quality Program Work Agreement which was submitted to Environmental Protection Agency on June 22, 1978. The Prospectus defines the responsibilities of Department of Environmental Quality, the City of Portland, and Metropolitan Service District over a two-year planning period. The Prospectus will be revised to incorporate the work mandated by the analysis to date.

Coordination Activities Ozone air quality planning activities have been extensive to date. At a minimum, weekly meetings were held between staff from Metropolitan Service District, Department of Environmental Quality, and the City of Portland. Staff from the Clark County Regional Planning Council and Environmental Protection Agency also attended several of these meetings.

Several other major coordination meetings were held during the planning period. These meetings included all parties involved in air quality planning in the Oregon and Washington portions of the Air Quality Maintenance Area. Agencies represented at these meetings included the Washington Departments of Transportation and Ecology, the Southwest Air Pollution Control Authority, the Clark County Regional Planning Council, the Port of Portland, Tri-Met, the Federal Highway Administration, the Oregon Department of Transportation, the Oregon Department of Environmental Quality, the City of Portland, the Environmental Protection Agency, the Urban Mass Transportation Administration, and the Columbia Region Association of Governments (now Metropolitan Service District). These meetings were designed to give all concerned parties the opportunity to discuss issues and resolve problems related to the State Implementation Plan revision process.

In addition to the above activities, Metropolitan Service District's Transportation Policy Alternatives Committee was consulted regarding the development of the ozone State Implementation Plan revision.

This committee is composed of officials from the metropolitan area representing local, regional, and state agencies involved in transportation services. Transportation Policy Alternatives Committee is charged with advising the Metropolitan Service District Council on policy matters relating to planning and funding of transportation projects. There are fourteen members on the committee. The responsibilities of Transportation Policy Alternatives Committee with respect to air quality planning are to:

1. Develop recommendations to Metropolitan Service District for controlling mobile sources of particulates, carbon monoxide, volatile organic compounds, and oxides of nitrogen.
2. Conduct an in-depth review of travel, social, economic, and environmental impacts of proposed transportation control measures; and
3. Provide a critique of the proposed plan for meeting particulate standards as they relate to mobile sources.

Interstate Agreement and Coordination An Interstate Working Agreement between the Regional Planning Council of Clark County and the Metropolitan Service District became effective on March 22, 1979. This agreement specifies the work to be performed by each agency. The Metropolitan Service District will perform certain activities for the Regional Planning Council of Clark County on a contractual basis. The dollar amounts for the work performed will be specified in subsequent amendments to this agreement.

The first round of Section 175 air quality planning funds have already been allocated to the Portland-Vancouver Interstate Air Quality Maintenance Area. These funds were allocated between Oregon and Washington on a proportional basis that was directly related to population. Future funding splits for the region will be made based on the Interstate Working Agreement.

There was a high level of coordination between Oregon and Washington for this State Implementation Plan revision. Since it was recognized that Portland and Vancouver share a common airshed and were designated as non-attainment areas by Environmental Protection Agency for ozone, both states realized that any solutions to the problem would result from a joint effort. The strategies selected would not necessarily be the same for each state, but would still be coordinated to ensure that the reduction which occurred would be sufficient to attain the federal ozone ambient air quality standard.

As has been previously discussed, the Regional Planning Council of Clark County participated in the weekly coordination team meetings as necessary. Regional Planning Council of Clark County staff, along with Southwest Air Pollution Control Authority officials, attended the larger coordination meetings that were held with all concerned agencies in Oregon and Washington. Metropolitan Service District has provided the Regional Planning Council with volatile organic compound, carbon monoxide, and oxides of nitrogen emission densities for the Clark County portion of the Air Quality Maintenance Area on a two by two kilometer grid format.

There are two air quality advisory committees in the Portland-Vancouver Interstate Air Quality Maintenance Area. In the Oregon portion there is the Portland Air Quality Maintenance Area Advisory Committee. On the Washington side, there is the Air Quality Committee of the Regional Planning Council of Clark County. These committees will be discussed in detail in Section 4.3.8.4. Representatives from Southwest Air Pollution Control Authority and the Regional Planning Council are members of the Portland committee and a representative from Metropolitan Service District serves on the Clark County Committee.

To further strengthen interstate coordination, an Interstate Advisory Conference Committee has been formed. This committee is composed of three members from the Portland and Vancouver advisory committees. Its purpose is to resolve conflicts in data, assumptions, and/or control measures.

4.3.8.4 Public Involvement

The Portland Air Quality Maintenance Area Advisory Committee has been the primary focal point of the citizen involvement effort in the Oregon portion of the Portland-Vancouver Interstate Air Quality Maintenance Area. The committee is a 23-member body (refer to Section 4.2.8.4 for membership) whose primary mission is to advise Department of Environmental Quality and Metropolitan Service District of an air quality control strategy which is implementable and is designed to attain and maintain state and federal air quality standards. The specific charge of the committee is to review the interrelationships

between planning for total suspended particulates, carbon monoxide and ozone control strategies and to provide advice on the compatibilities and tradeoffs between actions involved in controlling stationary and transportation sources of those pollutants. In formulating such advice, the committee will be taking into account many factors besides air quality impacts. These non-air quality environmental factors, include energy consumption, economic and social impacts, and political and institutional feasibility.

There was a concerted effort to make this committee representative of both the community at large and those with a specific interest in air quality planning. This is an important prerequisite which ensures that the recommended strategies which evolve have taken into account many divergent points of view. Thus, members of the committee represent the general public (i.e., no specific interest group), industry, environmental groups, the business community, citizen organizations, and state and local officials involved in air quality planning from both Washington and Oregon.

All committee meetings are open to the public. At every meeting, there is an opportunity for interested citizens to comment on the activities of the committee or any other matter pertaining to air quality.

In addition to the activities of the advisory committee, there are other ongoing measures which ensure public participation. A public relations subcommittee has been formed to communicate to the public the activities of the advisory committee and the status of air quality

planning in the region. This committee is a volunteer committee, which has issued press releases, public notices and an air quality brochure. There are currently about 325 individuals and groups on the mailing list. Included on the list are affected industries, businesses, public health organizations, environmental groups and concerned citizens.

Agendas of all committee meetings are sent to local newspapers including the region's major newspapers. Thus, when major issues come before the committee, the general public is informed almost immediately through the local press. Local television stations have also been cooperative and have aired several stories regarding air quality problems in the Portland-Vancouver Interstate Air Quality Maintenance Area.

Another device that has been used in developing public awareness of air quality problems is the broadcasting of Public Service Announcements. So far, six Public Service Announcements have been aired on Portland television stations. These TV spots were produced by Keep Oregon Liveable with assistance from the Oregon Department of Transportation and the Department of Environmental Quality. The first round of PSA's has dealt only with defining air quality problems. The spots are humorous, are of high technical quality, and are having much exposure during prime air time. Another series of Public Service Announcements is projected to be produced soon. They will recommend ways that the public can help improve air quality.

At a more technical level, Metropolitan Service District sponsored a series of Transportation Systems Planning Workshops which have been held throughout the region since July, 1978. These workshops have focused on identifying problems and developing alternatives for the region's long range transportation plan. Air quality has been identified as a factor to be taken into consideration as new alternatives are defined. As air quality problems and potential solutions are more clearly identified, this information will be provided to future workshop participants. Comments will be solicited from workshop participants regarding the feasibility of potential air quality control strategies. Participants will also have the opportunity to provide alternative solutions.

In the next phase of the air quality planning program, all public involvement activites that are now ongoing will continue. In addition, Metropolitan Service District and Department of Environmental Quality will be holding public forums and hearings. The Public Relations Subcommittee of the Air Quality Maintenance Area Advisory Committee is also in the process of developing a more extensive public involvement program. At this time, the program is not finalized, but the committee plans to produce a slide show and three television public service announcements and also plans to distribute brochures and pamphlets to the public. These activities will commence when these funds become available.

Volatile Organic Compound Rule Change Adoption Process

There were extensive public meetings held during the adoption process of the recent volatile organic compound rule changes. Department of Environmental Quality held approximately 20 meetings with industry officials during the process. Mailings were sent to all affected gasoline service stations in the state. The rule changes were culminated with a formal public hearing on October 16, 1978, and adopted by the Environmental Quality Commission on December 15, 1978. Due to some technical and legal errors in the initial adoption process of the emission regulations for volatile organic compound sources (OAR 340-22-100 through 150), these regulations were readopted by the Environmental Quality Commission at its June 8, 1979 meeting following a public hearing held on May 8th.

Elected Official Involvement

Elected officials will be involved in the planning process through several mechanisms. The Metropolitan Service District Council, the MSD's governing body, is composed of 12 elected officials representing the majority of citizens in the tri-county area surrounding Portland. The Council must adopt the SIP before it can be forwarded to the governor for approval.

Other elected officials will be represented through their participation on two committees which serve in an advisory capacity to the Metropolitan Service District Council. These committees are the Joint Policy Advisory Committee on Transportation, which is

charged with transportation and air quality advisory responsibilities, and the Local Officials Advisory Committee, which is charged with advising the Council on matters affecting local governments.

In addition, elected officials from the City of Portland, Multnomah County, Clackamas County, Washington County, and Clark County, Washington, are represented on the Portland Air Quality Maintenance Area Advisory Committee. Similarly, elected officials from other local jurisdictions in Washington sit on or are represented on the Clark County Regional Council Air Quality Advisory Committee.

4.3.9 PUBLIC NOTICE AND HEARINGS

A public hearing on Section 4.3 of this State Implementation Plan was held on May 4, 1979. Public notices and comments on this State Implementation Plan revision are included in Appendix 4.3-3.

APPENDIX 4.3-1

OZONE MODELING METHODOLOGY FOR THE PORTLAND-VANCOUVER INTERSTATE AQMA

Introduction

The EPA city specific isopleth version of the Emperical Kinetic Modeling Approach (EKMA) was used to estimate the amount of precursor control necessary to attain the National Ambient Air Quality Standard for ozone (0.12 ppm hourly average concentration) for all nonattainment areas in Oregon.

Briefly, this method uses a set of ozone isopleths to express maximum afternoon ozone (O_3) as a function of morning levels of nonmethane hydrocarbons (NMHC) (a chemical compound subset of VOC) and oxides of nitrogen (NO_x). The isopleths are the result of a chemical kinetics model (OZIPP) which incorporates city specific assumptions about sunlight intensity, atmospheric dilution, diurnal emission patterns, and transported ozone. The city-specific isopleth method is described in detail in an EPA publication.[1]

Methodology

To estimate VOC emission reduction requirements, the design value, the NMHC/NO_x ratio, present transport, and estimated future transport must be known.

Design Value

The EPA recommends that the design value for a city be measured 15-30 km in the downwind direction of the central business district. This criterion results in the use of the concentrations monitored at the Carus site for design value determination.

The design value was chosen in accordance with EPA's Guideline for Interpretation of Ozone Air Quality Standards.[2] All data for the Carus site for the last three years (1976-1978) was ranked by concentration. The empirical frequency distribution of this data was plotted on semi-log paper (see Figure 1). A least squares fit of the data was then performed. The design value is that concentration which corresponds to a frequency of 1/365 (= 0.27%). Figure 1 shows that the value of 365 ug/m^3 (0.183 ppm) is thus designated as the design value.

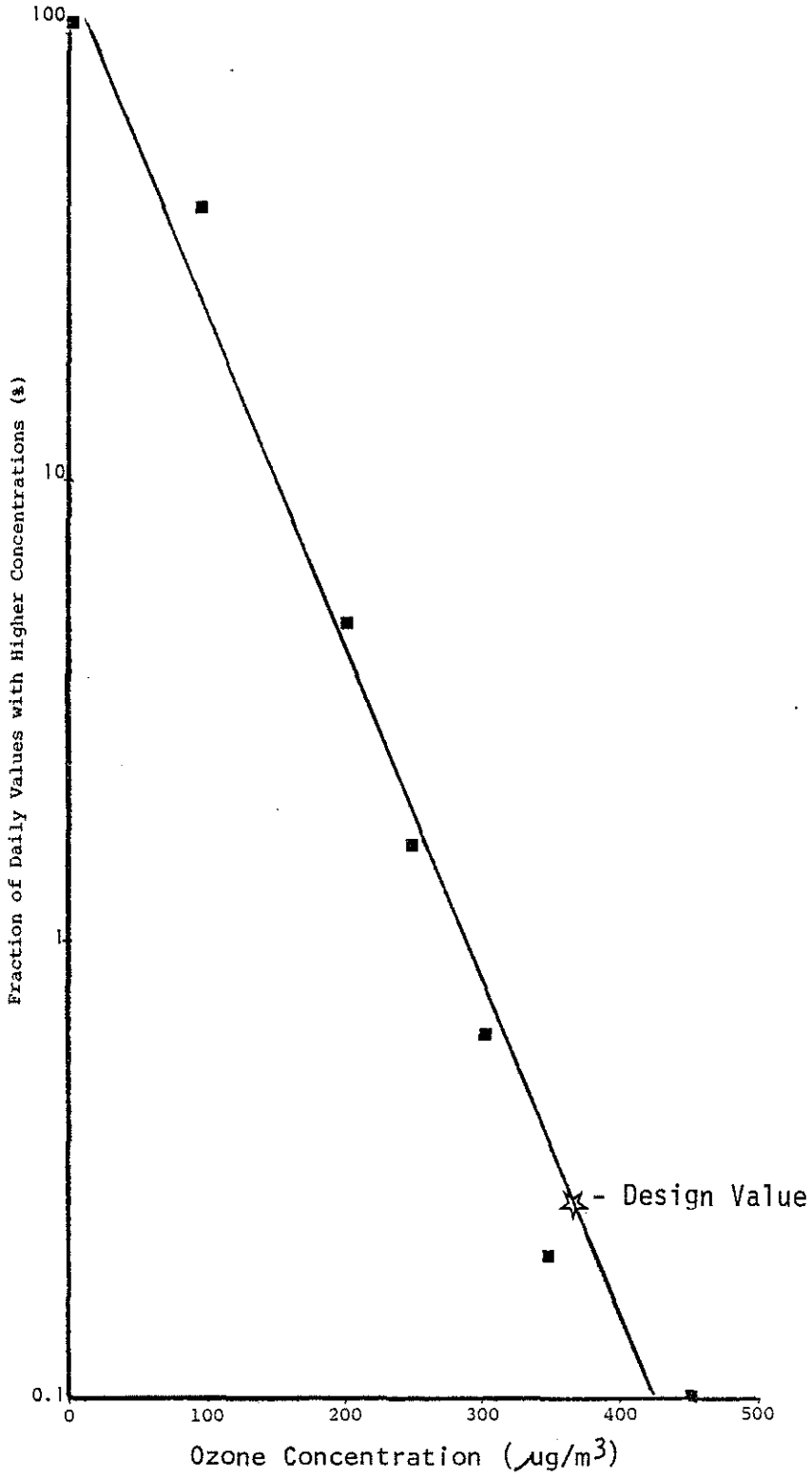
NMHC/NO_x Ratio

EPA[3] suggests using the median NMHC/NO_x ratio occurring betwen 5 a.m. and 8 a.m. LST within the urban core on the days in the past three years having the five highest ozone values.

Two NO_x and NMHC sites operate within Portland. The CAM station located in the Central Business District (CBD) of Portland began operation in 1978. The Clark School site, located about five miles east of the Portland CBD, has been collecting NO_x and NMHC ambient air data since 1976. Although the CAM site data would usually be used to calculate the NMHC/NO_x ratio, no data is available for 1977, the year the three highest ozone values were

FIGURE 1

OZONE DESIGN VALUE DETERMINATION



measured. U.S. EPA staff were consulted to determine the best method of calculating the NMHC/NO_x ratio.[4] EPA suggested using the Clark School data when the CAMS data was not available . When both sites had NMHC and NO_x data for the same day, the NMHC/NO_x ratios for the two stations should be averaged if in fairly close agreement. If not in agreement, the highest NMHC/NO_x ratio should be used to represent the day.

Table 1 summarizes the data used to calculate the NMHC/NO_x ratio. The daily ratios ranked according to concentration are: 16.5, 10.0, 7.9, 7.6, 6.7. The 4.7/1 ratio measured at Clark School on August 3, 1978 was not used. Instead, the August 3, 1978 CAM ratio of 16.5/1 was used. The wide variation in the ratios is not atypical. Frequently, the CAM's NHMC/NO_x ratio will be higher than Clark School's. The reverse is also true. In general, the median and mean ratios for Clark School are higher than for CAMS.

After ranking the ratios, the median ratio (7.9/1) was chosen as the NMHC/NO_x ratio to be used in the oxidant attainment analysis based upon the EPA guidance.

Table 1

AMBIENT AIR DATA USED TO DEVELOP NHMC/NO_x RATIO FOR THE PORTLAND-VANCOUVER AQMA

Site	Date	THC	CH_4	NMHC		NO		NO_2		NO_x	$\frac{\Delta NMHC}{NO_x}$
		ug/m^3	ug/m^3	ug/m^3	ppmC	ug/m^3	ppm	ug/m^3	ppm	ppm	
Clark School	Aug. 17, 1977	2246	1813	433	0.662	51	0.042	46	0.024	0.066	10.0
" "	Aug. 4, 1977	865	853	12	0.018	1	0.0007	3	0.0016	0.0024	7.6
" "	July 24, 1977	952	898	54	0.082	4	0.0033	17	0.0090	0.0123	6.7
" "	Aug. 3, 1978	918	838	80	0.122	21	0.0171	17	0.0090	0.0261	4.7
" "	July 25, 1978	1205	1005	200	0.305	35	0.0285	19	0.0101	0.0386	7.9
CAM	August 3, 1978	1353	917	436	0.666	37	0.0301	19	0.00101	0.0402	16.5

C7

Transport

There are two modes of ozone transport: ground level (ozone transported within the morning mixing layer) and aloft (ozone transported above the morning but below the afternoon mixing layer).

Although the Portland-Vancouver area does not have an upper air ozone monitor, ozone transported aloft (T_o) in 1977 can be calculated. The Sauvie Island site, northwest of Portland, serves as a background site for the city since winds during violation days are usually from the northwest. To estimate transport aloft, EPA suggests using the average ozone concentration between 1000 and 1200 LST at the upwind site on the day of the occurrence of the design value. The Sauvie Island site was not operating during the highest and second highest ozone days in 1977. Transported ozone was therefore estimated using the Sauvie Island 1000-1200 LST ozone concentration on the four days with subsequent highest ozone violations in the Portland-Vancouver AQMA. The T_o value thus determined was 0.06 ppm.

Ozone transported aloft in 1982 was assumed to be the natural background level of 0.04 ppm.

Ground level transport was estimated for 1977 from the actual ozone concentrations existing on the morning of the day whose maximum ozone value was closest to the design value. Since the OZIPP simulations begin at 0800, the 0700-0800 oxidant concentration measured at Carus was used for the ground transport value. The value thus determined was 0.03 ppm.

Ground transport in 1983 was estimated by averaging the 0700-0800 Carus ozone concentration for days with maximum hourly oxidant concentrations near 0.12 ppm. This average resulted in a 1982 ground transport of 0.016 ppm.

Control Requirements

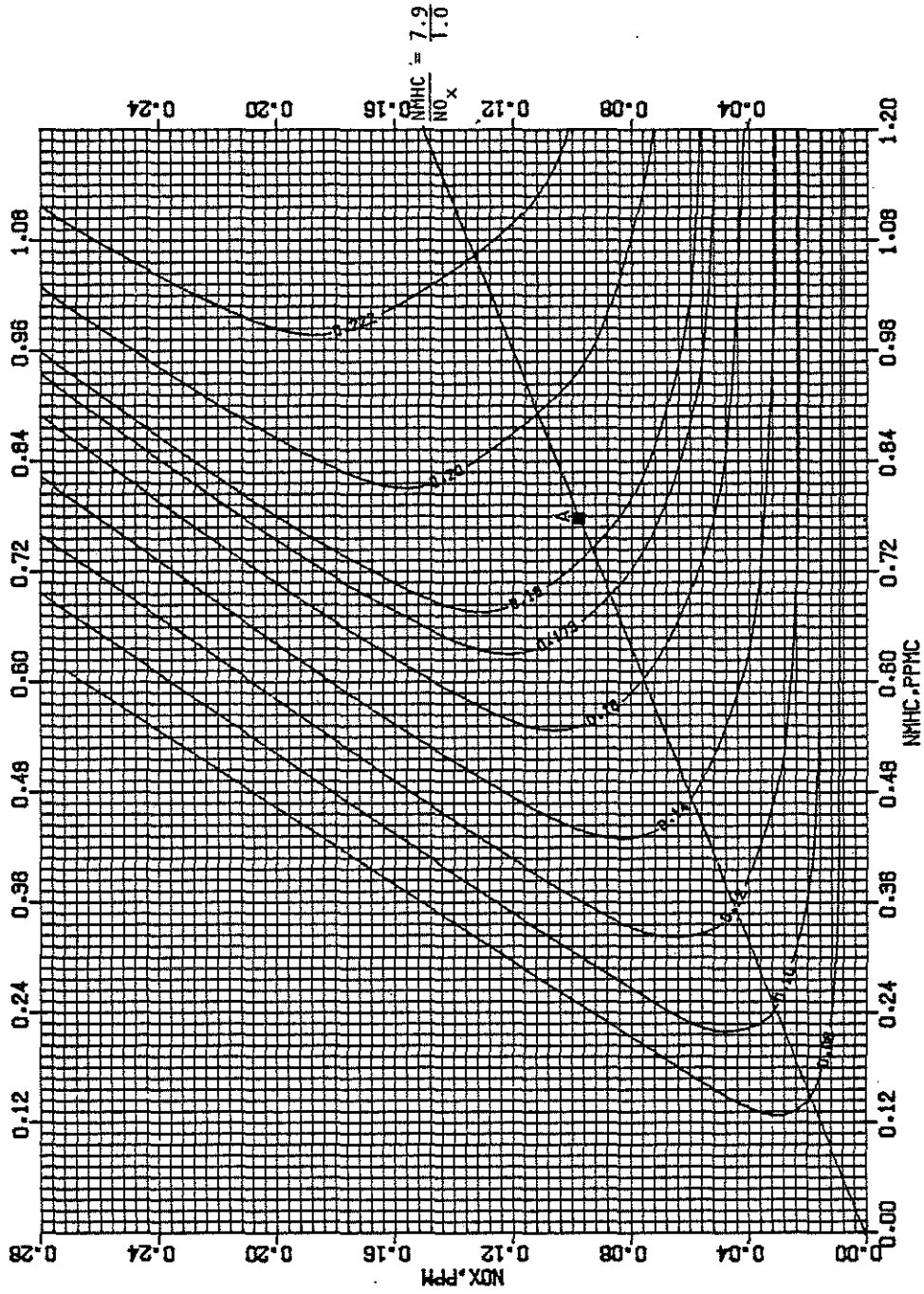
Control requirements are estimated by running OZIPP twice: once with 1977 transport estimates and once with 1983 transport estimates. The 1977 base case is portrayed in Figure 2 and the 1982 case in Figure 3.

The amount of control necessary is estimated by entering the 1977 isopleth diagram at the intersection of the design value isopleth (0.183) and the NMHC/NO_x ratio (7.9/1). The NMHC concentration below this intersection (HC_1) is noted. The point of intersection (A) is then projected onto the same coordinates on the 1982 graph. Since NO_x is estimated to decrease 7% by 1983, the NO_x coordinate of point A is decreased by 7%. Point B is placed at the intersection of the new NO_x value and the ozone standard isopleth (0.12 ppm). The NMHC concentration below point B (HC_2) is noted.

According to Figures 2 and 3:

$HC_1 = 0.774$

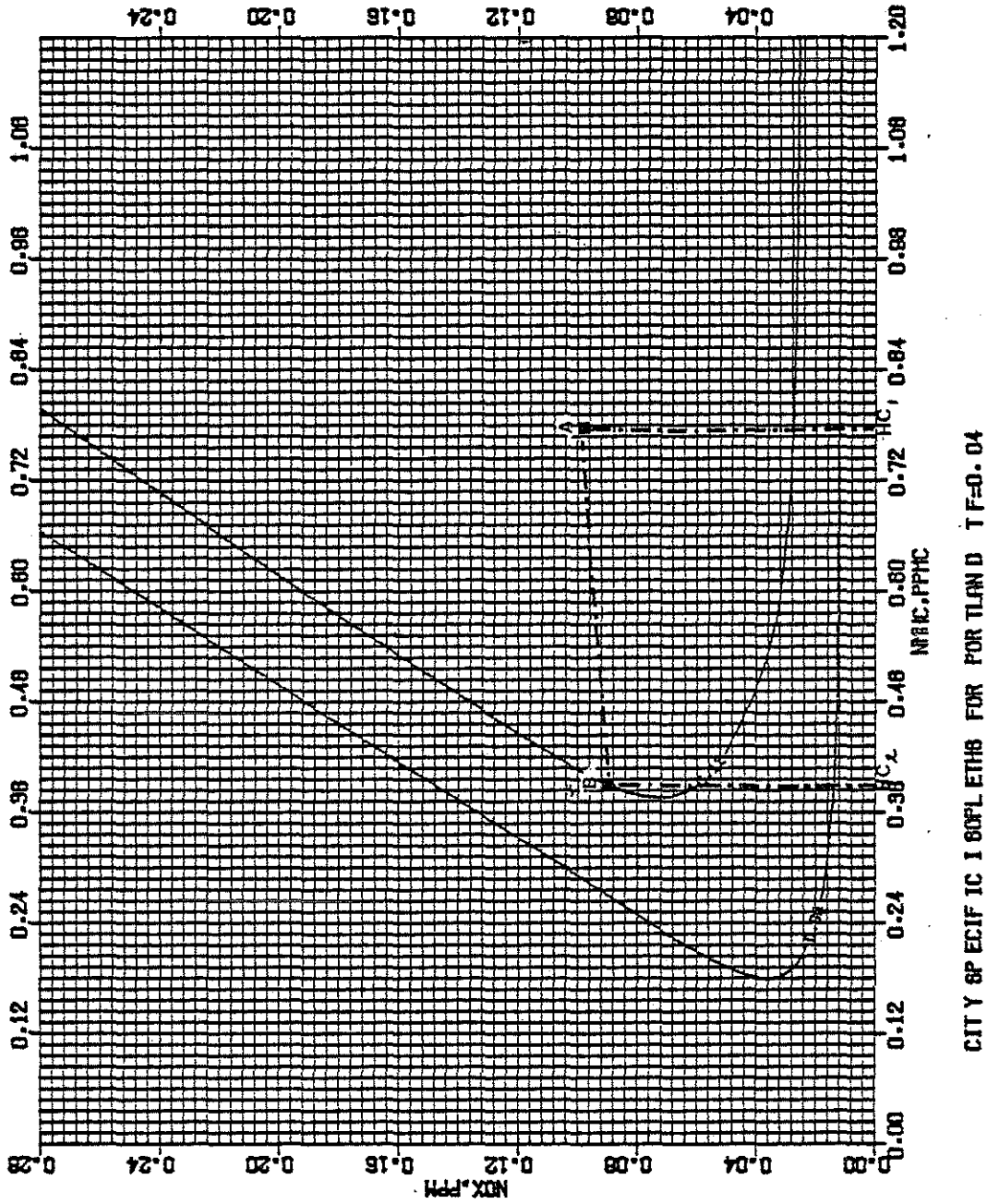
$HC_2 = 0.390$



CIT Y SP ECIF IC I SOPL ETHS FOR POR TLAN D T O=0. 06

FIGURE 2

Figure 3


NOX,PPM
NMHC,PPMC
CITY SPECIFIC 1 80FLETHB FOR PORTLAND TF=0.04

The amount of NMHC reduction necessary to achieve compliance by the end of 1982 is calculated using the formula:

$$\text{Percent Reduction Required} = \frac{HH_1 - HC_2}{HC_1} \times 100$$

$$= \frac{0.774 - 0.390}{0.774} \times 100 = 50\%$$

References

1. EPA (1978) User's Manual for Kinetics Model and Ozone Isopleth Plotting Package, EPA 600/8-78-014a

2. EPA (Jan. 1979) Guideline for the Interpretation of Ozone Air Quality Standards

3. EPA (April 1978) Workshop on Requirements for Non-attainment Area Plans, Revised Ed.

4. Personal communication with Ned Meyer, EPA "Ozone Czar" March 9, 1978

Comparison of 1977 and 1982 VOC Emissions for the Portland-Vancouver INTERSTATE AQMA

APPENDIX 4.3-1A

SUMMARY FORMAT FOR VOC

SOURCE		BASE YEAR EMISSIONS 1977	1982 PROJECTED ALLOWABLE EMISSIONS		
			EMISSIONS FROM SOURCES EXISTING IN 1977	GROWTH SINCE 1977	TOTAL
PETROLEUM REFINERIES	REFINERY FUGITIVES (leaks)				
	MISCELLANEOUS SOURCES a) Process Drains and Waste b) Vacuum Producing Systems c) Process Unit Blowdown				
	OTHER				
STORAGE, TRANSPORTATION & MARKETING OF PETROLEUM PRODUCTS	OIL & GAS PRODUCTION FIELDS				
	NATURAL GAS AND NATURAL GASOLINE PROCESSING PLANTS				
	Bulk TRANSFER OF GASOLINE & CRUDE OIL	3144	1334	147	1481
	BULK GASOLINE TERMINALS [2]	5826	2753	303	3056
	GASOLINE BULK PLANTS[3]	325	152	17	169
	SERVICE STATION LOADING (stage I)	2213	483	53	536
	SERVICE STATION UNLOADING (stage II)	2259	2259	249	2508
	OTHER	35	35	4	39
INDUSTRIAL PROCESSES	ORGANIC CHEMICAL MANUFACTURE	385	385	42	427
	PAINT MANUFACTURE	276	276	30	306
	VEGETABLE OIL PROCESSING				
	PHARMACEUTICAL MANUFACTURE				
	PLASTIC PRODUCTS MANUFACTURE				
	RUBBER PRODUCTS MANUFACTURE				
	TEXTILE POLYMERS MANUFACTURE				
	OTHERS				
INDUSTRIAL SURFACE COATING	LARGE APPLIANCES				
	MAGNET WIRE				
	AUTOMOBILES	10	7	1	8
	CANS	336	229	39	268
	METAL COILS	44	30	5	35
	PAPER	4611	3140	251	3391
	FABRIC				
	METAL FURNITURE	39	27	2	29
	WOOD FURNITURE	469	469	28	497
	FLAT WOOD PRODUCTS	217	217	16	233
	OTHER METAL PRODUCTS	1291	828	149	1027
	OTHERS				
NON-INDUSTRIAL SURFACE COATINGS	ARCHITECTURAL COATINGS	2265	2265	249	2514
	AUTO REFINISHING				
	OTHERS				
OTHER SOLVENT USE	DEGREASING	840	546	60	606
	DRY CLEANING	1530	1530	167	1697
	GRAPHIC ARTS	698	698	77	775
	ADHESIVES				
	CUTBACK ASPHALT	2208	1104	122	1226
	OTHER SOLVENT USE	765	765	84	849
OTHER MISCELLANEOUS SOURCES	FUEL COMBUSTION	696	696	77	773
	SOLID WASTE DISPOSAL	87	87	10	97
	FOREST, AGRICULTURAL, AND OTHER OPEN BURNING	3907	3907	429	4336
TOTAL VOC EMISSIONS FROM STATIONARY SOURCES		34476	24272	2611	26883
MOBILE SOURCES	HIGHWAY VEHICLES a) Light Duty Automobiles b) Light Duty Trucks c) Heavy Duty Gasoline Trucks d) Heavy Duty Diesel Trucks e) Motorcycles	56475 11875 1593 2462	16548 3048 501 424	13538 3278 347 887	30086 6326 848 1311
	OFF-HIGHWAY VEHICLES	2704	2704	297	3001
	RAIL	438	438		438
	AIRCRAFT	709	470	52	522
	VESSELS	308	308	33	341
TOTAL VOC EMISSIONS FROM MOBILE SOURCES		76564	24441	18432	42873
TOTAL VOLATILE ORGANIC EMISSIONS		111040	48713	21043	69756

[2] Includes all storage facilities except those at service stations and bulk plants.

[3] Emissions from storage and transfer operations.

Comparison of 1977 and 1982 VOC Emissions from Oregon Sources Only Located in the Portland-Vancouver Interstate AQMA

APPENDIX 4.3-1B

SUMMARY FORMAT FOR VOC

SOURCE		BASE YEAR EMISSIONS 1977	1982 PROJECTED ALLOWABLE EMISSIONS: EMISSIONS FROM SOURCES EXISTING IN 1977	GROWTH SINCE 1977	TOTAL
PETROLEUM REFINERIES	REFINERY FUGITIVES (leaks)				
	MISCELLANEOUS SOURCES a) Process Drains and Waste b) Vacuum Producing Systems c) Process Unit Blowdown				
	OTHER				
STORAGE, TRANSPORTATION & MARKETING OF PETROLEUM PRODUCTS	OIL & GAS PRODUCTION FIELDS				
	NATURAL GAS AND NATURAL GASOLINE PROCESSING PLANTS				
	Bulk TRANSFER OF GASOLINE & CRUDE OIL	3144	1334	147	1481
	BULK GASOLINE TERMINALS [2]	5613	2657	292	2949
	GASOLINE BULK PLANTS[3]	227	106	12	118
	SERVICE STATION LOADING (stage I)	1886	412	45	457
	SERVICE STATION UNLOADING (stage II)	1887	1887	208	2095
	OTHER	21	21	2	23
INDUSTRIAL PROCESSES	ORGANIC CHEMICAL MANUFACTURE	356	356	39	395
	PAINT MANUFACTURE	276	276	30	306
	VEGETABLE OIL PROCESSING				
	PHARMACEUTICAL MANUFACTURE				
	PLASTIC PRODUCTS MANUFACTURE				
	RUBBER PRODUCTS MANUFACTURE				
	TEXTILE POLYMERS MANUFACTURE				
	OTHERS				
INDUSTRIAL SURFACE COATING	LARGE APPLIANCES				
	MAGNET WIRE				
	AUTOMOBILES	10	7	1	8
	CANS	298	203	35	238
	METAL COILS	44	30	5	35
	PAPER	4314	2938	235	3173
	FABRIC				
	METAL FURNITURE	39	27	2	29
	WOOD FURNITURE	469	469	28	497
	FLAT WOOD PRODUCTS	144	144	10	154
	OTHER METAL PRODUCTS	1291	878	149	1027
	OTHERS				
NON-INDUSTRIAL SURFACE COATINGS	ARCHITECTURAL COATINGS	1908	1908	210	2118
	AUTO REFINISHING				
	OTHERS				
OTHER SOLVENT USE	DEGREASING	715	465	51	516
	DRY CLEANING	1308	1308	143	1451
	GRAPHIC ARTS	698	698	77	775
	ADHESIVES				
	CUTBACK ASPHALT	1434	717	79	796
	OTHER SOLVENT USE	10	10	1	11
OTHER MISCELLANEOUS SOURCES	FUEL COMBUSTION	399	399	44	443
	SOLID WASTE DISPOSAL				
	FOREST, AGRICULTURAL, AND OTHER OPEN BURNING	3730	3730	410	4140
TOTAL VOC EMISSIONS FROM STATIONARY SOURCES		30221	20980	2255	23235
MOBILE SOURCES	HIGHWAY VEHICLES a) Light Duty Automobiles b) Light Duty Trucks c) Heavy Duty Gasoline Trucks d) Heavy Duty Diesel Trucks e) Motorcycles	49191 10345 1389 2146	13765 2534 417 353	11263 2728 289 738	25028 5262 706 1091
	OFF-HIGHWAY VEHICLES	2173	2173	239	2412
	RAIL	350	350	0	350
	AIRCRAFT	680	441	49	490
	VESSELS	83	83	9	92
TOTAL VOC EMISSIONS FROM MOBILE SOURCES		66357	20,116	15,315	35431
TOTAL VOLATILE ORGANIC EMISSIONS		96578	41,046	17,570	58666

[2] Includes all storage facilities except those at service stations and bulk plants.

[3] Emissions from storage and transfer operations.

Comparison of 1977 and 1987 VOC Emissions for the Portland-Vancouver Interstate AQMA

APPENDIX 4.3-1C

SUMMARY FORMAT FOR VOC

SOURCE		BASE YEAR EMISSIONS 1977	(1987) PROJECTED ALLOWABLE EMISSIONS		
			EMISSIONS FROM SOURCES EXISTING IN 1977	GROWTH SINCE 1977	TOTAL
PETROLEUM REFINERIES	REFINERY FUGITIVES (leaks)				
	MISCELLANEOUS SOURCES a) Process Drains and Waste b) Vacuum Producing Systems c) Process Unit Blowdown				
	OTHER				
STORAGE, TRANSPORTATION & MARKETING OF PETROLEUM PRODUCTS	OIL & GAS PRODUCTION FIELDS				
	NATURAL GAS AND NATURAL GASOLINE PROCESSING PLANTS				
	Bulk TRANSFER OF GASOLINE & CRUDE OIL	3144	1334	267	1601
	BULK GASOLINE TERMINALS [2]	5826	2753	683	3436
	GASOLINE BULK PLANTS[3]	325	152	35	187
	SERVICE STATION LOADING (stage I)	2213	483	96	579
	SERVICE STATION UNLOADING (stage II)	2259	2259	451	2710
	OTHER	35	35	7	42
INDUSTRIAL PROCESSES	ORGANIC CHEMICAL MANUFACTURE	385	385	59	444
	PAINT MANUFACTURE	276	276	41	312
	VEGETABLE OIL PROCESSING				
	PHARMACEUTICAL MANUFACTURE				
	PLASTIC PRODUCTS MANUFACTURE				
	RUBBER PRODUCTS MANUFACTURE				
	TEXTILE POLYMERS MANUFACTURE				
	OTHERS				
INDUSTRIAL SURFACE COATING	LARGE APPLIANCES				
	MAGNET WIRE				
	AUTOMOBILES	10	7	2	9
	CANS	336	229	65	294
	METAL COILS	44	30	8	38
	PAPER	4611	3140	313	3453
	FABRIC				
	METAL FURNITURE	39	27	8	35
	WOOD FURNITURE	469	469	52	521
	FLAT WOOD PRODUCTS	217	217	27	238
	OTHER METAL PRODUCTS	1291	878	237	1115
	OTHERS				
NON-INDUSTRIAL SURFACE COATINGS	ARCHITECTURAL COATINGS	2265	2265	455	2720
	AUTO REFINISHING				
	OTHERS				
OTHER SOLVENT USE	DEGREASING	840	546	82	628
	DRY CLEANING	1530	1530	229	1759
	GRAPHIC ARTS	698	698	80	778
	ADHESIVES				
	CUTBACK ASPHALT	2208	1104	166	1270
	OTHER SOLVENT USE	765	765	115	880
OTHER MISCELLANEOUS SOURCES	FUEL COMBUSTION	696	696	108	801
	SOLID WASTE DISPOSAL	87	87	13	100
	FOREST, AGRICULTURAL, AND OTHER OPEN BURNING	3907	3907	587	4494
TOTAL VOC EMISSIONS FROM STATIONARY SOURCES		34476	24272	4177	28449
MOBILE SOURCES	HIGHWAY VEHICLES a) Light Duty Automobiles b) Light Duty Trucks c) Heavy Duty Gasoline Trucks d) Heavy Duty Diesel Trucks e) Motorcycles	56475 11875 1593 2462	7349 1278 224 128	17573 3962 479 958	24922 5240 703 1086
	OFF-HIGHWAY VEHICLES	2704	2704	410	3114
	RAIL	438	438	0	438
	AIRCRAFT	709	323	64	387
	VESSELS	308	308	63	371
TOTAL VOC EMISSIONS FROM MOBILE SOURCES		76564	12752	23509	36261
TOTAL VOLATILE ORGANIC EMISSIONS		111040	37024	27686	64710

[2] Includes all storage facilities except those at service stations and bulk plants.

[3] Emissions from storage and transfer operations.

Comparison of 1977 and 1987 VOC Emissions from Oregon Sources Only Located in the Portland-Vancouver Interstate AQMA

APPENDIX 4.3-1D

SUMMARY FORMAT FOR VOC

SOURCE		BASE YEAR EMISSIONS 1977	(1987) PROJECTED ALLOWABLE EMISSIONS		
			EMISSIONS FROM SOURCES EXISTING IN 1977	GROWTH SINCE 1977	TOTAL
PETROLEUM REFINERIES	REFINERY FUGITIVES (leaks)				
	MISCELLANEOUS SOURCES a) Process Drains and Waste b) Vacuum Producing Systems c) Process Unit Blowdown				
	OTHER				
STORAGE, TRANSPORTATION & MARKETING OF PETROLEUM PRODUCTS	OIL & GAS PRODUCTION FIELDS				
	NATURAL GAS AND NATURAL GASOLINE PROCESSING PLANTS				
	Bulk TRANSFER OF GASOLINE & CRUDE OIL	3144	1334	267	1601
	BULK GASOLINE TERMINALS [2]	5613	2657	664	3321
	GASOLINE BULK PLANTS[3]	227	106	26	132
	SERVICE STATION LOADING (stage I)	1886	412	82	494
	SERVICE STATION UNLOADING (stage II)	1887	1887	377	2264
	OTHER	21	21	4	25
INDUSTRIAL PROCESSES	ORGANIC CHEMICAL MANUFACTURE	356	356	53	409
	PAINT MANUFACTURE	276	276	41	317
	VEGETABLE OIL PROCESSING				
	PHARMACEUTICAL MANUFACTURE				
	PLASTIC PRODUCTS MANUFACTURE				
	RUBBER PRODUCTS MANUFACTURE				
	TEXTILE POLYMERS MANUFACTURE				
	OTHERS				
INDUSTRIAL SURFACE COATING	LARGE APPLIANCES				
	MAGNET WIRE				
	AUTOMOBILES	10	7	2	9
	CANS	298	203	55	258
	METAL COILS	44	30	8	38
	PAPER	4314	2938	293	3231
	FABRIC				
	METAL FURNITURE	39	27	8	35
	WOOD FURNITURE	469	469	52	521
	FLAT WOOD PRODUCTS	144	144	14	158
	OTHER METAL PRODUCTS	1291	878	237	1115
	OTHERS				
NON-INDUSTRIAL SURFACE COATINGS	ARCHITECTURAL COATINGS	1908	1908	401	2309
	AUTO REFINISHING				
	OTHERS				
OTHER SOLVENT USE	DEGREASING	715	465	70	535
	DRY CLEANING	1308	1308	196	1504
	GRAPHIC ARTS	698	698	80	778
	ADHESIVES				
	CUTBACK ASPHALT	1434	717	108	825
	OTHER SOLVENT USE	10	10	2	12
OTHER MISCELLANEOUS SOURCES	FUEL COMBUSTION	399	399	60	459
	SOLID WASTE DISPOSAL				
	FOREST, AGRICULTURAL, AND OTHER OPEN BURNING	3730	3730	560	4290
TOTAL VOC EMISSIONS FROM STATIONARY SOURCES		30221	20980	3660	24640
MOBILE SOURCES	HIGHWAY VEHICLES a) Light Duty Automobiles b) Light Duty Trucks c) Heavy Duty Gasoline Trucks d) Heavy Duty Diesel Trucks e) Motorcycles	49191 10345 1389 2146	5928 1031 180 103	14176 3196 387 773	20104 4227 567 876
	OFF-HIGHWAY VEHICLES	2173	2173	330	2503
	RAIL	350	350	0	350
	AIRCRAFT	680	294	58	352
	VESSELS	83	83	17	100
TOTAL VOC EMISSIONS FROM MOBILE SOURCES		66357	10142	18937	29079
TOTAL VOLATILE ORGANIC EMISSIONS		96578	31122	22597	53719

[2] Includes all storage facilities except those at service stations and bulk plants.

[3] Emissions from storage and transfer operations.

APPENDIX 4.3-2A
Portland-Vancouver AQMA
Emission Inventory - Nitrogen Oxides, Tons Per Year
1977 and 1982

Source	Baseline Year 1977	1982 Projected Emissions		
		Emissions from sources existing in 1977	Growth Since 1977	Projected 1982 Total Emissions
1. Fuel Combustion External				
A. Residential Fuel (Area)				
1. Anthracite Coal	0	0	0	0
2. Bituminous Coal	0	0	0	0
3. Distillate Oil	834.0	834.0	92.0	926.0
4. Residual Oil	0	0	0	0
5. Natural Gas	510.0	510.0	56.0	566.0
6. Clark County	430 0	430 0	47 0	477 0
7. Total	1774.0	1774.0	163.0	1969.0
B. Electric Generation (Point)				
1. Antracite Coal	0	0	0	0
2. Bituminous Coat	0	0	0	0
3. Lignite	0	0	0	0
4. Residual Oil	0	0	0	0
5. Distillate Oil	0	0	0	0
6. Natural Gas	0	0	0	0
7. Process Gas	0	0	0	0
8. Coke	0	0	0	0
9. Solid Waste Coal	0	0	0	0
10. Total	0	0	0	0
C. Industrial Fuel (Point)				
1. Anthracite Coal				
a. area	0	0	0	0
b. point	0	0	0	0
2. Bituminous Coal				
a. area	0	0	0	0
b. point	0	0	0	0
3. Lignite				
a. point	0	0	0	0
4. Residual Oil				
a. area	413.0	413.0	83.0	496.0
b. point	0	0	0	0
5. Distillate Oil				
a. area	85.0	85.0	17.0	102.0
b. point	0	0	0	0
6. Natural Gas				
a. area	401.0	401.0	80.0	481.0
b. point	1240.0	1240.0	118.0	1358.0

APPENDIX 4.3-2A
Portland-Vancouver AQMA
Emission Inventory - Nitrogen Oxides, Tons Per Year
1977 and 1982

Source	Baseline Year 1977	1982 Projected Emissions		
		Emissions from sources existing in 1977	Growth Since 1977	Projected 1982 Total Emissions
7. Process Gas				
a. area	0	0	0	0
b. point	0	0	0	0
8. Coke				
a. point	0	0	0	0
9. Wood				
a. area	226.0	226.0	18.0	244.0
b. point	336.0	336.0	27.0	363.0
10. Liquid Petro Gas				
a. point	0	0	0	0
11. Bagasse				
a. point	0	0	0	0
12. Other				
a. point (Clark Co.)	3014.0	3014.0	332.0	3346.0
13. Total				
a. area	1125.0	1125.0	198.0	1323.0
b. point	4590.0	4590.0	477.0	5067.0
D. Commercial/Institutional Fuel				
1. Anthracite Coal				
a. area	0	0	0	0
b. point	0	0	0	0
2. Bituminous Coal				
a. area	0	0	0	0
b. point	0	0	0	0
3. Lignite				
a. point	0	0	0	0
4. Residual Oil				
a. area	931.0	931.0	102.0	1033.0
b. point	0	0	0	0
5. Distillate Oil				
a. area	0	0	0	0
b. point	0	0	0	0
6. Natural Gas				
a. area	91.0	91.0	10.0	101.0
b. point	0	0	0	0
7. Wood				
a. area	0	0	0	0
b. point	0	0	0	0
8. Liquid Petrol Gas				
a. point	0	0	0	0

APPENDIX 4.3-2A
Portland-Vancouver AQMA
Emission Inventory - Nitrogen Oxides, Tons Per Year
1977 and 1982

Source	Baseline Year 1977	1982 Projected Emissions		
		Emissions from sources existing in 1977	Growth Since 1977	Projected 1982 Total Emissions
9. Other				
a. point (Clark Co.)	0	0	0	0
10. Total				
a. area	1022.0	1022.0	112.0	1134.0
b. point	0	0	0	0
E. Other				
1. Point	0	0	0	0
F. Total External Combustion				
1. Area	3921.0	3921.0	505.0	4326.0
2. Point	4590.0	4590.0	477.0	5067.0
2. Fuel Combustion Internal				
A. Electric Generator				
1. Distillate Oil	0	0	0	0
2. Natural Gas	0	0	0	0
3. Diesel	43.0	43.0	5.0	48.0
4. Other	78.0	78.0	9.0	87.0
5. Total	121.0	121.0	14.0	135.0
B. Industrial Fuel				
1. Distillate Oil	0	0	0	0
2. Natural Gas	0	0	0	0
3. Gasoline	0	0	0	0
4. Diesel	0	0	0	0
5. Other	0	0	0	0
6. Total	0	0	0	0
C. Commercial/Institutional Fuel				
1. Diesel	0	0	0	0
2. Total	0	0	0	0
D. Engine Testing Aircraft	0	0	0	0
E. Total Internal Combustion	121.0	121.0	14.0	135.0

APPENDIX 4.3-2A
Portland-Vancouver AQMA
Emission Inventory - Nitrogen Oxides, Tons Per Year
1977 and 1982

Source	Baseline Year 1977	1982 Projected Emissions		
		Emissions from sources existing in 1977	Growth Since 1977	Projected 1982 Total Emissions
Total Fuel Combustion				
Area	3921.0	3921.0	505.0	4326.0
Point	4711.0	4711.0	491.0	5202.0
3. Industrial Process (Point)				
A. Chemical Manufacturing	2.0	2.0	0	2.0
B. Food/Agriculture	0	0	0	0
C. Primary Metal	14.0	14.0	2.0	16.0
D. Secondary Metals	0	0	0	0
E. Mineral Products	620.0	620.0	68.0	688.0
F. Petroleum Industry	73.0	73.0	8.0	81.0
G. Wood Products	12.0	12.0	1.0	13.0
H. Metal Fabrication	0	0	0	0
I. Leather Products	0	0	0	0
J. Textile Manufacturing	0	0	0	0
K. Inprocess Fuel	0	0	0	0
L. Other (Clark Co.)	320.0	320.0	35.0	355.0
M. Total	1041.0	1041.0	114.0	1155.0
4. Solid Waste Disposal				
A. Government (Point)				
1. Municipal Incin.	0	0	0	0
2. Open Burning	430.0	430.0	47.0	477.0
3. Other	0	0	0	0
4. Total	430.0	430.0	47.0	477.0
B. Residential (Area)				
1. Onsite Incin.	87.0	87.0	8.0	95.0
2. Open Burning	16.0	16.0	1.0	17.0
3. Total	103.0	103.0	9.0	112.0
C. Commercial Institutional				
1. Onsite Incin.				
a. area	14.0	14.0	2.0	16.0
b. point	0	0	0	0
2. Open Burning				

APPENDIX 4.3-2A
Portland-Vancouver AQMA
Emission Inventory - Nitrogen Oxides, Tons Per Year
1977 and 1982

Source	Baseline Year 1977	1982 Projected Emissions		
		Emissions from sources existing in 1977	Growth Since 1977	Projected 1982 Total Emissions
a. area	0	0	0	0
b. point	0	0	0	0
3. Apartment				
a. point	0	0	0	0
4. Other				
a. area	0	0	0	0
b. point	0	0	0	0
5. Total				
a. area	14.0	14.0	2.0	16.0
b. point	0	0	0	0
D. Industrial				
1. Onsite Incin.				
a. area	58.0	58.0	6.0	64.0
b. point	0	0	0	0
2. Open Burning				
a. area	0	0	0	0
b. point	0	0	0	0
3. Auto Body Incin.				
a. point	0	0	0	0
4. Other				
a. area	0	0	0	0
b. point	0	0	0	0
5. Total				
a. area	58.0	58.0	6.0	64.0
b. point	0	0	0	0
E. Total Solid Waste Disposal				
1. area	175.0	175.0	17.0	192.0
2. point	430.0	430.0	47.0	477.0
5. Transportation (Area)				
A. Land Vehicles				
1. Gasoline				
a. light duty	38659.0	18074.0	15512.0	33586.0
b. heavy duty	901.0	463.0	320.0	783.0
c. off highway	162.0	162.0	18.0	180.0
d. total	39722.0	18699.0	15850.0	34549.0

APPENDIX 4.3-2A
Portland-Vancouver AQMA
Emission Inventory - Nitrogen Oxides, Tons Per Year
1977 and 1982

Source	Baseline Year 1977	1982 Projected Emissions		
		Emissions from sources existing in 1977	Growth Since 1977	Projected 1982 Total Emissions
2. Diesel				
a. heavy duty	1392.0	391.0	819.0	1210.0
b. off highway	299.0	299.0	33.0	332.0
c. rail	1458.0	1458.0	0.0	1458.0
d. total	3149.0	2148.0	852.0	3000.0
3. Total	42871.0	20847.0	16702.0	37549.0
B. Aircraft Total	528.0	528.0	55.0	583.0
C. Vessels Total	482.0	482.0	48.0	530.0
D. Total Transportation	43881.0	21857.0	16805.0	38662.0
6. Miscellaneous (Area)				
A. Fires				
1. Structural	78.0	78.0	9.0	87.0
2. Frost Control	0	0	0	0
3. Slash Burning	0	0	0	0
4. Wild Forest	0	0	0	0
5. Agricultural	0	0	0	0
6. Total	78.0	78.0	9.0	87.0
AREA TOTAL	48055.0	26031.0	17336.0	43367.0
POINT TOTAL	6182.0	6182.0	652.0	6834.0
GRAND TOTAL	54237.0	32213.0	17988.0	50201.0

APPENDIX 4.3-2B
Portland-Vancouver Interstate AQMA
Emission Inventory - Nitrogen Oxides, Tons Per Year
1977 and 1987

Source	Baseline Year 1977	1987 Projected Emissions		
		Emissions from sources existing in 1977	Growth Since 1977	Projected 1987 Total Emissions
1. Fuel Combustion External				
A. Residential Fuel (Area)				
1. Anthracite Coal	0	0	0	0
2. Bituminous Coal	0	0	0	0
3. Distillate Oil	834.0	834.0	175.0	1009.0
4. Residual Oil	0	0	0	0
5. Natural Gas	510.0	510.0	102.0	612.0
6. Clark County	430 0	430 0	64 0	494 0
7. Total	1774.0	1774.0	341.0	2115.0
B. Electric Generation (Point)				
1. Antracite Coal	0	0	0	0
2. Bituminous Coat	0	0	0	0
3. Lignite	0	0	0	0
4. Residual Oil	0	0	0	0
5. Distillate Oil	0	0	0	0
6. Natural Gas	0	0	0	0
7. Process Gas	0	0	0	0
8. Coke	0	0	0	0
9. Solid Waste Coal	0	0	0	0
10. Total	0	0	0	0
C. Industrial Fuel (Point)				
1. Anthracite Coal				
a. area	0	0	0	0
b. point	0	0	0	0
2. Bituminous Coal				
a. area	0	0	0	0
b. point	0	0	0	0
3. Lignite				
a. point	0	0	0	0
4. Residual Oil				
a. area	413.0	413.0	86.0	499.0
b. point	0	0	0	0
5. Distillate Oil				
a. area	85.0	85.0	18.0	103.0
b. point	0	0	0	0
6. Natural Gas				
a. area	401.0	401.0	83.0	484.0
b. point	1240.0	1240.0	123.0	1363.0

APPENDIX 4.3-2B
Portland-Vancouver Interstate AQMA
Emission Inventory - Nitrogen Oxides, Tons Per Year
1977 and 1987

Source	Baseline Year 1977	1987 Projected Emissions		
		Emissions from sources existing in 1977	Growth Since 1977	Projected 1987 Total Emissions
7. Process Gas				
a. area	0	0	0	0
b. point	0	0	0	0
8. Coke				
a. point	0	0	0	0
9. Wood				
a. area	226.0	226.0	23.0	249.0
b. point	336.0	336.0	34.0	370.0
10. Liquid Petro Gas				
a. point	0	0	0	0
11. Bagasse				
a. point	0	0	0	0
12. Other				
a. point (Clark Co.)	3014.0	3014.0	452.0	3466.0
13. Total				
a. area	1125.0	1125.0	210.0	1335.0
b. point	4590.0	4590.0	609.0	5199.0
D. Commercial/Institutional Fuel				
1. Anthracite Coal				
a. area	0	0	0	0
b. point	0	0	0	0
2. Bituminous Coal				
a. area	0	0	0	0
b. point	0	0	0	0
3. Lignite				
a. point	0	0	0	0
4. Residual Oil				
a. area	931.0	931.0	140.0	1071.0
b. point	0	0	0	0
5. Distillate Oil				
a. area	0	0	0	0
b. point	0	0	0	0
6. Natural Gas				
a. area	91.0	91.0	14.0	105.0
b. point	0	0	0	0
7. Wood				
a. area	0	0	0	0
b. point	0	0	0	0
8. Liquid Petrol Gas				
a. point	0	0	0	0

APPENDIX 4.3-2B

Portland-Vancouver Interstate AQMA

Emission Inventory - Nitrogen Oxides, Tons Per Year

1977 and 1987

Source	Baseline Year 1977	1987 Projected Emissions		
		Emissions from sources existing in 1977	Growth Since 1977	Projected 1987 Total Emissions
9. Other				
a. point (Clark Co.)	0	0	0	0
10. Total				
a. area	1022.0	1022.0	154.0	1176.0
b. point	0	0	0	0
E. Other				
1. Point	0	0	0	0
F. Total External Combustion				
1. Area	3921.0	3921.0	705.0	4626.0
2. Point	4590.0	4590.0	609.0	5199.0
2. Fuel Combustion Internal				
A. Electric Generator				
1. Distillate Oil	0	0	0	0
2. Natural Gas	0	0	0	0
3. Diesel	43.0	43.0	6.0	49.0
4. Other	78.0	78.0	12.0	90.0
5. Total	121.0	121.0	18.0	139.0
B. Industrial Fuel				
1. Distillate Oil	0	0	0	0
2. Natural Gas	0	0	0	0
3. Gasoline	0	0	0	0
4. Diesel	0	0	0	0
5. Other	0	0	0	0
6. Total	0	0	0	0
C. Commercial/Institutional Fuel				
1. Diesel	0	0	0	0
2. Total	0	0	0	0
D. Engine Testing Aircraft	0	0	0	0
E. Total Internal Combustion	121.0	121.0	18.0	139.0

APPENDIX 4.3-2B
Portland-Vancouver Interstate AQMA
Emission Inventory - Nitrogen Oxides, Tons Per Year
1977 and 1987

Source	Baseline Year 1977	1987 Projected Emissions		
		Emissions from sources existing in 1977	Growth Since 1977	Projected 1987 Total Emissions
Total Fuel Combustion				
Area	3921.0	3921.0	705.0	4626.0
Point	4711.0	4711.0	627.0	5338.0
3. Industrial Process (Point)				
A. Chemical Manufacturing	2.0	2.0	1.0	3.0
B. Food/Agriculture	0	0	0	0
C. Primary Metal	14.0	14.0	3.0	17.0
D. Secondary Metals	0	0	0	0
E. Mineral Products	620.0	620.0	93.0	713.0
F. Petroleum Industry	73.0	73.0	15.0	88.0
G. Wood Products	12.0	12.0	1.0	13.0
H. Metal Fabrication	0	0	0	0
I. Leather Products	0	0	0	0
J. Textile Manufacturing	0	0	0	0
K. Inprocess Fuel	0	0	0	0
L. Other (Clark Co.)	320.0	320.0	48.0	368.0
M. Total	1041.0	1041.0	161.0	1202.0
4. Solid Waste Disposal				
A. Government (Point)				
1. Municipal Incin.	0	0	0	0
2. Open Burning	430.0	430.0	65.0	495.0
3. Other	0	0	0	0
4. Total	430.0	430.0	65.0	495.0
B. Residential (Area)				
1. Onsite Incin.	87.0	87.0	17.0	104.0
2. Open Burning	16.0	16.0	3.0	19.0
3. Total	103.0	103.0	20.0	123.0
C. Commercial Institutional				
1. Onsite Incin.				
a. area	14.0	14.0	2.0	16.0
b. point	0	0	0	0
2. Open Burning				

APPENDIX 4.3-2B

Portland-Vancouver Interstate AQMA

Emission Inventory - Nitrogen Oxides, Tons Per Year

1977 and 1987

Source	Baseline Year 1977	1987 Projected Emissions		
		Emissions from sources existing in 1977	Growth Since 1977	Projected 1987 Total Emissions
a. area	0	0	0	0
b. point	0	0	0	0
3. Apartment				
a. point	0	0	0	0
4. Other				
a. area	0	0	0	0
b. point	0	0	0	0
5. Total				
a. area	14.0	14.0	2.0	16.0
b. point	0	0	0	0
D. Industrial				
1. Onsite Incin.				
a. area	58.0	58.0	9.0	67.0
b. point	0	0	0	0
2. Open Burning				
a. area	0	0	0	0
b. point	0	0	0	0
3. Auto Body Incin.				
a. point	0	0	0	0
4. Other				
a. area	0	0	0	0
b. point	0	0	0	0
5. Total				
a. area	58.0	58.0	9.0	67.0
b. point	0	0	0	0
E. Total Solid Waste Disposal				
1. area	175.0	175.0	31.0	206.0
2. point	430.0	430.0	65.0	495.0
5. Transportation (Area)				
A. Land Vehicles				
1. Gasoline				
a. light duty	38659.0	8719.0	21766.0	30485.0
b. heavy duty	901.0	226.0	484.0	710.0
c. off highway	162.0	162.0	24.0	186.0
d. total	39722.0	9107.0	22274.0	31381.0

APPENDIX 4.3-2B
Portland-Vancouver Interstate AQMA
Emission Inventory - Nitrogen Oxides, Tons Per Year
1977 and 1987

Source	Baseline Year 1977	1987 Projected Emissions		
		Emissions from sources existing in 1977	Growth Since 1977	Projected 1987 Total Emissions
2. Diesel				
a. heavy duty	1392.0	129.0	969.0	1098.0
b. off highway	299.0	299.0	45.0	344.0
c. rail	1458.0	1458.0	0.0	1458.0
d. total	3149.0	1886.0	1014.0	2900.0
3. Total	42871.0	10993.0	23288.0	34281.0
B. Aircraft				
Total	528.0	528.0	111.0	639.0
C. Vessels				
Total	482.0	482.0	72.0	554.0
D. Total Transportation	43881.0	12003.0	23471.0	35474.0
6. Miscellaneous (Area)				
A. Fires				
1. Structural	78.0	78.0	12.0	90.0
2. Frost Control	0	0	0	0
3. Slash Burning	0	0	0	0
4. Wild Forest	0	0	0	0
5. Agricultural	0	0	0	0
6. Total	78.0	78.0	12.0	90.0
AREA TOTAL	48055.0	16177.0	24219.0	40396.0
POINT TOTAL	6182.0	6182.0	853.0	7035.0
GRAND TOTAL	54237.0	32359.0	25072.0	47431.0

APPENDIX 4.3-3

Documentation of the Public Notice and Hearing for the Ozone State Implementation Plan Revision

A public hearing on "Proposed Revisions to the State 'Clean Air' Act Implementation Plan (SIP) for Carbon Monoxide and Ozone Control Strategies in the Portland Air Quality Maintenance Area (AQMA)" was held in Portland on May 4, 1979. The public notice for this hearing was mailed to interested and affected citizens on March 30. Newspaper advertisements for this hearing were published the Oregonian and the Oregon Journal on March 30, 1979 and April 9, 1979. Three individuals submitted testimony. A summary of these comments is in the hearing report. Copies of the public notice and the newspaper advertisements are in this appendix.

Copies of the State Implementation Plan were sent to the State A-95 Clearinghouse and to fourteen areawide clearinghouses for review, as well as to the U.S. Department of Interior, the U.S. Fish and Wildlife Service, and the U.S. Forest Service. Copies of comments received are also in this appendix.

INTERGOVERNMENTAL REVIEW

Copies of the complete State Implementation Plan were sent to the State A-95 Clearinghouse, fourteen areawide clearinghouses, and various federal and state agencies which might be affected by the Plan. Since no significant comments were received, no responses were deemed necessary.

YOUR OPPORTUNITY TO COMMENT ON PROPOSED DEPARTMENT OF ENVIRONMENTAL QUALITY AIR POLLUTION EMISSION RULES FOR

PORTLAND OZONE AND CARBON MONOXIDE CONTROL

The proposed revisions contain an analysis of existing and projected carbon monoxide (CO) and ozone air quality levels as well as a program for analyzing potential new CO and ozone control strategies. A request for extension of the December 31, 1982 EPA standards attainment date is also included. The revisions would be submitted to EPA as a change to Oregon's Clean Air Act Implementation Plan. You may comment orally at:

9:00 A.M.
PUBLIC HEARING, MAY 4
STATE OFFICE BLDG. RM. 36
1400 S. W. Fifth Avenue
PORTLAND, OREGON

Copies of the proposed rule are available for your study and comment by writing or phoning Carl. A. Simons, 229-6279 DEQ Air Quality Division, P. O. Box 1760, Portland, Or. 97207. You can call toll-free 1-800-452-7813 and ask for DEQ-229-6279.

Written comments may be submitted until May 4 at the above address.

the Oregonian March 30, 1979

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the Oregonian 4/9/79

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Written comments may be submitted until May 4 at the above address.

OREGON JOURNAL
MARCH 30, 1979

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Written comments may be submitted until May 4 at the above address.

Oregon Journal 4/9/79

ROBERT W. STRAUB
GOVERNOR

Environmental Quality Commission

522 S.W. 5th AVENUE, P.O. BOX 1760, PORTLAND, OREGON 97207 PHONE (503) 229-5696

MEMORANDUM

To: Environmental Quality Commission

From: Hearing Officer

Subject: Hearing Report on May 4, 1979, hearing.
"Proposed revisions to the State Air Quality Implementation Plan (SIP) for the Portland-Vancouver Interstate AQMA Carbon Monoxide and Ozone Control Strategies." (OAR 340-20-047)

Summary of Procedure

Pursuant to public notice, a public hearing was convened at the State Office Building Room 36, located at 1400 SW Fifth Avenue in Portland at 9:00 a.m. on May 4, 1979. The purpose was to receive testimony regarding proposed revisions to the SIP for carbon monoxide and ozone control strategies in the Portland AQMA.

Summary of Testimony

Melinda Renstrom, Oregon Environmental Council Read a prepared position paper which was opposed to portions of the Department's proposed SIP revisions. OEC criticized the Department for not referencing the present state oxidant level of 0.08 ppm in the SIP. OEC stated that by leaving this reference out of the SIP the Department may be prejudicing the outcome of the hearings process just begun on the possible relaxing of this standard (i.e. bringing the state standard into conformance with the new federal standard of 0.12 ppm). Should the state standard not be relaxed the Department would be faced with administering two standards for the same pollutant. OEC expressed concern that the double standard would cause confusion and could diminish the public's ability to bring effective civil suits to enforce emission standards as provided by Section 304 of the CAAA.

OEC also criticized the Department for failing to include the Indirect Source program in the list of Reasonably Available Control Measures (RACM's). OEC also questioned whether the omission of the Indirect Source program from the SIP will lessen its effectiveness and the Department's commitment to it.

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The last comment by OEC deals with the public participation element of the SIP. It is their opinion that the much of the public participation and publicity centering on the SIP revisions was not generated by the Department or MSD but by concerned citizens and OEC. OEC feels that the responsible agencies should make greater financial commitment to the public involvement element of the program.

Gary Coe, Multnomah Hot Rod Council stated that he and his group were opposed to the annual testing of auto emissions in the Portland area. He stated the cost of maintaining older cars in condition to pass the emission tests were greater than the benefits gained. He stated that an annual emission test program would be inflationary and would cause hardships on less affluent people. Mr. Coe made reference to the Portland Aerosol Characterization Study (PACS) study released on particulate sampling and inventory of sources.

Other testimony, received by letter

Jan D. Sokol, Oregon Student Public Interest Research Group, (OSPIRG), states that while OSPIRG generally does not oppose the SIP revisions it feels the Department's request for an extention in time is legally insufficient. OSPIRG bases this claim on the fact that the revisions do not include an alternative analysis program for major emitting facilities proposing to locate in a nonattainment area. Section 172(b)(11)(A) of the CAAA is referenced as requiring this program as a specific element of a SIP revision request for a time extension. OSPIRG has not been satisfied by previous EPA staff responses to this matter.

League of Women Voters of Oregon states it supports "adequate standards for control of all sources of pollution and strict enforcement of established rules and regulations." They note a lack of resolve in part of the Department and the Commission to strengthen present programs and initiate new programs to meet air quality standards. Finally, the League states it is opposed to an extension of the attainment date for the carbon monoxide and ozone ambient air standards beyond 1982.

Oral and written testimony was offered by:

Melinda Renstrom, Oregon Environmental Council

Oral testimony was given by:

Gary Coe, Multnomah Hot Rod Council

Testimony received in written form only:

Jan D. Sokol, Oregon Student Public Interest Research Group
The League of Women Voters of Oregon

Recommendations

The hearing officer has no recommendations.

Respectfully submitted,

Stephen C. Carter
Hearing Officer

CAS:kmm
229-6279
May 8, 1979
Attachments (1) Notice of Public Hearing
(2) Testimony of the Oregon Environmental Council
(3) Testimony of the Oregon Student Public Interest Research Group (OSPIRG)
(4) Testimony of the League of Women Voters of Oregon

A6254.2

ROBERT W. STRAUB
GOVERNOR

Department of Environmental Quality

522 SOUTHWEST 5TH AVE. PORTLAND, OREGON

MAILING ADDRESS: P.O. BOX 1760, PORTLAND, OREGON 97207

Prepared: March 13, 1979
Hearing Date: May 4, 1979

NOTICE OF PUBLIC HEARING

A CHANCE TO BE HEARD ABOUT:

PROPOSED REVISIONS TO THE STATE "CLEAN AIR" ACT IMPLEMENTATION PLAN (SIP) FOR CARBON MONOXIDE AND OZONE CONTROL STRATEGIES IN THE PORTLAND AIR QUALITY MAINTENANCE AREA (AQMA)

The Department of Environmental Quality is proposing to amend its State Implementation Plan for carbon monoxide and ozone control strategies in accordance with the federal Clean Air Act Amendments of 1977. The proposed revisions contain an analysis of existing and projected carbon monoxide (CO) and ozone (O_3) air quality levels as well as a program for analyzing potential new CO and O_3 control strategies. A request for extension of the December 31, 1982 EPA attainment date is also included.

WHAT IS THE DEQ PROPOSING?

Interested parties should request a copy of the complete proposed SIP Revision package. Some highlights are:

** Federal Ambient Air Quality standards for Carbon Monoxide and Ozone are projected to be exceeded beyond December 31, 1982.

** The CO and O_3 SIP revisions consist of a commitment to analyze new control strategies which would insure attainment and maintenance of ambient air quality standards. This control strategy analysis would be performed by the Metropolitan Service District (MSD) and would be completed by June 30, 1980.

** The proposed SIP revision contains a request to EPA to extend the attainment date for the CO and O_3 ambient air quality standards beyond December 31, 1982. EPA requirements for requesting this extension have been met.

WHO IS AFFECTED BY THIS INFORMATION:

The residents and industries in the Portland-Vancouver Interstate AQMA.

HOW TO PROVIDE YOUR INFORMATION:

Written comments should be sent to the Department of Environmental Quality, Air Quality Division, P.O. Box 1760, Portland, Oregon 97207, and should be received by May 4, 1979.

Oral and written comments may be offered at the following public hearing:

City	Time	Date	Location
Portland	9:00 a.m.	May 4	State Office Building Room 36, Basement 1400 SW Fifth Portland, OR

WHERE TO OBTAIN ADDITIONAL INFORMATION:

Copies of the proposed rules may be obtained from:

Carl A. Simons
DEQ Air Quality Division
P.O. Box 1760
Portland, Oregon 97207
229-6279

LEGAL REFERENCES FOR THIS PROPOSAL:

Clean Air Act Amendments of 1977 (PL 95-95). This hearing is being proposed under authority of OAR 340-20-047 and ORS 468.305.

FURTHER PROCEEDINGS:

After public hearing the Commission may adopt amendments identical to the proposed amendments, adopt modified amendments on the same subject matter, or decline to act. The adopted regulations may be submitted to the Environmental Protection Agency as part of the State Clean Air Act Implementation Plan. The Commission's deliberation should come on June 8, 1979 as part of the agenda of a scheduled Commission meeting.

CAS:kmm

OREGON ENVIRONMENTAL COUNCIL

2637 S.W. WATER AVENUE, PORTLAND, OREGON 97201 / PHONE: 503/222-1963

ALTERNATIVE FUTURES, Tigard
AMERICAN INSTITUTE OF ARCHITECTS
Portland Chapter
AMERICAN SOCIETY OF LANDSCAPE ARCHITECTS
Oregon Chapter
ASSOCIATION OF NORTHWEST STEELHEADERS
ASSOCIATION OF OREGON RECYCLERS
AUDUBON SOCIETY
Central Oregon, Corvallis, Portland, Salem
BAY AREA ENVIRONMENTAL COUNCIL
Coos Bay
B.R.I.N.G.
CENTRAL CASCADES CONSERVATION COUNCIL
CHEMEKETANS, Salem
CITIZENS FOR A BETTER GOVERNMENT
CITIZENS FOR A CLEAN ENVIRONMENT
CLATSOP ENVIRONMENTAL COUNCIL
CONCERNED CITIZENS FOR AIR PURITY
Eugene
DEFENDERS OF WILDLIFE
ECO-ALLIANCE, Corvallis
ENVIRONMENTAL ACTION CLUB
Parkrose High School
EUGENE FUTURE POWER COMMITTEE
EUGENE NATURAL HISTORY SOCIETY
GARDEN CLUBS of Cedar Mill, Corvallis, McMinnville, Nehalem Bay, Scappoose
GRANT COUNTY CONSERVATIONISTS
H.E.A.L., Azalea
LAND, AIR, WATER, Eugene
LEAGUE OF WOMEN VOTERS
Central Lane, Coos County
McKENZIE GUARDIANS, Blue River
NORTHWEST ENVIRONMENTAL DEFENSE CENTER
OBSIDIANS, Eugene
1,000 FRIENDS OF OREGON
OREGON ASSOCIATION OF RAILWAY PASSENGERS
OREGON BASS AND PANFISH CLUB
OREGONIANS COOPERATING TO PROTECT WHALES
OREGON FEDERATION OF GARDEN CLUBS
OREGON GUIDES AND PACKERS
OREGON HIGH DESERT STUDY GROUP
OREGON LUNG ASSOCIATION
Portland, Salem
OREGON NORDIC CLUB
OREGON NURSES ASSOCIATION
OREGON PARK & RECREATION SOCIETY
Eugene
OREGON ROADSIDE COUNCIL
OREGON SHORES CONSERVATION COALITION
O.S.P.I.R.G.
PLANNED PARENTHOOD ASSOCIATION, INC.
Portland
PORTLAND ADVOCATES OF WILDERNESS
PORTLAND RECYCLING TEAM, INC.
RECREATIONAL EQUIPMENT, INC.
SANTIAM ALPINE CLUB
Salem
SIERRA CLUB
Oregon Chapter
Columbia Group, Portland
Klamath Group, Klamath Falls
Many Rivers Group, Eugene
Mary's Peak Group, Corvallis
Mt. Jefferson Group, Salem
Rogue Valley Group, Ashland
SOLV
SPENCER BUTTE IMPROVEMENT ASSOCIATION
STEAMBOATERS
SURVIVAL CENTER
University of Oregon
THE TOWN FORUM, INC.
Cottage Grove
TRAILS CLUB OF OREGON
UMPQUA WILDERNESS DEFENDERS
WESTERN RIVER GUIDES ASSOCIATION, INC.
WILLAMETTE RIVER GREENWAY ASSOCIATION

Statement of Melinda Renstrom on Behalf of Oregon Environmental Council Regarding the Portland Air Quality Maintenance Area Draft State Implementation Plan for Carbon Monoxide and Photochemical Oxidants

May 4, 1979

I am Melinda Renstrom of the Oregon Environmental Council, a coalition of 75 recreational, planning, health, and environmental groups and 2500 individual members. I specialize in matters related to air quality.

My comments today are focused on three areas of the carbon monoxide and ozone portions of the Portland AQMA Draft State Implementation Plan. I will make them brief:

First, the Oregon Environmental Council criticizes the Metropolitan Service District and the Oregon State Department of Environmental Quality for omitting the Oregon state photochemical oxidant standard from the Draft State Implementation Plan. Regardless of new federal standards, the Oregon standard limits photochemical oxidant or ozone levels to .08 ppm, measured hourly, not to be exceeded more than once per year. The Oregon standard should, by law, be referenced in the

State Implementation Plan. It is not. State Hearings addressing the ozone standard have just started. There has been a tacit assumption that the state will relax the ozone standard. How might that assumption and the State Implementation Plan which contains that assumption affect the ozone hearings? Oregon Environmental Council is concerned that treating a changed standard as a foregone conclusion might very well affect the hearing process, in fact we think it already has done just that.

Presuming that the Oregon ozone standard does not change, then the Oregon Environmental Council is critical of what seems to be a new state policy for keeping two sets of books. The OEC does not approve of this policy. Oregonians lose out when the federal State Implementation Plan shows one set of rules and state administrative rules say something else. Government is complicated enough for most of us without doubling the confusion. Furthermore, the OEC is not convinced that state administrative rule provides the same degree of rights to citizens as does the Clean Air Act. Section 304 of the Clean Air Act quite specifically provides for civil suits to enforce emissions standards and provides for attorneys fees and court costs as well. The OEC presumes that Congress made provisions for the very thorough Section 304 for what they felt were good reasons. We would like to take this opportunity to voice our criticism of the double books policy for several aspects of the State Implementation Plan. I will not go into those issues at this time.

Secondly, the Oregon Environmental Council wishes to comment on the so-called "Demonstration of Commitment to Reasonably Available Control Measures" section of the Draft State Implementation Plan for both carbon monoxide and ozone in the Portland AQMA. Nowhere in the Draft document is there any mention of the currently administered Indirect Source

program. Cars are necessarily the target of most efforts to reduce CO and O_3 levels and yet one of the only programs in existence that does planning for parking and traffic patterns and which has significant implications for regional air quality is omitted from this Draft. Does omitting this vital program represent reasonable further progress? Is the state seriously trying to scrap the Indirect Source program or is this another example of keeping two sets of books? The Indirect Source program should be in the State Implementation Plan. If it is omitted the list of "Reasonably Available Control Measures" to which the state and region are supposedly committed is a joke.

Our last comment concerns public participation. In the State Implementation Plan local agencies must, by law, convince EPA that adequate provisions are being made for public participation . While Oregon Environmental Council does not fault the role of the Portland Air Quality Maintenance Area Advisory Committee in the SIP process we must insist that the role of the public relations sub-committee has been overstated. The sub-committee has not been able to do very much because there has been no commitment of financial support. Most of the work hours that have been put into publicizing the AQMA Committee's activities have been donated by the Oregon Environmental Council or one or two committee volunteers. In fact, the newsletter that was mentioned in the Draft State Implementation Plan is not an AQMA Committee activity at all. Clean Air News is a publication of the Oregon Environmental Council.

The Oregon Environmental Council urges a more complete submission of a State Implementation Plan to the U.S. Environmental Protection Agency.

April 26, 1979

Bill Young, Director
Department of Environmental Quality
P.O. Box 1760
Portland, Oregon 97207

RE: Proposed Revisions to the State Air Quality Implementation Plan for the Portland-Vancouver Interstate AQMA Carbon Monoxide and Ozone Control Strategies.

Dear Bill:

The following are the Oregon Student Public Interest Research Group's (OSPIRG) comments on the above-entitled control strategies.

OSPIRG does not oppose in principle the Department's requested extension to attain CO and O_3 ambient air standards. However, OSPIRG believes that the Department has failed to fulfill the requirements of § 172 of the Clean Air Act, 42 USC § 7502, and EPA requirements as set forth in 43 Fed. Reg. 21673 (May 19, 1978) in order to obtain an extension beyond December 31, 1982.

42 USC § 7502 (b)(11)(A) requires the Department to:

> [E]stablish a program which requires, prior to issuance of any permit for construction or modification of a major emitting facility, an analysis of alternative sites, sizes, production processes, and environmental control techniques for such proposed source which demonstrates that the benefits of the proposed source significantly outweigh the environmental and social costs imposed as a result of its location, construction, or modification.

This is in addition to the requirement that the Department "establish a specific schedule for implementation of a vehicle emission control inspection and maintenance program" and "identify other measures necessary to provide for attainment of the applicable national ambient air quality standard no later than December 31, 1987." These three measures are essential prerequisites to any extension beyond December 31, 1982.

The need for an alternative analysis program is further supported by the Joint Explanatory Statement of the Committee of Conference on the Clean Air Act P.L. 95-95:

> A plan submission in 1979 which demonstrates that oxidant or carbon monoxide standards will not be met by 1982 must contain certain specified provisions: (1) it must require alternative site analyses for major emitting facilities proposing to locate in a nonattainment area; (2) it must establish a schedule for implementing a vehicle inspection and maintenance program; and (3) it must require that funds reasonably available to the State or local government be used to improve public transportation. [Emphasis added]

1977 U.S. Code Cong. & Adm. News 1502, 1537-38. In addition, EPA, in its memorandum concerning "Criteria for Approval of 1979 SIP Revisions" clearly mandates such a program. 43 Fed. Reg. 21673, 21675 (May 19, 1978).

No alternative analysis program is provided in the Department's SIP revision for CO and O_3. Nor does the Department have an administrative rule which requires an alternative site analysis prior to the issuance of a permit for construction or modification of a major emitting facility. Without such a program, the Department's request for an extension is legally insufficient.

This is not the first time I have brought this matter to the Department's attention. This issue has been raised during several meetings with DEQ staff as well as during several AQMA Advisory Committee meetings. The response by DEQ staff has been that EPA Region X has informed the Department that such a program is not necessary in order for the EPA Administrator to grant an extension for CO and O_3 compliance. I have never seen such a statement from EPA in writing. OSPIRG submits that, if this is Region X's interpretation, it is in conflict with the clear wording of the law.

OSPIRG urges the Department through the EQC to adopt an alternative site analysis program and include it in the 1979 SIP revisions so that the DEQ's request for an extension can be expeditiously reviewed by the EPA Administrator.

Thank you for the opportunity to comment.

Sincerely,

Jan

Jan D. Sokol
Attorney and OSPIRG's
Representative on the
Portland AQMA Committee

THE LEAGUE OF WOMEN VOTERS OF OREGON
494 STATE STREET - SUITE 216
SALEM, OREGON 97301
581-5722

TESTIMONY TO THE ENVIRONMENTAL QUALITY COMMISSION REGARDING

PROPOSED REVISIONS TO THE STATE "CLEAN AIR" ACT
IMPLEMENTATION PLAN (SIP) FOR CARBON MONOXIDE AND OZONE
CONTROL STRATEGIES IN THE PORTLAND AIR QUALITY MAINTENANCE AREA

April 30, 1979

Members of the League of Women Voters of Oregon and the League of Women Voters of Portland believe that all segments of society must share responsibility for improved air pollution abatement practices. In more specific terms, the League supports adequate standards for control of all sources of pollution and strict enforcement of established rules and regulations.

The Environmental Quality Commission (EQC) has adopted air quality standards for Oregon which the League has supported. We have seen substantial progress toward these goals due in part to the Portland transportation control plan and the permit program for industry. However, some programs have not achieved their potentials, such as the federal control program for automobiles, inspection maintenance, and the indirect source rule. For example, a permit for construction of an indirect source has never been denied. Air quality in the Portland area is still not close to meeting the EQC standards.

We have noted a lack of resolve on the part of the Department and the Commission to strengthen present programs and initiate new programs to meet air quality standards. We understand that industry and developers place enormous pressure on the regulating agency to relax its rules. We would like to exert an equal pressure on the agency not to relax its rules. Citizens in this community support the stricter state standards for clean air. We do not think that the minimum limits required by the Environmental Protection Agency are acceptable.

The League of Women Voters opposes an extension of the attainment date for carbon monoxide and photochemical oxidants beyond 1982. We recognize that this is a tough problem, but we urge you to stand firm for clean air.

State of Oregon
DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY

Department Responses to Hearing Officer's Report on the "Proposed Revisions to the State Air Quality Implementation Plan (SIP) for the Portland-Vancouver Interstate AQMA Carbon Monoxide and Ozone Control Strategies.

A. RESPONSES TO TESTIMONY OF OREGON ENVIRONMENTAL COUNCIL

1. ISSUE: "Existing State Ozone standard is not addressed in proposed Ozone SIP Revision."

   Response: Section 172 of the Clean Air Act Amendments (CAAA) of 1977 requires that states only have to submit SIP revisions which address national ambient air quality standards (NAAQS). Since both the primary and secondary NAAQS for Ozone is 0.12 ppm, the SIP proposed revisions only addressed these standards. The above position supports the present Department policy of keeping state programs and requirements that are not federally required out of the SIP so as to maintain maximum administrative flexibility and minimize paper work. (Refer to body of Staff Report on SIP as to possible alternative approaches available to the EQC in response to this issue.)

2. ISSUE: "The double (ozone) standard would cause confusion and could diminish the public's ability to bring effective civil suits to enforce air quality standards and programs as provided by section 304 of the Clean Air Act."

   Response: Informal advice from legal counsel to the Department indicates that this statement is essentially correct. Present state statutes do not allow the same level of legal redress for the failure of the State of Oregon to enforce any air pollution standard and law. Section 304 allows "persons" to sue EPA for failure to enforce adopted SIP provisions and provides, at the court's discretion, the awarding of coats of litigation to any party. Such provisions do not presently exist in state statutes according to legal counsel. (Refer to body of staff report for a more detailed discussion on this issue.)

3. ISSUE: "Indirect Source Rule is not included in the list of Reasonably Available Control Measures"

   Source: Oregon Environmental Council

   Response: It is the Department's opinion that the Rules for Indirect Sources (OAR 340-20-100 through 135) is not a Reasonably Available Control Measure (RACM) as defined in the Clean Air Act (Section 108) but is rather a regulatory review mechanism to assess the air pollution impacts from motor vehicles. While the initiation of a RACM, e.g. improved transit service, may be a condition of approval of an Indirect Source Permit, the Indirect Source Rule in and by itself is not RACM. However, the Rules for Indirect Sources are part of the present Oregon SIP and the fact

it did not appear in Sections 4.2.3 or 4.3.3 of the proposed SIP revisions is not to be construed as a conscious effort by the Department to delete them from the SIP. Amendments have been made to Sections 4.2.4 and 4.3.4 of the proposed SIP to clarify the Department's position on the Rules for Indirect Sources.

4. ISSUE: "The role of the Portland AQMA Advisory Committee in the SIP process . . . has been overstated."

   Response: Within existing resources, public relations efforts have been initiated as explained in sections 4.2.8.4 and 4.3.8.4 of the SIP. To further clarify the programming of future public involvement programs amendments have been added to these sections to indicate the Advisory Committee's role in producing press releases and developing air quality information brochures. In addition, it is now stated in the SIP that as funding becomes available programs and materials listed in the last paragraphs of sections 4.2.8.4 and 4.3.8.4 will be developed. It is expected that funds to support an adequate public relations program should be available through the pooled resources of DEQ and MSD.

B. RESPONSE TO TESTIMONY OF MR. GARY COE, REPRESENTING THE MULTNOMAH HOT ROD COUNCIL

1. ISSUE: "Multnomah Hot Rod Council is opposed to an annual motor vehicle inspection program as being inflationary and would be a hardship on less affluent individuals."

   Response: Due to a misunderstanding Mr. Coe thought that the proposed SIP was requiring that an annual motor vehicle inspection/maintenance (I/M) program replace the existing biennial program. It was explained to Mr. Coe at the hearing that the SIP revision only proposes to evaluate the need for an annual I/M program as part of the alternative transportation measure evaluation program (Sections 4.2.3 and 4.3.3). Until this analysis is completed (June 30, 1980) and it is clearly demonstrated that an annual program is needed to meet the carbon monoxide and/or ozone standards, the Department would not proposed increasing the frequency of the inspection cycle. It was also explained to Mr. Coe that the SIP revisions only address the CO and O_3 ambient air standards and not particulate ambient air standards.

C. RESPONSE TO TESTIMONY OF THE OREGON STUDENT PUBLIC INTEREST RESEARCH GROUP (OSPIRG)

1. ISSUE: "No alternative analysis plant site analysis requirements as specified by Section 172(b)(11)(A) of the Clean Air Act are included in the Carbon Monoxide and Ozone SIP revisions."

   Response: The need for an alternative plant site analysis program had been previously discussed with representatives of Region X EPA. Based upon these previous discussions, the Department was given the impression that no such program would be needed for a non-attainment area in the process of developing an attainment plan.

However, the Department was officially notified by EPA on May 15, 1979 that such a program is needed as part of the SIP revisions for carbon monoxide and ozone.

In response to this EPA position, the "Rules for Special Permit Requirements for Sources Locating in or Near Nonattainment Areas" (OAR 340-20-190 through 195) have been amended to include these requirements. Carbon monoxide and ozone SIP revisions have been amended (Sections 4.2.4, 4.3.4) and new sections added (5.2 and 5.3) to indicate the implementation of an alternative plant site evaluation program as part of an overall new sources review (NSR) program.

D. RESPONSE TO TESTIMONY OF THE LEAGUE OF WOMEN VOTERS OF OREGON

1. ISSUE: "The League is opposed to an extension of the attainment date for the carbon monoxide and ozone ambient air standards beyond 1982.

Response: The Department is committed to meeting the federal primary carbon monoxide and ozone standards as soon as possible but within the restraints of available resources, eg., adopted and implementable control strategies, funding, manpower, etc. As noted in section 4.2.5 of the carbon monoxide SIP Revision, the comprehensive alternative transportation analysis to be completed by June 30, 1980 will lead to "either a request for a specific attainment date extension or a withdrawal of this request." Meeting the Ozone standard by the end 1982 will be much more difficult if not impossible, unless the public is willing to make fairly extreme changes in lifestyles. The Department believes its request related to the extension of the attainment date is valid, both legal, and technically given the magnitude of air pollution problems in this region.

CAS:kmm
A6254.A1

Comments Received from the U.S. EPA on May 15, 1979 on the Carbon Monoxide and Ozone SIP Revisions for the Portland-Vancouver Interstate AQMA and Department Responses.

(NOTE: The EPA comments listed below are edited from a larger list received on May 15, 1979. Only those comments which are directly related to the proposed Portland AQMA Carbon Monoxide and Ozone SIP Revisions requiring a response are listed.)

1. EPA Comment: "Accurate, comprehensive and current emissions inventory.

> Essentially Complete: Documentation describing the way parking lot and parking activity emissions were calculated is required. For example, we are finding that carbon monoxide emissions generated from parking activity could amount to a substantial percent of the emissions generated in the central business district. (Comments pertain to mobile source only, see other comments on stationary sources.)"

Response: In all the guidelines that the Department had received from EPA regarding motor vehicle emission simulations this issue had never been addressed. However, the Department believes it had addressed this issue by using a conservative cold start percentage used as an input into the motor vehicle emission factors. National studies have shown the cold start percentage to be approximately 27%, while the Oregon SIP analyses used 34%. This increase in cold start percentage has the effect of increasing a base year (1977) emissions motor vehicle (CO and VOC) approximately 8 to 15% over that amount simulated if a 27% cold start assumption had been used. This additional amount of emissions should approximate the effect of idle and parking lot circulation emissions in the CBD. For the future years analysis (1982, 1987), the 34% cold start assumption had resulted in an additional 10% to 19% increase in CO and VOC emissions over what would have been simulated if a 27% cold start assumption had been used.

To more directly address this EPA comment on simulation of parking lot emissions, MSD will be modifying its motor vehicle emission simulation models to directly assess the impacts from parking lot/idle emissions versus "running" (VMT related) emissions. These revised models will be used in the comprehensive alternative transportation measure analysis that will be completed by June 1980.

2. EPA Comment: "Schedule for comprehensive analyses of alternatives and demonstration that analysis is underway or completed.

> Incomplete: The only schedule in the submittal is one to complete the alternatives analysis needed by July 1980. Some interim dates are needed for individual measures or packages of measures."

Response: As part of its next quarterly progress report required as part of its Section 175 funding agreement with UMTA/EPA, MSD will provide a detailed work schedule for the carbon monoxide and ozone comprehensive analyses of alternative transportation measures. This work schedule will include interim dates for the development of specific and/or packages of potential transportation control measures.

3. EPA Comment: "Process for public, interest group, and elected official consultation and involvement in defining transportation-air quality issues, establishing the planning process, and development and analyses of alternatives.

Public Participation, Public Information - Complete:
Elected Official Involvement - Incomplete:

The process for public involvement relies largely on the Portland Air Quality Maintenance Area Advisory Committee. This group contains both special interest group representation and that of citizen at large. Does the concerned citizen have an adequate opportunity to be heard through this group? Consideration might be given to other avenues of citizen participation prior to public hearings on the phase II SIP submission.

The public information program appears to be well planned and innovative.

The submission does not address how publicly elected officials will be brought into the process (for example the mayors of Portland and Vancouver)."

Response: In response to the question, "Does the concerned citizen have an adequate opportunity to be heard through this group? (Portland AQMA Advisory Committee)" it was stated in Section 4.2.8.4 of the proposed carbon monoxide SIP revision that,

> "All committee meetings are open to the public. At every meeting, there is an opportunity for interested citizens to comment on the activities of the committee or any other matter pertaining to air quality."

Other avenues of citizen participation and education, e.g. public forums, are noted in Section 4.2.8.4 of the carbon monoxide SIP.

Regarding the comment how local elected officials will be brought in the SIP revision process, statements have been added to Sections 4.2.8.4 and 4.3.8.4 of the CO and O_3 SIP Revisions to address this issue.

4. EPA Comment: "Identification of estimated financial and manpower resources necessary to carry out the process described by these guidelines. A commitment to the first year of this process should be demonstrated in the UPWP.

Complete-Documentation Needed:

The submission implies that the funding requested in the Section 175 grant application ($384,915) will be sufficient to complete the phase II SIP submission. This needs to be explicitly addressed."

Response: MSD is presently updating its Air Quality Prospectus which will contain a detail accounting of costs associated with completing the phase II SIP submission. This revised document will be submitted to EPA within the next two months.

5. EPA Comment: "Evidence that the SIP was adopted by the State after reasonable notice and public hearing.

Documentation Required: We note that the public hearing is being held currently. The final SIP submission should contain the public notice for the hearing (and where it was published), certification the hearing has taken place, and a summary of hearing proceedings. Evidence as State and local A-95 clearinghouse review should also accompany the final submission."

Response: The required documentation is contained in the appendices 4.2-4 and 4.3-3 of the SIP Revisions.

6. EPA Comment: "Provisions for progress reporting throughout the planning and implementation period.

Incomplete-Integration with 175 Grant Reporting Needed: The annual progress reports must separate the inventory, growth, and reduction needed for mobile sources from those for stationary sources. Hopefully, this will be done in the future as it has been in the past.

The submission does not address how to integrate progress reporting for the air quality portions of the UPWP (the Section 175 program quarterly reports) with progress reporting on the SIP (annual report)."

Response: Annual reports will address the issue of accounting for existing emissions, growth and emission reductions from implemented control strategies. Where appropriate, Section 175 funding quarterly reports will be integrated into the annual reporting format. At a minimum, Section 175 quarterly reports will be made an attachment to the annual report.

7. EPA Comment: "Schedule of activities leading to implementation of I/M (if attainment after 1982).

Conditionally Complete: At this point in time we are uncertain whether the Oregon (Portland) inspection/ maintenance (I/M) program actually does conform to the

I/M policy statement that was issued by EPA Assistant Administrator David Hawkins in July 1978. We agree that future analysis is necessary as described in the alternative analysis schedule to determine if an annual I/M program is necessary. As new information is gathered we will work jointly with DEQ to determine the existing program's acceptability."

Response: The Department has thoroughly reviewed Mr. Hawkins' memo of July 1978 and believes based upon the methodology provided to DEQ by EPA (as referenced in Appendix 4.2-1) that Oregon's biennial I/M program meets all criteria specified in the memo regarding an acceptable I/M program. However, if the biennial I/M emission reduction credit methodology needs revision based upon the results of the EPA sponsored Portland I/M Evaluation Program, the Department will include such information in its alternative transportation measures evaluation program if such information is made available in a reasonable time before June 1980.

8. EPA Comment: "The Emission inventories for VOC in Portland and Salem appear to meet the requirements of the Act and our Guidelines. We do note, however, that they do not include emissions from bulk plants or degreasers. . ."

Response: Estimated emissions from bulk plants and degreasers have been included in the VOC inventories (Appendices 4.3-1A and 4.3-1B.)

9. EPA Comment: The emission inventory for VOC for Portland includes emissions from sources in Clark County, Washington. Such emissions are not discussed anywhere else in the plan. The effects of these emissions on the control strategies and attainment demonstration should be noted.

Response: Section 4.3.2.1 of the Ozone SIP Revision discusses the sources and quality of Washington State emission estimates. The effects of Washington emissions as the relate to potential control strategies as listed in Sections 4.2.3.3 and 4.3.3.3 of the SIP will be evaluated as part of the comprehensive alternatives control strategy analysis.

10. EPA Comment: "For each of the nonattainment areas, the NMHC/NO_x ratios are lower than the 9.5:1 default value recommended in Mr. Rhoads' memorandum of February 21, 1978 entitled "Determination of Reductions Necessary to Attain the Ozone Standard." The high NO_x data should be carefully reviewed to determine its representatives before accepting the low NMHC/NO_x ratio . . . Such low ratios would result in the control agency underpredicting the amounts of reduction needed to meet the ambient standards. . ."

Response: As explained in technical Appendix 4.3-1 the method used to determine the appropriate NMHC/NO_x ratio for the Portland AQMA was discussed with Ned Meyer, ozone modeling expert of EPA. According to our notes of that discussion, Mr. Meyer concurred with the Department's methodology for developing the NMHC/NO_x ratio used in the EKMA modeling process. Based on our discussions with EPA staff and review of EPA modeling guidelines, we believe the methodology used to develop the Portland NMHC/NO_x ratio is technically sound.

11. EPA Comment: "Where 18 month extensions are being sought for submission of plans to meet secondary standards (pursuant to Section 110(b) of the CAA and 40 CFR Section 51.31), the subject requirements (Section 173 only for TSP) need not be adopted until such time as the control strategy is required. However, in the case of CO/O_x plans where the need for a post 1982 attainment date has been documented, Section 172 of the CAA states that all provisions in subsection (b) must be adopted to void the nondiscretionary penalty of no growth of major stationary sources after July 1, 1979. Thus, the interim plans being required at this time for CO and O_x (for areas where post 1982 attainment dates are being identified) must include both permit requirements for major stationary sources (Section 172(b)(6) and Section 173)) and a program for requiring various alternative analyses relating to stationary sources (Section 172(b)(11)(A)."

Response: The Portland-Vancouver Interstate AQMA Carbon Monoxide and Ozone SIP Revisions have been modified (Sections 4.2.4, 4.3.4) and added (Sections 5.2 and 5.3) to address this comment. All applicable new source review (NSR) requirements as specified in the Clean Air Act will be implemented in accordance with EPA requirements. (A more detailed discussion on this subject can be found in the staff report (No. A3) on the "Rules for Special Permit Requirements for Sources Locating in or Near Nonattainment Areas" (OAR 340-20-190 through 195.))

CAS:kmm
A6254.B1

NOTIFICATION OF INTENT TO APPLY FOR FEDERAL AID

For Internal Use Only	[1-8] PNRS #	22	Page One

02	[12] APPLICANT: State of Oregon Dept. of Environmental Quality	[45]	[46] DIVISION: Air Quality	[79]
03	[12] APPLICANT ADDRESS STREET: P.O. Box 1760 522 S.W. Fifth	[45]	[46] CITY: Portland	[60] [76] ZIP: 97207 [80]
04	[12] CONTACT PERSON: Marianne E. Fitzgerald	[45]	[46] AREA CODE: 503 [48] [49] PHONE: 229-5353 [55]	[56] EXTENSION [59]
01	[12] PROJECT TITLE: Revisions to the Oregon State Clean Air Act Implementation Plan			[71]
11	[12] PROJECT LOCATION—CITY	PROJECT LOCATION—COUNTY: Statewide	PROJECT LOCATION SEC: T: R:	[79]

SUMMARY PROJECT DESCRIPTION (ATTACH SUPPORTING DOCUMENTS AS NECESSARY—SEE INSTRUCTIONS ON BACK)

05 To meet Clean Air Act requirements, the DEQ is revising its State Implementation Plan.
06 [12] Included in the revision are strategies to attain air quality standards in Portland, [71]
07 [12] Salem, Eugene and Medford; rules on the Prevention of Significant Deterioration of [71] air quality, plant site emission limits, stack heights to be used in modeling; and
08 [12] [71] miscellaneous other rules. The pollutants of concern in this revision are carbon
09 [12] monoxide, total suspended particulate and ozone (and its precursors). [71]
10 [12] [71] Also enclosed are proposed revisions to the ambient air quality standard for ozone.

12

AMOUNT REQUESTED—FEDERAL FUNDS		NON-FEDERAL MATCHING FUNDS		OTHER	TOTAL
[12] (A) Grant [19]	[20] (B) Other [27]	[28] (C) State [35]	[36] (D) Local [43]	[44] (E) FUNDS [51]	[52] (F) FUNDS [60]
N/A	N/A	N/A	N/A	N/A	

13	[12] TYPE OF OTHER FEDERAL FUNDS (See 12B) [45]	[46] TYPE OF OTHER NON-FEDERAL FUNDS (See 12E)	[79]
14	[12] FEDERAL PROGRAM TITLE		[71]
15	[12] FEDERAL AGENCY NAME: Environmental Protection Agency [45]	[46] FEDERAL SUB-AGENCY NAME	[79]

17 (A) TYPE OF APPLICANT: (Check (X) the single most applicable box)

STATE	INTER-STATE	COUNTY	CITY	SCHOOL DISTRICT	SPECIAL DISTRICT	COMMUNITY ACTION	SPONSORED ORGANIZATION	OTHER
[X] 12	[ ] 13	[ ] 14	[ ] 15	[ ] 16	[ ] 17	[ ] 18	[ ] 19	[ ] 20

(B) TYPE OF ACTION: (Check (X) as many boxes as apply to this action)

NEW GRANT	CONT. GRANT	SUPPLT GRANT	INCREASE DURATION	DECREASE DURATION	CANCELLATION	INCREASE DOLLARS	DECREASE DOLLARS
[ ] 21	[ ] 22	[ ] 23	[ ] 24	[ ] 25	[ ] 26	[ ] 27	[ ] 28

(C) HAS DISTRICT CLEARINGHOUSE BEEN NOTIFIED?	(D) REVIEW REQUIRED by A-95	(E) ENVIRONMENTAL IMPACT	(F) HOUSING RELOCATION REQUIRED
Yes [X] 29 No [ ] 30 Date: April 10, 1979	Yes [X] 31 No [ ] 32	Yes [ ] 33 No [XX] 34	Yes [ ] 35 No [XX] 36

(G) ESTIMATED APPLICATION FILING DATE: [41] MONTH [42] [43] DAY [44] [45] YEAR [46]

OREGON PROJECT NOTIFICATION AND REVIEW SYSTEM

STATE CLEARINGHOUSE

Intergovernmental Relations Division
Room 306, State Library Building
Salem, OR. 97310, Phone: 378-3732

PROJECT ACKNOWLEDGEMENT

APPLICANT: DEQ

PROJECT TITLE: Revised Clean Air Act Implementation Plan

DATE RECEIVED: April 18, 1979

PNRS #: 7904 6 780

Your project has been assigned the file title and number that appear above. Use this reference in all future correspondence regarding this project.

[ ] Initial 30-day State Clearinghouse review of your Notice of Intent began on the above date.

[ ] The 30-day State Clearinghouse review of your final application began on the above date.

[ ] Initial 30-day State Clearinghouse review of this HUD Housing project began on the above date.

[ ] Initial 30-day State Clearinghouse review of your Direct Federal Development project began on the above date.

[ ] The 30-day State Clearinghouse review of your final Environmental Impact Statement began on the above date.

[ ] Initial 45-day State Clearinghouse review of your draft Environmental Impact Statement began on the above date.

[X] The 45-day State Clearinghouse review of your State Plan/ Amendment began on the above date.

Your project must also be submitted to the affected area-wide clearinghouses for review.

If you have questions or need assistance, contact the State Clearinghouse at the above address and telephone number.

5.2 PORTLAND-VANCOUVER INTERSTATE AQMA (OREGON PORTION ONLY) NEW SOURCE REVIEW - CARBON MONOXIDE

Rules OAR 340-20-197 through -195 give the Department expanded authority and requirements regarding Special Permit Requirements for Sources Locating In or Near Nonattainment Areas.

The Clean Air Act Amendments of 1977, Sections 171, 172, 173, require that the State Implementation Plan contain an adequate permit program for the review of major new or modified stationary sources of carbon monoxide. The basic requirement that must be contained in the permit program is that major new or modified sources in nonattainment areas having a potential to emit more than 100 tons/year of a specific air pollutant must meet the following in order for a construction permit to be issued:

1. Lowest achievable emission rate (LAER).
2. Demonstrate that all other facilities under the authority of the permit applicant are in compliance or on a compliance schedule to meet State Rules.
3. Demonstrate that a sufficient growth increment is available in the attainment plan or provide offsets.
4. Provide for an "Alternate (Site) Analysis" as defined in the rule.

In addition, the Department added permit requirements to set plant site emission limits commensurate with airshed carrying capacity at the time an attainment plan is submitted. The rule, OAR 340-20-190 to -197, is in Section 3.2 of the Oregon State Implementation Plan.

These Rules will apply to properties adjoining or within road sections or areas shown not to be in compliance with the carbon monoxide standard (Figure 4.2.3-1) and to all applicable carbon monoxide sources located in attainment areas but which are "significantly impacting" (as defined in the rule) nonattainment roads or areas.

5.3 PORTLAND-VANCOUVER INTERSTATE AIR QUALITY MAINTENANCE AREA (OREGON PORTION) NEW SOURCE REVIEW - OZONE

Rules OAR 340-20-190 through 195 give the Department expanded authority and requirements regarding Special Permit Requirements for Sources Locating In or Near Nonattainment Areas.

The Clean Air Act Amendments of 1977, Sections 171, 172, 173, require that the State Implementation Plan contain an adequate permit program for the review of major new or modified sources of volatile organic compounds. The basic requirement that must be contained in the permit program is that major new or modified sources in nonattainment areas having a potential to emit more than 100 tons/year of a specific air pollutant must meet the following in order for a construction permit to be issued:

1. Lowest achievable emission rate (LAER).
2. Demonstrate that all other facilities under the authority of the permit applicant are in compliance or on a compliance schedule to meet State Rules.
3. Demonstrate that a sufficient growth increment is available in the attainment plan or provide offsets.
4. Provide for an "Alternative (Site) Analysis" as defined in the rule.

In addition, the Department added permit requirements to set plant site emission limits commensurate with airshed carrying capacity at the time an attainment plan is submitted. The rules, OAR 340-20-190 to -197, are in Section 3.2 of the Oregon State Implementation Plan.

These rules will apply to applicable sources locating within the area shown in Figure 4.3.0 (Oregon portion only) and all applicable sources located outside of the designated ozone nonattainment area but which are shown to "significantly impact" (as defined in the rules) the nonattainment area.

CAS:kmm

A6211.A3

7.2 PORTLAND-VANCOUVER INTERSTATE AQMA (Oregon Portion) - CARBON MONOXIDE MONITORING PROGRAM

Air quality monitoring for carbon monoxide within the AQMA began as early as 1965 with routine monitoring established at West Burnside and Broadway in Portland's Central Business District in 1967. Since that time, continuous monitoring sites operated by DEQ have been established at three other locations in Portland.

Each site was located in an area of high traffic density. The sampling line intake, measurement methods and quality assurance procedures conform to specifications required by the Environmental Protection Agency Standing Air Monitoring Work Group. Table 7.2-1 lists the locations of the sites shown in Figure 7.2-1.

Table 7.2-1

Portland-Vancouver Interstate AQMA (Oregon Portion)

Carbon Monoxide Surveillance Sites

Location	Site No.	Date Established	Land Use	Designation
718 W. Burnside	2614176	1965	CBD	NAMS(1)
4112 NE Sandy Blvd	2614069	Dec. 1972	Commercial	SLAMS(2)
600 SW 5th*	2614185	Sept. 1975	CBD	SLAMS
1420 NE Halsey	2614186	Oct. 1975	Commercial	SLAMS

* Actual probe intake is located on S.W. 4th, 30 feet south of Alder Street.

(1) National Air Monitoring Site

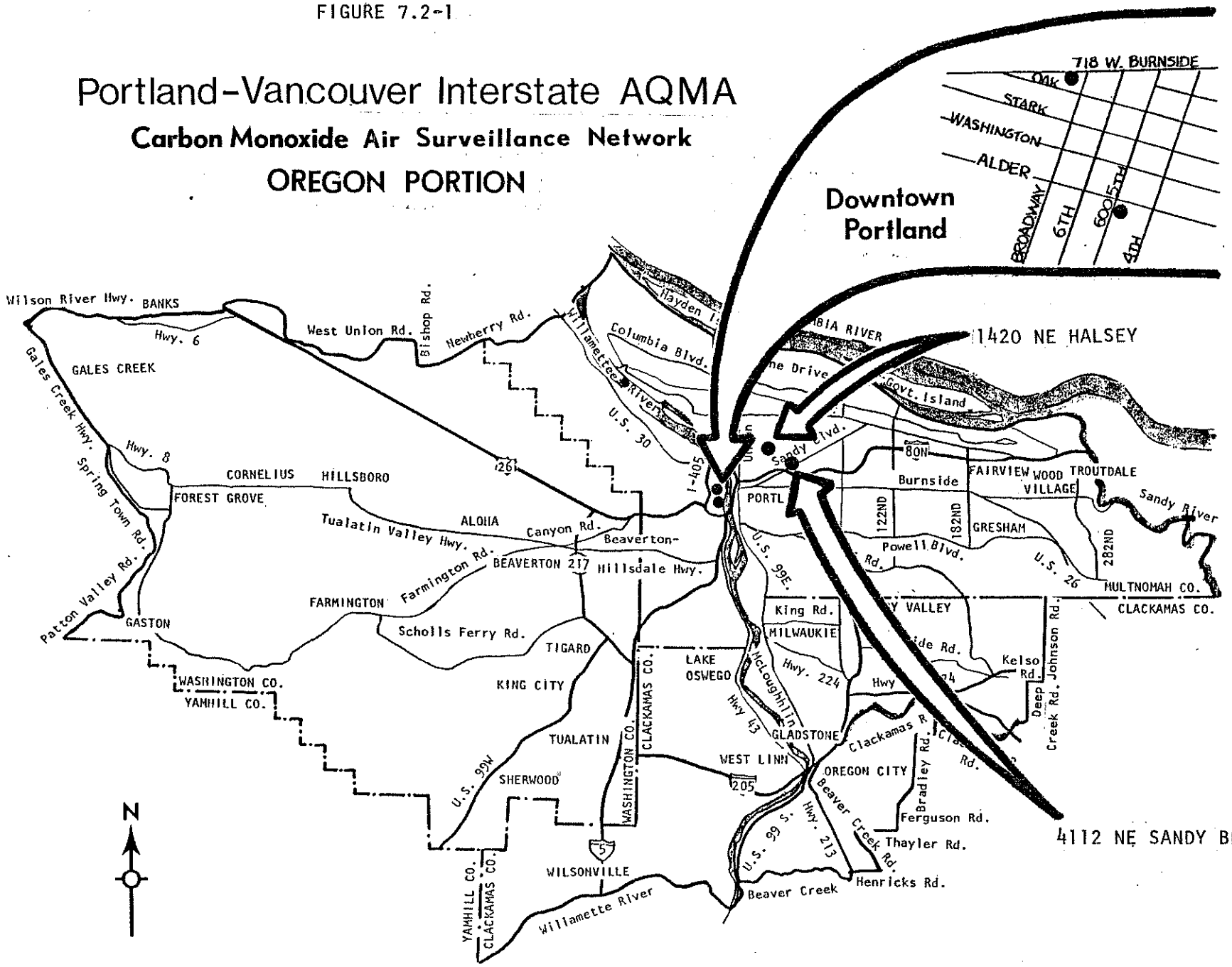
(2) State and Local Air Monitoring Site

FIGURE 7.2-1

Portland-Vancouver Interstate AQMA

Carbon Monoxide Air Surveillance Network

OREGON PORTION



7.3 PORTLAND-VANCOUVER INTERSTATE AQMA (Oregon Portion) - OZONE MONITORING PROGRAM

Ozone monitoring within the Portland-Vancouver Interstate AQMA began in 1965 at the West Burnside site location in the Central Business District of Portland. Since 1965, several surveys have been conducted to locate the area of maximum concentration south of Portland due to the transport effect of predominantly northerly summer winds. The Milwaukie site, established in June, 1974, was initially believed to be the point of maximum concentration. A permanent ozone monitoring site was established in the Carus area in October, 1975. Aircraft surveys in the summer of 1976 identified this area as a maximum ozone impact area. Ozone monitoring is conducted north of Portland at the Sauvie Island site, established in June, 1976. Generally, this site measures background ozone concentrations due to the fact that winds are predominantly from the northwest. All sites use Federal Reference method monitoring equipment and calibration methods. The data from the Carus site which meets all applicable EPA Standing Air Monitoring Work Group requirements regarding site location, intake height above ground, monitoring equipment, quality assurance procedures and other specifications, was used to determine the level of control to meet the federal ozone standard. Table 7.3-1 lists each site. Figure 7.3-1 shows its location.

Table 7.3-1

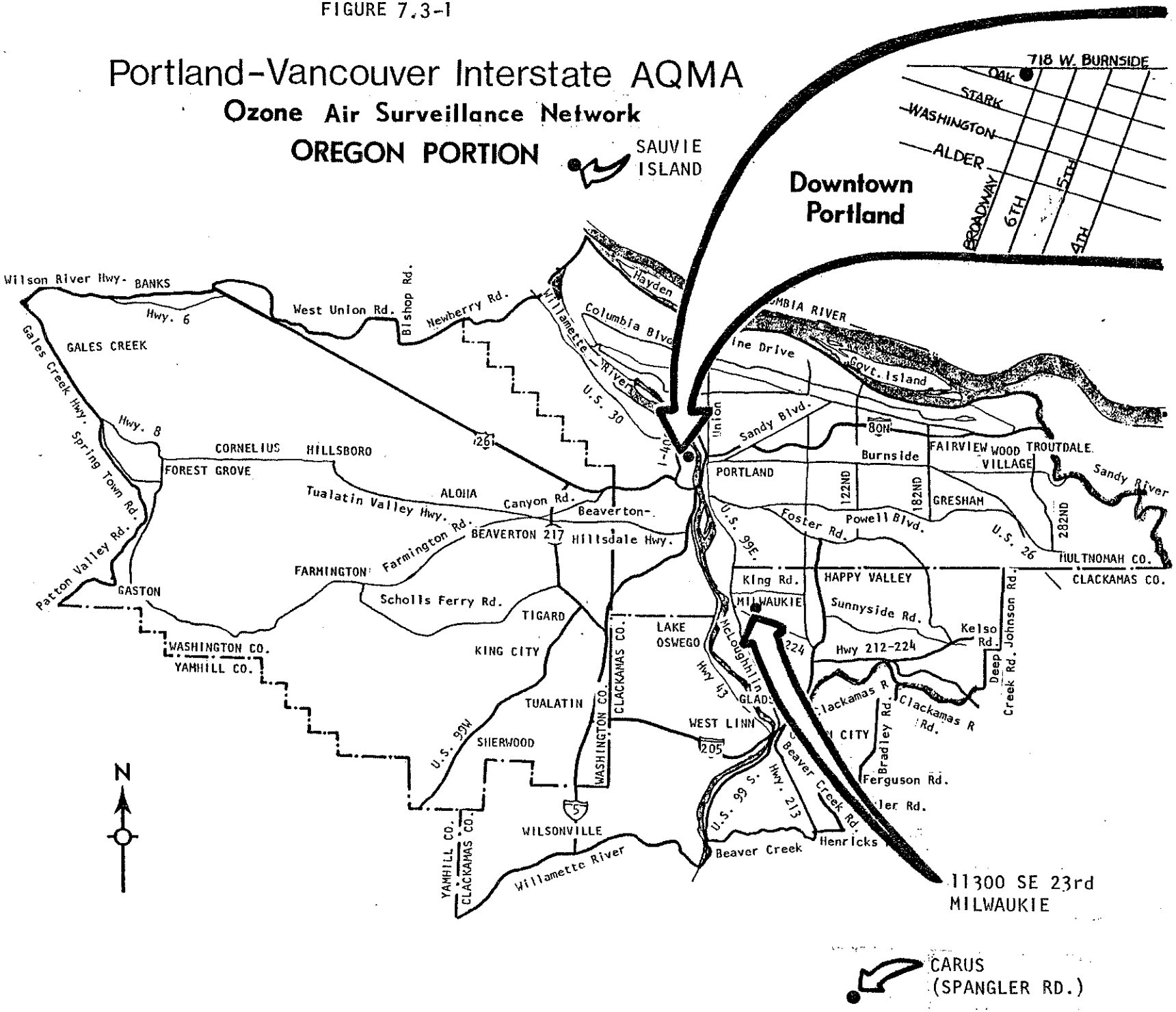
Portland-Vancouver Interstate AQMA (Oregon Portion)

Ozone Air Surveillance Network

Location	Site No.	Land Use	Designation
718 W. Burnside	2614176	Central Business District	SLAMS(1)
11300 SE 23rd, Milwaukie	0343111	Milwaukie-Residential Area	SLAMS
Carus (Spangler Rd.)	0300101	Rural-maximum Concentration Area	NAMS(2)
Sauvie Island	0500103	Rural-Background monitoring	SLAMS

(1) State and Local Air Monitoring Station
(2) National Air Monitoring Station

FIGURE 7.3-1


Portland-Vancouver Interstate AQMA
Ozone Air Surveillance Network
OREGON PORTION
SAUVIE ISLAND
Downtown Portland
718 W. BURNSIDE
Oak
STARK
WASHINGTON
ALDER
BROADWAY
6TH
15TH
4TH
Wilson River Hwy.
BANKS
Hwy. 6
West Union Rd.
Bishop Rd.
Newberry Rd.
Willamette River
Columbia Blvd
Hayden
COLUMBIA RIVER
Ine Drive
Govt. Island
GALES CREEK
Gales Creek Hwy.
Hwy. 8
Spring Town Rd.
Patton Valley Rd.
CORNELIUS
HILLSBORO
FOREST GROVE
Tualatin Valley Hwy.
ALOHA
Canyon Rd.
Beaverton-
BEAVERTON
Farmington Rd.
Hillsdale Hwy.
FARMINGTON
GASTON
Scholls Ferry Rd.
TIGARD
WASHINGTON CO.
YAMHILL CO.
KING CITY
TUALATIN
SHERWOOD
U.S. 99W
WASHINGTON CO.
CLACKAMAS CO.
WILSONVILLE
YAMHILL CO.
CLACKAMAS CO.
Willamette River
I-405
U.S. 30
Union
Sandy Blvd.
PORTLAND
80N
Burnside
FAIRVIEW
WOOD VILLAGE
TROUTDALE
Sandy River
122ND
182ND
282ND
GRESHAM
Foster Rd.
Powell Blvd.
U.S. 26
U.S. 99E
MULTNOMAH CO.
CLACKAMAS CO.
King Rd.
HAPPY VALLEY
MILWAUKIE
Sunnyside Rd.
Kelso Rd.
Hwy 212-224
224
LAKE OSWEGO
McLoughlin Hwy 43
GLADSTONE
WEST LINN
205
Clackamas R
Clackamas R Rd.
Deep Creek Rd.
Johnson Rd.
Bradley Rd.
CITY
Ferguson Rd.
U.S. 99 S.
Hwy. 213
Beaver Creek Rd.
Beaver Creek
Henricks
N
11300 SE 23rd
MILWAUKIE
CARUS
(SPANGLER RD.)

Environmental Quality Commission

522 S.W. 5th AVENUE, P.O. BOX 1760, PORTLAND, OREGON 97207 PHONE (503) 229-5696

MEMORANDUM

To: Environmental Quality Commission

From: Director

Subject: Agenda Item No. B2, June 8, 1979, EQC Meeting

Adoption of Carbon Monoxide and Ozone Control Strategies for the City of Salem as a Revision to the State Implementation Plan

BACKGROUND AND PROBLEM STATEMENT

1. On March 3, 1978 the EPA designated Salem to be a non-attainment area for Carbon Monoxide (CO) and Ozone (O_3) federal primary standards. A plan to bring Salem into attainment with those standards by December 31, 1982 has been developed, and a public hearing was held on May 4, 1979 to secure comment. The plan is needed in order to meet the requirements of the Clean Air Act Amendments of 1977. The proposed transportation control strategy plan is shown in Attachment 5.

2. Authority to Act

   ORS 468.305 and the Federal Clean Air Act as amended 1977 (PL 95-95) provide the legal authority to adopt the proposed rule. The Statement of Need for Rulemaking is shown in Attachment 1. The Land Use Consistency Statement is shown in Attachment 2.

Alternative Courses of Action

If the proposed rule is not adopted, Section 176 of the Clean Air Act Amendments of 1977 states that the Administrator of the EPA shall not approve any projects or award any federal transportation assistance grants other than for safety, mass transit, or transportation improvement projects related to air quality improvement or maintenance. Rejection of the proposed rule could also result in sanctions related to sewage treatment grants and growth sanctions.

Contains Recycled Materials

Rule Development Process

Mid-Willamette Valley Council of Governments, as the designated lead agency, has had the major responsibility for producing the control strategy. The proposed plan has been reviewed by DEQ staff. Parts of the plan have been reviewed by the Attorney General's staff. No oral testimony was offered at the public hearing. The only written comments received by the Department were submitted by the EPA and are attached as they appear in the Hearing Officer's Report (Attachment 3). The plan has been through the A-95 review process.

The following format will be used in responding to the major issues raised by the EPA: Major Issue, Alternatives for Resolution, and Recommended Resolution. General comments related to both Carbon Monoxide and Ozone will be followed by comments related specifically to Carbon Monoxide with comments related specifically to Ozone appearing last. All comments received from the EPA along with the Department's responses are shown in Attachment 4. To the extent practicable, the attainment plan document has been modified in accordance with the comments received.

Major Issue

Emissions for 1982 should have been calculated, not for 1983.

Alternatives for Resolution

1. Rerun all transportation models for 1982, calculate 1982 composite emission factors for mobile sources, and execute a 1982 run of SAPOLLUT. Finally, recalculate grid Carbon Monoxide (CO) concentrations and CO screening tables.

2. Do not re-run transportation models, but calculate 1982 composite emission factors. Compare difference between 1983 CO emission factor and 1982 CO emission factor with difference in Vehicle Miles Traveled (VMT) growth. Estimate effect on CO projections, where predicted 1983 concentrations are highest. Document results of analysis in a new appendix.

   Change the ozone analysis by incorporating 1982 emissions.

Recommended Resolution

No clear guidance was ever received from the EPA as to whether 1982 or 1983 should be one of the target years for analysis. In fact, through verbal communications with EPA Region X in early 1978, the Department was led to believe that 1983 would be an acceptable analysis year, and the Salem work program was drafted accordingly. Furthermore, the analysis year, 1983, was explicitly labeled in an October submittal to EPA, responding to their questionnaires on modeling methodologies to be used in the SIP work. No negative comment on selection of 1983 was received from EPA in their response to our completed questionnaire.

Because of the limited amount of time available to meet the EPA criticism, and still meet the July 1, 1979 submittal date, Alternative 2 is recommended as a solution. Alternative 1 would require about one month of work, coordinated between the Department and the Oregon Department of Transportation. A question would probably arise as to how the effort would be funded. Alternative 2 can be accomplished within a day.

The analysis for Carbon Monoxide, per Alternative 2, is documented in Appendix 4.4-10. The emission inventory for ozone analysis has been changed to incorporate 1982 emissions. The revised emission inventory is contained in Appendix 4.5-1. The results indicate that the use of 1982 emissions do not change the conclusions that Salem is projected to attain federal CO and ozone standards by December 31, 1982.

Major Issue

The New Source Review rules for carbon monoxide (CO) should be applicable to any source which significantly impacts any area of actual non-attainment, not just any source that is located only within the designated non-attainment area.

Alternatives for Resolution

1. Change text in Section 5.4 to indicate clearly that stationary CO sources in attainment areas which impact the non-attainment area are incorporated in the New Source Review rule under OAR 340-20-193 through 340-20-195.

2. Leave text in Section 5.4 unchanged.

Recommended Resolution

The text will be appropriately changed as indicated in Alternative 1.

Major Issue

The NMHC/NO_X ratio used in the Salem Non-Attainment Area is lower than the 9.5/1 default value recommended by EPA. EPA requested that the NO_X portion of the ratio be reviewed.

Alternatives

1. Review NO_X data and use DEQ's NMHC/NO_X ratio of 7.9/1.

2. Use EPA default NMHC/NO_X ratio of 9.5/1.

Recommended Resolution

Either alternative 1 or 2 is acceptable, since Salem is projected to be in compliance if either the 7.9/1 or 9.5/1 ratio is used in the analysis. However, the NO_x data appears to be representative, and since the 7.9/1 ratio was calculated using EPA guidelines, the Department sees no reason not to use it.

Major Issue

The New Source Review rules for ozone should clearly identify the geographic area to which a growth allowance applies. Since Volatile Organic Compound (VOC) sources may need offsets, even those that are as far away as 36 hours of transport time from the non-attainment area should be addressed. Has general area source growth within the Willamette Valley (especially Portland) been considered in determining the available growth allowance?

Alternatives for Resolution

Rely on existing Rule, OAR 340-20-195, which contains a review process applicable to major new or modified VOC sources, proposing to locate in attainment areas. If such VOC sources exceed specific incremental impacts, then offsets or the growth increment identified in the plan must be applied.

Recommended Resolution

No change.

Major Elements of the Proposed Rule and Principal Impacts

The proposed rule contains the following elements for reducing CO and VOC emissions: the Federal Motor Vehicle Emission control Program (FMVECP) and the Volatile Organic Compound (VOC) Rules. The following assurance mechanisms have been incorporated into the proposed rule to ensure that emissions do not exceed the levels needed to achieve Reasonable Further Progress, leading to attainment: the Plant Site Emission Limit rule and the Special Permit Requirements (New Source Review) Rules.

The costs of the FMVECP and VOC Rules are estimated below:

Strategy			Approximate Cost
FMVECP			$46,000,000
VOC Rules			
Bulk Plants	5 @ $6,500	=	32,500
Gas Stations	50 @ $1,350	=	67,500

On a per capita basis, the FMVECP will cost approximately $390, based on the 1977 Salem Area Transportation Study population. The cost to bulk plants is based upon the requirement that a vapor balance system be installed for incoming transfer from terminal plants. Approximately one half of Salem's 100 gasoline stations are supplied by terminals. The other half are supplied by bulk plants and would only be required to provide for submerged fill of storage tanks, the cost of which is negligible. The terminal supplied stations would be required to install a vapor balance system.

The major impact of the Plant Site Emission Limit Rule would be to require future emission increases to use some of the growth margin in the plan or to obtain offsets. The major impact of the New Source Review Rules would be to require air quality impact modeling and alternative site analysis for major sources. Major new sources (100 tons/year potential emissions of either CO or VOC) would also be required to limit emissions to Lowest Achievable Emission Rate, defined in OAR 340-20-191.

Summation

1. A plan has been developed to bring Salem into attainment with the federal primary standards for carbon Monoxide (CO) and ozone (O_3) by December 31, 1982. A public hearing was held on May 4, 1979, to secure comment. The proposed plan is needed in order to meet the requirements of the Clean Air Act amendments of 1977.

2. Mid-Willamette Valley Council of Governments had the major responsibility for producing the attainment plan. The proposed plan has been reviewed by the Department's staff and the Attorney General's staff. Responses to EPA comments are shown in Attachment 4. To the extent practicable, the attainment plan document has been modified in accordance with the comments received.

3. The plan consists of the Federal Motor Vehicle Emission Control Program and the Volatile Organic Compound Rules for reducing emissions from stationary sources and the Plant Site Emission Rule and the Special Permit Requirements (New Source Review) Rules for assuring that emissions stay within the projections leading to attainment.

4. The Federal Motor Vehicle Emission Control Program is estimated to cost $390 per capita while the VOC Rules would cost each bulk plant $6,500 and gas stations (those served by terminals - approximately 50) $1,350 each.

5. Failure to adopt the proposed rule could lead to sanctions under Sections 176 or 316 or the Clean Air Act. Section 176 affects federal grants for certain transportation projects, and Section 316 affects federal grants for sewage treatment works.

DIRECTOR'S RECOMMENDATION

Based upon the summation, it is recommended that the EQC adopt Salem's attainment strategy for Carbon Monoxide and Ozone and direct the Department to submit it to the EPA as a revision of the State Implementation Plan.

Bill

WILLIAM H. YOUNG
Director

HWHarris:mg
229-6086
May 29, 1979
Attachments:
1) Statement of Need for Rulemaking
2) Land Use Consistency Statement
3) Hearing Officer's Report
4) Department's Response to EPA Comments
5) Proposed Transportation Control Strategy for Salem

F20:A6253.4

Attachment 1

STATEMENT OF NEED FOR RULEMAKING

a. Legal Authority: ORS 468.305 and Federal Clean Air Act as Amended 1977 (PL 95-95).

b. Need for Rule: The Salem area is not in attainment with State and Federal ambient air quality standards for carbon monoxide and ozone. The Clean Air Act requires that areas attain standards by December 31, 1982. The proposed control strategy brings the area into attainment by that date.

c. Documents Relied Upon:

1. Clean Air Act Amendments of 1977, P.L. 95-95, 8/7/77.

2. DEQ Updated Emission Inventory

3. SAPOLLUT Computer Printout - Oregon Department of Transportation

4. EPA (1977) Uses, Limitations and Technical Basis for Procedures for Quantifying Relationships Between Photochemical Oxidants and Precursors, EPA-450/2-77-021a.

5. EPA (April, 1978), Workshop on Requirements for Nonattainment Area Plans, Revised ed.

6. Rhoads, Richard G. (memo dated Aug. 16, 1978), Clarification of Attainment/Nonattainment Evaluation Guidance.

7. OAR 340-22-100 to 340-22-201 relating to Volatile Organic Compounds.

8. Rhoads, Richard (memo dated February 21, 1979) Determination of Reductions Necessary to Attain the Ozone Standard.

9. Oregon Graduate Center (1977), Survey of Ozone and Light Scattering Particles in Western Oregon. p. 98.

10. Wood, Richard M. (May 16, 1978), Carbon Monoxide Concentration Nomograph.

11. Oregon Air Quality Report 1976, by State of Oregon, Department of Environmental Quality (DEQ).

12. EPA (January, 1979) Guidelines for the Interpretation of Ozone Air Quality Standards.

ATTACHMENT 2

LAND USE CONSISTENCY STATEMENT

for

PROPOSED REVISION TO THE CLEAN AIR ACT STATE IMPLEMENTATION PLAN
REGARDING THE CARBON MONOXIDE AND OZONE CONTROL STRATEGY
FOR THE SALEM NON-ATTAINMENT AREA

The proposals described herein appear to conform with Statewide Planning Goals. These proposals appear to conform with Goal Number 6 (Air, Water and Land Resources Quality). The proposals do not relate to Goal Number 11 (Public Facilities and Services). There is apparently no conflict with other goals.

With regard to Goal 6, the proposals provide for the attainment of ambient federal and state air quality standards for carbon monoxide and ozone in the Salem Non-attainment Area by December 31, 1982. The proposals are being submitted as a revision to the State Implementation Plan.

It is requested that local, state, and federal agencies review the proposed action and comment on possible conflicts with their programs affecting land use and with Statewide Planning Goals within their expertise and jurisdiction.

The Department of Environmental Quality intends to ask the Department of Land Conservation and Development to mediate any apparent conflicts brought to our attention by local, state, or federal authorities.

ROBERT W STRAUB
GOVERNOR

Environmental Quality Commission

522 S.W. 5th AVENUE, P.O. BOX 1760, PORTLAND, OREGON 97207 PHONE (503) 229-5696

MEMORANDUM

To: Environmental Quality Commission

From: Hearing Officer

Subject: Hearing Report: Proposed Revision of the State Implementation Plan Regarding Carbon Monoxide and Ozone Control Strategy for the Salem Non-attainment Area

SUMMARY OF PROCEDURE

Commencing at 2:00 p.m. on Friday, May 4, 1979, a public hearing was held in Room 129 of the Marion County Courthouse in Salem, Oregon. Of the five people in attendance, none offered testimony. Written testimony, a copy attached, was received from the Environmental Protection Agency, Region X.

SUMMARY OF WRITTEN TESTIMONY

EPA, Region X believes that the following items should be considered:

1. The Salem VOC emission inventory does not include emissions from bulk plants, degreasers, other solvent uses, or cutback asphalt.

2. The NMHC/NO_X ratio is less than the 9.5:1 EPA recommended default value. The amount of reduction needed to meet ambient standards could be underestimated.

3. The New Source Review rules for carbon monoxide (CO) should be applicable to any source which significantly impacts any area of actual nonattainment, not just on eight separate street segments.

4. The New Source Review rules for ozone should clearly identify the geographic area to which a growth allowance applies. Since Volatile Organic Compound (VOC) sources may need offsets, even those that are as far away as 36 hours of transport time from the nonattainment area, will such a source be able to utilize part of the allowance? Has general area source growth within the Willamette Valley (especially Portland) been considered in determining the available growth allowance?

Contains Recycled Materials

5. Documentation describing how parking lot emissions were accounted for in the emission inventories is necessary.

6. The required VOC emission reductions for the three ozone nonattainment areas, Salem, Medford, and Portland, appear to be inconsistent.

7. The large amounts of CO and VOC from mobile sources in the emission inventory cannot be justified.

RECOMMENDATION

Your hearing officer makes no recommendation in this matter.

Respectfully submitted,

D. St Louis

HWH:kmm
229-6086
May 11, 1979

ADDENDUM 1

to Hearing Report

Written EPA comments received at the time of the Public Hearing, are listed below.

1. The emission inventories for VOC in Portland and Salem appear to meet the requirements of the Act and our Guidelines. We do note, however, that they do not include emissions from bulk plants or degreasers. Likewise, the Salem inventory does not include emissions from "other solvent uses" or cutback asphalt.

2. For each of the non-attainment areas, the NMHC/NO_X ratios are lower than the 9.5:1 default value recommended in Mr. Rhoads' memorandum of February 21, 1979, entitled "Determination of Reductins Necessary to Attain the Ozone Standard." The high NO_X data should be carefully reviewed to determine its representativeness before accepting the low NMHC/NO_X ratio. This is particularly true for the Medford-Ashland area where the ratio is 3.4:1. Such low ratios would result in the control agency underpredicting the amounts of reduction needed to meet the ambient standards. Also, high ambient concentrations of NO_X could indicate a violation of the NO_2 standard.

3. Section 5.4 Salem NSR - CO

   Pg.1: These rules should be applicable to any source which significantly impacts any area of actual non-attainment, not just on eight separate street segments.

   RECOMMENDATION: Change text to reflect that rules apply where necessary.

4. Section 5.5 Salem NSR - O_3

   Pg. 1: If the state chooses to establish a growth allowance then it must be made clear for what geographic area the allowance is applicable. Since VOC sources may need offsets even if they are up to 36 hours of transport time distant from the designated non-attainment area, will such a source be able to utilize part of the allowance. Also, has general area source growth within the Willamette Valley (especially Portland) been considered in determining the available growth allowance?

   ACTION REQUIRED: Expand and clarify the growth allowance to meet the requirements of Sections 172 (b)(6) and 173 (1)(B).

5. There seems to be a major question concerning parking lot and parking activity emissions for all four non-attainment areas. Documentation

describing how these emissions were accounted for in the various emission inventories is necessary.

6. We do not understand the inconsistencies in projections of VOC emission reductions and ozone concentrations. For example:

City	% Reduction in VOC Emission (1977 to 1982)
Portland	38
Medford	14
Salem	30

7. We can't justify the large amounts of CO and VOC's related to mobile source(s). For 1983 growth is equal to 1983 Baseline. Therefore, VMT has doubled from 1977 to 1983.

ADDENDUM 2

to Hearing Report

The following comments from EPA arrived too late to appear in the Hearing Officer's Report.

1. "Estimation of emission reductions needed to demonstrate standard attainment by 1982 and 1987 (including emission growth projections)."

   Documentation Required: The emission projections were for 1983 rather than 1982. Determination of emission reductions needed to demonstrate standard attainment by 1982 must be based upon projections to 1982, not 1983. The approach used in the Salem analysis (using 1983) does not appear to be consistent with the other non-attainment areas for Oregon. These projections must be revised incorporating the 1982 emission factors. A specific air quality review of the ozone technical analysis may result in additional concerns or required modifications. These additional comments will be sent out after the review is complete.

2. "Designation and certification of lead agency for non-attainment areas."

   Incorrect Statement-Correction Needed: Page 1 of both the CO and Ox submissions, page 24 of the CO submission, and page 28 of the Ox submission indicate that EPA designated MWCOG as the local lead agency for air quality planning at the request of the Governor of Oregon. This is incorrect.

   The Governor of Oregon made the lead agency designation on March 30, 1978, in a letter to EPA. EPA concurred with the Governor's choice on April 14, 1978.

3. Section 4.4.3.4a - The phrase "...would most likely not..." is not very concrete. Eliminate "most likely."

4. Section 4.4.3.4c - The Section is not specific enough as to when and how plant site CO emission limits will be set. It appears that these limits might be set. Provide information as to when and how such limits will be set.

5. Section 4.4.4 - The explanation of new source rules to be found in Section 5.4 is missing. Provide missing pages.

6. Section 4.4.4.1 - The PSEL rule "...would clearly delegate authority..."--when, how, etc? Since a regulation either does or does not do something, it is recommended that the word "would" be eliminated and the statement be made more positive.

7. Section 4.5.0.02 - An EPA approved model is cited for estimation of VOC reductions. Nothing is provided about the details of the model.

8. Section 4.5.2.2 - Table 4.5.2-1 describes growth indicies for the Salem area which do not cover all categories of sources shown in the emission inventory. It is not clear how the projected growth of sources not shown is determined.

9. Section 4.5.2.2, para 6, para 2 - The statement concerning 100 tons/year potential emission does not appear to relate to anything. If the 100 ton/year criteria has any particular significance that significance must be clearly stated.

10. Section 4.5.3.1, para 2 - The 982 ton/year value is a typo error, it should be 952 tons/year.

11. Section 4.5.3.2, para 2 - The control startegy indicates RACT will be implemented for 100 tons/year sources yet section 4.5.2.2 at page 6 indicates there are no 100 ton sources.

12. Section 4.5.3.2, para 3 - The rules specified to manage growth omit the requirement contained in 340-22-104 where LAER must be installed on new or modified 100 ton VOC sources.

13. Section 4.5.4.1 - The date shown for adopting Group II VOC rules is 1983. Since the Group II CTG documents are already published SIP revisions to include those categories are due on January 1, 1980.

14. Section 4.5.4.1, para 2 - It is not clear why VOC rules do not apply to sources other than service stations and cutback asphalt. If the reason is that no other Group I VOC sources exist then it should be so stated.

15. Section 4.5.5, Figure 4.5.5-1 - The HC emissions line shows a gradual decrease starting in 1977 yet the applicable VOC rules only become effective after 1981. The graph should reflect this step change.

16. Appendix 4.5-1 - No reference or method is cited for the VOC emission inventory.

ATTACHMENT 4

RESPONSE TO EPA COMMENTS

The first section of this report labels EPA comments that are believed to be significant as Major Issue followed by Alternatives for Resolution and Recommended Resolution. The second section contains the EPA comment and the Department's response.

I. Significant Issues

Major Issue

Emissions for 1982 should have been calculated, not for 1983.

Alternatives for Resolution

1. Rerun all transportation models for 1982, calculate 1982 composite emission factors for mobile sources, and execute a 1982 run of SAPOLLUT. Finally, recalculate grid carbon monoxide (CO) concentrations and CO screening tables.

2. Do not rerun transportation models, but calculate 1982 composite emission factors. Compare difference between 1983 CO emission factor and 1982 CO emission factor with difference in vehicle miles traveled (VMT) growth. Estimate effect on CO projections, where predicted 1983 concentrations are highest. Document results of the CO analysis in a new appendix.

   Change the Ozone analysis by incorporating 1982 emissions.

Recommended Resolution

No clear guidance was ever received from the EPA as to whether 1982 or 1983 should be one of the target years for analysis. In fact, through verbal communications with EPA Region X in early 1978, the Department was led to believe that 1983 would be an acceptable analysis year, and the Salem work program was drafted accordingly. Furthermore, the analysis year, 1983, was explicitly labeled in an October submittal to EPA, responding to their questionnaires on modeling methodologies to be used in the SIP work. No negative comment on selection of 1983 was received from EPA in their response to our completed questionnaire.

Because of the limited amount of time available to meet the EPA criticism, and still meet the July 1, 1979, submittal date, Alternative 2 is recommended as a solution. Alternative 1 would require about one month of work, coordinated between the Department and the Oregon Department of Transportation. Questions would probably arise as to how the effort would be funded. Alternative 2 can be accomplished within a day.

The results of the analysis, documented in Appendix 4.4-10 and 4.5-1, do not change the conclusion that Salem is projected to attain federal CO and ozone standards by December 31, 1982.

Major Issue

The New Source Review rules for carbon monoxide (CO) should be applicable to any source which significantly impacts any area of actual non-attainment, not just on eight separate street segments.

Alternatives for Resolution

1. Change text in Section 5.4 to indicate clearly that stationary CO sources in attainment areas which impact the non-attainment area are incorporated in the New Source Review rule under OAR 340-20-193 through 340-20-195.

2. Leave text in Section 5.4 unchanged.

Recommended Resolution

The text will be appropriately changed as indicated in Alternative 1.

Major Issue

The NMHC/NO_X ratio used in the Salem Non-Attainment Area is lower than the 9.5/1 default value recommended by EPA. EPA requested that the NO_X portion of the ratio be reviewed.

Alternatives

1. Review NO_X data and use DEQ's NMHC/NO_X ratio of 7.9/1.

2. Use EPA default NMHC/NO_X ratio of 9.5/1.

Recommended Resolution

Either alternative 1 or 2 is acceptable, since Salem is projected to be in compliance if either the 7.9/1 or 9.5/1 ratio is used in the analysis. However, the NO_X data appears to be representative, and since the 7.9/1 ratio was calculated using EPA guidelines, the Department sees no reason not to use it.

Major Issue

The New Source Review rules for ozone should clearly identify the geographic area to which a growth allowance applies. Since Volatile Organic compound (VOC) sources may need offsets, even those that are as far away as 36 hours of transport time from the non-attainment area, will such a source be able to utilize part of the allowance? Has general area

EPA Comment:

"Designation and certification of lead agency for non-attainment areas."

Incorrect Statement-Correction Needed: Page 1 of both the CO and Ox submissions, page 24 of the CO submission, and page 28 of the Ox submission indicate that EPA designated MWCOG as the local lead agency for air quality planning at the request of the Governor of Oregon. This is incorrect.

The Governor of Oregon made the lead agency designation on March 30, 1978, in a letter to EPA. EPA concurred with the Governor's choice on April 14, 1978.

Response:

Text has been changed.

EPA Comment:

We do not understand the apparent inconsistencies in the predicted VOC emission reductions from 1977 to 1982 in the three cities that are non-attainment for oxidants. We are also confused about the wide ranges and differences in the wide ranges and differnces in the hydrocarbon emission inventory (the ratio of mobile to stationary source emissions) from city to city.

Response:

Clarified by telephone conversation between Ann Batson and Loren McPhillips. EPA is satisfied that calculations were in accordance with their format.

EPA Comment:

Section 4.4.3.4a - The phrase "...would most likely not..." is not very concrete. Eliminate "most likely."

Response:

The phrase should be left unchanged. Because additional reductions in Carbon Monoxide emissions could possibly provide the necessary increment, the qualifier "most likely" is appropriate.

EPA Comment:

Section 4.4.3.4c - The Section is not specific enough as to when and how plant site CO emission limits will be set. It appears that these limits might be set. Provide information as to when and how such limits will be set.

Response:

The Department will set limits after the plan is approved. The limits will be based on the Emission Inventory documented in the plan.

EPA Comment:

Section 4.4.4 - The explanation of new source rules to be found in Section 5.4 is missing. Provide missing pages.

Response:

Explanation is in Section 5.4.

EPA Comment:

Section 4.4.4.1 - The PSEL rule "...would clearly delegate authority..."--when, how, etc? Since a regulation either does or does not do something, it is recommended that the word "would" be eliminated and the statement be made more positive.

Response:

Text has been changed.

EPA Comment:

Section 4.5.0.02 - An EPA approved model is cited for estimation of VOC reductions. Nothing is provided about the details of the model.

Response:

Text has been changed to include the name of the model. The details of the model are contained in Appendix 4.5-2.

EPA Comment:

Section 4.5.2.2 - Table 4.5.2-1 describes growth indicies for the Salem area which do not cover all categories of sources shown in the emission inventory. It is not clear how the projected growth of sources not shown is determined.

Response:

Table 4.5.2-1 was deleted in a later revision of Section 4.5. The comment no longer applies to the SIP.

EPA Comment:

Section 4.5.2.2, para 6, para 2 - The statement concerning 100 tons/year potential emission does not appear to relate to anything.

If the 100 ton/year criteria has any particular significance that significance must be clearly stated.

Response:

EPA requires that all sources over 100 tons/year potential be listed in the SIP. The text simply states that there are no stationary sources which fall into the EPA's definition of point source, which is a source of 100 tons/year potential emissions. Since the explanation is not obvious to EPA, the text has been changed slightly for clarity.

EPA Comment:

Section 4.5.3.1, para 2 - The 982 ton/year value is a typo error, it should be 952 tons/year.

Response:

Typo has been corrected.

EPA Comment:

Section 4.5.3.2, para 2 - The control startegy indicates RACT will be implemented for 100 tons/year sources yet section 4.5.2.2 at page 6 indicates there are no 100 ton sources.

Response:

The 100 ton/year stipulation has been deleted from the text. Any VOC source for which a Control Technology Guideline has been issued is subject to RACT.

EPA Comment:

Section 4.5.3.2, para 3 - The rules specified to manage growth omit the requirement contained in 340-22-104 where LAER must be installed on new or modified 100 ton VOC sources.

Response:

OAR 340-22-104 is an interim rule which will be revoked when the proposed New Source Review Rules (OAR 340-20-190 through 198) are adopted. LAER is contained in the New Source Review Rules, which are referenced in Section 4.5.3.2, paragraph 3. The effects of the New Source Review Rules (including LAER) on the Salem Non-Attainment area are enumerated in Section 5.5.

EPA Comment:

Section 4.5.4.1 - The date shown for adopting Group II VOC rules is 1983. Since the Group II CTG documents are already published SIP revisions to include those categories are due on January 1, 1980.

Response:

Text has been changed.

EPA Comment:

Section 4.5.4.1, para 2 - It is not clear why VOC rules do not apply to sources other than service stations and cutback asphalt. If the reason is that no other Group I VOC sources exist then it should be so stated.

Response:

Service stations and cutback asphalt are the only Group I VOC sources existing in the Salem Non-Attainment Area. Text has been changed to clarify this point.

EPA Comment:

Section 4.5.5, Figure 4.5.5-1 - The HC emissions line shows a gradual decrease starting in 1977 yet the applicable VOC rules only become effective after 1981. The graph should reflect this step change.

Response:

Graph has been modified.

EPA Comment:

Appendix 4.5-1 - No reference or method is cited for the VOC emission inventory.

Response:

The source of the VOC emission inventory is referenced in Section 4.5.2: Emission Inventory. Appendix 4.5-1 is also referred to in this Section.

SECTION 4.4

CONTROL STRATEGY FOR

SALEM NON-ATTAINMENT AREA

1979 STATE IMPLEMENTATION PLAN REVISION

FOR CARBON MONOXIDE

(Attainment Strategy)

June 1979

Mid-Willamette Valley Council of Governments

Oregon Department of Environmental Quality

Table of Contents

APPENDICES

LIST OF TABLES

LIST OF FIGURES

4.4.0 SALEM NON-ATTAINMENT AREA - CARBON MONOXIDE

4.4.0.1 Introduction

The purpose of this document is to serve as the carbon monoxide (CO) attainment strategy portion of the State of Oregon Clean Air Act Implementation Plan (SIP) for the Salem area. On March 3, 1978 the area within the city limits of Salem was designated by EPA as non-attainment for CO. Mid-Willamette Valley Council of Governments (MWVCOG) requested and subsequently was designated Lead Agency by the Governor on March 30, 1978 for the purpose of developing an attainment plan. The EPA concurred with that designation on April 14, 1978. The original non-attainment area (NAA) was expanded by MWVCOG to include the area within the Salem Area Transportation Study (SATS) boundary. See Appendix 4.4-1, Salem Non-attainment Area for the definition of the boundary. Table 4.4.0-1 shows population and area sizes for Salem's various legal and administrative boundaries.

Table 4.4.0-1

Comparison of Salem's

Legal and Administrative Boundaries

Boundary	Population (1977)	Area
City Limits	83,170	32.0 sq. miles
Urban Growth Boundary	111,691	70.0 sq. miles
Salem Area Transportation Study	117,499	124.0 sq. miles

4.4.0.2 Summary

Results of a CO analysis show that the Salem NAA will be able to just attain federal CO ambient air quality standards by December 31, 1982 and maintain compliance in future years. This attainment will be achieved through reliance upon the Federal Motor Vehicle Emission Control Program (FMVECP).

To ensure that CO emissions are limited to attainment strategy projections, plant site emission limits will be set for stationary CO sources. Also, Special Permit Requirements Rules for stationary CO sources will be in effect as a growth management plan. These rules will apply to sources on properties adjoining the eight separate non-attainment street segments areas and sources locating elsewhere which would significantly impact the non-attainment areas. of compliance in 1977. These streets are largely located in the urban core area and are shown in Figure 4.4.3-1. New stationary CO sources would most likely be prohibited from locating in those areas, because no growth increment is provided for such sources in the core area. The lack of a growth increment is due to the fact that the Salem NAA is projected to just attain CO standards by December 31, 1982, thus leaving no room for growth. Despite this, further demonstrated reductions from mobile sources could possibly provide future growth increments. However, present zoning in the eight identified areas would likely by itself prohibit new stationary CO sources from locating in those areas.

The above strategies and assurance mechanisms constitute major features of Salem's plan for meeting the state and federal CO standards by December 31, 1982.

4.4.1 AMBIENT AIR QUALITY

Until October 29, 1978 carbon monoxide (CO) was monitored by the Department of Environmental Quality (DEQ) at the Far West Savings Bank located at Liberty and Center Streets in downtown Salem. Urban renewal recently forced the relocation of this monitor to an equivalent site at the Fuller Paint store, located at 498 Church Street Northeast, which conforms to federal siting guidelines. The original monitor was chosen as representative of worst case traffic conditions. The monitor has recorded occasional relatively minor exceedances of the federal CO 8-hour average ambient air quality standard of 10 milligrams per cubic meter (mg/m^3). A summary of CO violations is shown below in Table 4.4.1-1.

Table 4.4.1-1

Carbon Monoxide Summary (mg/m^3)

Year	1-hour Averages		8-hour Averages			
	Maximum	Second Highest	No. of Days 10 mg/m^3	Percent	Max	Second Highest
1974	23.0	20.7	6	2	13.3	12.9
1975	18.4	18.4	1	0	12.3	8.9
1976	24.1	21.8	7	2	11.9	11.4
1977	21.8	16.1	4	1	13.5	10.9

4.4.2 EMISSION INVENTORY

4.4.2.1 Base Year

The base year was chosen as 1977 in accordance with the EPA/DOT Transportation - Air Quality Planning Guidelines which specify the 1977 calendar year.

Total carbon monoxide emissions in the SATS area are shown in Table 4.4.2-1. The table shows that mobile sources account for most of the CO emissions.

Table 4.4.2-1

Total CO Emissions (Tons/Year)

SATS Non-Attainment Area

	1977	1983	1987
Mobile Sources	52,248	40,276	34,203
Stationary Area Sources	196	224	239
Total	52,444	40,500	34,442

For the base year (1977), stationary area source emissions were determined from the DEQ's updated basic equipment list of the emission inventory data system.

Mobile source CO emissions for 1977 were determined through computer modeling. The existing 1975 base year SATS transportation system was updated to 1977.

4.4.2.2 Growth

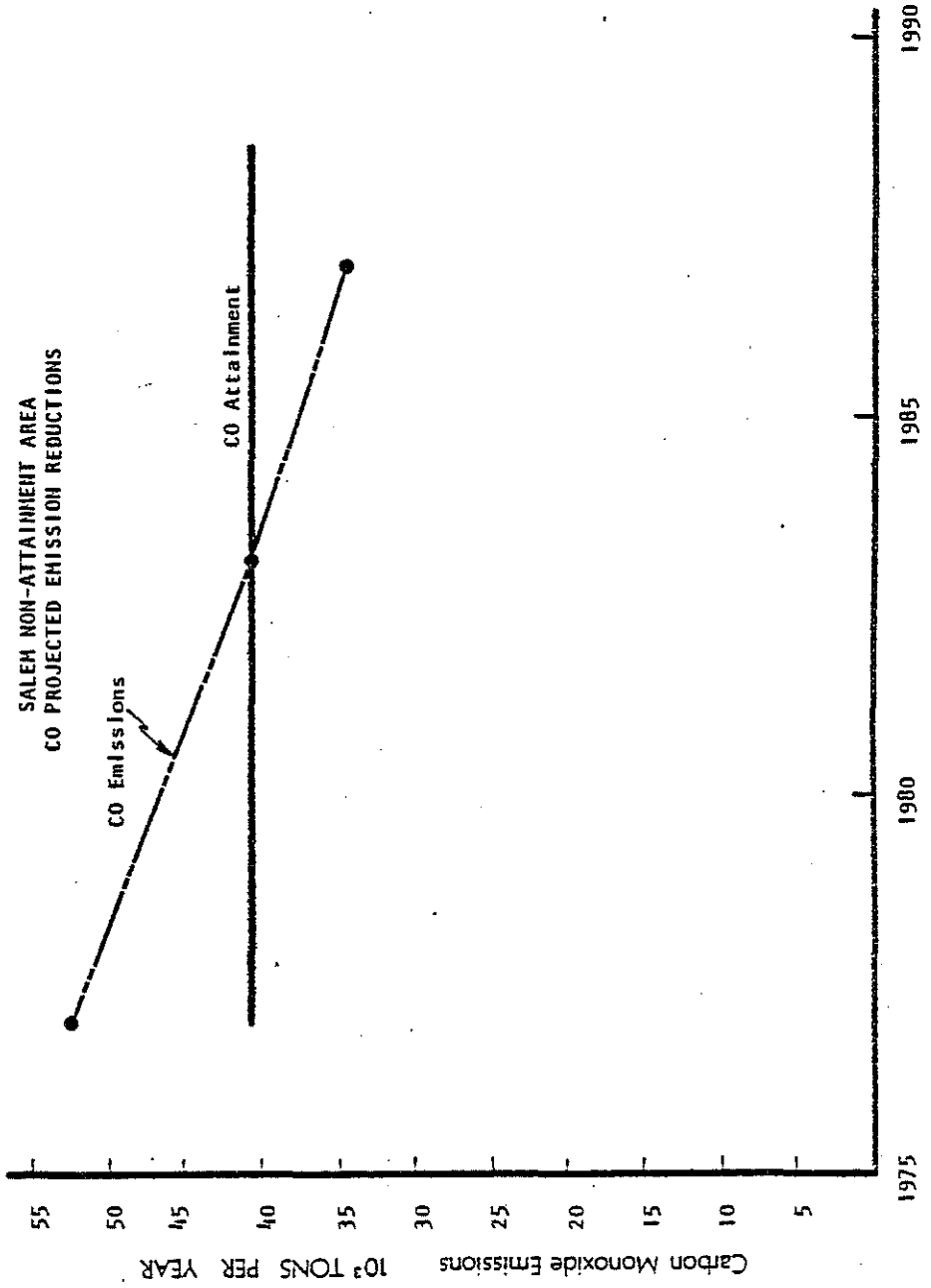
Stationary source growth factors were obtained from the Mid-Willamette Valley Council of Governments' Salem Urban Area Energy Study, dated March, 1978. This study contains the most recent and accurate employment, population, and residential growth factors that are available for the Salem area. Refer back to Table 4.4.2-1 which shows stationary source CO emissions for 1983 and 1987.

Mobile source CO emissions for 1983 and 1987 may also be found in Table 4.4.2-1. Figure 4.4.2-1 shows the trend line of CO emissions, with attainment projected by the end of 1982. Table 4.4.2-2 shows the daily vehicle miles travelled (VMT) for the years 1977, 1983, and 1987. Although VMT increases by 9.6% in 1983 and 23.3% over the base year 1977, total CO emissions decline by 22.7% in 1983 and 34.3% in 1987 over the base year level.

Appendix 4.4-4 documents the assumptions that were made for calculating emission factors, includes a listing of calculated composite emission factors, and contains the detailed CO Emission Inventory in EPA format.

EPA has criticized the use of 1983 CO emissions to project attainment by December 31, 1982. Because a complete revision of mobile source CO emissions to 1982 would involve a substantial amount of additional work, a sketch analysis was conducted to determine the CO

FIGURE 4.4.2-1


SALEM NON-ATTAINMENT AREA
CO PROJECTED EMISSION REDUCTIONS
CO Emissions
CO Attainment
Carbon Monoxide Emissions
10³ TONS PER YEAR
55
50
45
40
35
30
25
20
15
10
5
1975
1980
1985
1990

concentration that would be obtained in 1982 at the site with the highest 1983 concentration. The documentation and results are contained in Appendix 4.4-10.

The analysis indicates that use of 1982 CO emissions will not change the conclusion that Salem is projected to attain the federal CO standards by December 31, 1982.

Table 4.4.2-2

Daily Vehicle Miles Travelled

Year	Daily Vehicle Miles Travelled	% Increase Over 1977
1977	1,979,000	--
1983	2,168,000	9.6
1987	2,441,000	23.3

The above noted projected growth in VMT was derived through the transportation modeling process. The basic inputs to that process were population and employment forecasts for the year 2000. Population figures were revised to meet the consistency requirements of the Clean Air Act Amendments of 1977 and subsequent guidelines. The population projections for the Salem Urban Growth Boundary (UGB) are consistent for land use planning, water quality 208 planning, 701 planning, and transportation and air quality planning. Population projections for the SATS area, which is larger than the UGB area, incorporate those of the UGB.

According to the middle-range population forecasts developed by Portland State University, the SATS area is expected to grow in population from 110,850 in 1975 to 200,700 by the year 2000, an 81% increase. A high growth rate is expected between 1975 and 1980, but the rate of increase is expected to decline after 1980.

The details of the transportation modeling process, including population and employment projections and emission factor calculations, are documented in Appendices 4.4-2 through 4.4-4.

4.4.3 CONTROL STRATEGY

4.4.3.1 Level of Control Required

A CO hot spot analysis technique was developed by DEQ and applied to the 1977, 1983, and 1987 transportation system networks. The technique is documented in Appendix 4.4-5, Salem CO Control Strategy Analysis Methodology. Application of the technique to the base year 1977 network yields a total of 2.2 miles of roadways that violate the 8-hour CO standard. The roadways are mostly located in the urban core area and are shown in Figure 4.4.3-1. The CO hot spot analysis, applied to the 1983 network, shows that the roadways identified as violating the 8-hour CO standard in 1977 will just attain CO standards by December 31, 1982. Analysis of the 1987 network shows that the CO standards will be maintained.

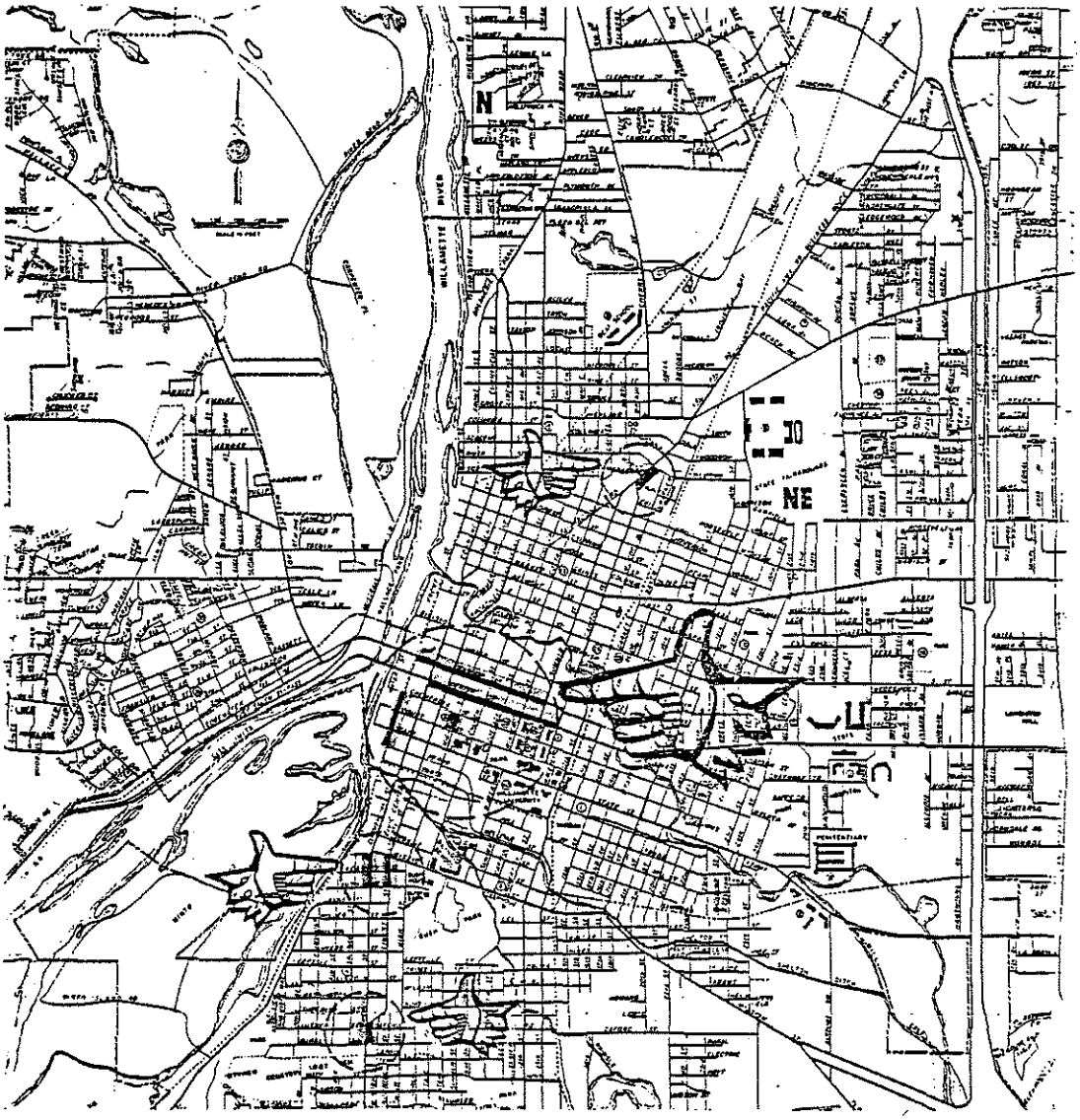
Since 8-hour CO concentrations on several street segments (see Appendix 4.4-7, CO Analysis) are barely less than the 8-hour CO standard by 1983, the amount of control required is equal to the reduction in CO emissions from 1977 to 1983, or 11,944 tons/year (see the Emission Inventory, section 4.4.2).

4.4.3.2 Strategy Alternatives

In order to determine the effectiveness of the Federal Motor Vehicle Emission Control Program (FMVECP) and, if necessary, other transportation controls, i.e., Reasonably Available Control Measures (RACM) as defined by the Environmental Protection Agency, future

Figure 4.4.3-1

Roadways that Violate the
8-hour Carbon Monoxide Standard



transportation systems were initially modeled to include higher levels of vehicle miles of travel than present trends in alternative mode transportation would indicate. The following assumptions were incorporated into the future transportation systems to ensure that initial estimates of emissions would not be too low:

1. Energy will be available and not prohibitively expensive.
2. The number of automobiles per dwelling unit will increase from 1.36 to 1.43 by the year 2000.
3. No estimate of reductions in VMT from transit will be made even though two percent of existing person trips are by transit.

The only emission reduction program that was first applied to these conservative transportation systems was the FMVECP, which after analysis was concluded to provide the basic amount of control required to meet CO standards. Therefore, no further control strategy alternatives were modeled.

4.4.3.3 Selected Strategy

The FMVECP is the strategy that will enable the Salem NAA to attain CO standards by December 31, 1982.

The FMVECP will continue to reduce CO emissions through 1987, assuming no changes are made in the Clean Air Act Vehicle exhaust emission standards.

The EPA lists fourteen Reasonably Available Control Measures for transportation related sources. Although the air quality analysis did not incorporate travel reductions from an Alternate Modes Program, such a program is now being extensively implemented in the Salem Urban Area. Nine of the fourteen EPA recommended RACM's already implemented or committed for implementation are listed below:

1) Carpool Program - Over 1,000 employes have availed themselves of the MWVCOG initiated Carpool Match Program. Carpool parking spaces are reserved on streets located close to employment centers, and major parking structures have spaces reserved for carpools.

2) Express Bus/Park and Ride Program - An extensive Park and Ride Program began operating throughout the Salem Urban Area on January 2, 1979.

3) Bicycle Facilities - A Bicycle Plan has recently been completed and submitted for review by interested organizations. It will be incorporated into the Salem Area Comprehensive Plan and the SATS Transportation Plan.

4) Transit - The existing bus fleet is being expanded by purchasing used buses from other cities.

5) Private Car Restrictions - A 600 space lot for downtown employee parking will be terminated when construction begins for the planned Front Street Bypass.

6) On Street Parking Controls - Most streets within the downtown and Capitol Mall area are off-limits to commuter parking with $20 fines imposed on violators. Residential parking districts have been established around the Capitol Mall which are reserved for residents and two hour parking.

7) Staggered Working Hours - Flexible working hours have been available for over a year for all State, City, and County employes.

8) Pedestrian Malls - Construction has begun on a pedestrian mall which will cover two city blocks.

9) Traffic Flow Improvements - Five operations improvement projects have been scheduled for 1979. These projects will smooth traffic flow at intersections. One of the projects, the removal of the offset intersection at Silverton Road and 34th Avenue, was recently completed.

A large project that will have major impact on downtown traffic is the Front Street Bypass. It should remove the bulk of through traffic that presently uses the Commercial-Liberty couplet in the downtown core.

Another significant project is the Portland Road, Pine Street - Academy Street improvement to the north of the downtown on State Route 99E. The existing four lane section will be widened to accommodate a continuous left turn refuge and major intersections will be modified and upgraded with improved traffic signals. Average travel speeds through the section will be increased as a result.

4.4.3.4 Growth Management Plan

The Growth Management Plan has the following elements (transportation control measures are included as examples even though they did not need to be incorporated in the attainment analysis):

a. Review of New Sources (See Section 5.4)

The Special Permit Requirement Rules for new stationary CO sources will be in effect for sources on properties adjoining eight street segments mostly located in the urban core area (see Figure 4.4.3-1). Sources not on the adjoining properties, but impacting the non-attainment streets will also be subject to the Rules. New sources of CO (>100 tons per year potential CO emissions) would most likely not be able to locate in the area, because neither growth increment or offset potentials exist. However, further demonstrated reductions from mobile sources could possibly provide the necessary increments.

b. Commitment to Implement Transportation Control Measures

The Urban Core Area has a Parking and Traffic Circulation Plan in effect which conforms to Rules for Indirect Sources (OAR 340-20-120). For the current year, 1979, ten bicycle path projects are scheduled for implementation as well as the installation of thirty bus shelters. For fiscal year 1982 two downtown roadway couplet projects are planned that would convert streets from two way to one way operation.

c. Plant Site Emission Limits

Pursuant to OAR 340-20-196 and 197, plant site emission limits will be established for CO sources to ensure that emissions are limited to attainment strategy projections. (See Section 4.4.4, Rules and Regulations.)

4.4.3.5 Emission Reduction Estimates

The Federal Motor Vehicle Emission Control Program will reduce CO emissions by 11,944 T/Yr or 23.3% from 1977 to 1983 in the SATS area (see Emission Inventory, Section 4.4.2). Figure 4.4.2-1 in the Emission Inventory Section shows the expected decreasing trend for CO emissions through 1987.

4.4.3.6 Socio-Economic Impacts of Selected CO Attainment Strategy

a. Air Quality

The Federal Motor Vehicle Emissions Control Program is expected to enable the Salem NAA to attain federal CO primary ambient air quality standards by December 31, 1982 and maintain them through 1987.

b. Health

CO is an odorless, colorless, highly toxic gas that interferes with the blood's ability to carry oxygen. At sufficiently elevated levels in the blood, it causes loss of consciousness and can ultimately cause death. At lower levels it can impair heart function of persons with chronic diseases, reduce lung capacity, and impair mental ability. The FMVECP will provide the means for attaining federal CO standards so that the public health will be adequately protected.

c. Welfare

In that the welfare standard for CO is set at the same level as the health standard, attainment of the CO standards through the FMVECP will also adequately protect the public welfare.

d. Economic

The FMVECP is estimated by the Society of Automotive Engineers (see SAE Technical Paper Series, Projections of Motor Vehicle Fuel Demand and Emissions, 1978) to cost approximately $420 per vehicle in 1977 in terms of 1970 dollars. By 1983 the SATS area is estimated to have approximately 114,500 motor vehicles. Of that total, model years 1968 through 1983 will have been subject to the FMVECP. This will amount to 110,800 cars, and the total cost of the program to persons owning cars in the SATS area is calculated to be approximately $46.5 million.

e. Energy

Some fuel cost penalty could be associated with pre-catalyst equipped cars. However, catalyst equipped cars have a negligible impact on fuel economy.

f. Social

Pollution control devices on motor vehicles, mandated by the FMVECP, require periodic maintenance. In the absence of mandatory vehicle inspection/maintenance, such maintenance is left to conscientious owner/operators.

4.4.4 RULES AND REGULATIONS

The rules applying to new sources are explained in Section 5.4. The Plant Site Emissions Limit Rule (OAR 340-20-196-197) is contained in Section 3.2 and is explained in the following subsection 4.4.4.1.

4.4.4.1 Plant Site Emissions Limit (PSEL) Rule

The PSEL Rule was developed in recognition that airsheds have a limited carrying capacity. The rule would clearly delegate authority to Oregon's Department of Environmental Quality to limit emissions of any new or existing source. This would prevent any one source from filling the capacity of an airshed to the exclusion of new or expanding sources, and assures maintenance of Reasonable Further Progress towards attainment.

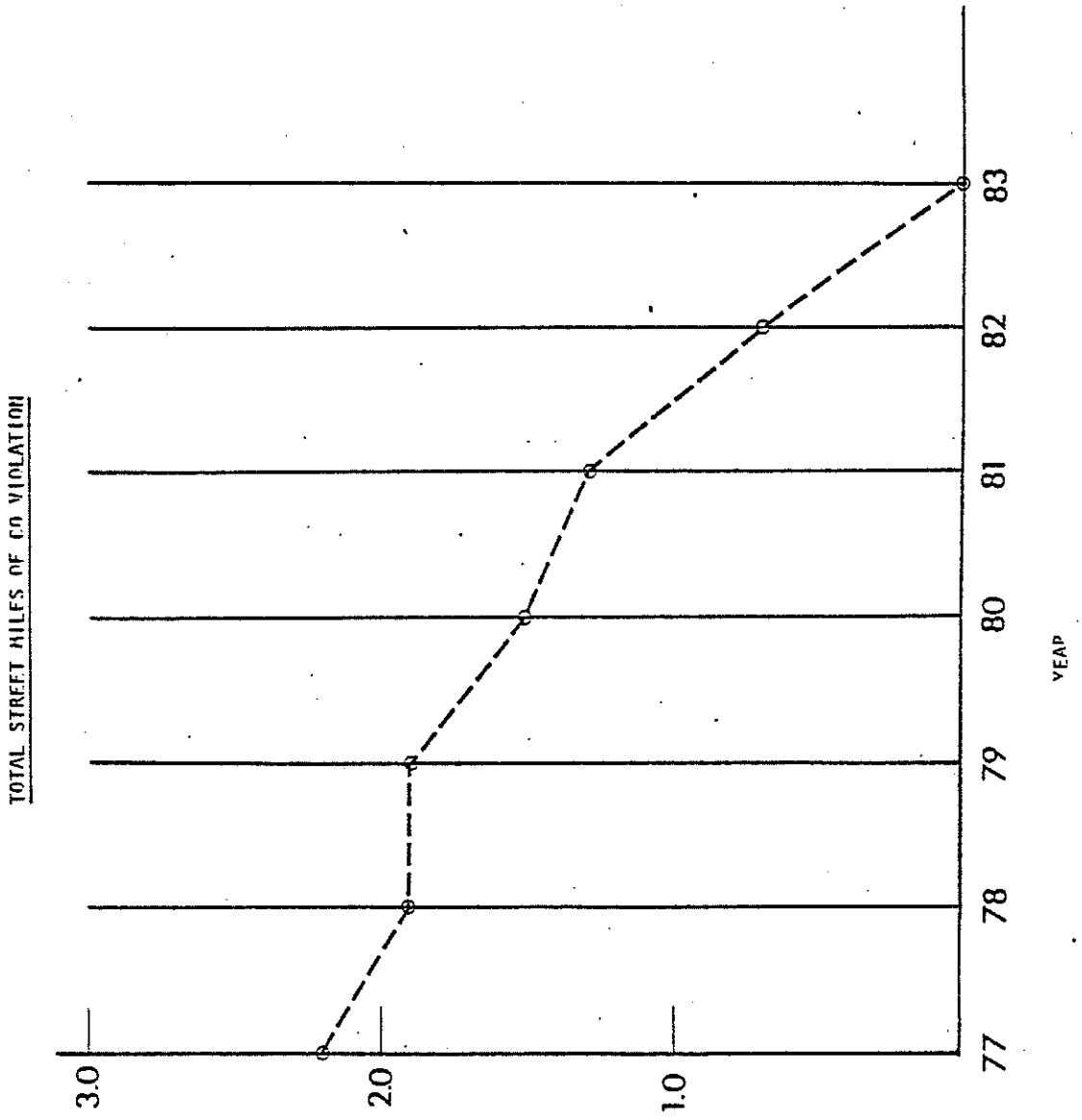
4.4.5 REASONABLE FURTHER PROGRESS SCHEDULE

4.4.5.1 Demonstration of Reasonable Further Progress

The 2.2 miles of roadways, estimated to be in violation of the 8-hour CO standard in 1977, are expected to be reduced according to the schedule shown in Figure 4.4.5-1 so that by 1983 no roadways would be in violation of the CO standards. Reasonable Further Progress (RFP) is a tracking tool that is applied to the expected CO emissions reductions (see Figure 4.4.2-1 Salem Non-attainment Area CO Projected Emission Reductions). Since the Salem NAA is projected to just attain CO standards by December 31, 1982, the CO emissions trend line can also be considered the RFP line.

Actual emissions will be estimated on an annual basis and plotted against the RFP line. The DEQ will update the stationary source CO emission inventory annually. The accuracy of the mobile source CO emission projections will be evaluated through the continuing traffic counting programs of both the Oregon Department of Transportation (ODOT) and the City of Salem Department of Public Works. The traffic counts will provide a check on projected VMT growth. Any changes to CO emission factors will also be incorporated into the update.

Figure 4.4.5-1


TOTAL STREET MILES OF CO VIOLATION
3.0
2.0
1.0
77
78
79
80
81
82
83
YEAR

4.4.6 ANNUAL REPORT

EPA requires the following information to be submitted each year:

a. Identification of growth of major new or modified existing sources, minor (less than 100 T/Yr) new sources, and mobile sources.

b. Reduction in emissions for existing sources.

c. Updated emission inventory.

d. Conclusions of studies to quantify the air quality problem.

The DEQ will submit a report, covering the above elements, each July 1 for the preceding calendar year, beginning in 1980.

4.4.7 RESOURCE ANALYSIS/COMMITMENT

4.4.7.1 Mid-Willamette Valley Council of Governments

As the lead agency, MWVCOG has completed the transportation planning tasks required to develop a CO attainment strategy. Any further work by MWVCOG to update the population, employment, and land use forecasts that were input into the CO air quality analysis will be done as part of the ongoing transportation planning process. Therefore, no additional lead agency costs are foreseen.

4.4.7.2 DEQ

The DEQ has responsiblity for implementing growth management measures for stationary CO sources, monitoring ambient CO, and preparing the Annual Report for EPA. The estimated costs for carrying out these tasks are summarized in Table 4.4.7-1 in full time equivalents (FTE) on a biennial basis.

Table 4.4.7-1

DEQ Projected Resource Commitments

Division	1979-1981 Biennium, FTE
Headquarters staff	
Monitoring	0.8
Planning and Development	0.2
Administration	0.2
Headquarters/Regional Staff	
Enforcement	0.2
Total	1.4 FTE

Administration includes supervision and support services. The Planning and Development Section will prepare the Annual Report.

4.4.7.3 ODOT

No additional costs are foreseen for the state transportation agency.

4.4.8 PUBLIC INVOLVEMENT

4.4.8.1 Organizational Responsibility for Carrying out the SIP

Through a Memorandum of Understanding, Marion County, Polk County, and the City of Salem requested the Governor to designate MWVCOG as the lead agency to prepare the CO SIP revision (see Appendix 4.4-8). On March 30, 1978 the Governor requested EPA to recognize MWVCOG as the lead agency for the Salem NAA. The EPA concurred with that designation on April 11, 1978.

Since the of strategy for attaining federal CO standards by December 31, 1982 is the FMVECP, MWVCOG and DEQ will have joint responsibility for evaluating the effectiveness of that program against the Reasonable Further Progress projections.

4.4.8.2 A-95 Review Procedure

Comments and responses from the A-95 review procedure on Salem's CO attainment strategy portion of the SIP are included in Appendix 4.4-8.

4.4.8.3 Consultation Process and Organizations Specified

Through powers delegated by MWVCOG and through a cooperative agreement between the ODOT and MWVCOG, the Salem Area Transportation Study has authority for preparing and adopting transportation plans in the Salem urbanized area. The Coordinating Committee is the policy committee of SATS. It includes representatives from ODOT, the City of Salem,

Polk and Marion Counties, and School District 24J. The SATS planning body also includes a standing Technical Advisory Committee (TAC) and Citizens Advisory Committee (CAC). All SIP work was programmed and coordinated through SATS. The SATS organizational structure is shown in Figure 4.4.8-1. The responsibilities of the SATS committees are explained in Appendix 4.4-8.

4.4.8.4 Air Quality Planning Responsibilities

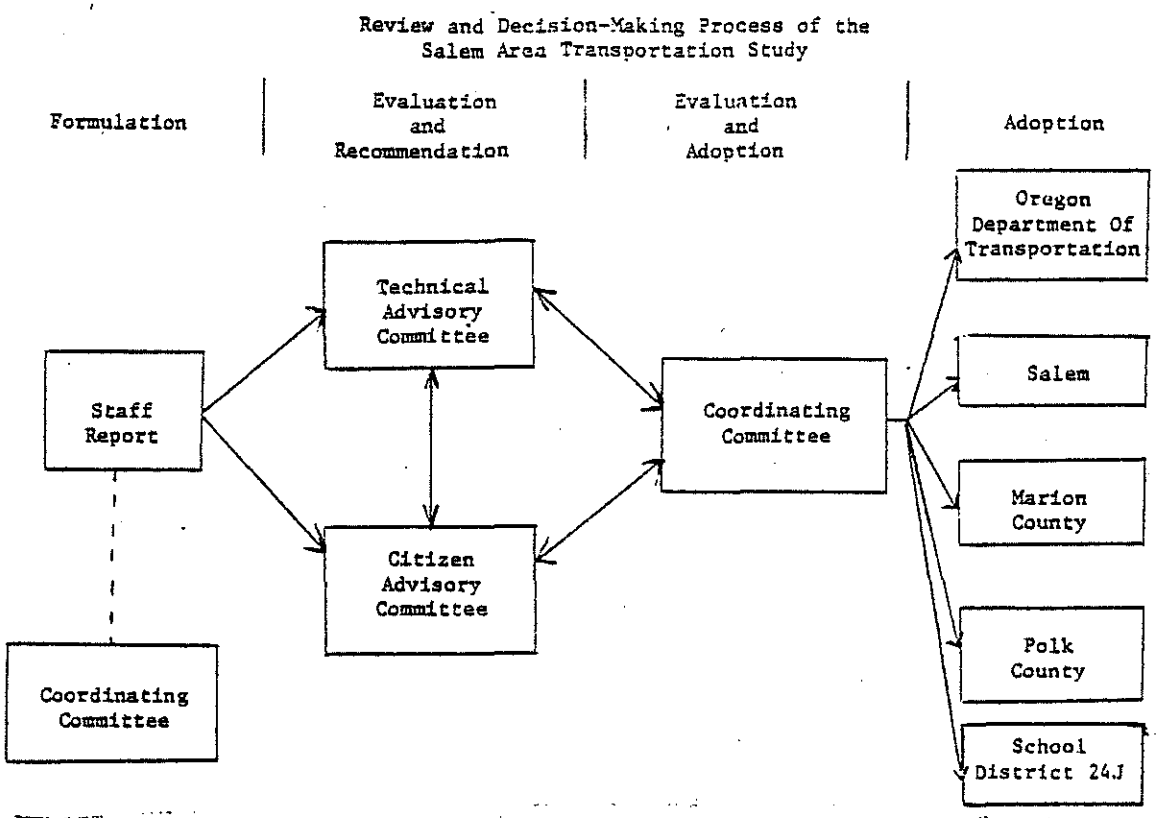
An air quality planning work program was devised during 1978 by ODOT, DEQ, and MWVCOG. A list of the role and responsibility of each agency follows.

Role/Responsibility	Agency
1. Lead agency for air quality planning program management	MWVCOG
2. SATS-CC Support	MWVCOG
3. SATS-TAC Support	MWVCOG
4. SATS-CAC Support	MWVCOG
5. Other Special Interest Groups	MWVCOG
6. Mobile source emission estimates	ODOT-MWVCOG
7. Stationary source emissions estimates	DEQ
8. Technical analysis and evaluation of control strategies	
a. Mobile	MWVCOG, ODOT, DEQ
b. Stationary	DEQ
9. Implementation Scheduling	
a. Mobile	MWVCOG
b. Stationary	DEQ
10. Transportation Control Plan and mobile source SIP revisions	MWVCOG, DEQ
11. Stationary source SIP revisions	DEQ
12. TCP/SIP revision hearings	DEQ

4.4.8.5 Consultation with Other Planning Agencies

To ensure that the City of Salem, Marion County, and Polk County planning agencies would have input to the CO SIP, preliminary drafts

FIGURE 4.4.8-1


Review and Decision-Making Process of the
Salem Area Transportation Study
Formulation
Evaluation and Recommendation
Evaluation and Adoption
Adoption
Staff Report
Coordinating Committee
Technical Advisory Committee
Citizen Advisory Committee
Coordinating Committee
Oregon Department Of Transportation
Salem
Marion County
Polk County
School District 24J

of the CO analysis and results were sent to them for their review and comment.

4.4.8.6 Consistency with Plans and Programs

To comply with the Clean Air Act Amendments of 1977 and the subsequent guidelines issued concerning consistency of base data, the Mid-Willamette Valley Council of Governments revised the Salem area population figures. The population projections for the Salem Urban Growth Boundary are now consistent for land use planning, water quality 208 planning, 701 planning, air quality planning and transportation planning.

4.4.8.7 Public Involvement Procedures

At the monthly meetings of the CAC, MWVCOG has periodically reported on the progress of the CO SIP air quality analysis.

A public involvement procedure has been built into the DEQ's annual report on progress toward attainment of federal CO standards in the Salem NAA. The report will go out for a 30 day minimum public comment period before it is submitted to EPA.

Additionally, the DEQ publishes a report on air quality, covering the entire state, each year (usually available in June). These reports are widely distributed and contain summaries of the most recent air quality measurements.

4.4.9 PUBLIC NOTICE AND HEARINGS

4.4.9.1 Public Notice

Public notice was published in the Oregon Secretary of State's Bulletin on April 2, 1979. This notice may be found in Appendix 4.4-9.

4.4.9.2 Media Coverage

Paid public advertisements of the proposed SIP revision were placed in the Salem Statesman and Capitol Journal on April 2, 1979 and April 9, 1979 to satisfy both EPA and state notice requirements. The advertisements and certification of publication are shown in Appendix 4.4-9.

4.4.9.3 Public Hearing

A summary of the public hearing on May 4, 1979 on the proposed SIP revision is contained in Appendix 4.4-9.

4.4.9.4 Annual Report

The requirements concerning publishing the annual report and submittal to EPA will be followed. EPA requires the annual report to be submitted by July 1 for the previous calendar year.

APPENDIX 4.4-1

STUDY AREA

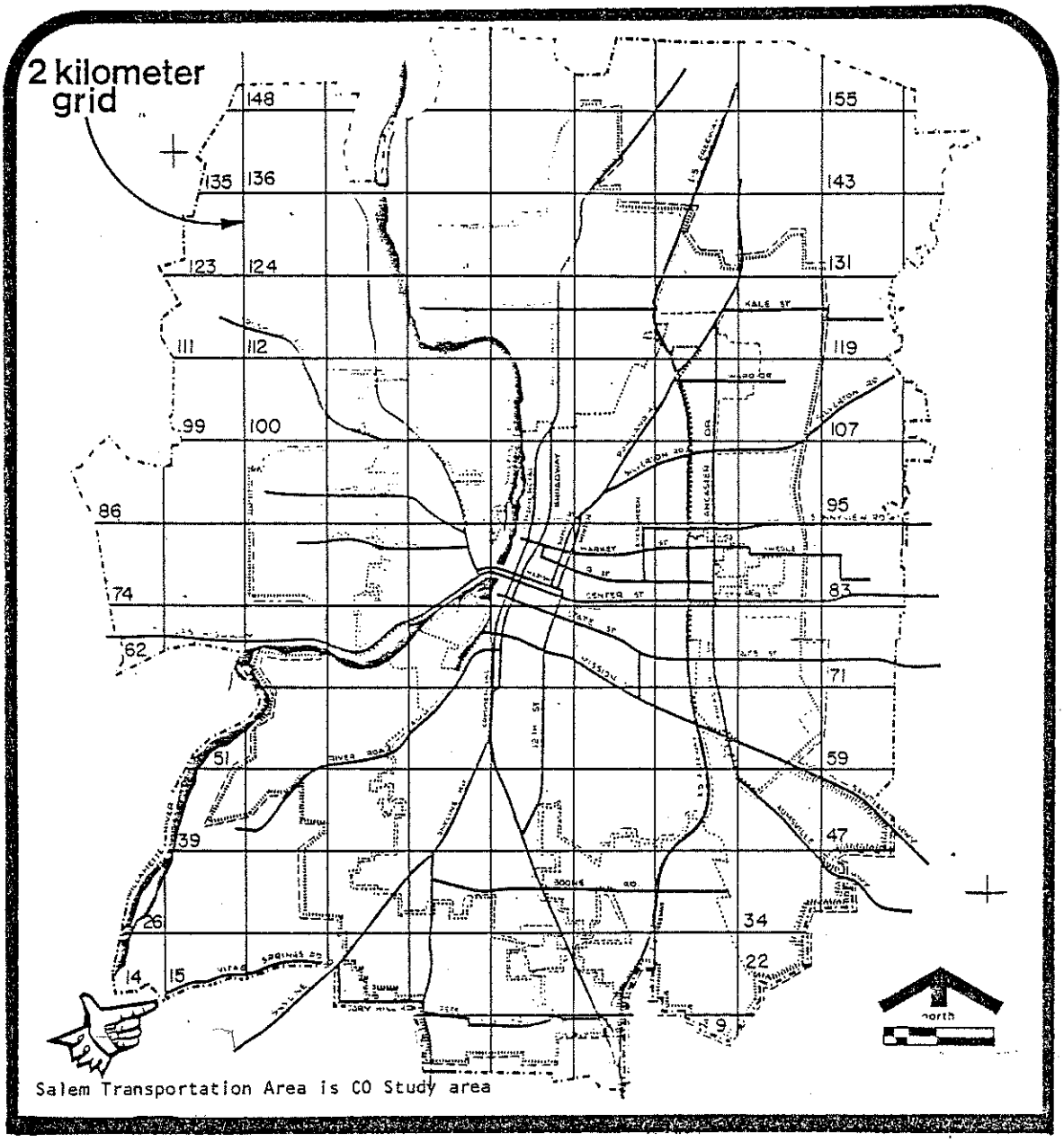
When the Environmental Protection Agency (EPA) designated Salem as a Non-attainment area for carbon monoxide (CO) and ozone (O_3), the actual physical area designated was the Salem City Limits. The city limits is not a fixed boundary, but is continually changing through the annexation process. EPA made its official determination in January, 1978, therefore, the city limits as of that date is considered the legal boundary. However, the city limits does not include several large population areas (such as Keizer and East Salem) that have a significant impact on Salem's transportation system. In planning a transportation and air quality study it is necessary to review the various factors which influence the establishment of travel patterns. These factors include, among others, such items as geography, population, land use, and topography.

In order to more adequately cover the demographic and geographic Salem Urban Area, the SATS boundary was selected as the study area boundary. The SATS area operates as a single urban complex. By increasing the size of the study area from the city limits to the SATS area, a more realistic approach can be taken to solving an air quality problem that is regional in scope and does not stop at the city limits.

Figure 1.1 shows the legal and administrative boundaries for Salem. Table 1.1 shows a comparison of size and population of the boundaries.

FIGURE 1.1

SALEM CARBON MONOXIDE STUDY AREA



LEGEND
City Limits
SATS Area
FAU Urban Area
1970 Urbanized Area

LEGAL AND ADMINISTRATIVE BOUNDARIES
Salem Area Transportation Study

Prepared by Mid Willamette Valley Council of Governments

The SATS boundary generally follows census tract boundaries. Besides the 30 census tracts, the SATS area is easily divided into five larger subareas.

Downtown and Capitol Mall - Census tracts 1, 2, 3, 5, 8, and 9

North Salem - Census tracts 4, 14, 15, and 25

East Salem - Census tracts 5, 7, 16, 17, and 18

South Salem - Census tracts 10, 11, 12, 13, 19, 20, 21, 22, 23, 24, 27, and 28

West Salem - Census 51, 52, and 53

For purposes of the air quality analysis a 2-kilometer grid was superimposed on the SATS area. Total emissions analysis was then done for each grid. The only CO monitor in the Salem AQMA is located in grid square number 79.

Table 1.1

COMPARISON OF SALEM'S

LEGAL AND ADMINISTRATIVE BOUNDARIES

Boundary	Population (1977)	Area
City Limits	83,170	32.0 sq. miles
Urban Growth Boundary	111,691	70.0 sq. miles
Salem Area Transportation Study	117,499	124.0 sq. miles

APPENDIX 4.4-2

POPULATION AND EMPLOYMENT

Population Projections

To comply with the Clean Air Act Amendments of 1977 and the subsequent guidelines issued concerning population projections, the Mid-Willamette Valley Council of Governments (MWVCOG) revised its population figures. The population for the Salem Urban Growth Boundary (UGB) is now consistent for land use planning, air quality planning and transportation planning. Since the SATS area is larger than the UGB, the SATS population projections incorporate those of the UGB.

The SATS area is expected to grow in population from 110,830 in 1975 to 200,700 by the year 2000, an 81% increase (see Figure 1). These projections are based on the middle-range population forecasts developed by Portland State University. The projections reflect a fairly high rate of population growth between 1975 and 1980 and a declining rate of increase thereafter. This is substantially due to migration, which currently is 65% of all population growth in the Salem area.

Population Distributions

Using historic data for 1975 and the total SATS population projections for the Year 2000, distributions were made for each census tract within the SATS area. The distributions for the census tracts in the year 2000 were made without constraints. That is, all geographic areas were assumed

FIGURE 1

SATS HOUSEHOLD
POPULATION GROWTH CURVE
1970-YEAR 2000

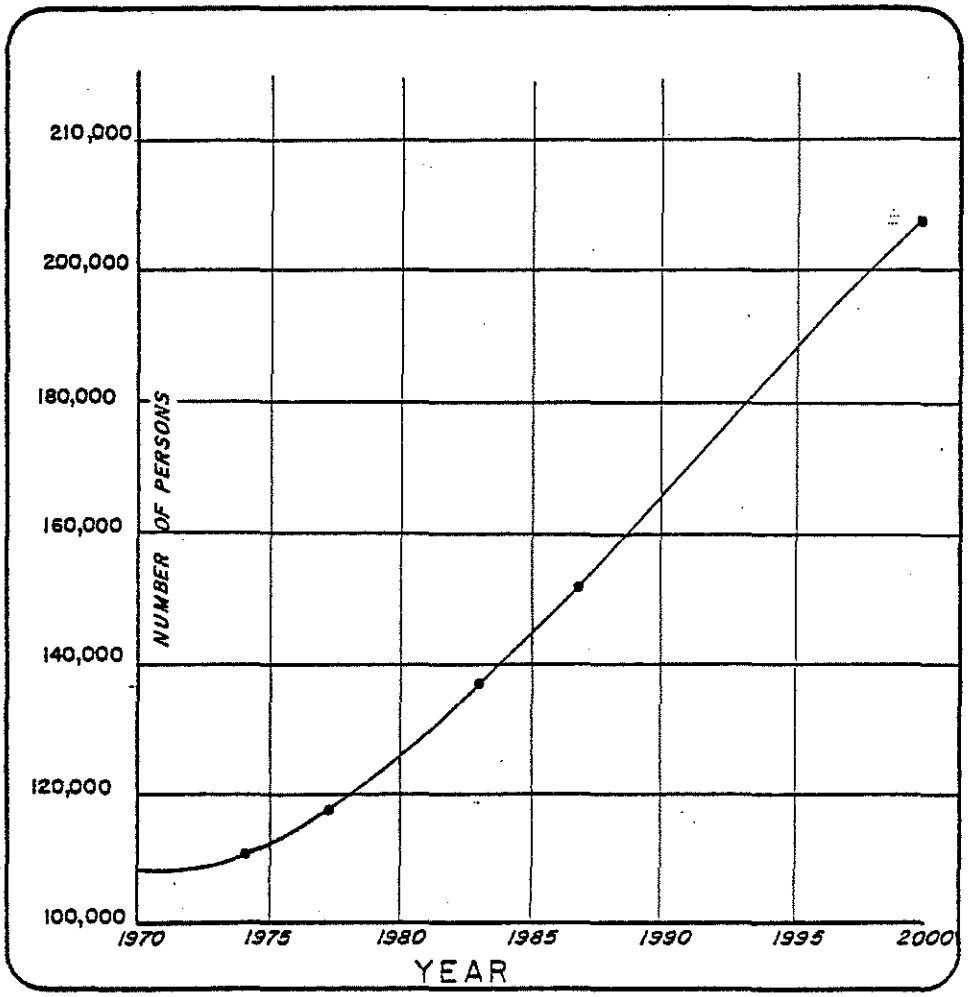
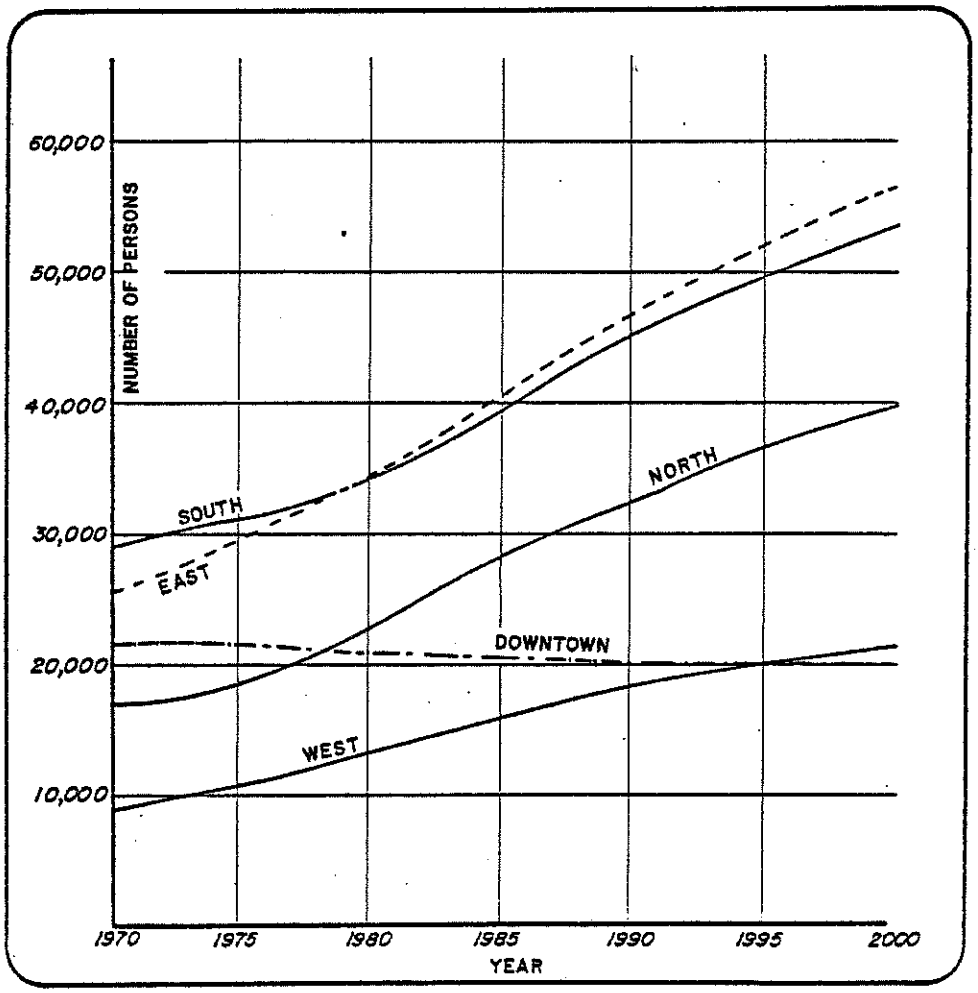


FIGURE 2

POPULATION WITHIN SUBAREAS
1970-YEAR 2000



to be serviced by sewer and water and all needed arterials would be constructed. Existing zoning, densities, slope, available land and employment were the major considerations. Once the census tract distributions were made for the year 2000, the distributions for the years 1977, 1983, and 1987 were interpolated. These distributions were made assuming a growth management policy of radial growth.

The traffic model uses population projections by transportation zones, which are considerably smaller than the corresponding census tract. Because of time constraints for the SIP submittal and limited data, the assumption was made that all transportation zones within a census tract are homogenous. Therefore, the growth rate per transportation zone is equal to the growth rate per its parent census tract.

Increases in population growth are not, however, expected to occur uniformly throughout the urban area during the 1975-2000 period. Specific shifts in growth patterns within a given census tract can be identified through variations in percentage of that census tract to the total SATS population (Tables 1 and 2). A more generalized indication of these shifts is given in Table 3.

Separated into the five major subareas of the community, future population growth patterns should be characterized by a decline in the relative population of the downtown and its surrounding environs and by an increase in the relative importance of the suburban areas. Population growth is expected to be especially rapid in North and East Salem originally. As

TABLE 1

DISTRIBUTION OF POPULATION*-EMPLOYMENT WITHIN SALEM AREA

1970-2000
(by census tract)

Census Tract	POPULATION 1975	%	2000	%	EMPLOYMENT 1975	%	2000	%
1	1202	1.1	650	0.3	7416	15.0	13081	15.5
2	3727	3.4	2500	1.2	10618	21.4	14443	17.1
3	4874	4.4	4950	2.5	1753	3.5	1943	2.3
4	4063	3.7	4400	2.2	1475	3.0	2076	2.5
5	5278	4.7	6300	3.1	2938	5.9	4903	5.8
6	5166	4.6	5350	2.7	1522	3.1	2929	3.5
7	3779	3.4	4340	2.2	1051	2.1	2369	2.8
8	74	0.1	90	0.0	1255	2.5	2192	2.3
9	6181	5.6	6500	3.2	2212	4.5	3273	3.9
10	2460	2.2	3000	1.5	3605	7.3	4513	5.3
11	4254	3.8	4510	2.2	622	1.3	1409	1.7
12	4330	3.9	4560	2.3	1442	2.9	2815	3.3
13	3786	3.4	5100	2.5	636	1.3	1539	1.8
14	6230	5.6	9590	4.8	680	1.4	1662	2.0
15	6980	6.3	13500	6.7	875	1.8	3129	3.7
16	10042	9.0	19060	9.5	1027	2.1	3257	2.7
17	4350	3.9	9580	4.8	2386	4.8	5250	6.2
18	6137	5.5	17030	8.5	1660	3.3	2554	3.0
19	33	0.0	50	0.0	1245	2.5	2076	2.5
20	1410	1.3	7800	3.9	421	0.8	840	1.0
21	5497	4.9	8450	4.2	1159	2.3	2632	3.1
22	6091	5.5	8400	4.2	626	1.3	1337	1.6
23	1490	1.3	11750	5.9	267	0.5	1088	1.3
24	1284	1.2	5590	2.8	196	0.4	153	0.2
25	1197	1.1	11910	5.9	702	1.4	564	0.7
26	0	0.0	0	0.0	0	0.0	0	0.0
27	0	0.0	500	0.2	0	0.0	0	0.0
28	406	0.4	3500	1.7	71	0.1	100	0.1
51	2050	1.8	2200	1.1	938	1.9	1503	1.8
52	6010	5.4	11200	5.6	473	1.0	1672	2.0
53	2767	2.5	8340	4.2	306	0.6	294	0.3
TOTALS	111,150		200,700		49,577		84,596	

*household population does not include group quartered and institutionalized persons

TABLE 2

DISTRIBUTION OF POPULATION* AND EMPLOYMENT SATS AREA

1970-2000
(by geographic sectors)

Census Tract	POPULATION* 1975 No.	%	2000 No.	%	EMPLOYMENT 1975 No.	%	2000 No.	%
DOWNTOWN-CAPITOL MALL AREA								
1	1202	1.1	650	0.3	7416	15.0	13081	15.5
2	3727	3.4	2500	1.2	10618	21.4	14443	17.1
3	4874	4.4	4950	2.5	1753	3.5	1943	2.3
6	5166	4.6	5350	2.7	1522	3.1	2929	3.5
8	74	0.1	90	0.0	1255	2.5	2192	2.3
9	6181	5.6	6500	3.2	2212	4.5	3273	3.9
TOTAL	21224	19.2	20040	9.9	24776	50.0	37861	44.6
NORTH SALEM								
4	4063	3.7	4400	2.2	1475	3.0	2076	2.5
14	6230	5.6	9590	4.8	680	1.4	1662	2.0
15	6980	6.3	13500	6.7	875	1.8	3129	3.7
25	1197	1.1	11910	5.9	702	1.4	564	0.7
TOTAL	18470	16.7	39400	19.6	3732	7.6	7431	8.9
EAST SALEM								
5	5278	4.7	6300	3.1	2938	5.9	4903	5.8
7	3779	3.4	4340	2.2	1051	2.1	2369	2.8
16	10042	9.0	19060	9.5	1027	2.1	2257	2.7
17	4350	3.9	9580	4.8	2386	4.8	5250	6.2
18	6137	5.5	17030	8.5	1660	3.3	2554	3.0
TOTAL	29586	26.5	56310	28.1	9062	18.2	17333	20.5
SOUTH SALEM								
10	2460	2.2	3000	1.5	3605	7.3	4513	5.3
11	4254	3.8	4510	2.2	622	1.3	1409	1.7
12	4330	3.9	4560	2.3	1442	2.9	2815	3.3
13	3786	3.4	5100	2.5	636	1.3	1539	1.8
19	33	0.0	50	0.0	1245	2.5	2076	2.5
20	1410	1.3	7800	3.9	421	0.8	840	1.0
21	5497	4.9	8450	4.2	1159	2.3	2632	3.1
22	6091	5.5	8400	4.2	626	1.3	1337	1.6
23	1490	1.3	11750	5.9	267	0.5	1088	1.3
24	1284	1.2	5590	2.8	196	0.4	153	0.2
27	0	0.0	500	0.2	0	0.0	0	0.0
28	406	0.4	3500	1.7	71	0.1	100	0.1
TOTAL	31041	28.0	63210	31.4	10290	20.7	18502	21.9
WEST SALEM								
51	2050	1.8	2200	1.1	938	1.9	1503	1.8
52	6010	5.4	11200	5.6	473	1.0	1672	2.0
53	2767	2.5	8340	4.2	306	0.6	294	0.3
TOTAL	10827	9.7	21740	10.9	1717	3.5	3469	4.1

*Household population does not include group quartered or institutionalized persons.

TABLE 3

POPULATION SUMMARY OF DISTRIBUTIONS*

BY GEOGRAPHIC AREA
(% of Total Population)

	1970		1975		1977		1983		1987		2000	
	Population	%	Population	%	Population	%	Population	%	Population	%	Population	%
Downtown	21480	21.3	21224	19.2	21135	18.1	20849	15.3	20662	13.7	20040	9.9
North	16682	16.5	18470	16.7	20470	17.5	26190	19.1	29650	19.5	39400	19.6
East	24986	24.8	29586	26.5	31790	27.2	38280	27.9	42830	28.3	56310	28.1
South	28716	28.4	31041	28.0	32194	27.3	36888	27.0	41421	27.4	63210	31.4
West	8971	8.9	10827	9.7	11910	10.2	14990	10.9	16990	11.2	21740	10.9
TOTAL	100,835		110,850		177,499		137,197		151,553		200,700	

*Household population does not include group quartered and institutionalized persons.

these areas become full, the growth will shift to South Salem. Relative stability is expected in West Salem. Over the 25-year period the growth rates for all areas but the Downtown-Capitol Mall area will be approximately equal at 4% per year (see Figure 2 and Table 3).

APPENDIX 4.4-3

TRANSPORTATION SYSTEMS AND TRAFFIC PROJECTIONS

In order to assess air quality from mobile sources, the transportation system must be defined. Since air quality projections were needed for present and future conditions, transportation system networks were developed for the years 1975, 1977, 1983, 1987, and 2000.

For the purpose of this analysis, energy is assumed to continue to be both available and not prohibitively expensive. This may be considered to be a conservative assumption, and any major departure from this trend will result in lower air pollutant levels than predicted because of declining trip production rates. Another conservative assumption is that the number of automobiles available per individual dwelling unit is expected to increase from 1.36 in 1975 to 1.43 by the year 2000. This is a result of increasing incomes and a type of living style that produces a dispersed low-density residential land pattern.

In developing the traffic data for each of these transportation systems, transit ridership was not included. The existing transit trips are 2% of the person trips with more diversion to transit every year. Also,

Salem's vigorous alternative modes program has increased and will continue to increase the vehicle occupancy ratio. The existing 2% transit trips are significant, and by not considering transit trips and alternative modes, a conservative worst case air quality analysis is maintained.

Predictive Methodology

The transportation modeling process used techniques developed for the Salem Area Transportation Plan. Involved in this process are the following steps:

1. Forecast and distribute population and employment data.
2. Generate vehicle trip productions and attractions.
3. Develop vehicle trip interchanges (trip tables).
4. Assign vehicle trips to the major street network.

The trip generation model projects the number of trips "produced" in a given zone and the number "attracted" to that zone. Estimates of trip productions and attractions were developed using multiple linear regression equations that contain certain basic variables that have been found to be associated with travel behavior. The production and attraction equations were calibrated to local conditions using historical information from 1970. See Table 1 for equations.

Vehicle trip productions and attractions were then generated for the design year 2000. The transportation system network was based upon the recommendations contained in the SATS Transportation Plan and

TABLE 1 3

PRODUCTION AND ATTRACTION EQUATIONS*

The 1975 Production Equation

1. PrW = 1.612 RLF

2. PrSh = 0.171 NPR5

3. PrC = 0.284 NOAU + 0.260 NPR5

4. PrMs = 0.755 NPR5 + 0.657 NOAU

5. PrNh = 1.393 NOAU + 0.618 NPR5

where,

PrW = Person Trips, Work
PrSh = Person Trips, GAF Shopping Trips
PrC = Person Trips, Convenience Shopping Trips
PrMs = Person Trips, Miscellaneous
PrNh = Person Trips, Non-home Connected
RLF = Resident Labor Force
NPR5 = Number of Persons Five Years or Older
NOAU = Number of Automobiles

The 1975 total person-trip attractions were:

Zones with 100 or More Employees

1. PrW = 58.93 + 4.6115 PROF + 0.7634 LFGT + 0.9349 TOTE + 0.1567 GOVT - 0.5242 CVAU

2. PrSh = 12.86 + 0.4033 AUSV + 4.1417 GAF + 10.875 CSRE + 24.0 RSRE

3. PrC = 115.95 + 4.564 CONV + 29.0 CSRE + 26.25 RSRE

4. PrMS = 420.145 + 16.62621 PROF + 11.29707 EDMH + 7.65 CSRE + 8.75 RSRE

5. PrNh = 4.11757 + 5.14369 CONV + 5.32236 GAF + 10.23282 PROF + 23.1 CSRE + 32.4 RSRE

Zones With Less Than 100 Employees

1. PrW = 18.85 + 0.8597 AUSV +0.7777 MDH - 0.0233 NPR5 + 0.9074 TOTE

2. PrSh = 12.86 + 0.4033 AUSV + 4.1417 GAF + 10.875 CSRE

3. PrC = 18.38 + 2.0285 CONV + 29.0 CSRE

4. PrMs = 79.93 + 2.83665 BSAU + 4.3491 MDH + 12.296 EDUC + 0.2543 NPR 5 + 7.65 CSRE

5. PrNh = 38.09 + 2.9709 CONV + 2.3325 BSTR + 0.2364 NPR5 + 0.9051 TOTE + 22.2 CSRE

The 1975 auto-driver trip attraction equations were:

6. AuDr = 79.33 + 1.1352 TRCU + 0.9171 AUSV + 0.40989 CVAU + 2.4728 TRDE (for zones with 100 or more employees)

TABLE 1 (Cont.)

or

AuCM = 10.81 + 0.7315 CVAU + 1.7266 MDH + 0.1139 NPR5 + 0.2278 TOTE
(for zones with less than 100 employees)

7. AuX = 36.47 + 0.6472 TOTE + 10.0 RSRE

Where the variables were the number of employees in the following employment categories:

PROF = Professional Other Than Medical and Health
GOVT = All Government
GAF = Retail Trade (GAF Goods)
CONV = Retail Trade (Convenience Goods)
EDMH = Educational, Medical, Health
CVAU = CONV + AUSV
TRCU = Transportation, Communication, Utilities
AUSV = Retail Trade (Auto Services)
TRDE = Special Trades (Plubming, Electrical, etc.)
LFGT = Local and Federal Government
BSAU = Business Service and Auto Repair
BSTR = TRDE + BSAU
MDH = Medical + Health
EDUC = Educational
CSRE = Community Shopping Center Employees
RSRE = Regional Shopping Center Employees
TOTE = Total Employment
NODU = Number of Dwelling Units
NPR5 = Number of Persons Five Years or Older

These equations estimate the number of trips that are "produced in" or "attracted to" a given area (zone) based on the population and employment characteristics within each zone. For each of the 19 variables listed above, areawide forecasts were prepared to the Year 2000, and these amounts distributed to individual transportation zone.

*The equations for the year 2000 are similar

TABLE 2

ARTERIAL STREET IMPROVEMENTS

The arterials will be in operation by the year indicated.

		1977	1983	1987	2000
1.	Mission Street				
	Church - 12th				X
	12th - 25th		X		
2.	I-305 Arterial		X		
3.	Fairview Avenue			X	
4.	Orchard Heights				X
5.	Northgate Extension				X
6.	Brooks Avenue Extension			X	
7.	Summer Capitol Couplet			X	
8.	Front Street Bypass		X		
9.	Pringle Creek Parkway		X		
10.	Church Street Extension			X	
11.	N. Liberty-Commercial Couplet		X		
12.	Wallace Road			X	
13.	South Commercial Street				
	Leslie to Superior				X
	Superior to Vista		X		
	Vista to Barnes			X	
14.	Owens			X	
15.	Kubler Boulevard				X
	Kubler Interchange			X	
16.	South Liberty Road		X		
17.	Fairgrounds Road		X		
18.	12th Street			X	
19.	13th Street			X	
20.	Sunnyview Avenue Extension			X	
21.	Olsen Street				X
22.	Rickey Street				X
23.	Lockhaven Drive Extension		X		
24.	East Cordon Route				X
25.	Marion Street Extension			X	
26.	State Street		X		
27.	Hawthorne Avenue Extension		X		
28.	35th Avenue Realignments		X		
29.	Silverton Road		X		
30.	Verda Lane Extension		X		

TABLE 2 (Cont.)

	1977	1983	1987	2000
31. Hyacinth Road Extension		X		
32. Cherry Avenue		X		
33. Croisan Scenic Way Extension				X
34. Marion and Center Street Bridges				
Marion St. Ramp		X		
Center St. Ramp				X
Marion St. Bridge Third Lane		X		
Center St. Bridge				X
35. Chemawa Road		X		
Chemawa Interchange			X	
36. North River Road		X		
37. Madrona Avenue				X

Transportation Improvement Program shown in Table 2. These systems were computer simulated, and trip tables were then developed by "distributing" the trip productions and attractions over the street network. The Gravity Model was used in this process.

After the trip tables had been output by the Gravity Model, each trip table was computer assigned to the corresponding transportation network and evaluated. The 1975 trip table was assigned first in order to compare computer generated traffic assignments to actual traffic counts. An "all or nothing" technique was then used on all future test systems to develop the traffic volumes. This technique assigns vehicle trips between zone pairs to a single minimum time path (most logical route).

The travel data and average trip length for each year are shown below:

TABLE 3

VEHICLE TRIP SUMMARY

Year	Daily Vehicle Trips	Daily Vehicle Miles of Travel	Average Trip Length (Miles)	Daily Vehicle Hours of Travel	Average Trip Length (Minutes)
1975	466,100*	1,931,300*	4.14	49,520	6.37
1977	471,800	1,979,000	4.19	50,740	6.45
1983	514,400	2,168,0000	4.21	55,590	6.48
1987	574,800	2,441,000	4.25	62,590	6.54
2000	781,500	3,384,000	4.33	86,770	6.66

* Stochastic loading

Average weighted speed 39 mph

The base year (1977) assignment, 1983 and 1987 assignments were then input to the mobile source gross emissions model, SAPOLLUT. Also input to SAPOLLUT were the latest Supplement 8 Emission Factors. The assumptions that went into the CO emission factor calculations are documented in Appendix 4.4-4. SAPOLLUT produced CO emissions for the entire NAA and allocated them to two kilometer by two kilometer grid squares for each of the three analysis years.

APPENDIX 4.4-4

EMISSIONS INVENTORY

OREGON DEPARTMENT OF TRANSPORTATION
Office of Project Management
Urban Studies Unit

CALCULATION OF POLLUTANT EMISSION FACTORS FOR AIR QUALITY ANALYSIS OF THE SALEM, EUGENE AND MEDFORD AREAS

Background

The Salem, Eugene and Medford areas are presently designated by the Department of Environmental Quality (DEQ) and the Federal Environmental Protection Agency (EPA) to be areas that do not presently meet National Air Quality Standards. These nonattainment areas must demonstrate to EPA that they will be in compliance with air quality standards by December 31, 1983 or by 1987 for oxidants (Ox) and carbon monoxide (CO) if an extension is granted. Therefore, a plan must be developed to bring these areas into compliance with National Air Quality Standards by the above dates, or face substantial federal sanctions.

A primary task in assisting the local lead agencies in their developing a plan to bring each area into an attainment status is the defining of basic input data to be used in calculating emission factors. A cooperative effort by the local agencies, DEQ and the Oregon Department of Transportation (ODOT) is being made to establish factual and supportable emission factor input data.

Basic Emission Factor Input Data

The basic emission factor input data under consideration includes the following:

1) Percent Cold Start - vehicles being started following a specified engine-off period.

2) Percent Hot Start - vehicles being started in a "hot" or normal engine operating temperature.

3) Percent Trucks - average number of trucks found in normal weekday traffic.

4) Percent Motorcycles - average number of cycles found in normal weekday traffic.

5) Percent Light Duty Trucks - number of light duty trucks (i.e. pickups) that would be found in normal weekday traffic.

6) Ambient (atmospheric) Temperature - average "worst case" temperature expected for the study area.

7) Air Conditioning Factor - an adjustment factor to account for the effects of air conditioning on emissions for light duty vehicles (LDV) and light duty trucks (LDT).

8) Vehicle Loading Correction Factor - an adjustment factor to account for above normal passenger/cargo loading in LDV and LDT.

9) Trailer Towing Correction Factor - an adjustment factor to account for the effects of trailer towing on emissions for LDV and LDT.

10) Humidity Correction Factor - an adjustment factor to correct Oxides of nitrogen (NOx) emissions under different conditions.

The proposed values for hot start, cold start, percent trucks, percent motorcycles, percent light duty trucks and atmospheric temperature are summerized in the following table.

	%Hot Start	%Cold Start	%LDT	Atmos. Temp.	Percent Trucks	Percent Cycles
Salem	38	34	23	40	3	1
Eugene	33	31	27	40	3	1
Medford	38	33	27	40	3	1

Except for Medford, the determination of hot and cold start percentages were determined from studies done by the Urban Studies

Unit in 1975. After consultation with local planners and a review of the 1965 Bear Creek Area Transportation Study, the Urban Studies Unit feels that the proposed figures represent realistic percentages. Unfortunately, time does not permit this office to perform a complete Medford hot start-cold start study similar to what was done for Salem and Eugene.

Truck and motorcycle percentages were determined from manual count information at various major arterial intersections within each study area. Based on past experience, the proposed percentages are believed to be representative of conditions in Salem, Eugene and Medford.

The percentage of light duty trucks was determined from Department of Motor Vehicles (DMV) registration data. The DMV information provided vehicle registration on a county-by-county basis for the 12 model years from 1963 through 1974.

The proposed atmospheric (ambient) temperature is the same for Salem, Eugene and Medford. For the purposes of air quality analysis, the proposed ambient temperature is an "average worst case" temperature for the three study areas. The temperatures used for Salem and Eugene are the same as what has been used in the past. The propose ambient temperature for Medford is based on a ten-year annual minimum temperature 1/ at the Medford Airport.

Since data is not readily available, the effects of vehicle loading, trailer towing and air conditioning are assumed to be negligible. For any needed remaining basic emission factor input data,

1/ Climatological Handbook, Columbia Basin States, Temperature, Volume 1, Part A, Pacific Northwest River Basins, Commission, June, 1969.

national averaged data will be used.

Mel Holmes
July 21, 1978

Salem Non-Attainment Area 1983
Emission Inventory - Carbon Monoxide, Tons Per Year

Source	Baseline Year 1977	1983 Projected Allowable Emissions		
		Emissions from sources existing in 1977	Growth Since 1977	Projected 1983 Total Emissions
1. Fuel Combustion External				
A. Residential Fuel (Area)				
1. Anthracite Coal	0	0	0	0
2. Bituminous Coal	0	0	0	0
3. Distillate Oil	14.0	14.0	2.0	16.0
4. Residual Oil	0	0	0	0
5. Natural Gas	29.0	29.0	5.0	34.0
6. Wood	0	0	0	0
7. Total	43.0	43.0	7.0	50.0
B. Electric Generation (Point)				
1. Antracite Coal	0	0	0	0
2. Bituminous Coat	0	0	0	0
3. Lignite	0	0	0	0
4. Residual Oil	0	0	0	0
5. Distillate Oil	0	0	0	0
6. Natural Gas	0	0	0	0
7. Process Gas	0	0	0	0
8. Coke	0	0	0	0
9. Sawdust	0	0	0	0
10. Total	0	0	0	0
C. Industrial Fuel (Point)				
1. Anthracite Coal				
a. area	0	0	0	0
b. point	0	0	0	0
2. Bituminous Coal				
a. area	0	0	0	0
b. point	0	0	0	0
3. Lignite				
a. point	0	0	0	0
4. Residual Oil				
a. area	8.0	8.0	1.0	9.0
b. point	0	0	0	0
5. Distillate Oil				
a. area	0	0	0	0
b. point	0	0	0	0
6. Natural Gas				
a. area	7.0	7.0	1.0	8.0
b. point	0	0	0	0

Salem Non-Attainment Area 1983
Emission Inventory - Carbon Monoxide, Tons Per Year

Source	Baseline Year 1977	1983 Projected Allowable Emissions		
		Emissions from sources existing in 1977	Growth Since 1977	Projected 1983 Total Emissions
7. Process Gas				
a. area	0	0	0	0
b. point	0	0	0	0
8. Coke				
a. point	0	0	0	0
9. Wood				
a. area	14.0	14.0	0	14.0
b. point	0	0	0	0
10. Liquid Petro Gas				
a. point	0	0	0	0
11. Bagasse				
a. point	0	0	0	0
12. Other				
a. point	0	0	0	0
13. Total				
a. area	29.0	29.0	2.0	31.0
b. point	0	0	0	0
D. Commercial/Institutional Fuel				
1. Anthracite Coal				
a. area	0	0	0	0
b. point	0	0	0	0
2. Bituminous Coal				
a. area	0	0	0	0
b. point	0	0	0	0
3. Lignite				
a. point	0	0	0	0
4. Residual Oil				
a. area	12.0	12.0	2.0	14.0
b. point	0	0	0	0
5. Distillate Oil				
a. area	0	0	0	0
b. point	0	0	0	0
6. Natural Gas				
a. area	0	0	0	0
b. point	0	0	0	0
7. Wood				
a. area	0	0	0	0
b. point	0	0	0	0
8. Liquid Petrol Gas				
a. point	0	0	0	0

Salem Non-Attainment Area 1983
Emission Inventory - Carbon Monoxide, Tons Per Year

Source	Baseline Year 1977	1983 Projected Allowable Emissions		
		Emissions from sources existing in 1977	Growth Since 1977	Projected 1983 Total Emissions
9. Other				
a. point	0	0	0	0
10. Total				
a. area	12.0	12.0	2.0	14.0
b. point	0	0	0	0
E. Other				
1. Point	0	0	0	0
F. Total External Combustion				
1. Area	84.0	84.0	11.0	95.0
2. Point	0	0	0	0
2. Fuel Combustion Internal				
A. Electric Generator				
1. Distillate Oil	14.0	14.0	0	14.0
2. Natural Gas	0	0	0	0
3. Diesel	0	0	0	0
4. Other	0	0	0	0
5. Total	14.0	14.0	0	14.0
B. Industrial Fuel				
1. Distillate Oil	0	0	0	0
2. Natural Gas	0	0	0	0
3. Gasoline	0	0	0	0
4. Diesel	0	0	0	0
5. Other	0	0	0	0
6. Total	0	0	0	0
C. Commercial/Institutional Fuel				
1. Diesel	0	0	0	0
2. Total	0	0	0	0
D. Engine Testing Aircraft	0	0	0	0
E. Total Internal Combustion	14.0	14.0	0	14.0

Salem Non-Attainment Area 1983
Emission Inventory - Carbon Monoxide, Tons Per Year

Source	Baseline Year 1977	1983 Projected Allowable Emissions		
		Emissions from sources existing in 1977	Growth Since 1977	Projected 1983 Total Emissions
Total Fuel Combustion				
Area	98.0	98.0	11.0	109.0
Point	0	0	0	0
3. Industrial Process (Point)				
A. Chemical Manufacturing	0	0	0	0
B. Food/Agriculture	0	0	0	0
C. Primary Metal	0	0	0	0
D. Secondary Metals	0	0	0	0
E. Mineral Products	0	0	0	0
F. Petroleum Industry	0	0	0	0
G. Wood Products	0	0	0	0
H. Metal Fabrication	0	0	0	0
I. Leather Products	0	0	0	0
J. Textile Manufacturing	0	0	0	0
K. Inprocess Fuel	0	0	0	0
L. Other/Not Classified	0	0	0	0
M. Total	0	0	0	0
4. Solid Waste Disposal				
A. Government (Point)				
1. Municipal Incin.	0	0	0	0
2. Open Burning	0	0	0	0
3. Other	0	0	0	0
4. Total	0	0	0	0
B. Residential (Area)				
1. Onsite Incin.	0	0	0	0
2. Open Burning	0	0	0	0
3. Total	0	0	0	0
C. Commercial Institutional				
1. Onsite Incin.				
a. area	0	0	0	0
b. point	0	0	0	0
2. Open Burning				

Salem Non-Attainment Area 1983
Emission Inventory - Carbon Monoxide, Tons Per Year

Source	Baseline Year 1977	1983 Projected Allowable Emissions		
		Emissions from sources existing in 1977	Growth Since 1977	Projected 1983 Total Emissions
a. area	0	0	0	0
b. point	0	0	0	0
3. Apartment				
a. point	0	0	0	0
4. Other				
a. area	0	0	0	0
b. point	0	0	0	0
5. Total				
a. area	0	0	0	0
b. point	0	0	0	0
D. Industrial				
1. Onsite Incin.				
a. area	0	0	0	0
b. point	0	0	0	0
2. Open Burning				
a. area	0	0	0	0
b. point	0	0	0	0
3. Auto Body Incin.				
a. point	0	0	0	0
4. Other				
a. area	0	0	0	0
b. point	0	0	0	0
5. Total				
a. area	0	0	0	0
b. point	0	0	0	0
E. Total Solid Waste Disposal				
1. area	0	0	0	0
2. point	0	0	0	0
5. Transportation (Area)				
A. Land Vehicles				
1. Gasoline				
a. light duty	50250.0	19296.0	19296.0	38592.0
b. heavy duty	804.0	241.0	362.0	603.0
c. off highway	85.0	85.0	14.0	99.0
d. total	51139.0	19622.0	19672.0	39294.0

Salem Non-Attainment Area 1983
Emission Inventory - Carbon Monoxide, Tons Per Year

Source	Baseline Year 1977	1983 Projected Allowable Emissions		
		Emissions from sources existing in 1977	Growth Since 1977	Projected 1983 Total Emissions
2. Diesel				
a. heavy duty	804.0	121.0	482.0	603.0
b. off highway	0	0	0	0
c. rail	100.0	100.0	0	100.0
d. total	90.4	221.0	482.0	703.0
B. Aircraft				
4. Total	205.0	205.0	74.0	279.0
C. Vessels				
1. Bituminous Coal	0	0	0	0
2. Diesel Fuel	0	0	0	0
3. Residual Oil	0	0	0	0
4. Gasoline	0	0	0	0
5. Total	0	0	0	0
D. Total Transportation	52248.0	20048.0	20228.0	40276.0
6. Miscellaneous (Area)				
A. Fires				
1. Structural	98.0	98.0	17.0	115.0
2. Frost Control	0	0	0	0
3. Slash Burning	0	0	0	0
4. Wild Forest	0	0	0	0
5. Agricultural	0	0	0	0
6. Total	98.0	98.0	17.0	115.0
AREA TOTAL	52444.0	20244.0	20256.0	40500.0
POINT TOTAL	0	0	0	0
GRAND TOTAL	52444.0	20244.0	20256.0	40500.0

Salem Non-Attainment Area 1987
Emission Inventory - Carbon Monoxide, Tons Per Year

Source	Baseline Year 1977	1987 Projected Allowable Emissions		
		Emissions from sources existing in 1977	Growth Since 1977	Projected 1987 Total Emissions
1. Fuel Combustion External				
A. Residential Fuel (Area)				
1. Anthracite Coal	0	0	0	0
2. Bituminous Coal	0	0	0	0
3. Distillate Oil	14.0	14.0	3.0	17.0
4. Residual Oil	0	0	0	0
5. Natural Gas	29.0	29.0	7.0	36.0
6. Wood	0	0	0	0
7. Total	43.0	43.0	10.0	53.0
B. Electric Generation (Point)				
1. Antracite Coal	0	0	0	0
2. Bituminous Coat	0	0	0	0
3. Lignite	0	0	0	0
4. Residual Oil	0	0	0	0
5. Distillate Oil	0	0	0	0
6. Natural Gas	0	0	0	0
7. Process Gas	0	0	0	0
8. Coke	0	0	0	0
9. Sawdust	0	0	0	0
10. Total	0	0	0	0
C. Industrial Fuel (Point)				
1. Anthracite Coal				
a. area	0	0	0	0
b. point	0	0	0	0
2. Bituminous Coal				
a. area	0	0	0	0
b. point	0	0	0	0
3. Lignite				
a. point	0	0	0	0
4. Residual Oil				
a. area	8.0	8.0	2.0	10.0
b. point	0	0	0	0
5. Distillate Oil				
a. area	0	0	0	0
b. point	0	0	0	0
6. Natural Gas				
a. area	7.0	7.0	2.0	9.0
b. point	0	0	0	0

Salem Non-Attainment Area 1987
Emission Inventory - Carbon Monoxide, Tons Per Year

Source	Baseline Year 1977	1987 Projected Allowable Emissions		
		Emissions from sources existing in 1977	Growth Since 1977	Projected 1987 Total Emissions
7. Process Gas				
a. area	0	0	0	0
b. point	0	0	0	0
8. Coke				
a. point	0	0	0	0
9. Wood				
a. area	14.0	14.0	3.0	17.0
b. point	0	0	0	0
10. Liquid Petro Gas				
a. point	0	0	0	0
11. Bagasse				
a. point	0	0	0	0
12. Other				
a. point	0	0	0	0
13. Total				
a. area	29.0	29.0	7.0	36.0
b. point	0	0	0	0
D. Commercial/Institutional Fuel				
1. Anthracite Coal				
a. area	0	0	0	0
b. point	0	0	0	0
2. Bituminous Coal				
a. area	0	0	0	0
b. point	0	0	0	0
3. Lignite				
a. point	0	0	0	0
4. Residual Oil				
a. area	12.0	12.0	3.0	15.0
b. point	0	0	0	0
5. Distillate Oil				
a. area	0	0	0	0
b. point	0	0	0	0
6. Natural Gas				
a. area	0	0	0	0
b. point	0	0	0	0
7. Wood				
a. area	0	0	0	0
b. point	0	0	0	0
8. Liquid Petrol Gas				
a. point	0	0	0	0

Salem Non-Attainment Area 1987
Emission Inventory - Carbon Monoxide, Tons Per Year

Source	Baseline Year 1977	1987 Projected Allowable Emissions		
		Emissions from sources existing in 1977	Growth Since 1977	Projected 1987 Total Emissions
9. Other				
a. point	0	0	0	0
10. Total				
a. area	12.0	12.0	3.0	15.0
b. point	0	0	0	0
E. Other				
1. Point	0	0	0	0
F. Total External Combustion				
1. Area	84.0	84.0	20.0	104.0
2. Point	0	0	0	0
2. Fuel Combustion Internal				
A. Electric Generator				
1. Distillate Oil	14.0	14.0	0	14.0
2. Natural Gas	0	0	0	0
3. Diesel	0	0	0	0
4. Other	0	0	0	0
5. Total	14.0	14.0	0	14.0
B. Industrial Fuel				
1. Distillate Oil	0	0	0	0
2. Natural Gas	0	0	0	0
3. Gasoline	0	0	0	0
4. Diesel	0	0	0	0
5. Other	0	0	0	0
6. Total	0	0	0	0
C. Commercial/Institutional Fuel				
1. Diesel	0	0	0	0
2. Total	0	0	0	0
D. Engine Testing Aircraft	0	0	0	0
E. Total Internal Combustion	14.0	14.0	0	14.0

Salem Non-Attainment Area 1987
Emission Inventory - Carbon Monoxide, Tons Per Year

Source	Baseline Year 1977	1987 Projected Allowable Emissions		
		Emissions from sources existing in 1977	Growth Since 1977	Projected 1987 Total Emissions
Total Fuel Combustion				
Area	98.0	98.0	20.0	118.0
Point	0	0	0	0
3. Industrial Process (Point)				
A. Chemical Manufacturing	0	0	0	0
B. Food/Agriculture	0	0	0	0
C. Primary Metal	0	0	0	0
D. Secondary Metals	0	0	0	0
E. Mineral Products	0	0	0	0
F. Petroleum Industry	0	0	0	0
G. Wood Products	0	0	0	0
H. Metal Fabrication	0	0	0	0
I. Leather Products	0	0	0	0
J. Textile Manufacturing	0	0	0	0
K. Inprocess Fuel	0	0	0	0
L. Other/Not Classified	0	0	0	0
M. Total	0	0	0	0
4. Solid Waste Disposal				
A. Government (Point)				
1. Municipal Incin.	0	0	0	0
2. Open Burning	0	0	0	0
3. Other	0	0	0	0
4. Total	0	0	0	0
B. Residential (Area)				
1. Onsite Incin.	0	0	0	0
2. Open Burning	0	0	0	0
3. Total	0	0	0	0
C. Commercial Institutional				
1. Onsite Incin.				
a. area	0	0	0	0
b. point	0	0	0	0
2. Open Burning				

Salem Non-Attainment Area 1987
Emission Inventory - Carbon Monoxide, Tons Per Year

Source	Baseline Year 1977	1987 Projected Allowable Emissions		
		Emissions from sources existing in 1977	Growth Since 1977	Projected 1987 Total Emissions
a. area	0	0	0	0
b. point	0	0	0	0
3. Apartment				
a. point	0	0	0	0
4. Other				
a. area	0	0	0	0
b. point	0	0	0	0
5. Total				
a. area	0	0	0	0
b. point	0	0	0	0
D. Industrial				
1. Onsite Incin.				
a. area	0	0	0	0
b. point	0	0	0	0
2. Open Burning				
a. area	0	0	0	0
b. point	0	0	0	0
3. Auto Body Incin.				
a. point	0	0	0	0
4. Other				
a. area	0	0	0	0
b. point	0	0	0	0
5. Total				
a. area	0	0	0	0
b. point	0	0	0	0
E. Total Solid Waste Disposal				
1. area	0	0	0	0
2. point	0	0	0	0
5. Transportation (Area)				
A. Land Vehicles				
1. Gasoline				
a. light duty	50250.0	7079.0	25622.0	32701.0
b. heavy duty	804.0	67.0	439.0	506.0
c. off highway	85.0	85.0	20.0	105.0
d. total	51139.0	7231.0	26081.0	33312.0

Salem Non-Attainment Area 1987
Emission Inventory - Carbon Monoxide, Tons Per Year

Source	Baseline Year 1977	1987 Projected Allowable Emissions		
		Emissions from sources existing in 1977	Growth Since 1977	Projected 1987 Total Emissions
2. Diesel				
a. heavy duty	804.0	34.0	472.0	506.0
b. off highway	0	0	0	0
c. rail	100.0	100.0	0	100.0
d. total	904.0	134.0	472.0	606.0
B. Aircraft				
4. Total	205.0	205.0	80.0	285.0
C. Vessels				
1. Bituminous Coal	0	0	0	0
2. Diesel Fuel	0	0	0	0
3. Residual Oil	0	0	0	0
4. Gasoline	0	0	0	0
5. Total	0	0	0	0
D. Total Transportation	52248.0	7570.0	26633.0	34203.0
6. Miscellaneous (Area)				
A. Fires				
1. Structural	98.0	98.0	23.0	121.0
2. Frost Control	0	0	0	0
3. Slash Burning	0	0	0	0
4. Wild Forest	0	0	0	0
5. Agricultural	0	0	0	0
6. Total	98.0	98.0	23.0	121.0
AREA TOTAL	52444.0	7766.0	26676.0	34442.0
POINT TOTAL	0	0	0	0
GRAND TOTAL	52444.0	7766.0	26676.0	34442.0

ROBERT W. STRAUB
GOVERNOR

Department of Transportation

TRANSPORTATION BUILDING, SALEM, OREGON 97310

October 2, 1978

Ms. Ann Batson
Oregon Department of Environmental Quality
522 S.W. 5th Avenue
Portland, OR 07201

Dear Ann:

As per your request, enclosed are copies of the composite emission factors for the SATS and Medford study area.

Columns two through eleven should provide you with the necessary information. The data represented by each column is as follows:

Column

1 = Traffic volume

2 = Composite hydrocarbon emission factor

3 = Composite carbon monoxide emission factor

4 = Composite oxides of nitrogen emission factor

5 = Fraction of vehicle mix comprising light duty vehicles

6 = Fraction of vehicle mix comprising light duty trucks

7 = Fraction of vehicle mix comprising heavy duty gasoline powered trucks

8 = Fraction of vehicle mix comprising heavy duty diesel trucks

9 = Fraction of vehicle mix comprising motorcycles

Column

10 = Light duty vehicle speed

11 = Heavy duty vehicle speed

It should be pointed out that column 1 has been "dummied" out, and should be ignored. Also, the last three rows of data for each study year is a result of requesting emission factors for speeds up to 75 mph.

Please contact me if there are any questions concerning the data.

Sincerely,

Mel Holmes

Mel Holmes
Transportation Analyst

MH:dpy

Enclosure

SATS EMISSION FACTORS

	Load	Air Cond.	Trailer	CID	GVW
LVD	0	0	0	NA	NA
LDT	0	0	NA	NA	NA
HDG	NA	NA	NA	370	18500
HDD	NA	NA	NA	600	45000
Cycle	NA	NA	NA	NA	NA

County : Marion
Temp. : 40 F
Cold Start: 34%
Hot Start : 38%
Humidity : 75

SATS 1977	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	1.	32.56	378.60	4.72	0.7300	0.2300	0.0150	0.0150	0.0100	5	5
	2.	18.74	197.03	4.21	0.7300	0.2300	0.0150	0.0150	0.0100	10	10
	3.	13.98	136.28	4.13	0.7300	0.2300	0.0150	0.0150	0.0100	15	15
	4.	11.76	108.24	4.28	0.7300	0.2300	0.0150	0.0150	0.0100	20	20
	5.	10.40	91.00	4.53	0.7300	0.2300	0.0150	0.0150	0.0100	25	25
	6.	9.40	78.24	4.79	0.7300	0.2300	0.0150	0.0150	0.0100	30	30
	7.	8.63	68.54	5.00	0.7300	0.2300	0.0150	0.0150	0.0100	35	35
	8.	8.09	61.85	5.16	0.7300	0.2300	0.0150	0.0150	0.0100	40	40
	9.	7.77	58.04	5.31	0.7300	0.2300	0.0150	0.0150	0.0100	45	45
	10.	7.60	56.19	5.54	0.7300	0.2300	0.0150	0.0150	0.0100	50	50
	11.	7.43	53.91	5.97	0.7300	0.2300	0.0150	0.0150	0.0100	55	55
	12.	6.95	46.68	6.67	0.7300	0.2300	0.0150	0.0150	0.0100	60	55
	13.	6.95	46.68	6.67	0.7300	0.2300	0.0150	0.0150	0.0100	60	55
	14.	6.95	46.68	6.67	0.7300	0.2300	0.0150	0.0150	0.0100	60	55
	15.	6.95	46.68	6.67	0.7300	0.2300	0.0150	0.0150	0.0100	60	55
1983											
	1.	22.23	261.47	3.88	0.7300	0.2300	0.0150	0.0150	0.0100	5	5
	2.	12.49	136.77	3.45	0.7300	0.2300	0.0150	0.0150	0.0100	10	10
	3.	9.16	95.76	3.40	0.7300	0.2300	0.0150	0.0150	0.0100	15	15
	4.	7.58	76.67	3.55	0.7300	0.2300	0.0150	0.0150	0.0100	20	20
	5.	6.58	64.49	3.78	0.7300	0.2300	0.0150	0.0150	0.0100	25	25
	6.	5.83	55.19	4.01	0.7300	0.2300	0.0150	0.0150	0.0100	30	30
	7.	5.25	48.12	4.20	0.7300	0.2300	0.0150	0.0150	0.0100	35	35
	8.	4.86	43.37	4.36	0.7300	0.2300	0.0150	0.0150	0.0100	40	40
	9.	4.62	40.82	4.52	0.7300	0.2300	0.0150	0.0150	0.0100	45	45
	10.	4.51	39.68	4.75	0.7300	0.2300	0.0150	0.0150	0.0100	50	50
	11.	4.36	37.82	5.20	0.7300	0.2300	0.0150	0.0150	0.0100	55	55
	12.	3.97	31.82	5.80	0.7300	0.2300	0.0150	0.0150	0.0100	60	55
	13.	3.97	31.82	5.80	0.7300	0.2300	0.0150	0.0150	0.0100	60	55
	14.	3.97	31.82	5.80	0.7300	0.2300	0.0150	0.0150	0.0100	60	55
	15.	3.97	31.82	5.80	0.7300	0.2300	0.0150	0.0150	0.0100	60	55
1987											
	1.	16.69	189.02	3.50	0.7300	0.2300	0.0150	0.0150	0.0100	5	5
	2.	9.27	100.17	3.10	0.7300	0.2300	0.0150	0.0150	0.0100	10	10
	3.	6.74	71.18	3.05	0.7300	0.2300	0.0150	0.0150	0.0100	15	15
	4.	5.52	57.56	3.19	0.7300	0.2300	0.0150	0.0150	0.0100	20	20
	5.	4.73	48.59	3.41	0.7300	0.2300	0.0150	0.0150	0.0100	25	25
	6.	4.13	41.59	3.63	0.7300	0.2300	0.0150	0.0150	0.0100	30	30
	7.	3.67	36.25	3.81	0.7300	0.2300	0.0150	0.0150	0.0100	35	35
	8.	3.35	32.72	3.96	0.7300	0.2300	0.0150	0.0150	0.0100	40	40
	9.	3.17	30.94	4.11	0.7300	0.2300	0.0150	0.0150	0.0100	45	45
	10.	3.08	30.21	4.34	0.7300	0.2300	0.0150	0.0150	0.0100	50	50
	11.	2.96	28.71	4.77	0.7300	0.2300	0.0150	0.0150	0.0100	55	55
	12.	2.62	23.71	5.32	0.7300	0.2300	0.0150	0.0150	0.0100	60	55
	13.	2.62	23.71	5.32	0.7300	0.2300	0.0150	0.0150	0.0100	60	55
	14.	2.62	23.71	5.32	0.7300	0.2300	0.0150	0.0150	0.0100	60	55
	15.	2.62	23.71	5.32	0.7300	0.2300	0.0150	0.0150	0.0100	60	55

ROBERT W. STRAUB
GOVERNOR

Department of Transportation

TRANSPORTATION BUILDING, SALEM, OREGON 97310

November 20, 1978

Mr. Howard Harris
Transportation Control Program
Coordinator
Department of Environmental Quality
522 S.W. 5th Avenue
Portland, OR 97201

Dear Howard:

This letter is in response to your November 14 telephone request for the percentage breakdown for vehicles used in arriving at emission factors for study years 1987, 1983 and 1977 for the Salem area. You requested vehicle percentages for the following categories:

1. Percentage of Light Duty Vehicles pre 1975.
2. Percentage of Light Duty Vehicles post 1974.
3. Percentage of Light Duty Diesel Vehicles.
4. Percentage of Light Duty Trucks pre 1975, (0-6000 lbs.).
5. Percentage of Light Duty Trucks post 1974, (0-6000 lbs.).
6. Percentage of Light Duty Trucks 1975-1978, (6001-8500 lbs.).
7. Percentage of Light Duty Trucks post 1978, (6001-8500 lbs.).

Light Duty Diesel Vehicles were not included in the emission factor calculations. The remaining data requested is listed below.

Study Year 1987	Percentage Breakdown		
	LDV	LDT (0-6000 Lbs.)	LDT (6001-8500 Lbs.)
Pre 1975	10.07%	1.25%	1.33%
1975-1978			0.94%

Mr. Howard Harris
Page two
November 20, 1978

Study Year 1987		Percentage Breakdown	
	LVD	LDT (0-6000 Lbs.)	LDT (6001-8500 Lbs.)
1979-1987			7.43%
1975-1987	62.93%	12.05%	
	73.00%	13.30%	9.70%

Study Year 1983		Percentage Breakdown	
	LVD	LDT (0-6000 Lbs.)	LDT (6001-8500 Lbs.)
Pre 1975	21.17%	2.33%	2.04%
1975-1978			2.33%
1979-1983			4.33%
1975-1983	51.83%	11.97%	
	73.00%	14.3%	8.7%

Study Year 1977		Percentage Breakdown	
	LVD	LDT (0-6000 Lbs.)	LDT (6001-8500 Lbs.)
Pre 1975	52.12%	10.45%	4.81%
1975-1977	20.88%	5.75%	1.99%
	73.00%	16.20%	6.80%

In each of the study years, the emission factors were calculated using 73% light duty vehicles and 23% light duty trucks. The remaining 4% of the vehicles were 3% heavy trucks and 1% motorcycles.

If further information is needed, please contact me.

Sincerely,

Von E. Hemmert

Von E. Hemmert
Transportation Analyst

VEH:dpy

APPENDIX 4.4-5

SALEM CO CONTROL STRATEGY

ANALYSIS METHODOLOGY

I. Introduction

The purpose of this report is to document the methodology to be used for determining whether the Salem Non-Attainment Area (NAA) will be in compliance with the Federal Ambient Air Quality Standards for Carbon Monoxide (CO) by the end of 1982. The report consists of two main sections: Section II explains the methodology to be employed and Section III contains the supporting documentation.

II. Methodology

1. Background

CO concentrations (C) measured near an urban roadway can be expressed as the sum of two terms:

$$C = C_l + C_g \qquad (1)$$

where C_l is the microscale CO concentration resulting from local traffic adjacent to the monitor and C_g is the mesoscale concentration which is related to all other sources of CO in the

vicinity of the monitor. Under the stable conditions which characterize CO violations days, areawide CO levels accumulate and the C_g term becomes significant.

To effectively design a transportation control strategy for CO, all possibly violating roadways should be identified. However, Salem has only one continuous air monitoring (CAM) site measuring CO. To identify other possibly violating roadways, the CO data from the CAM station has been expanded through the use of two models, SAPOLLUT and AIRPOL-4A. AIRPOL-4A calculates local CO concentrations from a specific roadway and thus can be used to determine the C_1 term in equation (1) for any roadway. To use SAPOLLUT, the Salem NAA has been divided into 82 grids, 2 km on each side. SAPOLLUT interfaces directly with transportation models and calculates total CO emissions per grid as a function of vehicle miles traveled (VMT) and speed. This information has been used to calculate the C_g term for the CAM site as described in Section II.3 and to estimate the C_g term for other areas as described in Section II.4.

2. Determination of base CO concentration (C).

The EPA stipulates that the CO value used for attainment calculations be the highest of the second-highest 8-hour average CO concentrations observed during 1975, 1976, or 1977. The second highest concentrations for these three years are contained in Table 1.

Table 1

8 Hour Averages

2nd Highest 8-hour CO concentration (mg/m^3)		
1975	1976	1977
8.9	11.4	10.9

According to EPA criterion, the base CO concentration should be 11.4 mg/m^3, occurring in 1976.

Since the emission inventory was developed for the year 1977 and modification of the inventory would require considerable time and effort, the EPA suggests that the 1976 value be "normalized" to 1977 by considering the effects of emission factor reductions achieved between 1976 and 1977 through the Federal Motor Vehicle Emission Control Program. The reduction in emission factors between 1976 and 1977 is about 4%. Adjusting the 1976 second highest concentration downward by 4% results in a normalized 1977 concentration of 10.9 mg/m^3.

3. Determination of C_g at the CAM Site

To scale the CO concentrations observed at the CAM site to non-monitored areas of potentially high concentrations, an estimation of C_g at the CAM site is necessary. This can be done through the use of the AIRPOL-4A model. This model uses traffic

volumes and emission factors combined with physical and meteorological conditions to determine traffic-generated CO. The traffic volume input for the model at the CAM site is based on actual traffic counts. The physical input consists of the monitoring site and roadway geometries of the CAM station.

The meteorological input is the result of an analysis of the reaction of AIRPOL to a variety of parameters and the actual meteorological conditions typical of CO violations in Salem. Since the C_g concentration calculated for the CAM station is later modified and applied to other sites (Sections II.4 and II.5), a standardized set of "worst case" meteorological conditions had to be identified. Although the general conditions of E stability and low speed winds are typical of CO violation days at any site in Salem, wind direction effects are not constant. To measure the maximum concentration of CO from a designated link at receptor distances less than 135 ft, AIRPOL requires that the wind be parallel to that link. Based on these considerations, 1.2 mph wind speed, E stability, and parallel wind direction were identified as typical "worst case" meteorology.

These meteorological conditions must be applied to both the C_g calculations and the screening technique (Section II.5) to provide a common basis for the estimation of the CO concentrations at sites other than the CAM station.

The output of AIRPOL-4A is representative of the CO produced by traffic on the roadways adjacent to the CAM station. Since total CO is the sum of local plus grid CO, the modeled concentration will be subtracted from the observed second highest CO concentration (C) to estimate C_g at the monitoring site:

$$C_{g\ (cam)} = C - C_{l(mod)} \qquad (2)$$

where $C_{g(cam)}$ is the grid CO concentration, C is the second highest base year concentration, and $C_{l(mod)}$ is the CO concentration obtained from AIRPOL-4A.

4. Expansion of CAM's C_g to other grids

CO emission densities will be calculated by SAPOLLUT for the base year 1977, and future years, 1983 and 1987, for each two kilometer grid in the NAA. Since C_g is assumed to be proportional to grid-wide emission density, C_g concentrations in the non-monitored grids will be estimated by comparing their emission densities with the CAM grid emission density as follows:

$$\frac{C_{g(cam)}}{ED_{cam}} = \frac{C_{g(n)}}{ED_n} \qquad (3)$$

or rearranging:

$$C_{g(n)} = \frac{C_{g(cam)} \times ED_n}{ED_{cam}} \qquad (4)$$

where $C_{g(cam)}$ is the grid CO concentration determined for the CAM station as described in Section II.3, ED_{cam} is the emission density calculated by SAPOLLUT for the grid containing the CAM site, $C_{g(n)}$ is the grid concentration to be calculated for a non-monitored grid, and ED_n is the SAPOLLUT emission density for that grid. This exercise is carried out using the emission densities for 1977. The 1977 background concentration for the non-monitored grid is then scaled to 1983 by multiplying the 1977 concentration by the 1983/1977 emission density ratio for that grid. An example of this process is contained in Section III.2.

5. Screening Technique

A screening technique has been developed to streamline the calculation of C_1 for all non-monitored roadways. Rick Wood of the Oregon Department of Transportation developed a standardized equation for estimating CO concentration by running AIRPOL-4A to determine how changes in input parameters affected

the output CO concentrations. Correction factors were derived for roadway length, perpendicular distance of the receptor from the roadway, stability class, wind direction, and wind speed.

If these factors are held constant, CO concentration at any given site is a function only of speed (which determines emission factors) and average weekday traffic volume (AWDT):

$$C_1 = k \text{ (Emission Factor)(AWDT)} \qquad (5)$$

where k is the product of the correction factors and varies only with roadway type (CBD, arterial or freeway).

By using the standardized assumptions listed below, C_1 can be calculated solely from peak 8-hour speed and AWDT:

	Roadway Type		
Characteristic	CBD	Arterials	Freeways
Receptor Height	10 ft.	10 ft.	10 ft.
Receptor distance	12 ft.	25 ft.	95 ft.
Stability class	E	E	E
Wind Speed	1.2 mph	1.2 mph	1.2 mph
Wind direction	parallel	parallel	parallel
Lane Configuration	4 lanes	4 lanes	6 lanes
Length upwind	1000 ft.	1000 ft.	1000 ft.

Screening tables were developed to include all grid CO concentrations (C_g) from 0 to 9 mg/m^3. The grid concentration was subtracted from the ambient air quality standard of 10 mg/m^3, leaving a C_1 term from 9 to 1 mg/m^3.

$$C_1 = (10 - C_g) \text{ mg/m}^3 \qquad (6)$$

To obtain the AWDT which would cause the total of $C_g + C_1$ to equal 10 mg/m^3 equation (5) can be rearranged as follows:

$$\text{AWDT} = \frac{C_1}{\text{k(Emission Factor)}} \qquad (7)$$

The AWDT resulting in CO concentrations up to 10 mg/m^3 has been calculated for each possible grid CO concentration and speeds from 5 to 55 mph. The resulting tables are contained in Appendix 4.4-7.

To screen a given link having an associated volume, speed, and grid CO level; the appropriate table (CBD, freeway, arterial) will be entered at the same grid CO concentration and speed. If the projected volume on the link is greater than the tabulated volume, the link will be flagged as potentially violating the 8-hour CO standard. An example of this process is contained in Section III.2.

6. Screening Technique Follow Up Procedure

Links that screen out as potentially violating the 8 hour average CO standard in 1983 will receive closer scrutiny. Actual critical receptor distances will be identified, and if they are greater than the distances built into the screening tables, then the resulting concentrations will be factored, based on distance correction factors from Rick Wood's screening technique. If, after performing the above analysis on the set of screened out links, any problem links remain, and reasonably available measures cannot correct this problem by 1983, then a compliance extension will be requested.

III. Supporting Documentation

1. The CO screening tables are shown in Tables 1, 2, and 3, Appendix 4.4-7.
2. An example of the screening technique follows.

APPENDIX 4.4-6

EXISTING PROGRAMS AND PLANS

PROGRAMS

Alternative Modes

This analysis assumes the worst case situation and does not icorporate the extensive Alternate Modes Program being implemented for the Salem Urban Area.

The Salem Urban Area is presently accomplishing nine of the fourteen EPA recommended reasonably available control measures for implementing the SIP (Transportation - Air Quality Planning Guidelines, June, 1978, pp. 11-12).

The following are key elements of the Alternate Modes Program already in operation:

Carpool. The COG has initiated a Carpool Match program for all employees in the Salem Urban Area. Over 1000 employees have used this service. Any employee can call one telephone number and he will receive a list of all other employees who live and work close to him.

On-Street Carpool Spaces. For those who carpool, special carpool areas are reserved on streets located close to employment centers.

Carpool Incentives. The major parking structures in Salem have preferred parking reserved for carpoolers. The parking rates for carpoolers are lower. The carpooler has first priority for parking spaces and the location of spaces are located near the elevator or next to the business.

Commuter Bus Pass. The Salem Transit Division has initiated a free bus service to all employees who use the bus at least one-half of the time. Over 1700 employees receive monthly bus passes. This compares with 1200 employees a year ago.

Express Bus/Park and Ride Program. Effective January 2, 1979, an extensive Park and Ride Program will begin throughout the Salem Urban Area. Four routes will serve people in the outlying areas with half hour service. This service will have a capacity of 1500 people. Although the program has not yet been implemented, over 500 people have submitted application for regular ridership.

Bicycle Facilities. A Bike Plan for the Salem Urban Area has recently been prepared and submitted to organizations for review. This plan will soon be an element of the Salem Area Comprehensive Plan and the SATS Transportation Plan and will be used to help implement future bicycle facilities.

Transit. The City of Salem has recently authorized the Transit Administrator to purchase used buses from other cities. These buses will service both the new Express Bus and commuter bus programs.

On-Street Free Customer Parking District. The City of Salem has designated most streets within the downtown and Capitol Mall Area to be off-limits to employees and available to customers. This parking disincentive for employees has caused an increase in Alternate Modes. Employees who repeatedly violate the free parking district will receive $20 fines.

Front Street Parking Restriction. Presently, 600 cars park along Front Street. However, this parking facility will be terminated when Front Street is improved, and the proposed Greenway Park is constructed. This restriction is expected in June, 1979. Therefore, more employees can be expected to convert to the bus or to methods other than the single occupant vehicle.

Staggered Working Hours. Flex hours have been available for over a year for all State, City, and County employees. The working shifts range from 6-9 a.m. and 4-6 p.m. This has allowed ease of forming carpools and better off-peak transit use.

Pedestrian Malls. The downtown is being renovated with a new Nordstrom Store and improvements to existing retail stores. The City Council has hired a consultant to design pedestrian shelters within the downtown. A pedestrian mall is planned for two city blocks for the convenience of the shopper.

Residential Parking District. The neighborhoods surrounding the downtown and Capitol Mall have asked the City Council to restrict parking by employees, since residents in those areas could not find spaces near their own homes. In response, the City Council acted to change parking within several neighborhoods to two hours for everyone except specially permitted residents. As a consequence, hundreds of employees have been forced to find other ways to travel to work.

Parking and Employment Inventory. The MWVCOG is undertaking a detailed survey of each business in the downtown/Capitol Mall Area in order to study the actual demand for parking and the need for Alternate Modes.

PLANS

Salem Urban Area Year 2000 Transportation Plan

The Year 2000 Transportation Plan provides recommendations in the following four areas: 1) improvement of the area's highway system; 2) bridge structures; 3) transit expansion and operation; 4) methods to resolve projected parking deficits. It serves as the guide to transportation systems management and development in the urban area to the year 2000. Projects, policies and programs of the plan must be consistent with the SIP. If the transportation control strategies included in the SIP revision differ from the Year 2000 Transportation Plan, the Transportation Plan will be amended to be consistent with the SIP revision.

Salem Area Comprehensive Plan

The Comprehensive Plan is currently undergoing a major update. Although the process for the update and the process for the SIP revision are concurrent, significant findings from the SIP revisions analysis can be incorporated in the update before its final adoption. In any event, the SIP revisions could be adopted as an element of the Comprehensive Plan in recognition of Land Conservation and Development Commission's goal regarding air quality (#6).

Regional Parking and Circulation Plan (RPCP)

Phase I Downtown-Capitol Phase I of the RPCP is a transportation-related air quality document for the Salem downtown and Capitol Mall Area. The document is an areawide approach to determining impacts from numerous proposed street projects and parking changes. A second phase air quality control plan will be done concurrently with the SIP revision and will be complimentary.

Transportation Improvement Program (TIP) and Transportation Systems Management Element (TSME)

These two plans are subelements of the Year 2000 Transportation Plan.

The documents are revised annually and will be used to schedule implementation and funding of projects that are idenfied as being consistent with air quality goals.

APPENDIX 4.4-7

CO ANALYSIS

The screenline tables developed by the DEQ show the maximum allowable ADT for a given speed and CO grid concentration for various receptor distances (Tables 1, 2, and 3). Using the projected ADT's, the 1983 (FTS-6) and 1987 (FTS-7) transportation systems were analyzed for possible violations. Since there is only one CO grid concentration for each two kilometer grid, only the roadway section with the highest ADT in each grid square has to be analyzed. Therefore, the most heavily traveled roadway section for each grid square was analyzed. Table 4 shows only those grid squares that have a calculated CO background greater than 1 mg/m^3.

The screenline technique did not identify any roadway links as potential CO violators in 1983 or 1987. Although none of the two-kilometer grids show a CO violation, the analysis does show the area of greatest concern to be the CBD i.e., the two grid squares directly south of the CBD and the one grid square directly east of the CBD: SAPOLLUT Grid Squre numbers 79, 67, 55 and 80, respectively.

Although the roadway link analysis did not show any violations of allowable ADT's, three were close (within 7,000 ADT). Therefore, those key intersections were further analyzed. The selected analytical method was

CO SCREENING TABLE FOR SALEM
RECEPTOR HEIGHT - 10 FT. - RECEPTOR DISTANCE - 12 FT.

1983

Average 8-Hour Speed (mph)	GRID (CO) mg/m^3									
	0	1	2	3	4	5	6	7	8	9
	Allowable AWDT									
5	13,700	12,300	10,900	9,600	8,200	6,800	5,500	4,900	2,700	1,400
10	26,100	23,500	20,900	18,300	15,700	13,100	10,500	7,800	5,200	2,600
15	37,300	33,600	29,900	26,100	22,400	18,700	14,900	11,200	7,500	3,700
20	46,600	42,000	37,300	32,600	28,000	23,300	18,700	14,000	9,300	4,700
25	50,000+	49,900	44,400	38,800	33,300	27,700	22,200	16,600	11,100	5,500
30	↓	50,000+	50,000+	45,400	38,900	32,400	25,900	19,400	13,000	6,500
35	↓	↓	↓	50,000+	44,600	37,200	29,700	22,300	14,900	7,400
40	↓	↓	↓	↓	49,500	41,200	33,000	24,700	16,500	8,200
45	↓	↓	↓	↓	50,000+	43,800	35,000	26,300	17,500	8,800
50	↓	↓	↓	↓	↓	45,100	36,000	27,000	18,000	9,000
55	↓	↓	↓	↓	↓	47,300	37,800	28,400	18,900	9,500

1987

5	18,900	17,000	15,100	13,200	11,400	9,500	7,600	5,700	3,800	1,900
10	35,700	32,100	28,600	25,000	21,400	12,700	14,300	10,700	7,100	3,600
15	50,000+	45,200	40,200	35,200	30,100	25,100	20,100	15,100	10,000	5,000
20	↓	50,000+	49,700	43,500	37,300	31,100	24,800	18,600	12,400	6,200
25	↓	↓	50,000+	50,000+	44,200	36,800	29,400	22,100	14,700	7,400
30	↓	↓	↓	↓	50,000+	43,000	34,400	25,800	17,200	8,600
35	↓	↓	↓	↓	↓	49,300	39,500	29,600	19,700	9,900
40	↓	↓	↓	↓	↓	50,000+	43,700	32,800	21,900	10,900
45	↓	↓	↓	↓	↓	↓	46,200	34,700	23,100	11,600
50	↓	↓	↓	↓	↓	↓	47,300	35,500	23,700	11,800
55	↓	↓	↓	↓	↓	↓	49,800	37,400	24,900	12,500

TABLE 1

CO SCREENING TABLE IN SALEM
RECEPTOR HEIGHT - 10 FT. - RECEPTOR DISTANCE - 25 FT.

1983

Average 8-Hour Speed (mph)	GRID (CO) mg/m^3									
	0	1	2	3	4	5	6	7	8	9
	Allowable AWDT									
5	15,800	14,200	12,700	11,100	9,500	7,900	6,300	4,700	3,200	1,600
10	30,200	27,200	24,200	21,200	18,100	15,100	12,100	9,100	6,000	3,000
15	43,200	38,900	34,600	30,200	25,900	21,600	17,300	13,000	8,600	4,300
20	50,000+	48,600	43,200	37,800	32,400	27,000	21,600	16,200	10,800	5,400
25	↓	50,000+	50,000+	44,900	38,500	32,100	25,700	19,200	12,800	6,400
30	↓	↓	↓	50,000+	45,000	37,500	30,000	22,500	15,000	7,500
35	↓	↓	↓	↓	50,000+	43,000	34,400	25,800	17,200	8,600
40	↓	↓	↓	↓	↓	47,700	38,200	28,600	19,100	9,500
45	↓	↓	↓	↓	↓	50,000+	40,500	30,400	20,300	10,100
50	↓	↓	↓	↓	↓	↓	41,700	31,300	20,900	10,400
55	↓	↓	↓	↓	↓	↓	43,800	32,800	21,900	10,900

1987

5	21,900	19,700	17,500	15,300	13,100	10,900	8,800	6,600	4,400	2,200
10	41,300	37,200	33,000	28,900	24,800	20,600	16,500	12,400	8,300	4,100
15	50,000+	50,000+	46,500	40,700	34,900	29,100	23,200	12,400	11,600	5,800
20	↓	↓	50,000+	50,000+	43,100	35,900	28,700	21,600	14,400	7,200
25	↓	↓	↓	↓	50,000+	42,600	34,100	25,500	17,000	8,500
30	↓	↓	↓	↓	↓	49,700	39,800	27,800	19,900	9,900
35	↓	↓	↓	↓	↓	50,000+	45,600	34,200	22,800	11,400
40	↓	↓	↓	↓	↓	↓	50,000+	37,900	25,300	12,600
45	↓	↓	↓	↓	↓	↓	↓	40,800	26,700	13,400
50	↓	↓	↓	↓	↓	↓	↓	41,100	27,400	13,400
55	↓	↓	↓	↓	↓	↓	↓	43,200	28,800	14,400

TABLE 2

CO SCREENING TABLE FOR SALEM
RECEPTOR HEIGHT - 10 FT. - RECEPTOR DISTANCE - 95 FT.

1983

Average 8-Hour Speed (mph)	GRID (CO) mg/m^3									
	0	1	2	3	4	5	6	7	8	9
	Allowable AADT									
5	43,600	39,200	34,900	30,500	26,100	21,800	17,400	13,100	8,700	4,400
10	83,300	75,000	66,600	58,300	50,000	41,600	33,300	25,000	16,700	8,300
15	100,000+	100,000+	95,200	83,300	71,400	59,500	47,600	35,700	23,800	11,900
20			100,000+	100,000+	89,100	74,300	59,400	44,600	29,700	14,900
25					100,000+	88,300	20,700	53,000	35,300	17,700
30						100,000+	82,600	61,900	41,300	20,600
35							100,000+	71,000	47,300	23,700
40								78,800	52,500	26,300
45								83,700	55,800	27,900
50								86,100	57,400	28,700
55	↓	↓	↓	↓	↓	↓	↓	90,400	60,200	30,100

1987

5	60,300	54,200	48,200	42,200	36,200	30,100	24,100	18,100	12,100	6,000
10	100,000+	100,000+	91,000	79,600	68,200	56,900	45,500	34,100	22,900	11,400
15			100,000+	100,000+	95,200	79,300	63,500	47,600	31,700	15,900
20					100,000+	99,000	79,200	59,400	39,600	19,800
25						100,000+	93,800	70,300	46,900	23,400
30							100,000+	82,200	54,800	27,400
35								94,300	62,800	31,400
40								100,000+	69,600	34,800
45									73,600	36,800
50									75,400	37,700
55	↓	↓	↓	↓	↓	↓	↓	↓	79,400	39,400

TABLE 3

TABLE 4

CARBON MONOXIDE SCREENLINE ANALYSIS FOR
GRIDS WITH BACKGROUND GREATER THAN 1 mg/m^3

1983

SAPOLLUT Grid No.	Calculated Background (mg/m^3)	Location	ADT (1000)	Speed (mph)	Receptor Distance (Ft.)	Allowable ADT @ (1000)	Allowable Speed (mph)
55	3	Commercial @ Rural	32.1	27	12	38.8	25
67	4	Ferry @ Liberty	26.0	25	12	33.3	25
68	2	Mission @ 17th	31.1	35	12	50.0	35
69	2	Lancaster @ State	10.6	35	25	50.0+	35
		I-5 @ State	31.3	50	95	100.0	50
79	5	Front @ Center	33.5	30	25	37.5	30
80	4	Center @ 17th	21.1	27	12	38.9	30
92	2	Portland @ Pine	20.5	35	25	50.0+	35
93	3	Lancaster @ Silverton	20.1	41	25	50.0	40
		I-5 @ Silverton	31.3	50	25	50.0	50
105	2	I-5 @ Portland	29.7	45	95	100.0	45
141	2	St. Paul Highway	1.5	45	25	50.0+	45

1987

55	2	Commercial @ Rural	35.6	27	12	50.0+	25
67	3	Ferry @ Liberty	27.4	25	12	50.0+	25
68	2	Mission @ 17th	32.6	35	12	50.0+	35
69	2	Lancaster @ State	26.0	35	25	50.0+	35
		I-5 @ State	38.1	50	95	100.0+	50
79	4	Front @ Center	30.7	30	12	50.0+	30
80	3	Center @ 17th	26.1	27	12	50.0+	25
92	2	Pine @ Portland	26.5	35	25	50.0+	35
93	3	Lancaster @ Silverton	19.0	41	25	50.0+	40
		I-5 @ Silverton	35.3	50	25	50.0+	50
105	2	I-5 @ Portland	37.5	45	95	100.0+	45
141	2	St. Paul Hwy.	1.5	25	25	50.0+	25

more stringent than the original screening method. This is because in addition to accounting for the major roadway, the CO contribution from the cross street was also included while applying the same grid background as was used in the original screening method. The CO concentration for the roadway links were determined using the AIRPOL 4A nomographs and the same worst case meteorological data as was used in the original screenline technique. The concentrations obtained from the nomographs are shown in Table 5.

Table 5
AIRPOL-4A NOMOGRAPH ANALYSIS
FOR INTERSECTION OF HIGH POTENTIAL
8-HOUR AVERAGE CO
1983

SAPOLLUT Grid No.	Calculated Background (mg/m^3)	Location	ADT (1000)	Speed mph	Concentration (mg/m^3)	Total Including Background (mg/m^3)
55	3	Commercial	32.1	27	5.1	8.7
		Rural	3.8	30	0.6	
	3	Commercial	18.1	27	2.9	6.5
		Rural	8.6	30	0.6	
	3	12th	20.3	32	2.8	6.5
		Madrona	8.3	30	0.7	
67	4	Ferry[1]	26.0	25	3.8	8.5
		Liberty[1]	16.1	17	0.7	
	4	Mission[1]	20.1	35	3.5	8.7
		13th[1]	14.9	25	1.2	
79	5	Center	15.2	25	2.6	9.0
		High	12.0	18	1.4	
	5	Front[2]	33.5	30	3.7	9.6
		Center[2]	18.7	41	0.9	
80	4	Market	17.0	32	2.5	8.0
		17th	14.2	21	1.5	
	4	Center[1]	21.1	25	1.6	9.1
		17th[1]	21.7	21	3.5	

Wind direction was assumed parallel to the roadway link with the highest ADT and perpendicular to the cross street.

All receptor distances are 12 feet except as noted.

8-hour standard for CO is 10 mg/m^3.

[1]receptor distance 25 ft.
[2]receptor distance 60 ft.

APPENDIX 4.4-8

PUBLIC INVOLVEMENT

SATS Organization

In addition to the Coordinating Committee, which is the policy committee, SATS includes three advisory committees. These advisory committees participate in a complex review and decision making process that results in officially adopted plans and programs. The description that follows analyzes the structure of the various committees in the Salem Area Transportation Study.

Mid-Willamette Valley Council of Governments

The Mid Willamette Valley Council of Governments is a voluntary association of governments and special service districts within Marion, Polk, and Yamhill Counties. The purpose of this organization is to identify issues and needs which are regional in scope and to plan, approve, and recommend actions in areas of intergovernmental concern.

It is the responsibility of the Council of Governments to ensure that transportation decisions are consistent with areawide goals and objectives.

Coordinating Committee

The Coordinating Committee is the policy committee of the Salem Area Transportation Study. It includes representatives from the State Transportation Agency and local units of government -- specifically, the City of Salem, Polk and Marion Counties, and School District 24J. It is the responsibility of the Coordinating Committee to:

Provide policy direction to the area's transportation planning process

Formulate and recommend transportation plans, policies, and priorities for adoption by the Council of Governments adn participating units of government

Help member agencies coordinate their respective implementation programs

Although the Coordinating Committee has full authority to prepare plans and annual programs of projects, the final authority to adopt the Transportation Plan rests with the member governments and agencies of the Salem Area Transportation Study. The decisions of the Coordinating Committee may be called up by the Council of Governments, in which case the decisions of the Council shall be final. Through authority delegated by the Council of Governments, the SATS Coordinating Committee also

operates as the Metropolitan Planning Organization. In this capacity the Coordinating Committee has the authority to annually revise and adopt the Transportation Systems Management Plan, Transportation Improvement Program, Prospectus - Unified Work Program, and reconfirm the validity of the Transportation Plan.

Technical Advisory Committee

The Technical Advisory Committee guides and reviews the technical procedures of the transportation planning process. This committee includes representatives from the Council of Governments, Oregon Department of Transportation, Salem, Polk County, Marion County, School District 24J, Parks and Recreation Agency, and the Federal Highway Administration. It is charged with the responsibility to:

Conduct the technical aspects of the transportation planning process

Assist in the formulation of transportation plans, projects and policies

Assist member agencies in the conduct of studies leading to the implementation of plans and projects

Provide an interdisciplinary planning approach

Citizen Advisory Committee

The Citizen Advisory Committee includes representatives of neighborhood

groups and at-large members representing special transportation and economic interests. The principal function of this committee is to permit citizen participation and review of proposed transportation plans, policies, and projects. Responsibilities of the Citizen Advisory Committee are to:

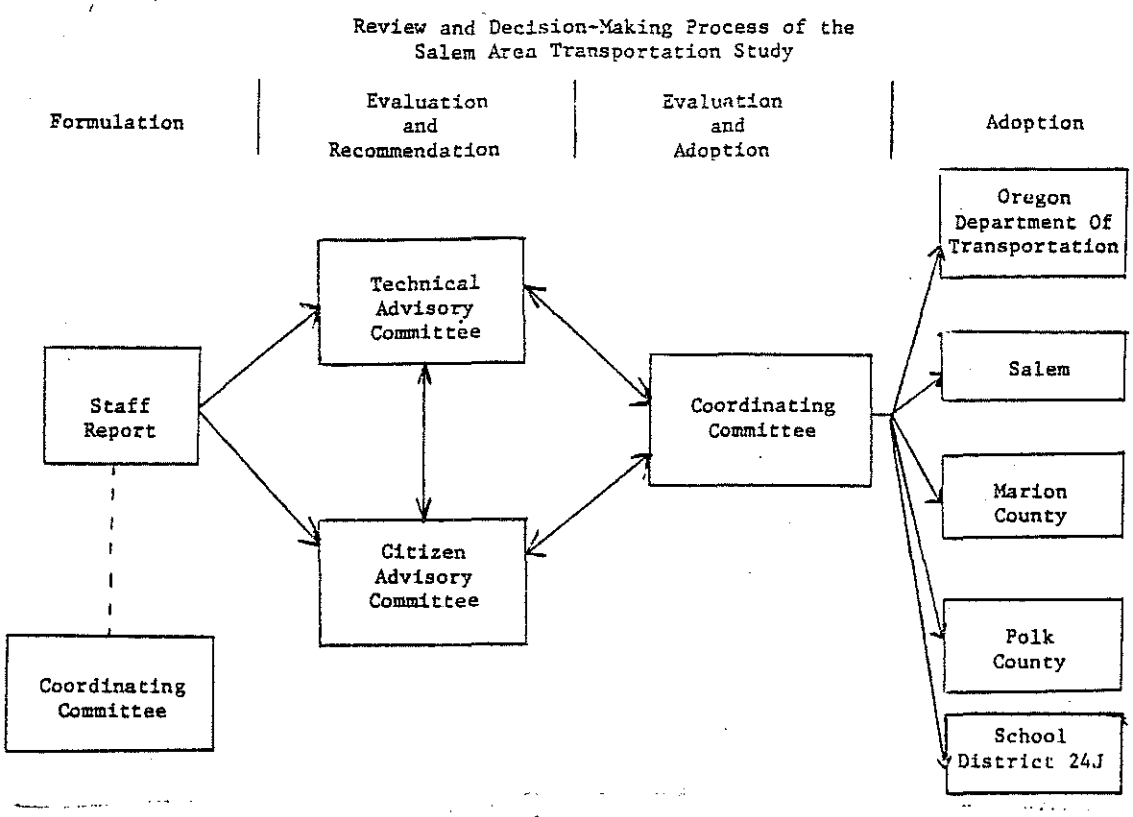
Review and make recommendations to the Coordinating Committee on transportation plans and projects

Advise the Coordinating Committee on community issues and possible responses to proposed programs

Recommend and assist in broad-range citizen involvement programs

The SATS organizational structure is shown in Figure 1.

FIGURE 1


Review and Decision-Making Process of the Salem Area Transportation Study
Formulation
Evaluation and Recommendation
Evaluation and Adoption
Adoption
Staff Report
Technical Advisory Committee
Citizen Advisory Committee
Coordinating Committee
Coordinating Committee
Oregon Department Of Transportation
Salem
Marion County
Polk County
School District 24J

MEMORANDUM OF UNDERSTANDING BETWEEN MARION COUNTY, POLK COUNTY, THE CITY OF SALEM AND THE MID WILLAMETTE VALLEY COUNCIL OF GOVERNMENTS RECOMMENDING LEAD AGENCY DESIGNATION UNDER PROVISIONS OF THE CLEAN AIR ACT AMENDMENTS OF 1977

This Memorandum of Understanding between the Marion County Board of Commissioners, the Polk County Board of Commissioners, the Salem City Council, and the Mid Willamette Valley Council of Governments Board of Directors, concerns a recommendation to the Governor for designation of the Mid Willamette Valley Council of Governments as the Lead Agency under Section 174 of the Clean Air Act Amendments of 1977, hereinafter called the Act. It also concerns the responsibilities of local agencies and the State in developing and implementing plans to meet the national ambient air standards in the Act.

WHEREAS, the Lead Agency designation does not require planning or implementation in addition to those already required, but does provide a forum for local elected official decision-making, and can provide additional air quality planning funds available only to local Lead Agencies; and

WHEREAS, a recommendation to the Governor for designation of a local Lead Agency requires unanimous consent of all parties to this Memorandum of Understanding;

NOW THEREFORE, be it agreed that the following recommendations to the Governor are accepted and adopted as firm policies of the parties as follows:

1. The Mid Willamette Valley Council of Governments be designated as the Lead Agency under Section 174 of the Clean Air Act Amendments of 1977.
2. The determination of responsibilities shall be considered an on-going process but made jointly by State and local elected officials.
3. Initially, responsibilities for relevant planning, implementation and enforcement activities shall be as shown in Attachment A which is made part of this Agreement.

4. Attachment A cannot be changed without the written consent of all parties to this Agreement.

IN WITNESS THEREOF, the parties have executed this Agreement this 29th day of March, 1978.

Board of Commissioners for Marion County:

Chairman Commissioner Commissioner

Board of Commissioners for Polk County:

Chairman Commissioner Commissioner

City of Salem:

Mayor Attest: City Recorder

Mid Willamette Valley Council of Governments:

Chairman, Board of Directors

ATTACHMENT A

INITIAL STATE AND LOCAL AIR QUALITY MAINTENANCE RESPONSIBILITIES

Element Classification	RESPONSIBILITY		
	Planning	Implementation	Enforcement
Traffic Operation Improvements	L,C,S	L,S	L,S
Alternative Modes	L,C,S	L,S	L,S
Parking Management	L,C,S	L,S	L,S
Vehicle Inspection and Maintenance	S	S	S
Air Quality Consistency Determination	C	--	--
Non Mobile Source Air Pollution	S	S	S

L - Local
C - COG
S - State

ROBERT W. STRAUB
GOVERNOR

9

RECEIVED
MAR 31 1978
MID WILLAMETTE VALLEY
COUNCIL of GOVERNMENTS

OFFICE OF THE GOVERNOR
STATE CAPITOL
SALEM, OREGON 97310

MAR 30 1978

Dennis L. Frank

Mr. Donald Dubois
Regional Administrator
Region X
U. S. Environmental
Protection Agency
1200 Sixth Avenue
Seattle, Washington 98101

Re: Designation of Organizations to Prepare Carbon Monoxide and Photochemical Oxidant SIP Revisions for Nonattainment Areas

Dear Mr. Dubois:

In accordance with the requirements of Section 174 of the Clean Air Act Amendments of 1977 (PL-95-95) and guidelines issued December 1977, I am certifying the following organizations as qualified to prepare revisions to Oregon's Clean Air Implementation Plan for carbon monoxide and photochemical oxidant nonattainment areas. A description of each of these designated organizations and the process by which each of these organizations have been selected is attached. As stated in each of the attachments, a preliminary determination of responsibilities has been accomplished.

ORGANIZATIONS DESIGNATED TO DEVELOP
STATE IMPLEMENTATION PLAN (SIP) REVISIONS
FOR CARBON MONOXIDE AND PHOTOCHEMICAL
OXIDANT NONATTAINMENT AREAS

Nonattainment Area	Pollutants Designated	Organization Designated	Type of Organization
Oregon portion of Portland/Vancouver Interstate AQMA	CO, O_x	Oregon Department of Environmental Quality	State Air Pollution Agency-AQMA Coordinating Agency
City of Salem	CO, O_x	Mid-Willamette Valley Council of Governments	MPO
Eugene-Springfield AQMA	CO, O_x	Lane Council of Governments	MPO
Medford-Ashland AQMA	CO, O_x	Jackson County	County

It is expected that each of these designated organizations will be working in a cooperative manner with other appropriate Federal, state, region and local agencies to develop needed SIP revisions by the January 1, 1979, deadline. For the Washington portion of the Portland-Vancouver Interstate AQMA, it is assumed that Governor Ray will appoint an appropriate lead agency to work with the Department of Environmental Quality on photochemical oxidant SIP revisions. (Refer to Attachment E.)

Any questions regarding these designations may be referred to the Department of Environmental Quality.

Sincerely,

Governor

RWS/kz

Attachments

cc Honorable Dixie Ray, Governor of Washington
Commissioner Isabel Sickels, Jackson County
Commissioner Tam Moore, Jackson County
Commissioner Carol Doty, Jackson County
Mayor Kent L. Aldrich, City of Salem
Mayor Al Densmore, City of Medford
Mayor Neil Goldschmidt, City of Portland
Mayor Gus Keller, City of Eugene
Mayor Vernon A. Meyer, City of Springfield
Mayor Gary Prickett, City of Ashland
Mr. William H. Young, Director, DEQ
Mr. Thomas Jeninson, Lane Council of Governments
Mr. Allan H. Hershey, Mid-Willamette Valley Council of Governments
Mr. Denton U. Kent, Columbia Region Associations of Governments
Department of Ecology, State of Washington
Southwest Washington Air Pollution Authority

APPENDIX 4.4-9

PUBLIC NOTICE AND HEARINGS

A public hearing on the Salem Transportation Control Strategy was held in Salem on May 4, 1979. The public notice for this hearing was mailed to interested and affected citizens on March 30. A newspaper advertisement for the hearing was published in the Statesman on April 2, 1979, and April 9, 1979. The only testimony received was submitted by the U.S. Environmental Protection Agency. A summary of these comments is in the hearing report in this appendix. Copies of the public notice and the newspaper advertisements are in this appendix.

Copies of the State Implementation Plan were sent to the State A-95 Clearinghouse and to fourteen areawide clearinghouses for review, as well as to the U.S. Department of Interior, the U.S. Fish and Wildlife Service, and the U.S. Forest Service. Copies of comments received are also in this appendix.

HWH:kmm

A6241

INTERGOVERNMENTAL REVIEW

Copies of the complete State Implementation Plan were sent to the State A-95 Clearinghouse, fourteen areawide clearinghouses, and various federal and state agencies which might be affected by the Plan. Since no significant comments were received, no responses were deemed necessary.

YOUR OPPORTUNITY TO COMMENT ON PROPOSED DEQ AIR POLLUTION EMISSION RULES FOR

SALEM TRANSPORTATION CONTROL STRATEGY

The DEQ is proposing to adopt a strategy that will attain and maintain federal carbon monoxide and ozone air quality standards in Salem after December 31, 1982. The strategy will include using carpooling, limited on-street parking, a traffic circulation plan and other measures to reduce air pollution. Vapor controls on some gasoline transfer operations are also part of the strategy. The adopted strategy will be submitted to EPA as part of Oregon's Clean Air Act Implementation Plan. Attend a

2:00 P.M. PUBLIC HEARING, MAY 4, 1979
MARION COUNTY COURTHOUSE
ROOM 129
SALEM

Copies of the proposed rule are available for your study and comment by writing or phoning Howard Harris, 229-6086, DEQ, Air Quality Division, PO Box 1760, Portland, OR 97207; or by phoning toll-free 1-800-452-7813, and asking for DEQ, 229-6086.

Written comments may be submitted until May 4 at the above DEQ address

Statesman 4-2-79

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Statesman - 4-9-79

Written comments may be submitted until May 4 at the above DEQ address

SALEM STATESMAN

APRIL 2, 1979

APRIL 9, 1979

ROBERT W STRAUB
GOVERNOR

Department of Environmental Quality

522 SOUTHWEST 5TH AVE. PORTLAND, OREGON

MAILING ADDRESS: P.O. BOX 1760, PORTLAND, OREGON 97207

Prepared: March 14, 1979
Hearing Date: May 4, 1979

NOTICE OF PUBLIC HEARING

A CHANCE TO BE HEARD ABOUT:

SALEM TRANSPORTATION CONTROL STRATEGY

The Department of Environmental Quality is proposing a strategy that will attain and maintain Federal carbon monoxide and ozone air quality standards in Salem. The strategy is in response to requirements of the Clean Air Act Amendments of 1977 and will show attainment with carbon monoxide and ozone standard by the statutory deadlines. The Department will submit to the Environmental Protection Agency the strategy approved by the Environmental Quality Commission. This will be a revision to the state Clean Air Act Implementation Plan. A hearing will be held on this matter in Salem on May 4, 1979.

WHAT IS THE DEQ PROPOSING?

Interested parties should request a copy of the complete proposed rule package. Some highlights are:

** The use of carpooling, bicycling, limited on-street parking, a traffic circulation plan and other measures to reduce carbon monoxide and ozone precursor emissions.

** Gasoline stations will be applying controls to limit the amount of vapors emitted to the atmosphere which result in ozone formation.

WHO IS AFFECTED BY THIS PROPOSAL:

The residents of the Salem area.

HOW TO PROVIDE YOUR INFORMATION:

Written comments should be sent to the Department of Environmental Quality, Air Quality Division, P.O. Box 1760, Portland, Oregon 97207, and should be received by May 4, 1979.

APPENDIX 4.4-10

RESULTS OF USING 1982 EMISSIONS AND EFFECT ON CO ATTAINMENT PROJECTION

The purpose of this section is to respond to EPA's concern that the Carbon Monoxide (CO) attainment projection for the Salem Non-attainment Area (NAA) was based on CO emissions for 1983 rather than for 1982. Because a complete revision of mobile source CO emissions to 1982 would involve a substantial amount of staff time and resources, a sketch analysis was conducted to determine the CO concentration that would be obtained in 1982 at the site with the highest 1983 concentration. The site analyzed is near the intersection of Front Street and Center Street which is located in the grid with the highest CO emissions. A summary of the methodology employed and the results of the analysis follows.

To estimate the CO concentration directly contributed by the two streets on the critical receptor, the methodology consists of determining the magnitude of 1982 CO emissions in the grid cell containing Front Street and Center Street, Grid Cell 79, determining the grid CO concentration for 1982, and finally employing Rick Wood's nomograph, derived from multiple runs of AIRPDL-4 and submitted to EPA in October, 1978 for their approval.

CO emission factors for 1982 were obtained from the Oregon Department of Transportation for speeds ranging from 25 miles per hour (mph) to 45 mph and are shown below in Table 1.

Table 1

CO Emission Factors for 1982

Speed, mph	CO, gm/vehicle-mile
25	69.21
30	59.21
35	51.61
40	46.49
45	43.70

The 1982 Grid Cell (GC) 79 CO emission density in kilograms (kg)/day was determined in a two step process as follows: 1) the GC 79 1983 CO emission density, 9,170 kg/day, was divided by GC 79 1983 Vehicle Miles of Travel (VMT), 146,370 VMT, which yields a composite 1983 CO emission factor for GC 79, 62.6 gm/VMT, for which an overall GC 79 speed can be interpolated from 1983 CO emission factors; 2) the GC 1983 speed was assumed to be equal to the GC 79 1982 speed which allows for the interpolation of a 1982 GC 79 CO emission factor, 67.21 gm/VMT at 26 mph, which, in turn, is multiplied by interpolated 1982 VMT for GC 79, thus yielding a 1982 GC 79 emission density of 9,667 kg/day.

Applying a ratio of the 1982 GC 79 emission density versus the 1977 GC 79 emission density to the 1977 GC 79 CO concentration of 7.2 mg/m^3 (8

hour average) yields a 1982 GC 79 CO concentrtion of 5.9 mg/m^3.

The next step involved calculation of the direct CO concentration contributed by Front Street and Center Street. The critical receptor has been identified as being located 60 feet from Front Street and 60 feet from Center Street. Traffic volumes were interpolated to 1982 levels. The speeds in 1982 were assumed to be the same as those used for 1983. Using Rick Wood's nomograph for "E" stability, Front Street contributes an eight hour average CO concentration of 3.4 mg/m^3 (parallel wind of 1.2 mph) and Center Street contributes an eight hour average CO concentration of 0.6 mg/m^3 (perpendicular wind of 1.2 mph). When the GC 79 CO concentration is added, the resulting eight hour average CO concentrtion is 9.9 mg/m^3, just under the eight hour average federal standard.

The above analysis is conservative in at least two respects. The intersection of Front Street and Center Street is analyzed at grade whereas, in reality, it is grade separated with Center Street elevated above Front Street. Also, the original grid CO concentration of 7.2 mg/m^3 was derived by modeling only one street with a parallel wind as contributing to measured concentrations. The use of two streets, as was done in this analysis, for determining the original CO grid concentration would have resulted in a lower CO grid concentration than 7.2 mg/m^3.

Conclusions

The above analysis indicates that the use of 1982 CO emissions instead of 1983 CO emissions would result in the attainment of the federal CO

standards by December 31, 1982. This is despite the fact that GC 79 CO emissions are approximately five percent higher in 1982 versus 1983. Therefore, completely revising the CO emissions to 1982 for the entire Salem CO study area, the Salem Area Transportation Study boundary, which would entail re-running the transportation models, does not appear to be warranted.

A6263.1

5.4 SALEM NON-ATTAINMENT AREA - NEW SOURCE REVIEW FOR CARBON MONOXIDE

Rules OAR 340-20-190 to -195 give the Department expanded authority and requirements regarding Special Permit Requirements for Sources Locating In or Adjacent to Nonattainment Areas.

The Clean Air Act Amendments of 1977, Sections 171, 172, 173, require that the 1979 State Implementation Plan contain an adequate permit program. The basic requirement that must be contained in the permit program is that major new or modified sources in the actual non-Attainment areas having a potential to emit 100 tons/year of a specific air pollutant must meet the following in order for a construction permit to be issued:

1. Lowest achieveable emission rate.
2. Demonstrate that all other facilities under the authority of the permit applicant are in compliance or on a compliance schedule to meet State Rules.
3. Demonstrate that a sufficient growth increment is available in the attainment plan or provide offsets.
4. Provide for an "Alternatives Analysis" as defined in the rule.

In addition, the Department added permit requirements similar to those above for sources that may locate adjacent to non-attainment areas, and has clarified authority to set plant site emission limits commensurate with airshed carrying capacity. The rules, OAR 340-20-190 to -197, are in Section 3.

The actual CO nonattainment area is adjoining eight separate street segments, mostly located in the urban core area and shown in Figure 4.4.3-1. New stationary sources of CO (greater than 100 tons per year potential CO emissions) would most likely not be able to locate in the identified nonattainment areas, because neither growth increments nor offset potentials exist. This is due to the fact that the Salem nonattainment area is projected to just attain CO standards by December 31, 1982, thus leaving no room for growth. Despite this, future growth increments could possibly become available through further demonstrated reductions from mobile sources. However, present zoning in the eight identified areas would likely by itself prohibit new stationary CO sources from locating in those areas.

HWH:kmm

A6202.2

7.4 SALEM NON-ATTAINMENT AREA CARBON MONOXIDE MONITORING PROGRAM

Carbon monoxide air quality surveillance within the Salem Non-Attainment Area was begun in 1974 at the Center and Liberty location (site 2438029) following a review of traffic circulation data. In October, 1978 the site was moved to 498 Church Street due to pending demolition of the Center and Liberty location. The new site was established in an area of expected maximum concentration within the Central Business District. The site criteria were evaluated by Department and EPA staff and found to be in conformance with the August 7, 1978 Federal Register (Vol. 43, No. 152) monitoring requirements. The monitoring methods and quality assurance practices employed by the Department also meet the EPA requirements. Table 7.4-1 lists the locations of the two sites shown in Figure 7.4-1.

Table 7.4-1

Salem Non-Attainment Area

Carbon Monoxide Surveillance Sites

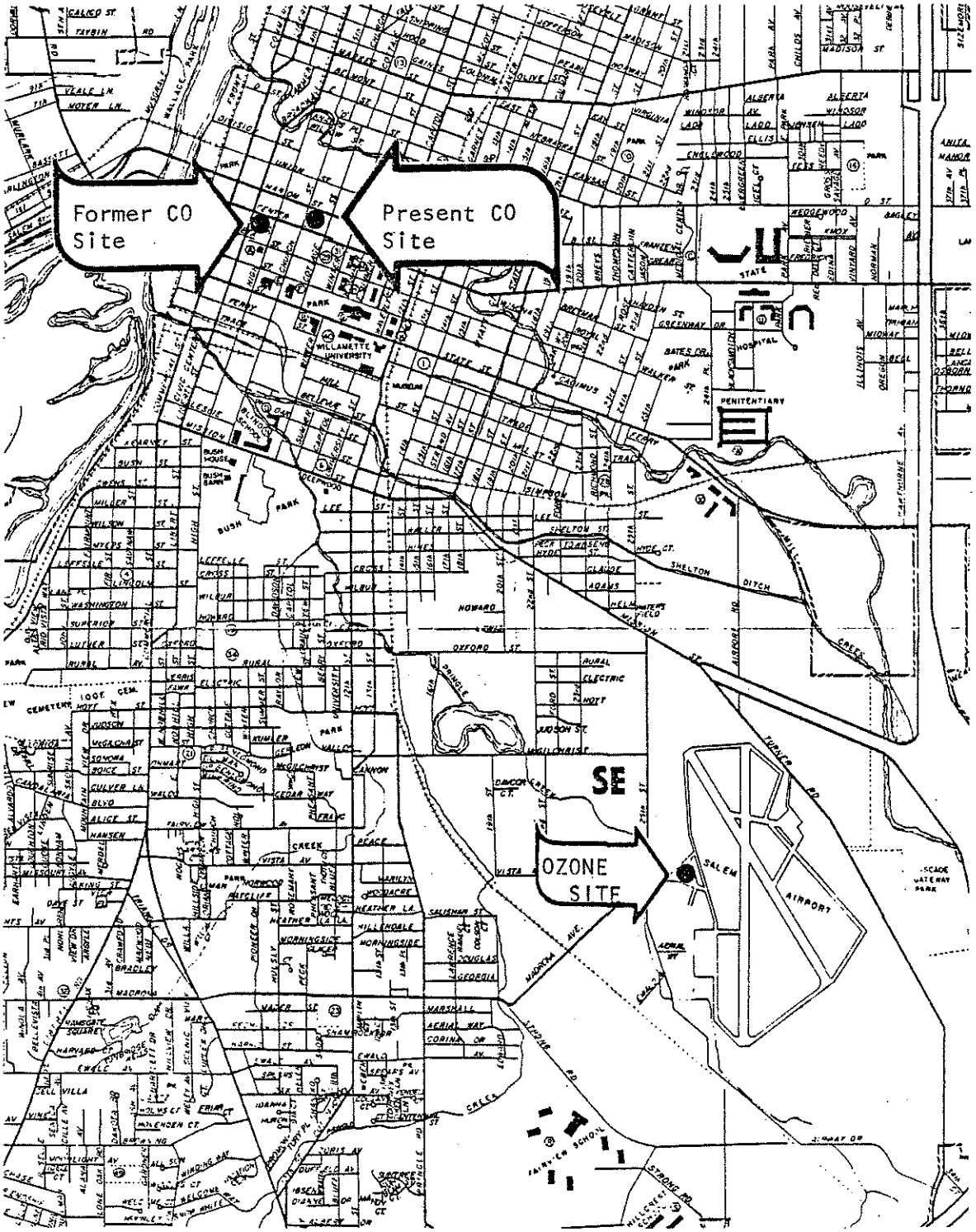
Location	Site No.	Date Established	Land Use	Designation
Center & Liberty	2438029	Jan., 1974	CBD	SLAMS[1]
498 Church St.	2438034	Oct., 1978	CBD	SLAMS

[1]State and Local Air Monitoring Site

FIGURE 7.4 -1

2

SALEM NON-ATTAINMENT AREA
CARBON MONOXIDE AND OZONE AIR SURVEILLANCE
NETWORK



SECTION 4.5

CONTROL STRATEGY FOR

SALEM NON-ATTAINMENT AREA

1979 STATE IMPLEMENTATION PLAN REVISION

FOR OZONE

(Attainment Strategy)

June 11, 1979

Mid-Willamette Valley Council of Governments

Oregon Department of Environmental Quality

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4.5.0 SALEM NON-ATTAINMENT AREA STATE IMPLEMENTATION PLAN FOR OZONE

4.5.0.1 Introduction

The Clean Air Act of 1970 and the Clean Air Act Amendments of 1977 establish guidelines outlining the methods and schedule by which National Ambient Air Quality Standards must be attained. Generally, areas throughout the nation are required to develop plans for attainment if past air monitoring indicates they do not comply with the federal ambient air quality standards. The Salem area marginally violates the federal ambient air quality standard for ozone of 0.12 parts per million (ppm) one-hour average. Consequently, the Salem city limits were designated a Non-Attainment Area for ozone in March, 1978. The original Non-Attainment Area was expanded by Mid-Willamette Valley Council of Governments to include the area within the Salem Area Transportation Study boundary. A legal description of the Non-Attainment Area is contained in Appendix 4.4-1.

4.5.0.2 Summary of Attainment Strategy

Using the Environmental Protection Agency approved model EKMA, Salem is estimated to need a 12% or 985 tons/year reduction in volatile organic compounds to meet the federal ozone standard.

The attainment strategy relies on the following measures to attain the federal ozone ambient air quality standard by December 31, 1982, and to meet other requirements of the 1977 Clean Air Act Amendments:

1. Federal Motor Vehicle Emissions Control Program
2. Volatile Organic Compounds Rules for 11 source categories
3. Commitment to adopt practicable measures from new volatile organic source categories.
4. Setting of plant site emission limits for existing sources that are consistent with the attainment strategy data base.

Emission projections show that a 2243 tons/year or 27% reduction in the 1977 volatile organic compound levels should occur by the end of 1982 through the implementation of the federally required Volatile Organic Compounds Rules for stationary sources and the Federal Motor Vehicle Emissions Control Program, which reduces volatile organic emissions from mobile sources. Since only a 985 tons/year reduction is required and a 2243 tons/year is expected, the reduction is more than sufficient to attain the federal ozone standard.

Growth is projected to be rapid in the Salem Non-Attainment Area for the next two decades. Population is expected to grow from 110,800 in 1975 to 200,700 by the year 2000, an increase of 81%. To deal with the added pollution burden resulting from this growth, the State of Oregon will implement New Source Review Rules to control emissions from new industrial sources and the Plant Site Emission Limits Rules to control emissions from existing sources.

4.5.1 AMBIENT AIR QUALITY

Ozone is not directly emitted into the atmosphere but results from a reaction between volatile organic compounds and nitrogen oxides in the presence of sunlight. Maximum ozone levels occur downwind of the areas producing these precursors. Salem's ozone monitor, located downwind of the Salem city center at the Salem Airport, meets current federal siting guidelines.

Table 4.5.1-1 summarizes the pertinent ozone air quality data for days exceeding the new federal ambient air quality standard of 0.12 ppm one-hour average at the Salem Airport ozone monitor.

Table 4.5.1-1

Ozone Air Quality Summary, 1975 - 1978

Year	Number of Days Exceeding 0.12 ppm 1 hr. Avg.	Hourly Ozone Concentration (ppm) Highest	Second Highest
1975	1	0.122	0.084
1976	0	0.114	0.102
1977	3	0.167	0.153
1978	4	0.149	0.147

4.5.2 EMISSION INVENTORY

4.5.2.1 Base Year

The Environmental Protection Agency - Department of Transportation Transportation - Air Quality Planning Guidelines, dated June 1978 requires an accurate, comprehensive, and current (1977 calendar year) inventory of existing emissions.

In accordance with that directive, stationary and mobile source emissions of volatile organic compounds and oxides of nitrogen were estimated using a 1977 data base.

Mobile source emissions were calculated using a sophisticated series of transportation models. The detailed description of the modeling process is contained in Appendices 4.4-2 through 4.4-4. Stationary source emissions for the 1977 inventories were obtained from the updated Department of Environmental Quality basic equipment list of the emission inventory data system.

Summaries of the 1977 base year emission inventories for volatile organic compounds and oxides of nitrogen are contained in Tables 4.5.2-2 and 4.5.2-3.

4.5.2.2 Growth

To estimate emissions in 1982 and 1987, the 1977 volatile organic compounds and oxides of nitrogen emission inventories were adjusted by forcasted growth rates.

Population and industrial growth estimates were obtained from the Mid Willamette Valley Council of Governments' Salem Urban Area Energy Study, March 1978. These estimates are consistent for land use planning, water quality 208 planning, housing and urban development 701 planning, and air quality and transportation planning.

Production growth factors for each type of industry in the Salem Non-Attainment Area were applied directly to the 1977 industrial emissions to obtain 1982 and 1987 estimated levels.

To calculate mobile source growth, the 1982 and 1987 population and employment estimates were fed into the same computer models used to determine 1977 emissions. The output mobile source emissions for the future years included the growth increment and could be directly entered into the 1982 and 1987 emission inventories.

Summaries of the volatile organic compounds and oxides of nitrogen emission inventories, which have been compiled using the 1977 data base and the Salem area growth factors, are contained in Tables 4.5.2-2 and 4.5.2-3. The detailed inventories in EPA format are contained in Appendix 4.5-1.

Table 4.5.2-2
Total Volatile Organic Compound Emissions (tons/year)

Source	1977	1982	1987
Stationary	1160	1104	1176
Mobile	7050	4863	3751
Total	8210	5967	4927

Table 4.5.2.-3
Total Oxides of Nitrogen Emissions (tons/year)

Source	1977	1982	1987
Stationary	2245	2600	2745
Mobile	4109	4483	3942
Total	6354	7083	6687

Of the 1977 total volatile organic compound emissions, 89% are created by mobile sources. The other 11% are contributed by small stationary sources. There are no stationary sources large enough to fall under the Environmental Protection Agency's definition of point source (sources of 100 tons/year potential emission).

Mobile source volatile organic compound emissions continue to dominate the total areawide emissions through 1982 and 1987. Mobile source emissions constitute 81% of the total in 1982 and 76% of the total in 1987.

4.5.3 OZONE CONTROL STRATEGY

4.5.3.1 Level of Control Needed

The level of control needed for compliance with the 0.12 ppm ozone standard was calculated using the Environmental Protection Agency's standard isopleth method, EKMA. This method is described in detail in Appendix 4.5-2.

Using EKMA, a reduction of 12% of the 1977 volatile organic compound levels, or 985 tons/year, was calculated to reduce the maximum ozone levels from their present concentrations to levels less than the 0.12 ppm national ambient air quality standard.

4.5.3.2 Control Alternatives

The Environmental Protection Agency required that a commitment be made by the state to implement the following control strategies.

Because EKMA was used in forecasting the ozone attainment date, Reasonably Available Control Technology will be implemented for stationary sources for which EPA has issued Control Technology Guidelines. Reasonably Available Control measures for mobile sources have also been implemented. See Sections 4.5.3.3 and 4.5.4.1 for further details on these programs.

A permit plan is required to manage growth from new and existing sources. The New Source Review (OAR-340-20-190, through -198) and Plant Site Emission Limits (OAR-340-20-196, -197) Rules, fulfill these requirements (Refer to Sections 4.5.4.2 and 5.5).

The final strategy is that new automobiles will comply with the tail pipe emissions standards adopted in the Clean Air Act Amendments of 1977.

The emission reductions obtained by 1983 from the implementation of these required control strategies were found to be more than sufficient to bring the Salem area into attainment with the ozone standard. Therefore, no other control alternatives were investigated.

4.5.3.3 Selected Strategies

The strategies selected to obtain the reduction in volatile organic compounds required to attain the ozone ambient air quality standard fall into three categories. A fourth category of strategies, growth management, will ensure that the emissions from new sources and from the expansion of existing sources will not exceed attainment strategy projections. The reduction strategies are:

1. Reasonably Available Control Technology - Volatile Organic Compounds Rules

Reasonably Available Control Technology will be required of sources of volatile organic compound emissions for which the EPA has issued a Control Technology Guideline. The specific sources impacted by this rule are described under Rules and Regulations, Section 4.5.4. The effect of the rule will be to reduce volatile organic compound emissions by about 198 tons/year. However, growth of other stationary sources results in a net stationary source reduction of only 56 tons/year by the end of 1982.

2. Reasonably Available Control Measures for Transportation

Nine of the fourteen Environmental Protection Agency recommended Reasonably Available Control Measures have already been implemented or committed for implementation in the Salem Non-Attainment area. These measures are:

Carpool Program. Over 1,000 emloyees have availed themselves of the Mid Willamette Valley Council of Governments' Carpool Match Program. Carpool parking spaces are reserved on streets located close to employment centers, and major parking structures have spaces reserved for carpools.

Express Bus/Park and Ride Program. An extensive Park and Ride Program began operating throughout the Salem Urban Area on January 2, 1979.

Bicycle Facilities. A Bicycle Plan has recently been completed and submitted for review by interested organizations. It will be incorporated into the Salem Area Comprehensive Plan and the SATS Transportation Plan.

Transit. The existing bus fleet is being expanded by purchasing used buses from other cities.

Private Car Restrictions. A 600 space lot for downtown employee parking will be terminated when construction begins for the planned Front Street Bypass.

On Street Parking Controls. Most streets within the downtown and Capitol Mall area are off-limits to commuter parking with $20 fines imposed on violators. Residential parking districts have been established around the Capitol Mall which are reserved for residents and two hour parking.

Staggered Working Hours. Flexible working hours have been available for over a year for all State, City, and County employees.

Pedestrian Malls. Construction has begun on a pedestrian mall which will cover two city blocks.

Traffic Flow Improvements. Five operations improvement projects have been scheduled for 1979. These projects will smooth traffic flow at intersections.

The effects of these programs on ozone is small at present but is expected to be more important in the next two decades as population and traffic volumes grow rapidly. No credit was taken at this time for these control measures.

3. Federal Motor Vehicle Emissions Control Program

This program will continue to reduce mobile source volatile organic compound emissions through 1987, assuming no changes are made in future federal tail pipe standards. A net reduction of 2187 tons/year of volatile organic compound emissions from mobile sources will be achieved by 1983 through the program.

The total volatile organic compound reduction achieved through these three control strategies is 2243 tons/year. Since the reduction required for attainment status is only 985 tons/year of volatile organic compounds, the strategies described above provide for a growth increment of 1,258 tons/year. This growth increment will be handled with the fourth set of strategies, growth management.

4. Growth Management Strategies

Increases in total volatile organic compound emissions in the Salem Non-Attainment Area from new and modified sources will be handled by the New Source Review Rules (OAR-340-20-190 through 198). This rule is described under Section 5.5.

To ensure that emissions from existing industrial sources do not exceed the limits required to maintain attainment status, plant site emissions limits will be set for volatile organic compound sources (Refer to Section 4.5.4).

4.5.3.4 Emission Reduction Estimates

The 1982 volatile organic compound emission inventory total of 5967 tons/year shows a 2243 tons/year decrease over the 1977 volatile organic compound inventory total of 8210 tons/year. Table 4.5.3-1 summarizes the reduction credits for stationary and mobile sources between 1977 and 1983.

Table 4.5.3-1

Summary of 1977 - 1982 Volatile Organic Compound Emissions Credits

(tons/year)

Source	1977 Total Emissions	Reduction from Sources Existing in 1977	Growth Since 1977	Net Reduction	1982 Total Emissions
Stationary	1160	198	142	56	1104
Mobile	7050	4535	2348	2187	4863
Total	8210	4733	2490	2243	5967

The 198 tons/year decrease in stationary sources between 1977 and 1983 is due to the implementation of volatile organic compounds rules. This credit is reduced by the 142 tons/year stationary source growth to a net reduction of 56 tons/year in 1982.

Likewise, the total mobile source credit from the Federal Motor Vehicle Emission Control Program and the phasing out of older automobiles is reduced from 4535 to 2187 tons/year by growth.

Volatile organic compound emissions are expected to further decline through 1987, with a net reduction of 3283 tons/year from the 1977 total.

4.5.3.5 Socio - Economic Effects

In accordance with Section 172(b)(9)(A) of the Clean Air Act Amendments an identification and analysis of the air quality, health, welfare, economic, energy, and social effects of the State Implementation Plan follows:

Air Quality. Through the adopted strategy, ozone should be reduced to the federal ambient air quality standard of 0.12 ppm by the end of 1982. This reduction will be accomplished through the Federal Motor Vehicle Emissions Control Program and the Volatile Organic Compound Rules.

Health Effects. Environmental Protection Agency has established the 0.12 ppm 1-hour average ozone standard based on available

health impact studies. Attainment of the 0.12 ppm standard should provide for the safety of the health of the community with an adequate margin of safety.

Welfare Effects. Environmental Protection Agency has established an ozone standard or 0.12 ppm 1-hour average to protect welfare.

Economic Effects. The attainment strategy is based upon the Federal Motor Vehicle Emissions Control Program and the Volatile Organic Compounds Rules. Table 4.5.3-2 summarizes the costs of implementing the attainment strategies.

Table 4.5.3-2
Approximate Costs of Implementing Attainment Strategies

Strategy	Approximate Cost
Federal Motor Vehicle Emissions Control Program	$46,000,000
Volatile Organic Compound Rules	
Gas Stations	67,500
Asphalt Contractors	32,500
Total	$46,100,000

Energy Effects. A slight reduction in fuel economy results from the Federal Motor Vehicle Emissions Control Program. However, industrial and petroleum commercial operations will partially recover petroleum compounds by implementing the volatile organic compound regulations.

Social Effects. There will be no major social effects in the Salem Non-Attainment Area as a result of the State Implementation Plan.

4.5.4 RULES AND REGULATIONS

The rules and regulations pertaining to existing volatile organic compound sources are the Volatile Organic Compounds Rules (OAR-340-22-100 through 150) and the Plant Site Emission Limits Rule (proposed OAR-340-20-196, and -197). The actual rules applying to existing sources are covered in Section 3.2. The rules applying to new sources are discussed in Section 5.5.

4.5.4.1 Volatile Organic Compound Rules

To meet Environmental Protection Agency requirements, Volatile Organic Compound Rules for applicable Group I sources have been adopted and additional Volatile Organic Compound Rules will be adopted as new Control Technology Guidelines become available.

Source Grouping	Date of Proposed Applicability
Group I	1979
1) Large Appliance Manufacture	
2) Magnet Wire Insulation	
3) Gasoline Bulk Plants	
4) Metal Furniture Manufacture	
5) Petroleum Liquid Storage, Fixed Roof Tanks	
6) Degreasing	
7) Bulk Gasoline Terminals	
8) Petroleum Refinery Vacuum Systems, Waste Water Separators and Process Unit Turnaround	
9) Service Stations, Stage I	
10) Cutback Asphalt Paving	
11) Surface Coating of Cans, Coils, Paper, Fabric, Automobiles and Light-duty trucks	

Group II 1980

1) Petroleum Refinery Fugitive Emissions (leaks)
2) Surface Coating of Other Metal Products - Industrial
3) Pharmaceutical Manufacture
4) Rubber Products Manufacture
5) Paint Manufacture
6) Vegetable Oil Processing
7) Graphic Arts (Printing)
8) Flat Wood Products
9) Sevice Stations, Stage II
10) Petroleum Liquid Storage Floating Roof Tanks

Of the sources impacted by the Volatile Organic Compound Rules, only service stations, degreasing operations, and the laying of cutback asphalt exist in the Salem Non-Attainment Area at present. Control equipment will be required for degreasing operations and for the transfer of gasoline from tank trucks to service stations storage tanks (Stage I) and laying of cutback asphalt will be subject to seasonal limitations.

4.5.4.2 Plant Site Emission Limits Rule

The Plant Site Emission Limits Rule was developed in recognition that airsheds have a limited carrying capacity. The rule would clearly delegate authority to Oregon's Department of Environmental Quality to limit emissions of any new or existing source. This would prevent any one source from filling the capacity of an airshed to the exclusion of new or expanding sources, and assures maintenance of Reasonable Further Progress towards attainment of the ozone ambient air quality standard.

4.5.5 REASONABLE FURTHER PROGRESS SCHEDULE

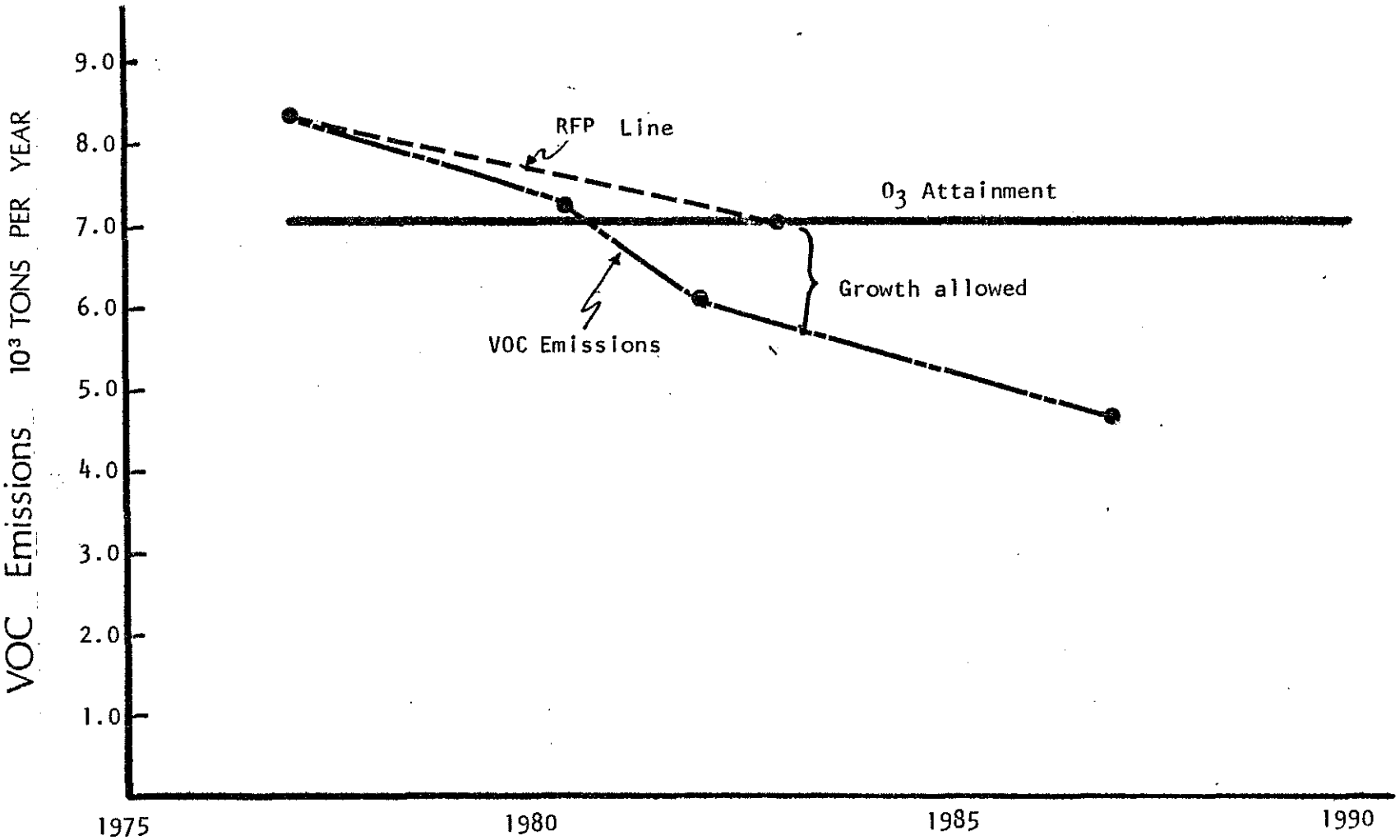
A Reasonable Further Progress schedule as required by Environmental Protection Agency is outlined as follows:

The ozone modeling analysis shows that a twelve percent reduction in volatile organic compound emissions is required to attain the ozone standard of 0.12 ppm. This means that total volatile organic compound emissions in 1982 would have to be no more than 88% of the base year emissions of 8,210 tons/year, i.e., 7,225 tons/year. A line drawn between the two above emissions levels constitutes the Reasonable Further Progress line which will serve to track yearly progress toward achieving the required emissions level that produces attainment.

As shown in the Reasonable Further Progress line for volatile organic compounds in Figure 4.5.5-1, a 985 ton reduction is needed between 1977 and 1983. The Reasonable Further Progress increment which must be met on a yearly basis is one-fifth of the total 985 tons, or 197 tons/year.

According to the present volatile organic compound emission inventory projections, the reduction expected by the end of 1982 is 2,243 tons, a reduction more than adequate to comply with the Reasonable Further Progress schedule.

FIGURE 4.5.5-1
SALEM NON-ATTAINMENT AREA
VOC PROJECTED EMISSION REDUCTIONS



4.5.6 ANNUAL REPORT

To meet EPA requirements, the DEQ will submit a report, covering the following elements, each July 1 for the preceding calendar year.

a. Identification of growth of major new or modified existing sources, minor new sources, and mobile sources.

b. Reduction in emissions for existing sources.

c. Updated emission inventory.

d. Conclusions of studies to quantify the air quality problem.

4.5.7 RESOURCE ANALYSIS/COMMITMENT

Local Involvement. The Mid Willamette Valley Council of Governments has completed its tasks as lead agency for the transportation planning process for ozone air quality. Any work which the Council of Governments does to update the population, employment, and land use assumptions used as input for the ozone air quality analysis will be done as part of the general planning routine and not as a special task for air pollution planning. Therefore, no additional cost is foreseen at the local level.

State Involvement. The Department of Environmental Quality has responsibility to implement the ozone attainment control strategy and develop the Annual Report for the Environmental Protection Agency. The estimated costs for carrying out these tasks are summarized in Table 4.5.7-1 in full time equivalents (FTE) on a biennial basis.

Table 4.5.7-1
Projected DEQ Resource Commitments

Division	1979 - 1981 Biennium FTE
Headquarters Staff	
Monitoring	0.88
Planning and Development	0.10
Regional Staff	
VOC Rule Implementation	0.70

Oregon Department of Transportation is not projected to be further involved with the ozone strategy.

4.5.8 PUBLIC INVOLVEMENT

4.5.8.1 Organizational Responsibility for Carrying out the SIP

Through a Memorandum of Understanding, Marion County, Polk County, and the City of Salem requested the Governor to designate Mid-Willamette Council of Governments as the lead agency to prepare the ozone State Implementation Plan revision. On March 30, 1978, the Governor requested Environmental Protection Agency to recognize Mid-Willamette Valley Council of Governments as the lead agency for the Salem Non-Attainment Area. EPA concurred with that designation on April 14, 1978.

Since the main strategies for attaining the federal ozone standard by December 31, 1982, are the Federal Motor Vehicle Emissions Control Program and the State Volatile Organic Compounds Rules, Department of Environmental Quality will be responsible for evaluating the effectiveness of these programs against the Reasonable Further Progress projections.

4.5.8.2 A-95 Review Procedure

Comments and responses from the A-95 review procedure on Salem's ozone attainment strategy portion of the State Implementation Plan are contained in Appendix 4.4-9.

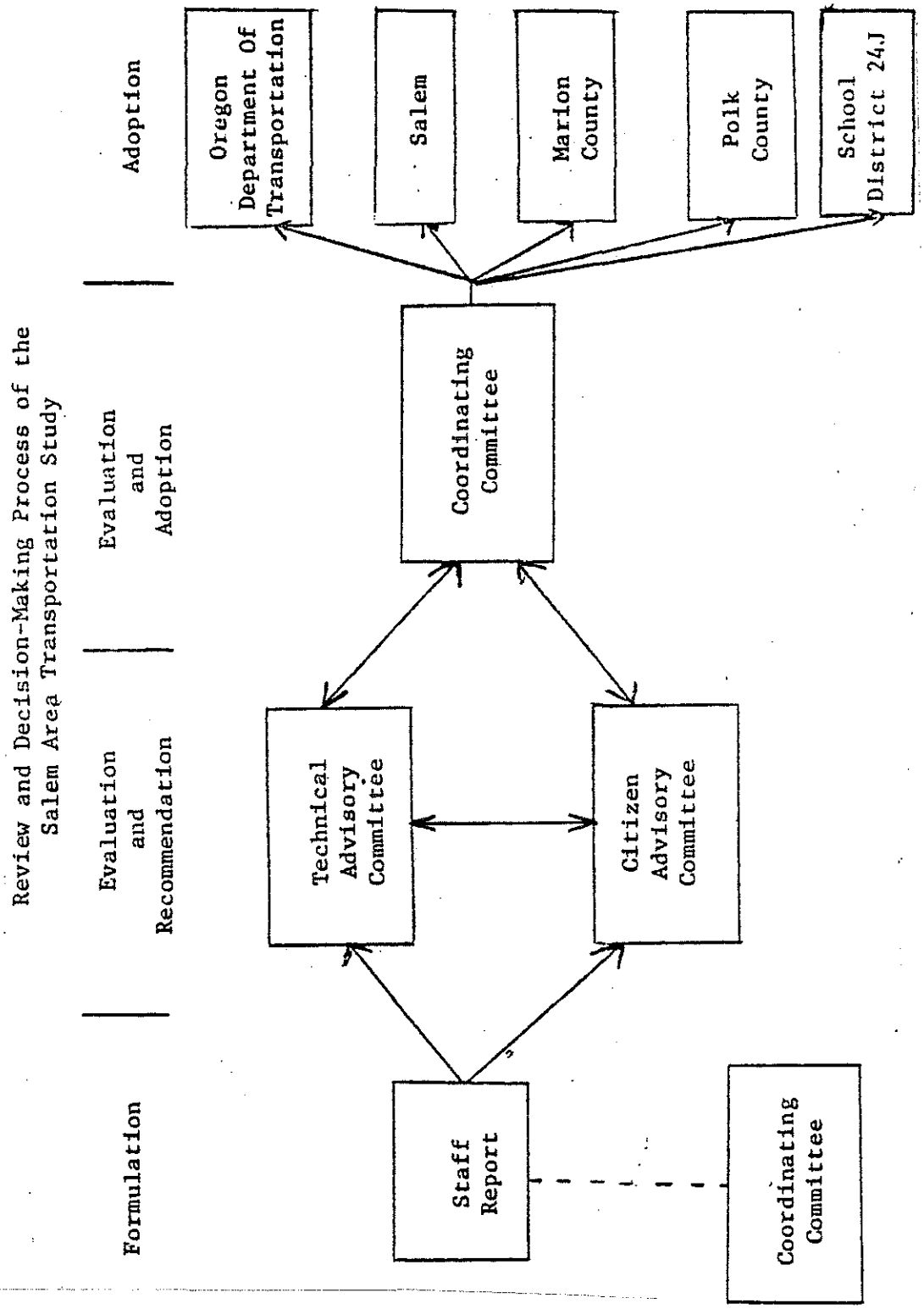
4.5.8.3 Consultation Process and Organizations Specified

Through powers delegated by Mid-Willamette Valley Council of Governments and through a cooperative agreement between the Oregon Department of Transportation and Mid-Willamette Valley Council of Governments, a group of committees known as the Salem Area Transportation Study was given authority for preparing and adopting transportation plans in the Salem urbanized area. The Salem Area Transportation Study includes representatives from Oregon Department of Transportation, the City of Salem, Polk and Marion Counties, School District 24J, a Technical Advisory Committee (TAC), and a Citizens Advisory Committee (CAC). All State Implementation Plan work was coordinated through Salem Area Transportation Study. The Salem Area Transportation Study organizational structure is shown in Figure 4.5.8-1.

4.5.8.4 Air Quality Planning Responsibilities

An air quality planning work program was devised during 1978 by Oregon Department of Transportation (ODOT), Department of Environmental Quality (DEQ) and Mid Willamette Valley Council of Governments (MWVCOG). A list of the role and responsibility of each agency follows.

FIGURE 4.5.8-1


Review and Decision-Making Process of the Salem Area Transportation Study
Formulation
Evaluation and Recommendation
Evaluation and Adoption
Adoption
Staff Report
Technical Advisory Committee
Citizen Advisory Committee
Coordinating Committee
Oregon Department Of Transportation
Salem
Marion County
Polk County
School District 24J
Coordinating Committee

Role/Responsibility	Agency
Lead agency for air quality planning program management	MWVCOG
SATS-CC Support	MWVCOG
SATS-TAC Support	MWVCOG
SATS-CAC Support	MWVCOG
Other Special Interest Groups	MWVCOG
Mobile source emission estimates	ODOT-MWVCOG
Stationary source emission estimates	DEQ
Technical analysis and evaluation control strategies	
a. Mobile	MWVCOG, ODOT, DEQ
b. Stationary	DEQ
Transportation Control Plan and mobile source SIP revisions	MWVCOG, DEQ
Stationary source SIP revisions	DEQ
TCP/SIP revision hearings	DEQ

4.5.8.5 Consultation with Other Planning Agencies

To ensure that the City of Salem, Marion County, and Polk County planning agencies would have input to the ozone State Implementation Plan, preliminary drafts of the ozone analysis and results were sent to them for their review and comment.

4.5.8.6 Consistency with Plans and Programs

To comply with the Clean Air Act Amendments of 1977 and the subsequent guidelines issued concerning consistency of base data, the Mid Willamette Valley Council of Governments revised the Salem area population figures. The population projections for the Salem Urban Growth Boundary are now consistent for land use planning, water quality 208 planning, 701 planning, air quality planning and transportation planning.

4.5.8.7 Public Involvement Procedures

At the monthly meetings of the Citizens Advisory Committee, Mid Willamette Valley Council of Governments has periodically reported on the progress of the ozone State Implementation Plan air quality analysis.

A public involvement procedure has been built into the DEQ's annual report on progress toward achievement of the State and Federal ozone standards in the Salem Non-Attainment Area. The report will go out for a 30-day minimum public comment period before it is submitted to EPA.

Additionally, the DEQ publishes a report each year on air quality, covering the entire state. These reports are widely distributed and contain summaries of the most recent air quality measurements.

4.5.9.1 Public Notice

Public notice was published in the Oregon Secretary of State's Bulletin on April 2, 1979. This notice may be found in Appendix 4.4-9.

4.5.9.2 Media Coverage

Paid public advertisements of the proposed State Implementation Plan revision were placed in the Salem Statesman and Capitol Journal on April 2, and April 9, 1979, to satisfy both EPA and State notice requirements.

4.5.9.3 Public Hearing

The Hearing Officer's Report on the public hearing held on May 4, 1979, is contained in Appendix 4.4-9.

4.5.9.4 Annual Report

The requirements concerning publishing the annual report and submittal to EPA will be followed. EPA requires the annual report to be submitted by July 1 for the previous calendar year.

APPENDIX 4.5-1

SALEM 1977--1982 VOC Emission Inventory

SUMMARY FORMAT FOR VOC

SOURCE		BASE YEAR EMISSIONS 1977	1982 (1987) PROJECTED ALLOWABLE EMISSIONS		
			EMISSIONS FROM SOURCES EXISTING IN 1977	GROWTH SINCE 1977	TOTAL
PETROLEUM REFINERIES	REFINERY FUGITIVES (leaks)				
	MISCELLANEOUS SOURCES a) Process Drains and Waste b) Vacuum Producing Systems c) Process Unit Blowdown				
	OTHER				
STORAGE, TRANSPORTATION & MARKETING OF PETROLEUM PRODUCTS	OIL & GAS PRODUCTION FIELDS				
	NATURAL GAS AND NATURAL GASOLINE PROCESSING PLANTS				
	TRANSFER OF GASOLINE & CRUDE OIL				
	BULK GASOLINE TERMINALS [2]	20	20	2	22
	GASOLINE BULK PLANTS[3]				
	SERVICE STATION LOADING (stage I)	169	79	6	85
	SERVICE STATION UNLOADING (stage II)	169	169	15	184
	OTHER				
INDUSTRIAL PROCESSES	ORGANIC CHEMICAL MANUFACTURE				
	PAINT MANUFACTURE	3	3	1	4
	VEGETABLE OIL PROCESSING				
	PHARMACEUTICAL MANUFACTURE				
	PLASTIC PRODUCTS MANUFACTURE				
	RUBBER PRODUCTS MANUFACTURE				
	TEXTILE POLYMERS MANUFACTURE				
	OTHERS				
INDUSTRIAL SURFACE COATING	LARGE APPLIANCES				
	MAGNET WIRE				
	AUTOMOBILES				
	CANS				
	METAL COILS				
	PAPER				
	FABRIC				
	METAL FURNITURE				
	WOOD FURNITURE	3	3	1	4
	FLAT WOOD PRODUCTS				
	OTHER METAL PRODUCTS				
	OTHERS				
NON-INDUSTRIAL SURFACE COATINGS	ARCHITECTURAL COATINGS	260	260	44	304
	AUTO REFINISHING				
	OTHERS				
OTHER SOLVENT USE	DEGREASING	126	82	24	106
	DRY CLEANING	157	157	24	181
	GRAPHIC ARTS				
	ADHESIVES				
	CUTBACK ASPHALT	130	66	7	73
	OTHER SOLVENT USE				
OTHER MISCELLANEOUS SOURCES	FUEL COMBUSTION	36	36	5	41
	SOLID WASTE DISPOSAL				
	FOREST, AGRICULTURAL, AND OTHER OPEN BURNING	87	87	13	100
TOTAL VOC EMISSIONS FROM STATIONARY SOURCES		1160	962	142	1104
MOBILE SOURCES	HIGHWAY VEHICLES	4745	1732	1548	3280
	a) Light Duty Automobiles	1487	359	675	1034
	b) Light Duty Trucks	197	26	42	68
	c) Heavy Duty Gasoline Trucks	197	13	55	68
	d) Heavy Duty Diesel Trucks	65	26	19	45
	e) Motorcycles				
	OFF-HIGHWAY VEHICLES	33	33	6	39
	RAIL	317	317	0	317
	AIRCRAFT	9	9	3	12
	VESSELS				
TOTAL VOC EMISSIONS FROM MOBILE SOURCES		7050	2515	2348	4863
TOTAL VOLATILE ORGANIC EMISSIONS		8210	3477	2490	5967

[2] Includes all storage facilities except those at service stations and bulk plants.

[3] Emissions from storage and transfer operations.

SALEM 1977-1987 VOC Emission Inventory

SUMMARY FORMAT FOR VOC

SOURCE		BASE YEAR EMISSIONS 1977	1982 (1987) PROJECTED ALLOWABLE EMISSIONS		
			EMISSIONS FROM SOURCES EXISTING IN 1977	GROWTH SINCE 1977	TOTAL
PETROLEUM REFINERIES	REFINERY FUGITIVES (leaks)				
	MISCELLANEOUS SOURCES a) Process Drains and Waste b) Vacuum Producing Systems c) Process Unit Blowdown				
	OTHER				
STORAGE, TRANSPORTATION & MARKETING OF PETROLEUM PRODUCTS	OIL & GAS PRODUCTION FIELDS				
	NATURAL GAS AND NATURAL GASOLINE PROCESSING PLANTS				
	Bulk TRANSFER OF GASOLINE & CRUDE OIL				
	BULK GASOLINE TERMINALS [2]	20	20	5	25
	GASOLINE BULK PLANTS[3]				
	SERVICE STATION LOADING (stage I)	169	79	18	97
	SERVICE STATION UNLOADING (stage II)	169	169	34	203
	OTHER				
INDUSTRIAL PROCESSES	ORGANIC CHEMICAL MANUFACTURE				
	PAINT MANUFACTURE	3	3	1	4
	VEGETABLE OIL PROCESSING				
	PHARMACEUTICAL MANUFACTURE				
	PLASTIC PRODUCTS MANUFACTURE				
	RUBBER PRODUCTS MANUFACTURE				
	TEXTILE POLYMERS MANUFACTURE				
	OTHERS				
INDUSTRIAL SURFACE COATING	LARGE APPLIANCES				
	MAGNET WIRE				
	AUTOMOBILES				
	CANS				
	METAL COILS				
	PAPER				
	FABRIC				
	METAL FURNITURE				
	WOOD FURNITURE	3	3	1	4
	FLAT WOOD PRODUCTS				
	OTHER METAL PRODUCTS				
	OTHERS				
NON-INDUSTRIAL SURFACE COATINGS	ARCHITECTURAL COATINGS	260	260	65	325
	AUTO REFINISHING				
	OTHERS				
OTHER SOLVENT USE	DEGREASING	126	82	12	94
	DRY CLEANING	157	157	40	197
	GRAPHIC ARTS				
	ADHESIVES				
	CUTBACK ASPHALT	130	66	10	76
	OTHER SOLVENT USE				
OTHER MISCELLANEOUS SOURCES	FUEL COMBUSTION	36	36	8	44
	SOLID WASTE DISPOSAL				
	FOREST, AGRICULTURAL, AND OTHER OPEN BURNING	87	87	20	107
TOTAL VOC EMISSIONS FROM STATIONARY SOURCES		1160	962	214	1176
MOBILE SOURCES	HIGHWAY VEHICLES	4745	608	1859	2467
	a) Light Duty Automobiles	1487	101	676	777
	b) Light Duty Trucks	197	7	44	51
	c) Heavy Duty Gasoline Trucks	197	3	48	51
	d) Heavy Duty Diesel Trucks	65	0	34	34
	e) Motorcycles				
	OFF-HIGHWAY VEHICLES	33	33	8	41
	RAIL	317	317		317
	AIRCRAFT	9	9	4	13
	VESSELS				
TOTAL VOC EMISSIONS FROM MOBILE SOURCES		7050	1078	2673	3751
TOTAL VOLATILE ORGANIC EMISSIONS		8210	2040	2887	4927

[2] Includes all storage facilities except those at service stations and bulk plants.

[3] Emissions from storage and transfer operations.

Salem Non-Attainment Area 1982
Emission Inventory - Nitrogen Oxides, Tons Per Year

Source	Baseline Year 1977	1983 Projected Allowable Emissions		
		Emissions from sources existing in 1977	Growth Since 1977	Projected 1982 Total Emissions
1. Fuel Combustion External				
A. Residential Fuel (Area)				
1. Anthracite Coal	0	0	0	0
2. Bituminous Coal	0	0	0	0
3. Distillate Oil	106.0	106.0	18.0	124.0
4. Residual Oil	0	0	0	0
5. Natural Gas	72.0	72.0	12.0	84.0
6. Wood	0	0	0	0
7. Total	178.0	178.0	30.0	208.0
B. Electric Generation (Point)				
1. Antracite Coal	0	0	0	0
2. Bituminous Coat	0	0	0	0
3. Lignite	0	0	0	0
4. Residual Oil	0	0	0	0
5. Distillate Oil	0	0	0	0
6. Natural Gas	0	0	0	0
7. Process Gas	0	0	0	0
8. Coke	0	0	0	0
9. Sawdust	304.0	304.0	0	304.0
10. Total	304.0	304.0	0	304.0
C. Industrial Fuel (Point)				
1. Anthracite Coal				
a. area	0	0	0	0
b. point	0	0	0	0
2. Bituminous Coal				
a. area	0	0	0	0
b. point	0	0	0	0
3. Lignite				
a. point	0	0	0	0
4. Residual Oil				
a. area	95.0	95.0	16.0	111.0
b. point	0	0	0	0
5. Distillate Oil				
a. area	0	0	0	0
b. point	0	0	0	0
6. Natural Gas				
a. area	32.0	32.0	5.0	37.0
b. point	92.0	92.0	0	92.0

Salem Non-Attainment Area 1982
Emission Inventory - Nitrogen Oxides, Tons Per Year

Source	Baseline Year 1977	1983 Projected Allowable Emissions		
		Emissions from sources existing in 1977	Growth Since 1977	Projected 1982 Total Emissions
7. Process Gas				
a. area	0	0	0	0
b. point	0	0	0	0
8. Coke				
a. point	0	0	0	0
9. Wood				
a. area	0	0	0	0
b. point	0	0	0	0
10. Liquid Petro Gas				
a. point	0	0	0	0
11. Bagasse				
a. point	0	0	0	0
12. Other				
a. point	0	0	0	0
13. Total				
a. area	127.0	127.0	22.0	149.0
b. point	92.0	92.0	0	92.0
D. Commercial/Institutional Fuel				
1. Anthracite Coal				
a. area	0	0	0	0
b. point	0	0	0	0
2. Bituminous Coal				
a. area	0	0	0	0
b. point	0	0	0	0
3. Lignite				
a. point	0	0	0	0
4. Residual Oil				
a. area	154.0	154.0	26.0	180.0
b. point	0	0	0	0
5. Distillate Oil				
a. area	1.0	1.0	0	1.0
b. point	0	0	0	0
6. Natural Gas				
a. area	43.0	43.0	7.0	50.0
b. point	0	0	0	0
7. Wood				
a. area	0	0	0	0
b. point	0	0	0	0
8. Liquid Petrol Gas				
a. point	0	0	0	0

Salem Non-Attainment Area 1982
Emission Inventory - Nitrogen Oxides, Tons Per Year

Source	Baseline Year 1977	1983 Projected Allowable Emissions		
		Emissions from sources existing in 1977	Growth Since 1977	Projected 1982 Total Emissions
9. Other				
a. point	0	0	0	0
10. Total				
a. area	198.0	198.0	33.0	231.0
b. point	0	0	0	0
E. Other				
1. Point	0	0	0	0
F. Total External Combustion				
1. Area	503.0	503.0	85.0	588.0
2. Point	396.0	396.0	0	396.0
2. Fuel Combustion Internal				
A. Electric Generator				
1. Distillate Oil	304.0	304.0	0	304.0
2. Natural Gas	0	0	0	0
3. Diesel	0	0	0	0
4. Other	0	0	0	0
5. Total	304.0	304.0	0	304.0
B. Industrial Fuel				
1. Distillate Oil	0	0	0	0
2. Natural Gas	0	0	0	0
3. Gasoline	0	0	0	0
4. Diesel	0	0	0	0
5. Other	0	0	0	0
6. Total	0	0	0	0
C. Commercial/Institutional Fuel				
1. Diesel	0	0	0	0
2. Total	0	0	0	0
D. Engine Testing Aircraft	0	0	0	0
E. Total Internal Combustion	304.0	304.0	0	304.0

Salem Non-Attainment Area 1982
Emission Inventory - Nitrogen Oxides, Tons Per Year

Source	Baseline Year 1977	1983 Projected Allowable Emissions		
		Emissions from sources existing in 1977	Growth Since 1977	Projected 1982 Total Emissions
Total Fuel Combustion				
Area	503.0	503.0	85.0	588.0
Point	700.0	700.0	0	700.0
3. Industrial Process (Point)				
A. Chemical Manufacturing	0	0	0	0
B. Food/Agriculture	0	0	0	0
C. Primary Metal	0	0	0	0
D. Secondary Metals	0	0	0	0
E. Mineral Products	0	0	0	0
F. Petroleum Industry	0	0	0	0
G. Wood Products	1035.0	1035.0	269.0	1304.0
H. Metal Fabrication	0	0	0	0
I. Leather Products	0	0	0	0
J. Textile Manufacturing	0	0	0	0
K. Inprocess Fuel	0	0	0	0
L. Other/Not Classified	0	0	0	0
M. Total	1035.0	1035.0	269.0	1304.0
4. Solid Waste Disposal				
A. Government (Point)				
1. Municipal Incin.	0	0	0	0
2. Open Burning	0	0	0	0
3. Other	0	0	0	0
4. Total	0	0	0	0
B. Residential (Area)				
1. Onsite Incin.	0	0	0	0
2. Open Burning	0	0	0	0
3. Total	0	0	0	0
C. Commercial Institutional				
1. Onsite Incin.				
a. area	0	0	0	0
b. point	0	0	0	0
2. Open Burning				

Salem Non-Attainment Area 1982
Emission Inventory - Nitrogen Oxides, Tons Per Year

Source	Baseline Year 1977	1983 Projected Allowable Emissions		
		Emissions from sources existing in 1977	Growth Since 1977	Projected 1982 Total Emissions
a. area	0	0	0	0
b. point	0	0	0	0
3. Apartment				
a. point	0	0	0	0
4. Other				
a. area	0	0	0	0
b. point	0	0	0	0
5. Total				
a. area	0	0	0	0
b. point	0	0	0	0
D. Industrial				
1. Onsite Incin.				
a. area	0	0	0	0
b. point	0	0	0	0
2. Open Burning				
a. area	0	0	0	0
b. point	0	0	0	0
3. Auto Body Incin.				
a. point	0	0	0	0
4. Other				
a. area	0	0	0	0
b. point	0	0	0	0
5. Total				
a. area	0	0	0	0
b. point	0	0	0	0
E. Total Solid Waste Disposal				
1. area	0	0	0	0
2. point	0	0	0	0
5. Transportation (Area)				
A. Land Vehicles				
1. Gasoline				
a. light duty	3700.0	2010.0	2050.0	4060.0
b. heavy duty	57.0	25.0	38.0	63.0
c. off highway	4.0	4.0	1.0	5.0
d. total	3761.0	2039.0	2089.0	4128.0

Salem Non-Attainment Area 1982
Emission Inventory - Nitrogen Oxides, Tons Per Year

Source	Baseline Year 1977	1983 Projected Allowable Emissions		
		Emissions from sources existing in 1977	Growth Since 1977	Projected 1982 Total Emissions
2. Diesel				
a. heavy duty	57.0	12.0	50.0	62.0
b. off highway	0	0	0	0
c. rail	286.0	286.0	0.0	286.0
d. total	343.0	298.0	50.0	348.0
B. Aircraft				
4. Total	5.0	5.0	2.0	7.0
C. Vessels				
1. Bituminous Coal	0	0	0	0
2. Diesel Fuel	0	0	0	0
3. Residual Oil	0	0	0	0
4. Gasoline	0	0	0	0
5. Total	0	0	0	0
D. Total Transportation	4109.0	2342.0	2141.0	4483.0
6. Miscellaneous (Area)				
A. Fires				
1. Structural	7.0	7.0	1.0	8.0
2. Frost Control	0	0	0	0
3. Slash Burning	0	0	0	0
4. Wild Forest	0	0	0	0
5. Agricultural	0	0	0	0
6. Total	7.0	7.0	1.0	8.0
AREA TOTAL	4619.0	2852.0	2227.0	5079.0
POINT TOTAL	1735.0	1735.0	269.0	2004.0
GRAND TOTAL	6354.0			7083.0

Salem Non-Attainment Area 1987
Emission Inventory - Nitrogen Oxides, Tons Per Year

Source	Baseline Year 1977	1983 Projected Allowable Emissions		
		Emissions from sources existing in 1977	Growth Since 1977	Projected 1987 Total Emissions
1. Fuel Combustion External				
A. Residential Fuel (Area)				
1. Anthracite Coal	0	0	0	0
2. Bituminous Coal	0	0	0	0
3. Distillate Oil	106.0	106.0	24.0	130.0
4. Residual Oil	0	0	0	0
5. Natural Gas	72.0	72.0	17.0	89.0
6. Wood	0	0	0	0
7. Total	178.0	178.0	41.0	219.0
B. Electric Generation (Point)				
1. Antracite Coal	0	0	0	0
2. Bituminous Coat	0	0	0	0
3. Lignite	0	0	0	0
4. Residual Oil	0	0	0	0
5. Distillate Oil	0	0	0	0
6. Natural Gas	0	0	0	0
7. Process Gas	0	0	0	0
8. Coke	0	0	0	0
9. Sawdust	304.0	304.0	0	304.0
10. Total	304.0	304.0	0	304.0
C. Industrial Fuel (Point)				
1. Anthracite Coal				
a. area	0	0	0	0
b. point	0	0	0	0
2. Bituminous Coal				
a. area	0	0	0	0
b. point	0	0	0	0
3. Lignite				
a. point	0	0	0	0
4. Residual Oil				
a. area	95.0	95.0	33.0	128.0
b. point	0	0	0	0
5. Distillate Oil				
a. area	0	0	0	0
b. point	0	0	0	0
6. Natural Gas				
a. area	32.0	32.0	7.0	39.0
b. point	92.0	92.0	10.0	102.0

Salem Non-Attainment Area 1987
Emission Inventory - Nitrogen Oxides, Tons Per Year

Source	Baseline Year 1977	1983 Projected Allowable Emissions		
		Emissions from sources existing in 1977	Growth Since 1977	Projected 1987 Total Emissions
7. Process Gas				
a. area	0	0	0	0
b. point	0	0	0	0
8. Coke				
a. point	0	0	0	0
9. Wood				
a. area	0	0	0	0
b. point	0	0	0	0
10. Liquid Petro Gas				
a. point	0	0	0	0
11. Bagasse				
a. point	0	0	0	0
12. Other				
a. point	0	0	0	0
13. Total				
a. area	127.0	127.0	40.0	167.0
b. point	92.0	92.0	10.0	102.0
D. Commercial/Institutional Fuel				
1. Anthracite Coal				
a. area	0	0	0	0
b. point	0	0	0	0
2. Bituminous Coal				
a. area	0	0	0	0
b. point	0	0	0	0
3. Lignite				
a. point	0	0	0	0
4. Residual Oil				
a. area	154.0	154.0	35.0	189.0
b. point	0	0	0	0
5. Distillate Oil				
a. area	1.0	1.0	0	1.0
b. point	0	0	0	0
6. Natural Gas				
a. area	43.0	43.0	10.0	53.0
b. point	0	0	0	0
7. Wood				
a. area	0	0	0	0
b. point	0	0	0	0
8. Liquid Petrol Gas				
a. point	0	0	0	0

Salem Non-Attainment Area 1987
Emission Inventory - Nitrogen Oxides, Tons Per Year

Source	Baseline Year 1977	1983 Projected Allowable Emissions		
		Emissions from sources existing in 1977	Growth Since 1977	Projected 1987 Total Emissions
9. Other				
a. point	0	0	0	0
10. Total				
a. area	198.0	198.0	45.0	243.0
b. point	0	0	0	0
E. Other				
1. Point	0	0	0	0
F. Total External Combustion				
1. Area	503.0	503.0	126.0	629.0
2. Point	396.0	396.0	10.0	406.0
2. Fuel Combustion Internal				
A. Electric Generator				
1. Distillate Oil	304.0	304.0	0	304.0
2. Natural Gas	0	0	0	0
3. Diesel	0	0	0	0
4. Other	0	0	0	0
5. Total	304.0	304.0	0	304.0
B. Industrial Fuel				
1. Distillate Oil	0	0	0	0
2. Natural Gas	0	0	0	0
3. Gasoline	0	0	0	0
4. Diesel	0	0	0	0
5. Other	0	0	0	0
6. Total	0	0	0	0
C. Commercial/Institutional Fuel				
1. Diesel	0	0	0	0
2. Total	0	0	0	0
D. Engine Testing Aircraft	0	0	0	0
E. Total Internal Combustion	304.0	304.0	0	304.0

Salem Non-Attainment Area 1987
Emission Inventory - Nitrogen Oxides, Tons Per Year

Source	Baseline Year 1977	1983 Projected Allowable Emissions: Emissions from sources existing in 1977	Growth Since 1977	Projected 1987 Total Emissions
Total Fuel Combustion				
Area	503.0	503.0	126.0	629.0
Point	700.0	700.0	10.0	710.0
3. Industrial Process (Point)				
A. Chemical Manufacturing	0	0	0	0
B. Food/Agriculture	0	0	0	0
C. Primary Metal	0	0	0	0
D. Secondary Metals	0	0	0	0
E. Mineral Products	0	0	0	0
F. Petroleum Industry	0	0	0	0
G. Wood Products	1035.0	1035.0	362.0	1397.0
H. Metal Fabrication	0	0	0	0
I. Leather Products	0	0	0	0
J. Textile Manufacturing	0	0	0	0
K. Inprocess Fuel	0	0	0	0
L. Other/Not Classified	0	0	0	0
M. Total	1035.0	1035.0	362.0	1397.0
4. Solid Waste Disposal				
A. Government (Point)				
1. Municipal Incin.	0	0	0	0
2. Open Burning	0	0	0	0
3. Other	0	0	0	0
4. Total	0	0	0	0
B. Residential (Area)				
1. Onsite Incin.	0	0	0	0
2. Open Burning	0	0	0	0
3. Total	0	0	0	0
C. Commercial Institutional				
1. Onsite Incin.				
a. area	0	0	0	0
b. point	0	0	0	0
2. Open Burning				

Salem Non-Attainment Area 1987
Emission Inventory - Nitrogen Oxides, Tons Per Year

Source	Baseline Year 1977	1983 Projected Allowable Emissions		
		Emissions from sources existing in 1977	Growth Since 1977	Projected 1987 Total Emissions
a. area	0	0	0	0
b. point	0	0	0	0
3. Apartment				
a. point	0	0	0	0
4. Other				
a. area	0	0	0	0
b. point	0	0	0	0
5. Total				
a. area	0	0	0	0
b. point	0	0	0	0
D. Industrial				
1. Onsite Incin.				
a. area	0	0	0	0
b. point	0	0	0	0
2. Open Burning				
a. area	0	0	0	0
b. point	0	0	0	0
3. Auto Body Incin.				
a. point	0	0	0	0
4. Other				
a. area	0	0	0	0
b. point	0	0	0	0
5. Total				
a. area	0	0	0	0
b. point	0	0	0	0
E. Total Solid Waste Disposal				
1. area	0	0	0	0
2. point	0	0	0	0
5. Transportation (Area)				
A. Land Vehicles				
1. Gasoline				
a. light duty	3700.0	765.0	2768.0	3533.0
b. heavy duty	57.0	7.0	48.0	55.0
c. off highway	4.0	4.0	1.0	5.0
d. total	3761.0	776.0	2817.0	3593.0

Salem Non-Attainment Area 1987
Emission Inventory - Nitrogen Oxides, Tons Per Year

Source	Baseline Year 1977	1983 Projected Allowable Emissions		
		Emissions from sources existing in 1977	Growth Since 1977	Projected 1987 Total Emissions
2. Diesel				
a. heavy duty	57.0	4.0	51.0	55.0
b. off highway	0	0	0	0
c. rail	286.0	286.0	0.0	286.0
d. total	343.0	290.0	51.0	341.0
3. Total	4104.0	1066.0	2868.0	3934.0
B. Aircraft				
Total	5.0	5.0	3.0	8.0
C. Vessels				
Total	0	0	0	0
D. Total Transportation	4109.0	1071.0	2871.0	3942.0
6. Miscellaneous (Area)				
A. Fires				
1. Structural	7.0	7.0	2.0	9.0
2. Frost Control	0	0	0	0
3. Slash Burning	0	0	0	0
4. Wild Forest	0	0	0	0
5. Agricultural	0	0	0	0
6. Total	7.0	7.0	2.0	9.0
AREA TOTAL	4619.0	1581.0	2999.0	4580.0
POINT TOTAL	1735.0	1735.0	372.0	2107.0
GRAND TOTAL	6354.0	3316.0	3371.0	6687.0

APPENDIX 4.5-2

SALEM OZONE

ANALYSIS METHODOLOGY

The EPA standard isopleth version of the Empirical Kinetic Modeling Approach (EKMA) will be used to estimate the amount of precursor control required to attain the National Ambient Air Quality Standard for ozone (0.12 ppm hourly average concentration) for the Salem Non-attainment Area.

Briefly, the standard isopleth method uses a set of ozone isopleths to express maximum afternoon ozone (O_3) as a function of morning levels of nonmethane hydrocarbons (NMHC) and oxides of nitrogen (NO_x). The isopleths are the result of a chemical kinetics model which incorporates a standard set of assumptions about sunlight intensity, atmospheric dilution, and diurnal emission patterns.

The EKMA method is described in detail in the EPA document EPA-450/2-77-02la.[1] This document also includes procedures for modifying the standard isopleth version to account for transport and natural background, an alteration which has been incorporated into this methodology. An abbreviated description of the modified EKMA method follows. All information not otherwise documented is derived from EPA-450/2-77-02la.

METHODOLOGY

To estimate control requirements, the following factors must be determined: the design value, the NMHC/NO_x ratio, present and future transport estimates, and the additivity of transported ozone.

Design Value

The design value was chosen in accordance with EPA's Guideline for the Interpretation of Ozone Air Quality.[2] The highest hourly ozone value for each day in the last three years (1976 - 1978) was ranked by concentration and assigned a frequency. The frequency distribution was plotted on semi-log paper. A least squares fit was then calculated for the data. Figure 1 depicts the best fit line obtained in the above manner. The design value is that concentration which corresponds to a frequency of 1/365 (= 0.27%). Figure 1 shows that the value of approximately 305 ug/m^3 (0.151 ppm) becomes the designated design value.

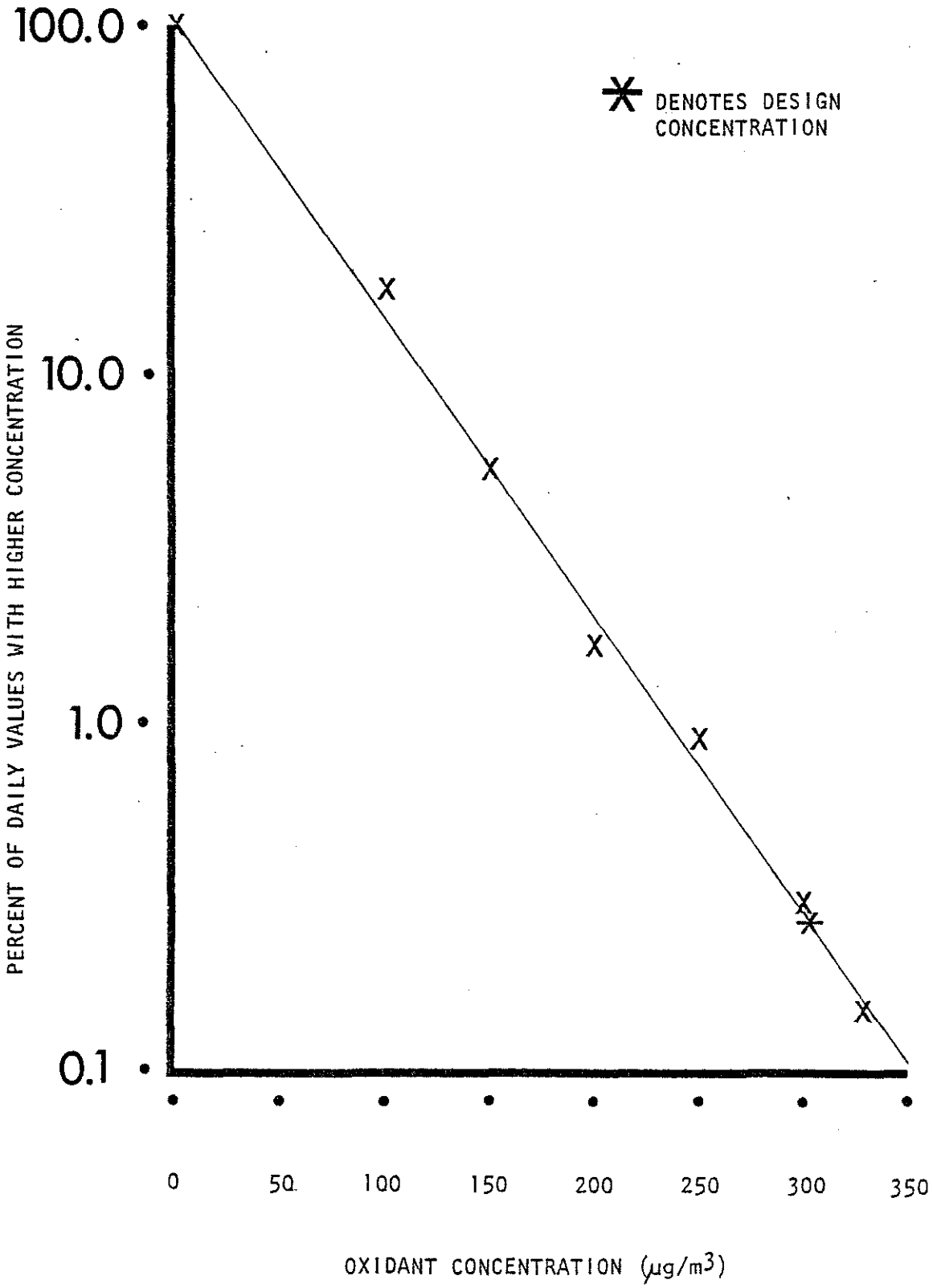
NMHC/NO_x

Salem, a relatively small city, has no NMHC or NO_x monitoring sites and may not have the same emission relationships as the larger cities where the EPA determined the 9.5/1 default ratio. Since Portland is more characteristic of Salem than the larger cities from which the 9.5/1 ratio was derived, the Portland NMHC/NO_x ratio of 7.9/1 will be applied in the Salem ozone analysis.

Transport

There are two modes of ozone transport: ground level (ozone transported within the morning mixing layer) and aloft (ozone transported above the morning but below the afternoon mixing height). The EPA estimated that

FIGURE 1
DESIGN CONCENTRATION DETERMINATION



ozone transported aloft is from 20-70% additive, depending on the magnitude of locally generated precursors and mixing rates. Since afternoon ground transport is also important for the Salem NAA, the EPA was consulted concerning the additivity of this type of transport. Ned Meyer, USEPA, suggested using the same additivity factor that was used for transport aloft. Since additivity data is not available for Salem, the default value of 0.5 will be used.

After additivity has been determined, the design value will be adjusted as follows:

$$(O_3)_{adj} = (O_3)_{design} - A\ (T_o)$$

where $(O_3)_{adj}$ is the reduced second highest ozone concentration, A is the additivity factor, and T_o is the concentration of transported ozone estimated for the base period.

T_o for Salem has been estimated from a study conducted by the Oregon Graduate Center which combined trajectory analysis with surface and aircraft ozone measurements.[3] Trajectory analyses indicated that the ozone levels measured on violation days in Salem are often the result of transport of ozone or its precursors from Portland. On the basis of the measurements contained in this study, T_o will be considered to be 0.12 ppm for Salem. The reduced ozone value becomes:

$$(O_3)_{adj} = 0.151 \text{ ppm} - 0.5(0.12) = 0.091$$

Control Requirements

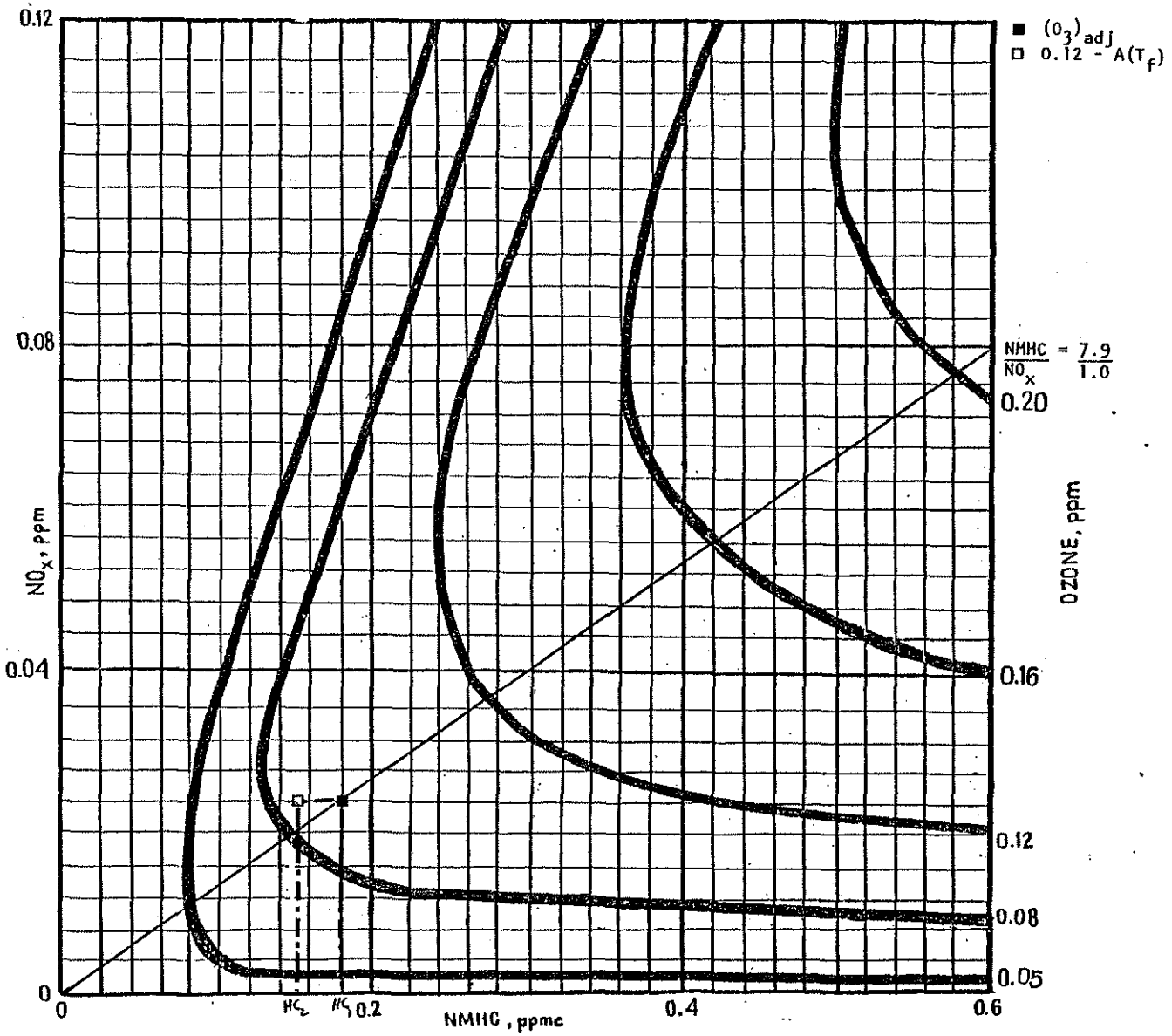
To calculate the amount of control required to achieve attainment by 1983, future transport (T_f) and changes in the total NO_x emissions between 1977 and 1983 must be estimated.

Salem is close enough downwind of Portland that transport may still be significant in 1983. The EPA originally approved a T_f value of 0.060 ppm. However, new EPA guidance requires that T_f be at least 60% of T_o.[4] This criterion would result in a T_f value 0.072 ppm. The future standard isopleth is adjusted downward from 0.12 ppm to: 0.12 - A (T_f) ppm = 0.085 ppm.

NO_x is assumed to be constant between 1977 and 1983 to conform with EPA recommendations.[4]

The amount of control needed to comply with the standard is estimated by entering the standard isopleth diagram (Figure 2) at the intersection of the $(O_3)_{adj}$ value (0.091ppm) and the 1977 NMHC/NO_x line (7.9/1). The NMHC concentration directly below this intersection (HC_1) is noted. A horizontal line is then drawn to the intersection of the 0.12 - A(T_f) = 0.085 ppm isopleth. The NMHC concentration directly below this point (HC_2) is noted.

FIGURE 2. Standard Isopleth Analysis for Salem Nonattainment Area



According to Figure 2:

$HC_1 = 0.180$

$HC_2 = 0.158$

The amount of NMHC reduction necessary by 1983 is calculated using the formula:

$$\% \text{ Reduction Required} = \frac{HC_1 - HC_2}{HC_1} \times 100 = \frac{0.180 - 0.158}{0.180} \times 100 = 12\%$$

References

1. EPA (1977) Uses, Limitations and Technical Basis of Procedures for Quantifying Relationships Between Photochemical Oxidants and Precursors, EPA-450/2-77-021a.

2. EPA (January 1979) Guideline for the Interpretation of Ozone Air Quality, Draft.

3. Oregon Graduate Center (1977), Survey of Ozone and Light Scattering Particles in Western Oregon, p. 98.

4. Rhoads, Richard G. (memo dated February 21, 1979) Determination of Reductions Necessary to Attain the Ozone Standard.

5.5 NEW SOURCE REVIEW FOR THE SALEM NON-ATTAINMENT AREA - OZONE

Rules OAR 340-20-190 to -195 give the Department expanded authority and requirements regarding Special Permit Requirements for Sources Locating In or Adjacent to Nonattainment Areas.

The Clean Air Act Amendments of 1977, Sections 171, 172, 173, require that the 1979 State Implementation Plan contain an adequate permit program. The basic requirement that must be contained in the permit program is that major new or modified sources in the actual nonattainment areas having a potential to emit more than 100 tons/year of a specific air pollutant must meet the following in order for a construction permit to be issued:

1. Lowest achievable emission rate.
2. Demonstrate that all other facilities under the authority of the permit applicant are in compliance or on a compliance schedule to meet State Rules.
3. Demonstrate that a sufficient growth increment is available in the attainment plan or provide offset.
4. Provide for an "Alternative Analysis" as defined in the rule.

In addition, the Department added permit requirements similar to those above for sources that may locate adjacent to nonattainment areas, and has clarified authority to set plant site emission limits commensurate with airshed carrying capacity. The rules, OAR 340-20-190 to 197, are in Section 3.

Since the ozone modeling analysis indicates that approximately 1,258 tons/year VOC growth is available in the Salem Non-Attainment Area between 1977 and 1983,offset is not required until the growth increment is consumed. At present, the main effect of the regulation is to require major new facilities to limit emissions to lowest achievable emission rate.

7.5 SALEM NON-ATTAINMENT AREA OZONE MONITORING PROGRAM

The Ozone Air Quality Surveillance Program within the Salem Non-Attainment Area was established in 1973 at the McNary Airport (site 2438007). The site, established in an area of very low traffic volume, is downwind of the Salem CBD during the summer ozone season. The site location was evaluated by EPA staff and found to be in conformance with the August 7, 1978 Federal Register (Vol. 43, No. 152) monitoring network requirements. Monitoring methods, quality assurance and data processing practices employed by the Department were also found to meet EPA requirements. Table 7.5-1 lists the location of the station shown in Figure 7.4-1.

Table 7.5-1
Salem Non-Attainment Area
Ozone Surveillance Site

Location	Site No.	Date Established	Land Use	Designation
McNary Airport	2438007	February 1974	Commercial	SLAMS(1)

(1) State and Local Air Monitoring Site

Environmental Quality Commission

522 S.W. 5th AVENUE, P.O. BOX 1760, PORTLAND, OREGON 97207 PHONE (503) 229-5696

MEMORANDUM

To: Environmental Quality Commission

From: Director

Subject: Agenda Item No. B3, June 8, 1979, EQC Meeting

Adoption of CO Control Strategies for the Eugene-Springfield Air Quality Maintenance Area as Revisions to the State Implementation Plan

BACKGROUND

The Clean Air Act Amendments of 1977 require states to submit plans demonstrating how they will attain and maintain compliance with National Ambient Air Standards. These plans are to be approved by EPA by July 1, 1979. If a SIP revision for an AQMA is not submitted by July 1, 1979, EPA has authority to impose severe growth sanctions on that area.

A plan has been prepared for the Eugene-Springfield AQMA to address the Carbon Monoxide non-attainment problem. The Lane Council of Governments, the area transportation planning agency, and designated lead agency, formally approved the plan on March 30, 1979. A public hearing was held on behalf of the EQC on May 4, to consider public testimony on the proposed SIP revision. Although no public testimony was presented at the hearing, comments were received from EPA which are summarized in Attachment 2. The remaining step in the process is for the EQC to consider comments on the CO SIP, amend it if necessary, and to adopt the CO SIP at the June 8 meeting if it meets their approval, so that it can be formally submitted to EPA prior to July 1, 1979.

The technical analysis of the SIP projected that with current and planned control measures, a portion of the downtown Eugene area will not attain CO standards by December 31, 1982. EPA thus will require a CO control strategy SIP revision which will attain the CO standards by December 31, 1982, or as soon thereafter as practicable.

Contains Recycled Materials

The legal authority for the EQC to adopt the proposed State Implementation Plan revision is ORS 468.020.

ALTERNATIVES AND EVALUATION

ISSUE: EPA pointed out that control measures might possibly be adopted which could result in attainment by 1982 if they were implemented before that date. EPA conveyed this comment as a concern rather than as grounds for disapproval.

Alternatives:

1. Commit at this time to attaining the CO standard by December 31, 1982.
2. Respond to EPA's concern after information is available on the effectiveness and reasonableness of alternative control measures.

The Department and LCOG expressly chose not to commit at this time to attaining the CO standard by December 31, 1982 for three reasons. First, minimal information has been available to date on the effectiveness of transportation control measures. Secondly, it appeared more reasonable to develop information on the effectiveness and reasonableness of control measures first, and then determine how soon the CO standard could be met. Thirdly, because of technological and social delays inherent in implementing large scale transportation control strategies, it is quite conceivable that a time period greater than two years (1980-1982) will be necessary to realize the full effectiveness of new control strategies. Under the current SIP, LCOG has committed in the 79-80 Unified Work Program to developing an implementation schedule for control measures during this next fiscal year (by July 1980) after information on control strategy effectiveness and reasonableness is available. LCOG has indicated that the extension request will be withdrawn if analysis in FY 79-80 indicates it is unnecessary.

Recommendation:

No change in the current SIP is recommended.

ISSUE: EPA commented that New Source Review Rules must apply to major new or modified stationary sources of CO emissions, even during the period prior to adoption of a final attainment strategy. EPA commented that the NSR Rules must also address major sources outside a non-attainment area which may significantly impact on the non-attainment area. EPA indicated that the NSR Rules must be revised to address these concerns or growth sanctions would result.

Alternatives:

1. Revise the NSR Rules per EPA request.
2. Decline to revise the NSR Rules and risk EPA growth sanctions.

Recommendation: Revise the NSR Rules for major new or modified CO stationary sources per the EPA request. This issue is discussed in greater detail as part of the New Source Review Rule EQC staff report which is Agenda Item A3 at the June 8, 1979, EQC meeting.

RULE DEVELOPMENT PROCESS

The SIP was prepared by LCOG as the lead agency with assistance from DEQ, the Lane Regional Air Pollution Authority, and the Oregon Department of Transportation. The SIP was approved by the LCOG Board on March 22. At the March 30, EQC meeting, the EQC authorized a CO SIP revision hearing which was held on May 4. The proposed plan has undergone the public review process described in OAR 340-22-(005-030). The Department of Justice and Intergovernmental Review (A-95) were invited to comment on the proposed plan.

The Proposed Rule

The Carbon Monoxide SIP is attached as Attachment 3. The key elements of the SIP are that:

- An extension of the December 31, 1982, attainment date has been requested up to December 31, 1987, if necessary.
- LCOG has committed to analyze reasonable transportation control measures by July 30, 1980 which would improve CO air quality.
- LCOG will develop an implementation schedule for transportation control measures which are found to be effective and reasonable.
- The SIP commits LCOG and DEQ to submit a complete CO attainment strategy by June 30, 1982.

Summation

1. CO air quality analysis projects that CO standards will not be met in the Eugene-Springfield AQMA by December 31, 1982, with current and planned control measures. Therefore, EPA requires that an approvable CO SIP revision be submitted for the AQMA by June 30, 1979, or growth sanctions can be applied.

2. The CO SIP revision for the Eugene-Springfield AQMA was approved by the LCOG Board on March 23, and a hearing was held on behalf of the EQC on May 4.

3. Comments on the CO SIP revision have been addressed in this staff report and it is recommended that the New Source Review section of the SIP be modified for new major stationary sources of CO emissions to comply with EPA requests and to avoid EPA growth sanctions for the area.

4. This CO SIP revision consists primarily of a commitment to analyze reasonable transportation control measures by July 30, 1980, with LCOG remaining in the lead coordinating role, and a commitment to submit a CO attainment and maintenance strategy SIP to EPA by no later than July, 1982.

5. An extension request, to attain the Ambient CO Standard beyond December 31, 1982, but prior to December 31, 1987, is being included in the revised SIP. The EPA requirements for requesting this extension have been met. If control measures can achieve attainment by December 31, 1982, then the extension request will be rescinded.

6. Procedural requirements for development of the SIP revision (such as necessary public notice and intergovernmental coordination) have been met.

7. The CO SIP revision for the Eugene-Springfield AQMA needs to be adopted in June 1979 by the EQC so that the SIP revision can be submitted to EPA by June 30, 1979, and growth sanctions can be avoided.

Director's Recommendation

Based on the summation, it is recommended that the CO SIP revision for the Eugene-Springfield AQMA be approved by the EQC as modified to include special New Source Review requirements and that it be submitted to the EPA as a revision to the State Implementation Plan.

Sincerely,

Bill

WILLIAM H. YOUNG

WTGreene:jl
229-6087
May 25, 1979
Attachments 1. Hearings' Officer's Report
2. Department's Response to EPA Comments
3. Proposed CO SIP Revision for the Eugene-Springfield AQMA

ATTACHMENT 1

ROBERT W. STRAUB
GOVERNOR

Environmental Quality Commission

522 S.W. 5th AVENUE, P.O. BOX 1760, PORTLAND, OREGON 97207 PHONE (503) 229-5696

MEMORANDUM

To: Environmental Quality Commission

From: Hearings Officer

Subject: Hearing Report on May 3, 1979 Hearing regarding the "Proposed State Implementation Plan for Carbon Monoxide in the Eugene-Springfield Air Quality Maintenance Area."

Summary of Procedure

Pursuant to public notice, a public hearing was convened in the Eugene City Council chambers at 9:00 a.m. on May 4, 1979. The purpose was to receive testimony regarding adoption of the "Proposed State Implementation Plan for Carbon Monoxide in the Eugene-Springfield Air Quality Maintenance Area."

Summary of Testimony

The hearing record was opened at 9:00 a.m. and held open for 20 minutes in consideration of any individuals wishing to testify who might have been late. No public testimony was offered in person.

Recommendations

The hearing officer has no recommendations.

Respectfully submitted,

Paul Willhite

Paul Willhite
Hearings Officer

WTGreene:jl
229-6087
May 25, 1979

Contains Recycled Materials

Attachment 2

Response to Summary of EPA Written comments on the Eugene-Springfield AQMA SIP Revision for Carbon Monoxide.

EPA submitted written comments which are summarized and responded to below. Responses are DEQ staff responses based on consultation with LCOG staff.

EPA Comment 1: EPA expressed concern that the technical analysis had not documented how emissions associated with parking lots were treated. It was implied that these emissions may have been underestimated.

Response to Comment 1: No previous mention of this issue has been made in any of the guidance received from EPA to this date. However, the emissions from circulating traffic associated with parking lots have been accounted for, because actual traffic counts were used for the downtown Eugene area where the CO non-attainment area is. Beyond this, it was conservatively assumed that average daily traffic in the downtown area would increase by 1.3% to 1.5% per year, even though traffic levels in the downtown area have remained at the same level in recent years. Although it appears that the emissions associated with parking lot activity are adequately accounted for, this issue will be reassessed during this next year as part of the alternative control strategy analysis to be completed by July 30, 1980.

EPA Comment 2: EPA expressed concern that neither the SIP submittal nor the draft FY 80 Unified Work Program (UWP) specifies the interim dates by when each of the alternative control measures to be analyzed would be analyzed. EPA indicated that either the UWP or the Section 175 Funding Application would need to address this concern.

Response to Comment 2: The FY 1980 draft UWP now contains a bar chart schedule which has greater detail and shows when various tasks are scheduled to be completed. Analysis of the six control measures identified as most promising are scheduled to be completed by May 1980.

EPA Comment 3: EPA expressed concern that control measures might not be implemented until 1982 which, if implemented earlier, could result in attainment by 1982 or sooner. EPA questioned whether an extension past 1982 is really needed.

Response to Comment 3: LCOG has committed, as part of their FY 1980 UWP, to develop an implementation schedule by July 1980 for those transportation control measures which analysis determines to be reasonable and effective. Clearly, the most reasonable time to develop the implementation schedule is after certain measures have been identified as reasonable and effective. LCOG also indicated in their SIP that the extension request will be rescinded if future analysis indicates it is not needed.

EPA Comment 4: The FY 1980 UWP identifies $23,917 in funding needs for CO SIP related work for LCOG, DEQ, LRAPA, and ODOT for the July 1, 1979 to June 30, 1980 time period. EPA asked whether such funding needs comprise the total amount needed to complete the Phase II CO SIP submission.

Response to Comment 4: The funding needs identified in the FY 80 UWP do not cover all Phase II SIP requirements but do cover the funding needs sufficient to analyze potential transportation control measures and to develop an implementation schedule for those measures determined to be reasonable and effective. The Section 175 funding request to be submitted by LCOG will estimate funding needs through 1982. The three work areas needing funding for the July 1980 through July 1982 period will be 1) assembly of the SIP 2) hearing, adoption, and citizen involvement procedures, and 3) reporting procedures.

EPA Comment 5: EPA commented that New Source Review Rules must apply to major new or modified stationary sources of CO emissions, even during the period prior to adoption of a final attainment strategy. EPA commented that NSR Rules must also address major sources outside a non-attainment area which may significantly impact on the non-attainment area. EPA indicated that the NSR Rules must be revised to address these concerns or growth sanctions would result.

Response to Comment 5: The Department intends to revise the NSR Rules for major new or modified CO stationary sources per the EPA request. Few if any new major or modified sources of CO emissions are likely to be affected by this rule because such sources are unlikely to locate in or near the downtown Eugene ares. A map of the CO non-attainment area has been prepared in conjunction with this revision. The NSR Rules and revisions thereto are discussed in detail in the June 8, 1979 EQC staff report on that subject.

Attachment 3

SECTION 4.7

CONTROL STRATEGY FOR

THE EUGENE-SPRINGFIELD AIR QUALITY MAINTENANCE AREA

1979 STATE IMPLEMENTATION PLAN REVISION

FOR CARBON MONOXIDE

(Request for Extension of the December 31, 1982 Attainment Date)

Lane Council of Governments

Oregon Department of Environmental Quality

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Technical Support Documents

4.7-1 L-COG letter requesting December 15, 1976 as design day
4.7-2 EPA letter allowing December 15, 1976 as design day
4.7-3 Carbon Monoxide Analytical Methodology
4.7-4 Screening Tables
4.7-5 L-COG letter requesting 1982 Attainment designation
4.7-6 EPA letter rejecting Attainment request
4.7-7 Public Involvement and Hearings

Appendices 4.7-8 through 4.7-14 are included for informational purposes to assist in review of the State Implementation Plan. Each has been adopted or approved individually, but is not considered part of the adopted State Implementation Plan.

Metropolitan Planning Organization Documents

4.7-8 Unified Work Program FY78-79
4.7-9 Transportation-Air Quality Work Program for FY78-79
4.7-10 Transportation Improvement Program (TIP)
4.7-11 Transportation Systems Management (TSM) Element
4.7-12 2000 Transportation Plan
4.7-13 Prospectus
4.7-14 Lane Council of Government Agreements
- a. Oregon Department of Transportation
- b. Urban Mass Transportation Administration (UMTA)
- c. Department of Environmental Quality
- d. Lane Regional Air Pollution Authority

Copies of Appendices 4.7-8 through 4.7-14 are on file at:

Lane Council of Governments
North Plaza Level
Public Service Building
125 East 8th Avenue
Eugene, OR 97401
Phone: 687-4283

Lane Regional Air Pollution Authority
16 Oakway Mall
Eugene, OR 97401
Phone: 686-7618

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LIST OF FIGURES

4.7.0 INTRODUCTION

4.7.0.1 General Background

The Clean Air Act of 1970 and the Clean Air Act Amendments of 1977 prescribe a series of air quality standards and establish requirements outlining the methods and schedule by which these standards must be attained. All urbanized areas throughout the nation are required to develop plans for attainment if past monitoring indicates they do not comply. The Eugene-Springfield area has has minor exceedences of the eight-hour standard for carbon monoxide. The Eugene-Springfield area has also failed to achieve standards for total suspended particulates. The standards for other pollutants have not been violated; consequently, the area has been designated as an attainment area for these other pollutants.

4.7.0.2 Summary

4.7.0.2.1 Purpose of document

This document serves as the Eugene-Springfield Air Quality Maintenance Area's portion of the State Implementation Plan (SIP) for carbon monoxide (until further revisions are submitted and approved). It includes documentation of the air quality analysis performed, definition of the magnitude and extent of Eugene-Springfield's carbon monoxide problem and delineation of the

steps to develop a plan to assure timely attainment of the standards. It requests an extension beyond 1982 to meet the carbon monoxide standard in the event that no reasonable means can be found to achieve the standard by 1983.

Because the carbon monoxide problem is almost entirely the result of motor vehicle travel, L-COG, as the metropolitan transportation planning organization, served as lead agency in the preparation of the carbon monoxide State Implementation Plan revision. The State Implementation Plan for total suspended particulates is prepared by Lane Regional Air Pollution Authority and the Department of Environmental Quality under a concurrent but separate process.

4.7.0.2.2 Review of SIP contents

The significant points of the State Implementation Plan can be grouped into two major categories - findings of the air quality analysis and local commitments resulting from the analysis.

Findings

a. The Eugene-Springfield area is designated a non-attainment area by the Environmental Protection Agency (EPA) because several exceedences of the eight-hour carbon monoxide standard were recorded in the 1975-1978 period.

b. The exceedences over that time were not greatly in excess of the standard set by EPA and the Oregon Environmental Quality Commission. The highest exceedence was 14.1 mg/m^3, compared to the standard of 10.0 mg/m^3.

c. In Eugene-Springfield, exceedences of the carbon monoxide standard typically occur between late afternoon and midnight on days with stagnant air conditions. These conditions are most likely to occur during October through February. Exceedences can be expected primarily in and around the central Eugene area, along streets with high traffic volumes and low travel speeds.

d. Total carbon monoxide emissions in the metropolitan area are expected to decrease 18% between 1977 and 1983, despite a 17% increase in vehicle miles traveled (VMT) during the same period. Between 1977 and 1987, emissions are expected to decrease by 32% while vehicle miles traveled increases by 27%. The decrease in emissions is due almost entirely to the Federal Motor Vehicle Emission Control Program.

e. Despite the significant overall decrease in carbon monoxide emissions, the replacement of older vehicles with newer, cleaner ones will not, by itself, enable Eugene-Springfield to demonstrate attainment of the carbon monoxide standard by December 31, 1982, the deadline imposed by Congress.

Some streets in downtown Eugene will still have the potential to violate the standard in 1983 if certain meteorological conditions are present. Less than one and one-half miles of streets have the potential to be in violation.

f. Compliance with the carbon monoxide standard should be attained sometime between 1983 and 1987 without implementation of any additional local control measures.

g. Because compliance with the standard is not forecasted by the end of 1982, EPA requires that further analysis be performed during FY79-80 to identify what measures, if any, can reasonably be applied to achieve the standard by December 31, 1982, or as soon thereafter as possible.

Commitments

The 1979 State Implementation Plan revision commits the Eugene-Springfield Air Quality Maintenance Area to:

a. Conducting analysis by July 30, 1980 to identify what measures, if any, can reasonably be applied to achieve the eight-hour carbon monoxide standard by December 31, 1982 or as expeditiously as possible thereafter. The work activities for this analysis will be described in detail in the L-COG FY79-80 Unified Work Program for Transportation Planning.

b. Continuing to monitor streets suspected of violations to help validate the accuracy of the carbon monoxide forecasting model used in Eugene-Springfield.

c. Developing an implementation schedule for any further transportation control measures that will have beneficial air quality impacts. The schedule will take into account financial, economic, social and environmental considerations. Examples of control measures that may be effective in Eugene-Springfield include a vehicle inspection/maintenance program, improved transit, carpooling or revised parking policies.

d. Developing a program to facilitate public review of proposed control measures.

f. Submitting a revised State Implementation Plan not later than June 30, 1982, documenting additional analysis and containing commitments to implement effective and reasonable control measures to attain the carbon monoxide standard as expeditiously as practical.

g. Continue to promote public transportation services which meet basic transportation needs.

4.7.0.2.3 Request for extension

The 1979 State Implementation Plan requests an extension beyond December 31, 1982 to meet the eight-hour carbon monoxide standard in the event that no reasonably available control measures can be implemented to bring the area into compliance by the end of 1982. If reasonable measures can be found and implemented to achieve the standard by 1982, the extension will be withdrawn.

4.7.1 DEFINITION OF PROBLEM

4.7.1.1 Identification of Study Area

The Eugene-Springfield Air Quality Maintenance Area (AQMA) was designated in 1974 by the Environmental Protection Agency. The Air Quality Maintenance Area has been used for stationary source planning as well as transportation planning aspects of the air quality program. The Air Quality Maintenance Area is legally defined as the area within the bounds beginning at the northwest corner of T17S, R4W; extending south to the southwest corner of Section 6, T17S, R4W; then east to the northwest corner of Section 8, T17S, R4W; thence south to the southwest corner of Section 32, T17S, R4W; thence east to the northeast corner of Section 4, T18S, R4W; thence south to the southwest corner of Section 3, T18S, R4W; thence east to the northwest corner of Section 12, T18S, R4W; thence south to the southwest corner of Section 13, T18S, R4W; thence east to the northeast corner of Section 24, T18S, R4W; thence south to the southeast corner of Section 24, T18S, R4W; thence east to the northeast corner of Section 21, T18S, R3W; thence north to the northeast corner of Section 21, T18S, R3W; thence east to the northeast corner of Section 22, T18S, R3W; thence south to the southwest corner of Section 23, T18S, R3W; thence east to the southeast corner of Section 24, T18S, R3W; thence north to the southeast corner of Section 1, R3W; thence east to the southeast corner of Section 2, T18S, R2W; thence north to the northeast corner of Section 26, T17S, R2W; thence west to the southwest corner of Section 20, T17S, R2W; thence north to the

northwest corner of Section 20, T17S, R2W; thence west to the southwest corner of Section 13, T17S, R3W; thence north to the northwest corner of Section 13, T17S, R3W; thence west to the southwest corner of Section 11, T17S, R3W; thence north to the northwest corner of Section 11, T17S, R3W; thence west to the southwest corner of Section 6, T17S, R3W; thence north to the northwest corner of Section 31, T16S, R3W; thence west to the northwest corner of Seciton 34, T16S, R4W; thence west to the point of beginning. Figure 4.7.1-1 illustrates the Air Quality Maintenance Area.

The geographic area for which transportation control strategies are being investigated is the Air Quality Maintenance Area. The area in which control strategies are implemented depends on the results of the investigations of the various control strategies.

4.7.1.2 Ambient Air Quality

4.7.1.2.1 Summary of monitoring data 1975-77

The carbon monoxide measurements in the Eugene-Springfield Air Quality Maintenance Area are taken at one continuous air monitoring (CAM) site located at 11th and Willamette in downtown Eugene. During 1975 there were two days for which the eight-hour average concentration exceeded the standard. However, the carbon monoxide monitor was inoperative during the first half of 1975. During 1976 the standard was exceeded eleven days, and during

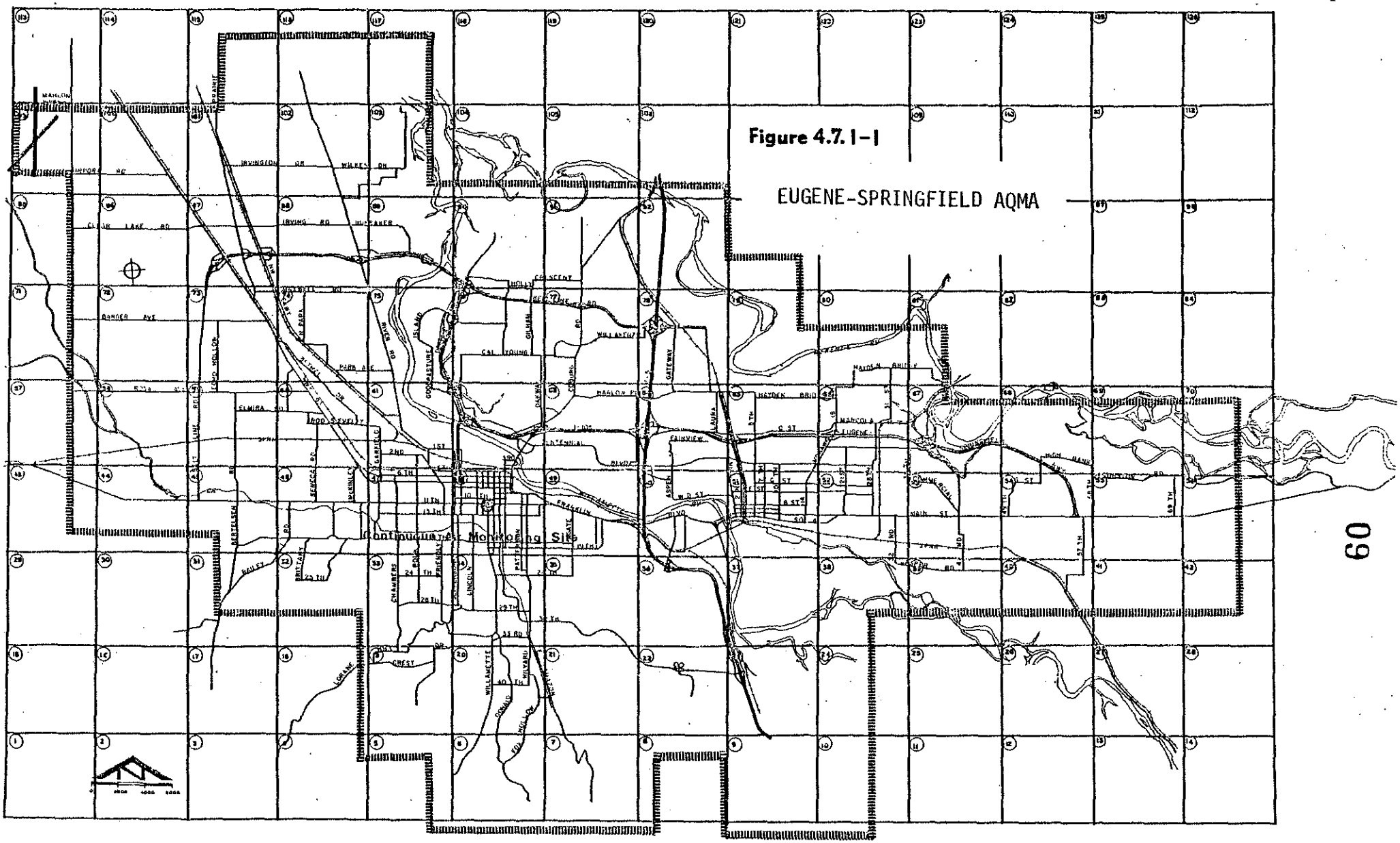


Figure 4.7.1-1
EUGENE-SPRINGFIELD AQMA
Continuous PM10 Monitoring Site

1977 it was exceeded on seven days. During 1978 the standard was exceeded on only two days. Table 4.7.1-1 indicates the exceedences recorded from 1975 through 1978.

4.7.1.2.2 Baseline design concentration

EPA guidelines specify that the highest of the second highest eight-hour carbon monoxide concentrations observed during 1975, 1976 or 1977 be used as the design concentration upon which future concentrations are calculated. Table 4.7.1-1 indicates that the highest of the second highest readings occurred on December 2, 1976. However, this corresponds with a swine flue innoculation program conducted one-half block from the continuous air monitoring site and most probably resulted in higher than usual traffic volumes. Because of data and modeling limitations, use of this date as the basis for model calibration would result in an over-prediction of future carbon monoxide concentrations. (A more detailed explanation is contained in Appendix 4.7-1.) Accordingly, EPA has permitted the use of December 15, 1976 as the basis for the design concentration (Appendix 4.7-2). The eight-hour carbon monoxide concentration on this date was 13.3 mg/m^3, the third highest reading in 1976, and exceeds even the highest concentration from 1975, 1977 and 1978.

TABLE 4.7.1-1

RECORD OF CO VIOLATIONS

Eugene-Springfield AQMA
11th and Willamette CAM Site

Date	CO concentration mg/m^3	
12-15-75	11.1	
12-23-75	10.6	*2nd highest reading for year
1-21-76	11.0	
11- 8-76	10.4	
11-12-76	10.4	
11-30-76	12.5	
12- 2-76	13.9	*2nd highest reading for year
12- 6-76	10.9	
12-10-76	10.9	
12-13-76	12.4	
12-15-76	13.3	Basis for design value
12-16-76	14.1	
12-22-76	10.2	
1- 7-77	12.2	
1-10-77	10.2	
1-20-77	11.1	
1-27-77	10.3	
10-28-77	10.5	
11- 4-77	10.6	
12-20-77	11.5	*2nd highest reading for year
1- 4-78	11.9	
12-13-78	11.0	*2nd highest reading for year

Note: The carbon monoxide (CO) monitor was inoperative for the first half of 1975.

Since the Environmental Protection Agency directed that all emission inventories be compiled using 1977 as the base year, it was further necessary to adjust the design concentration from 1976 to 1977. According to EPA figures, carbon monoxide emissions from the vehicle fleet have and will continue to decrease as a result of the Federal Motor Vehicle Emission Control Program. Replacement of older vehicles with less sophisticated emission control systems by newer, cleaner vehicles results in an emission reduction of approximately four percent annually, assuming no change in traffic volumes. Since traffic volumes adjacent to the continuous air monitoring site have remained essentially constant for the past few years, the 1976 design concentration was "normalized" to account for lower emission factors from 1976 to 1977. A four percent decrease in emission factors from 1976 to 1977 results in a "normalized" design concentration of 12.7 mg/m^3. In other words, the design concentration of 12.7 mg/m^3 represents the estimate of the second highest carbon monoxide concentration which would have occurred in 1977 had the poor meteorological conditions from 1976 been repeated.

Although produced by a somewhat circuitous, though logical, method, the 12.7 mg/m^3 design concentration allows the most accurate forecast of future carbon monoxide concentrations. By discounting the normally accepted day because of atypical traffic conditions, it allows accurate calibration of the model

upon which the analysis is dependent. By normalizing the 1976 data to 1977, it assures that due credit is given for annual improvements in vehicle emissions. Finally, use of December, 1976 data, rather than more recent data with lower concentrations, assures that the area can develop plans to avoid exceedence of the standards even if the adverse meteorological conditions encountered in December, 1976 are repeated.

4.7.2 DESCRIPTION OF THE PLANNING PROCESS

4.7.2.1 Designation of Lead Agency

The Lane Council of Governments (L-COG) has been designated by the Governor as the lead agency for preparing the carbon monoxide State Implementation Plan for the metropolitan area. Because 95% of the carbon monoxide released into the atmosphere in Eugene-Springfield comes from transportation related sources, Lane Council of Governments was a logical choice for lead agency, since it already conducts the areawide transportation planning process.

By resolution, the Lane Council of Governments Board formally requested designation as lead agency on February 23, 1978. The Governor's designation was made on March 30, 1978. The Regional Office of EPA has concurred with the designation.

4.7.2.2 Interagency Coordination

4.7.2.2.1 Air quality work in the Unified Work Program

The Eugene-Springfield Unified Work Program (UWP) FY78-79, Appendix 4.7-8, outlines the overall transportation planning program conducted by Lane Council of Governments during FY 1979. The Transportation - Air Quality Work Program FY78-79, Appendix 4.7-9, details the air quality planning activities which were anticipated for FY 1979. The air quality work activities in these documents are somewhat dated, although the roles and responsibilities, organization and process described therein are not. When the Air Quality Work Program was adopted in August, 1978, it was anticipated that all planning activities, including adoption of control strategies, could be accomplished during FY 1979. It is now obvious that considerably more effort will be required for completion of the analysis and adoption of control measures.

The FY79-80 Unified Work Program, which includes both air quality and transportation planning activities, is currently being developed. The primary focus of the air quality activities will be the analysis and adoption of reasonable control strategies. Additional discussion of future activities is contained in Section 4.7.4.4.

The following roles and responsibilities of each agency are excerpted from the Transportation - Air Quality Work Program. The FY79-80 Unified Work Program will further define responsibilities.

Role/Responsibility	Agency
1. Lead agency for air quality planning; program management	L-COG
2. Metropolitan Area Transportation Committee support	L-COG
3. Transportation Planning Committee support	L-COG
4. Citizen Advisory Committee support	L-COG
5. AQMA Citizen Committee support	L-RAPA/DEQ
6. Mobile source emission estimates	O-DOT
7. Stationary source emission estimates	L-RAPA
8. Air quality analysis	L-RAPA/DEQ
9. Technical analysis and evaluation of control strategies	
a. Mobile	L-COG
b. Stationary	L-RAPA/DEQ
10. Implementation scheduling	
a. Mobile	L-COG
b. Stationary	L-RAPA
11. Transportation Control Plan and mobile source SIP revisions	L-COG
12. Stationary source SIP revisions	L-RAPA/DEQ
13. TCP/SIP revision hearings	Eugene, Springfield, Lane County, L-RAPA
14. Adoption of TCP/SIP revisions	
a. Mobile	Eugene, Springfield, Lane County, L-COG
b. Stationary	L-RAPA
15. Hearing and adoption	EQC

4.7.2.2.2 Interagency agreements

Lane Council of Governments has been designated by the Governor as the local metropolitan planning organization (MPO) for Eugene-Springfield, and, as such, has general responsibilities for the conduct of the areawide transportation planning process. On

a continuing basis, Lane Council of Governments receives support for planning from the Federal Highway Administration (FHWA), the Urban Mass Transportation Administration (UMTA), and Oregon Department of Transportation (O-DOT). Agreements between Lane Council of Governments and Oregon Department of Transportation and between Lane Council of Governments and Urban Mass Transportation Administration are contained in Appendix 4.7-14. For the conduct of specific air quality activities, Lane Council of Governments has also entered into agreements with the Oregon Department of Environmental Quality (DEQ) and the Lane Regional Air Pollution Authority. These agreements are also included in Appendix 4.7-14.

4.7.2.2.3 Technical/policy work group participation

Policy direction for the conduct of the transportation planning program is provided by the Metropolitan Area Transportation Committee (MATC). MATC is composed of elected representatives of Lane County, Eugene and Springfield, and officials from the Oregon Transportation Commission and the Lane Transit District. Lane Council of Governments, which has authority for adoption of the Plan, is composed of elected representatives from general purpose units of government and special districts in Lane County.

The transportation planning program, including air quality aspects, is conducted by Lane Council of Governments and its subordinate committees. The technical aspects of transportation

work are performed by the Transportation Planning Committee (TPC). The committee is composed of technical staff from agencies with responsibility for transportation facilities, services or related functions.

Public participation as a continuous part of the transportation planning process is provided through the Citizens' Advisory Committee for Transportation Planning. The basic relationship of these bodies is shown in Figure 4.7.2-1.

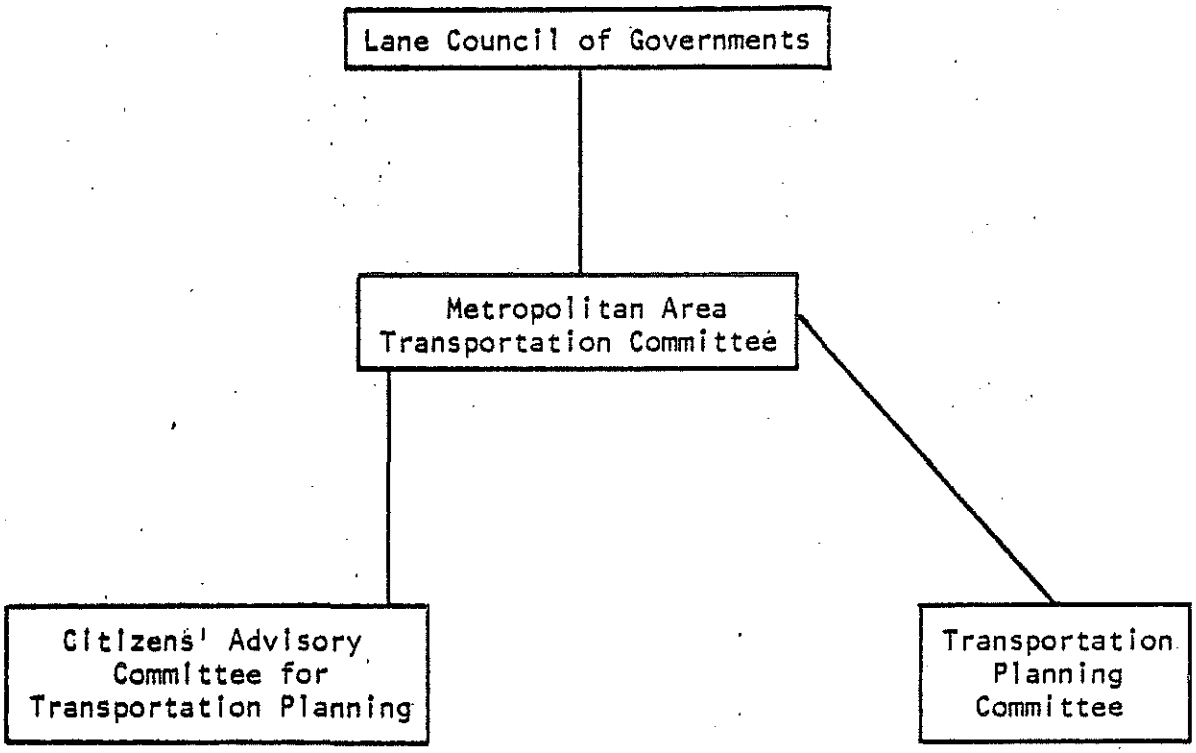
A detailed description of each of these committees, its membership and responsibilities, and a description of the general transportation planning process are contained in the Prospectus, Appendix 4.7-13.

The first phase of the 1979 State Implementation Plan revision, the technical analysis and problem definition, was performed by Transportation Planning Committee in coordination with technical staff from Lane Council of Governments, Lane Regional Air Pollution Authority, Department of Environmental Quality, Oregon Department of Transportation and local agencies. The second phase, analysis and adoption of control strategies, is outlined in Section 4.7.4.4.

The technical analysis of alternate control strategies and their impact on air quality will be undertaken by Transportation Planning Committee and staff of member agencies. Because the control strategies will impact the citizenry directly, the

Figure 4.7.2-1

Transportation Planning Organization



Citizens' Advisory Committee and the public at large will play a more important role than during preparation of the 1979 State Implementation Plan. General policy direction will continue to be provided by local elected officials as described below.

4.7.2.2.4 Elected official involvement

Local elected officials have been involved throughout the process beginning with a request that Lane Council of Governments be designated as lead agency. Periodic progress reports have been provided to the Lane Council of Governments Board and Metropolitan Area Transportation Committee. Member agencies, elected officials, the general public and media have been kept informed by air quality related articles published in the Lane Council of Governments and Lane Regional Air Pollution Authority monthly newsletters. A major portion of a Springfield City Council work session was devoted to air quality planning activities.

The Metropolitan Area Transportation Committee has provided primary policy direction during the early phases of the process. At a number of key points, Metropolitan Area Transportation Committee has directed staff to pursue clarification from and concurrence by EPA for alternative approaches on various technical matters.

Because transportation control strategies and the next State Implementation Plan revision must be adopted in legally enforceable terms, participation by elected officials from local general purpose units of government will become increasingly important. Elected officials on Metropolitan Area Transportation Committee and Lane Council of Governments will continue to provide general direction in the State Implementation Plan revision process, but adoption of control strategies, in the end, must be by local governmental bodies with the responsibility for implementation.

4.7.2.3 Citizen Participation

4.7.2.3.1 Citizen involvement

During the 1979 Statement Implementation Plan preparation, an exercise that was primarily technical in nature, there was little information to which the general publish could react responsibly. The Lane Council of Governments Citizens' Advisory Committee for Transportation Planning was briefed on the air quality program, and opportunities were provided for review had the members desired to participate. The Lane Council of Governments and Lane Regional Air Pollution Authority newsletters were also utilized to inform the public about the air quality program and the 1979 State Implementation Plan revision. Both newsletters are distributed to all major TV, radio and news media in Lane County.

There will be more opportunity for meaningful public participation during the evaluation of alternative control measures and the next State Implementation Plan, since specific measures may be proposed for implementation. Public acceptance of the control strategies is clearly desirable prior to adoption and implementation by local governments, so strong efforts will be made to involve the public during the remaining part of the process. Public involvement procedures for the next State Implementation Plan will be included in the FY79-80 Unified Work Program. Appendix 4.7-7 contains hearing notices and other public information material.

4.7.2.3.2 Public hearings

A public hearing on the 1979 State Implementation Plan was conducted by the Oregon Environmental Quality Commission (EQC) prior to adoption.

4.7.3 EMISSION INVENTORY

4.7.3.1 Baseline Emissions for Design Year - 1977

4.7.3.1.1 Background emissions

In the Eugene-Springfield area, there is a distinct scarcity of measured carbon monoxide data. However, the 1977 Emission Inventory estimates that carbon monoxide emissions from stationary soruces account for less than five percent of carbon

monoxide emissions. Total carbon monoxide emissions from stationary sources and from sources outside the Air Quality Maintenance Area are calculated to have negligible impact on attainment of standards. The remainder of total carbon monoxide emissions come from mobile sources. Table 4.7.3-1 indicates annual carbon monoxide emissions by source category. Figure 4.7.3-1 shows graphically how total carbon monoxide emissions in the Air Quality Maintenance Area are projected to decrease continuously between 1977 and 1987. The Eugene continuous air monitoring site meets EPA siting criteria (SAMWG).

TABLE 4.7.3-1

Total CO Emissions (Tons/Year)
Eugene-Springfield AQMA

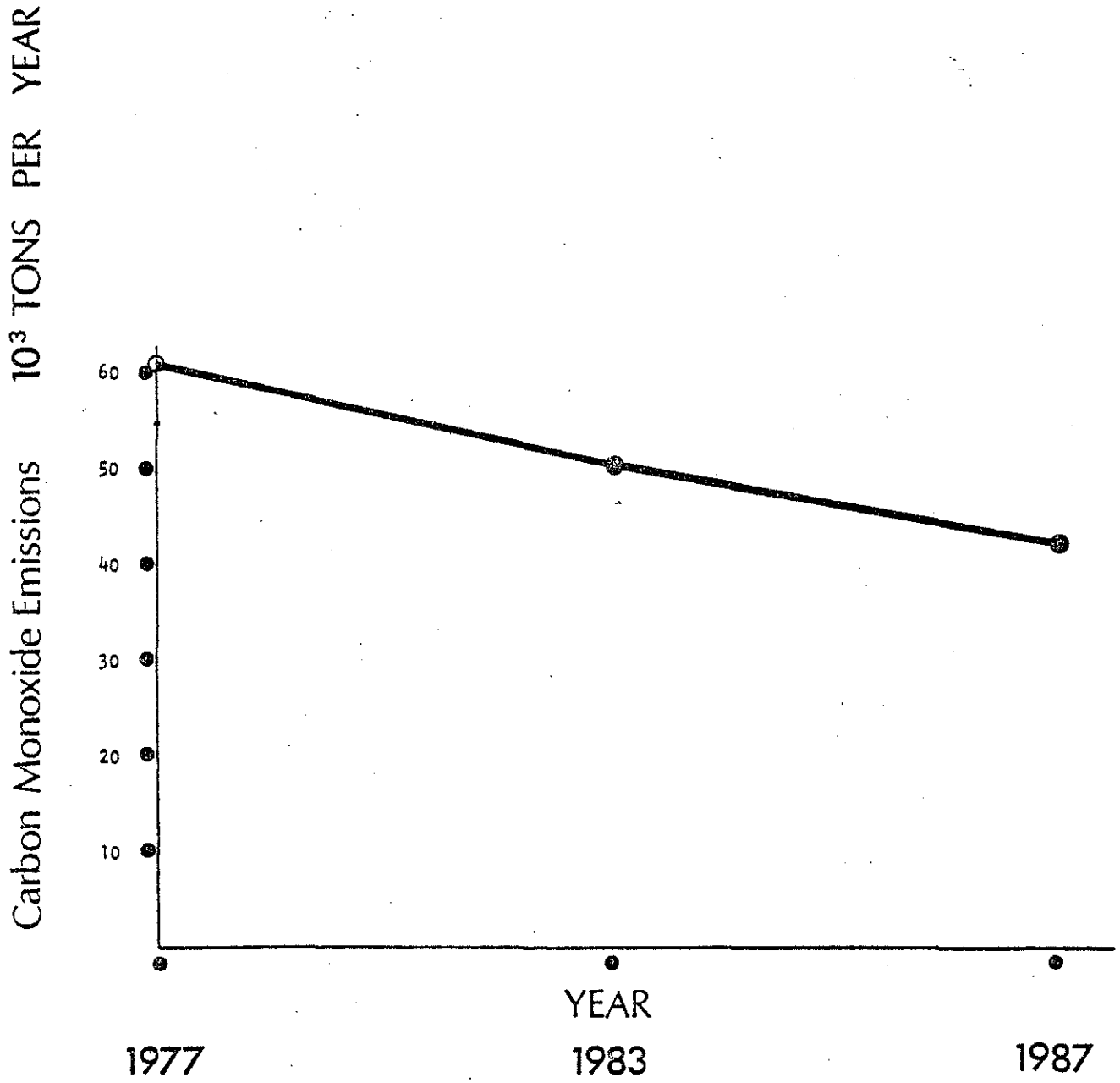
	1977	1983	1987
Mobile Sources	57,970	48,014	40,046
Industrial Process	1,184	1,184	923
Point Source Fuel Combustion	821	850	847
Miscellaneous	890	947	1,003
	60,865	50,995	42,819

4.7.3.1.2 Major stationary sources

In terms of carbon monoxide emissions, there are no major stationary sources in Eugene-Springfield which contribute to carbon monoxide violations.

Figure 4.7.3-1

AREAWIDE CARBON MONOXIDE EMISSIONS BY YEAR
EUGENE-SPRINGFIELD AQMA



4.7.3.1.3 Mobile sources

a. Generation of baseline emission inventory

Because there is only one continuous air monitoring site for carbon monoxide in Eugene-Springfield, heavy reliance was placed on modeling throughout the air quality analysis. Areawide carbon monoxide emissions were calculated by utilizing the existing traffic forecasting model developed through the Eugene-Springfield Area Transportation Study and the computer model, SAPOLLUT, which interfaces with it.

Each street link of the major street network and each centroid connector, which represents local streets within a transportation zone, was assigned to one of the two-kilometer grids. Vehicle miles traveled (VMT) for each grid were calculated by multiplying 1977 street loadings, derived from the computerized traffic forecasting model, for each street in the grid by the respective street lengths. The SAPOLLUT model was used to calculate gross carbon monoxide emissions by multiplying composite vehicle emission factors, stratified by speed, by the vehicle miles traveled for each street segment. Additional explanation is contained in Appendix 4.7-3.

TABLE **4.7.3-2**

Emission Factors for Modeling Process

		Vehicle Speeds in MPH.										
YEAR	IDLE	5	10	15	20	25	30	35	40	45	50	55
1977	37.86	366.23	190.41	131.65	104.51	87.79	75.40	66.00	59.53	55.85	54.08	51.86
1983	24.11	255.33	133.44	93.45	74.82	62.87	53.73	46.78	42.12	39.65	38.56	36.71
1987	15.00	187.21	99.17	70.54	57.07	48.14	41.13	35.79	32.29	30.54	29.84	28.32
HDV SPEED:		5	10	15	20	25	30	35	40	45	50	55

Environmental Protection Agency, AP-42 Supplement 8 Carbon Monoxide
Factors in grams per mile except idle rate in grams per minute.

b. Data inputs

The 1977 street loadings were generated by interpolation of the trip tables from the transportation model. As indicated above, vehicle miles traveled for each grid is based on these loadings. Figure 4.7.3-2 illustrates the vehicle miles traveled within each two-kilometer grid.

Total carbon monoxide emissions within each grid were calculated by applying composite vehicle emission factors and speeds from the historical record of the transportation model. Figure 4.7.3-3 indicates the carbon monoxide emissions within each grid. Emission factors were based on EPA AP-42, Supplement 8, Table 4.7.3-2, using as much Eugene-Springfield data as possible. The percentage of cold starts and hot starts, an extremely important parameter in emission calculations, were estimated by Oregon Department of Transportation. The composition of the vehicle fleet, Table 4.7.3-3, is based on current state motor vehicle registration figures.

TABLE 4.7.3-3

Composition of Vehicle Fleet

Light Duty Vehicles (passenger cars)	69.0%
Light Duty Trucks	27.0%
Heavy Duty Trucks - Gasoline	1.5%
Heavy Duty Trucks - Diesel	1.5%
Motorcycles	1.0%

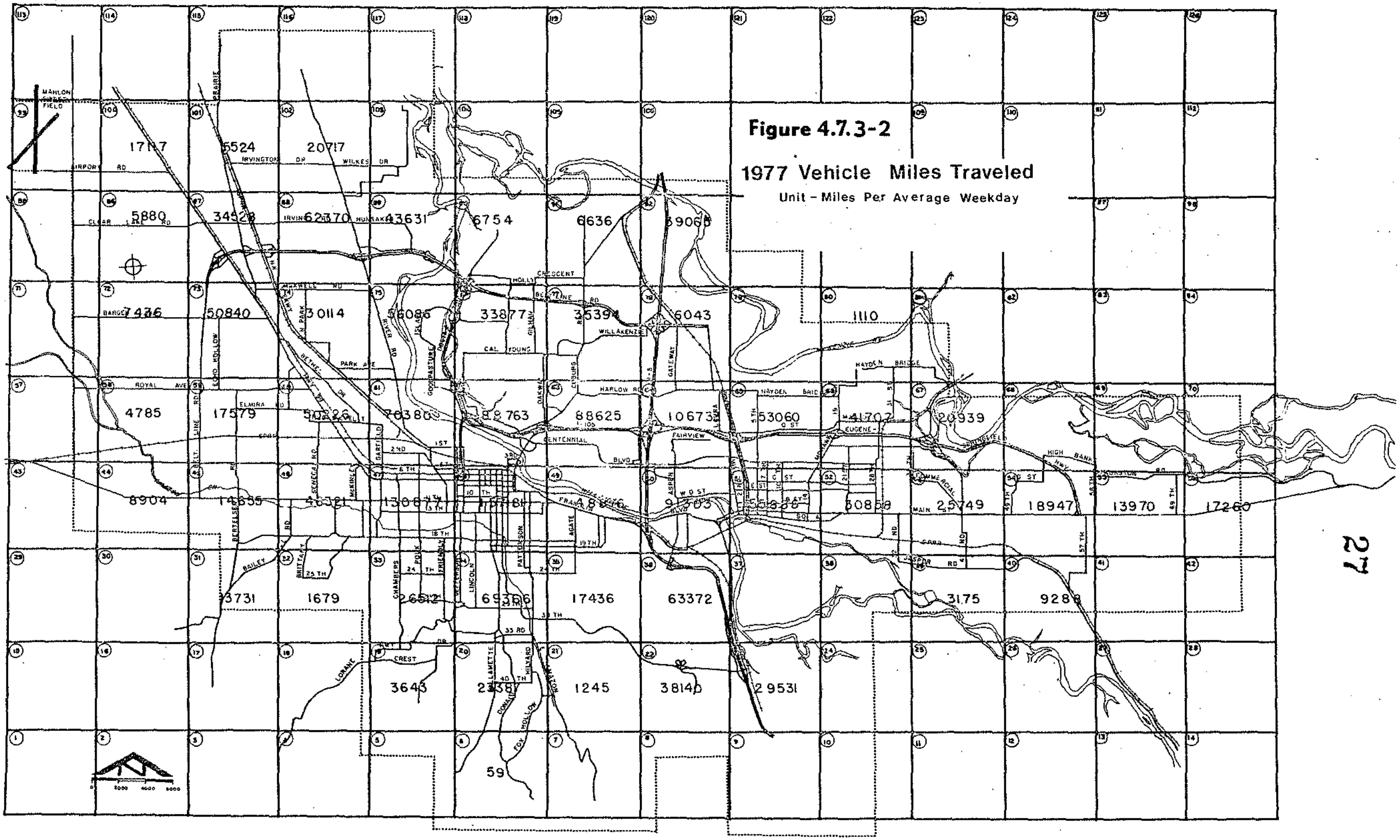


Figure 4.7.3-2

1977 Vehicle Miles Traveled

Unit - Miles Per Average Weekday

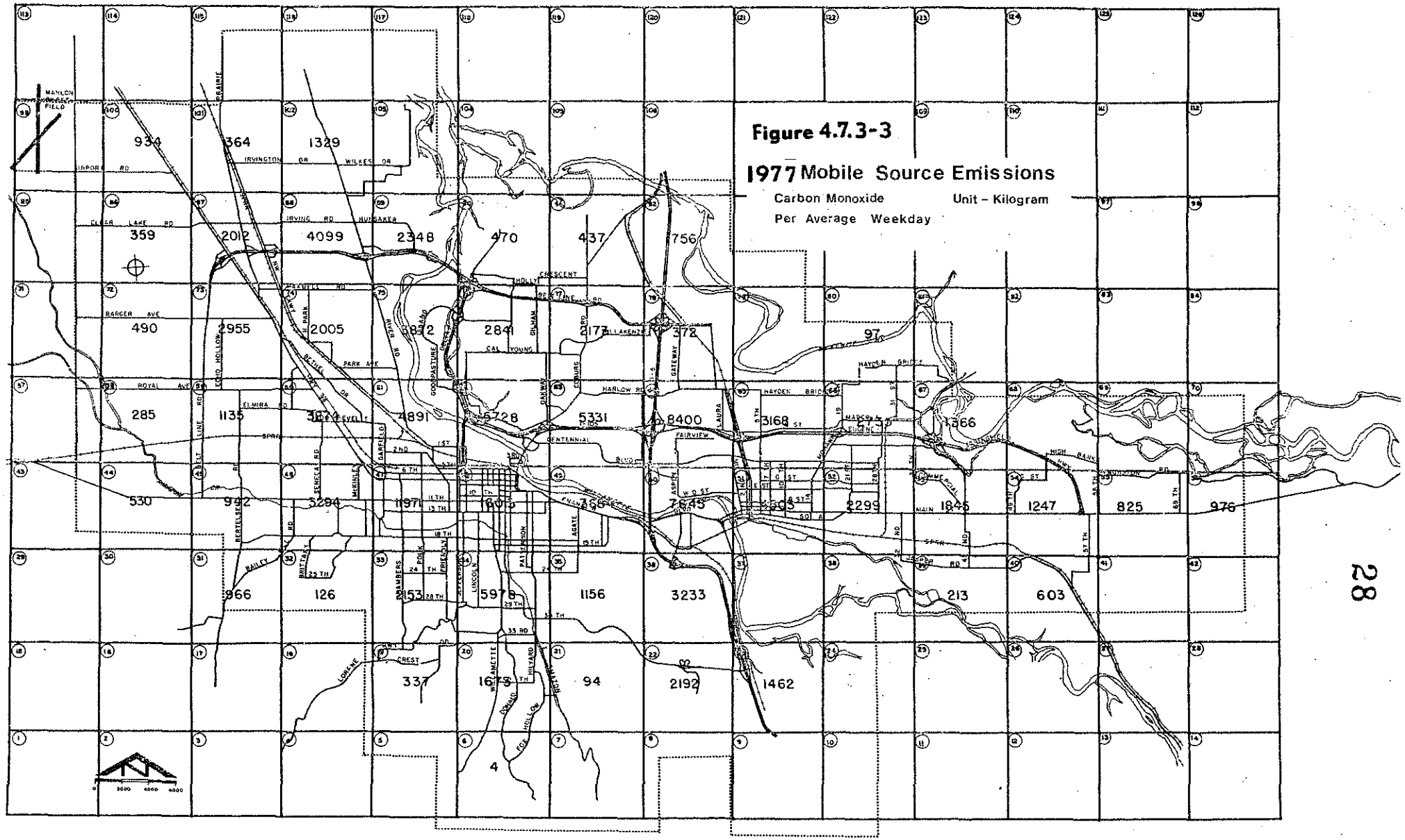


Figure 4.7.3-3
1977 Mobile Source Emissions
Carbon Monoxide
Unit - Kilogram
Per Average Weekday
934
364
1329
359
2012
4099
2348
470
437
756
490
2955
2005
2841
285
1135
4891
5728
5331
8400
530
992
5294
1971
7648
2299
1845
1247
825
976
966
126
5978
1156
3233
213
603
337
1673
94
2192
1462
4

c. Summary of emission burden

As indicated in Appendix 4.7-3, the carbon monoxide concentration at a particular receptor is comprised of two components, the contribution from traffic on the adjacent roadway and the contribution from all other sources (in this case, roadways) in the vicinity. The contribution from the individual street segment was calculated by using the AIRPOL-4A model and traffic data for that street link. The background concentration, that component of the carbon monoxide concentration from other sources in the vicinity, was determined to be proportional to the total carbon monoxide emissions within the appropriate two-kilometer grid.

For the calculation of 1977 carbon monoxide contribution from individual links, current measured traffic volumes and speed estimates by Eugene, Springfield and Lane County engineering staffs were used. For some street segments where violations of carbon monoxide standards appeared possible, limited field checks and analysis of signal timing, which determines operating speed, were utilized.

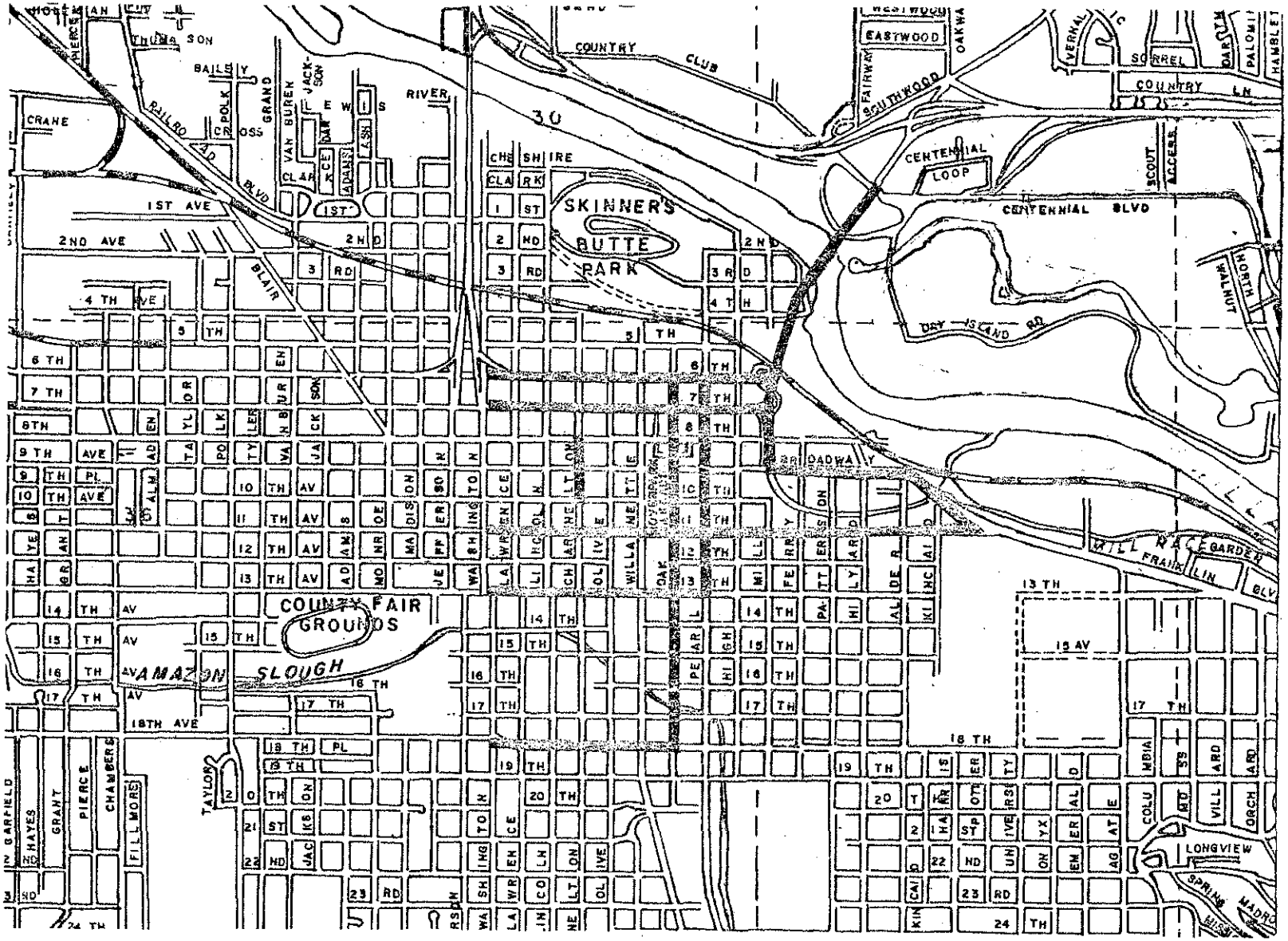
For comparison with future carbon monoxide concentration levels, the carbon monoxide forecasting model was applied, using 1977 data and emission factors, to identify the street segments that were suspected to be potential violators in 1977. Figure 4.7.3-4 illustrates these streets. It should be emphasized that most of these potential violations did

Figure 4.7.3-4

LOCATIONS WITH POTENTIAL TO VIOLATE CO 8-HOUR STANDARD IN 1977

BASED ON MODELING RESULTS

1" = 2000'



not occur in 1977 because the adverse meteorological conditions producing the high design concentrations in December, 1976 have not been repeated. In addition, since monitoring data is limited, there was no way to verify these results with observed data.

In an attempt to validate the modeling itself, the Lane Regional Air Pollution Authority mobile monitoring van has been utilized for carbon monoxide sampling at various sites in the Eugene-Springfield area beginning in October, 1978. Preliminary results are inconclusive, but will be examined during the analysis conducted during the coming fiscal year.

4.7.3.2 Projected 1983 Emission Inventory

4.7.3.2.1 Growth rates and projections

Vehicle miles traveled and carbon monoxide emissions for each two-kilometer grid for 1983 were calculated in a manner similar to that used for 1977. Trip tables for 1983 were generated by interpolation between 1970 trip tables and year 2000 trip tables that were based on future population and land use allocations used in the development of the 2000 Transportation Plan.

The 2000 Transportation Plan was adopted in June, 1978, so that the population and land use projections used for air quality planning purposes represent recent policy direction. The

population forecast is consistent with that used in the ongoing General Plan update, as well as the EPA 208 Water Quality planning program.

Although the transportation model provides reasonable accuracy for major corridors and outlying areas, it has not performed accurately in estimating traffic assignments in the central business district (CBD). To provide required accuracy for the central business district analysis, traffic volumes for 1983 were calculated by factoring current volumes according to the increases projected in the adopted Transportation Plan. In the vicinity of downtown Eugene, annual increases of 1.3 to 1.5 percent were used although cordon counts conducted in the area have detected little change since 1973. This insures that "worst case" traffic conditions were considered in the analysis of the downtown area. In all other grids of the study are, the 1983 traffic from the computer traffic model were used.

Minor modifications to the existing street network were made to account for street improvements programmed in the Transportation Improvement Program to occur before 1983. However, analysis performed subsequently indicated these had negligible impact on potential carbon monoxide violations. Although the Transportation Plan has a goal of greatly increasing the percentage of metropolitan area trips using mass transit by 2000, the transit ridership for both 1983 and 1987 was held

to three percent to reflect existing conditions. Although a straight line growth in transit ridership would call for increases before 1987 to reach the Plan goals, a continuation of existing ridership levels was modeled to simulate "worst case" traffic conditions.

Between 1977 and 1983, the areawide vehicle miles traveled is projected to increase by 16.9 percent from 1,974,767 miles to 2,307,774 miles per average weekday. In spite of this increase, the areawide carbon monoxide emissions are projected to decrease by 17.5 percent from 141,843 kilograms to 117,077 kilograms per average weekday. This decrease is due solely to the impact of the Federal Motor Vehicle Emission Control Program. 1983 vehicle miles traveled and carbon monoxide emissions are shown in Figures 4.7.3-5 and 4.7.3-6, respectively.

4.7.3.2.2 Emission reduction credits

a. Impact of Federal Motor Vehicle Emission Control Program

The decrease in emissions for 1983 is due to the Federal Motor Vehicle Emission Control Program. The emission factors shown in Table 4.7.3-2 were utilized by the SAPOLLUT model during the calculation of the areawide carbon monoxide emissions.

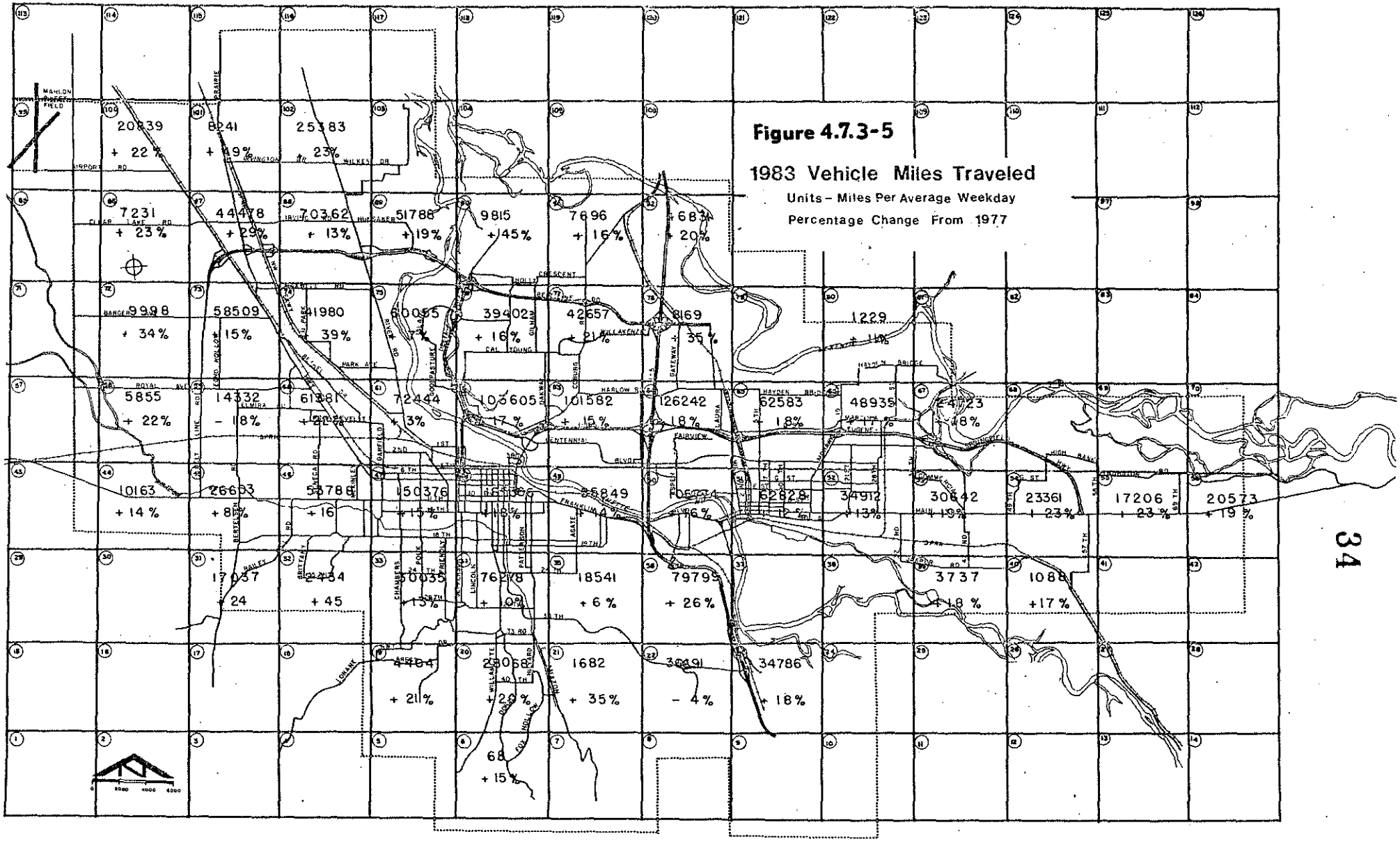


Figure 4.7.3-5

1983 Vehicle Miles Traveled

Units – Miles Per Average Weekday

Percentage Change From 1977

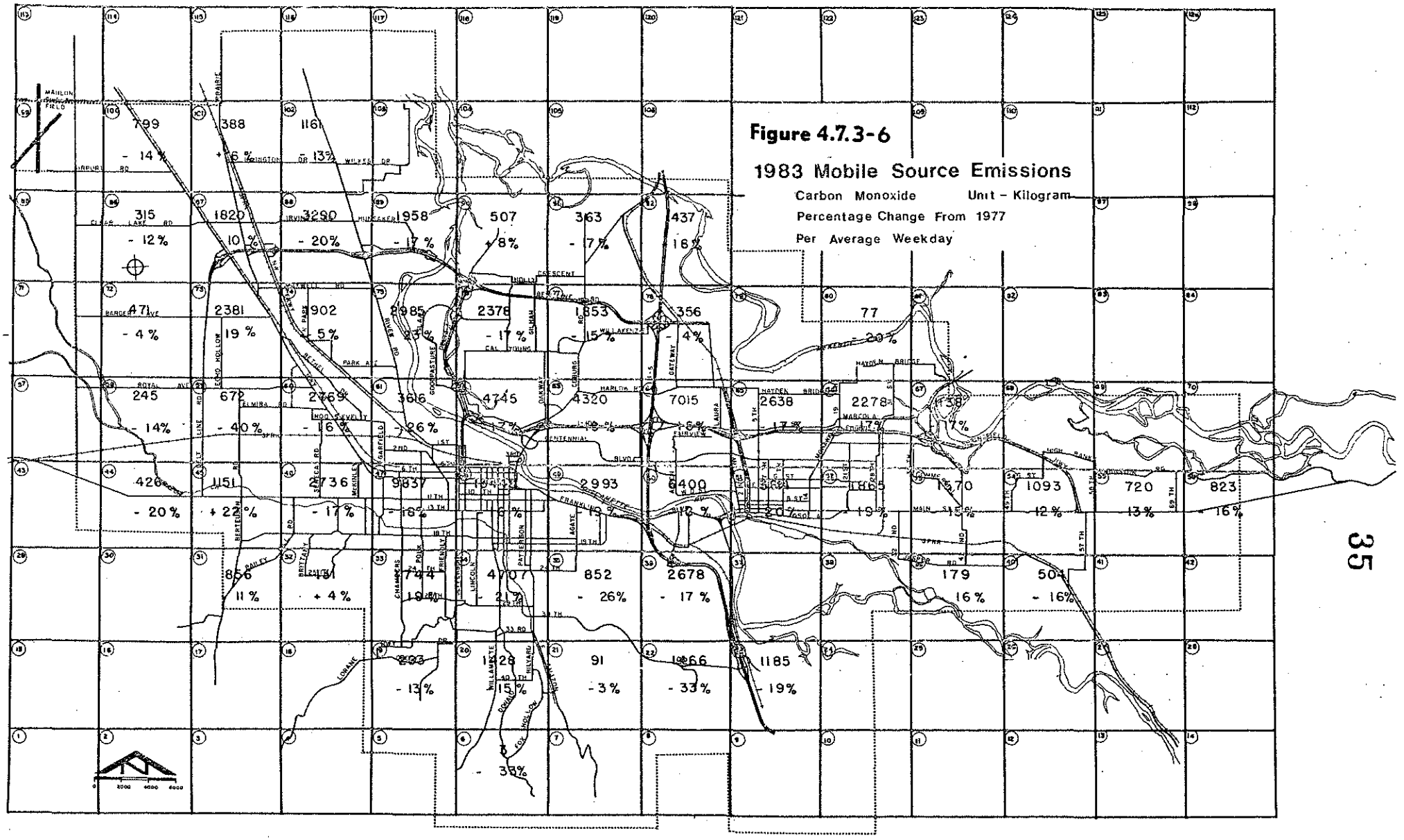


Figure 4.7.3-6
1983 Mobile Source Emissions
Carbon Monoxide Unit - Kilogram
Percentage Change From 1977
Per Average Weekday
799
- 14 %
388
+ 6 %
1161
- 13%
315
- 12 %
1820
10 %
3290
- 20%
1958
- 17 %
507
+ 8%
363
- 17%
437
18%
471
- 4 %
2381
19 %
902
- 5%
2985
2378
- 17 %
1853
- 15%
356
- 4%
77
- 20%
245
- 14%
672
- 40 %
2769
- 16 %
3666
- 26 %
4745
4320
7015
2638
2278
1138
- 7%
426
- 20 %
1151
+ 22 %
2736
- 17 %
9837
- 18%
2993
6400
1370
1093
12%
720
13%
823
- 16%
856
11 %
2351
+ 4 %
744
- 19%
4707
- 21%
852
- 26%
2678
- 17 %
179
16 %
504
- 16%
293
- 13%
1128
15%
91
- 3%
1866
- 33%
1185
- 19%
- 38%

b. Credit for other measures

The emission reductions calculated for 1983 are based solely on the improvement in vehicle emissions due to the Federal Motor Vehicle Emission Control Program. As indicated in Section 4.7.3.2.1, above, minor modifications to the street network have a negligible effect and the transit ridership percentage was held constant.

4.7.3.2.3 Summary of emission burden

The methodology described in Appendix 4.7-3 was used to determine the potential for violations of the carbon monoxide standard in 1983.

The only streets revealed as potential violations were in the two-kilometer grid containing downtown Eugene. High traffic volumes, low speeds and 12-foot receptor distances in the central business district indicate the potential for violation of the eight-hour carbon monoxide standard under "worst case" meteorological conditions. "Worst case" meteorology is characterized by infrequent frontal passages, very low wind, and generally poor mixing of air. The two months with the most potential for violations are December and January, although the worst case meteorological conditions could ocurr during any of the fall and winter months. Violations would not be expected unless extremely adverse conditions, such as those occurring in December, 1976, were encountered.

Table 4.7.3-4 indicates those streets with a potential to violate the carbon monoxide standards in 1983. Street segment length, receptor distances, speeds and volumes are indicated. The total mileage of these street segments is only one and one-quarter miles. Figure 4.7.3-7 illustrates these streets.

4.7.3.3 Projected 1987 Emission Inventory

4.7.3.3.1 Growth rates or projections

Vehicle miles traveled and carbon monoxide emissions for each two-kilometer grid for 1987 were calculated by the same process as described for 1983. Again, modifications were made to the street network to reflect additional facilities anticipated by 1987 in the Transportation Plan. As with the modifications for 1983, these changes had negligible impact on the air quality. The percentage trips by transit was again maintained at the current level.

Between 1977 and 1987, the areawide vehicle miles traveled is projected to increase by 27.4 percent from 1,974.767 miles to 2,515,294 miles per average weekday. Due to the Federal Motor Vehicle Control Program, areawide carbon monoxide emissions are calculated to decrease by 31.5 percent from 141,843 kilograms to 97,185 kilograms per average weekday. 1987 vehicle miles traveled and carbon monoxide emissions are shown in Figures 4.7.3-8 and 4.7.3-9, respectively.

TABLE 4.7.3-4

Summary of Potential Violations for 1983

Street Segment	Length	Receptor Distance	Operating Speed	Screenline Volume	1977 Volume	1983 Volume	Maximum Projected CO Concentration*
Seventh (Oak to Ferry Street Bridge)	1,100'	12'	20	22,700	22,000	23,800	10.2
Eleventh (Olive to Pearl)	1,200'	12'	12½	15,400	18,000	19,400	11.3
Pearl (Broadway to Eleventh)	800'	12'	12½	15,400	15,200	16,400	10.3
Franklin (Hilyard to Broadway)	1,200'	25'	25	39,400	39,900	44,000	10.6
Ferry St. Bridge Approach (Broadway to Seventh)	800'	25'	25	33,500	35,000	39,000	10.8
Ferry St. Bridge Approach (Seventh to Third)	1,600'	25'	30	39,200	45,000	51,000	11.5
Sixth (High to Pearl)	400'	12'	15	18,200	17,800	19,200	10.3

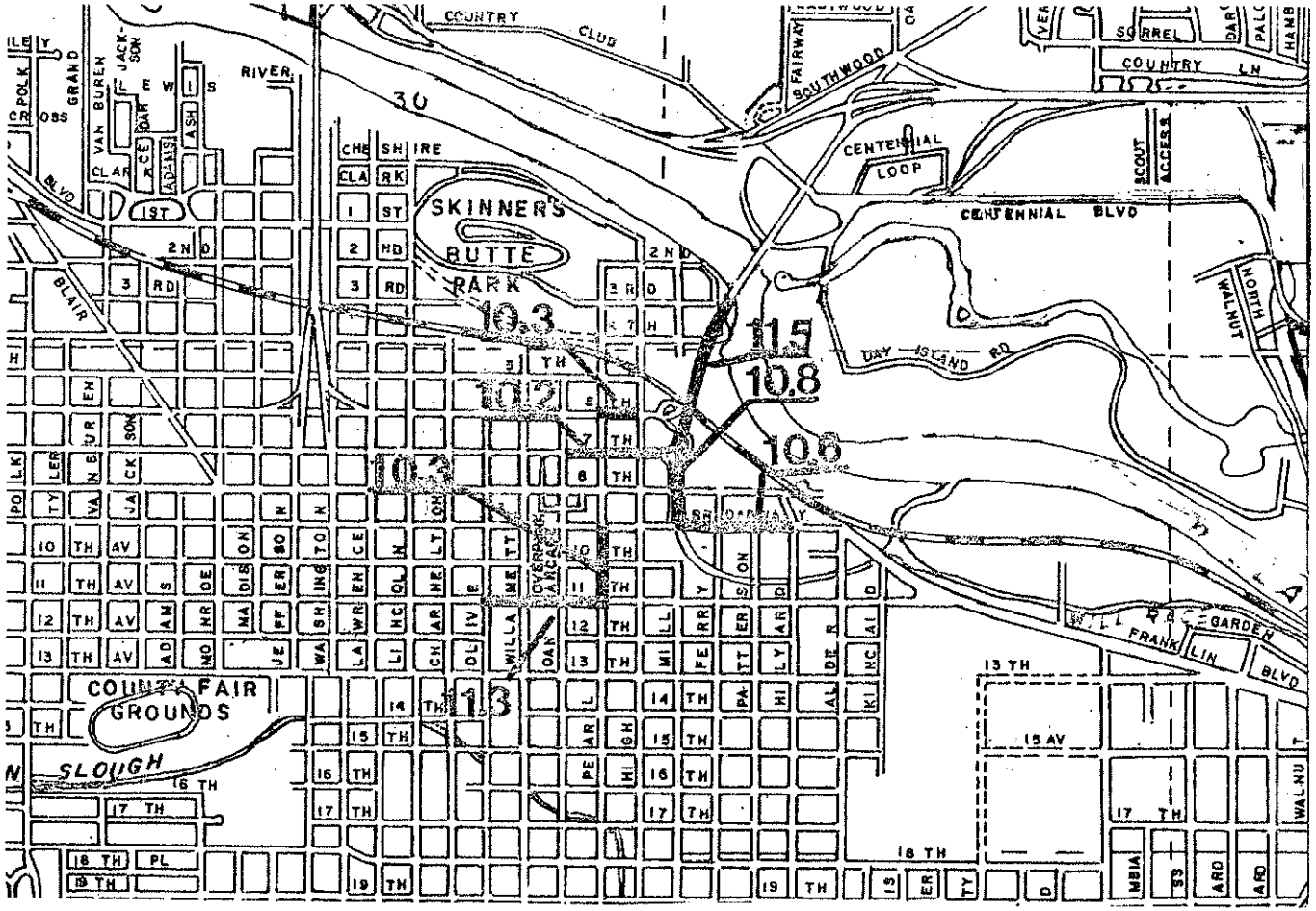
* Mg/m^3

Background CO concentration for Eugene downtown grid in 1983 = 5.0 mg/m^3.

Figure 4.7.3-7

LOCATIONS WITH POTENTIAL TO VIOLATE CO 8-HOUR STANDARD IN 1983

MAXIMUM CO CONCENTRATION FOR EACH SEGMENT SHOWN IN mg/m^3



1" = 2000'

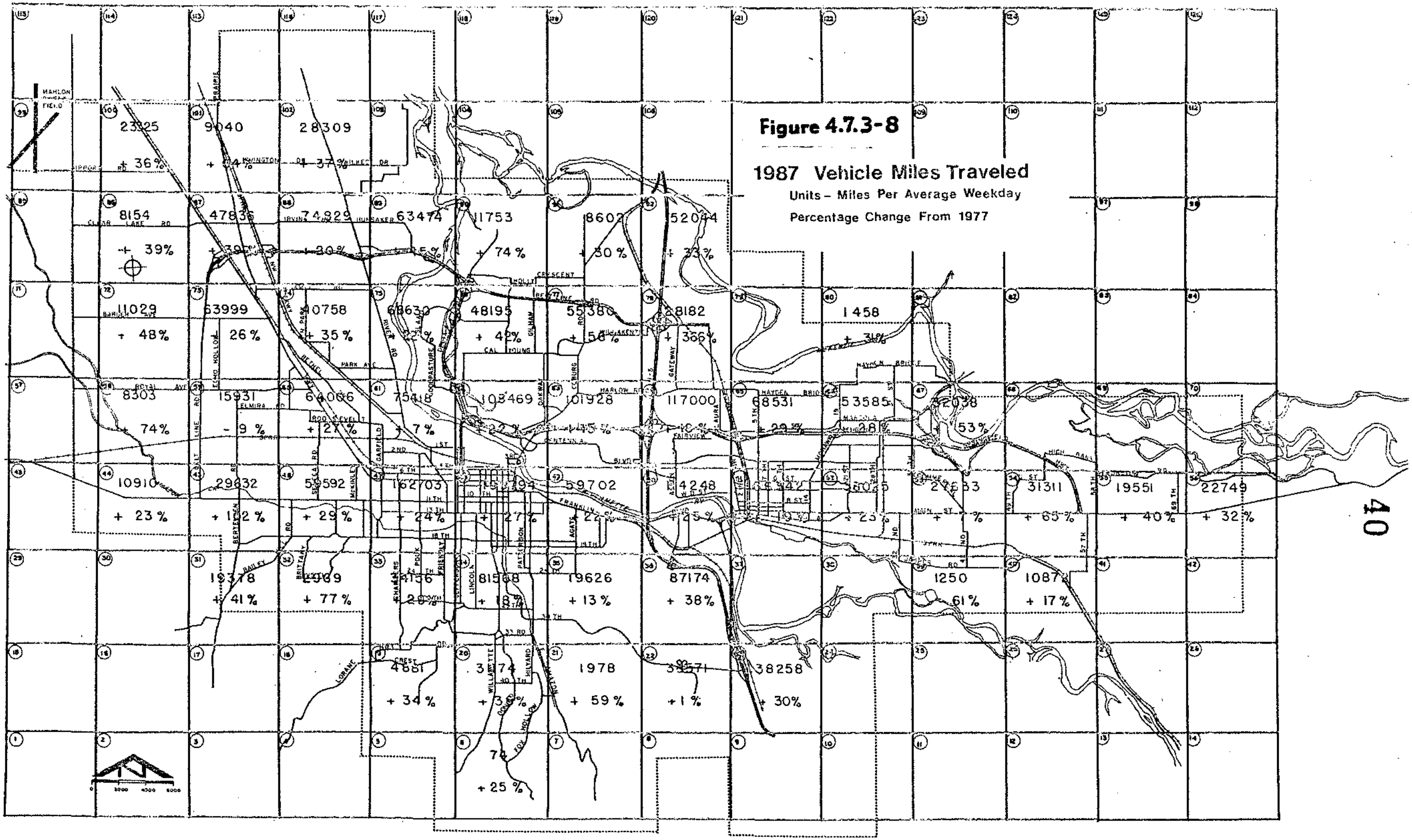


Figure 4.7.3-8

1987 Vehicle Miles Traveled

Units - Miles Per Average Weekday

Percentage Change From 1977

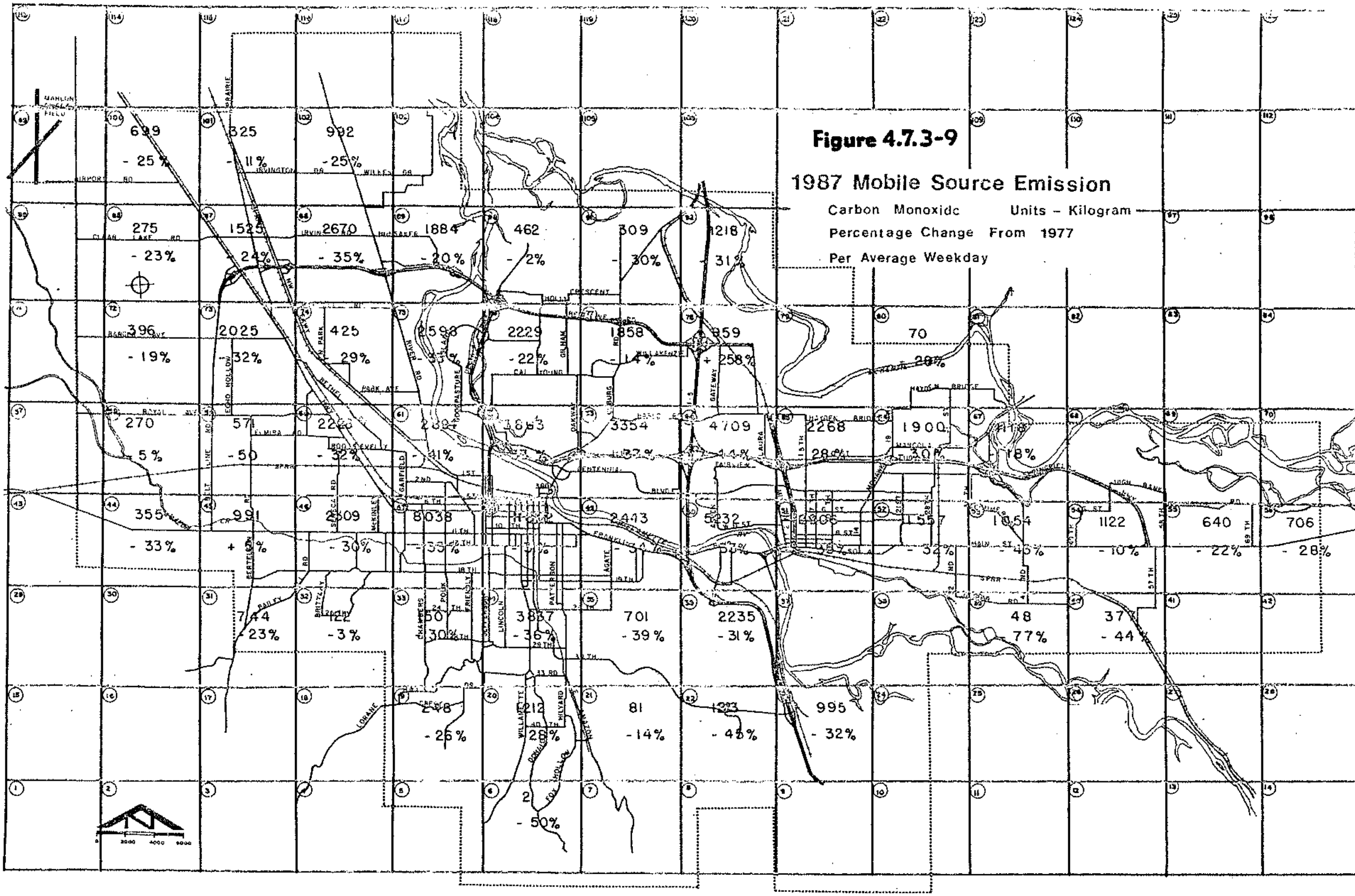


Figure 4.7.3-9

1987 Mobile Source Emission

Carbon Monoxide   Units - Kilogram

Percentage Change From 1977

Per Average Weekday

4.7.3.3.2 Emission reduction credits

a. Impact of the Federal Motor Vehicle Emission Control Program

The decrease in emissions between 1977 and 1987 is due to the Federal Motor Vehicle Emission Control Program. The 1987 emission factors shown in Table 4.7.3-2 were used as the basis for calculation of carbon monoxide emissions by the SAPOLLUT model.

b. Credit for other measures

The emission reductions calculated for 1987 are based solely on the improvement in vehicle emissions due to the Federal Motor Vehicle Emission Control Program. As indicated in Section 4.7.3.3.1 above, street network modifications had negligible impact and transit ridership percentage was held constant.

4.7.3.3.3 Summary of emission burden

The analysis of individual street segments was conducted in an identical manner as used for 1983. Traffic volume increases were adjusted using the same methods and factors. No street segments, even those with a potential for violations in 1983, showed a potential for exceedence of the eight-hour carbon monoxide standard in 1987 even under "worst case" meteorological

and traffic conditions. Figure 4.7.3-10 illustrates graphically how the amount of streets with a potential for exceedence of the standards is projected to decrease continually from 1977 to 1985, when all streets are projected to be in compliance.

4.7.4 CONTROL STRATEGY

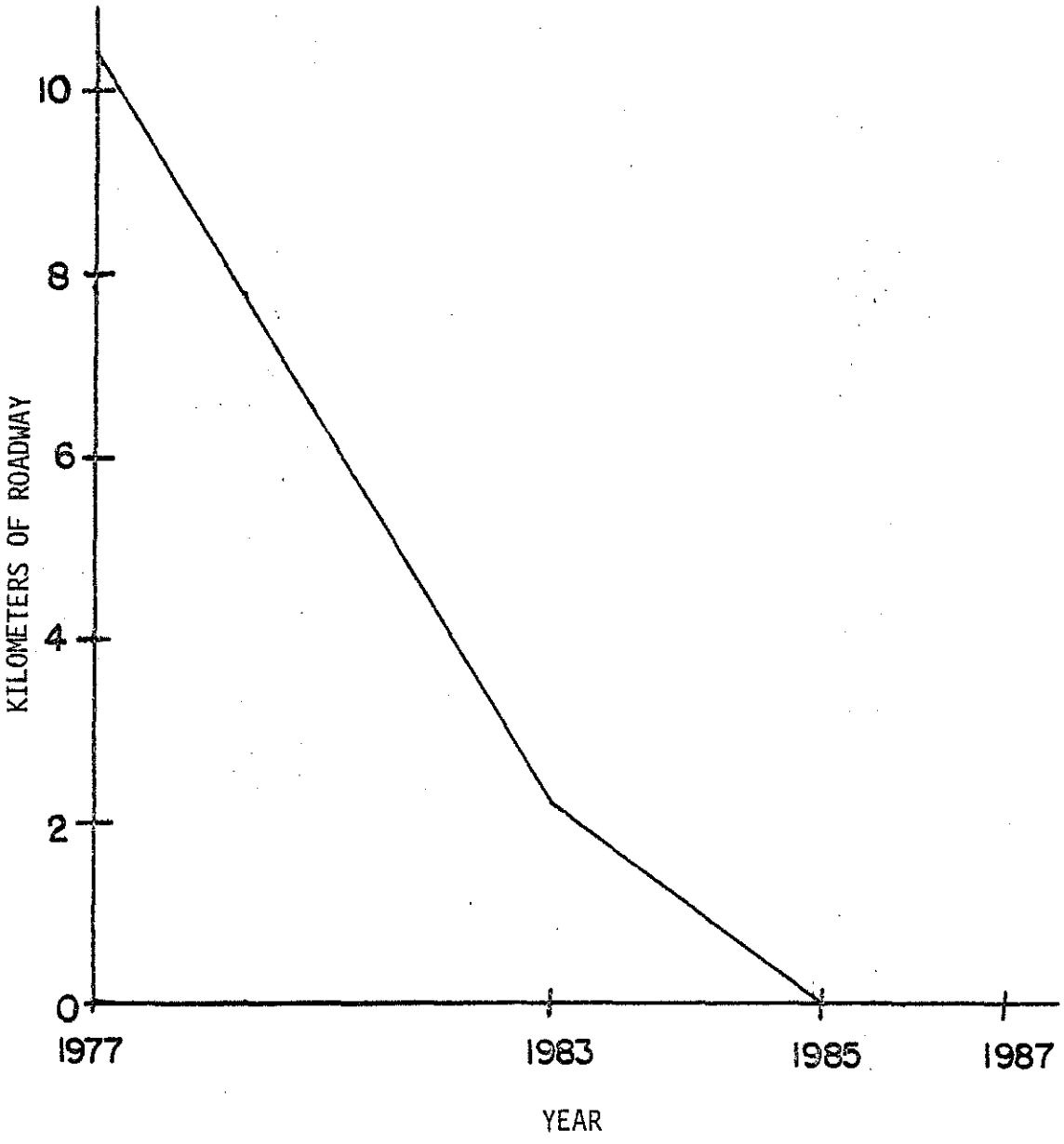
4.7.4.1 Emission Reduction Necessary for Attainment

From the analysis detailed in Part 4.7.3, there are only isolated areas where the carbon monoxide standard might be violated in 1983. All links showing potential violation are within the downtown Eugene grid. This grid, like the area as a whole, shows decreases in carbon monoxide emissions in spite of an increase in vehicle miles traveled. Vehicle miles traveled increases of 18 percent and 27 percent for 1983 and 1987, respectively, are more than offset by emission reductions. Total carbon monoxide emission decreases of 16 percent and 31 percent, respectively, are anticipated based on the replacement of older vehicles with newer, cleaner ones. This contributes directly to a decrease in the general background carbon monoxide concentration within the grid.

According to the carbon monoxide forecasting model, violations could be eliminated if general background concentrations for the downtown Eugene grid were reduced further or if the contribution from the particular street segment were reduced. The emission reduction

Figure 4.7.3-10

LENGTH OF STREETS WITH POTENTIAL FOR VIOLATION
OF 8-HOUR CO STANDARD BY YEAR
EUGENE-SPRINGFIELD AQMA



necessary for each street segment will be determined in conjunction with the evaluation of control measures. Table 4.7.3-4 lists maximum carbon monoxide concentrations projected for 1983 by the modeling process.

No violations of the carbon monoxide standards in 1987 are projected. Attainment by that date is assured by the Federal Motor Vehicle Emission Control Program.

4.7.4.2 Emission Reduction Strategies Already Implemented

A variety of measures have been implemented in Eugene-Springfield which undoubtedly help contribute to the attainment of the air quality standards. Traffic engineering improvements, such as improved signal timing, enhance vehicle operations and improve traffic flow, thus reducing carbon monoxide emissions.

The area has been a leader in promoting and encouraging alternatives to the automobile. There are currently in excess of 100 miles of bikeways in the metropolitan area, with more planned for completion by 1983. Provision of bikeways, in downtown Eugene in particular, helps eliminate some auto trips, which obviously reduces emissions. In 1969, a pedestrian mall was constructed in the Eugene central business district, and it serves today as the core of the downtown shopping area. Lane Transit District, since it assumed operation of the local private transit company in 1970, has experienced one

of the highest ridership growth rates in the country. Between 1979 and 1983, the Transit Development Program calls for replacement of over one-half the existing fleet with new vehicles. Installation of 100 waiting shelters is also planned during that period.

The New Source Review Rule requirements of Oregon's 1979 State Implementation Plan revision will ensure that no major new or modified stationary source of carbon monoxide emissions will have an adverse air quality effect on the carbon monoxide violation area. The Lane Regional Air Pollution Authority will implement the New Source Review Program in Lane County.

4.7.4.3 Schedule for Implementation of Adopted Strategies

Several existing plans and programs contain projects or policies which will enhance air quality, but they have not been adopted as control strategies, nor has a schedule been developed for their implementation. These projects and policies will be evaluated along with other reasonable control strategies. Development of a schedule for their implementation is one of the activities to be undertaken by July 30, 1980, prior to adoption of the next State Implementation Plan revision.

Many of the policies adopted as part of the Eugene-Springfield Area 2000 Transportation Plan (Appendix 4.7-12) directly or indirectly address the improvement or maintenance of air quality in the metropolitan area. Policies and capital improvement recommendations reflect a commitment to a transportation system with increased

emphasis on mass transit and other alternatives to the automobile. The Plan also identifies land use recommendations needed to increase transit ridership and decrease travel demand. These recommendations are merely guidelines, however, and must be confirmed through the Metropolitan General Plan, currently being updated. Policies directing the investigation of carpooling, staggered work hours, parking policy and many other actions will be refined through updates of the Transportation Systems Management Element (Appendix 4.7-11).

The Transportation Improvement Program (Appendix 4.7-10) lists specific projects which are programmed for implementation during the next three years. While many of these projects will have a positive impact on overall carbon monoxide emissions, their immediate impact on potential violations in downtown Eugene is as yet undetermined.

4.7.4.4 Commitment to Conduct Analysis of Control Strategies

4.7.4.4.1 Commitment to justify the decision not to implement certain strategies

Since the analysis has shown a potential for violation of the eight-hour carbon monoxide standard, reasonably available control measures will be evaluated during FY 1979-80.

The FY79-80 (July 1, 1979 - June, 1980) Unified Work Program (UWP) will detail the specific work activities to be undertaken during the next year. The FY79-80 Unified Work Program is currently being developed and will be submitted to the Intermodal

Planning Group. After its approval, the Unified Work Program will identify specific financial and manpower requirements for the conduct of the air quality analysis necessary to identify control strategies that will bring the area into attainment with the carbon monoxide standard. Lane Council of Governments' two transportation planners and support staff will devote sufficient time to the program to analyze measures, and, with the help of local governments, develop implementation schedules. Analysis should be completed by July, 1980, and the next State Implementation Plan revision will be submitted to EPA no later than June 30, 1982.

The following list of work activities represents the areas of emphasis in the air quality portion of the FY79-80 Unified Work Program.

I. Continue carbon monoxide monitoring and model validation; refine nonattainment area boundary.

II. Evaluate impact of control measures;
   - A. Identify appropriate control measures for evaluation.
   - B. Justify why other strategies are inappropriate.
   - C. Quantify traffic impact.
   - D. Estimate future total emissions.
   - E. Estimate future concentrations.

III. Define actions to implement control measures.

IV. Identify health, welfare, economic, energy and social effects of control measures.

V. Prepare financial analysis of implementation.

VI. Develop implementation schedule.

VII. Develop "reasonable further progress" line.

VIII. Develop monitoring and reporting procedures.

IX. Public participation.

X. Hearing and adoption process.

This reflects EPA's suggestion (Thomas Wilson's letter M/S 625, Appendix 4.7-6), that the "main work effort should be spent on analyzing and developing measures that have some merit as solutions to the identified problem." As requested, a short justification explaining why certain strategies are inappropriate will also be provided.

Preliminary analysis reveals that the reasonably available control measures which may be appropriate for the Eugene-Springfield area are vehicle inspection/maintenance, improved public transit, carpool programs, parking controls, staggered work hours, and traffic flow improvements. This list is based only on preliminary analysis and past experience with some of the suggested control measures. Further study will be required of these and other measures to determine their applicability and effect. Analysis of measures to reduce carbon monoxide will be coordinated with control measures for total suspended particulates where appropriate.

4.7.4.4.2 Schedule and commitment to adopt and implement selected measures

It is premature to schedule implementation of control measures before they have been identified as reasonable and effective. The FY79-80 Unified Work Program will address the schedule to implement reasonable control measures. Once measures have been identified as having potential for reducing emissions, they will be submitted to the appropriate implementing agencies for consideration and possible adoption.

Lane Council of Governments, Lane County, Eugene and Springfield indicated their intention to implement control strategies when they each adopted the following policy as part of the Eugene-Springfield Area 2000 Transportation Plan:

> IF NECESSARY, THE 2000 TRANSPORTATION PLAN SHALL BE AMENDED TO ACCOMMODATE CONTROL STRATEGIES REQUIRED TO MEET AMBIENT AIR STANDARDS IN THE METROPOLITAN AREA.

4.7.4.5 Documentation of "Reasonable Further Progress"

As indicated above, one of the work activities to be undertaken during FY79-80 is development of a schedule for reasonable further progress. Development of this schedule depends on the results of the evaluation of reasonable control measures.

4.7.5 DOCUMENTATION FOR EXTENSION REQUEST

The Clean Air Act Amendments of 1977 allow a non-attainment area an extension until December 31, 1987 to achieve carbon monoxide standards if it can be demonstrated that no reasonably available control measures can be implemented to bring the area into compliance by the end of 1982. Department of Environmental Quality interpretation of the 1977 amendments indicates that if an extension for attainment of standards is to be requested, it must be done in the 1979 State Implementation Plan submittal. No extension can be granted at a later date.

In keeping with provisions of the law, an extension for attainment of the eight-hour carbon monoxide standard is hereby requested for the Eugene-Springfield area.

4.7.5.1 Justification

4.7.5.1.1 Credit for measures to be adopted and implemented

The analysis performed thus far indicates that the area will not be in attainment with the carbon monoxide standard by December 31, 1982, but will be in attainment with the eight-hour carbon monoxide standard no later than 1987, merely by relying on the Federal Motor Vehicle Emission Control Program. As indicated in Section 4.7.4.3, there are a number of planned

projects and adopted policies which will enhance air quality. If implemented, these items will further assist in meeting the carbon monoxide standard; however, since an analysis has not yet been performed, the impact has not been quantified.

4.7.5.1.2 Demonstration of need for extension

Since the analysis of further control strategies has not yet been undertaken, it is not clear whether implementation of new reasonable control strategies would achieve attainment of the standard by January 1, 1983. The short time remaining until 1983 may not be adequate even to implement control measures, let alone allow the measures to reach maximum effectiveness. If the analysis performed during FY79-80 indicates the attainment by 1983 is possible with implementation of reasonable control measures, the extension request will be withdrawn.

4.7.5.2 Required Program Activities

4.7.5.2.1 Activities leading to implementation of Inspection/ Maintenance

Currently, the Oregon Department of Environmental Quality has authority to conduct a motor vehicle inspection/maintenance (I/M) program only in Portland. Enabling legislation which would grant Department of Environmental Quality authority for operation of

an inspection/maintenance program in other parts of the state, including Eugene-Springfield, is being considered in SB135 by the state legislature. Some local agencies, including the City of Eugene, have testified in support of the bill.

4.7.5.2.2 Public transportation for basic needs

The Lane Transit District provides fairly high levels of public transit service for the Eugene-Springfield area. Total ridership for FY79 is projected to exceed three and one-half million with over 200,000 hours of operation on the urban fixed route system alone. Transit projects contained in the Transportation Improvement Program (Appendix 4.7-10) reflect a commitment to expanded service. The Transit Development Program (Appendix 4.7-11) describes in detail the services provided.

4.7.6 PROVISIONS FOR PROGRESS REPORTING

4.7.6.1 Tracking System for Commitment to Schedules

Following the analysis of reasonable control measures, a schedule for implementation of appropriate ones will be developed. Each individual control measure selected will have a series of specific steps leading to implementation. At this time, it is premature to develop a detailed system for tracking progress for an undetermined schedule for undertermined control measures. It is anticipated that

this can be accomplished as part of the on-going transportation planning proess as described in the Prospectus (Appendix 54.7-13). The Transportation Improvement Program, which details implementation of specific transportation projects, will be utilized for this purpose as appropriate.

Monitoring trends of air quality, emissions, and related information, such as population, traffic counts and transit ridership, will continue as in the past. Overall coordination is provided by the Transportation Planning Committee with particular reliance on the Lane Regional Air Pollution Authority and the Department of Environmental Quality for air quality monitoring, Lane Council of Governments for employment and population data and forecasts, Lane Transit District for transit ridership, and Lane County, Eugene and Springfield for traffic counts and land use changes. Availability of this information assures that schedules for attainment of standards can be adequately monitored. Local, state and federal agencies, as well as the general public, will be kept informed of progress through the Lane Council of Governments Transportation Annual Report and other sources when appropriate.

4.7.6.2 Methodology for Reporting on Implementation Activities

An annual review of prograss for implementation activities is provided during the development of the three-year Transportation Improvement Program. Any control strategy which requires commitment of Federal Highway Administration (FHWA) funds, Urban Mass Transportation Administration (UMTA) funds or substantial state and local funds,

is included in the three-year Transportation Improvement Program. By definition, this assures monitoring of project implementation as a project is advanced into the Annual Element of the Transportation Improvement Program. Control strategies not requiring substantial funding can be monitored as part of the Transportation Systems Management Element of the planning process. Annual endorsement of both the Transportation Improvement Program and Transportation Systems Management Element by local elected officials is required.

For reporting transportation air quality information to the general public, the Transportation Annual Report will be used. In addition to providing general information on the planning process, the annual update of the long-range plan, the Transportation Improvement Program, the Transportation Systems Management Element, and basic transportation data, it will report on air quality data and implementation of control strategies.

4.7.6.3 Methodology for Reporting on Study Activities

The quarterly planning progress report required of Lane Council of Governments by Urban Mass Transportation Administration will serve as the primary method for reporting on study activities. As a member of the Intermodal Planning Group, Environmental Protection Agency receives and reviews the Lane Council of Governments Unified Work Program. other appropriate documentation will be sent directly to Environmental Protection Agency.

LCOG Lane Council of Governments

NORTH PLAZA LEVEL PSB / 125 EIGHTH AVENUE EAST / EUGENE, OREGON 97401 / TELEPHONE (503) 687-4283

March 1, 1979

Mr. Clark L. Gualding
Chief, Air Programs Branch
Environmental Protection Agency
Region X
1200 Sixth Avenue
Seattle, WA 98101

Dear Mr. Gualding:

RE: Eugene-Springfield 1979 SIP Revision for Carbon Monoxide

Thank you for Mr. Wilson's response to our February 2, 1979, letter concerning our 1979 SIP revisions. While I personally was disappointed with your decision not to designate Eugene-Springfield as an attainment area for CO for 1982, I was encouraged by your suggestion that further analysis and solutions be commensurate with the problem. I still believe the case for attainment presented in our February 2, 1979, letter had merit, but further pursuit of this issue would likely be counterproductive at this time.

L-COG will proceed with completion of the 1979 SIP revision on a schedule that will allow, hopefully, acceptance by EPA in July 1979.

Tentatively, the SIP processing schedule is as follows:

Action	Date
L-COG Transportation Planning Committee approval	March 15, 1979
L-COG Metropolitan Area Transportation Committee adoption	March 22, 1979
Lane Council of Governments adoption	March 22, 1979
Environmental Quality Commission Hearing Authorization	March 30, 1979
Lane Regional Air Pollution Authority Endorsement	April 10, 1979
Environmental Quality Commission Hearing	May 4, 1979
Environmental Quality Commission Adoption	June 8, 1979

I think it is evident that the adoption schedule is extremely tight, and rejection by one of the local committees could cause the above dates to be moved back. The SIP should be relatively straightforward, but the length of time needed to settle on planning requirements for Eugene-Springfield has pushed the final adoption close to the EPA deadline.

The Eugene-Springfield SIP will follow the "Region 10 Suggested Format for the CO Plan" (September 15, 1978). Major components will be:

1. Documentation of air quality analysis,
2. Commitment to further study commensurate with the problem,
3. Documentation of public participation,
4. Request for extension,
5. Commitment to consider reasonable control strategies for adoption and implementation.

No analysis of alternative control strategies will be included in the 1979 SIP nor will a schedule for adoption of reasonably available measures. Both will be addressed during the analysis ending June 30, 1980. At this point it makes no sense to schedule a measure for adoption before it has been studied and is determined to be both effective and reasonable. In addition, a detailed air quality work program identifying activities to be funded with Section 175 monies will not be contained in the 1979 SIP, but will be developed as a part of the L-COG FY79-80 Unified Work Program. It is our intent to make application to UMTA for the $21,000 of Section 175 initially identified by L-COG in December as the planning funds needed if analysis of alternative control measures were required.

If no comments are received from you by March 12, 1979, we will assume your concurrence with the above approach.

In a related matter, MATC, at its February 22, 1979, meeting, requested that the design concentration for CO in the Eugene-Springfield SIP preparation be the third highest observed value in 1976, rather than the second highest. Rationale for this request is attached. We have received verbal concurrence with this position from Loren McPhillips of your staff, and we will proceed accordingly. Nevertheless, prompt written authorization would be appreciated.

Yours sincerely,

Tom Jenkinson
Executive Director

TJ:OS:ds/ul-2
Attachment

Appendix 4.7-2

U.S. ENVIRONMENTAL PROTECTION AGENCY

REGION X

1200 SIXTH AVENUE

SEATTLE, WASHINGTON 98101

MAR 9 - 1979

REPLY TO ATTN OF: M/S 625

Mr. Tom Jenkinson
Executive Director
Lane Council of Governments
North Plaza Level PSB
125 Eighth Avenue East
Eugene, Oregon 97401

RECEIVED
MAR 13 1979

Dear Mr. Jenkinson:

Re: Eugene-Springfield 1979 SIP Revision for Carbon Monoxide

Thank you for your March 1 letter on Eugene Transportation Control Plan. The schedule you submitted looked acceptable. However, we would appreciate receiving a draft of your SIP as soon as practical. Hopefully we can minimize or eliminate potential problem areas by reviewing your draft before the actual official submission.

As mentioned in previous meetings I would like to re-emphasize that my staff will be using the October 17, 1978, "Checklist for Review of Transportation Portions of 1979 SIP Submissions", as the criteria for reviewing your plan. For your convenience a copy of this document is enclosed. Based upon this guidance we are concerned about the following statement in your letter, "it makes no sense to schedule a measure for adoption before it has been studied and determined to be both effective and reasonable." In order to adequately evaluate a measure, the amount of time necessary to implement that measure has to be identified. We believe that the SIP submission should address this issue and that ranges of various implementation times for each measure should be presented as required in the Transportation-Air Quality Checklist.

Also, we note that you plan on applying for $21,000 of the Section 175 funds. A target amount of $70,000 has been identified as a target figure for the combined cities of Eugene, Salem, and Medford. However, we have heard nothing from the state concerning the breakdown of funding. Since DEQ is responsible for setting the individual target figure for Eugene, we suggest that you work closely with them on these funding issues.

M. O.S.

Finally, we have reviewed your request to change the design concentration for carbon monoxide from the second highest value to the third highest value. Based upon review of your technical support data we concur with this position. We now recognize the concentration recorded on December 15, 1976 of 13.3 mg/m^3 as your new design concentration.

If you have any additional comments or questions, please feel free to contact me or Loren McPhillips of my staff at 442-1226.

Sincerely,

Thomas E. Wilson

Thomas E. Wilson, Chief
Coordination and Planning Section

cc: Norm Edmisten
Mike Schultz
John Kowalczyk, DEQ
George Hofer
Dick Arnold, OFHWA

EUGENE-SPRINGFIELD CO ANALYSIS METHODOLOGY

I. Introduction

The purpose of this report is to document the methodology to be used for determining whether the Eugene-Springfield Air Quality Maintenance Area (AQMA) will be in compliance with the Federal Ambient Air Quality Standards for Carbon Monoxide (CO) by the end of 1982. The report consists of two main sections: Section II explains the methodology to be employed and Section III contains the Technical Appendix with supporting documentation.

II. Methodology

1. Background

CO concentrations (C) measured near an urban roadway can be expressed as the sum of two terms:

$$C = C_1 + C_g \qquad (1)$$

where C_1 is the microscale CO concentration resulting from local traffic adjacent to the monitor and C_g is the mesoscale concentration which is related to all other sources of CO in the vicinity of the monitor. Under the stable conditions which characterize CO violations days, areawide CO levels accumulate and the C_g term becomes significant.

To effectively design a transportation control strategy for CO all possibly violating roadways should be identified. However, Eugene has only one continuous air monitoring (CAM) site measuring CO. To identify other possibly violating roadways the CO data from the CAM station has been expanded through the use of two models, SAPOLLUT and AIRPOL-4A. AIRPOL-4A calculates local CO concentrations from a specific roadway and thus can be used to determine the C_1 term in equation (1) for any roadway. To use SAPOLLUT, the Eugene-Springfield AQMA has been divided into 85-2 km^2 grids. SAPOLLUT interfaces directly with transportation models and calculates total CO emission per grid as a function of vehicle miles traveled (VMT) and speed. This information has been used to calculate the C_g term for the CAM site as described in Section II.3 and to estimate the C_g term for other areas as described in Section II.4.

2. Determination of base CO concentration (C).

The EPA stipulates that the CO value used for attainment calculations be the highest of the second highest 8-hour average concentrations observed during 1975, 1976, or 1977. The second highest concentrations for these 3 years are contained in Table 1.

Table 1
8 Hour Averages

Nonattainment Area	2nd Highest CO concentration (mg/m^3) 1975	1976	1977
Eugene-Springfield	10.6	13.9	11.5

According to EPA criterion, the base CO concentration is 13.9 mg/m^3, occurring in 1976.

Since the emission inventory was developed for the year 1977 and modification of the inventory would require considerable time and effort, the EPA suggests that the 1976 value be "normalized" to 1977 by considering the effects of reduced emission factors and possible increase in traffic volumes between 1976 and 1977.[1] The City of Eugene[2] maintains that there has been no growth in traffic volume at the monitor site from 1976 to 1977. The reduction in emission factors between 1976 and 1977 is about 4%. Adjusting the 1976 second highest concentration downward by 4% results in a normalized 1977 concentration of 13.3 mg/m^3.

3. Determination of C_g at the CAM Site

To scale the CO concentrations observed at the CAM sites to non-monitored areas of potentially high concentrations, an estimation of C_g at the CAM site is necessary. This can be done through the use of the AIRPOL-4A model.[3] This model uses traffic volumes and emission factors combined with physical and meteorological conditions to determine traffic-generated CO. The traffic volume input for the model at the CAM site is based on actual traffic counts. The physical input consists of the monitoring site and roadway geometries of the CAM station.

The meteorological input is the result of an analysis of the reaction of AIRPOL to a variety of parameters and the actual meteorological conditions typical of CO violations in Eugene. Since the C_g concentration calculated for the CAM station is later modified and applied to other sites (Sections II.4 and II.5), a standardized set of "worst case" meteorological conditions had to be identified. Although the general conditions of E stability and low wind speeds are typical of CO violation days at any site in Eugene, wind direction effects are not constant. To measure the maximum concentration of CO from a designated link at receptor distances less than 135 ft, AIRPOL requires that the wind be parallel to that link. Based on these considerations, 1.2 mph wind speed, E stability, and parallel wind direction were identified as typical "worst case" meteorology.

These meteorological conditions must be applied to both the C_g calculations and the screening technique (Section II.5) to provide a common basis for the estimation of the CO concentrations at sites other than the CAM station.

The output of AIRPOL-4A is representative of the CO produced by traffic on the roadways adjacent to the CAM station. Since total CO is the sum of local plus grid CO, the modeled concentration will be subtracted from the observed second highest CO concentration (C) to estimate Cg at the monitoring site:

$$C_{g(cam)} = C - C_{l(mod)} \qquad (2)$$

where $C_{g(cam)}$ is the grid CO concentration, C is the second highest base year concentration, and $C_{l(mod)}$ is the CO concentration obtained from AIRPOL-4A.

4. Expansion of CAM's C_g to other grids

CO emission densities will be calculated by SAPOLLUT for the base year 1977, and future years, 1983 and 1987, for each two kilometer grid in the AQMA's. Since C_g is assumed to be proportional to grid-wide emission density, C_g concentrations in the non-monitored grids will estimated by comparing their emission densities with the CAM grid emission density as follows:

$$\frac{C_{g(cam)}}{ED_{cam}} = \frac{C_{g(n)}}{ED_{n}} \qquad (3)$$

or rearranging:

$$C_{g(n)} = \frac{C_{g(cam)}}{ED_{cam}} \times ED_{n} \qquad (4)$$

where $C_{g(cam)}$ is the grid CO concentration determined for the CAM station as described in Section 3, ED_{cam} is the emission density calculated by SAPOLLUT for the grid containing the CAM site, $C_{g(n)}$ is the grid concentration to be calculated for a non-monitored grid, and ED_n is the SAPOLLUT emission density for that grid. This exercise is carried out using the emission densities for 1977. The 1977 background concentration for the non-monitored grid is then scaled to 1983 by multiplying the 1977 concentration by the 1983/1977 emission density ratio for that grid. An example of this process is contained in Section III.3.

5. Screening Technique

A screening technique has been developed to streamline the calculation of C_1 for all non-monitored roadways. Rick Wood of the Oregon Department of Transportation developed a standardized equation for estimating CO concentration by running AIRPOL to determine how changes in input parameters affected the output CO concentrations. Correction factors were derived for roadway length, perpendicular distance of the receptor from the roadway, stability class, wind direction, and wind speed.

If these factors are held constant, CO concentration at any given site is a function only of speed (which determines emission factors) and average weekday traffic volume (AWDT):

$$C_1 = k \text{ (Emission Factor) (AWDT)} \qquad (5)$$

where k is the product of the correction factors and varies only for the different roadway types (CBD, arterial or freeway). The derivation of this empirical relationship is contained in Section III.1.

By using the standardized assumptions listed below, C_1 can be calculated solely from peak 8-hour speed and AWDT:

	Roadway Type		
Characteristic	CBD	Arterials	Freeways
Receptor Height	10 ft.	10 ft.	10 ft.
Receptor distance	12 ft.	25 ft.	75 ft.
Stability class	E	E	E
Wind Speed	1.2 mph	1.2 mph	1.2 mph
Wind direction	parallel	parallel	parallel
Lane Configuration	4 lanes	4 lanes	6 lanes
Length upwind	1000 ft.	1000 ft.	1000 ft.

Screening tables were developed to include all grid CO concentrations (C_g) from 0 to 9 mg/m^3. The grid concentration was subtracted from the standard of 10 mg/m^3, leaving a C_1 term from 9 to 1 mg/m^3.

$$C_1 = (10 - C_g) \text{ mg/m}^3 \qquad (6)$$

To obtain the AWDT which would cause the total of $C_g + C_1$ to equal 10 mg/m^3 equation (5) can be rearranged as follows:

$$\text{AWDT} = \frac{C_1}{k(\text{Emission Factor})}$$

The AWDT that would bring total CO up to 10 mg/m^3 has been calculated for each possible grid CO concentration and speeds from 5 to 55 mph. The resulting tables are contained in Section III.2.

To screen a given link having an associated volume, speed, and grid CO level; the appropriate table (CBD, freeway, arterial) will be entered at the same grid CO concentration and speed. If the projected volume on the link is greater than the tabulated volume, the link will be flagged as potentially violating the 8-hour CO standard. An example of this process is contained in Section III.3.

References

1. Loren McPhillips, EPA Region X, personal communication.

2. Dave Reinhard, City of Eugene, personal communication.

6. Screening Technique Follow Up Procedure

Links that screen out as potentially violating the 8 hour average CO standard in 1983 will receive closer scrutiny. Actual critical receptor distances will be identified, and if they are greater than the distances built into the screening tables, then the resulting concentrations will be factored, based on distance correction factors from Rick Wood's screening technique. Roadway alignment relative to critical receptors will also be evaluated to determine whether the assumption of a straight segment of roadway for 1000 feet upwind is appropriate. If, after performing the above analysis on the set of screened out links, any problem links remain, and reasonably available measures cannot correct this problem by 1983, then a compliance extension will be requested.

III. Technical Appendix

The following documents are contained in the Technical Appendix:

1. Carbon monoxide concentration nomograph

2. CO Screening Table for Eugene

3. Example of Screening technique using Eugene Screening Tables

III.3 Example of Screening Method using Eugene Screening Tables

Assume: $C_{g(cam)} = 6.0\ mg/m^3$

ED_{cam} (1977) = 18,000

ED_n (1977) = 4000

ED_n (1983) = 3000

Projected AWDT(1983) = 20,000

Roadway Type = Arterial

Average 8-hr speed = 15 mph

$$C_{g(n)}\ (1977) = \frac{6.0 \times 4000}{18{,}000} = 1.3\ mg/m^3$$

$$C_{g(n)}\ (1983) = \frac{1.3 \times 3000}{} = 1.0\ mg/m^3$$

From Section III.2: Allowable traffic in 1983 with a background of 1.0 mg/m^3 and an average speed of 15 mph = 40,600 vehicles/day. Since the projected Average Weekday Traffic (AWDT) for 1983 is only 20,000, this link should not be in violation.

CO Screening Tables for Eugene Springfield CBD

Average 8-hr speed in mph	Grid CO Concentration (mg/m^3) 0	1	2	3	4	5	6	7	8	9
	Allowable AWDT									
	1983									
5	13,300	12,000	10,600	9,300	8,000	6,700	5,300	4,000	2,700	1,30
10	25,500	22,900	20,400	17,800	15,300	12,700	10,200	7,600	5,100	2,50
15	36,300	32,700	29,100	25,400	21,800	18,200	14,500	10,900	7,300	3,60
20	45,400	40,900	36,300	31,800	27,200	22,700	18,200	13,600	9,100	4,50
25	54,000	48,600	43,200	37,800	32,400	27,000	21,600	16,200	10,800	5,40
30	63,200	56,900	50,600	44,300	37,900	31,600	25,300	19,000	12,600	6,30
35	72,600	65,300	58,100	50,800	43,600	36,300	29,000	21,800	14,500	7,30
40	80,600	72,600	64,500	56,500	48,400	40,300	32,300	24,200	16,100	8,10
45	85,700	77,100	68,500	60,000	51,400	42,800	34,300	25,700	17,100	8,60
50	88,100	79,300	70,500	61,700	52,900	44,000	35,200	26,400	17,600	8,80
55	92,500	83,300	74,000	64,800	55,500	46,300	37,000	27,800	18,500	9,30
	1987									
5	18,100	16,300	14,500	12,700	10,900	9,100	7,300	5,400	3,600	1,80
10	34,600	31,100	27,700	24,200	20,800	17,300	13,800	10,400	6,900	3,50
15	48,200	43,300	38,500	33,700	28,900	24,100	19,300	14,400	9,600	4,80
20	59,500	53,600	47,600	41,700	35,700	29,800	23,100	17,900	11,900	6,00
25	70,600	63,500	56,400	49,700	42,300	35,300	28,200	21,200	14,100	7,10
30	82,600	74,300	66,100	57,800	49,600	41,300	33,000	24,800	16,500	8,30
35	94,900	85,400	75,900	66,400	56,900	47,500	38,000	28,500	19,000	9,50
40	105,200	94,700	84,200	73,600	63,100	52,600	42,100	31,600	21,000	10,50
45	111,200	100,100	88,800	77,900	66,700	55,600	44,500	33,400	22,200	11,10
50	113,800	102,400	91,100	79,700	68,300	56,800	45,500	34,100	22,800	11,40
55	119,900	107,900	96,000	84,000	72,000	60,000	48,000	36,000	24,000	12,00

CO Screening Tables for Eugene Springfield Arterials

Average 8-hr speed in mph	Grid CO Concentration (mg/m^3)									
	0	1	2	3	4	5	6	7	8	9
	Allowable AWDT									
	1983									
5	16,500	14,800	13,200	11,500	9,900	8,200	6,600	4,900	3,300	1,600
10	31,600	28,400	25,300	22,100	18,900	15,800	12,600	9,500	6,300	3,200
15	45,100	40,600	36,100	31,600	27,000	22,500	18,000	13,500	9,000	4,500
20	56,300	50,700	45,000	39,400	33,800	28,100	22,500	16,900	11,300	5,600
25	67,000	60,300	53,600	46,900	40,200	33,500	26,800	20,100	13,400	6,700
30	78,400	70,600	62,700	54,900	47,000	39,200	31,400	23,500	15,700	7,800
35	90,000	81,000	72,000	63,000	54,000	45,000	36,000	27,000	18,000	9,000
40	100,000	90,000	80,000	70,000	60,000	50,000	40,000	30,000	20,000	10,000
45	106,200	95,600	85,000	74,400	63,700	53,100	42,500	31,900	21,200	10,600
50	109,200	98,300	87,400	76,500	65,500	54,600	43,700	32,800	21,800	10,900
55	114,700	103,300	91,800	80,300	68,800	57,400	45,900	34,400	22,900	11,500
	1987									
5	22,500	20,300	18,000	15,800	13,500	11,300	9,000	6,800	4,500	2,300
10	42,900	38,600	34,300	30,000	25,700	21,500	17,200	12,900	8,600	4,300
15	59,700	53,700	47,800	41,800	35,800	29,900	23,900	17,900	11,900	6,000
20	73,800	66,400	59,000	51,700	44,300	36,900	29,500	22,100	14,800	7,400
25	87,500	78,800	70,000	61,300	52,500	43,800	35,000	26,300	17,500	8,800
30	102,400	92,200	81,900	71,700	61,400	51,200	41,000	30,700	20,500	10,200
35	117,700	105,900	94,200	82,400	70,600	58,800	47,100	35,300	23,500	11,800
40	130,500	117,400	104,400	91,300	78,300	65,200	52,200	39,100	26,100	13,000
45	137,900	124,100	110,300	96,500	82,800	69,000	55,200	41,400	27,600	13,800
50	141,200	127,000	112,900	98,800	84,700	70,600	56,500	42,300	28,200	14,100
55	148,700	133,900	119,000	104,100	89,200	74,400	59,500	44,600	29,700	14,900

CO Screening Tables for Eugene Springfield Freeways

Average 8-hr speed in mph	Grid CO Concentration (mg/m^3) 0	1	2	3	4	5	6	7	8	9
	Allowable AWDT									
	1983									
5	47,000	42,300	37,600	32,900	28,200	23,500	18,800	14,100	9,400	4,70
10	89,900	80,900	71,900	62,900	54,000	45,000	36,000	27,000	18,000	9,00
15	128,400	115,600	102,700	89,900	77,000	64,200	51,400	38,500	25,700	12,80
20	160,400	144,300	128,300	112,300	96,200	80,200	64,200	48,100	32,100	16,00
25	190,900	171,800	152,700	133,600	114,500	95,400	76,300	57,300	38,200	19,10
30	223,300	201,000	178,700	156,300	134,000	111,700	89,300	67,000	44,700	22,30
35	256,500	230,900	205,200	179,600	153,900	128,300	102,600	77,000	51,300	25,70
40	284,900	256,400	227,900	199,400	170,900	142,500	114,000	85,500	57,000	28,50
45	302,600	272,400	242,100	211,900	181,600	151,300	121,100	90,800	60,500	30,30
50	311,200	280,100	249,000	217,800	186,700	155,600	124,500	93,400	62,300	31,10
55	326,900	294,200	261,500	228,800	196,100	163,400	130,800	98,100	65,400	32,70
	1987									
5	64,100	57,700	51,300	44,900	38,500	32,100	25,700	19,200	12,800	6,40
10	122,300	110,100	97,800	85,600	73,400	61,100	48,900	36,700	24,500	12,20
15	170,200	153,200	136,200	119,100	102,100	85,100	68,100	51,100	34,000	17,00
20	210,400	189,300	168,300	147,200	126,200	105,200	84,100	63,100	42,100	21,00
25	249,400	224,400	199,500	174,600	149,600	124,700	99,800	74,800	49,900	24,90
30	291,900	262,700	233,500	204,300	175,100	145,900	116,800	87,600	58,400	29,20
35	335,100	301,900	268,300	234,800	201,300	167,700	134,200	100,600	67,100	33,50
40	371,800	334,600	297,400	260,300	223,100	185,900	148,700	111,500	74,400	37,20
45	393,100	353,800	314,500	275,200	235,900	196,500	157,200	117,900	78,600	39,30
50	402,300	362,100	321,900	281,600	241,400	201,200	160,900	120,700	80,500	40,20
55	423,900	381,500	339,100	296,700	254,300	212,000	169,600	127,200	84,800	42,40

LCOG Lane Council of Governments
NORTH PLAZA LEVEL PSB / 125 EIGHTH AVENUE EAST / EUGENE, OREGON 97401 / TELEPHONE (503) 687-4283

February 2, 1979

Mr. Clark L. Gaulding
Chief, Air Program Branch
Environmental Protection Agency
Region X
1200 Sixth Avenue
Seattle, Washington 98101

Dear Mr. Gaulding:

The generalized air quality analysis for the 1979 SIP revision for carbon monoxide in the Eugene-Springfield AQMA has been completed. Some of the findings are shown on Map 1 and Table 1 (Attached).

The Metropolitan Area Transportation Committee (MATC), comprised of local elected and appointed officials, serves as the policy committee for conducting the local SIP revision process. Based upon a review of the carbon monoxide air quality analysis performed thus far, MATC feels that no conclusive proof has been provided to indicate that the Eugene AQMA will continue to violate the eight hour standard through the end of 1982. The committee believes that the results of the analysis do not demonstrate the need for development of additional control strategies and feels that the AQMA should be designated as an attainment area for 1982. The committee's position is founded on four general precepts:

1. The general trend toward improvement in air quality;
2. The significant tolerances inherent in the air quality forecasting model;
3. The ambiguity of guidance in identification of reasonable receptors, and;
4. Control strategies already implemented.

Each will be discussed in detail below.

1. General Air Quality Trends

Air quality modeling can be best used to identify and project trends. In the Eugene AQMA, the trend with respect to carbon monoxide air quality is one of improvement. Essentially, less than 1½ miles of streets, all in the downtown Eugene grid, were identified as having the potential to violate the eight hour CO standard in 1983. A comparison between the modelled (not monitored) violations presumed to have occurred in 1977 (Map 2) and the forecasted violations in 1983 (Map 1) shows a significant improvement based solely on improved motor vechicle emission controls. In terms of magnitude, all the possible violations are anticipated to be relatively minor,

with most maximum concentrations in the 10.0 to 11.5 mg/m^3 range. The effect of federally mandated vehicle emission controls and fleet replacement more than offset the expected increase in traffic between 1982 and 1987, and no violations are forecast for 1987. Emission forecasts show a 17 percent decrease in total areawide CO emission between 1977 and 1983 despite a 17 percent increase in vehicle miles travelled for the same period. Between 1977 and 1987, total CO emissions are expected to decrease by 31 percent while VMT increase by 27 percent.

The screening tables used to identify potential violations are shown in Tables 2-4.

2. Modelling Tolerances

It is well recognized that transportation predictive models work better in relative comparisons and trend projections than in an absolute capacity. Traffic models are planning tools to provide macro-and meso-scale estimates of transportation demand, to be used in concert with professional judgement to help make decisions in facility siting and design.

Air quality models, with the same scale of tolerances, should be used in a like manner. The gross nature of the air quality modelling assumptions make "fine-tuning" of dubious value. Calculation of emission factors is extremely sensitive to the ambient temperature and percent of cold starts. The forecasting model is extremely sensitive to travel speeds. Obviously, the percent cold starts can be only a guess and assigned travel speed an average at best. Gross assumptions of this order can be used when performing comparitive analysis, but application to determine nonattainment, when the forecasted violations are marginal, is not a reasonable use of the model. The model appropriately can be used to identify the order of magnitude of potential violations.

The model, indicates that the CO problem in Eugene is not great, that any violations would be isolated and relatively minor and that general improvement can be expected without additional governmental intervention. Professional judgement can be used to conclude that the results are not conclusive enough to warrant development of control strategies. Points supporting this conclusion include:

a. Model Validation - The model developed by DEQ has not been validated in Eugene. Lack of an historic data base and adequate monitoring network make validation impossible in the allotted time frame.

b. Traffic forecasting assumptions - Traffic forecasts for 1983 and 1987 assummed "worst case" conditions--transit, bicycle and nonauto ridership was maintained at 1977 levels through 1987. This contrary to local policy and existing trends.

c. Grid Delineation - The forecasted violations lie within a single 2km square grid. The background concentration is proportional to total emissions within the grid and the same background level is assumed for all streets in the grid. Shifting, or manipulation of, the grid boundaries would likely eliminate nearly all forecasted violations.

d. Site Specific Dispersion Characteristics --the Ferry Street Bridge approaches (Coburg Road), the street segment with the highest forecasted concentrations, is a viaduct for nearly its entire length. Concentrations at the receptors below are subject to vertical as well as horizontal dispersion. This was not taken into account in the forecasting model.

e. Calibration data--Since no data were available, traffic volumes and speeds from the design day were assumed to represent average values. This was probably not the case, since the Eugene Hospital and Clinic one block from the CAM site, administered over 2300 swine flu innoculations between 3 and 8 p.m. on the day of violation. Additional congestion and lower traffic speeds past the CAM site were the likely result. Because of the sensitivity of the model to these parameters, any change has significant implications for the forecasting results.

3. Receptor Designation

Guidance on "reasonable" receptors to be used in the CO SIP revision is obscure and ambiguous.

Chapter II of EPA-450/4-78-001 "Guidelines for Air Quality Maintenance Planning and Analysis, Volume 9 (Revised)" contains several references to receptor siting guidelines. Specificaly, receptors should be located where:

"The maximum total projected concentration is likely to occur (not on the roadway itself)."
"The general public or any significant segment thereof is likely to have access over time periods specified by NAAQS."

This second point would seem to preclude sidewalks, parking lots, etc. as resonable receptors, since obviously individuals will not be present over the entire eight hour period. Yet the guidelines go on to identify as reasonable receptors sidewalks, vacant lots, parking lots, and property lines of residences, hospitals, rest homes, schools, playgrounds, and building entrances and air intakes.

Historically, violations of the eight hour standard in Eugene have occurred between 3 and 11 p.m. or 4 p.m. and midnight. Obviously sidewalks and parking lots in the downtown area will be little used during most of this period. Map 3 is an aerial photograph showing generalized land use/zoning in the vicinity of the potential violations. There are no hospitals, resthomes, schools or playgrounds adjacent to street segments forecasted to exceed standards. One residence is adjacent to the Ferry Street Bridge right-of-way, but pedestrian and bicyclist access to the Ferry Street Bridge viaduct and approach ramps is restricted.

As can be seen from Map 3 the predominant land use in downtown Eugene is commercial, industrial or governmental, and buildings generally have fixed glass windows with air intakes well above, and removed from, street level. In few instances are individuals present in these buildings continously from 4 p.m. to midnight, and exposure inside to traffic generated CO has to be negligible.

In addition, the guidelines identify breathing height (1.5-2.0 m) as a reasonable receptor, while the SAMWG guidelines define 3.0 m as standard probe placement height. Receptor location for SIP forecasting should be consistent with existing monitoring standards, although it is not clear which figure should be used.

4. Control Stategies Adopted or Implemented

The Eugene-Springfield area has shown itself to be a leader in implementing actions to reduce dependency on the automobile. Several of the reasonable available control measures (RACM) identified by EPA has already been implemented and others have been adopted as public policy in the Eugene-Springfield Area 2000 Transportation Plan. An extensive mall in downtown Eugene anchors the downtown commercial district. The community has one of the most extensive bikeway systems in the nation with over 100 miles of bike routes. Of the five bridges over the Willamette River in the vicinity of downtown Eugene, two are exclusively for pedestrians and bicyclists. A third bridge for nonmotorized traffic is currently under construction. Since assuming operation of the local private transit company in 1971, the Lane Transit District has experienced one of the highest ridership growth rates in the nation.

The 2000 Transportation Plan, adopted by all local jurisdictions, calls for a greatly increased role for public transit by the year 2000 and outlines a major capital and operational improvement program for the District. In addition, the Plan calls for implementation and/or increased promotion of carpooling, staggered work hours and flex time, the remaining projects of the Metropolitan Bikeway Plan,

preferential parking and other transportation system management techniques. Implementation of all these measures, although designed to accomodate travel demand and help achieve greater efficiency from the existing transportation network, should benefit air quality in general by decreasing peak hour dependence on the automobile and improving traffic flow.

In summary, the carbon monoxide analysis for the Eugene-Springfield AQMA has shown no potential violations of the eight hour standard in 1987 and the potential for marginal violations on 1½ miles of streets in the Eugene CBD for 1983. Because of the points listed above--the trend toward improved air quality and attainment by 1987 without additional governmental intervention, the gross nature of the forecasting model, the ambiquity in identifying a reasonable receptor for modelling purposes, and existing local policy on many reasonably available control measures--as well as the fact that control requirements for areas under 200,000 are ill-defined, MATC believes that evidence supporting the need for additional control measures is lacking. A combined program of model refinement and additional monitoring in the area where violations were predicted by the current model would seem a more appropriate approach to the SIP for Eugene-Springfield.

Based on the emission standards for new vehicles there is good reason to believe the Eugene-Springfield area will be in attainment of the eight hour CO standard by 1983. Continued air quality work in the transportation planning program, along with monitoring, would ensure identification of progress toward achieving the standards.

Consequently, on behalf of the MATC, I hereby submit that the CO analysis completed is sufficient to demonstrate attainment by January 1, 1983 and request that the Eugene-Springfield AQMA be designated an attainment area for CO for 1982. This would allow the 1979 SIP submittal to document the air quality analysis and emission inventory, identify the future monitoring program, describe the integration of air quality planning into the continuing transportation planning process and document the extent of citizen participation. A prompt reply will facilitate timely completion of the SIP submittal. If further documentation or information is desired, or if you wish to meet to discuss the matter, please contact Ollie Snowden, Transportation Program Manager.

Yours sincerely,

Tom Jenkinson
Executive Director and Chairman, MATC

TJ:OS/jt/C

cc: John Kowalczyk
William Cranford
Vernor Adkinson

U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION X
1200 SIXTH AVENUE
SEATTLE, WASHINGTON 98101

REPLY TO ATTN OF: M/S 625

Mr. Thomas Jenkinson
Executive Director and Chairman, MATC
Lane Council of Governments
North Plaza Level PSB
125 Eight Avenue East
Eugene, Oregon 97401

RECEIVED
LANE COUNCIL OF
FEB 26 1979
GOVERNMENTS

Dear Mr. Jenkinson:

Re: Eugene - Springfield 1979 SIP Revision for Carbon Monoxide

Thank you for your February 2, 1979, letter concerning your 1979 SIP revision for carbon monoxide. Based upon our review, we do not feel that Eugene - Springfield can be designated an attainment area for CO for 1982. Furthermore, the SIP revisions must be consistent with the Transportation - Air Quality Planning Guideline (see Enclosure I). This would include a schedule for the alternative analysis which is due by July 30, 1980.

For Eugene, we do agree that the alternative analysis does not have to address all of the reasonably available control measures (RACM). However, a short justification describing why certain strategies are inappropriate will be required. Basically, the solution to your carbon monoxide problem should be commensurate with the problem. Your main work-effort should be spent on analyzing and developing measures that have some merit as solutions to the identified problem.

Your technical issues were well thought out and we appreciate the fact that carbon monoxide modeling is not an exact science. However, the same technical concerns were taken into account when

developing the guidelines for ambient air quality monitoring and the SIP revision process. The analysis used in the Eugene SIP revision represents the current state-of-the-art and can not be simply written off. The results indicate that Eugene will have future air quality violations and that mitigating measures are necessary.

If you have any questions or wish to meet with us to discuss the matter, please contact Loren McPhillips of my staff at 442-1226.

Sincerely,

Thomas E. Wilson, Chief
Coordination and Planning Section

Enclosure

Public Involvement and Hearings

Appendix 4.7-7

General Information

Articles about the air quality planning program and the State Implementation Plan have been published in the "L-COG Monthly Newsletter" and the L-RAPA "Monitor." Circulation of the newsletters is approximately 150 and 550, respectively. Both newsletters are sent to the local news media including the following:

Radio	Television	Printed Media
KEED	KVAL	Eugene Register Guard
KASH	KEZI	Willamette Valley Observer
KBDF		Springfield News
KZEL		Eugene News-Tribune
KPNW		Daily Emerald
KUGN		
KATR		
KLCC		
KNND		
KORE		

Sample issues are available from L-COG and L-RAPA.

Public Hearings

A public hearing was conducted by the Lane Council of Governments at its regular meeting on March 22, 1979 following the publication of legal notice. No public testimony was offered.

An additional public hearing was conducted by the Oregon Environmental Quality Commission in Eugene-Springfield on May 4, 1979. No public testimony was offered. Copies of the notice of public hearing and the newspaper advertisements announcing the hearing are included below.

WTG:kmm
A6228.B1

ROBERT W. STRAUB
GOVERNOR

Department of Environmental Quality

522 SOUTHWEST 5TH AVE. PORTLAND, OREGON

MAILING ADDRESS: P.O. BOX 1760, PORTLAND, OREGON 97207

Prepared: March 14, 1979
Hearing Date: May 4, 1979

NOTICE OF PUBLIC HEARING

A CHANCE TO BE HEARD ABOUT:

The proposed State Implementation Plan for Carbon Monoxide in the Eugene-Springfield Air Quality Maintenance Area.

The Department of Environmental Quality is proposing to revise the Oregon State Implementation Plan (SIP) regarding carbon monoxide (CO) pollutants in the Eugene-Springfield Air Quality Maintenance Area (AQMA). The proposed SIP revision is necessary to meet certain requirements of the Federal Clean Air Act. The proposed SIP revision will be submitted to the U.S. Environmental Protection Agency (EPA) by July 1, 1979. A hearing on this matter will be held in Eugene May 4, 1979 at the Eugene City Council Chambers at 9 a.m.

WHAT IS THE DEQ PROPOSING?

Interested parties should request a copy of the complete proposed rule package. Some highlights are:

** The state is requesting an extension of the Federal December 31, 1982 attainment date for CO.

** An analysis of existing and projected carbon monoxide air quality indicates that the AQMA is unlikely to attain Federal CO standards by the end of 1982, but should attain standards before 1987.

** Further carbon monoxide emission reduction strategies will be identified and analyzed by July, 1980. Selected strategies will be made part of the SIP by no later than July, 1982.

WHO IS AFFECTED BY THIS PROPOSAL:

Residents in the AQMA.

HOW TO PROVIDE YOUR INFORMATION:

Written comments should be sent to the Department of Environmental Quality, Air Quality Division, P.O. Box 1760, Portland, Oregon 97207, and should be received by May 4, 1979. The hearing record closes 5 p.m., May 4, 1979.

Oral and written comments may be offered at the following public hearing:

City	Time	Date	Location
Eugene	9:00	May 4	Eugene City Council Chambers 777 Pearl

WHERE TO OBTAIN ADDITIONAL INFORMATION:

Copies of the proposed rules may be obtained from:

Bill Greene
DEQ Air Quality Division
P.O. Box 1760
Portland, Oregon 97207
503 229-6087

LEGAL REFERENCES FOR THIS PROPOSAL:

Clean Air Act Amendments of 1977 (PL 95-95). The SIP revision is proposed under authority of ORS 468.020 and 468.305.

FURTHER PROCEEDINGS:

After public hearing the Commission may adopt rule amendments identical to the proposed amendments, adopt modified rule amendments on the same subject matter, or decline to act. The adopted regulations may be submitted to the Environmental Protection Agency as part of the State Clean Air Act Implementation Plan. The Commission's deliberation should come in June 1979 as part of the agenda of a regularly scheduled Commission meeting.

WTG:kmm

YOUR OPPORTUNITY TO COMMENT ON PROPOSED DEPARTMENT OF ENVIRONMENTAL QUALITY AIR POLLUTION EMISSION RULES FOR

CARBON MONOXIDE IN THE EUGENE-SPRINGFIELD AREA

The proposed revisions contain an analysis of existing and projected carbon monoxide (CO) air quality levels as well as a program for analyzing potential new CO control strategies. A request for extension of the December 31, 1982 EPA standards attainment date is also included. The revisions would be submitted to EPA as a change to Oregon's Clean Air Act Implementation Plan. You may comment orally at:

9:00 A.M. PUBLIC HEARING MAY 4, 1979
EUGENE CITY COUNCIL CHAMBERS
EUGENE

Copies of the proposed rule are available for your study and comment by writing or phoning Bill Greene, 229-6087, DEQ Air Quality Division, P.O. Box 1760, Portland, OR 97207. You can call toll-free 1-800-452-7813 and ask for DEQ, 229-6087.

Written comments may be submitted until May 4 at the above address.

EUGENE REGISTER-GUARD 3/30/79

YOUR OPPORTUNITY TO COMMENT ON PROPOSED DEPARTMENT OF ENVIRONMENTAL QUALITY AIR POLLUTION EMISSION RULES FOR

CARBON MONOXIDE IN THE EUGENE-SPRINGFIELD AREA

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EUGENE CITY COUNCIL CHAMBERS
EUGENE

Copies of the proposed rule are available for your study and comment by writing or phoning Bill Greene, 229-6087, DEQ Air Quality Division, P.O. Box 1760, Portland, OR 97207. You can call toll-free 1-800-452-7813 and ask for DEQ, 229-6087.

Written comments may be submitted until May 4 at the above address.

Eugene Register-Guard 4/9/79

INTERGOVERNMENTAL REVIEW

Copies of the complete State Implementation Plan were sent to the State A-95 Clearinghouse, fourteen areawide clearinghouses, and various federal and state agencies which might be affected by the Plan. Since no significant comments were received, no responses were deemed necessary.

5.7 EUGENE-SPRINGFIELD AQMA NEW SOURCE REVIEW - CARBON MONOXIDE

Rules OAR 340-20-190 to -195 give the Department expanded authority and requirements regarding Special Permit Requirements for Sources located in or adjacent to nonattainment areas.

The Clean Air Act amendments of 1977, Section 171, 172, 173, require that the 1979 State Implementation Plan contain an adequate permit program. The basic requirement that must be contained in the permit program is that major new or modified sources in the actual nonattainment areas having a potential to emit more than 100 tons/year of a specific air pollutant must meet the following in order for a construction permit to be issued:

1. Lowest achievable emission rate (LAER).
2. Demonstrate that all other facilities under the authority of the permit applicant are in compliance or on a compliance schedule to meet State Rules.
3. Demonstrate that a sufficient growth increment is available in the attainment plan or provide offsets.
4. Provide for an "Alternatives Analysis" (of sites, processes, etc.) as defined in the Rule.

In addition, the Department added permit requirements to set plant site emission limits commensurate with airshed carrying capacity at the time an attainment plan is submitted. The rules, OAR 340-20-190 to -198, are in Section 3 of the Oregon State Implementation Plan.

These Rules will apply to properties adjoining road Sections (shown in Section 3.2, Figure 5) and to all applicable new or modified carbon monoxide sources located in attainment areas which would significantly impact (as defined in the Rule) nonattainment roads.

7.7 EUGENE-SPRINGFIELD AQMA CARBON MONOXIDE MONITORING PROGRAM

Carbon monoxide air quality surveillance within the Eugene-Springfield Air Quality Maintenance Area was begun in 1971 at the 11th and Willamette site in Eugene (site 2018052) following a review of traffic circulation data. The site is located in an area of expected maximum concentration within the Central Business District. The site criteria were evaluated by Department and EPA staff and found to be in conformance with the August 7, 1978 Federal Register (Vol. 43, No. 152) monitoring requirements. The monitoring methods and quality assurance practices employed by the Department also meet the EPA requirements. Table 7.7-1 lists the location of the site shown in figure 7.7-1.

Table 7.7-1

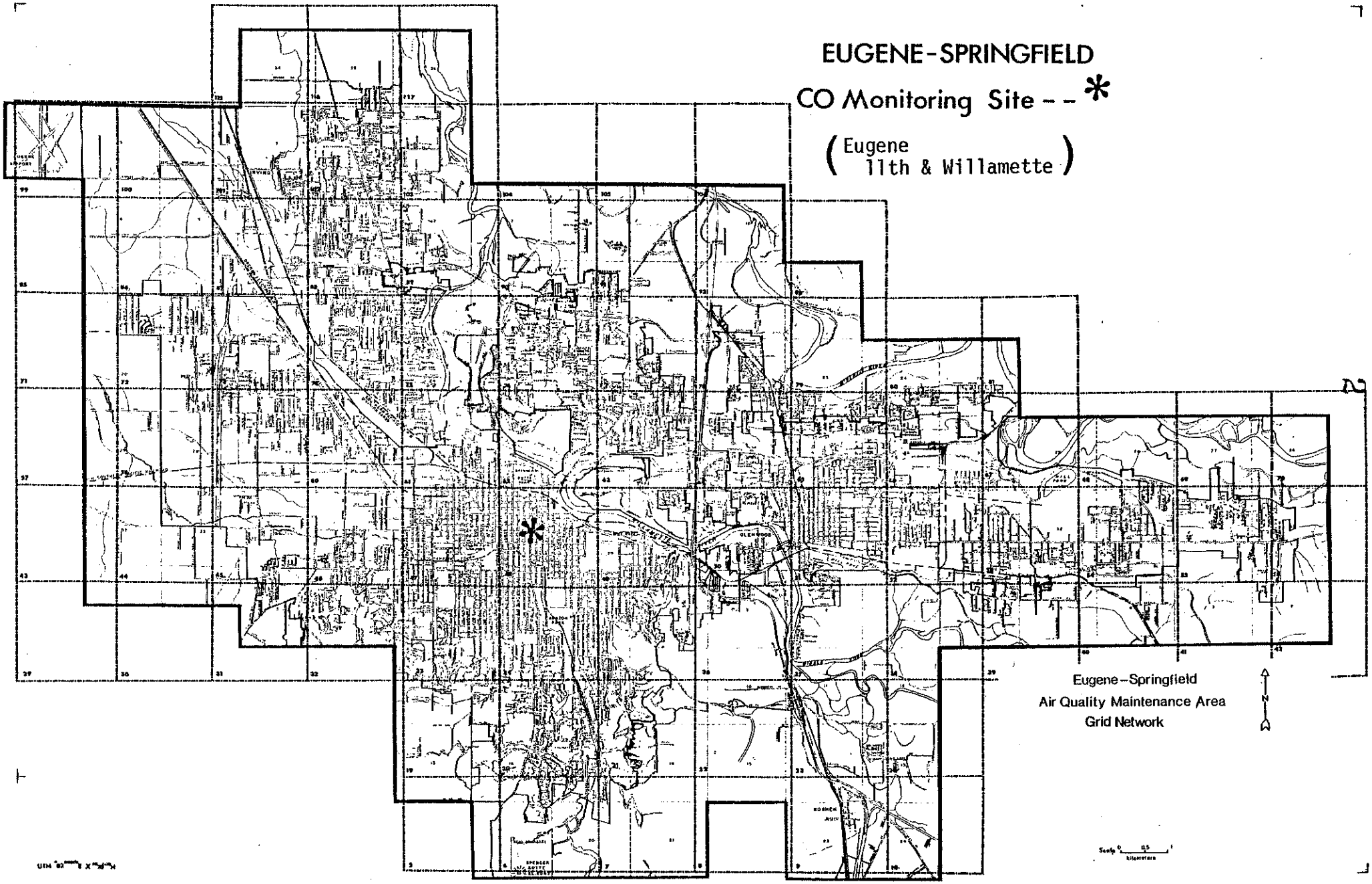
Eugene-Springfield Air Quality Maintenance Area

Carbon Monoxide Surveillance Site

Location	Site No.	Date Established	Land Use	Designation
11th and Willamette (Eugene)	2018052	May, 1971	CBD	SLAMS[1]

[1]State and Local Air Monitoring Site

Figure 7.7-1


EUGENE-SPRINGFIELD
CO Monitoring Site - - *
(Eugene
11th & Willamette)
Eugene–Springfield
Air Quality Maintenance Area
Grid Network

Environmental Quality Commission

522 S.W. 5th AVENUE, P.O. BOX 1760, PORTLAND, OREGON 97207 PHONE (503) 229-5696

MEMORANDUM

To: Environmental Quality Commission

From: Director

Subject: Agenda Item No. B4, June 8, 1979, EQC Meeting

Adoption of Carbon Monoxide and Ozone Control Strategies for the Medford-Ashland Air Quality Maintenance Area as Revisions to the State Implementation Plan (SIP)

Background and Problem Statement

The Clean Air Act Amendments of 1977 require states to submit a revised State Implementation Plan which demonstrates how they will attain and maintain compliance with the National Ambient Air Standards for areas designated as nonattainment. On January 24, 1978 the Medford Ashland Air Quality Maintenance Area was designated by the Environmental Protection Agency as non-attainment for carbon monoxide and ozone pollutants. The Clean Air Act Amendments further require that plans demonstrate compliance with primary standards not later than December 31, 1982. An extension up to December 31, 1987 is possible if the state can demonstrate that even with implementation of all reasonably available control measures the December 31, 1982 date cannot be met.

Revisions to the State Implementation Plan must be approved by the Environmental Protection Agency by July 1, 1979. Sanctions were provided in the Clean Air Act for non-performance, primarily withholding Federal funds for highway, sewage treatment, and air quality planning projects. Industrial growth and expansion could also be restricted.

Legal authority to adopt the proposed State Implementation Plan revision is ORS 468.020 and 468.295.

The statement of need prepared pursuant to ORS 183.335(7) and ORS 183.355(1) is attached as Attachment 1.

The statement of land use consistency prepared pursuant to ORS 197.180 and the DLCD/DEQ interagency coordination program is attached as Attachment 2.

Contains Recycled Materials

Alternatives & Evaluation

This portion of the report has three parts which will inform the Commission on alternatives to submitting a revised plan; significant issues raised during the rule development process; and a brief summary of the major elements contained in the proposed plan revision.

Alternatives Related to the Revision of the State Implementation Plan

1. Submit an approvable revision to the State Implementation Plan by July 1, 1979.

   An approvable plan will either demonstrate attainment by December 31, 1982 or request an extension with documentation on why the standards cannot be met by that date. An extension has the effect of delaying submittal of the attainment plan to July 1, 1982 and attainment of the standard to no later than December 31, 1987.

2. Do not submit a plan revision or fail to submit an approvable plan revision by July 1, 1979.

   The Clean Air Act provides for economic sanctions in an air quality control region and restrictions on industrial growth unless the Governor has submitted or has made reasonable efforts to submit an approvable plan.

Resolution: The recommended course of action is to submit an approvable revision to the State Implementation Plan by July 1, 1979. By doing so, the requirements of the Clean Air Act are met and sanctions are avoided.

Rule Development Process

The proposed carbon monoxide and ozone control strategies were prepared by the Jackson County Board of Commissioners acting as lead agency for transportation planning, the Department of Environmental Quality and the Department of Transportation, and meet the requirements of Section 172 of the Clean Air Act. The Department of Justice and A-95 Intergovernmental Review were invited to comment on the proposed plan. On March 30, 1979 the EQC authorized a public hearing. A hearing was held on May 3, 1979 in accordance with state and federal public notice procedures.

Discussed below are the significant issues raised at the public hearing and by EPA. Attachments to this report contain the hearing officer's report for the May 3, 1979 public hearing (Attachment 3); comments from EPA received May 15, 1979 (Attachment 4); DEQ staff responses to the May 3, 1979 hearing testimony and EPA comments (Attachment 5); and the amended carbon monoxide and ozone control strategies (Attachment 6). Where possible each alternative available to the Commission is discussed.

Response to Significant Issues

ISSUE: The proposed ozone plan should be based upon the state standard of 0.08 parts per million photochemical oxidant rather than the federal primary and secondary standard of 0.12 parts per million ozone.

Response: Section 172 of the Clean Air Act requires that states only have to submit plan revisions which address national ambient air quality standards. Since both the federal primary and secondary standard for ozone is 0.12 parts per million, the proposed revision only addresses these standards. However, the Commission has at least two alternatives available to respond to this issue.

The Commission could adopt a new ozone ambient air quality standard(s) or maintain the standard, and not include them as part of the State Implementation Plan. This approach would allow the state to develop its own timetable for implementing control strategies to meet new state ozone ambient air standards.

Another possible alternative would be the adoption of new ozone standards or maintain the existing standard, and include them as part of the State Implementation Plan. This option would result in DEQ having to make substantial changes resulting in considerable delays in the submission of the ozone State Implementation Plan revision. This delay could result in possible sanctions by EPA against the State for not having an approved State Implementation Plan by July 1, 1979. In addition, it is questionable as to whether funds would be available from EPA to do the necessary air quality planning to meet a more stringent state ozone standard. For these reasons, the Department does not recommend this option.

Resolution: No change is recommended at this time in the proposed State Implementation Plan revision.

ISSUE: EPA advises that where the need for an attainment date past December 31, 1982 has been documented, Section 172 of the Clean Air Act states that all provisions in subsection (b) including offsets and alternative site evaluations must be adopted to avoid the nondiscretionary penalty of no growth of major stationary sources after July 1, 1979.

Response: The interim plan for carbon monoxide requests an extension beyond December 31, 1982. The proposed plan has been amended to include the necessary permit requirement for major

stationary sources and a requirement to conduct an alternative site analysis. A more detailed discussion on this subject may be found in Agenda Item A3, June 8, 1979, EQC meeting on the "Special Permit Requirements for Sources Locating In or Near Nonattainment Areas" (OAR 340-20-190 through 195).

Resolution: The proposed plan has been amended to comply with the Clean Air Act requirements regarding New Source Review.

ISSUE: EPA comments that "the efficacy of the entire (ozone) control strategy approach is highly questionable" if the 3M Company is allowed increases in emissions that would "jeopardize attainment and maintenance of the standard."

Response: The 3M Company is a major source which emits about one-third of all VOC emissions in the AQMA or about 4000 tons per year. Under the ozone control strategy, the 3M Company will install controls that would limit emissions to 3700 tons at full existing production capacity. With controls the 3M Company will not jeopardize attainment and maintenance of the ozone standard.

The 3M Company has plans to possibly increase to full existing production capacity prior to installing controls. The 3M Company estimates emissions could be as high as 7000 tons annually in 1981. The Department will address this situation at the time 3M Company's permit is modified to include the attainment strategy plant site emission limit of 3700 tons per year.

Resolution: The long term VOC emission reduction control plans for the 3M Company will not jeopardize the efficacy of the control strategy. The Department will address appropriate interim emission limits for the 3M Company at the time of permit modification for final control limits.

Where appropriate the proposed plan has been amended in response to the above comments and other comments addressed in the attachments. It is the staff's opinion that the redrafted proposed plan is as responsive as practical with regard to the hearing testimony and EPA comments and should fully meet the requirements of the Clean Air Act.

Summary of the Carbon Monoxide and Ozone Control Strategies for the Medford-Ashland AQMA

1. A projection of future air quality indicates sixteen (16) miles of roadway will continue to exceed national carbon monoxide standards after December 31, 1982. Twelve miles (12) are projected to be in violation after December 31, 1987 despite existing control measures.

2. The proposed carbon monoxide plan requests an extension to attain the standard to no later than December 31, 1987. The EPA requirements for requesting the extension have been met.

3. The proposed carbon monoxide plan contains a commitment by the lead agency to analyze possible control measures contained in the Clean Air Act by July 30, 1980.

4. A projection of future air quality indicates attainment of the federal ozone standard by December 31, 1982 by implementing existing control measures. These measures are the Federal Motor Vehicle Control Program and the stationary source Volatile Organic Compound rules with amendments proposed for adoption at the June 8, 1979 EQC meeting.

5. The proposed ozone control strategy contains a commitment to develop and implement future rules for stationary sources of volatile organic compounds in accordance with scheduled-to-be-published EPA guideline documents.

6. The ozone control strategy reasonable further progress schedule is met by imposing a plant site emission limit on stationary sources where necessary and reliance on the Federal Motor Vehicle control program and state VOC Rules. To meet the carbon monoxide reasonable further progress schedule requires substantial emission reductions over and above existing control measures. These additional measures will be reviewed by the lead agency by July 30, 1980.

7. The growth increment in the ozone control strategy is approximately 185 tons through 1982. More increment could be created through such things as a vehicle inspection program or by imposing tighter plant site emission limitations on existing stationary sources. A growth increment for carbon monoxide will be identified in the attainment strategy to be developed and submitted to EPA by July 1, 1982.

8. The carbon monoxide and ozone plan meets EPA requirements of a growth management strategy by requiring major new or modified stationary sources to comply with the New Source Review Rule requirements contained in the Clean Air Act and reflected in OAR 340-20-190 through 195.

Summation

1. The Medford-Ashland Air Quality Maintenance Area is designated under the Clean Air Act as nonattainment for carbon monoxide and ozone pollutants.

2. The Clean Air Act requires states to submit revised State Implementation Plans by July 1, 1979, which demonstrates how attainment and maintenance of the National Ambient Air Standards will be achieved.

3. Jackson County Board of Commissioners is the lead agency for development of the attainment and maintenance plan for ozone and carbon monoxide. Jackson County in cooperation with DEQ, and the Oregon Department of Transportation, have developed the required plan.

4. A future air quality analysis for carbon monoxide projects that sixteen (16) miles of roadway will continue to exceed federal standards by the end of 1982.

5. A future air quality analysis for ozone projects federal standards will be attained by 1982 with the existing federal motor vehicle control program and controls for stationary sources. An adequate margin of attainment is projected through 1987.

6. The proposed carbon monoxide control strategy requests an extension of the December 31, 1982 attainment date and contains a commitment to analyze candidate control measures by July 30, 1980 and to submit a control strategy by July 1, 1982 which will demonstrate attainment as expeditiously as practicable but no later than December 31, 1987.

7. The proposed ozone control strategy documents attainment of the ozone standard by December 31, 1982, and contains a commitment to develop and implement controls for stationary VOC sources. A plant site emission limit rule will allow limiting emissions from existing stationary sources as necessary to maintain reasonable further progress towards attainment of the standard.

8. A growth management plan is provided for major new or modified stationary sources of carbon monoxide and volatile organic compounds.

9. There is a 185 ton growth increment in the proposed ozone attainment strategy through 1982. Additional growth increment may be obtained from such things as an inspection maintenance program or by further restricting existing stationary source emissions. A growth increment for carbon monoxide will be identified in the attainment strategy to be developed and submitted to EPA by July 1, 1982.

10. In accordance with federal and state public notice procedures a public hearing was held May 3, 1979 on the proposed carbon monoxide and ozone control strategies.

11. Public hearing testimony and informal comments received from EPA on the proposed carbon monoxide and ozone control strategies revisions are attached and responded to in this report.

12. It is the Department's opinion that all comments received have been adequately addressed and that the plan meets requirements of the Clean Air Act.

Director's Recommendation

Based upon the Summation, it is recommended that the Commission adopt the proposed carbon monoxide and ozone control strategies for the Medford-Ashland AQMA contained in Attachment 6 and direct the DEQ to forward them to the Environmental Protection Agency as a revision to the State Implementation Plan.

Bill

WILLIAM H. YOUNG

DWB:kmm
229-6446
May 30, 1979
Attachments
1) Statement of Need for rulemaking
2) Statement of Land Use Consistency
3) Hearings Officer Report
4) EPA letter of May 15, 1979
5) Staff Response to Testimony and EPA Comments
6) Carbon Monoxide and Ozone Control Strategies (Section 4.8, 4.9, 5.8, 5.9, 7.8, 7.9)

A6243.5

ATTACHMENT 1

BEFORE THE ENVIRONMENTAL QUALITY COMMISSION

In the Matter of the Proposed Revision to the Clean Air Act State Implementation Plan Regarding the Ozone Control Strategy for the Medford-Ashland Air Quality Maintenance Area	)))))))	STATEMENT OF NEED

The Environmental Quality Commission intends to consider adoption of the proposed Ozone Control Strategy for the Medford-Ashland Air Quality Maintenance Area as a revision to the State Implementation Plan.

a. Legal Authority: ORS 468.020 and 468.295; Federal Clean Air Act Amendments of 1977 - P.L. 95-95 (August 7, 1977) Section 110.

Need for Rule: The Environmental Protection Agency requires a control strategy for an area that is designated non-attainment for ozone. The Medford-Ashland Air Quality Maintenance Area is in violation of National Ambient Air Quality standard for ozone. This control strategy will be submitted to EPA to satisfy requirements of the Clean Air Act.

c. Documents Principally Relied Upon:

1. Emission Inventory 1977 Dated 10/26/78

2. SAPOLLUT _ - Oregon Dept. of Transportation (ODOT)

3. Clean Air Act Amendments of 1977, P.L. 95-95, 8/7/77

4. EPA (1977) Uses, Limitations and Technical Basis for Procedures for Quantifying Relationships Between Photochemical Oxidants and Precursors, EPA-450/2-77-021a.

5. EPA (April, 1978), Workshop on Requirements for Nonattainment Area Plans, Revised ed.

6. Rhoads, Richard G. (memo dated Aug. 16, 1978), Clarification of Attainment/Nonattainment Evaluation Guidance.

7. OAR 340-22-100 to 340-22-201 relating to Volatile Organic Compounds.

8. PES Hydrocarbon Survey Medford Area, 1977

ATTACHMENT 2

LAND USE CONSISTENCY STATEMENT
for
OZONE SIP REVISION
for the
MEDFORD-ASHLAND AQMA

The proposals described herein appear to be consistent with Statewide Planning Goal Number 6 (Air, Water and Land Resources Quality). The proposals do not relate to goal Number 11 (Public Facilities and Services). The Department is not aware of conflict with other goals.

With regard to Goal 6 (air, water and land resources quality) the proposed SIP Revision provides for attainment and maintenance of the Federal ozone air quality standard and is considered consistent with the goal.

Goal 11 (public facilities and services) is deemed unaffected by the proposals.

Implementation of the proposed SIP Revision for ozone will be coordinated with other air quality maintenance and improvement strategies by subsequent revision of the State Implementation Plan.

Public comment on any land use issue involved is welcome and may be submitted in the same fashion as are indicated for testimony in this NOTICE OF PUBLIC HEARING.

It is requested that local, state, and federal agencies review the proposed action and comment on possible conflicts within their programs affecting land use and with Statewide Planning Goals within their expertise and jurisdiction.

The Department of Environmental Quality intends to ask the Department of Land Conservation and Development to mediate any apparent conflicts brought to our attention by local, state, or federal authorities.

ATTACHMENT 3

ROBERT W. STRAUB
GOVERNOR

Environmental Quality Commission

POST OFFICE BOX 1760, PORTLAND, OREGON 97207 PHONE (503) 229-5696

MEMORANDUM

TO: Environmental Quality Commission DATE: May 4, 1979

FROM: Hearings Officer

SUBJECT: Hearing Report on May 3, 1979 Hearing regarding "Proposed Revision of the State Implementation Plan Involving Carbon Monoxide and Ozone Pollutants in the Medford-Ashland Air Quality Maintenance Area".

SUMMARY OF PROCEDURE

Pursuant to public notice, a public hearing was convened in the Jackson County Courthouse Auditorium at 9:00 AM on May 3, 1979. The purpose was to receive testimony regarding adoption of a "Revision to the State Implementation Plan Involving Carbon Monoxide and Ozone Pollutants in the Medford-Ashland Air Quality Maintenance Area".

SUMMARY OF TESTIMONY

The following five citizens provided testimony for the record while Fritz Reith of the Ashland Daily Tidings had questions on the concept of "growth management":

Lois N. Kent - League of Women Voters of Rogue Valley and Ashland
Bruce Shaw - Representing Jackson County Commissioners
Bob Gantenbein - Marquess & Marquess and Medford Chamber of Commerce
Patricia Kuhn - Citizen (former member of AQMA Advisory Committee)
John Brown - Citizen (also mentioned affiliation with Sierra Club)

The following pertinent testimony was offered:

Qualified support for most of the proposed revisions (Kent, Shaw, Kuhn, Brown)

Ozone standard should not be reduced and SIP revision should be submitted based on the more restrictive State Standard (0.08ppm) not the less restrictive Federal Standard (0.12ppm) (Kent, Shaw, Kuhn, Brown)

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Contains Recycled Materials

Proposed SIP revisions for ozone and carbon monoxide should contain the more restrictive State offset policy not the less restrictive Federal offset policy. (Kent, Brown)

Questioned the legality of the proposed revision since it doesn't include "all legally enforcement measures adopted by the State (i.e. State offset rules and current State ozone rules). (Shaw, Kuhn, Brown)

Concern expressed over the ozone data base for Medford-Ashland airshed. Recommend the SIP be more explicit in Section 4.8.6 as to what additional ambient air monitoring and meterological studies the Department is committed to doing. (Gantenbein)

Concern that the Department's proposal in Section 4.8.3.2 to "blindly" follow EQA's requirement to adopt "reasonably available control technology" and the Department's single dependence on "IKMA forecasting" may result in point source requirements that may be unrealistic or not required. (Gantenbein)

Respectively submitted,

Richard P. Reiter

Richard Reiter
Hearings Officer

RR:ml
Attachments

ROBERT W. STRAUB
GOVERNOR

Environmental Quality Commission

522 S.W. 5th AVENUE, P.O. BOX 1760, PORTLAND, OREGON 97207 PHONE (503) 229-5696

MEMORANDUM

To: Environmental Quality Commission

From: Director

Subject: Addendum to Hearings Officer Report regarding the May 3, 1979 hearing on "Proposed Revision to the State Implementation Plan Involving Carbon Monoxide and Ozone Pollutants in the Medford-Ashland Air Quality Maintenance Area."

Written Testimony was received at DEQ's Portland office on May 7, 1979 from Mr./Mrs. Tim Caswell. They oppose the extension of up to five years to meet the carbon monoxide standard.

Written testimony was received at DEQ's Portland office on May 16, 1979, from the Environmental Protection Agency. Several comments were made.

1. The proposed New Source Review rule (OAR 340-20-190,191,192) applies to all nonattainment areas.

2. Parking lot emissions are to be included in the emission inventories.

3. The NMHC/NOx ratio may be unrealistically low.

4. The ozone design value is incorrect.

Written testimony was received at DEQ's Portland Office on May 16 from Merlyn Hough. Several comments were made.

1. Recommend that the state ozone standard be used in revising the State Implementation Plan.

2. Include the offset rule in the revised State Implementation Plan.

3. Recommend that a plant site emission limit be established for the 3M company.

Contains Recycled Materials

4. The indirect source review is necessary to evaluate carbon monoxide until a parking and traffic circulation plan is developed by the lead agency. The indirect source review rule should be referenced in the State Implementation Plan.

William H. Young

Dennis W. Belsky:tf
May 10, 1979
Attachment
cc: Rich Reiter, Southwest Region Manager

ATTACHMENT 4

U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION X
1200 SIXTH AVENUE
SEATTLE, WASHINGTON 98101

REPLY TO ATTN OF: M/S 625

MAY 15 1979

Mr. John Kowalczyk
Department of Environmental Quality
P. O. Box 1760
Portland, OR 97207

Dear Mr. Kowalczyk:

The enclosed comments are being submitted pursuant to the agreement in Don Dubois' letter to Bill Young dated May 11, 1979.

Draft SIP

We acknowledge that our comments on your draft SIP revisions (Enclosure I) are not complete in all respects. They have not been reviewed and coordinated, but merely represent an accumulation of all input received from the reviews of your draft SIP. The issues addressed are not prioritized and thoroughly organized or indicative of possible conditions on approvability. There may even be conflicting or repetitious comments. Further, legal reviews for procedural and enforceable aspects have not been completed.

We apologize for this compromise in providing information per our May 11 agreement. Serious time constraints have prevented us from providing you with a comprehensive, well organized, prioritized set of comments at this time.

In recognition of the compromise in our submitted comments, I propose that members of both staffs discuss concerns you may have with these comments. As pointed out in my May 8 letter to you and Don Dubois' letter to Bill Young on May 11, the subjects of VOC rules, PSD, and new source review (NSR) were noted as problem areas. On May 14, we discussed in-depth our comments with your VOC rules and identified those discrepancies which could result in conditional approval. Similar discussions on PSD and NSR could be held if you wish.

Bill Young Requests from April 6 Letter

Our official response to questions raised on the Clean Air Act is the same as that provided in my May 8 letter to you. A copy that response is enclosed (Enclosure 2).

The proposal to approve an 18-month extension (until July 1, 1980) for submission of a secondary standard TSP attainment plan for Medford was submitted to the Federal Register on May 7.

redesignate

Action Items from March 2 Letter

As identified in Don Dubois' April 16 letter to Bill Young, nine separate requests were identified in the subject letter. The enclosed table (Enclosure 3) provides an update on the status of those actions.

Please feel free to call me if you wish to discuss these subjects further.

Sincerely,

Mike

Michael J. Schultz
SIP Coordinator

Enclosures (3)

cc: Tom Wilson
Norm Edmisten

ENCLOSURE 1

COMMENTS ON THE OREGON SIP REVISION

"TRANSPORTATION CONTROL PLANS"

FOR

PORTLAND, SALEM, EUGENE, MEDFORD

MAY 11, 1979

AIR PROGRAMS BRANCH

ENVIRONMENTAL PROTECTION AGENCY

DRAFT OREGON SIP REVISION
Section 4.1-4.9
(Transportation Control Plans Only)

We have reviewed the technical and policy aspects of the draft State Implementation Plan (SIP) revision for the Portland, Salem, Eugene and Medford areas as it relates to the various carbon monoxide and ozone problems. We consider this draft a good initial effort. However, since we received the draft so late in the process we are having trouble reviewing it in a timely fashion. We would like to offer the following comments:

General Comments

1. There is a major question concerning parking lot and parking activity emissions for all four non-attainment areas. Documentation describing how these emissions were calculated and accounted for in the various emission inventories is necessary.

2. We are conducting a separate analysis concerning the EKMA air quality modeling for ozone. The various design concentrations and modeling parameters will be reviewed in detail. When the review is complete it will be sent out to Oregon Department of Environmental Quality.

3. Comments on this section pertains only to mobile source emissions and the transportation control plan. Comments on the VOC emissions from stationary sources can be found in other attachments or sets of comments.

4. We do not understand the apparent inconsistencies in the predicted VOC emission reductions from 1977 to 1982 in the three cities that are non-attainment for oxidants. We are also confused about the wide ranges and differences in the hydrocarbon emission inventory (the ratio of mobile to stationary source emissions) from city to city.

need more info

5. Areas that have been declared non-attainment areas for carbon monoxide and ozone are charged with the task of developing a plan to attain the national ambient air quality standards by December 31, 1982. In those areas where attainment of the standards is not possible, after implementation of reasonable measures, an extension to a date not later than December 31, 1987 can be justified. Based upon the information presented, we can not grant any extension to specific dates. As we complete our technical reviews, we will be able to respond more completely to the various extension request. We would like to offer our initial thoughts concerning these requests.

Ozone

Portland	The request for an extension appears reasonable and justified, however, until the air quality technical analysis for ozone is complete, we are unable to give any commitments. Also, problems with the emission inventory for hydrocarbons needs to be addressed for both mobile and stationary sources.

Carbon Monoxide

Portland and Eugene	The request for an extension appears questionable. Our initial general feeling is that with reasonable efforts to implement the applicable reasonable available control measures, both Portland and Eugene should have a good chance of attaining the CO standards before December 31, 1982.

Attachments I through IV contain our initial comments on the Oregon Transportation Control Plans for carbon monoxide and ozone. If you have any comments or additional concerns please contact Loren McPhillips or Dave De Bruyn at 442-1226.

ENCLOSURE IV

Comments on the SIP Revision for Carbon Monoxide
and Ozone for Medford-Ashland
(Medford Transportation Control Plan)

1. "Definition of non-attainment area and geographic area covered by transportation control measures."

Complete: No additional documentation is required.

2. "Accurate comprehensive and current emissions inventory."

Essentially Complete: Documentation describing the way parking activity emission were accounted for in the emission inventory is necessary. (Comments pertain to mobile source emissions only, see other comments for stationary sources.)

3. "Estimation of emission reductions needed to demonstrate standard attainment by 1982 and 1987 (including emission growth projections)."

Indeterminate: No additional documentation is necessary. A separte air quality review of the ozone technical analysis may result in additional concerns or required modifications. These additional comments will be sent out after the review is complete.

4. "Designation and certification of a lead agency for non-attainment areas."

Incorrect Statement-Correction Needed: Page 8 of the carbon monoxide and page 28 of the ozone submissions state that EPA designated the Jackson County board of Commissioners as the lead agency for carbon monoxide and ozone air quality planning. This is not the case.

The Jackson County Board of Commissioners requested the Governor of Oregon to designate them as lead agency on March 13, 1978. On March 30, 1978 Oregon's Governor made this designation in a letter to EPA and on April 14, 1978, EPA concurred.

5. "Identification of agency tasks and responsibilities."

Additional Documentation Desirable: The division of responsibilities in table 4.9.2-1 (CO) and 4.8.8-1(O_x) are adequate identification. However, something akin to the professional services contract which Jackson County had with the State Department of Environmental Quality for the period from July 1, 1978 to December 31, 1978 would be desirable.

6. "Schedule for comprehensive analyses of alternatives and demonstration that analysis is underway or completed."

Complete O_x: For Ozone the commitment and means to achieve the standard by 1982 are clear.

Incomplete - CO: The submission contains no schedules for the alternatives analysis of individual transportation control measures or packages of measures other than the July 1980 endpoint for all analysis. Nor does the submission contain estimates of the potential emissions reductions which could result from various measures. The Clean Air act requires implementation of all reasonably available control measures to achieve the standards as soon as possible but not later than December 31, 1987. It is important to show reasonable further progress toward attaining the standards. Figure 4.9.4-1 does not demonstrate that this progress is being made. An accelerated effort to reduce emission is necessary.

7. "Schedule for adopting of reasonably available measures."

Complete: No additional documentation is necessary.

8. "Commitment to justify decision not to adopt difficult, but reasonably available measures."

Complete: No additional documentation is necessary.

9. "Process for public, interest group, and elected official consultation and involvement in defining transportation-air quality issues, establishing the planning process, and development and analysis of alternatives."

Complete: The extent of public participation, public information and elected official involvement in the Medford-Ashland area is impressive and serves as an example to others of what can be done.

10. "Identification of estimated financial and manpower resources necessary to carry out the process described by these guidelines. A commitment to the first year of this process should be demonstrated in the UPWP."

Clarification Needed: The resource commitment needed to complete this phase I SIP submittal has been adequate. From the submission it would appear that $94,500 will be needed to complete the alternatives analysis for carbon monoxide of which $12,500 will come from Jackson county and $60,018 from the State Department of Environmental quality. How does the $48,400 in Section 175 funding fit in? What budget (sources and uses of funds), tasks, products, and schedules are needed for completion of the phase II SIP submission (beyond the alternatives analysis)?

use JC SIP chart Bruce will send graph of more

send graph

– is SIP appropriate

11. "Evidence that the SIP was adopted by the State after reasonable notice and public hearing."

Documentation to be included in final sulbmission: The submisison indicates both the A-95 review and summary of public hearing, which are in process for the carbon monoxide and ozone elements of the plan, will be included in the final submission.

12. "Provisions for progress reporting throughout the planning and implementation period."

Complete: It would be desirable to integrate the reporting requirements for this SIP with those for the Section 175 grant and any air quality UPWP work.

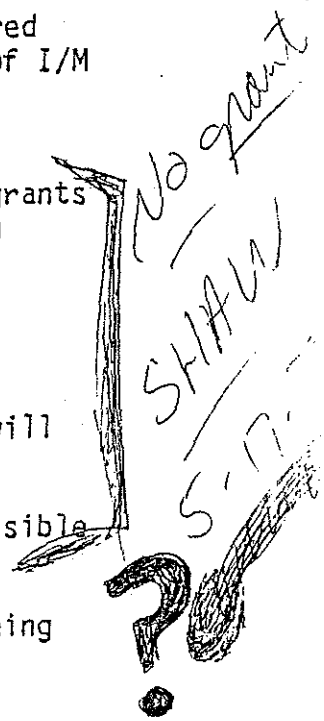
13. "Schedule of activities leading to implementation of I/M (if attainment after 1982)."

Does Not Apply: Inspection and Maintenance (I/M) is not required for cities under 200,000. However, we do support the concept of I/M for Medford. We are very concerned that Medford may have difficulties attaining the standards even by December 31, 1987.

14. "A commitment to use (insofar as is necessary) available grants and funds to establish, expand or improve public transportation needs as expeditiously as practicable."

Complete - O_x: Measures are being taken which will lead to attainment of the standards by 1982 so this is not an issue.

Incomplete - CO: The submission indicates the transit system will be continued and hopefully expanded. EPA is aware of ongoing consideration of an inspection and maintenance program but not commitments are contained in this submission. Is everthing possible being done to meet the standards?



15. "UPWP air quality-related transportation planning tasks being performed by each agency during FY 79."

Does Not Apply:

16. "Emission reduction estimates for adopted measures and/or packages of measures. Rough estimates of annual emission reductions through 1987 for packages of measures currently being developed and analyzed."

Complete: No additional documentation is necessary.

17. "Preliminary identification of analytical methodologies for determining air quality, travel, economic, energy, social, etc. effects of plan provisions. Summary of any public comment on such methodologies."

Incomplete: Due to the regional response to this item we are not asking for additonal information. Therefore, no additional documentation is necessary.

18. "Commitment to: (1) accelerate implementation of transportation improvements in current or recent AE, (2) incremental phase-in of additional reasonable measures."

Complete: No additional documentation is necessary.

19. "Deletion of measures from currently approved SIP."

Does Not Apply: No documentation is necessary.

10A-79-80

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Office of Air Quality Planning and Standards
Research Triangle Park, North Carolina 27711

SRCPC

MAY 4 1979

Draft SIP Revision from Oregon

FROM: Robert M. Schell, Chief RMS
Plans Analysis Section, CPDD (MD-15)

TO: Tom Wilson
Air and Hazardous Materials Division, Region X

We have completed our review of the draft of "Oregon's State Clean Air Act Implementation Plan," and wish to make the following comments and recommendations:

1. The emission inventories for VOC in Portland and Salem appear to meet the requirements of the Clean Air Act and our guidelines. We do note, however, that they do not include emissions from bulk plants or degreasers. Likewise, the Salem inventory does not include emissions from "other solvent uses" or cutback asphalt.

2. The emission inventory for VOC for Portland includes emissions from sources in Clark County, Washington. Such emissions are not discussed anywhere else in the plan. The effects of these emissions on the control strategies and attainment demonstration should be noted.

3. For each of the nonattainment areas, the NMHC/NO_x ratios are lower than the 9.5:1 default value recommended in Mr. Rhoads' memorandum of February 21, 1979 entitled "Determination of Reductions Necessary to Attain the Ozone Standard." The high NO_x data should be carefully reviewed to determine its representativeness before accepting the low NMHC/NO_x ratio. This is particularly true for the Medford-Ashland area where the ratio is 3.4:1. Such low ratios would result in the control agency underpredicting the amounts of reduction needed to meet the ambient standards. Also, high ambient concentrations of NO_x could indicate a violation of the NO_2 standard.

Should look carefully EPA has "wanted" to over this issue for

4. The design value for the Medford-Ashland area seems to have been improperly selected. Instead of the second high value over the past three years, the procedures described in EPA's "Guideline for Interpretation of Ozone Air Quality Standards" should have been utilized to select the design value for the Medford area in the same manner utilized for Portland on page 2 of Appendix 4.3-1.

5. On page 22 in Section 4.3.4, it was incorrectly stated for Portland that: "Since an ozone attainment plan is not being submitted at this time, new source review requirements of the Clean Air Act Amendments of 1977 will not affect this nonattainment area." It is clearly stated in Section 172 of the Act and in the Administrator's memorandum

of February 24, 1978, that the permitting procedures of Section 173 and Section 172(b)(11)(A) are required for the plan revisions to be completed in 1979. The offset requirements of 44 FR 3282 for this area will, in effect, be replaced by the "no new source growth" sanctions of 110(a)(2)(I) if the plan is not approved by July 1, 1979.

6. For those areas which the State has requested an 18-month extension for developing a plan to achieve secondary ambient standards, the State has not indicated whether controls, in addition to RACT, are required for achieving the secondary standards (see 40 CFR 51.31).

7. In the PSD regulations of Chapter 6, we noted the following:

A. In the definitions of "major emitting facility" and "major modification," a clause similar to "regulated under the Act" should be added when discussing the type of pollutant emissions to be controlled.

B. The definition of "best available control technology" lacks provisions concerning 40 CFR Parts 60 and 61 (NSPS and NESHAPS) and provisions to allow for the prescription of measures which represent BACT as provided in 40 CFR 51.24(b)(10).

C. The proposed regulations [Item 340-31-100(f)] contain the exemptions discussed in 40 CFR 51.24(f) but do not discuss the limitations of these exemptions in Section 51.24(f)(2).

D. The regulations [Item 340-31-100(k)] do not include an exemption from impact analysis for those source modifications which do not result in an increase in emissions as allowed in Section 51.24(k)(1)(iv).

E. When discussing the PSD requirements concerning air quality modelling, as in Item 340-31-100(m), the State should be informed that the Clean Air Act requires the Administrator, rather than the State, to approve alternative or modified dispersion modelling techniques [Section 165(e)(3) of the Clean Air Act].

F. The State's regulations [Item 340-31-100(n)] do not include a requirement that ambient monitoring be conducted after construction or modification of the source as required in 51.24(n)(1).

G. In Item 340-31-100(p) of the State's regulations, a requirement should be included which states that a source should provide an analysis of the air quality impact projected for the area as a result of growth associated with the source [see Section 51.24(p)].

H. The State's regulations [Item 340-31-100(q)] do not discuss the additional requirements specified in Section 51.24(q) for sources impacting Federal Class I areas. Likewise, the regulations do not describe the responsibilities of the various Federal agencies in this regard.

I. Provisions for the periodic assessment of the adequacy of the plan [as required by Section 51.24(a)(4)] were not included in the State's plan. It is recommended that such a provision be included and that the State be informed that such an assessment shall be subject to the opportunity for public hearing [Section 51.24(a)(5)].

J. When referencing the Federal regulations for PSD, the State should be made aware that some corrections were made to these regulations in the September 8, 1978 Federal Register (43 FR 40009).

8. For comments on the VOC regulations, see the attached memorandum from Bill Polglase and John Calcagni to Tom Helms.

I hope these comments will be of use to you in providing the State with assistance in developing an approvable SIP revision. If you have any questions on these comments or recommendations, please call Leo Stander at FTS 629-5365.

Attachment

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

DATE: MAY 15 1979

SUBJECT: Comments on the April 1979 Draft Oregon SIP Revision Package

FROM: George C. Hofer, Chief
Support & Special Projects Section

TO: Oregon State Implementation Plan
Docket No. 10A-79-8D

Attached are the consolidated technical comments on the proposed Oregon SIP revision package. Incorporated herein also are concerns raised by the Surveillance and Analysis Division in an independent review of the package.

At this time we are analyzing the ozone design values through rigorous mathematical analytical techniques. We intend to submit comments on design values and the ozone modeling as soon as our analysis is complete.

It should be noted that our review is based only on the sections submitted by the State in April. The entire SIP (as is now approved) has not yet been reviewed for consistency with all CAA requirements and the April submittal. That review will be done when the complete SIP is submitted for Agency approval.

The comments marked with "ACTION REQUIRED" are ones deemed to constitute significant deficiencies which, unless addressed or corrected may provide a basis for disapproval. The comments marked with "RECOMMENDATION" constitute areas where improvement in the SIP is necessary to make it accurate and technically sound.

Considering the fact that the package is simply proposed for public comment it will, in all likelihood, be different than the final SIP submission to EPA. In this regard we reserve the right to expand or change our comments.

Attachment

cc: T. Wilson
M. Schultz
W. Schmidt
B. Eusebio

COMMENTS ON THE OREGON DRAFT SIP

1. 1.0 Introduction - The attainment date for the Medford-Ashland AQMA plan for ozone is inconsistent with the control strategy.

ACTION REQUIRED: Revise the date.

2. 340-20-196 - The definition of "source" should be made consistent with that in 40 CFR 51.24(b)(4). Some confusion as to what constitutes a "new" source for PSD purposes may arise because the state's definition of source includes new sources and as such does not distinguish between new and existing sources.

RECOMMENDATION: Make definition consistent by deleting the phrase "new, modified and existing".

3. 340-20-197 - Emission limitations can be something other than a mass per unit time limitation. In fact, certain CAA programs require the ability to issue such non-numerical emission limitations and the State must also be able to do so. Based on the State's definition, it is not clear whether they even have the authority to adopt and enforce NESHAPS or NSPS provisions.

ACTION REQUIRED: Ensure that the State can set emission limitations as defined in Section 302(k) of the CAA.

4. 340-20-198 - The maintenance of pay requirement must apply statewide. This requirement is independent of attainment strategies and as such there is no reason to exclude the Portland AQMA.

ACTION REQUIRED: Delete exemption for Portland AQMA.

5. 340-20-198 - It is not clear why the exemption of the maintenance of pay provision from the Portland AQMA until a strategy exists is necessary. This provision is required to be contained in all SIP's and should not be contingent upon first adopting a strategy.

ACTION REQUIRED: Delete the stated exemption.

6. 340-20-198 and 340-31-112(1) - The term "supplemental or intermittent control system" is not defined.

7. 340-20-100(a) - The State cannot adopt 40 CFR 51.24 by reference since it is only a requirement and not in itself a program. Also, the State would probably not want to adopt 40 CFR 52.21. As such, the State must develop its own PSD regulations which satisfy the requirements of 40 CFR 51.24.

ACTION REQUIRED: Develop and adopt necessary regulations.

8. 340-31-110 - The stack heights provision must apply to all requirements of the SIP not just attainment and maintenance of NAAQS and PSD. Also, this section is applicable to all pollutants regulated under the CAA, not just criteria pollutants.

ACTION REQUIRED: Make consistent with Section 123.

9. 340-20-190 - The offset provisions should be applicable statewide and continue for all time. If not, then whenever it is found that a proposed new source would cause or contribute to a new violation of NAAQS, the State would have to either disapprove the permit or revise the SIP to ensure that there would be no violation of standards when the source commenced operation. Since there was no designated non-attainment area the source would not be allowed to obtain offsets under state regulations. The same holds for offsets for PSD increments.

RECOMMENDATION: If the State wishes to be able to issue permits to accomodate new sources in marginal attainment areas, new found non-attainment areas, or areas where the PSD increment is essentially used up, then the offset provisions must apply statewide per 40 CFR 51.18 and Appendix S.

10. 340-20-191(3) - The phrase "proposed for construction" is not defined and, as used here, is inconsistent with EPA definitions of new or modified major stationary source.

ACTION REQUIRED: Either define "proposed for construction" or adopt the phrase "commenced construction" so as to be consistent with PSD terminology.

11. 340-20-191(3) - In the definition of modification it will be difficult in some instances to compare increases in "potential" emissions with "permitted" limits (e.g, previously permitted greater than previous potential).

ACTION REQUIRED: Ensure that any modification that increases the potential emissions by 100 TPY over the previous potential emissions is required to get a permit.

12. 340-20-191(4) - In the definition of "non-attainment area" the reference to Figures 1 through 3 seems to imply that these are the only non-attainment areas in the State.

RECOMMENDATION: Change the definition to one of "designated non-attainment area" and reference appropriate Federal Register. It should also be recognized that these rules should apply to any area of actual non-attainment, whether designated or not.

13. 340-20-191(4) - Sections 340-20-190 thru 195 apply only to the Medford-Ashland oxidant, Salem oxidant, and Salem CO non-attainment areas in the State.

ACTION REQUIRED: These sections must be applicable to all non-attainment areas in the State.

14. 340-20-192(3) - A requirement for permitting a new source under Part D is that all other sources owned or operated by a person are in compliance or on a compliance schedule with all applicable requirements of the CAA, not just those of the SIP.

ACTION REQUIRED: Change to reflect correct CAA requirement.

15. 340-20-192(2) - It is not clear what is meant by "increments of change above the 100 ton/year potential increase". If there is a major modification of a source which increases the potential emissions by more than 100 tons of any pollutnat, then LAER is required on all facilities within that source which cause or contribute to the increase in potential emissions.

ACTION REQUIRED: Change wording to make clear exactly what the LAER requirements are.

16. 340-20-193 - Is the 50 ton/year value potential emissions or allowable emissions?

ACTION REQUIRED: Ensure that sources with potential emissions of 100 tons per year or more are required to get permits.

17. 340-20-193 - Eventhough one non-attainment area may be redesignated to attainment status other areas may remain non-attainment. The applicability of the rule would still need to remain in effect for those remaining non-attainment areas.

ACTION REQUIRED: Revise the rule to terminate the applicability for only the non-attainment area which has been redesignated.

18. 340-20-194(1) - Again the definition of "Major New or Modified Source" has problems. It must be based on potential emissions not actual or proposed. EPA has indicated that certain requirements can be waived for sources whose allowable emissions are less than 50 ton/year, 1000 lbs/day or 100 lbs/hour, but this does not change the definition of the term nor the basic requirements. Also, the phrase "proposed for construction" should be replaced by or made equivalent to "commenced construction".

ACTION REQUIRED: Correct definition of major source to make consistent with CAA and throughout SIP.

19. 340-20-195 - There are no specifications as to how modeling must be conducted before a permit can be issued.

RECOMMENDATION: Acceptable modeling techniques or guidelines should be listed or there should be a statement that the methods used must be approved by the Department to be consistent with Section 320 of the CAA.

20. 340-20-190 through 340-20-195 - General - The "Special Permit Requirements for Sources Subject to Control Strategies" does not appear to satisfy the requirements of Part D or offsets in general because of problems with applicability and definitions and lack of specifics and procedures for handling the many different situations which will arise.

ACTION REQUIRED: Ensure that this section satisfies CAA requirements. It is recommended that 40 CFR 51 Appendix S be used as a guideline for developing approvable regulations.

21. Section 4.3.3.3. - The level of control DEQ is requiring VOC sources to achieve is the lowest represented by CTG documents. In most cases there are two levels of control described in the CTG's. The DEQ may wish to include an examination of more restrictive VOC capture at existing sources.

RECOMMENDATION: Include "more restrictive VOC capture" in the list shown on table 4.3.3-1.

22. Section 4.3.4, para 2 - It is not clear why the new source review requirements do not affect the Portland non-attainment area.

RECOMMENDATION: Expand the discussion of the applicability of new source review.

23. Appendix 4.3 - 1A - The emission inventory does not account for emissions from petroleum refineries, petroleum storage, or degreasing operations. These are all CTG categories and must be accounted in the inventory.

ACTION REQUIRED: Revise the emission inventory to include all CTG source categories. If no sources exist within the area insert "0".

24. Section 4.4.3.4a - The phrase "... would most likely not ..." is not very concrete.

RECOMMENDATION: Eliminate the words "most likely".

25. Section 4.4.3.4c - The Section is not specific enough as to when and how plant site CO emission limits will be set. It appears that these limits might be set.

RECOMMENDATION: Provide information as to when and how such limits will be set.

26. Section 4.4.4 - The explanation of new source rules to be found in Section 5.4 is missing.

ACTION REQUIRED: Provide missing pages.

27. Section 4.4.4.1 - The PSEL rule "... would clearly delegate authority ..." - when, how, etc?

RECOMMENDATION: Since a regulation either does or does not do something, it is recommended that the word "would" be eliminated and the statement be made more positive.

28. Section 4.5.0.02 - An EPA approved model is cited for estimation of VOC reductions. Nothing is provided about the details of the model.

RECOMMENDATION: At a minimum the identity of the model must be given.

29. Section 4.5.2.2. - Table 4.5.2-1 describes growth indicies for the Salem area which do not cover all categories of sources shown in the emission inventory. It is not clear how the projected growth of sources not shown is determined.

ACTION REQUIRED: List the growth indicies for all applicable sources.

30. Section 4.5.2.2, para 6, para 2 - The statement concerning 100 tons/year potential emission does not appear to relate to anything. If the 100 ton/year criteria has any particular significance that significance must be clearly stated.

RECOMMENDATION: Clarify the subject paragraph.

31. Section 4.5.3.1, para 2 - The 982 ton/year value is a typo error, it should be 952 tons/year.

RECOMMENDATION: Repair the typo error.

32. Section 4.5.3.2., para 2 - The control strategy indicates RACT will be implemented for 100 tons/year sources yet section 4.5.2.2 at page 6 indicates there are no 100 ton sources.

ACTION REQUIRED: Clarify the strategy to show that implementation of RACT will have no result.

33. Section 4.5.3.2, para 3 - The rules specified to manage growth omit the requirement contained in 340-22-104 where LAER must be installed on new or modified 100 ton VOC sources.

ACTION REQUIRED: Include rule 340-22-104 in the list of applicable rules.

34. Section 4.5.3.3.2 - See comment #32.

34a. Section 4.5.4.1 - The date shown for adopting Group II VOC rules is 1983. Since the Group II CTG documents are already published SIP revisions to include those categories are due on January 1, 1980.

ACTION REQUIRED: Change the date of applicability from 1983 to 1980.

35. Section 4.5.4.1, para 2 - It is not clear why VOC rules do not apply to sources other than service stations and cutback asphalt. If the reason is that no other Group I VOC sources exist then it should be so stated.

RECOMMENDATION: Clarify the discussion.

36. Section 4.5.5, Figure 4.5.5-1 - The HC emissions line shows a gradual decrease starting in 1977 yet the applicable VOC rules only become effective after 1981. The graph should reflect this step change.

RECOMMENDATION: Modify the graph to show the delayed effective date of the VOC rules.

37. Appendix 4.5-1 - No reference or method is cited for the VOC emission inventory.

RECOMMENDATION: Explain the basis for the VOC emission inventory (or any other inventory) and reference the pertinent studies which were considered in the development of the inventory.

38. Section 4.8.2.1 - The source of the date base for the VOC emission inventory for Medford/Ashland is not explicitly stated. The VOC total agrees closely with NEDS, but there are differences in the subcategories. The May 1977 study by PES entitled "A Review and Survey of Hydrocarbon Emission Sources is the Medford AQMA" differs from the inventory given in the SIP.

ACTION REQUIRED: Explain the basis for the VOC emission inventory (or any other inventory) and reference the pertinent studies which were considered in the development of the inventory.

39. Section 4.8.5.1 - See comment #36.

40. Section 4.8.5.1 - Figure 4.8.5.1 basically shows the RFP line but does not show the actual VOC emissions that are projected to occur. If the projected emissions are identical to the RFP line there may not be any increment to accomodate new sources.

RECOMMENDATION: Describe the projected VOC emissions as another line on the chart.

41. Section 5.0 - New source review is not only a function of where a source proposes to locate (inside -vs- outside of a non-attainment area) but also where the source will impact air quality and what the existing air quality is at those points of impacts.

Of course any new source is subject to the State's air contaminant discharge permit requirements. Any new major stationary source or major modification is subject to PSD requirements no matter where it locates if it impacts air quality in an area which is actually attaining standards (even clean areas inside designated non-attainment areas). Any major stationary source locating in or near a designated non-attainment area which impacts the area of actual non-attainment is subject to offset (Part D) requirements.

However, any major stationary source proposing to locate in an attainment or unclassifiable area which would cause a new violation or contribute to an existing violation should also be subject to offset provisons if the State wishes to allow such growth. Finally, if a proposed new major stationary source would not cause or contribute to a violation of NAAQS but would exceed applicable PSD increments, the source should be allowed to obtain offsets if such growth is to be allowed.

RECOMMENDATION: That the State establish a consolidated NSR program which will cover all situations with a minimum of confusion and duplication and incorporate the State's policy on new growth in both attainment and non-attainment areas. This consolidated program would cover general pre-construction review, PSD, offsets, NESHAP and NSPS, etc.

42. Section 5.4 - These rules should be applicable to any source which significantly impacts any area of actual non-attainment, not just on eight separate street segments.

RECOMMENDATION: Change text to reflect that rules apply where necessary.

43. Section 5.5 - If the State chooses to establish a growth allowance then it must be made clear for what geographic area the allowance is applicable. Since VOC sources may need offsets even if they are up to 36 hours of transport time distant from the designated non-attainment area, will such a source be able to utilize part of the allowance. Also, has general area source growth within the Willamette Valley (especially Portland) been considered in determining the available growth allowance?

ACTION REQUIRED: Expand and clarify the growth allowance to meet the requirements of Section 172(b)(6) and 173(1)(B).

44. Section 5.8 - Same comments as for Salem NSR O_3.

45. Section 6.0 - Again, 40 CFR 51.24 cannot be adopted by reference; state regulations must be developed.

46. Section 9.1 - The stack height regulations are not consistent with Section 123 or proposed EPA regulations.

ACTION REQUIRED: Make consistent with Section 123.

RECOMMENDATION: Do not adopt regulations until EPA requirements are promulgated.

47. Section 9.1 - Section 340-31-100 thru 112 are referred to herein but were not contained in this submittal.

ACTION REQUIRED: Provide missing sections.

48. Section 9.4 - Secton 3.2 does not contain a copy of these rules so no comment can be made.

ACTION REQUIRED: Provide missing sections.

49. General - It is not clear whether the increase in emissions at 3-M results from a modification to the source or simply is an increase in production up to existing plant design capacity. If it is a modification (as defined in 40 CFR 51.24(b)(2)) then 3-M must meet either Part D permit requirements or the Interpretive Ruling - whichever applies at the time of application. This means that 3-M must apply LAER and obtain offsets. If it is simply an increase in production then it graphically illustrates the problem with using actual emissions rather than allowable emissions in the emission inventory and attainment demonstration.

If actual emissions are used, then any source which increases its emissions up to its allowable emission limit will jeopardize attainment and maintenance of the NAAQS. However, if allowable emissions are used, then the attainment strategy is valid irrespective of the actual emissions of any source (assuming compliance with SIP requirements). If the 3-M situation is an indication that Oregon is using actual rather than allowable emissions and that such increases in actual emissions could (as in this case) jeopardize attainment, the efficacy of the entire control strategy approach is highly questionable.

ACTION REQUIRED: Clarify the SIP regarding the proposed increase in emissions at 3-M to include copies of applicable permits, etc. indicate clearly whether actual or allowable emissions are being used throughout the SIP, and if actual, discuss the effects that allowable increases in emissions would have on the attainment strategies.

ATTACHMENT 5
Medford-Ashland AQMA

Review of Public Testimony
May 3, 1979 Hearing

ISSUE: The emission offset rule (OAR 340-30-110) should be part of the Implementation Plan as a legally enforceable measure.

Response: As part of the revised ozone plan, OAR 340-30-110 would affect most new sources of volatile organic compounds. A small growth increment is identified in the attainment strategy. The effect of the state offset rule would be to use the growth increment at a slower rate due to its lower triggering criteria. This does not change if only the federal rule applies in the ozone plan and the state operates under the more stringent state rule.

The emission offset rule is legally enforceable by the State and the effectiveness would not be increased if it is part of the plan. Keeping it as a state rule is a great advantage for adjusting the rule to future air quality situations. Also, the Senate Committee on Trade and Economic Development recommended that the emission offset rule be implemented only on the state level.

Resolution: Do not include OAR 340-30-110 in the ozone State Implementation Plan.

ISSUE: What additional ozone air monitoring and meteorological studies are planned by DEQ?

Response: None. Under projected funding for FY 79-81, no resources in manpower or equipment are identified for special ozone studies. This is not to say that there is not a need for special ozone studies for such things as identifying the reactants in the ozone reaction, and to learn more on the mechanism of transported ozone and ozone precursors from outside the nonattainment area. Jackson County may conduct a special ozone study in 1979 with limited available funds.

Resolution: No special ozone studies will be conducted in FY 79-81 by DEQ

ISSUE: The ozone model may result in rules that "may be unrealistic and not required."

Response: An EPA model was used to forecast future ozone air quality. A requirement for using this method is a commitment by the state to adopt regulations for sources of 100 tons per year of potential emissions of volatile organic compounds. Rules will be based upon EPA control technology guidelines. The impact of these future rules will be small as major existing sources are already subject to control regulations. Not providing a commitment to develop and implement these regulations would result in EPA disapproving the proposed ozone control strategy.

Resolution: No change at this time is recommended in the proposed State Implementation Plan revision.

ISSUE: EPA questions not including parking lots in the carbon monoxide and ozone emission inventories.

Response: This requirement is new. It is not in EPA guidance materials. Based on consultation with the lead agency, emissions from parking lots will be considered during analysis of a parking and traffic circulation plan. This analysis is expected by July 30, 1980 from the lead agency.

Resolution: Provide EPA an estimate of emissions from parking lots when the data is available.

ISSUE: The EPA suspects the ozone design ratio may be unrealistically low.

Response: Staff has calculated the design ratio following EPA guidance. Further, the available ambient data suggests that the design ratio is representative of existing conditions.

If the state uses the default value suggested by EPA the ozone control strategy revision would be delayed. The air quality projections would have to be redone. It is probable the Medford-Ashland AQMA would be shown not in attainment by December 31, 1982 deadline and further strategies would have to be developed and implemented.

Resolution: No change is recommended at this time in the proposed State Implementation Plan revision.

ISSUE: EPA suspects the ozone design value is incorrect

Response: The design value was selected by staff using procedures described in EPA's Guideline for Interpretation for Ozone Air Quality Standards page 25 (3). This method is equivalent to the graphical approach used by Portland mentioned by EPA in their comment.

Resolution: No change is recommended at this time in the proposed State Implementation Plan revision.

ISSUE: "The Indirect Source Rule is not included in the list of Reasonably Available Control Measures."

Response: It is the Department's opinion that the Rule for Indirect Sources (OAR 340-20-100 through 135) is not a Reasonable Available Control Measure as defined in the Clean Air Act (Section 108), but rather a regulatory review mechanism to assess the impacts from motor vehicles.

olution: The Rules for Indirect Sources are part of the present Oregon SIP and the fact it did not appear in the Section 4.9 of the proposed revision is not to be construed as a conscious effort to ignore them in this State Implementation Plan revision. Language has been added to Section 4.9.4 of the proposed revision to clarify the Department's position on the Rules for Indirect Sources.

ISSUE: The New Source Review rule for ozone should clearly identify the geographic area to which a growth allowance applies. This application is particularly acute when sources of volatile organic compounds up to 36 hours of transport time from the nonattainment area need to utilize part of the growth increment and/or locate emission offsets.

Response: A full discussion of alternatives is in the Volatile Organic Compound rule staff report Agenda Item A2, June 8, 1979 EQC meeting. The most equitable approach is to rely on the New Source Review rule (OAR 340-20-190 to 195) that requires a review of major new or modified sources proposing to locate in an attainment area. If the new source exceeds the specified incremental impact on air quality in a non-attainment area then emission offsets or the identified growth increment in the attainment strategy must be applied.

Resolution: The New Source Review rule adequately meets the need in this situation. No change is recommended at this time in the proposed State Implementation Plan revision.

A6243.2

ATTACHMENT 6

SECTION 4.8

CONTROL STRATEGY FOR

MEDFORD-ASHLAND AIR QUALITY MAINTENANCE AREA

1979 STATE IMPLEMENTATION PLAN REVISION

FOR OZONE

(Attainment Strategy)

June 8, 1979

Jackson County

Oregon Department of Environmental Quality

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4.8.0 MEDFORD-ASHLAND AIR QUALITY MAINTENANCE AREA STATE IMPLEMENTATION PLAN FOR OZONE

4.8.0.1 Introduction

The Clean Air Act of 1970 and the Clean Air Act Amendments of 1977 establish requirements specifying the methods and schedule by which National Ambient Air Quality Standards must be attained. States are required to develop plans for each nonattainment area that demonstrate attainment by December 31, 1982. The Medford-Ashland Air Quality Maintenance Area violates the one-hour standard for ozone. Consequently, it was designated nonattainment for ozone by the Environmental Protection Agency on March 30, 1978. Jackson County was designated lead agency by the Governor and has completed an analysis of future air quality and developed a control strategy in conjunction with the Oregon Department of Environmental Quality and the Oregon Department of Transportation.

4.8.0.2 Summary

A future ozone analysis projects that the Federal standard will be attained by December 31, 1982. A growth increment is available from 1979 to 1982. After 1982, further emission reductions occur creating a projected growth increment up to 1200 tons by 1987. Further growth increment may become available if other potential strategies, such as vehicle inspection/maintenance, are adopted in the future.

The attainment strategy contains the following measures to meet requirements of the Clean Air Act and attain the ozone standard by December 31, 1982.

1. Federal Motor Vehicle Emission Control Program
2. Volatile Organic Compound rules for 11 source categories
3. A commitment to adopt practicable measures for other source categories.
4. A special permit rule for new or modified stationary sources,
5. Setting of plant site emission limits for existing sources consistent with the attainment strategy data base.

This plan also contains a commitment of sufficient resources to implement the plan and an annual reporting program to analyze progress towards attainment.

4.8.1 AMBIENT AIR QUALITY

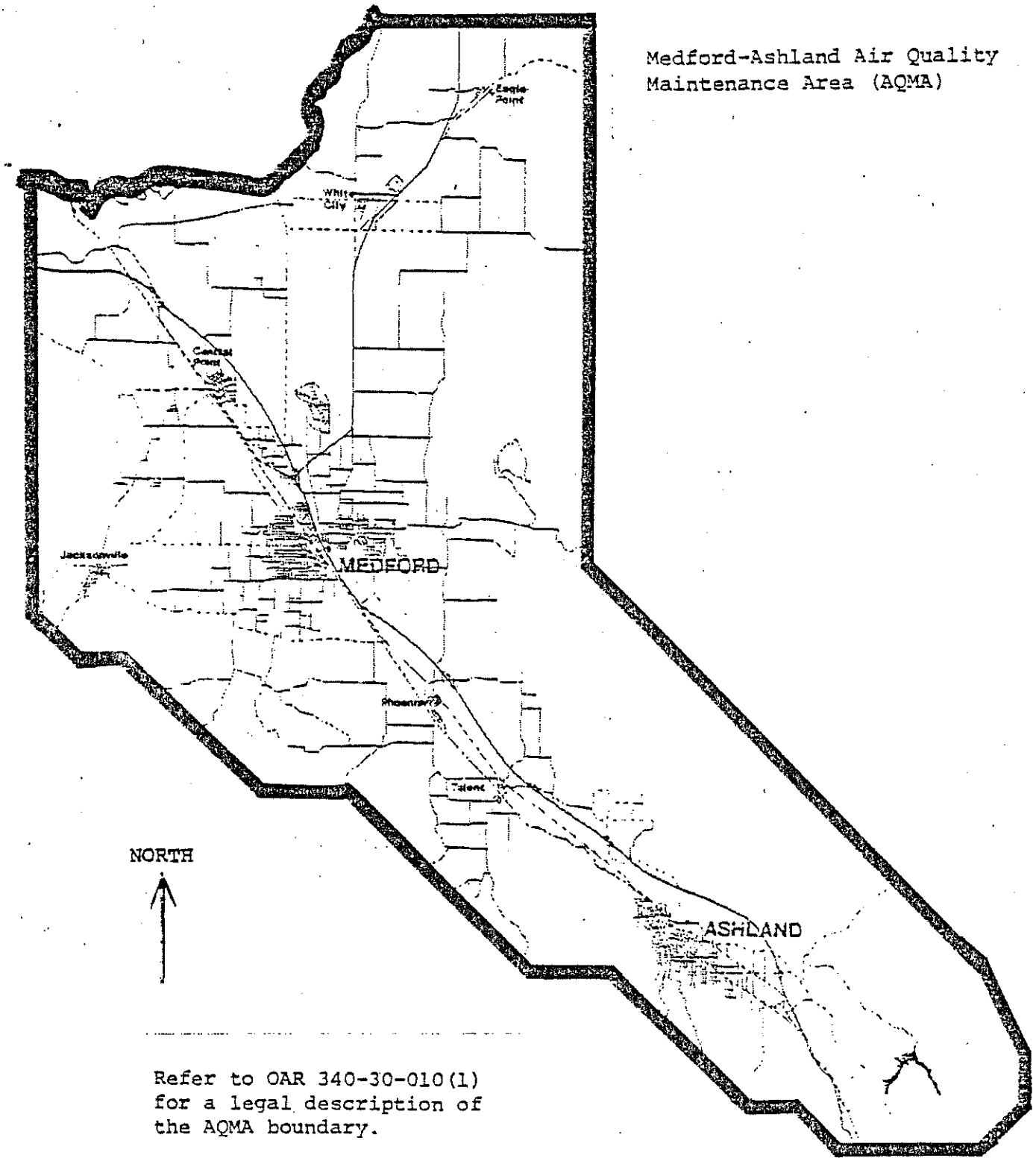
4.8.1.1 Identification of Study Area

The Medford-Ashland Air Quality Maintenance Area is located in Jackson County in Southwest Oregon. Because ozone levels exceed federal standards, it was designated non-attainment for ozone by the Environmental Protection Agency on March 30, 1978. The geographic area for which transportation related control strategies are identified is the Air Quality Maintenance Area illustrated in Figure 4.8.1-1.

The climate of the Rogue Valley may be characterized as moderate, with marked seasonal changes. Annual average rainfall totals about 19 inches. Winds are typically very light, prevailing from the south during the winter months, and from the north during the remainder of the year. The topography of the area restricts natural ventilation of the valley. On an annual basis, about three-fourths of the days have poor ventilation characteristics. Studies of the meteorological potential for air pollution within the continental United States identifies the southwest interior valleys of Oregon as one of the two areas most prone to air pollution episodes.

The Air Quality Maintenance Area includes seven incorporated cities: Eagle Point, Central Point, Jacksonville, Medford, Talent, Phoenix, and Ashland, and a large population in unincorporated areas. Approximately 100,000 persons reside in the Air Quality Maintenance Area. The valley also contains most of the industrial emission sources (primarily wood products) within Jackson County.

FIGURE 4.8.1-1



Refer to OAR 340-30-010(1) for a legal description of the AQMA boundary.

4.8.1.2 Monitoring Data

The ozone air quality levels show considerable seasonal variation. The summer and fall months experience the highest ozone levels corresponding to highest temperatures and sunlight intensity. The entire study area is believed to exceed the ozone standard though highest concentrations occur south of Medford.

Highest ozone levels have been observed at the Bear Creek Corporation monitor. Table 4.8.1-1 summarizes ozone measurements at the Bear Creek Corporation site. Further details on the ozone monitors and locations may be found in Section 7.8.

Table 4.8.1-1

Medford-Ashland AQMA Ozone Measurements at Bear Creek

Year	Days Over Standard*	Highest 1-hour Reading	Second Highest 1-hour Reading
1976 (Aug.-Dec.)	8	0.18 ppm	0.15 ppm
1977	2	0.14 ppm	0.14 ppm
1978	1	0.13 ppm	0.13 ppm

* Federal Standard 0.12 ppm ozone one hour average.

4.8.2 VOLATILE ORGANIC COMPOUND EMISSION INVENTORY

4.8.2.1 Emission Inventory

The calendar years 1977, 1982, and 1987 Volatile Organic Compound emission inventory is summarized in Table 4.8.2-1 below. The base year is 1977 which is consistent with the air quality base year. Totals have been rounded to the nearest hundred as the precision of emission factor estimates limits the accuracy of the emission inventory. A detailed emission inventory and more information regarding emission estimates may be found in Appendix 4.8-7.

Table 4.8.2-1

Volatile Organic Compound Emission Inventory EI, Tons Per Year (TPY)

Sources	1977, Tons/Year	1982, Tons/Year	1987, Tons/Year
Gasoline Storage & Marketing	657.1	494.9	573.6
Industrial Processes & Surface Coating	4699.7	4245.1	4131.7
Non-Industrial Surface Coating & Other Solvent Use	341.2	341.2	341.2
Motor Vehicles	5705.2	4161.3	3400.5
Miscellaneous Sources	1663.2	1638.7	1763.7
Total (rounded to nearest hundred)	13100	10900	10200

4.8.2.1.1 Industrial Sources

The Environmental Quality Commission has adopted Volatile Organic Compound rules which will result in reductions by 1982 from gasoline storage and marketing, industrial surface coating, and certain commercial activities. These rules are discussed in Section 4.8.4. Further reductions are realized as a result of installing particulate control equipment on veneer dryers, particle dryers, and hogged fuel boilers. Net emission reductions by 1982 compared to 1977 will be about 5 percent of the total volatile organic compound emitted.

Emission factors and information supplied by some sources were used to estimate volatile organic compound emissions. Industrial sources contribute about one-third of the total emissions. Over 80 percent of the industrial emissions comes from a single source - The 3M Company. Companies which have the potential to emit more than 100 tons per year volatile organic compound are:

3M Company
Timber Products
Reichold Chemical Co.
Husky Industries
Medford Corporation
Boise Cascade

4.8.2.1.2 Motor Vehicles

Nearly half of the volatile organic compound emissions result from motor vehicles. Emissions from motor vehicles were estimated by employing emission data from the Bear Creek Area Transportation Study and the computer model "SAPOLLUT". The computer modeling was performed by the Oregon Department of Transportation. SAPOLLUT calculates overall volatile organic compound emissions by multiplying vehicle emissions by the vehicle miles traveled for each link of the major street network. Environmental Protection Agency emission factors were used taking into account the makeup of the vehicle population and speed. A detailed explanation is contained in Appendix 4.8-2.

A 12 percent decrease by 1982 is projected, despite higher future vehicle miles traveled, because of greater effectiveness of the Federal Motor Vehicle Control Program in replacing older, polluting vehicles with newer, less polluting ones.

4.8.2.1.3 Other Sources

Space heating, solid waste disposal, and miscellaneous use of solvents were estimated by emission factors. Source data was obtained from the Medford-Ashland AQMA Analysis, by Seton, Johnson, and Odell, October, 1976.

4.8.2.2 Growth Factors

A very small growth in industrial emissions is projected due primarily to conversion of gas or steam-heated veneer dryers to wood-fired systems. Growth from remaining emission sources is based upon growth rates contained in the Medford-Ashland AQMA Analysis by Seton, Johnson and Odell, October 1976.

Vehicle miles traveled and volatile organic compound emissions for 1982 and 1987 were based on future population and land use allocations used in the draft 1978 Jackson County Comprehensive Plan. Growth factors are consistent with related planning programs including the 208 Water Quality Planning Program.

4.8.3 CONTROL STRATEGY

4.8.3.1 Emission Reduction Necessary for Attainment

Reducing volatile organic compound emissions is the accepted method of lowering ozone levels. The reduction needed to improve ozone air quality to attain the federal standard was determined by application of an Environmental Protection Agency developed technique called the Emperical Kinetic Model. This technique is explained in OAQPS 1.2-080 Guidelines for Air Quality Models. Details on the use of this technique may be found in Appendix 4.8-3.

It is projected that with anticipated reductions resulting from the Federal Motor Vehicle Control Program, the volatile organic compound rules, and from the particulate control strategy ozone levels will decline sufficiently by December 31, 1982 to attain the federal standard. This is based on the modelled estimate of a needed 13 percent reduction to attain standards. The emission inventory, by 1982, projects a 17 percent reduction in volatile organic compound emissions.

Projected reductions in volatile organic compound emissions in 1982 compared to 1977 emissions resulting from the federal motor vehicle emission control program are 12 percent, and from applying reasonably available control technology to industrial/commercial sources of volatile organic compound are 4 percent. About 1 percent reduction

results when industrial sources comply with special particulate rules. These rules affect emissions from veneer dryers, wood particle dryers and hogged fuel boilers.

4.8.3.2 Demonstration of Commitment to Develop Reasonably Available Control Technology

The control strategy commits the state to adopt and implement Reasonably Available Control Technology regulations for stationary sources of more than 100 tons per year potential emissions of volatile organic compound. This Environmental Protection Agency requirement results from the model used in forecasting future ozone air quality.

What constitutes Reasonably Available Control Technology for a particular source is explained by the Environmental Protection Agency in a Control Technology Guideline document. The Environmental Protection Agency allows the state up to the end of the next calendar year following issuance of each document to adopt regulations equivalent to Reasonably Available Control Technology or better for that source. The Environmental Quality Commission adopted Reasonably Available Control Technology rules as amended in June, 1979 for the first group of eleven documents issued in 1977. See Table 4.8.3-1.

Table 4.8.3-1

Environmental Protection Agency Control Technology Guidelines Series

	Document Published	Adoption
GROUP I	1977	December, 1978
Large Appliance Manufacture		
Magnet Wire Insulation		
Gasoline Bulk Plants		
Metal Furniture Manufacture		
Petroleum Liquid Storage, Fixed		
- Degreasing		
- Bulk Gasoline Terminals		
Petroleum Refinery Vacuum Systems, Waste Water Separators and Process Unit Turnaround		
- Service Stations, Stage I		
GROUP II	1978	In 1979
Petroleum Refinery Fugitive Emissions (leaks)		
Surface Coating of Other Metal Products - Industrial		
Pharmaceutical Manufacture		
Rubber Products Manufacture		
Paint Manufacture		
Vegetable Oil Processing		
Graphic Arts (Printing)		
Flat Wood Products		
- Service Stations, Stage II		
Petroleum Liquid Storage Floating Roof Tanks		
GROUP III	1978	In 1979
Ship and Barge Transport of Gasoline and Crude Oil		
Organic Chemical Manufacture Process Streams Fugitive (leaks)		
Dry Cleaning		
Wood Furniture Manufacture		
Architectural and Miscellaneous Coatings		
GROUP IV	1979	In 1980
Organic Chemical Manufacture Waste Disposal Storage and Handling		

Table 4.8.3-1 (continued)

	Document Published	Adoption
	1979	In 1980
OTHERS		
Natural Gas and Crude Oil Production		
Adhesives		
Other Industrial Surface Coatings		
Auto Refinishing		
Other Solvent Usage		

4.8.3.3 Growth Management Plan

There is a 185 ton growth increment in the ozone control strategy for major new or modified sources through December 31, 1982. By 1987 up to a 1200 ton growth increment will be available because of continued reductions in motor vehicle emissions and stationary sources. Under the special permit rule (OAR 340-20-190 through 198) once the growth increment is used, emission offsets would have to be obtained at least through 1982 or until additional growth increment becomes available. There is a possibility to provide more growth increment before 1982 if measures such as an inspection/maintenance program are established or if existing stationary source emissions are further restricted.

The 3M Company is the largest stationary source of volatile organic compound emissions. Control of this source is critical to the success of the control strategy. The 3M Company is discussed in further detail in Section 4.8.5.

The identification of further growth increment will be tied closely to the analysis of Reasonably Available Control Measures for carbon monoxide to be completed by the lead agency by July 1, 1980. The final plant site emission limit for 3M Company and other existing sources will be decided at that time based on the lead agency recommendations. This will ensure full local input into a decision which can have a significant impact on the local economy.

4.8.3.4 Impact of Selected Ozone Control Strategy

4.8.3.4.1 Air Quality

Air Quality standards for ozone will be attained by December 31, 1982 in the non-attainment area.

4.8.3.4.2 Health Effects

The Environmental Protection Agency established the 0.12 ppm 1-hour average primary standard for ozone based on newly available health impact studies of the effects of ozone. Attainment of the ozone standard in the non-attainment area will provide adequate protection to the health of the community.

4.8.3.4.3 Welfare Effects

The Environmental Protection Agency established 0.12 ppm as the secondary ozone standard. This level provides for material and

vegetation protection. Attainment of the ozone standard in the nonattainment area will provide adequate protection to the welfare of the community.

4.8.3.4.4 Economic Effects

The attainment strategy is based upon the federal motor vehicle emission control program and the industrial/commercial source regulations. Cost of implementation of the federal motor vehicle control program is borne by the purchasers of the new motor vehicle as the cost of the related pollution abatement devices is included in the total price. Estimated initial cost due to the federal motor vehicle control program is $420 per vehicle (SAE Paper 780933, November, 1978). By 1982, an estimated 119,000 new vehicles will be purchased in Jackson County resulting in a cost of about 50 million dollars. Maintenance costs are not estimated due to uncertainty in frequency and cost.

Cost of complying with the volatile organic compound regulations is estimated for each affected source in Table 4.8.3-1.

Table 4.8.3-2

Estimated Capital Cost of Implementing
Volatile Organic Compound Rules (OAR 340-22) in the AQMA

Rule	Affected Source	Approximate Capital Cost/ Source	Estimated Sources in AQMA	Estimated Capital Cost
-110	Gas Stations and other accounts, submerged fill	$50	200	$10,000
-110	Gas Stations, vapor balance	$500	75	$37,500
-110	Tank Trucks	$10,000	30	$300,000
-115	Bulk Plants	$5,000	11	$55,000
-140	Surface Coating	$2,900,000	1	$2,900,000
-145	Cold Cleaners	$25 - $65	25	$1,625
-146	Open Top Small Degreasers	$230 - $570	10	$5,700
-150	Roof Coating Contractors	$100	20	$2,000
Total				$3,310,000

4.8.3.4.5 Energy Considerations

Until the 1975 model year there was a relative fuel penalty of 10 to 20 percent compared to 1967 and earlier vehicles (SAE Paper 780933, November, 1978). Vehicles 1975 and later experience little or no fuel economy penalty. Industrial and commercial operations will partially recover or eliminate the use of petroleum-based solvents and compounds by implementing the regulations, which should not have an adverse impact on energy.

4.8.3.4.6 Social Considerations

Pollution devices on motor vehicles require periodic maintenance and repair to retain full effectiveness in reducing pollutants.

Without a mandatory vehicle inspection/ maintenance program which requires repair of severely degraded vehicles, it is left to the vehicle owner/operator to conscientiously provide periodic maintenance. The attainment strategy will not impose any new constraints on community activities other than costs identified in 4.8.3.4.4.

4.8.3.4.7 Summary of public testimony

Comments from the public hearing on May 3, 1979 are in Appendix 4.8-9 and were submitted to Environmental Protection Agency.

4.8.4 RULES AND REGULATIONS

The new rules and regulations in the control strategy which affect existing sources are the Volatile Organic Compound rules (OAR 340-22-100 through 150) and the Plant Site Emission Limit rule (OAR 340-20-196 to 198) discussed in 4.8.4.1 and 4.8.4.2. Additionally, a new rule in the control strategy which affects new sources is the New Source Review rule (OAR 340-20-190 to 195) that is discussed in Section 5.8. These rules are contained in Section 3.2.

4.8.4.1 Volatile Organic Compound Rules

The volatile organic compound rules adopted in December, 1978 and amended in June, 1979 affect gasoline marketing up to the service station underground tanks, prohibits the use of cutback asphalt, controls paper coating operations, small degreasers and cold cleaners, and affects roof coating contractors. The level of control required is consistent with the Control Technology Guideline documents equivalent to Reasonably Available Control Technology.

4.8.4.2 Plant Site Emission Limit Rule

The Plant Site Emission Limit rule was developed in recognition that airsheds have a limited carrying capacity. The rule clearly permits the Department of Environmental Quality to limit total annual emissions of any new or existing source. The rule prevents sources from exceeding the capacity of the airshed to the exclusion of future

new or expanding sources. It also assures maintenance of reasonable further progress towards attainment, and limits existing sources from increasing their production hours beyond the schedule used to establish the base year inventory.

4.8.5 REASONABLE FURTHER PROGRESS

4.8.5.1 Reasonable Further Progress

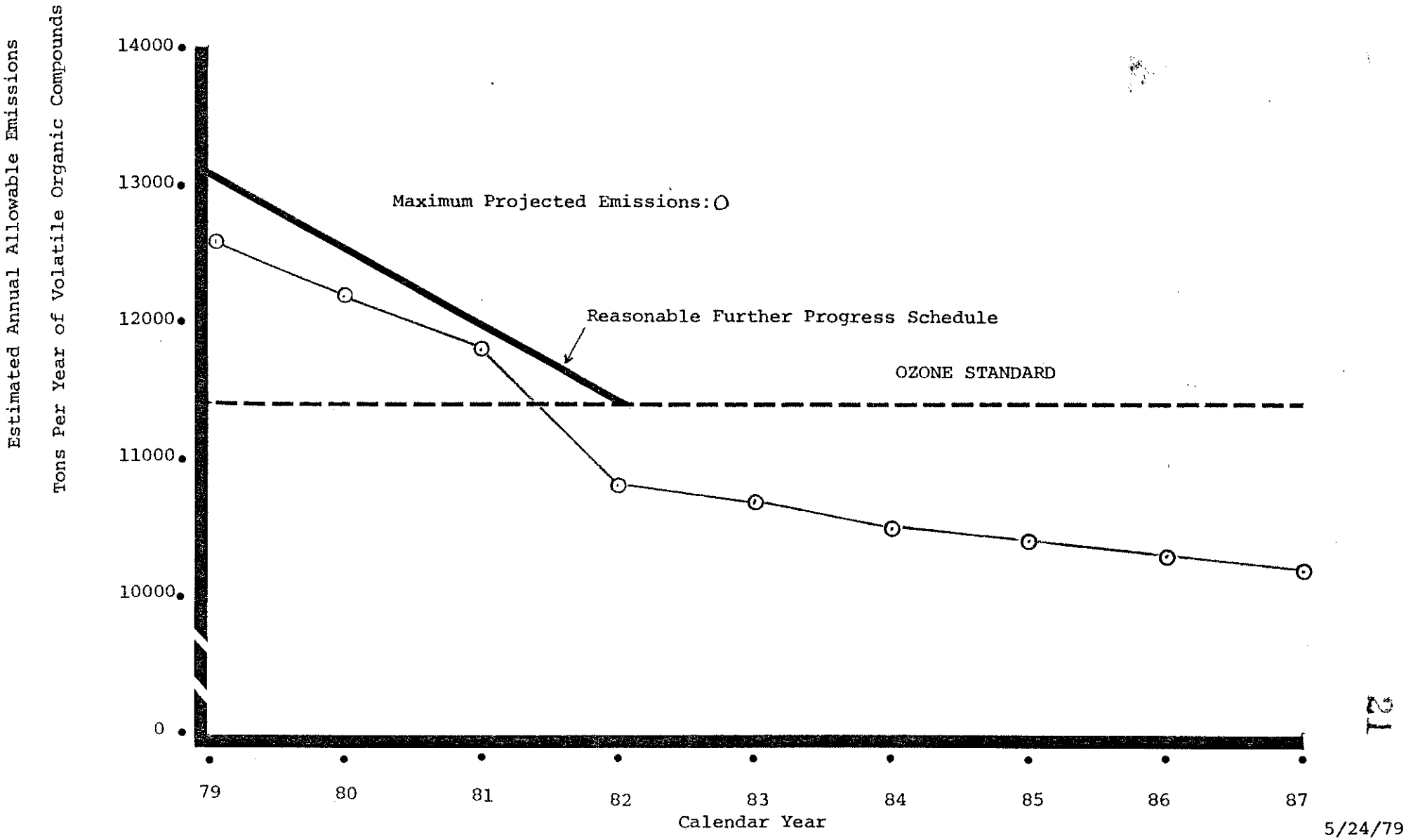
Based on the Clean Air Act the State commits to a reasonable further progress schedule. The reasonable further progress schedule line will be used to track annual progress towards attaining the ozone standard by the end of 1982. Figure 4.8.5-1 is the reasonable further progress schedule for the ozone attainment strategy.

A 13 percent reduction is needed to attain the ozone standard of 0.12 ppm. This requires that the total volatile organic compound emissions by December 31, 1982 must be no more than 87 percent of the base year emissions of 13,100 tons per year or 11,400 tons per year. A line drawn between the two emisison levels establishes the reasonable further progress schedule. According to EPA, the linear assumption is initially acceptable for the July 1, 1979 submittal.

To attain the ozone standard, a total reduction of 1700 tons is needed by December 31, 1982. On an annual basis the needed reduction is one-third of 1700 tons or 567 tons each year from 1980 through 1982. The 1982 emission inventory estimates a 2300 ton reduction will be realized. Sufficient reductions occur each year to comply with the reasonable further progress schedule.

Figure 4.8.5-1 Medford-Ashland AQMA:

Ozone Strategy Reasonable Further Progress Projection



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Emission reductions resulting from the Federal Motor Vehicle Control Program are projected to occur each year through 1987. The Volatile Organic Compound rules will be implemented in 1981 and 1982. Particulate emission controls will also reduce volatile organic compound emissions in 1980 and 1981.

The 3M Company is a major source which emits about one-third of all volatile organic compound emissions in the Air Quality Maintenance Area or about 4000 tons per year. Under the ozone control strategy, the 3M Company will install controls that would limit emissions to 3700 tons at full existing production capacity. With controls the 3M Company will not jeopardize attainment and maintenance of the ozone standard.

The 3M Company has plans to possibly increase to full existing production capacity prior to installing controls. The 3M Company estimates emissions could be as high as 7000 tons annually in 1981. The Department of Environmental Quality will address this situation at the time 3M Company's permit is modified to include the attainment strategy plant site emission limit of 3700 tons per year.

4.8.5.2 Enforcement

Based on Clean Air Act requirements, the State commits to enforcement of the control strategy to attain the ozone standard consistent with the reasonable further progress schedule. The volatile organic compound rules (OAR 340-20) contain specific legally enforceable

timetables for compliance, assuring that the projected emission reductions will be obtained. As explained in the section on Annual Reporting, progress made in realizing projected emission reductions will be relayed to Environmental Protection Agency annually. Enforcement of these regulations rests with Department of Environmental Quality. Sufficient field personnel are provided by Department of Environmental Quality to implement and enforce the regulations. (See Section 4.8.7, Resource Commitment.) The federal motor vehicle control program is part of the Clean Air Act and does not need state or local legislation to implement and enforce.

4.8.6 ANNUAL REPORT

Department of Environmental Quality will submit a report to Environmental Protection Agency by July 1 for the preceding calendar year, beginning July 1, 1980, covering the following requirements:

a. Identification of growth of major new or modified existing sources, minor (less than 100 tons/year) new sources, and mobile sources;
b. Reduction in emissions from existing sources;
c. Update of emission inventory; and
d. Conclusions of studies to quantify the air quality problem.

4.8.7 RESOURCE COMMITMENT

4.8.7.1 Lead Agency

The Jackson County Board of Commissioners completed tasks from July 1, 1978 to June 30, 1979 in their capacity as lead agency for the transportation planning process for ozone air quality. Resources needed beyond June 30, 1979 are less, as additional transportation measures are not needed in the control strategy. Future resources are estimated from the progress reporting requirement and voluntary analysis of vehicle inspection and maintenance.

Table 4.8.7-1 presents the resources committed to the ozone control strategy.

Table 4.8.7-1

Jackson County Resource Commitment

Time Period	Full Time Equivalent Per Year, FTE
July 1, 1978 - June 30, 1979	0.5
July 1, 1979 - June 30, 1980	0.3
July 1, 1980 - June 30, 1981	0.1 (estimated)
July 1, 1981 - June 30, 1982	0.1 (estimated)
July 1, 1982 - June 30, 1983	0.1 (estimated)

The resource commitment includes supervisory, planning, and support services. Estimated resources, while subject to change, will continue to the extent necessary in future years for which budgets have not yet been appropriated.

4.8.7.2 Department of Environmental Quality

Department of Environmental Quality has a biennial budget beginning July 1 of odd numbered years. Table 4.8.7-2 presents the resources committed to implement the ozone attainment strategy for which Department of Environmental Quality has responsibility.

Table 4.8.7-2

Department of Environmental Quality Projected Resource Commitment

	79-81 Biennium, Full time equivalent
Headquarters Staff	
- Administration	0.2
- Planning & Development	1.0
- Limited Duration	0.2
Region Staff	
- Administration	0.1
- Monitoring/Analysis	0.4
- Enforcement	0.1
Total	2.0 FTE

Administration includes supervision and support services. Limited duration resources include work study, graphic artist, public affairs, hearings officer and other short-involvement activities. Estimated resources, while subject to actual appropriations, will continue to the extent necessary to implement the control strategy in future years.

4.8.7.3 Oregon Department of Transportation

Oregon Department of Transportation is projected to have limited further involvement with the ozone control strategy. Oregon Department of Transportation ODOT will be contracted by the lead agency to do the necessary work.

4.8.8 PUBLIC INVOLVEMENT

4.8.8.1 Designation of Lead Agency

The Jackson County Board of Commissioners was designated as lead agency on March 30, 1978 by the Governor. The Environmental Protection Agency concurred on April 14, 1978. Jackson County, in conjunction with the Air Quality Advisory Committee, meets the lead agency requirement of the Clean Air Act for air quality transportation planning. See Appendix 4.8-6.

4.8.8.2 Interagency Coordination

4.8.8.2.1 The Medford-Ashland Air Quality Maintenance Area Air Quality Work Plan

The work plan outlines the overall transportation planning program conducted by the lead agency, Department of Environmental Quality and Oregon Department of Transportation. Refer to Appendix 4.8-5. The roles and responsibilities of each agency have been excerpted from the work plan and shown in Table 4.8.8-1.

Table 4.8.8-1

Jackson County and Department of Environmental Quality

Program Roles and Responsibilities

Role/Responsibility	Agency
1. Lead agency for air quality planning; program management	Jackson County
2. Air Quality Advisory Committee support	Jackson County
3. Mobile source emission estimates	ODOT/Jackson County
4. Stationary source emission estimates	DEQ
5. Air quality analysis	DEQ
6. Technical analysis and evaluation of control strategies	
a. Mobile	Jackson County
b. Stationary	DEQ
7. Implementating regulations and schedules	
a. Mobile Sources	Jackson County
b. Stationary Sources	DEQ
8. Preparing mobile source control strategies	Jackson County
9. Preparing stationary source control strategies	DEQ
10. State Implementation Plan revision hearings	DEQ
11. Hearing and adoption	DEQ/EQC

4.8.8.2.2 Interagency Agreements

Jackson County has entered into agreements with the Oregon Department of Environmental Quality for the conduct of specific air quality activities. This agreement is in Appendix 4.8-1.

4.8.8.2.3 Technical/Policy Direction

Policy direction for conducting the transportation planning program is provided by the Jackson County. The transportation planning program itself is conducted by Jackson County. The technical aspects of transportation work are performed by Jackson County, Department of Environmental Quality and Oregon Department of Transportation.

4.8.8.2.4 Elected Official Involvement

Through the lead agency, local elected officials were involved during development of the control strategy. Adoption of further control strategies, if warranted, will be by the governmental entity responsible for implementing the respective measure.

4.8.8.2.5 Organizational Responsibility for Carrying Out the State Implementation Plan

There is a split responsibility in carrying out the control strategy which is projected as attaining the ozone standard.

The elements of the strategy are the federal motor vehicle control program and the volatile organic compound regulations.

Federal Motor Vehicle Control Program: As a transportation control measure the lead agency has first responsibility. Practicably, the implementation of this measure is the responsibility of the Environmental Protection Agency, as the federal motor vehicle control program is established by the Clean Air Act. Therefore, the lead agency responsibilities are to evaluate the effectiveness of the federal motor vehicle control program in light of the reasonable further progress schedule.

Volatile organic compound Rules: Department of Environmental Quality has first responsibility in implementing and enforcing stationary source regulations. Department of Environmental Quality has committed the resources necessary in fulfilling its responsibility.

4.8.8.3 Citizen Participation

4.8.8.3.1 Citizen Involvement

Public participation through 1978 was provided through the Citizens Advisory Committee. The Committee held over 100 hours of public meetings. The Committee is no longer active. Refer to Appendix 4.8-10 for a list of members and the tasks completed.

In December, 1978, the Environmental Quality Commission adopted the volatile organic compound rules (OAR 340-22) after conducting a public hearing that included testimony from the Air Quality Advisory Committee and the general public. The rules were amended in June, 1979.

4.8.8.3.2 Public Involvement Procedures

Public involvement regarding the control strategy implementation and enforcement will occur annually when Department of Environmental Quality publishes its annual report. The draft report will be out for public comment for 30 days minimum prior to submittal to Environmental Protection Agency.

Further public involvement opportunity occurs when permits are modified to include compliance schedules responding to the VOC rules, or in the case of unpermitted sources, such as service stations, the proposed acceptance of the proposed compliance schedule via Department of Environmental Quality letter.

A separate report on air quality measurements is widely distributed each year by the Department of Environmental Quality. These reports are generally available in June.

4.8.8.3.3 Public Hearing on the Ozone SIP Revision

A public hearing was conducted May 3, 1979. Following Environmental Quality Commission adoption, the Governor submitted

the State Implementation Plan to Environmental Protection Agency for approval.

4.8.8.4 A-95 Review and Discussion of Comments

The control strategy was subject to A-95 review. A summary of comments received is in Appendix 4.8-8 and were submitted to Environmental Protection Agency.

4.8.8.5 Consistency with Plans and Programs Outlined in 40 CFR 50.241

The growth projections are consistent with local planning policies and plans, including the proposed 1978 Jackson County Comprehensive Plan and the 208 Water Quality Plan.

4.8.9 PUBLIC NOTICE AND HEARINGS

4.8.9.1 Public Notice

Public notice was published in the Oregon Secretary of State Bulletin on April 2, 1979. This notice may be found in Appendix 4.8-4.

4.8.9.2 Media Coverage

Paid public advertisements of the proposed State Implementation Plan revision were placed in the Medford Mail Tribune on two occasions (3/30/79; 4/9/79) prior to the hearing.

4.8.9.3 Public Hearing

A summary of the May 3, 1979 public hearing testimony on the control strategy is in Appendix 4.8-9.

4.8.9.4 Annual Report

The Environmental Protection Agency requirements concerning the annual report will be followed. See Section 4.8.6, Annual Report.

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5.8 MEDFORD-ASHLAND AQMA NEW SOURCE REVIEW - OZONE

Rules OAR 340-20-190 to -197 give the Department expanded authority and requirements regarding Special Permit Requirements for Sources Locating in or Near Non-Attainment Areas.

The Clean Air Act amendments of 1977, Section 171, 172, 173, require that the State Implementation Plan contain an adequate permit program as part of any attainment plan. The basic requirement that must be contained in the permit program is that major new or modified sources in nonattainment areas having a potential to emit more than 100 tons/year of a specific air pollutant must meet the following:

1. Lowest achievable emission rate.
2. Demonstrate that all other facilities under the authority of the permit applicant are in compliance or on a compliance schedule to meet State Rules.
3. Demonstrate that a sufficient growth increment is available in the attainment plan or provide offset.

In addition, the Department added permit requirements for sources that may locate adjacent to nonattainment areas, and has clarified authority to set plant site emission limits commensurate with airshed carrying capacity. The rule, OAR 340-20-190 to -197, is in Section 3.

Since modeling analysis forecasts that approximately 185 tons volatile organic compound growth is available between 1979 and December 31, 1982, the prime effect of the New Source Review regulation is to require major new or modified sources to install Lowest Achieveable Emission Rate. If the growth increment available is consumed before 1983, then offsets would have to be obtained.

7.8 MEDFORD-ASHLAND AQMA OZONE MONITORING PROGRAM

Ozone air quality surveillance began in August, 1976 at a site south of the Medford Central Business District. The Pacific Highway site was located in an area of maximum expected ozone concentration identified by 1976 aircraft studies of ozone air quality. The site location was found to be in conformance with federal siting criteria published in the August 7, 1978 Federal Register (Vol. 43, No. 152). Monitoring methods, quality assurance and reporting practices also meet federal requirements. Oxides of nitrogen and hydrocarbons, which are ozone precursors, are also measured in downtown Medford. A second ozone site, located in Gold Hill, is operated as a background station during the summer months. Table 7.8-1 lists the location of ozone and ozone precursor monitors. Figure 7.8-1 shows their location.

Table 7.8-1

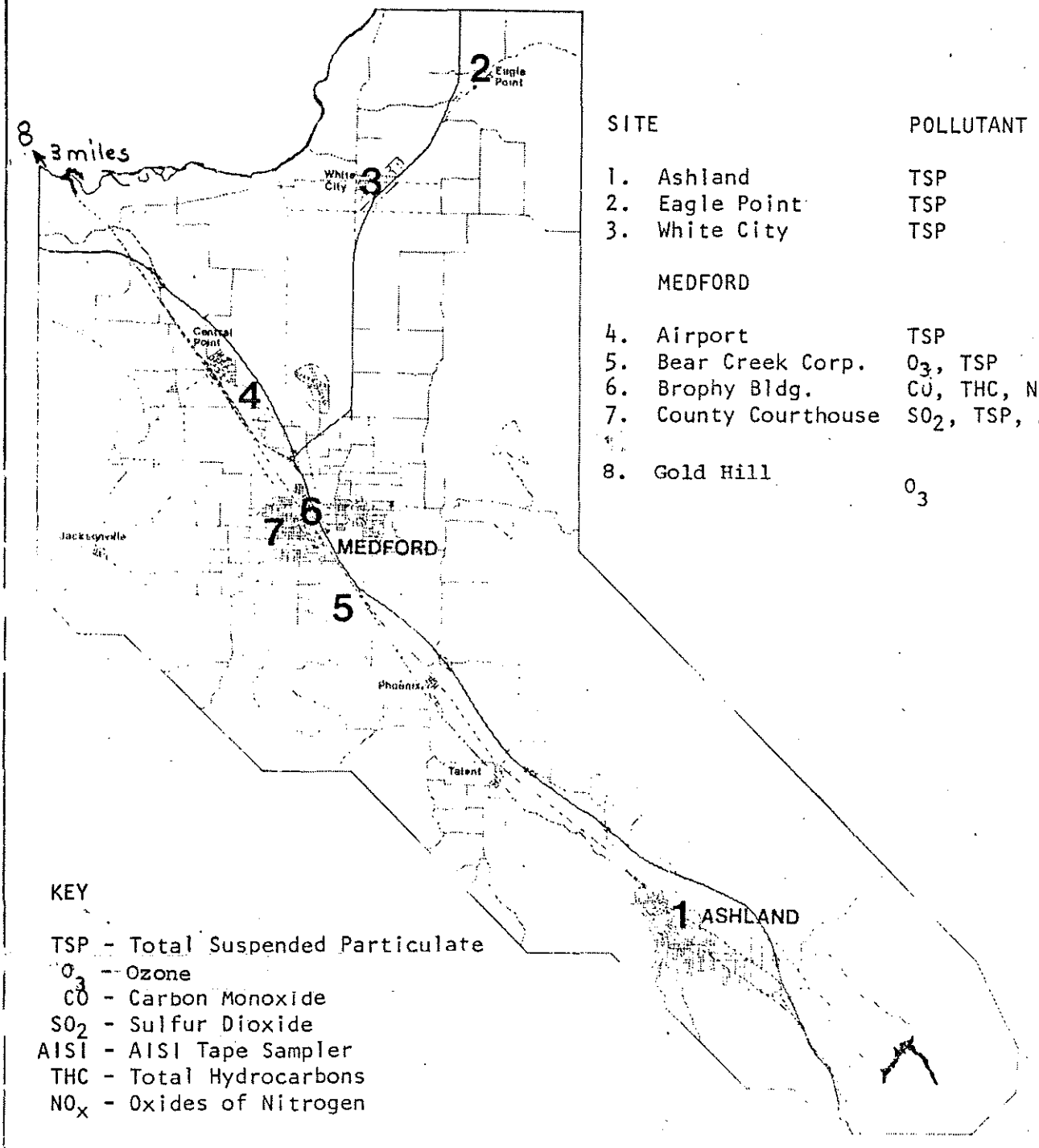
Medford-Ashland AQMA
Ozone Air Quality Surveillance Sites

Location	Pollutant	Site No.	Date Established	Land Use	Designation
2518 South Pacific Hwy	Ozone	1520118	August 1976	Commercial	SLAMS(1)
10 N Central Medford	Oxides of Nitrogen	1520119	Oct. 1977	Commercial	SLAMS
10 N Central Medford	Hydro-carbons	1520119	Aug. 1977	Commercial	SLAMS
Gold Hill(2)	Ozone	1514001	May 1978	Rural	SLAMS

(1) State and Local Air Monitoring Site
(2) Operational annually May to October, only

FIGURE 7.8-1

MEDFORD-ASHLAND AQMA AIR SURVEILLANCE NETWORK



SITE		POLLUTANT
1.	Ashland	TSP
2.	Eagle Point	TSP
3.	White City	TSP
	MEDFORD	
4.	Airport	TSP
5.	Bear Creek Corp.	O_3, TSP
6.	Brophy Bldg.	CO, THC, NO_x
7.	County Courthouse	SO_2, TSP, AISI
8.	Gold Hill	O_3

KEY

TSP - Total Suspended Particulate
O_3 - Ozone
CO - Carbon Monoxide
SO_2 - Sulfur Dioxide
AISI - AISI Tape Sampler
THC - Total Hydrocarbons
NO_x - Oxides of Nitrogen

SECTION 4.9

CONTROL STRATEGY FOR

MEDFORD-ASHLAND AIR QUALITY MAINTENANCE AREA

1979 STATE IMPLEMENTATION PLAN REVISION

FOR CARBON MONOXIDE

(Request for Extension of the December 31, 1982 Attainment Date)

June, 1979

Jackson County

Oregon Department of Environmental Quality

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4.9.0 MEDFORD-ASHLAND AIR QUALITY MAINTENANCE AREA STATE IMPLEMENTATION PLAN FOR CARBON MONOXIDE

4.9.0.1 Introduction

The Clean Air Act of 1970 and the Clean Air Act Amendments of 1977 establish requirements specifying the methods and schedule by which National Ambient Air Quality Standards must be attained. States are required to develop plans for each nonattainment area that demonstrate attainment by December 31, 1982. An extension of this date is possible under certain conditions. The Medford-Ashland Air Quality Maintenance Area violates the eight-hour standard for carbon monoxide. Consequently, it was designated nonattainment for carbon monoxide by the Environmental Protection Agency on March 30, 1978. Jackson County was designated by the Governor as lead agency for transportation planning.

4.9.0.2 Summary

The significant points of the plan are summarized in three major categories - the air quality analysis, commitments for future work by the lead agency and the Department of Environmental Quality, and a request for extension of the standard attainment date.

a. The Medford-Ashland Air Quality Maintenance Area is designated a nonattainment area because the carbon monoxide national ambient air quality standard was substantially exceeded during 1977.

b. The highest exceedence measured in 1977 was 21.8 mg/m^3, compared to the standard of 10.0 mg/m^3. The 1-hour average standard of 35 mg/m^3 has never been exceeded.

c. Exceedences of the standard are predicted to occur primarily in and around the Medford Central Business District (CBD) along streets with high traffic volumes and low travel speeds.

d. An emission reduction of 72 percent and 62 percent by 1982 and 1987, respectively, is needed to attain the standard.

e. Existing control measures will decrease carbon monoxide emissions 9 percent between 1977 and 1982, despite a 20 percent increase in vehicle miles traveled during the same period. Between 1977 and 1987 emissions are expected to decrease by 15 percent despite a increase of 40 percent in vehicle miles traveled. The decrease in emissions is due entirely to the Federal Motor Vehicle Control Program. The federal motor vehicle control program is the only existing control measure.

f. The Air Quality Maintenance Area cannot demonstrate attainment of the carbon monoxide standard with existing control measures by December 31, 1982. Approximately 20 miles of roadway violated the air quality standard in 1977. Approximately 16 miles of roadway have the potential to violate the standard by December 31, 1982 if certain meteorological conditions are present. Twelve miles of streets have the potential to be in violation by December 31, 1987.

g. Attainment of the carbon monoxide standard before December 31, 1987 is improbable without further control measures.

4.9.0.2.2 Commitments

Jackson County and Department Environmental Quality commit to:

a. Conducting an analysis by July 30, 1980 to identify reasonable control measures that will attain the carbon monoxide standard as expeditiously as practicable but by no later than December 31, 1987.

b. Adopting effective and reasonable control measure(s) by July 1, 1982 in a legally enforceable manner that will attain the carbon monoxide standard as expeditiously as practicable but by no later than December 31, 1987.

c. Providing for citizen involvement during review of candidate control measures.

d. Major new or modified sources will be subject to the growth management mechanism contained in the New Source Review rule.

4.9.0.2.3 Request for Extension

The State of Oregon requests an extension of the December 31, 1982 attainment date. A commitment is made to attain standards as expeditiously as practicable but no later than December 31, 1987.

An analysis of candidate control measures will be completed by the lead agency by July 30, 1980. An attainment strategy will be identified and submitted to Environmental Protection Agency no later than July 1, 1982.

4.9.1 AMBIENT AIR QUALITY

4.9.1.1 Identification of Study Area

The Medford-Ashland area was designated an Air Quality Maintenance Area in 1974 by the Environmental Protection Agency. Figure 4.9.1-1 illustrates the Air Quality Maintenance Area. The legal description of the Air Quality Maintenance Area is in Appendix 4.9-6.

The geographic area for which transportation control strategies are being investigated is the Air Quality Maintenance Area. The area in which control strategies are implemented depends on the results of the investigations of the various control strategies.

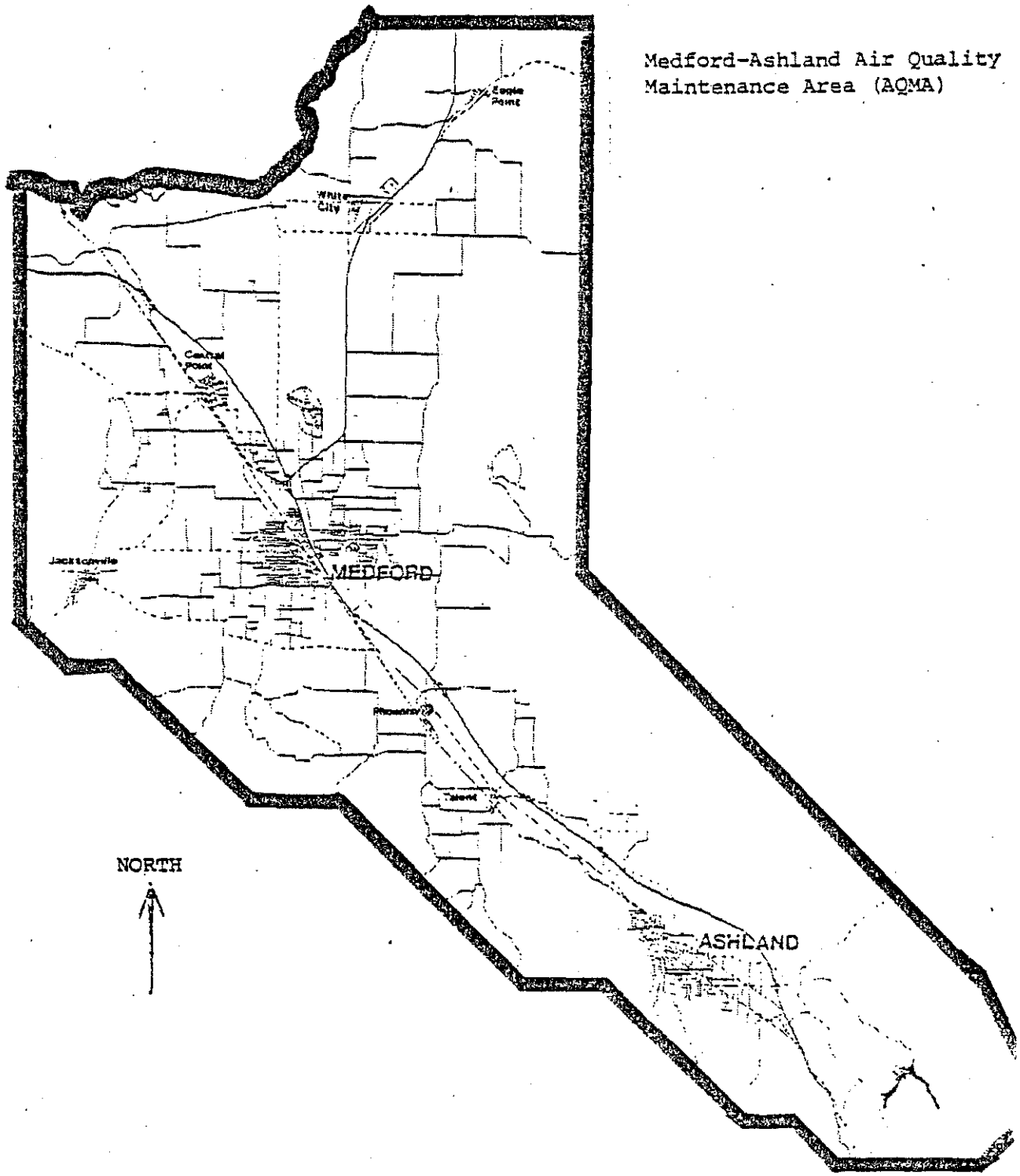
4.9.1.2 Monitoring Data

4.9.1.2.1 Summary of Monitoring Data

Ambient carbon monoxide measurements are taken at one site located at Main and Central in downtown Medford. The monitor is located and operated in accordance with Environmental Protection Agency requirements. Table 4.9.1-1 indicates the exceedences of the carbon monoxide standard recorded from 1977 through 1978.

FIGURE 4.9.1-1

Medford-Ashland Air Quality Maintenance Area (AQMA)



Refer to Appendix 4.9-6 for a legal description of the AQMA..

Table 4.9.1-1

Record of Carbon Monoxide Standard Exceedences at Medford

	Days exceeding 8-hr standard	Highest 8-hr average	Second-highest 8-hr average
1977	178	21.8 mg/m^3	19.8 mg/m^3
1978	180	22.1	21.0

4.9.1.3 Design Concentration

Based on Environmental Protection Agency guidelines the highest of the second highest eight-hour carbon monoxide concentrations observed during 1975, 1976 or 1977 is used as the design concentration upon which control strategies are based. No annual carbon monoxide data is available for 1975 and 1976. Thus the design value is 19.8 mg/m^3 based on 1977 data.

4.9.2 DESCRIPTION OF THE PLANNING PROCESS

4.9.2.1 Designation of Lead Agency

The Jackson County Board of Commissioners was designated lead agency on March 30, 1978 by the Governor. The Environmental Protection Agency concurred on April 14, 1978. See Appendix 4.9-9.

Jackson County, in conjunction with the Air Quality Advisory Committee, meets the lead agency requirement of the Clean Air Act for air quality transportation planning.

4.9.2.2 Interagency Coordination

Interagency coordination between Jackson County, the Oregon Department of Transportation and the Oregon Department of Environmental Quality is discussed in subsections 4.9.2.2.1 - 4.9.2.2.5 of this section.

4.9.2.2.1 The Medford-Ashland Air Quality Maintenance Area Air Quality Work Plan

The work plan outlines the overall transportation planning program conducted by the lead agency, Department of Environmental Quality and the Oregon Department of Transportation during 1978. It projects the air quality planning activities from January 1, 1979 through June 30, 1982. The work plan may be found in Appendix 4.9-1.

The roles and responsibilities of each agency, excerpted from the work plan, are shown in Table 4.9.2-1.

Table 4.9.2-1

Jackson County and DEQ Program Roles/Responsibilities

Role/Responsibility	Agency
1. Lead agency for air quality planning; program management	Jackson County
2. Air Quality Advisory Committee support	Jackson County/DEQ
3. Mobile source emission estimates	ODOT/Jackson County
4. Stationary source emission estimates	DEQ
5. Air quality analysis	DEQ
6. Technical analysis and evaluation of control strategies	
a. Mobile	Jackson County
b. Stationary	DEQ
7. Implementing regulations and schedules	
a. Mobile	Jackson County
b. Stationary	DEQ
8. Preparing mobile source control strategies	Jackson County
9. Preparing stationary source control strategies	DEQ
10. State Implementation Plan revision hearing	DEQ
11. Hearing and adoption	DEQ/EQC

4.9.2.2.2. Interagency agreements

Jackson County has entered into an agreement with the Oregon Department of Environmental Quality for the conduct of specific air quality activities. This agreement is in Appendix 4.9-2.

4.9.2.2.3 Technical/Policy Direction

Policy direction for conducting the transportation planning program is provided by the Jackson County Board of Commissioners. The transportation planning program itself is also conducted by Jackson County. The technical aspects of transportation work are performed by Jackson County, Department of Environmental Quality, and Oregon Department of Transportation.

4.9.2.2.4 Elected Official Involvement

Adoption of each control measure, in a legally enforceable manner, will be by the governmental entity responsible for implementing the respective measure.

4.9.2.2.5 A-95 Review

This control strategy is subject to A-95 review. A summary of comments is in Appendix 4.9-11 and were submitted to Environmental Protection Agency.

4.9.2.3 Citizen Participation

4.9.2.3.1 Citizen Involvement

Citizen involvement through 1978 was provided through the Air Quality Advisory Committee. See Appendix 4.9-10. Their accomplishments include extensive public education through the news media, recommendations regarding a particulate control strategy and emergency action plan and a preliminary analysis of candidate reasonably available control measures. It is projected that Jackson County will have special advisory committees, each analyzing an individual candidate measure. There will be additional opportunity for citizen involvement during the public hearing process for adoption of the control strategy.

Appendix 4.9-3 contains the hearing notice and paid advertisements pertaining to the control strategy.

4.9.2.3.2 Public Hearing

A public hearing on the control strategy was conducted May 3, 1979. A summary of testimony is in Appendix 4.9-8 and was submitted to Environmental Protection Agency.

4.9.3 EMISSION INVENTORY

4.9.3.1 Emission Inventory

The calendar years 1977, 1982, and 1987 emission inventory are summarized by source category in Table 4.9.3-1. A detailed emission inventory is contained in Appendix 4.9-4. The base or design year is 1977 which is consistent with the air quality base year. Totals have been rounded to the nearest hundred consistent with the precision of the available emission factors.

Table 4.9.3-1

Medford-Ashland AQMA CO Inventory, Tons/Year (TPY)

Source	1977, TPY	1982, TPY	1987, TPY
Industrial Process	1800	1800	1800
Space Heating	5500	6300	7000
Motor Vehicles	49,600	43,100	38,900
Solid Waste Disposal	1400	1500	1500
Miscellaneous	1200	1200	1200
Total	59,500	53,900	50,400

4.9.3.1.1 Industrial Sources

Environmental Protection Agency emission factors were used for estimating industrial source emissions. Industrial sources including sources outside the non-attainment area are about 3 percent of the total emissions. There are no industrial sources which have a potential to emit more than 100 tons per year carbon monoxide.

4.9.3.1.2 Motor Vehicles

Carbon monoxide emissions were estimated from Environmental Protection Agency emission factors in conjunction with the computer model "SAPOLLUT". The computer modeling was performed by the Oregon Department of Transportation. SAPOLLUT calculates overall carbon monoxide emissions by multiplying vehicle emissions (taking into account the makeup of the vehicle population and speed) by the vehicle miles traveled for each link of the major street network. Individual links that potentially exceed the carbon monoxide standard are determined by comparing future traffic projections to a calculated maximum capacity with respect to carbon monoxide air quality. If the future traffic is greater than the calculated capacity then that link is identified as potentially exceeding the carbon monoxide standard. A detailed explanation of the methodology is contained in Appendix 4.9-5.

4.9.3.1.3 Other Sources

Space heating, solid waste disposal, and miscellaneous emissions of carbon monoxide were estimated by emission factors. Source data was obtained from the Medford-Ashland AQMA Analysis by Seton, Johnson and Odell, October, 1976, a copy of which is on file with Department of Environmental Quality and Environmental Protection Agency.

4.9.3.2 Projected Emission Inventory for 1982 and 1987

4.9.3.2.1 Growth Rates and Projections

A very small growth in industrial emissions is projected due primarily to conversion of gas or steam-heated veneer dryers to wood-fired systems. Growth from remaining emission sources is based upon growth rates contained in the Medford-Ashland AQMA Analysis by Seton, Johnson and Odell, October 1976.

Vehicle miles traveled and carbon monoxide emissions for 1982 and 1987 were based on future population and land use allocations used in the proposed 1978 Jackson County Comprehensive Plan. Growth factors are consistent with related planning programs, including the 208 Water Quality Planning Program.

Between 1977 and 1982, the vehicle miles traveled is projected to increase by 20 percent from 1,728,875 miles to 2,069,686 miles. Even with this increase, the areawide carbon monoxide

emissions are projected to decrease by 9 percent from the 59,500 tons/year to 53,900 tons/year. This decrease is due solely to the impact of the Federal Motor Vehicle Control Program. The area projected to potentially violate carbon monoxide standards by 1982 is shown in Figure 4.9.3-1. About 16 miles of roadway are involved.

Between 1977 and 1987, the vehicle miles traveled is projected to increase by 40 percent from 1,728,875 miles to 2,427,711 miles per year. Even with the VMT increase the areawide carbon monoxide emissions are projected to decrease by 15 percent from 59,500 tons/year to 50,400 tons/year. The area projected to potentially violate carbon monoxide standards by 1987 is shown in Figure 4.9.3-2. About 12 miles of roadway are involved.

4.9.3.2.2 Emission reduction credits

Federal Motor Vehicle Control Program. The projected decrease in emissions from 1977 by 1982 and 1987 is due solely to the Federal Motor Vehicle Control Program. These reductions occur as older vehicles are replaced with newer less polluting vehicles.

Credit for other measures. The Rogue Valley Transit District program currently is projected as having a negligible effect on improving carbon monoxide air quality. See Appendix 4.9-7.

FIGURE 4.9.3-1

Roadway With Potential
for
CO Violations by 1982

Medford, OR

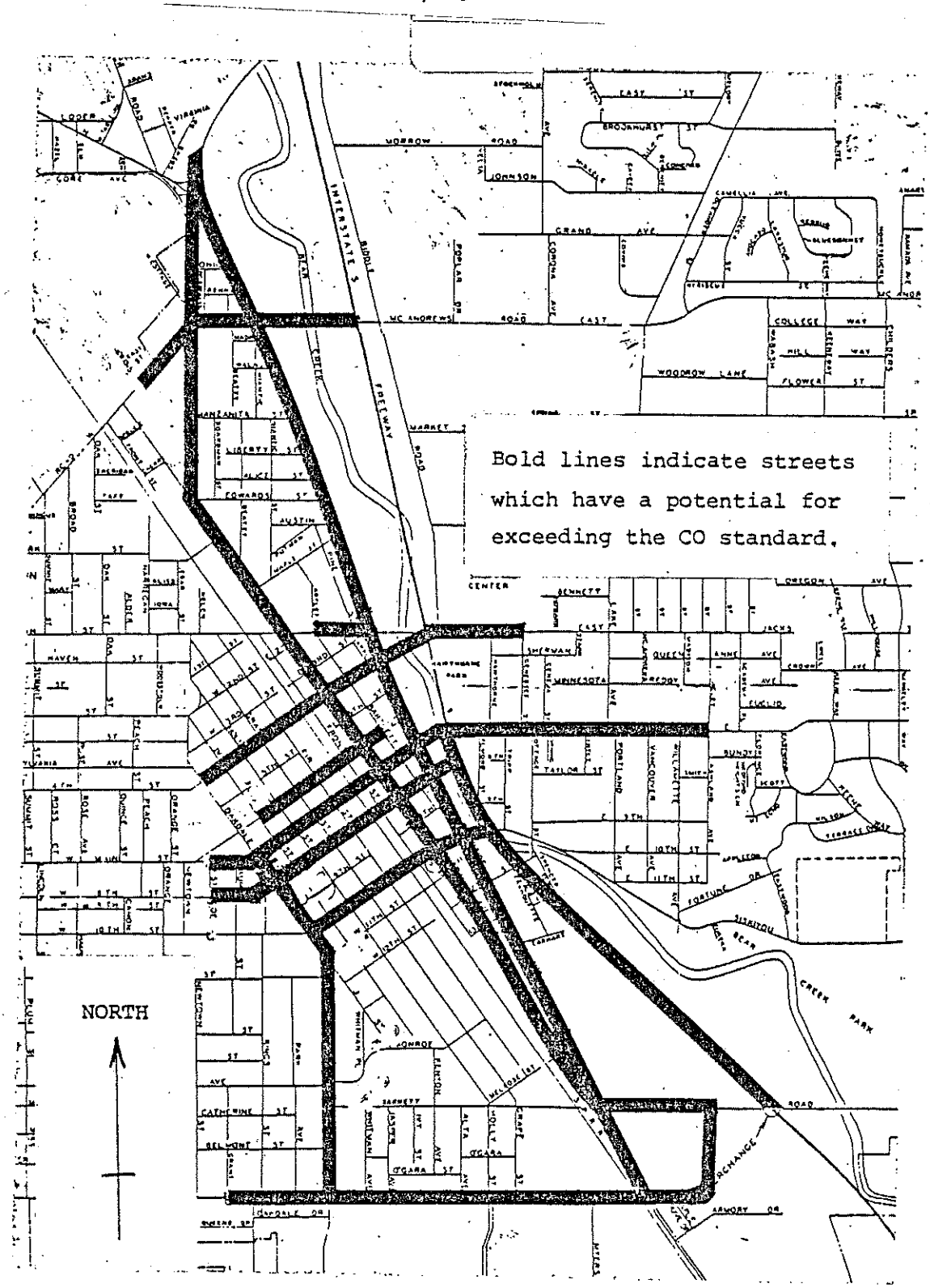
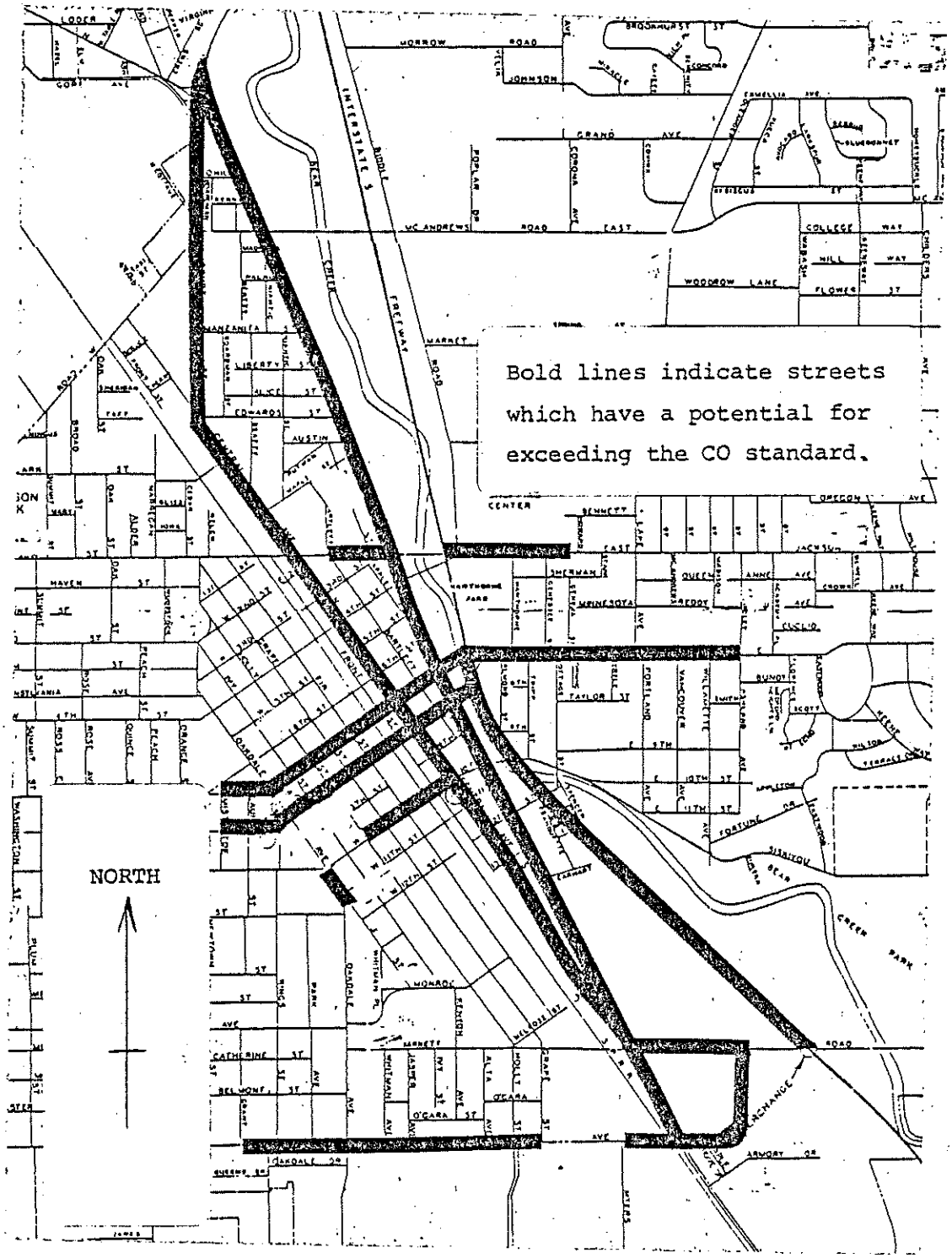


FIGURE 4.9.3-2

Roadway With Potential
for
CO Violations by 1987

Medford, OR



Should grants or funds become available, service will be established, expanded and improved as expeditiously as practicable.

4.9.4 CONTROL STRATEGY

4.9.4.1 Emission Reduction Necessary for Attainment

In 1977 approximately 20 miles of roadway were calculated as violating the carbon monoxide standard. There are about 16 miles of roadway where the carbon monoxide standard might be violated by 1982 and 12 miles by 1987. All links showing potential violation are in and near the Medford Central Business District. Violations of the standard could be eliminated by 1982 if an estimated 72 percent decrease in carbon monoxide emissions were achieved. This is based on the worst case receptor. See Figure 4.9.4-1.

4.9.4.2 Emission Reduction Strategies Already Implemented

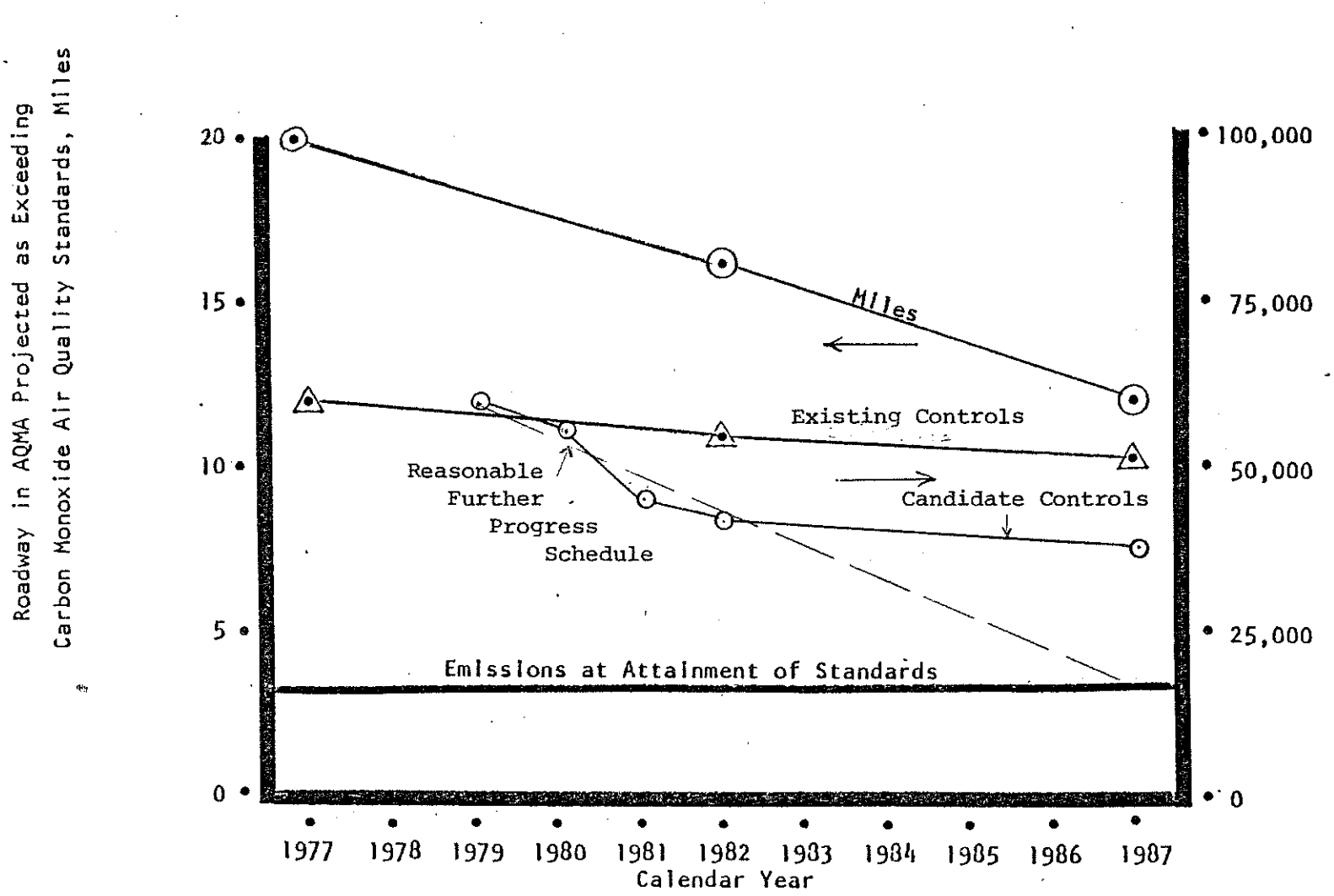
The Federal Motor Vehicle Control Program is the only measure currently implemented which reduces emissions and enhances carbon monoxide air quality. The federal motor vehicle control program alone is inadequate to attain standards.

4.9.4.3 Commitment to Conduct Analysis of Control Strategies

The Air Quality Work Program details the specific work activities to be undertaken through July 1, 1982. Reasonably available control measures will be evaluated by July 30, 1980 by the Lead Agency. The Governor will submit a control strategy no later than June 30, 1982

FIGURE 4.9.4-1

MEDFORD-ASHLAND AQMA CARBON MONOXIDE EMISSIONS
AND AIR QUALITY TRENDS THROUGH 1987



that contains legally enforceable measures sufficient to attain the carbon monoxide standard as expeditiously as practicable but no later than December 31, 1987.

Because of uncertainties associated with the attainment strategy development, it is premature to establish at this time a reasonable further progress schedule more definite than attainment as expeditiously as practicable but no later than December 31, 1987.

The reasonably available control measures which may be appropriate according to a preliminary analysis by the lead agency are listed in Table 4.9.4-1. This list is based only on preliminary analysis by the Air Quality Advisory Committee. Further study will be required of these and other measures to determine their usefulness. Analysis of measures to reduce carbon monoxide will be coordinated with candidate control measures for total suspended particulates and ozone where appropriate.

Table 4.9.4-1
Carbon Monoxide Candidate Control Measures

Measure	Possible Emission Reduction	Earliest Effective Date
Inspection/Maintenance	9900 tons per year	1/1/81
Improved Public Transit	Wide range (300 tons per year)	1/1/80
Carpool/Vanpool	700 tons per year	1/1/81
Parking/Traffic Circulation Plan	wide range (300 tons per year)	1/1/82 1/1/82
Improved Bicycle and Transportation Networks	700 tons per year	1/1/82
Disincentives to private auto use	wide range (100 tons per year)	1/1/82
Ban Open burning	1400 tons per year	1/1/81

4.9.4.4 Growth Management Plan

Major new or modified stationary sources must comply with the New Source Review rule including obtaining emission offsets. The New Source Review rule is discussed in Section 7.9. Emission offsets are required until a control strategy that provides a growth increment is developed by the lead agency and approved by the Environmental Protection Agency. It is anticipated the growth management plan will not significantly affect carbon monoxide air quality.

4.9.4.5 Indirect Source Rule

The Indirect Source Rule (OAR 340-20-100 through 135) is a program that reduces motor vehicle emissions from an indirect source. It is not a reasonably available control measure as defined in Section 108 of the Clean Air Act but rather a regulatory review mechanism to assess the impacts from motor vehicles. The rule reduces emissions only from new indirect sources. Existing indirect sources may be reduced through implementation of a parking and traffic circulation plan or other reasonably available control measures.

4.9.5 EXTENSION REQUEST

As provided by Section 172(a)(2) of the Clean Air Act, an extension of the December 31, 1982 attainment date is requested. Attainment of the eight-hour standard will be as expeditiously as practicable but no later than December 31, 1987.

4.9.5.1 Justification

4.9.5.1.1 Clean Air Act

Section 172(a)(2) of the Clean Air Act provides an extension of time to attain national standards. It must be demonstrated that reasonably available control measures cannot be implemented to attain national standards by December 31, 1982. Attainment of the national standard must be as expeditiously as practicable but no later than December 31, 1987.

4.9.5.1.2 Inadequate Existing Control Measures

The analysis described in Section 4.9.4 indicates that the eight-hour carbon monoxide standard will not be attained by December 31, 1982 by solely relying on the Federal Motor Vehicle Control Program.

4.9.5.1.3 Need for Extension

An extension of the attainment date is necessary as the time remaining is not adequate to analyze and implement additional reasonable control measures to attain the standard before December 31, 1982.

4.9.5.1.4 Analysis of Candidate Control Measures

An analysis of candidate control measures will be completed by July 30, 1980 and an adopted control strategy will be submitted to Environmental Protection Agency no later than July 1, 1982 that will demonstrate attainment as expeditiously as practicable but not later than December 31, 1987.

4.9.6 PROVISIONS FOR PROGRESS REPORTING

4.9.6.1 Annual Report

Department of Environmental Quality will submit to Environmental Protection Agency a report containing the following information:

a. Progress towards adoption of legally enforceable reasonably available control measures;
b. Identification of the growth of major new or modified existing sources, minor (less than 100 tons per year) new sources, and mobile sources;
c. Reduction in emissions for existing sources;
d. Update of emission inventory; and
e. Conclusions of studies to quantify the air quality problem.

The Department of Environmental Quality will submit this report by July 1 for the preceding calendar year beginning July 1, 1980.

4.9.6.2 Lead Agency Report

The quarterly planning process report planned by Jackson County will serve as the primary method for reporting planning activities to Environmental Protection Agency and Department of Environmental Quality.

4.9.7 RESOURCE COMMITMENT

4.9.7.1 Jackson County

The Jackson County Board of Commissioners completed tasks from July 1, 1978 to June 30, 1979 in their capacity as lead agency for the transportation planning process for carbon monoxide air quality. Table 4.9.7-1 presents the resources committed to developing and submitting to Environmental Protection Agency a carbon monoxide attainment strategy.

Table 4.9.7-1

Lead Agency Projected Resource Commitment

Time Period	Full Time Equivalent, FTE
July 1, 1978 - June 30, 1979	0.5 FTE
July 1, 1979 - June 30, 1980	1.8
July 1, 1980 - June 30, 1981	1.9 (estimated)
July 1, 1981 - June 30, 1982	1.9 (estimated)
July 1, 1982 - June 30, 1983	1.9 (estimated)

The resource commitment includes supervision, planning, and support services. Estimated resources are projected through the submittal of an attainment strategy to Environmental Protection Agency. Resources needed to implement the strategy will be committed at that time.

4.9.7.2 Department of Environmental Quality

Department of Environmental Quality has a biennial budget beginning July 1 of odd numbered years. Table 4.9.7-2 presents the resources committed to fulfill the tasks leading to submittal to Environmental Protection Agency of the carbon monoxide attainment strategy by July 1, 1982.

Table 4.9.7-2

Department of Environmental Quality Resource Projected Commitment

	79-81 Biennium, Full Time Equivalent	81-83 Biennium, Full Time Equivalent
Headquarters Staff		
- Administration	0.2	0.2
- Planning & Development	1.7	1.0
- Limited Duration	0.8	-
Region Staff		
- Administration	0.1	0.1
- Monitoring/Analysis	0.4	0.4
Total	3.2	1.7

Administration includes supervision and support services. Limited duration resources includes work study, graphic artist, public

affairs, hearings officer and other short term involvement activities. Estimated resources are projected through submittal of an attainment strategy to Environmental Protection Agency. Resources needed to implement the strategy will be committed at that time.

4.9.7.3 Oregon Department of Transportation

Oregon Department of Transportation will perform on a contractual as-needed basis being reimbursed for resources that are used from lead agency funds.

AQ 194, 2

5.9 MEDFORD-ASHLAND AQMA NEW SOURCE REVIEW - CARBON MONOXIDE

Rules OAR 340-20-190 to -195 give the Department expanded authority and requirements regarding Special Permit Requirements for Sources Locating In or Adjacent to Nonattainment Areas.

The Clean Air Act amendments of 1977, Section 171, 172, 173, require that the State Implementation Plan contain an adequate permit program as part of any attainment plan. The basic requirement that must be contained in the permit program is that major new or modified sources in nonattainment areas having a potential to emit more than 100 tons/year of a specific air pollutant must meet the following:

1. Lowest achievable emission rate.
2. Demonstrate that all other facilities under the authority of the permit applicant are in compliance or on a compliance schedule to meet State Rules.
3. Demonstrate that a sufficient growth increment is available in the attainment plan or provide offset.
4. Provide for an "Alternative Site Analysis" as defined in the rule.

In addition, the Department added permit requirements for sources that may locate adjacent to nonattainment areas, and has clarified authority to set plant site emission limits commensurate with airshed carrying capacity. The rule, OAR 340-20-190 to -197, is in Section 3.

DWB:kmm

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7.9 MEDFORD-ASHLAND AQMA CARBON MONOXIDE MONITORING PROGRAM

Carbon monoxide air quality surveillance began in 1976 at a site located in the Medford Central Business District. The site conforms with federal siting criteria published in the August 7, 1978 Federal Register (Vol. 43, No. 152). The monitoring methods, quality assurance and reporting practices also meet federal requirements (EPA August 2, 1978 letter to DEQ).

Table 7.9-1 lists the location of the site shown in Figure 7.8-1

Table 7.9-1

Medford-Ashland Air Quality Maintenance Area
Carbon Monoxide Air Quality Surveillance

Location	Site No.	Date Established	Land Use	Designation
10 North Central Medford	1520119	Nov. 1976	Commercial	SLAMS(1)

(1) State and Local Air Monitoring Site

PROFESSIONAL SERVICES CONTRACT

This contract is between the Oregon Department of Environmental Quality, hereinafter called Department, and Jackson County Board of Commissioners, hereinafter called Contractor.

Whereas, the Department requires the professional services of a Contractor who has the expertise and special knowledge of regional transportation planning and can provide the services set forth in this contract, the Department and Contractor agree as follows:

1. Contractor Status

Contractor is not a contributing member of the Public Employes' Retirement System and will be responsible for any Federal or State taxes applicable to this payment. Contractor will not be eligible for any benefits from these contract payments of Federal Social Security, State Workers' Compensation, unemployment insurance, or the Public Employes' Retirement System, except as a self-employed individual.

2. Statement of Work

The Contractor agrees to accomplish the following work under this contract during the period of July 1, 1978, through December 31, 1978, by the dates as indicated:

Task Period (July 1, 1978, to September 30, 1978)

a. Establish procedures to identify and analyze committed and candidate transportation control measures by September 30, 1978.

b. Perform an ambient PO_X in the AQMA (and outside to determine background and/or PO_X influx from outside the AQMA) during periods of peak PO_X formation totaling a minimum of 20 hours and provide the Department with verified data by September 30, 1978. It is recognized the survey's success depends upon suitable meterological conditions occurring. The Department is not adverse to postponing the survey, if necessary, until summer, 1979, so as to conduct the survey during peak PO_X formation.

c. Identify the scope of a survey to measure carbon monoxide in Medford and Ashland during December 1978. The prime purpose of the survey will be to determine ground level carbon monoxide concentration and develop isopleths of equal concentration. December is considered to be the peak CO period due to Christmas activity and poor dispersion.

d. Submit monthly progress reports on AQMA activity by the 15th of each month for the preceding calendar month.

e. Coordinate SIP revision activity with the Medford-Ashland AQMA Advisory Committee, Oregon Department of Transportation (ODOT), Oregon Department of Environmental Quality (DEQ), local governments, associations of local governments, private industry, and other interested parties (activity is of an ongoing nature).

Task Period (October 1, 1978, to December 31, 1978)

f. Propose and schedule candidate Transportation Control Measures (TCM) for further analysis by December 31, 1978.

g. Determine impact (social, health, welfare, institutional, legal, economic, fiscal, energy, environment, and policy implications) of required mobile source control measures by December 31, 1978.

h. Design progress reporting mechanism by October 30, 1978 (interdependency on concurrent DEQ development is recognized).

i. Revise permit process to include a cost-benefit review analysis by December 31, 1978 (interdependency on concurrent DEQ development is recognized).

j. Prepare Transportation Control Plan (TCP) SIP revision which meets EPA requirements and includes attainment analysis and finalized work program for Phase 2 and 3 and submit to DEQ by December 31, 1978.

k. Perform CO survey as developed in Item c above by December 31, 1978.

3. Consideration

a. The Department agrees to pay Contractor the sum of $10,000 for accomplishment of the statement of work. This payment shall be the sole monetary obligation of the Department.

b. One third (1/3) of the monetary consideration specified in 3a above shall be paid to the Contractor within 14 days of approval of this contract by all parties. One-half (1/2) of the monetary consideration specified in 3a above shall be paid to the Contractor within 14 days after the submission and Department approval of all items listed to be completed in the period July 1, 1978, to September 30, 1978. The remaining one-sixth (1/6) of the monetary consideration listed in 3a above shall be paid to the Contractor upon submission and Department approval of all items listed in Section 2 of this contract.

4. Government Employment Status

Contractor certifies that he/she is not currently employed by the Federal Government or the State of Oregon.

5. Subcontracts

Contractor shall not enter into any subcontracts for any work scheduled under this contract without obtaining prior written approval from the Department.

6. Dual Payment

Contractor shall not be compensated for work performed under this contract from any other department of the State of Oregon.

7. Funds Available and Authorized

Department certifies at the time the contract is written that sufficient funds are available and authorized for expenditure to finance costs of this contract within the Department's current appropriation/limitation, Oregon Laws 1977, Chapter 704, Section 3(1) Federal Funds, Air Quality Program, as amended by the Emergency Board meeting of June 16, 1978.

8. Termination

This contract may be terminated by mutual consent of both parties, or by either party upon 30 days' notice, in writing, and delivered by certified mail or in person.

The Department may terminate this contract effective upon delivery of written notice to the Contractor, or at such later date as may be established by the Department, under any of the following conditions:

a. If Department funding from Federal, State, or other sources is not obtained and continued at levels sufficient to allow for purchase of the indicated quantity of services. When possible, and when agreed upon, the contract may be modified to accommodate a reduction in funds.

b. If Federal or State regulations or guidelines are modified or changed in such a way that the services are no longer allowable or appropriate for purchase under this contract.

c. If any license or certificate required by law or regulation to be held by the Contractor to provide the services required by this contract is for any reason denied, revoked, or not renewed.

Any such termination of this contract shall be without prejudice to any obligations or liabilities of either party already accrued prior to such termination.

The Department by written notice of default (including breach of contract) to the Contractor may terminate the whole or any part of this agreement:

a. If the Contractor fails to provide services called for by this contract within the time specified herein or any extension thereof; or

b. If the contractor fails to perform any of the other provisions of this contract, or so fails to pursue the work as to endanger performance of this contract in accordance with its terms, and after receipt of written notice from the Department, fails to correct such failures within 10 days or such longer period as the Department may authorize.

The rights and remedies of the Department provided in the above clause related to defaults (including breach of contract) by the Contractor shall not be exclusive and are in addition to any other rights and remedies provided by law or under this contract.

9. Access to Records

Department, the Secretary of State's Office of the State of Oregon, the Federal Government, and their duly authorized representatives shall have access to the books, documents, papers, and records of the Contractor which are directly pertinent to the specific contract for the purpose of making audit, examination, excerpts, and transcripts.

10. Nondiscrimination

Contractor agrees to comply with the requirements of the Civil Rights Act of 1964 and the Vocational Rehabilitation Act of 1973.

11. Executive Department Approval

Executive Department approval is required before any work may begin under this contract.

12. Contractor Data

Jackson County Board of Commissioners
Jackson County Comprehensive Planning
107 East Main, Suite 12
Medford, Oregon 97501

Contractor's Code - Y9995

13. Department Address

Department of Environmental Quality
522 S. W. Fifth Avenue
P. O. Box 1760
Portland, Oregon 97207

14. Signatures

_____ Contractor	7/5/78 Date
_____ Department Project Officer	10-17-78 Date
_____ Department Contract Officer	10/23/78 Date
_____ Department Director	10/23/78 Date
_____ Executive Department Director or his Delegate	10-30-78 Date

APPENDIX 4.8-2

ROBERT W. STRAUB
GOVERNOR

Department of Transportation

TRANSPORTATION BUILDING, SALEM, OREGON 97310

July 21, 1978

Mr. Carl Simons, Coordinator
Air Quality Maintenance Planning
Department of Environmental Quality
522 S.W. 5th Avenue
Portland, OR 97201

Dear Carl:

SUBJECT: Emission Factor Input Parameters

Enclosed for your review and comment is a table showing proposed emission factor input parameters and a brief explanation for the proposed figures.

Sincerely,

Mel Holmes
Transportation Analyst

MH:dpy

Attachments

cc: Ollie Snowden - w/atts.
Richard Knowles "
Kerry Lay "

OREGON DEPARTMENT OF TRANSPORTATION
Office of Project Management
Urban Studies Unit

CALCULATION OF POLLUTANT EMISSION FACTORS FOR AIR QUALITY ANALYSIS OF THE SALEM, EUGENE AND MEDFORD AREAS

Background

The Salem, Eugene and Medford areas are presently designated by the Department of Environmental Quality (DEQ) and the Federal Environmental Protection Agency (EPA) to be areas that do not presently meet National Air Quality Standards. These nonattainment areas must demonstrate to EPA that they will be in compliance with air quality standards by December 31, 1983 or by 1987 for oxidants (Ox) and carbon monoxide (CO) if an extension is granted. Therefore, a plan must be developed to bring these areas into compliance with National Air Quality Standards by the above dates, or face substantial federal sanctions.

A primary task in assisting the local lead agencies in their developing a plan to bring each area into an attainment status is the defining of basic input data to be used in calculating emission factors. A cooperative effort by the local agencies, DEQ and the Oregon Department of Transportation (ODOT) is being made to establish factual and supportable emission factor input data.

Basic Emission Factor Input Data

The basic emission factor input data under consideration includes the following:

1) Percent Cold Start - vehicles being started following a specified engine-off period.

2) Percent Hot Start - vehicles being started in a "hot" or normal engine operating temperature.

3) Percent Trucks - average number of trucks found in normal weekday traffic.

4) Percent Motorcycles - average number of cycles found in normal weekday traffic.

5) Percent Light Duty Trucks - number of light duty trucks (i.e. pickups) that would be found in normal weekday traffic.

6) Ambient (atmospheric) Temperature - average "worst case" temperature expected for the study area.

7) Air Conditioning Factor - an adjustment factor to account for the effects of air conditioning on emissions for light duty vehicles (LDV) and light duty trucks (LDT).

8) Vehicle Loading Correction Factor - an adjustment factor to account for above normal passenger/cargo loading in LDV and LDT.

9) Trailer Towing Correction Factor - an adjustment factor to account for the effects of trailer towing on emissions for LDV and LDT.

10) Humidity Correction Factor - an adjustment factor to correct Oxides of nitrogen (NOx) emissions under different conditions.

The proposed values for hot start, cold start, percent trucks, percent motorcycles, percent light duty trucks and atmospheric temperature are summerized in the following table.

	%Hot Start	%Cold Start	%LDT	Atmos. Temp.	Percent Trucks	Percent Cycles
Salem	38	34	23	40	3	1
Eugene	33	31	27	40	3	1
Medford	38	33	27	40	3	1

Except for Medford, the determination of hot and cold start percentages were determined from studies done by the Urban Studies

Unit in 1975. After consultation with local planners and a review of the 1965 Bear Creek Area Transportation Study, the Urban Studies Unit feels that the proposed figures represent realistic percentages. Unfortunately, time does not permit this office to perform a complete Medford hot start-cold start study similar to what was done for Salem and Eugene.

Truck and motorcycle percentages were determined from manual count information at various major arterial intersections within each study area. Based on past experience, the proposed percentages are believed to be representative of conditions in Salem, Eugene and Medford.

The percentage of light duty trucks was determined from Department of Motor Vehicles (DMV) registration data. The DMV information provided vehicle registration on a county-by-county basis for the 12 model years from 1963 through 1974.

The proposed atmospheric (ambient) temperature is the same for Salem, Eugene and Medford. For the purposes of air quality analysis, the proposed ambient temperature is an "average worst case" temperature for the three study areas. The temperatures used for Salem and Eugene are the same as what has been used in the past. The propose ambient temperature for Medford is based on a ten-year annual minimum temperature 1/ at the Medford Airport.

Since data is not readily available, the effects of vehicle loading, trailer towing and air conditioning are assumed to be negligible. For any needed remaining basic emission factor input data,

1/ Climatological Handbook, Columbia Basin States, Temperature, Volume 1, Part A, Pacific Northwest River Basins, Commission, June, 1969.

national averaged data will be used.

Mel Holmes
July 21, 1978

Documentation of Federal Ozone Standard Attainment Projection by December 31, 1982 in the Medford-Ashland AQMA

Methodology

The reduction of VOC needed to improve ozone air quality to attain National Ambient Air Quality Standards (NAAQS) was determined by application of an EPA developed technique called the Emperical Kinetic Modeling Approach or EKMA. The technique uses a graphical representation called an ozone isopleth to express the relationship between maximum afternoon ozone and the morning level of precursors of VOC and NO_x. The isopleths are developed from a model of the chemical kinetics of the reaction. Kinetics is the mathematical simulation of the variables influencing the reaction. For ozone these variables are sunlight intensity, atmospheric dilution, and diurnal emission patterns. The standard isopleth which results from the chemical kinetics model is tailored to a particular region of interest by correcting for transported and background ozone.

Briefly, the standard isopleth method uses a set of ozone isopleths to express maximum afternoon ozone (O_3) as a function of morning levels of nonmethane hydrocarbons (NMHC) and oxides of nitrogen (NO_x). The isopleths are the result of a chemical kinetics model which incorporates a standard set of assumptions about sunlight intensity, atmospheric dilution, and diurnal emission patterns.

The EKMA method is described in detail in the EPA documents EPA-450/2-77-021a, and Guideline for the Interpretation of Ozone Air Quality Standards dated January, 1979. To estimate control requirements, it is necessary to know the design value, NMHC/NO_x ratio, present and future transport estimates, and the additivity of transported ozone.

Design Value

The design value was chosen in accordance with the criteria published in the January, 1979 guidance. The design value is the second highest day. This value is 0.15 ppm which occurred September 30, 1976.

NMHC/NO_x Ratio

The EPA maintains that the NMHC/NO_x ratio occurring between 5-8 a.m. LST within 3-4km from the central business district is characteristic of the ratio which would prevail during the hours in which ozone is formed. Since individual NMHC measurements may be subject to significant error, the EPA recommends the use of the average 6-9 a.m. LDT NMHC/NO_x ratio observed on the days having the five highest ozone values.

Medford has had a NMHC and NO_x monitor operating since January 1978. The

data from the summer of 1978 was used to determine the NMHC/NO_X ratio of 3.4/1 according to the EPA criteria stated above. It will be assumed that the 1976 ratio was similar to the 1978 ratio.

Transport

This portion of the analysis is hampered by the lack of upwind data during periods when the Bear Creek monitor was at or near the design level. Transported ozone is the upwind concentration between 10 a.m. - 12 noon. Gold Hill is the upwind receptor. The same 5 days used in calculating the NMHC/NO_X ratio (ie 1978 data) were used to find the transport of 0.06 ppm O_3. NOTE: Tolo in 1977 was near 0.06 ppm on high days but the data is incomplete. Additivity is 0.5 as determined using EPA guidance. DEQ is monitoring transport upwind during ozone seasons.

design value (1977) = 0.15 - 0.5 (0.06)
= 0.12 ppm O_3

design value (1983) = 0.12 - 0.5 (0.06)
= 0.09 ppm O_3

Level of VOC Reduction Needed for Attainment

The amount of control necessary is estimated by entering the standard isopleth diagram at the intersection of the 1977 (O_3) design value and the 1978 NMHC/NO_X line (Figure 1). The NMHC concentration directly below this intersection (HC_1) is noted = 0.26. A horizontal line is then drawn to the intersection of the 1983 isopleth. The increase or decrease of NO_X expected to occur by 1983 is accounted for by following the 0.09 isopleth to where it intersects a line drawn horizontally through the projected NO_X value. The NO_X change from 1977 is negligible. The NMHC concentration directly below this point (HC_2) is noted = 0.225. The amount of NMHC reduction necessary by 1983 is calculated using the formula:

$$\frac{HC_1 - HC_2}{HC_1} = \text{Needed Reduction}$$

$$\left(\frac{0.26 - 0.225}{0.26}\right)(100) = 13\%$$

The VOC emission inventory for 1977 and 1982 shows that VOC will be reduced 17% by 1982 through the VOC rules and the federal new car emission program. This is the basis for projecting attainment. Continued reductions from the federal motor vehicle emission control program provides a growth margin by 1987 of about 1200 tons of VOC.

DWB:kmm
A6142.A

EKMA: Medford-Ashland AQMA

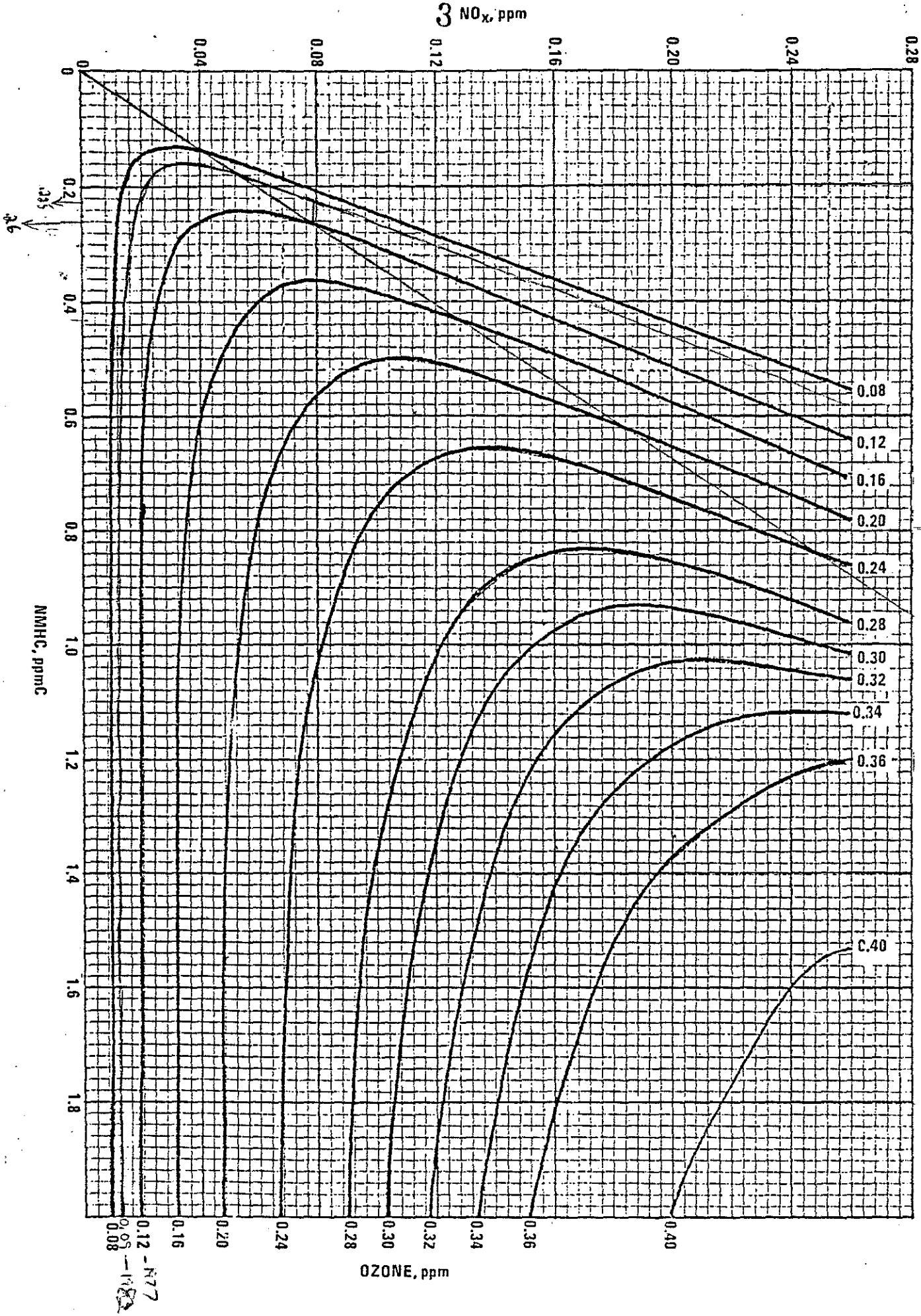

FIGURE 1 EKMA: Medford-Ashland AQMA

ROBERT W STRAUB
GOVERNOR

Department of Environmental Quality

522 SOUTHWEST 5TH AVE. PORTLAND, OREGON

MAILING ADDRESS: P.O. BOX 1760, PORTLAND, OREGON 97207

Prepared: March 8, 1979
Hearing Date: May 3, 1979

NOTICE OF PUBLIC HEARING

A CHANCE TO BE HEARD ABOUT

Revision of the State Implementation Plan Involving Carbon Monoxide and Ozone Pollutants in the Medford-Ashland Air Quality Maintenance Area.

The Department of Environmental Quality is proposing to revise the Oregon State Implementation Plan (SIP) regarding carbon monoxide and ozone pollutants in the Medford-Ashland Air Quality Maintenance Area (AQMA). The proposed revision is necessary to meet certain requirements of the Federal Clean Air Act. The proposed SIP revision will be submitted to the Environmental Protection Agency (EPA) by July 1, 1979. A hearing on this matter will be held in Medford May 3, 1979 at the Jackson County Courthouse Auditorium at 9 a.m.

WHAT IS THE DEQ PROPOSING?

Interested parties should request a copy of the proposed revision. The major aspects of the proposed revision are:

** The State is documenting compliance with the requirements of the Federal Clean Air Act regarding SIP revision in non-attainment areas such as the Medford-Ashland AQMA.

** An analysis of existing and projected carbon monoxide air quality which indicates meeting federal air quality standards is unlikely in the Medford-Ashland AQMA without instituting further emission reduction strategies.

** A commitment to identify and analyze candidate carbon monoxide emission reduction strategies by July, 1980. Selected strategies will be made part of the SIP by July, 1982.

** A request that EPA grant an extension from December 31, 1982 to December 31, 1987 to meet federal air quality standards for carbon monoxide.

** An analysis of existing and projected ozone air quality which indicates the AQMA will be in attainment of the federal air quality standards by December 31, 1982 without developing and

implementing further transportation related measures. By 1987 the margin of attainment will be approximately 500 tons of volatile organic compound emissions.

WHO IS AFFECTED BY THIS INFORMATION:

This SIP revision affects the following activities which emit Volatile Organic Compounds (VOC): a) new sources which have potential emissions more than 100 tons per year VOC; b) underground tank (over 8000 gallon capacity) filling at gasoline stations; c) the use of cutback asphalt; d) petroleum liquid storage; e) surface coating in manufacturing; f) degreasing operations; g) Asphaltic and Coar Tar Pitch Used for Roofing Coating; and h) bulk gasoline plants. Individuals who are exposed to carbon monoxide and ozone in areas where the air quality standards are exceeded.

HOW TO PROVIDE YOUR INFORMATION:

Written comments should be sent to the Department of Environmental Quality, Dennis Belsky, Air Quality Division, P.O. Box 1760, Portland, Oregon 97207, and should be received by May 3, 1979. The hearing record closes 5 p.m. May 3, 1979.

Oral and written comments may be offered at the following public hearing:

City	Time	Date	Location
Medford	9 a.m.	May 3, 1979	Auditorium, Jackson County Courthouse 10 South Oakdale

WHERE TO OBTAIN ADDITIONAL INFORMATION:

Copies of the proposed SIP revisions may be obtained after March 30, 1979 from:

Dennis Belsky
DEQ Air Quality Division
P.O. Box 1760
Portland, Oregon 97207
(503) 229-6446

LEGAL REFERENCES FOR THIS PROPOSAL:

This SIP revision includes additional regulations in OAR 340-22 and 340-20-190. This SIP revision is proposed under authority of ORS 468.295, ORS 468.305, and ORS 197.180.

LAND USE PLANNING CONSISTENCY:

The Department has concluded that the proposals do affect land use.

With regard to Goal 6 (air, water and land resources quality) the rules are designed to enhance and preserve air quality in the affected area and are considered consistent with the goal.

Goal 11 (public facilities and services) is deemed unaffected by the proposals.

Public comment on any land use issue involved is welcome and may be submitted in the same fashions as are indicated for testimony in this NOTICE OF PUBLIC HEARING.

It is requested that local, state, and federal agencies review the proposed action and comment on possible conflicts with their programs affecting land use and with Statewide Planning Goals within their expertise and jurisdiction.

The Department of Environmental Quality intends to ask the Department of Land Conservation and Development to mediate any apparent conflict brought to our attention by local, state or federal authorities.

FURTHER PROCEEDINGS:

After public hearing the Commission may adopt rule amendments identical to the proposed amendments, adopt modified rule amendments on the same subject matter, or decline to act. The adopted regulations may be submitted to the Environmental Protection Agency as part of the State Clean Air Act Implementation Plan. The Commission's deliberation should come in June, 1979 as part of the agenda of a special Commission meeting.

DWB:kmm

YOUR OPPORTUNITY TO COMMENT
ON PROPOSED DEQ
AIR POLLUTION EMISSION RULES FOR
MEDFORD-ASHLAND OZONE AND CARBON MONOXIDE CONTROL

The proposed revisions contain an analysis of existing and projected carbon monoxide (CO) and ozone air quality levels as well as a program for analyzing potential new CO control strategies. Projected ozone air quality indicates attainment with EPA standards by December 31, 1982 without implementing additional transportation control measures. A request for extension of the December 31, 1982 EPA CO standards attainment date is also included. The revisions would be submitted to EPA as a change to Oregon's Clean Air Act Implementation Plan. You may comment orally at:

9:00 A.M. PUBLIC HEARING MAY 3, 1979
AUDITORIUM
JACKSON COUNTY COURTHOUSE
MEDFORD, OR

Copies of the proposed rule are available for your study and comment by writing or phoning Dennis Belsky, 229-6446, DEQ Air Quality Division, P.O. Box 1760, Portland, OR 97207; or by phoning toll-free 1-800-452-7813, and asking for DEQ 229-6446

Written comments may be submitted until May 3 at the above DEQ address

MEDFORD MAIL TRIBUNE
MARCH 30, 1979

YOUR OPPORTUNITY TO COMMENT
ON PROPOSED DEQ
AIR POLLUTION EMISSION RULES FOR
MEDFORD-ASHLAND OZONE AND CARBON MONOXIDE CONTROL

The proposed revisions contain an analysis of existing and projected carbon monoxide (CO) and ozone air quality levels as well as a program for analyzing potential new CO control strategies. Projected ozone air quality indicates attainment with EPA standards by December 31, 1982 without implementing additional transportation control measures. A request for extension of the December 31, 1982 EPA CO standards attainment date is also included. The revisions would be submitted to EPA as a change to Oregon's Clean Air Act Implementation Plan. You may comment orally at:

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Written comments may be submitted until May 3 at the above DEQ address

MEDFORD MAIL TRIBUNE
APRIL 9, 1979

APPENDIX 4.8-5

Medford-Ashland Air Quality Maintenance Area

Air Quality Work Program

Agency Program Tasks and Budgets

- Phase 1 through January 1, 1979
- Phase 2 January 1, 1979 - June 30, 1980
- Phase 3 July 1, 1980 - June 30, 1982

August 3, 1978

Prepared by:
Dennis Belsky, Oregon Department of Environmental Quality
Bruce Shaw, Jackson County Comprehensive Planning
W. L. Cranford, Oregon Department of Transportation

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Appendix

I. Background

The Medford-Ashland Air Quality Maintenance Area (AQMA) is designated a nonattainment area with respect to National Ambient Air Quality Standards (NAAQS) for total suspended particulate (TSP), photochemical oxidant (PO_X), and carbon monoxide (CO). The State Implementation Plan (SIP) must be updated (required by Clean Air Act) with a revised control strategy to achieve and maintain NAAQS now being exceeded in the AQMA.

This work program describes the elements necessary for preparation of a SIP revision for CO and PO_X. A SIP revision for TSP has been prepared and is to be submitted to EPA shortly.

The Clean Air Act (CAA) additionally requires the Governor of each state to designate a lead agency to develop the control strategy impacting transportation related sources. On March 30, 1978 Governor Straub informed the EPA that Jackson County was designated as the lead agency for the preparation of the control strategy for transportation related sources. The Department of Environmental Quality is to develop the control strategy for stationary sources. Combined, the control strategy will form the SIP revision documenting the air quality plan leading to attainment of CO and PO_X NAAQS.

Funding, while from several sources, appears insufficient to accomplish tasks charged to the lead agency. If monies are received in a timely manner, it is expected that an adequate SIP revision can be developed on schedule to meet the deadline of 1-1-79 imposed by the CAA.

II. Program Objectives

The air quality work program has the following objectives:

1. To review existing data and obtain additional data so as to qualitatively and quantitatively identify the CO and PO_X problem in the AQMA.

   An important part of this work program is to define the boundaries of the nonattainment areas within the AQMA. Identification of background levels and/or transport of pollutants into the AQMA is especially important in developing an effective control strategy.

2. Develop and implement control strategies leading to attainment and maintenance of NAAQS in the AQMA.

   The SIP revision must demonstrate attainment of NAAQS by dates specified in the CAA (12-31-82 for TSP; up to 12-31-87 for CO and PO_X). It is conceivable that one or more elements of this SIP revision must be implemented with due consideration to insure consistency with concurrent planning activities by other organizations (e.g., LCDC and ODOT) and local governments. Coordination of planning activities is the responsibility of the lead agency.

Selection of each element in the control strategy must consider the cost-effectiveness of the plan, impact on community goals and resources, and the energy and environmental effects. Attainment of NAAQS is accomplished through implementation of control strategy elements -- reducing emissions from mobile (i.e., transportation related) and point sources. The work plan is intended to develop a control strategy containing reasonable elements leading to attainment and maintenance of air quality standards.

III. Financial Resources

At this time, committed available funds are insufficient to accomplish the elements of the Jackson County portion of the work plan. Table 2 summarizes projected expenditures to accomplish Phase 1 and 2 of the work plan (7-1-78 to 6-30-80). Jackson County lacks sufficient funds to allocate to this project. The Department has requested of EPA a grant of $80,000 for FY 79 which, if received, would alleviate the financial resource deficit through 6-30-79. Grant money would be transmitted to Jackson County, through contractual agreement, for a portion (unspecified at this time) of the anticipated deficit.

While the fact of insufficient committed funds is considered serious, the Department feels that any delay in development of a control strategy could jeopardize Jackson County as the CAA provides for severe economic sanctions should the SIP revision not be developed on schedule. Therefore, the Department encourages each agency involved to proceed with the work plan and expend every effort to maintain development of the control strategy on schedule. As supplemental funds are received, the Department will expeditiously move to disburse monies to Jackson County and ODOT as necessary. Other sources of revenue should be actively pursued by Jackson County.

IV. Work Program

The Department of Environmental Quality, Jackson County, and Oregon Department of Transportation have agreed to accomplish the elements of the work program detailed below in the time frame specified. Figures 1, 2, and 3 elucidate the time frame during which each element of the work program must be completed to keep development and implementation of the SIP revision on schedule.

Medford-Ashland Air Quality Maintenance Area

Air Quality Work Program
( ) = Person Weeks

PHASE 1

August 3, 1978

Task	Jackson County 7/1--10/1	Jackson County 10/1--1/1/79	D E Q 7/1--10/1	D E Q 10/1--1/1/79	Totals 7/1--10/1	Totals 10/1--1/1/79
1. Coordination & Project Management						
A. Display & Interpretation of Conditions & Standards	(2.0)	(2.0)	(1.0)	(1.0)	(4.0)	(5.0)
B. Coordinate Team Management	(1.0)	(1.0)	-	-	(3.0)	(4.0)
C. Air Quality Advisory Committee Coordination & Technical Support	(3.0)	(3.0)	(5.0)	(3.0)	(11.0)	(9.0)
D. Local Plan Coordination	(.5)	(.5)	(1.0)	(0.5)	(4.0)	(4.5)
E. Regional Plan & LCDC Coordination	(.5)	(.5)	-	-	(2.0)	(2.0)
F. Project Management & Progress Reporting	(1.0)	(2.0)	(1.0)	(0.5)	(4.0)	(4.5)
G. Conduct Public Hearings & Complete Adoption Process	(-)	(2.0)	(1.0)	(3.0)	(4.0)	(7.0)
2. Problem Identification						
A. Develop Emission Inventory						
1. Estimate Current CO, HC, & NO_x emissions						
a) Mobile Sources	-	-	-	-	See ODOT	N.A.[1]
b) Stationary & Area Sources	-	-	(1.0)	(0.5)	(1.0)	(0.5)
2. Estimate future CO, HC, & NO_x emissions for 'baseline' conditions						
a) 1982 Mobile Sources	-	-	-	-	See ODOT	N.A.[1]
b) 1987 Mobile Sources	-	-	-	-	See ODOT	N.A.[1]
c) 1982 Stationary & Area Sources	-	-	(1.0)	(1.0)	(1.0)	(1.0)
d) 1987 Stationary & Area Sources	-	-	(1.0)	(1.0)	(1.0)	(1.0)

PHASE I (Continued)

Task	Jackson County 7/1--10/1	Jackson County 10/1--1/1/79	D E Q 7/1--10/1	D E Q 10/1--1/1/79	Totals 7/1--10/1	Totals 10/1--1/1/79
B. Estimate Air Quality Levels						
1. Assess current CO and O_x Levels	-	-	(2.0)	(1.0)	(2.0)	(1.0)
2. Estimate future Baseline CO and O_x Levels (1977-1987)	-	-	(2.0)	(1.0)	(2.0)	(1.0)
C. Determine Necessary Emission Reductions from Mobile & Stationary/Area Sources	-	-	(1.0)	(1.0)	(1.0)	(1.0)
D. Determine 'Reasonable Further Progress' Line	-	-	-	(1.0)	-	(1.0)
3. Establish Procedures for Identifying & Analyzing Committed & Candidate Transportation Control Measures (TCM) for CO and O_x	(3.0)	(4.0)	-	-	(3.0)	(4.0)
4. Propose RACT (Stationary Source) Regulations for further analysis	-	-	(4.0)	-	(4.0)	-
5. Propose candidate TCM for further analysis, including annual I/M, and estimate reductions	-	(6.0)	-	(4.0)	-	(10.0)
6. Determine Impact of Required Stationary and Mobile Source Control Measures						
A. Emission Reduction Potential	-	-	(2.0)	(2.0)	(2.0)	(2.0)
B. Social, Health and Welfare Aspects	-	(1.0)	-	(1.0)	-	(2.0)
C. Institutional and Legal	-	(1.0)	-	(1.0)	-	(2.0)
D. Economic & Fiscal Impact	-	(2.0)	-	(1.0)	-	(3.0)
E. Energy	-	(0.5)	-	(0.5)	-	(1.0)
F. Environment	-	(0.5)	-	(1.5)	-	(2.0)
G. Policy Implications		(1.0)	-	(0.5)	-	(1.5)

PHASE 1 (Continued)

Task	Jackson County 7/1--10/1	Jackson County 10/1--1/1/79	D E Q 7/1--10/1	D E Q 10/1--1/1/79	Totals 7/1--10/1	Totals 10/1--1/1/79
7. Schedule Detailed Analysis of Candidate TCM's	-	(1.0)	-	(1.0)	-	(2.0)
8. Adopt RACT (Stationary) Rules	-	-	-	(2.0)	-	(2.0)
9. Design Progress Reporting Mechanism	-	(2.0)	-	(3.0)	-	(5.0)
10. Revise Permit Process to Include Cost Benefit Review Analysis	-	(1.0)	-	(2.0)	-	(3.0)
11. Prepare 1979 SIP Revision	-	(6.0)	-	(6.0)	-	(12.0)
12. Perform Ambient PO_X Survey and Analyze Data	(3.0)	-	(3.0)	-	(20.0)	-
13. Perform CO Survey and Analyze Data	-	(3.0)	-	(4.0)	-	(7.0)
PHASE 1 TOTALS	(14)	(40)	(26)	(44)	58 ~~(69)~~	84 ~~(101)~~
@ $500.00 per person week	~~$50,000~~ 27,000		$35,000		~~$85,000~~ 62,000	

Oregon Department of Transportation, Phase 1 (29)[1] = >(32)[1]

[1] ODOT Letter of 7/14/78 W. Cranford "ODOT expects to continue to aid the local agencies in air quality technical work after September, 1978 as required, to complete any necessary SIP revisions." Also see Table 1, Page 5 and Charts 1, 2, 3, 4. Includes updated ODOT time schedule per W. Crawford letter of 8-24-78.

TABLE 1

Air Quality Technical Work Program Time Schedule[2]

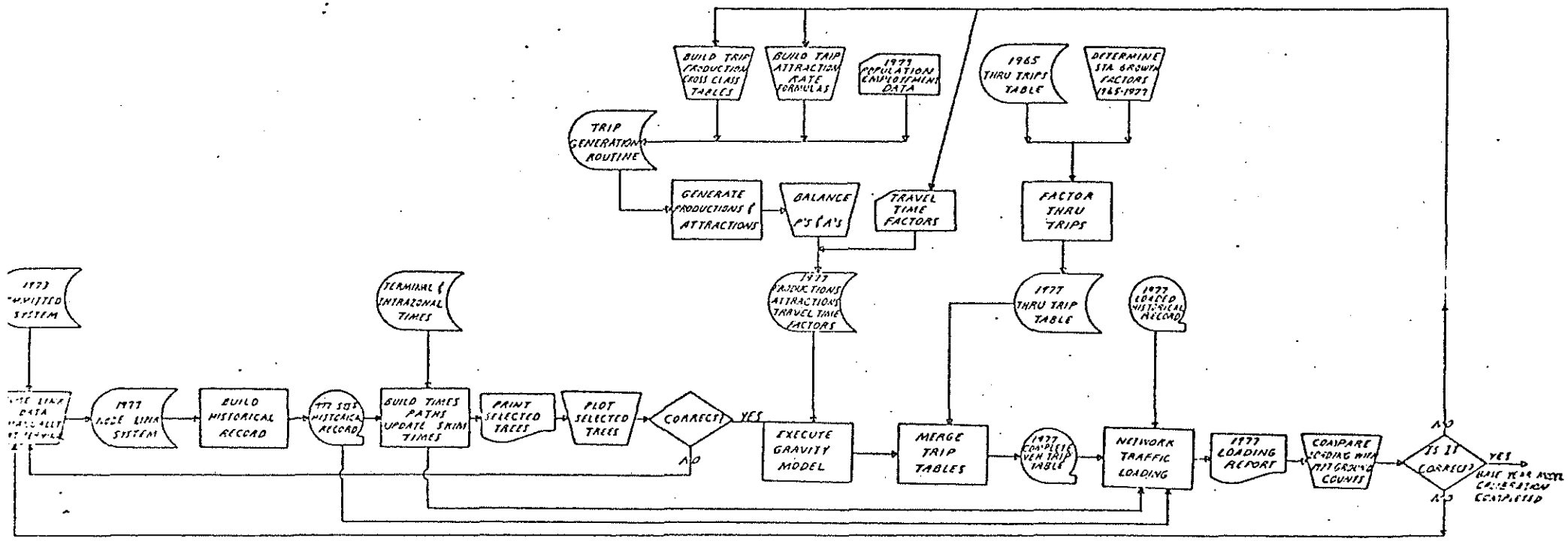
	Time Schedule	BCATS
1.	ODOT Man-Weeks Prior to July 14, 1978	17
2.	Base and Future Year Models Calibrated/ Useable	August 25, 1978
3.	1977 Traffic Assignment[3]	August 25, 1978
4.	1983 Traffic Assignment[3]	September 15, 1978
5.	1987 Traffic Assignment[3]	September 8, 1978
6.	1977 Total Emissions Report	September 8, 1978
7.	1983 Total Emissions Report	September 29, 1978
8.	1987 Total Emissions Report	September 22, 1978
9.	Total ODOT Man-Weeks to Complete Work Shown by Charts	32

[2] IBID Table 1.

[3] IBID footnote Table 1. Printout only - plotted node link map will take extra time -- 1 week minimum.

CHART 1

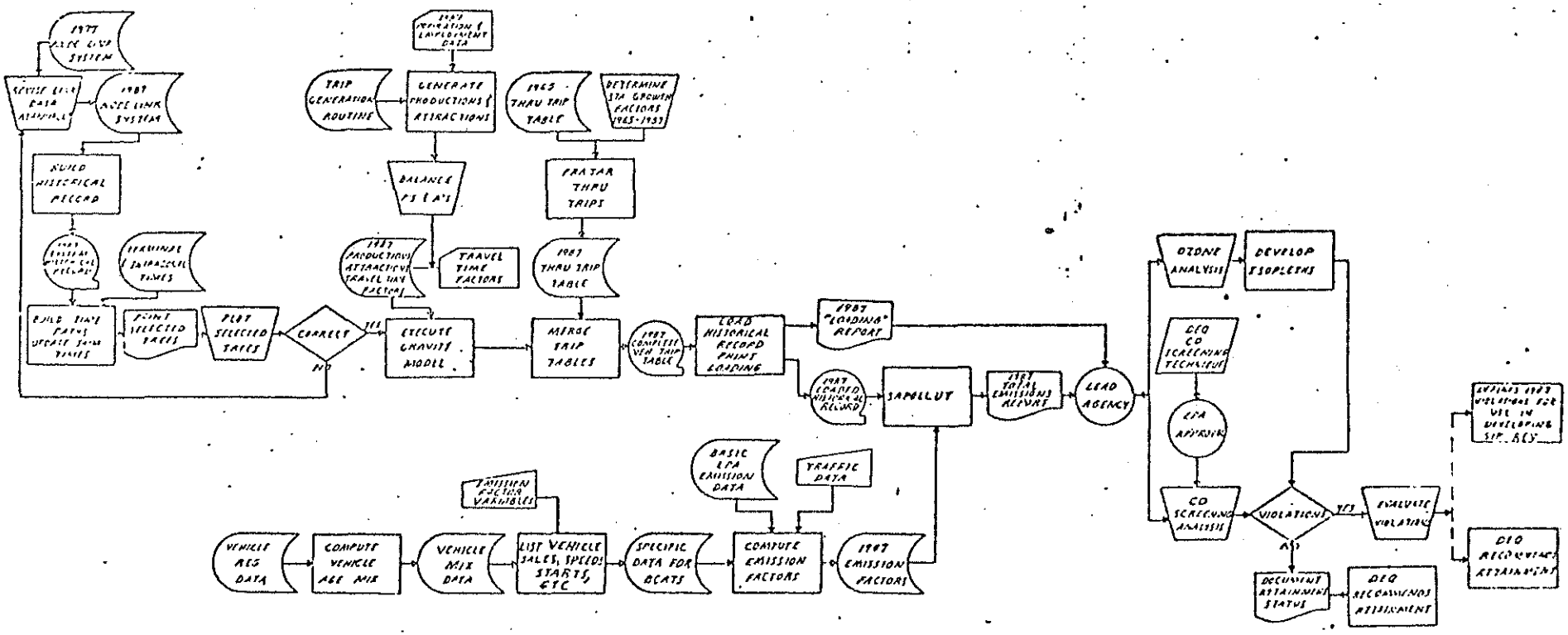
CALIBRATION OF BASE YEAR MODELS[4]



[4] IBID

CHART 2

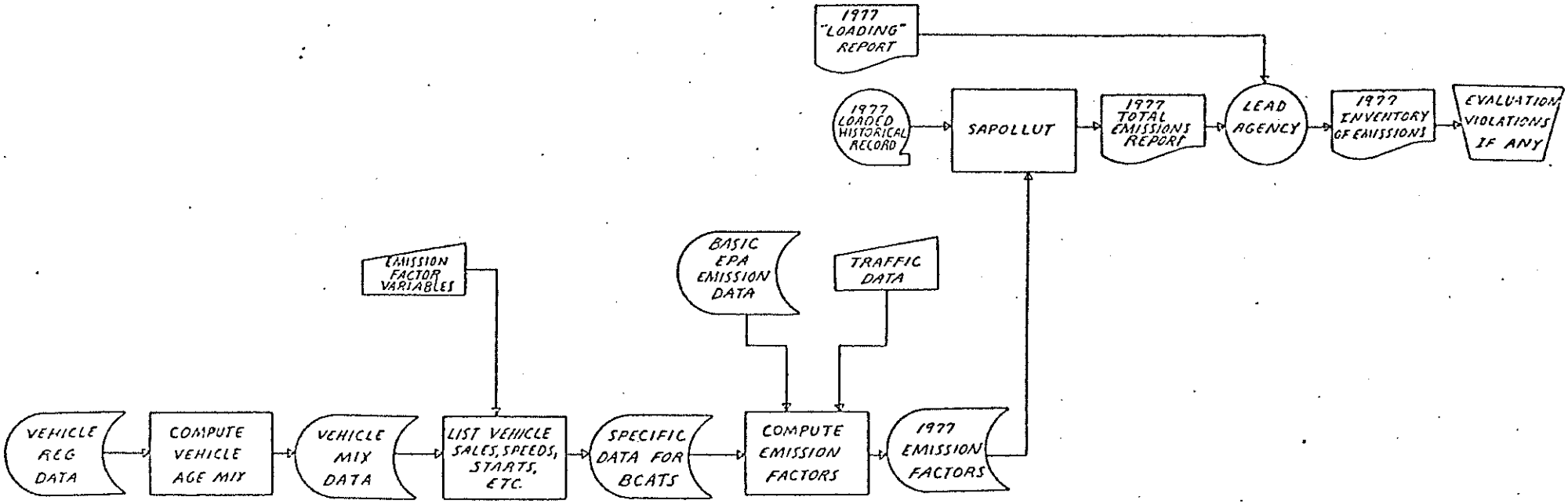
1987 ATTAINMENT OR VIOLATIONS FORECAST[5]



[5] IBID

CHART 3

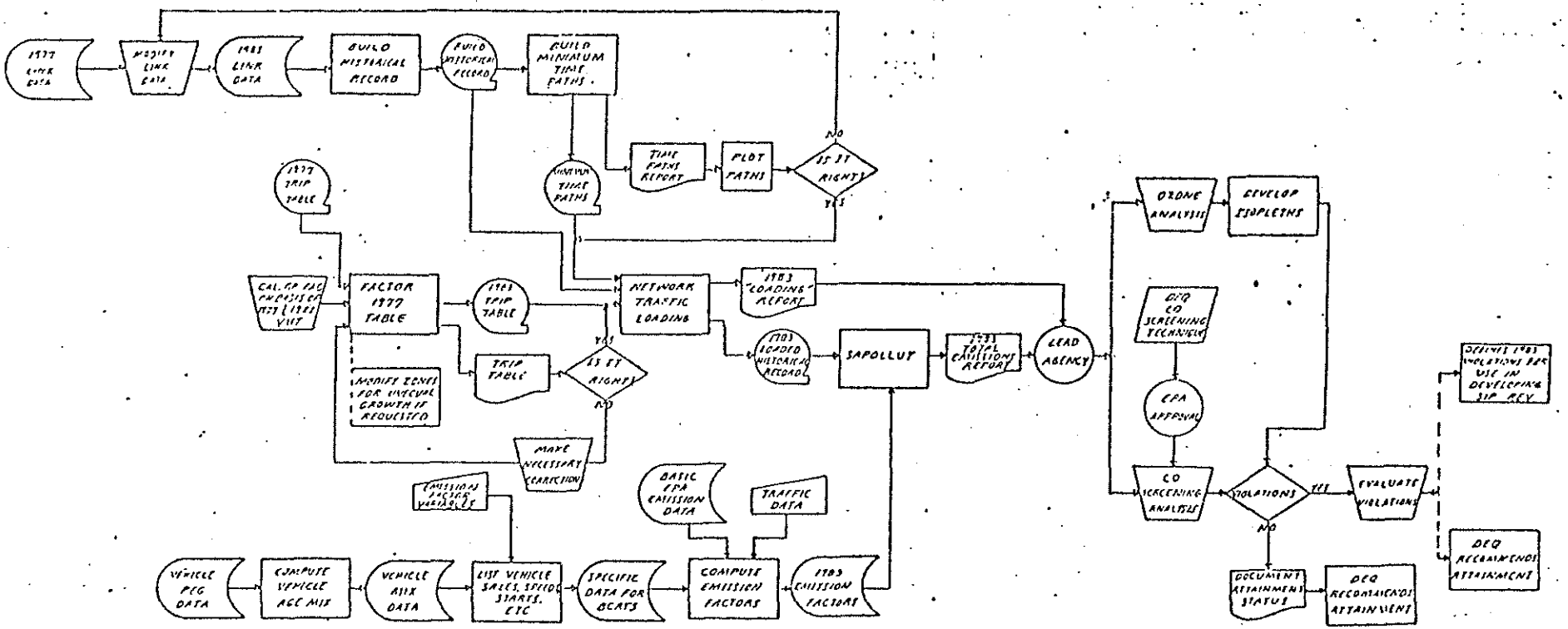
1977 EMISSIONS INVENTORY[6]



[6] IBID

CHART 4

1983 ATTAINMENT OR VIOLATIONS FORECAST[7]



[7] IBID

PHASE 2

Task	Jackson County 1/1--6/30/79	Jackson County 2nd Yr	D E Q 1/1--6/30/79	D E Q 2nd Yr	Totals 1/1--6/30/79	Totals 2nd Yr
1. Coordination & Project Management						
A. Display & Interpretation of conditions and standards	(2.0)	(2.0)	(2.0)	(4.0)	(5.0)	(10.0)
B. Coordination Team Management	(1.0)	(1.0)	-	-	(3.0)	(3.0)
C. Air Quality Advisory Committee Coordination and Support	(2.0)	(3.0)	(3.0)	(3.0)	(6.0)	(6.0)
D. Local Plan Coordination	(1.0)	(1.0)	(2.0)	(2.0)	(6.0)	(10.0)
E. Regional Plan and LCDC Coordination	(.5)	(4.0)	(1.0)	(1.0)	(3.0)	(5.0)
F. Project Management & Progress Reporting	(2.0)	(2.5)	(1.0)	(1.0)	(3.5)	(3.5)
G. Conduct Public Hearings and Adoption Process	(1.0)	(1.0)	(2.0)	(2.0)	(3.0)	(3.0)
H. Monitor & Coordination of 1979 SIP (Progress Reports)	(2.0)	(2.0)	(2.0)	(4.0)	(6.0)	(6.0)
2. Continue Development of O_X Model	-	-	(2.0)	(4.0)	(2.0)	(4.0)
3. Refine Procedure for Identifying & Analyzing Candidate Control Measures	(1.0)	(1.0)	(1.0)	(2.0)	(2.0)	(3.0)
4. Select and Refine Candidate Control Measures	(3.0)	(4.0)	(4.0)	(4.0)	(8.0)	(8.0)
5. Evaluate Alternative Control Measures						
A. Analyze TIP Project for Environmental, Social & Economic Impact	(1.0)	(1.0)	(2.0)	(2.0)	(3.0)	(3.0)
B. Estimate Reductions from Group 2 stationary & other area source emissions for 1982, 1987, & post-1987	-	-	(4.0)	(4.0)	(4.0)	(4.0)

PHASE 2 (Continued)

Task	Jackson County 1/1--6/30/79	Jackson County 2nd Yr	D E Q 1/1--6/30/79	D E Q 2nd Yr	Totals 1/1--6/30/79	Totals 2nd Yr
C. Estimate Reduction from Mobile Sources for 1982, 1987, & post-1987	-	-	(2.0)	(2.0)	(2.0)	(2.0)
D. Estimate air pollution levels	-	-	(2.0)	(2.0)	(2.0)	(2.0)
E. Analyze impacts in relative and/or absolute terms						
1. Social, health, welfare	-	(2.)	-	(1.0)	-	(1.0)
2. Institutional, legal	-	-	-	(1.0)	-	(1.0)
3. Economic, fiscal	-	(3.0)	-	(3.0)	-	(6.0)
4. Energy	-	-	-	(1.0)	-	(1.0)
5. Environmental, including air quality distribution effects	-	-	-	(1.0)	-	(1.0)
F. Identify priority areas for parking & traffic circulation studies	(1.0)	-	(1.0)	-	(2.0)	-
6. Develop Group 2 Stationary Source Control Regulations	-	-	-	(3.0)	-	(3.0)
7. Analyze Policy Implications						
A. Internal Policy Review	(1.0)	(2.0)	(1.0)	(2.0)	(2.0)	(4.0)
B. Identify Priority Concerns	(1.0)	(2.0)	(1.0)	(2.0)	(2.0)	(4.0)
C. Recommend Priorities	(1.0)	(1.0)	(1.0)	(1.0)	(2.0)	(2.0)
D. Literature Review	(1.0)	(1.0)	(1.0)	(1.0)	(2.0)	(2.0)
E. Report on Alternative Policies	(0.5)	(0.5)	(0.5)	(0.5)	(1.0)	(1.0)
F. Detail Policy Recommendations	(1.0)	-	-	(1.0)	(1.0)	(1.0)
8. Review Federal Requirements	(1.0)	(2.0)	(1.0)	(2.0)	(2.0)	(4.0)
A. Coordination with state officials						
B. Mechanism for Review						
C. Comments/Suggestions to EPA						
D. "Determination of Consistency" Process						

PHASE 2 (Continued)	Jackson County		DEQ		Totals	
Task	1/1--6/30/79	1st Yr	1/1--6/30/79	2nd Yr	1/1--6/30/79	2nd Yr
9. Identify funding	(1.0)	(1.0)	(2.0)	(2.0)	(3.0)	(3.0)
A. Coordination with Agency						
B. Coordination with Grants Office						
C. Quarterly reports to elected officials						
10. Prepare Draft SIP revision for adoption						
A. Evaluate cost-effectiveness of existing program	(0.5)	-	(0.5)	-	(1.0)	-
B. Study application of existing programs to other parts of Metropolitan area	(0.5)	-	(0.5)	-	(1.0)	-
C. DEQ Coordination on Meeting Reports	-	-	(1.0)	(2.0)	(1.0)	(2.0)
D. Identify 1980 Demonstration Control Measures		(2.0)	-	(1.0)	-	(3.0)
E. Develop Revised TCP	-	(4.0)	-	(4.0)	-	(8.0)
F. Document Process (Per Phase 1 Item 10)	-	(1.0)	-	(2.0)	-	(3.0)
11. SIP Selection Activities						
A. Review findings and Plan Proposals with local jurisdictions	-	(2.0)	-	(2.0)	-	(4.0)
B. Review findings and plan proposals with State Regulatory Authorities		(2.0)	-	(2.0)	-	(4.0)
C. Conduct Citizen Involvement Efforts	-	(2.0)	-	(1.0)	-	(3.0)
PHASE 2 TOTALS	(26)	(50)	(40.5)	(72.5)	~~(78.5)~~ 66.5	~~(133.5)~~ 122.5
@ $500.00 per person week	~~$49,500~~ 38,000		$56,500		~~$106,000~~ 94,500	

Oregon Department of Transportation, Phase 2

See Footnote, Page 4

PHASE 1 & 2 TOTALS			
	Jackson County	~~$99,500~~ 65000	(199)
	DEQ	$91,500	(183)
	ODOT	-	(32)[1]

PHASE 3 (7/1/80 - 6/30/82) NOTE: Budget to be developed if needed.

Prepare second state submittal of SIP Revision if extension granted

A. Revise SIP in EPA required format

B. Conduct Public hearings

C. Staff Reports

D. Commission Adoption

E. Submit to EPA

Medford-Ashland AQMA Air Quality Work Program

Table 2 - Identification of Financial Resources and Expenditures (Estimates)

	Jackson County	ODOT	DEQ	Total
A. Phase 1 (7-1-78 to 12-31-78)				
Expenditures	~~$50,000~~ 27,000	$14,500	$35,000	~~$ 99,500~~ 62,000
Resources	22,500 (8)	14,500 (9)	35,000 (10)	72,000
Deficit(s) (11)	~~27,500~~ 4500	-none-	-none-	
B. Phase 2 (1-1-79 to 6-30-80)				
Expenditures	~~49,500~~ 38,000	0	56,500	~~106,000~~ 94,500
Resources	12,500 (8)	0	60,018	72,518
Deficit(s) (11)	~~37,000~~ 25,500	-none-	-none-	
C. Phase 1 & 2 (7-1-78 to 6-30-80)				
Expenditures	~~99,500~~ 65,000	14,500	91,500	~~205,500~~ 171,000
Resources	35,000 (8)	14,500	95,018 (10)	144,518
Deficit(s) (11)	~~64,500~~ 30,000	-none-	-none-	

(8) Jackson County Comprehensive Planning Department estimate of $25,000 per annum by Bruce Shaw 8-21-78 funds appropriated through 6-30-79.

(9) ODOT has indicated costs to accomplish tasks will be through existing resources.

(10) Refer to Appendix A for DEQ Resource Estimate Calculation.

(11) Jackson County and DEQ could pursue sources of funds to supplement the above resources. DEQ will disburse any available funds as needed to complete tasks.

FIGURE 1

MEDFORD-ASHLAND AQMA
PHASE I SCHEDULE
(7/1/78 → 1/1/79)

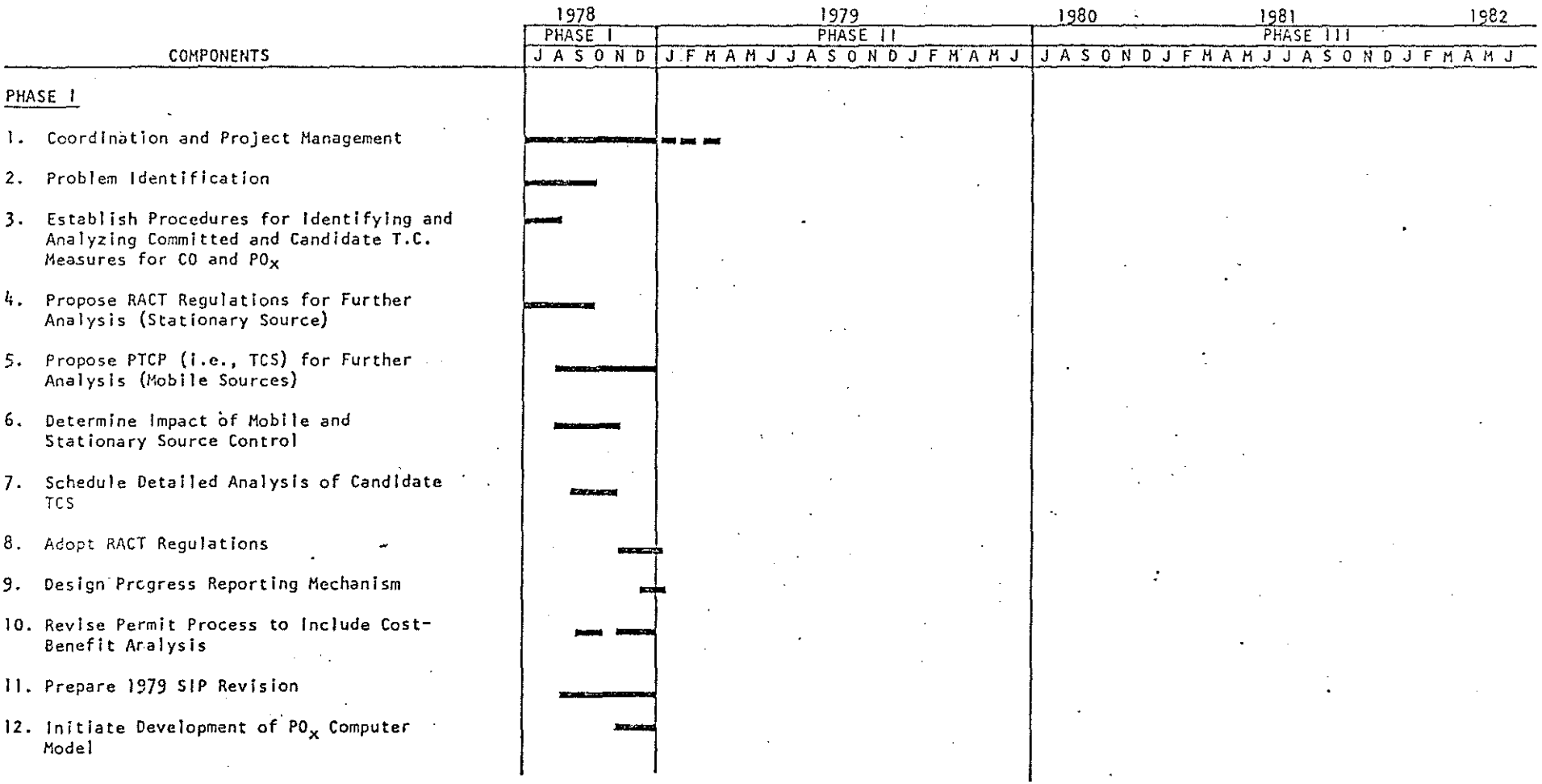


FIGURE 2

MEDFORD-ASHLAND AQMA
PHASE II SCHEDULE
(1/1/79 → 6/30/80)

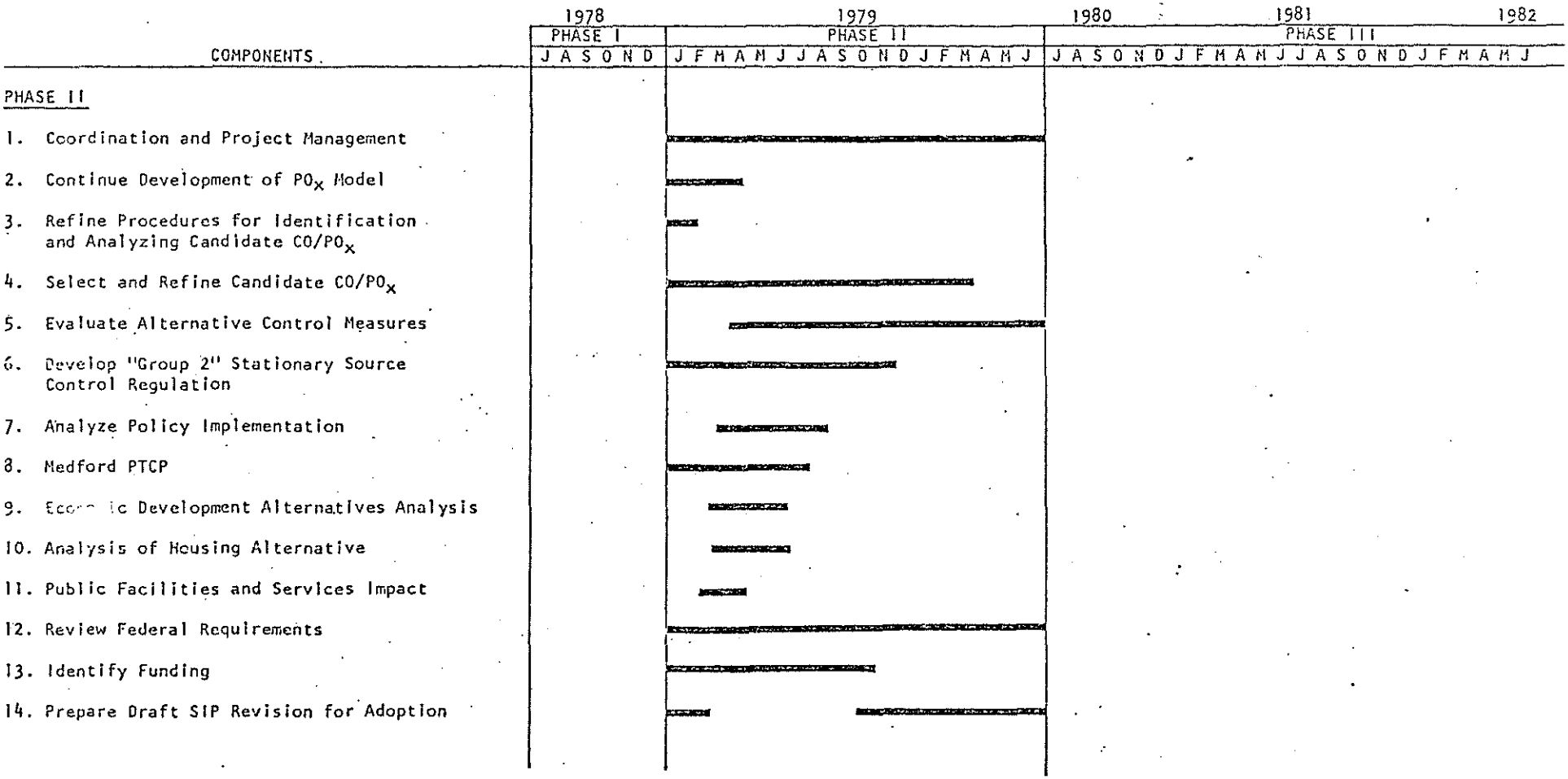
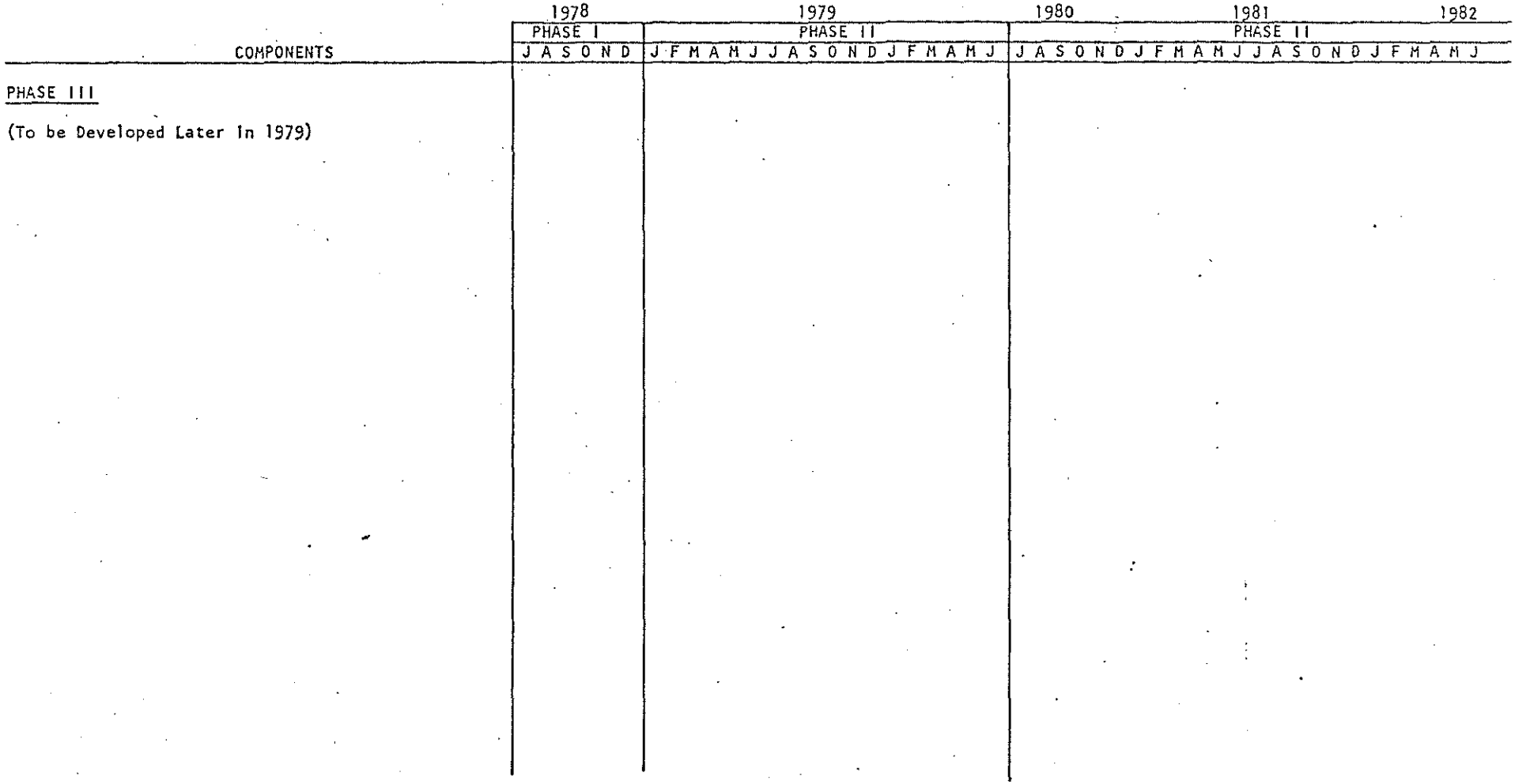


FIGURE 3

MEDFORD-ASHLAND AQMA
PHASE III SCHEDULE
(7/1/80 → 7/1/82)



U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION X
1200 SIXTH AVENUE
SEATTLE, WASHINGTON 98101

APPENDIX 4.8-6

REPLY TO ATTN OF: M/S 625

Mr. Bruce Shaw
Jackson Co. Planning and Development
Office Suite 12
107 E. Main
Medford, OR 97501

Dear Mr. Shaw:

Enclosed for your information is a list of those organizations designated in Region X as "lead agencies" under Section 174 of the Clean Air Act. The designation for Fairbanks has not yet been made but will be added as soon as it is received.

EPA Headquarters is putting together a similar list on a national basis which will be forward to you as soon as possible. In the meantime, if there are any changes or corrections to the Region X listing, please contact me at (206) 442-1226 (FTS 8-399-1226).

Sincerely yours,

Kathryn Davidson

Kathryn M. Davidson
Environmental Protection Specialist

cc: N. Edmisten

State of Oregon
DEPARTMENT OF ENVIRONMENTAL QUALITY
RECEIVED
MAR 21 1979
AIR QUALITY CONTROL

LEAD AGENCY DESIGNATIONS

Nonattainment Area	Pollutant	Designated Organization	Agency Head	Staff Contact	Telephone Number
Eugene-Springfied AQMA	CO,O_x	Lane Council of Governments 135 Sixth Ave. E. Eugene, OR 97401	Thomas Jenkinson Executive Director	Ollie Snowden	(503) 687-4283
Medford-Ashland AQMA	CO, O_x	Jackson County Board of Commissioners Jackson County Courthouse Medford, OR 97501	Carol Doty Board of Commissioners	Bruce Shaw Jackson Co. Planning and Development Office Suite 12 107 E. Main Medford, OR 97501	(503) 776-7520
shington					
Seattle-Tacoma	CO,O_x	Puget Sound Air Pollution Control Agency 410 W. Harrison ST. Seattle, WA 98119	Arthur R. Dammkoehler Air Pollution Control Officer	Jim Pearson	(206) 344-7330
City of Spokane	CO	Spokane Regional Planning Conference Room 353 City Hall Spokane, WA 99201	Jerry C. Kopet Chairman	Jose Urcia	(509) 456-4340 (FTS 8-439-4340)
Portland-Vancouver AQMA	O_x	Clark County Regional Planning Council 1408 Franklin St. Vancouver, WA 98663	Larry Rice Acting Director	Rich Hines	(206) 699-2361

LEAD AGENCY DESIGNATIONS

Nonattainment Area	Pollutant	Designated Organization	Agency Head	Staff Contact	Telephone Number
Alaska					
Anchorage	CO	Municipality of Anchorage Pouch 6-650 530 W. Fifth Anchorage, AK 99502	Honorable George Sullivan, Mayor	A. Reid Gibby	(907) 264-4865
Fairbanks	CO				
Idaho					
Boise	CO	Ada Planning Association P. O. Box 500 Boise, ID 87701	Mike Silva Chairman	Cliff Clark	(208) 384-4445
Oregon					
Portland-Vancouver AQMA	CO, O_x	State of Oregon Department of Environmental Quality P. O. Box 1760 Portland, OR 97207	William Young Director	John Kowalczyk	(503) 229-6459 (FTS 8-424-6459)
City of Salem	CO, O_x	Mid-Willamette Valley Council of Governments 220 High Street N.E. Salem OR 97301	Alan Hershey Director	Frank Mauldin	(503) 588-6177

Medford-Ashland AQMA Base Year and 1982 Projected Allowable VOC Emissions Reflecting Committed Measures Only, TPY

SOURCE		BASE YEAR EMISSIONS 1977	1982 (1987) PROJECTED ALLOWABLE EMISSIONS		
			EMISSIONS FROM SOURCES EXISTING IN 1977	GROWTH SINCE 1977	TOTAL
PETROLEUM REFINERIES	REFINERY FUGITIVES (Leaks)				
	MISCELLANEOUS SOURCES a) Process Drains and Waste b) Vacuum Producing Systems c) Process Unit Blowdown				
	OTHER				
STORAGE, TRANSPORTATION & MARKETING OF PETROLEUM PRODUCTS	OIL & GAS PRODUCTION FIELDS				
	NATURAL GAS AND NATURAL GASOLINE PROCESSING PLANTS				
	GASOLINE & CRUDE OIL STORAGE[1]				
	SHIP AND BARGE TRANSFER OF GASOLINE & CRUDE OIL				
	BULK GASOLINE TERMINALS [2]				
	GASOLINE BULK PLANTS[3]	278.3	130.0	25.6	155.6
	SERVICE STATION LOADING (stage I)	189.4	94.1	18.5	112.6
	SERVICE STATION UNLOADING (stage II)	189.4	189.4	37.3	226.7
	OTHER				
INDUSTRIAL PROCESSES	ORGANIC CHEMICAL MANUFACTURE	311.4	311.4	0	311.4[4]
	PAINT MANUFACTURE				
	VEGETABLE OIL PROCESSING				
	PHARMACEUTICAL MANUFACTURE				
	PLASTIC PRODUCTS MANUFACTURE				
	RUBBER PRODUCTS MANUFACTURE				
	TEXTILE POLYMERS MANUFACTURE				
	OTHERS	386.3	232.7	0	232.7
INDUSTRIAL SURFACE COATING	LARGE APPLIANCES				
	MAGNET WIRE				
	AUTOMOBILES				
	CANS				
	METAL COILS				
	PAPER	4002.0	3602.0	0	3602.0[5]
	FABRIC				
	METAL FURNITURE				
	WOOD FURNITURE				
	FLAT WOOD PRODUCTS	0	0	99.0	99.0
	OTHER METAL PRODUCTS				
	OTHERS				
NON-INDUSTRIAL SURFACE COATINGS	ARCHITECTURAL COATINGS	286.5	286.5	0	286.5
	AUTO REFINISHING				
	OTHERS				
OTHER SOLVENT USE	DEGREASING	1.7	1.7	0	1.7
	DRY CLEANING	53.0	53.0	0	53.0
	GRAPHIC ARTS				
	ADHESIVES				
	CUTBACK ASPHALT	0	0	0	0
	OTHER SOLVENT USE				
OTHER MISCELLANEOUS SOURCES	FUEL COMBUSTION	1429.6	1242.5	159.3	1401.8
	SOLID WASTE DISPOSAL	188.6	188.6	3.3	191.9
	FOREST, AGRICULTURAL, AND OTHER OPEN BURNING	45.0	45.0	0	45.0
TOTAL VOC EMISSIONS FROM STATIONARY SOURCES		7361.2	6376.9	343.0	6719.9
MOBILE SOURCES	HIGHWAY VEHICLES	3838.8	1431.8	1343.1	2774.9
	a) Light Duty Automobiles	1502.2	534.3	546.5	1080.8
	b) Light Duty Trucks	83.5	30.8	29.5	60.3
	c) Heavy Duty Gasoline Trucks	83.5	25.5	34.8	60.3
	d) Heavy Duty Diesel Trucks	55.6	5.4	34.8	40.2
	e) Motorcycles	67.2	67.2	1.8	69.0
	OFF-HIGHWAY VEHICLES	45.0	45.0	0	45.0
	RAIL	29.4	29.4	1.4	30.8
	AIRCRAFT				
	VESSELS				
TOTAL VOC EMISSIONS FROM MOBILE SOURCES		5705.2	2169.4	1996.9	4161.3
TOTAL VOLATILE ORGANIC EMISSIONS		13066.4	8546.3	2334.9	10881.2

[1] Includes all storage facilities except those at service stations and bulk plants.

[2] Emissions from loading tank trucks and rail cars.

[3] Emissions from storage and transfer operations.

[4] Current Production - No Increase Projected

[5] Emissions at 1977 Production with shutdown to install controls

Medford-Ashland AQMA Base Year and 1987 Projected Allowable VOC Emissions Reflecting Committed Measures and Estimated Reasonably Available Control Technology, TPY

SOURCE		BASE YEAR EMISSIONS 1977	1982 (1987) PROJECTED ALLOWABLE EMISSIONS		
			EMISSIONS FROM SOURCES EXISTING IN 1977	GROWTH SINCE 1977	TOTAL
PETROLEUM REFINERIES	REFINERY FUGITIVES (leaks)				
	MISCELLANEOUS SOURCES a) Process Drains and Waste b) Vacuum Producing Systems c) Process Unit Blowdown				
	OTHER				
STORAGE, TRANSPORTATION & MARKETING OF PETROLEUM PRODUCTS	OIL & GAS PRODUCTION FIELDS				
	NATURAL GAS AND NATURAL GASOLINE PROCESSING PLANTS				
	GASOLINE & CRUDE OIL STORAGE[1]				
	SHIP AND BARGE TRANSFER OF GASOLINE & CRUDE OIL				
	BULK GASOLINE TERMINALS [2]				
	GASOLINE BULK PLANTS[3]	278.3	130.0	50.3	180.3
	SERVICE STATION LOADING (stage I)	189.4	94.1	36.4	130.5
	SERVICE STATION UNLOADING (stage II)	189.4	189.4	73.4	262.8
	OTHER				
INDUSTRIAL PROCESSES	ORGANIC CHEMICAL MANUFACTURE	311.4	155.7	0	155.7[4]
	PAINT MANUFACTURE				
	VEGETABLE OIL PROCESSING				
	PHARMACEUTICAL MANUFACTURE				
	PLASTIC PRODUCTS MANUFACTURE				
	RUBBER PRODUCTS MANUFACTURE				
	TEXTILE POLYMERS MANUFACTURE				
	OTHERS	386.3	232.7	0	232.7
INDUSTRIAL SURFACE COATING	LARGE APPLIANCES				
	MAGNET WIRE				
	AUTOMOBILES				
	CANS				
	METAL COILS				
	PAPER	4002.0	1400.7	2300.0	3700.7[5]
	FABRIC				
	METAL FURNITURE				
	WOOD FURNITURE				
	FLAT WOOD PRODUCTS	0	0	42.6	42.6[6]
	OTHER METAL PRODUCTS				
	OTHERS				
NON-INDUSTRIAL SURFACE COATINGS	ARCHITECTURAL COATINGS	286.5	286.5	0	286.5
	AUTO REFINISHING				
	OTHERS				
OTHER SOLVENT USE	DEGREASING	1.7	1.7	0	1.7
	DRY CLEANING	53.0	53.0	0	53.0
	GRAPHIC ARTS				
	ADHESIVES				
	CUTBACK ASPHALT	0	0	0	0
	OTHER SOLVENT USE				
OTHER MISCELLANEOUS SOURCES	FUEL COMBUSTION	1429.6	1242.5	281.0	1523.5
	SOLID WASTE DISPOSAL	188.6	188.6	6.6	195.2
	FOREST, AGRICULTURAL, AND OTHER OPEN BURNING	45.0	45.0	0	45.0
TOTAL VOC EMISSIONS FROM STATIONARY SOURCES		7361.2	4019.9	2790.3	6810.2
MOBILE SOURCES	HIGHWAY VEHICLES a) Light Duty Automobiles	3838.8	277.0	1967.2	2244.2
	b) Light Duty Trucks	1502.2	161.6	716.6	878.2
	c) Heavy Duty Gasoline Trucks	83.5	10.4	38.4	48.8
	d) Heavy Duty Diesel Trucks	83.5	3.8	45.0	48.8
	e) Motorcycles	55.6	0.8	31.7	32.5
	OFF-HIGHWAY VEHICLES	67.2	67.2	3.6	70.8
	RAIL	45.0	45.0	0	45.0
	AIRCRAFT	29.4	29.4	2.8	32.2
	VESSELS				
TOTAL VOC EMISSIONS FROM MOBILE SOURCES		5705.2	595.2	2805.3	3400.5
TOTAL VOLATILE ORGANIC EMISSIONS		13066.4	4615.1	5595.6	10210.7

[1] Includes all storage facilities except those at service stations and bulk plants.

[2] Emissions from loading tank trucks and rail cars.

[3] Emissions from storage and transfer operations.

[4] Current Production - No Increase Projected - Controlled in 1983

[5] Maximum Controlled Emissions at Full Production

[6] Controlled in 1983

Medford-Ashland AQMA Ozone Control Strategy: Reasonable Further Progress Documentation

	1979	1980	1981	1982	1983	1984	1985	1986	1987
Bulk Plant[1]	288.5	293.7	191.4	155.6	160.5	165.5	170.4	175.4	180.3
Stage I[1]	196.8	200.5	135.6	112.6	116.2	119.8	123.3	126.9	130.5
Stage II	204.3	211.8	219.2	226.7	233.9	241.1	248.4	255.6	262.8
Or. Chem[3]	311.4	311.4	311.4	311.4	155.7	155.7	155.7	155.7	155.7
Other[2]	378.9	232.7	232.7	232.7	232.7	232.7	232.7	232.7	232.7
Paper[1]	4002.0	4002.0	4002.0	3602.0	3700.7	3700.7	3700.7	3700.7	3700.7
Flatwood[3]	99.0	99.0	99.0	99.0	42.6	42.6	42.6	42.6	42.6
Arch.	286.5	286.5	286.5	286.5	286.5	286.5	286.5	286.5	286.5
Degreasing	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
Dry Clean.	53.0	53.0	53.0	53.0	53.0	53.0	53.0	53.0	53.0
Fuel Comb.[2]	1493.3	1510.5	1542.3	1401.8	1426.1	1450.5	1474.8	1499.2	1523.5
Solid Waste	189.9	190.6	191.2	191.9	192.6	193.2	193.9	194.5	195.2
Mobile	5087.5	4779.0	4470.0	4161.3	4009.6	3857.6	3705.7	3553.6	3401.1
TOTAL	12637.8	12217.4	11781.0	10881.2	10656.8	10545.6	10434.4	10323.1	10211.3
RFP	13100.0	12533.0	11966.0	11400.0	--	--	--	--	--

1 VOC Rules adopted 12-78 as amended 6-79
2 VOC reduction from particulate controls on veneer dryers, particle dryers, hogged fuel boilers
3 VOC Rule: Estimated Reduction subject to change when final rule adopted

5/24/79

BASIS FOR MEDFORD-ASHLAND AQMA VOC EMISSIONS

Emission Source	Emission Calculation
1. Gasoline Bulk Plants	1. PES Survey 2. EPA Emission Factors 3. DEQ Survey (unpublished)
2. Service Stations	1. EPA Emission Factors 2. DEQ Survey (unpublished)
3. Org. Chemical	1. DEQ EI (15-0041)
4. Others (Press Vents, Veneer dryers, particle dryers)	1. PES Emission Factors (dryers) 2. DEQ Emission Factors (vents)
5. Paper Coating	1. DEQ EI - Annual report of solvent usage
6. Flat Wood Products	1. Maximum Allowable Emission
7. Arch. Coating	1. DEQ EI
8. Dry Cleaning	1. PES Survey
9. Wood Combustion	
a. Wood Space Heating	a. PES Suvey; SJO growth
b. Res. Space Heating	b. DEQ EI
c. Com. Space Heating	c. DEQ EI
d. Industry	d. DEQ EI
10. Solid Waste Disposal	
a. Domestic Incineration	a. EPA Emission Factor
b. Open Burning	b. EPA Emission Factor Table 2.4-1
11. Forest - Slash	1. 1977 Smoke Management Report (1.4% intrusion) 2. DEQ EI
12. Forest Fires	1. No impact on AQMA
13. Orchard Pruning	1. DEQ EI
14. Orchard Heating	1. EPA Emission Factor for Fuel Oil Combustion 2. DEQ EI

VOC Emissions (continued)

Emission Source	Emission Calculation
15. Mobile Sources	1. SAPOLLUT corrected for methane
16. Rail Roads	1. DEQ EI
17. Aircraft	1. DEQ EI
18. Off Highway	1. DEQ EI

Emissions for stationary sources reported in emission inventory are maximum allowable emissions.

DWB:kmm
A6267

Appendix 4.8-9

A public hearing on the Medford-Ashland AQMA carbon monoxide and ozone control strategies was held in Medford, Oregon on May 3, 1979. The public notice for this hearing was mailed to interested and affected citizens on March 30. A newspaper advertisement for the hearing was published in the Medford Mail Tribune on March 30, 1979 and April 9, 1979. Eight people and/or groups submitted testimony; a summary of these comments is in the hearing report in this appendix. Copies of the public notice and the newspaper advertisements are in this appendix.

Copies of the State Implementation Plan were sent to the State A-95 Clearinghouse and to fourteen areawide clearinghouses for review, as well as to the U.S. Department of Interior, the U.S. Fish and Wildlife Service, and the U.S. Forest Service. Copies of comments received are also in this appendix.

ROBERT W. STRAUB
GOVERNOR

Environmental Quality Commission

POST OFFICE BOX 1760, PORTLAND, OREGON 97207 PHONE (503) 229-5696

MEMORANDUM

TO: Environmental Quality Commission DATE: May 4, 1979

FROM: Hearings Officer

SUBJECT: Hearing Report on May 3, 1979 Hearing regarding "Proposed Revision of the State Implementation Plan Involving Carbon Monoxide and Ozone Pollutants in the Medford-Ashland Air Quality Maintenance Area".

SUMMARY OF PROCEDURE

Pursuant to public notice, a public hearing was convened in the Jackson County Courthouse Auditorium at 9:00 AM on May 3, 1979. The purpose was to receive testimony regarding adoption of a "Revision to the State Implementation Plan Involving Carbon Monoxide and Ozone Pollutants in the Medford-Ashland Air Quality Maintenance Area".

SUMMARY OF TESTIMONY

The following five citizens provided testimony for the record while Fritz Reith of the Ashland Daily Tidings had questions on the concept of "growth management":

Lois N. Kent - League of Women Voters of Rogue Valley and Ashland
Bruce Shaw - Representing Jackson County Commissioners
Bob Gantenbein - Marquess & Marquess and Medford Chamber of Commerce
Patricia Kuhn - Citizen (former member of AQMA Advisory Committee)
John Brown - Citizen (also mentioned affiliation with Sierra Club)

The following pertinent testimony was offered:

Qualified support for most of the proposed revisions (Kent, Shaw, Kuhn, Brown)

Ozone standard should not be reduced and SIP revision should be submitted based on the more restrictive State Standard (0.08ppm) not the less restrictive Federal Standard (0.12ppm) (Kent, Shaw, Kuhn, Brown)

Contains Recycled Materials

Proposed SIP revisions for ozone and carbon monoxide should contain the more restrictive State offset policy not the less restrictive Federal offset policy. (Kent, Brown)

Questioned the legality of the proposed revision since it doesn't include "all legally enforcement measures adopted by the State (i.e. State offset rules and current State ozone rules). (Shaw, Kuhn, Brown)

Concern expressed over the ozone data base for Medford-Ashland airshed. Recommend the SIP be more explicit in Section 4.8.6 as to what additional ambient air monitoring and meterological studies the Department is committed to doing. (Gantenbein)

Concern that the Department's proposal in Section 4.8.3.2 to "blindly" follow EQA's requirement to adopt "reasonably available control technology" and the Department's single dependence on "IKMA forecasting" may result in point source requirements that may be unrealistic or not required. (Gantenbein)

Respectively submitted,

Richard P. Reiter

Richard Reiter
Hearings Officer

RR:ml
Attachments

ROBERT W. STRAUB
GOVERNOR

Environmental Quality Commission

522 S.W. 5th AVENUE, P.O. BOX 1760, PORTLAND, OREGON 97207 PHONE (503) 229-5696

MEMORANDUM

To: Environmental Quality Commission

From: Director

Subject: Addendum to Hearings Officer Report regarding the May 3, 1979 hearing on "Proposed Revision to the State Implementation Plan Involving Carbon Monoxide and Ozone Pollutants in the Medford-Ashland Air Quality Maintenance Area."

Written Testimony was received at DEQ's Portland office on May 7, 1979 from Mr./Mrs. Tim Caswell. They oppose the extension of up to five years to meet the carbon monoxide standard.

Written testimony was received at DEQ's Portland office on May 16, 1979, from the Environmental Protection Agency. Several comments were made.

1. The proposed New Source Review rule (OAR 340-20-190,191,192) applies to all nonattainment areas.

2. Parking lot emissions are to be included in the emission inventories.

3. The NMHC/NOx ratio may be unrealistically low.

4. The ozone design value is incorrect.

Written testimony was received at DEQ's Portland Office on May 16 from Merlyn Hough. Several comments were made.

1. Recommend that the state ozone standard be used in revising the State Implementation Plan.

2. Include the offset rule in the revised State Implementation Plan.

3. Recommend that a plant site emission limit be established for the 3M company.

Contains Recycled Materials

4. The indirect source review is necessary to evaluate carbon monoxide until a parking and traffic circulation plan is developed by the lead agency. The indirect source review rule should be referenced in the State Implementation Plan.

William H. Young

Dennis W. Belsky:tf
May 10, 1979
Attachment
cc: Rich Reiter, Southwest Region Manager

Medford-Ashland AQMA Citizen's Advisory Committee

Esther Jensen, Chairman
1121 South Oakdale
Medford, OR 97501

Don Partridge
3M Co.
8124 Pacific Avenue
White City, OR 97501

Julius Courtney
U.S. Forest Service
PO Box 520
Medford, OR 97501

Dianne Meyers
Sierra Club
419 Pearl Street
Medford, OR 97501

Leslie Shannon
571 Henely Way
Ashland, OR 97520

Martin Craine
Southern Oregon Timber
Industries Assn.
2680 North Pacific Highway
Medford, OR 97501

Dr. Michael Slaughter
650 Royal
Medford, OR 97501

Patricia Kuhn
2419 Hillcrest Road
Medford, OR 97501

Eleanor Bradley
854 Twin Pines Circle
Ashland, OR 97520

Mr. Roger E. Wilkerson
3M Co.
8124 Pacific Avenue
White City, OR 97501

Candy Rayburn
5090 Rock Way
Central Point, OR 97502

Kerry L. Lay
Jackson County Planning & Dev.
Medford, Oregon 9750]

Dean Phelps
1383 Oregon Street
Ashland, OR 97520

Lou Hannum
2900 Seckel Street
Medford, OR 97501

Debra McFadden
Oregon Lung Association
1019 North Riverside-Suitell
Medford, OR 97501

Dr. James E. Dunn, II
33 North Central Avenue
Medford, OR 97501

Don Moody
Oregon State Dept. of Forestry
5286 Table Rock Road
Central Point, OR 97502

John LaRiviere
Rogue Valley Council of Govern.
33 North Central
Medford, OR 97501

Gary Grimes
SWF Plywood
PO Box 370
Medford, OR 97501

Hugh Jennings
Medford City Council
City Hall
Medford, OR 97501

Kay Alsing
970 Walker Avenue
Ashland, OR 97520

Bob Lichlyter
Rogue River National Forest
PO Box 520
Medford, OR 97501

Doug Roach
Fruit Growers Assc.
300 Lumin Road Space 87
Phoenix, OR 97535

BEFORE THE BOARD OF COMMISSIONERS

COUNTY OF JACKSON, STATE OF OREGON

IN THE MATTER OF DEFINING THE JURISDICTION OF THE MEDFORD-ASHLAND AIR QUALITY MAINTENANCE AREA ADVISORY COMMITTEE

ORDER

Whereas the Bear Creek Valley portion of Jackson County has been designated as an Air Quality Maintenance Area; and

Whereas the Medford-Ashland Air Quality Maintenance Area is a designated non-attainment area for three air pollutants; particulate matter, carbon monoxide, and photochemical oxidants; and

Whereas experienced levels of these pollutants are unhealthful to the general population; and

Whereas Jackson County has been designated as lead agency for developing a state implementation plan revision for transportation related pollutant sources; and

Whereas Jackson County has been designated lead agency for local comprehensive planning; and

Whereas local comprehensive plans are often referred to in state implementation plans; and

Whereas Jackson County has an Air Quality Advisory Committee charged generally with reviewing air quality issues and making recommendations; and

Whereas Jackson County has the responsibility of developing the process by which recommendations will be reviewed and implemented;

Therefore, the Board of Commissioners of Jackson County sets forth the responsibilities of the Medford-Ashland Air Quality Maintenance Area Advisory Committee and a process whereby recommendations will be reviewed.

Section 1. The responsibilities of the Medford-Ashland Air Quality Maintenance Area Advisory Committee are:

A) Advising the Jackson County Board of Commissioners, lead agency for developing controls of transportation related air pollutants, of the most acceptable transportation control measures.

B) Recommending to the Department of Environmental Quality an acceptable emergency action plan to avoid substantial health hazards in the event of very adverse ventilation.

C) Providing public dissemination of information concerning activities and issues regarding local air quality problems and potential solutions.

D) To review and make recommendation to the Board of Commissioners on issues regarding local air quality problems and potential solutions or impacts.

Section 2. The process by which the Medford-Ashland Air Quality Maintenance Area Advisory Committee recommendations are to be reviewed is graphically displayed on attachment "A" and outlined below:

A) Initiating agency suggests a proposal:

1) Probable agencies list:

a) Department of Environmental Quality

b) Jackson County

c) Medford-Ashland Air Quality Maintenance Area Advisory Committee

d) Air quality maintenance area cities

e) Rogue Valley Council of Governments

f) Public

g) Other agencies

2) Review criteria for the various proposal types:

a) Committee recommendation requires local review prior to being sent to implementing agency.

i) Proposal requires local ordinance to implement.

ii) Proposal requires local funding to be implemented.

iii) Recommendation being sent to implementing agency is to be endorsed by lead agency.

iv) Example; transportation control measures.

b) Proposals not needing local review prior to being sent to implementing agency - though needing lead agency endorsement.

i) Committee position on rules which are proposed by and will be implemented by the Department of Environmental Quality.

ii) Adoption of the proposed rule will not require a local ordinance or a local funding to be implemented.

iii) Proposed rule has significance to the local economy or environment.

iv) Example; Department of Environmental Quality proposed emission off-set rule.

c) It is necessary to have a mechanism which allows the Medford-Ashland Air Quality Maintenance Area Advisory Committee to take a position which differs from the lead agency position.

i) Air Quality Advisory Committee makes recommendation directly to implementing agency as committee position.

ii) Example; case by case committee decision.

B) Medford-Ashland Air Quality Maintenance Area Advisory Committee actions:

1) Committee receives proposal.

2) Committee action:

a) Proposal unacceptable to committee.

b) Proposal acceptable, with modifications.

c) Proposal acceptable.

3) Committee forwards action to Board of Commissioners. These actions shall be grouped into complete packages whenever possible.

4) Board of Commissioners notifies committee chair of review procedure to be used:

a) Sent back to committee for further analysis.

b) Sent on to implementing agency.

c) Requires local review.

C) Local review procedure:

1) Board notifies the Air Quality Advisory Committee of intention to hold local review.

2) Air Quality Advisory Committee action is forwarded to local governments, local agencies, and state agencies.

3) 30 days given for comment period - comments sent to Board.

4) Board reviews comments and determines whether or not the action has received a favorable or unfavorable review.

5) Board forwards action to implementing agency if review is favorable.

6) Board forwards action with direction to the Air Quality Advisory Committee if review is unfavorable.

7) The Board will review each action and determine specific entities to review on a case by case basis.

8) The Air Quality Advisory Committee either reworks the proposal or drops it as unacceptable.

D) Implementing agency.

1) Receives action from Board of Commissioners as lead agency.

2) Implementing agency reviews action.

3) Action is considered during the state/local hearings process.

4) Action is implemented through compliance schedule, condition applied, rule change, legislative action, etc.

5) Lead agency notified of state/local disposition.

6) Air Quality Advisory Committee notified of final disposition.

Section 3. The intent of this order is to provide an interim means whereby the Medford-Ashland Air Quality Maintenance Area Advisory Committee may make recommendations on air quality issues, and those recommendations then being given a timely review and consideration. In the event of the air quality process continuing beyond the period of time for which committee appointments have been made, it will be necessary to review, amend, or otherwise update this order upon reappointment or restructuring of the Medford-Ashland Air Quality Maintenance Area Advisory Committee.

Section 4. This order shall be effective from the date signed and stand until December 31, 1978.

Dated this _____ day of _____, 1978 at Medford, Oregon.

JACKSON COUNTY BOARD OF COMMISSIONERS

_____

Tam Moore, Chairman

_____

Isabel Sickels, Commissioner

_____

Carol Doty, Commissioner

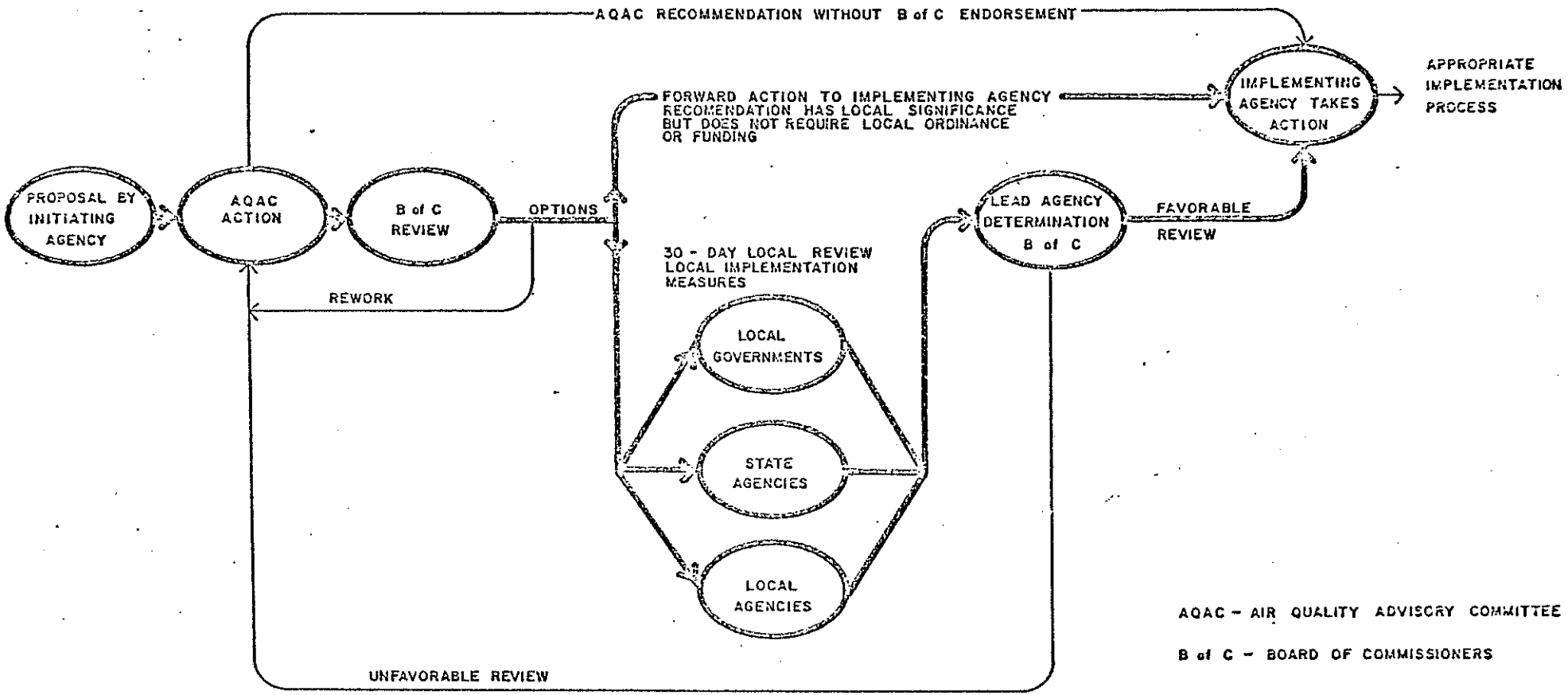
ATTEST:

_____

By: Recording Secretary

ATTACHMENT A

PROCESS FOR REVIEWING AND FORWARDING
AIR QUALITY ADVISORY COMMITTEE RECOMMENDATIONS



APPENDIX 4.9-1

Medford-Ashland Air Quality Maintenance Area

Air Quality Work Program

Agency Program Tasks and Budgets

- Phase 1 through January 1, 1979
- Phase 2 January 1, 1979 - June 30, 1980
- Phase 3 July 1, 1980 - June 30, 1982

August 3, 1978

Prepared by:
Dennis Belsky, Oregon Department of Environmental Quality
Bruce Shaw, Jackson County Comprehensive Planning
W. L. Cranford, Oregon Department of Transportation

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Appendix

I. Background

The Medford-Ashland Air Quality Maintenance Area (AQMA) is designated a nonattainment area with respect to National Ambient Air Quality Standards (NAAQS) for total suspended particulate (TSP), photochemical oxidant (PO_X), and carbon monoxide (CO). The State Implementation Plan (SIP) must be updated (required by Clean Air Act) with a revised control strategy to achieve and maintain NAAQS now being exceeded in the AQMA.

This work program describes the elements necessary for preparation of a SIP revision for CO and PO_X. A SIP revision for TSP has been prepared and is to be submitted to EPA shortly.

The Clean Air Act (CAA) additionally requires the Governor of each state to designate a lead agency to develop the control strategy impacting transportation related sources. On March 30, 1978 Governor Straub informed the EPA that Jackson County was designated as the lead agency for the preparation of the control strategy for transportation related sources. The Department of Environmental Quality is to develop the control strategy for stationary sources. Combined, the control strategy will form the SIP revision documenting the air quality plan leading to attainment of CO and PO_X NAAQS.

Funding, while from several sources, appears insufficient to accomplish tasks charged to the lead agency. If monies are received in a timely manner, it is expected that an adequate SIP revision can be developed on schedule to meet the deadline of 1-1-79 imposed by the CAA.

II. Program Objectives

The air quality work program has the following objectives:

1. To review existing data and obtain additional data so as to qualitatively and quantitatively identify the CO and PO_X problem in the AQMA.

   An important part of this work program is to define the boundaries of the nonattainment areas within the AQMA. Identification of background levels and/or transport of pollutants into the AQMA is especially important in developing an effective control strategy.

2. Develop and implement control strategies leading to attainment and maintenance of NAAQS in the AQMA.

   The SIP revision must demonstrate attainment of NAAQS by dates specified in the CAA (12-31-82 for TSP; up to 12-31-87 for CO and PO_X). It is conceivable that one or more elements of this SIP revision must be implemented with due consideration to insure consistency with concurrent planning activities by other organizations (e.g., LCDC and ODOT) and local governments. Coordination of planning activities is the responsibility of the lead agency.

Selection of each element in the control strategy must consider the cost-effectiveness of the plan, impact on community goals and resources, and the energy and environmental effects. Attainment of NAAQS is accomplished through implementation of control strategy elements -- reducing emissions from mobile (i.e., transportation related) and point sources. The work plan is intended to develop a control strategy containing reasonable elements leading to attainment and maintenance of air quality standards.

III. Financial Resources

At this time, committed available funds are insufficient to accomplish the elements of the Jackson County portion of the work plan. Table 2 summarizes projected expenditures to accomplish Phase I and 2 of the work plan (7-1-78 to 6-30-80). Jackson County lacks sufficient funds to allocate to this project. The Department has requested of EPA a grant of $80,000 for FY 79 which, if received, would alleviate the financial resource deficit through 6-30-79. Grant money would be transmitted to Jackson County, through contractual agreement, for a portion (unspecified at this time) of the anticipated deficit.

While the fact of insufficient committed funds is considered serious, the Department feels that any delay in development of a control strategy could jeopardize Jackson County as the CAA provides for severe economic sanctions should the SIP revision not be developed on schedule. Therefore, the Department encourages each agency involved to proceed with the work plan and expend every effort to maintain development of the control strategy on schedule. As supplemental funds are received, the Department will expeditiously move to disburse monies to Jackson County and ODOT as necessary. Other sources of revenue should be actively pursued by Jackson County.

IV. Work Program

The Department of Environmental Quality, Jackson County, and Oregon Department of Transportation have agreed to accomplish the elements of the work program detailed below in the time frame specified. Figures 1, 2, and 3 elucidate the time frame during which each element of the work program must be completed to keep development and implementation of the SIP revision on schedule.

Medford-Ashland Air Quality Maintenance Area

Air Quality Work Program
( ) = Person Weeks

PHASE 1

August 3, 1978

Task	Jackson County 7/1--10/1	Jackson County 10/1--1/1/79	D E Q 7/1--10/1	D E Q 10/1--1/1/79	Totals 7/1--10/1	Totals 10/1--1/1/79
1. Coordination & Project Management						
A. Display & Interpretation of Conditions & Standards	(2.0)	(2.0)	(1.0)	(1.0)	(4.0)	(5.0)
B. Coordinate Team Management	(1.0)	(1.0)	-	-	(3.0)	(4.0)
C. Air Quality Advisory Committee Coordination & Technical Support	(3.0)	(3.0)	(5.0)	(3.0)	(11.0)	(9.0)
D. Local Plan Coordination	(.5)	(.5)	(1.0)	(0.5)	(4.0)	(4.5)
E. Regional Plan & LCDC Coordination	(.5)	(.5)	-	-	(2.0)	(2.0)
F. Project Management & Progress Reporting	(1.0)	(2.0)	(1.0)	(0.5)	(4.0)	(4.5)
G. Conduct Public Hearings & Complete Adoption Process	(-)	(2.0)	(1.0)	(3.0)	(4.0)	(7.0)
2. Problem Identification						
A. Develop Emission Inventory						
1. Estimate Current CO, HC, & NO_x emissions						
a) Mobile Sources	-	-	-	-	See ODOT	N.A.[1]
b) Stationary & Area Sources	-	-	(1.0)	(0.5)	(1.0)	(0.5)
2. Estimate future CO, HC, & NO_x emissions for 'baseline' conditions						
a) 1982 Mobile Sources	-	-	-	-	See ODOT	N.A.[1]
b) 1987 Mobile Sources	-	-	-	-	See ODOT	N.A.[1]
c) 1982 Stationary & Area Sources	-	-	(1.0)	(1.0)	(1.0)	(1.0)
d) 1987 Stationary & Area Sources	-	-	(1.0)	(1.0)	(1.0)	(1.0)

PHASE 1 (Continued)

Task	Jackson County 7/1--10/1	Jackson County 10/1--1/1/79	D E Q 7/1--10/1	D E Q 10/1--1/1/79	Totals 7/1--10/1	Totals 10/1--1/1/79
B. Estimate Air Quality Levels						
1. Assess current CO and O_x Levels	-	-	(2.0)	(1.0)	(2.0)	(1.0)
2. Estimate future Baseline CO and O_x Levels (1977-1987)	-	-	(2.0)	(1.0)	(2.0)	(1.0)
C. Determine Necessary Emission Reductions from Mobile & Stationary/Area Sources	-	-	(1.0)	(1.0)	(1.0)	(1.0)
D. Determine 'Reasonable Further Progress' Line	-	-	-	(1.0)	-	(1.0)
3. Establish Procedures for Identifying & Analyzing Committed & Candidate Transportation Control Measures (TCM) for CO and O_x	(3.0)	(4.0)	-	-	(3.0)	(4.0)
4. Propose RACT (Stationary Source) Regulations for further analysis	-	-	(4.0)	-	(4.0)	-
5. Propose candidate TCM for further analysis, including annual I/M, and estimate reductions	-	(6.0)	-	(4.0)	-	(10.0)
6. Determine Impact of Required Stationary and Mobile Source Control Measures						
A. Emission Reduction Potential	-	-	(2.0)	(2.0)	(2.0)	(2.0)
B. Social, Health and Welfare Aspects	-	(1.0)	-	(1.0)	-	(2.0)
C. Institutional and Legal	-	(1.0)	-	(1.0)	-	(2.0)
D. Economic & Fiscal Impact	-	(2.0)	-	(1.0)	-	(3.0)
E. Energy	-	(0.5)	-	(0.5)	-	(1.0)
F. Environment	-	(0.5)	-	(1.5)	-	(2.0)
G. Policy Implications		(1.0)	-	(0.5)	-	(1.5)

PHASE 1 (Continued)

Task	Jackson County 7/1--10/1	Jackson County 10/1--1/1/79	D E Q 7/1--10/1	D E Q 10/1--1/1/79	Totals 7/1--10/1	Totals 10/1--1/1/79
7. Schedule Detailed Analysis of Candidate TCM's	-	(1.0)	-	(1.0)	-	(2.0)
8. Adopt RACT (Stationary) Rules	-	-	-	(2.0)	-	(2.0)
9. Design Progress Reporting Mechanism	-	(2.0)	-	(3.0)	-	(5.0)
10. Revise Permit Process to Include Cost Benefit Review Analysis	-	(1.0)	-	(2.0)	-	(3.0)
11. Prepare 1979 SIP Revision	-	(6.0)	-	(6.0)	-	(12.0)
12. Perform Ambient PO_X Survey and Analyze Data	(3.0)	-	(3.0)	-	(20.0)	-
13. Perform CO Survey and Analyze Data	-	(3.0)	-	(4.0)	-	(7.0)
PHASE 1 TOTALS	(14)	(40)	(26)	(44)	~~(69)~~ 58	~~(101)~~ 84
@ $500.00 per person week	~~$50,000~~ $27,000		$35,000		~~$85,000~~ $62,000	

Oregon Department of Transportation, Phase 1 (29)[1] = >(32)[1]

[1] ODOT Letter of 7/14/78 W. Cranford "ODOT expects to continue to aid the local agencies in air quality technical work after September, 1978 as required, to complete any necessary SIP revisions." Also see Table 1, Page 5 and Charts 1, 2, 3, 4. Includes updated ODOT time schedule per W. Crawford letter of 8-24-78.

TABLE 1

Air Quality Technical Work Program Time Schedule[2]

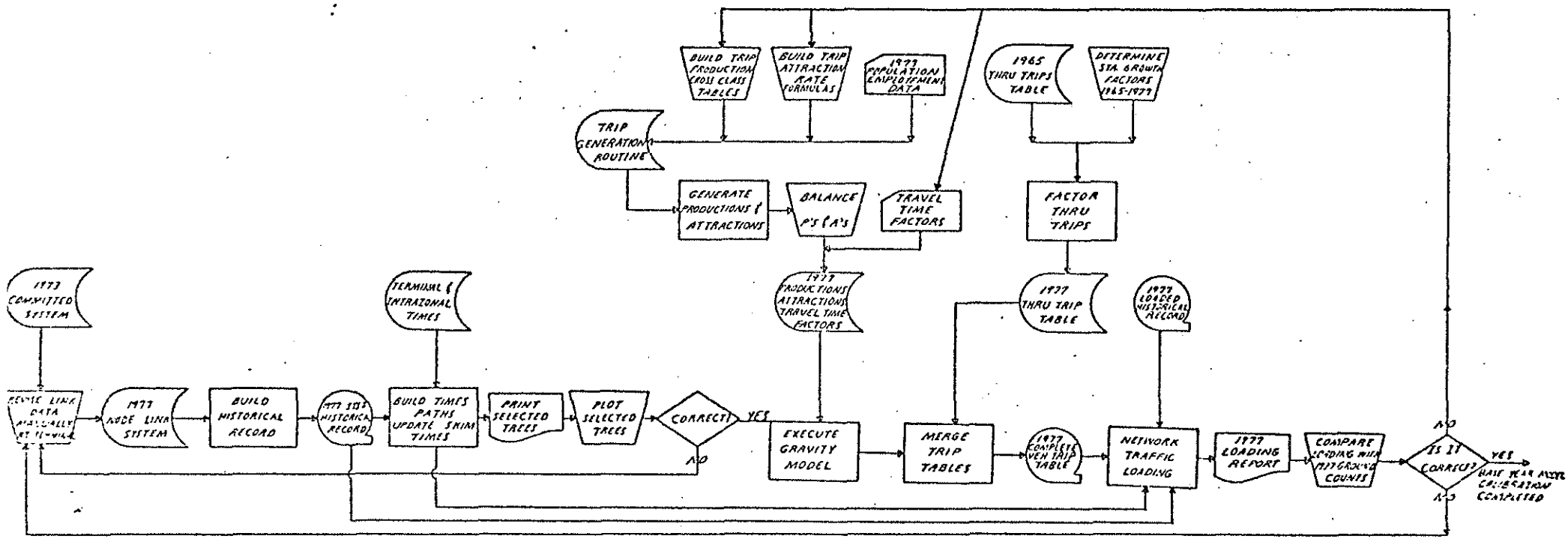
	Time Schedule	BCATS
1.	ODOT Man-Weeks Prior to July 14, 1978	17
2.	Base and Future Year Models Calibrated/ Useable	August 25, 1978
3.	1977 Traffic Assignment[3]	August 25, 1978
4.	1983 Traffic Assignment[3]	September 15, 1978
5.	1987 Traffic Assignment[3]	September 8, 1978
6.	1977 Total Emissions Report	September 8, 1978
7.	1983 Total Emissions Report	September 29, 1978
8.	1987 Total Emissions Report	September 22, 1978
9.	Total ODOT Man-Weeks to Complete Work Shown by Charts	32

[2] IBID Table 1.

[3] IBID footnote Table 1. Printout only - plotted node link map will take extra time -- 1 week minimum.

CHART 1

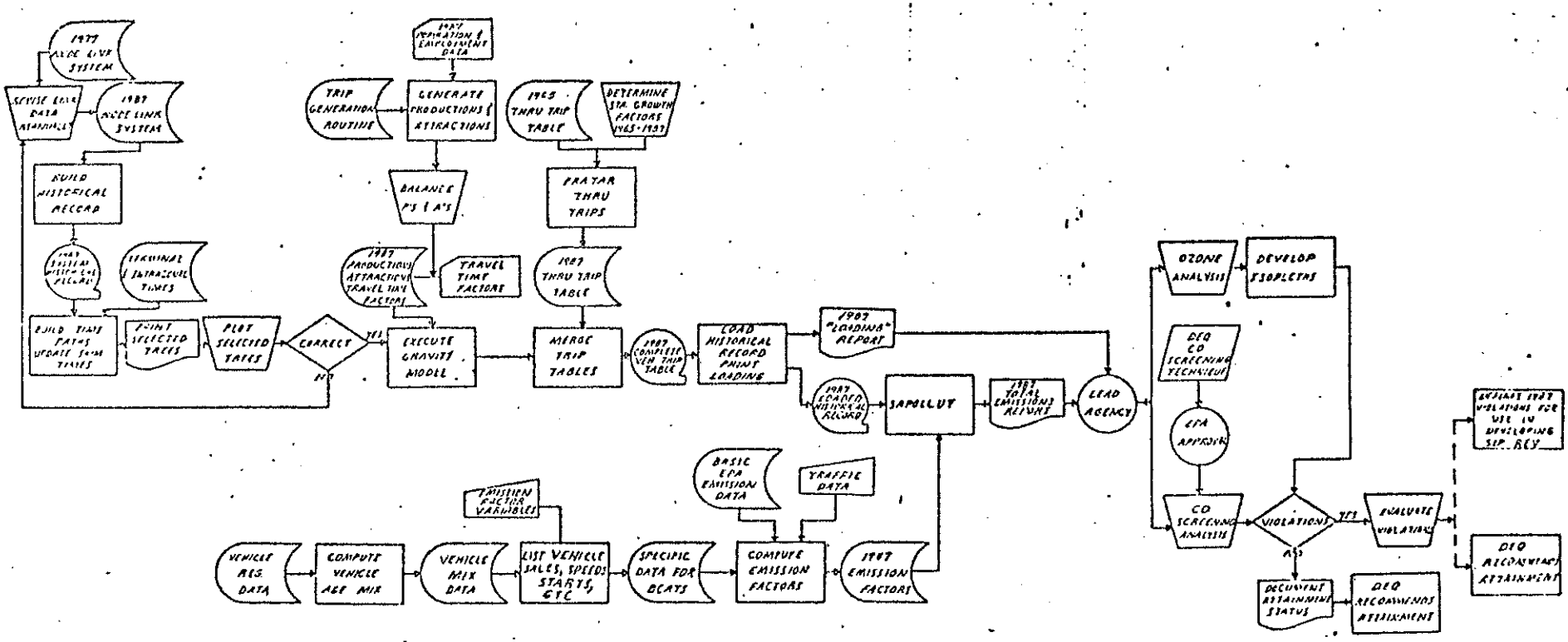
CALIBRATION OF BASE YEAR MODELS[4]



[4] IBID

CHART 2

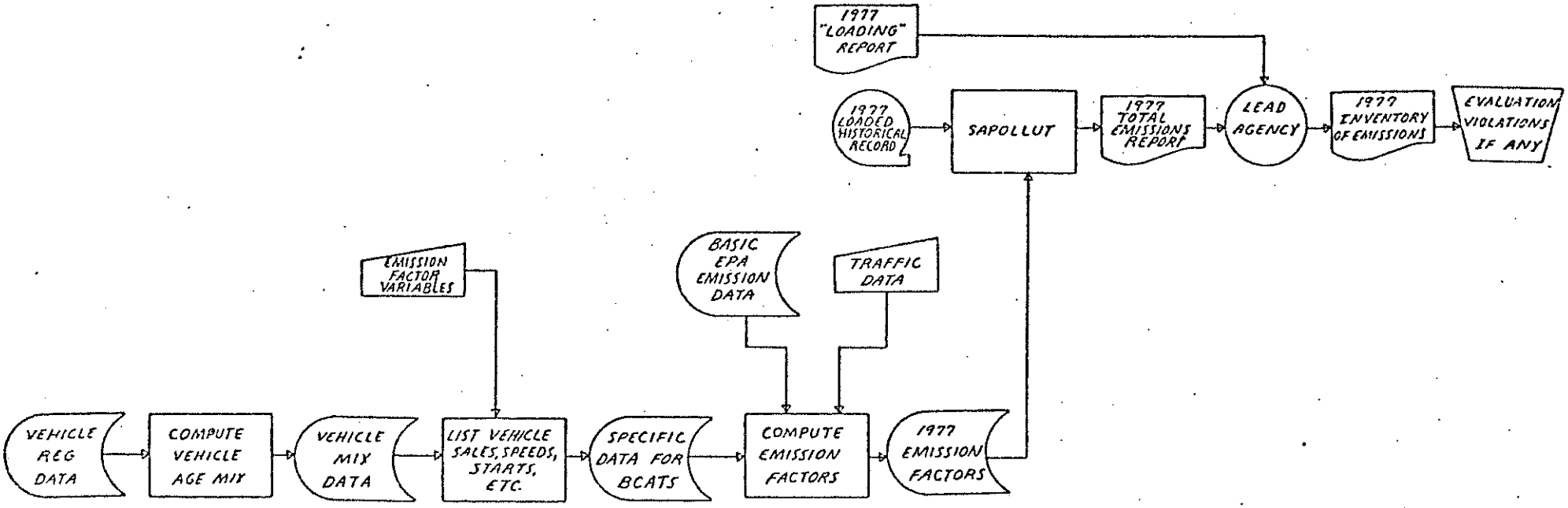
1987 ATTAINMENT OR VIOLATIONS FORECAST[5]



[5] IBID

CHART 3

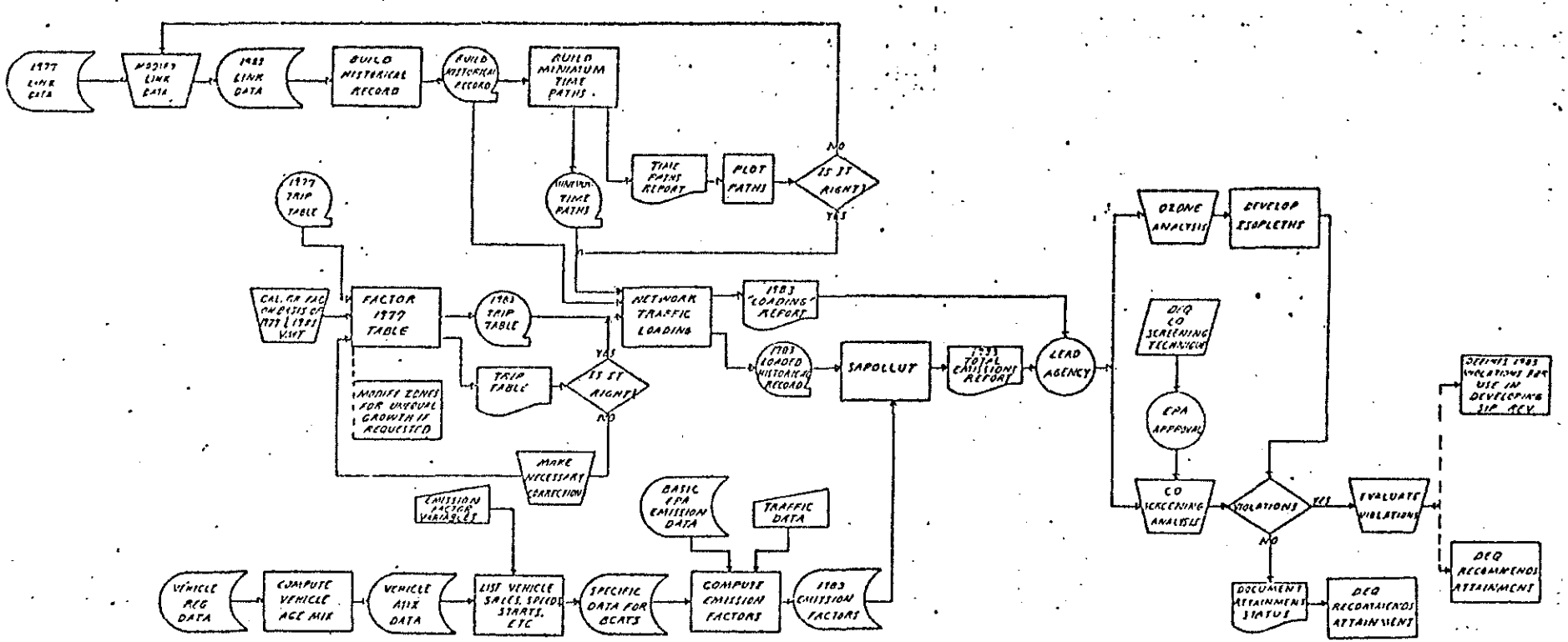
1977 EMISSIONS INVENTORY[6]



[6] IBID

CHART 4

1983 ATTAINMENT OR VIOLATIONS FORECAST[7]



[7] IBID

PHASE 2

Task	Jackson County 1/1--6/30/79	Jackson County 2nd Yr	D E Q 1/1--6/30/79	D E Q 2nd Yr	Totals 1/1--6/30/79	Totals 2nd Yr
1. Coordination & Project Management						
A. Display & Interpretation of conditions and standards	(2.0)	(2.0)	(2.0)	(4.0)	(5.0)	(10.0)
B. Coordination Team Management	(1.0)	(1.0)	-	-	(3.0)	(3.0)
C. Air Quality Advisory Committee Coordination and Support	(2.0)	(3.0)	(3.0)	(3.0)	(6.0)	(6.0)
D. Local Plan Coordination	(1.0)	(1.0)	(2.0)	(2.0)	(6.0)	(10.0)
E. Regional Plan and LCDC Coordination	(.5)	(4.0)	(1.0)	(1.0)	(3.0)	(5.0)
F. Project Management & Progress Reporting	(2.0)	(2.5)	(1.0)	(1.0)	(3.5)	(3.5)
G. Conduct Public Hearings and Adoption Process	(1.0)	(1.0)	(2.0)	(2.0)	(3.0)	(3.0)
H. Monitor & Coordination of 1979 SIP (Progress Reports)	(2.0)	(2.0)	(2.0)	(4.0)	(6.0)	(6.0)
2. Continue Development of O_x Model	-	-	(2.0)	(4.0)	(2.0)	(4.0)
3. Refine Procedure for Identifying & Analyzing Candidate Control Measures	(1.0)	(1.0)	(1.0)	(2.0)	(2.0)	(3.0)
4. Select and Refine Candidate Control Measures	(3.0)	(4.0)	(4.0)	(4.0)	(8.0)	(8.0)
5. Evaluate Alternative Control Measures						
A. Analyze TIP Project for Environmental, Social & Economic Impact	(1.0)	(1.0)	(2.0)	(2.0)	(3.0)	(3.0)
B. Estimate Reductions from Group 2 stationary & other area source emissions for 1982, 1987, & post-1987	-	-	(4.0)	(4.0)	(4.0)	(4.0)

PHASE 2 (Continued)

Task	Jackson County 1/1--6/30/79	Jackson County 2nd Yr	D E Q 1/1--6/30/79	D E Q 2nd Yr	Totals 1/1--6/30/79	Totals 2nd Yr
C. Estimate Reduction from Mobile Sources for 1982, 1987, & post-1987	-	-	(2.0)	(2.0)	(2.0)	(2.0)
D. Estimate air pollution levels	-	-	(2.0)	(2.0)	(2.0)	(2.0)
E. Analyze impacts in relative and/or absolute terms						
1. Social, health, welfare	-	(2.)	-	(1.0)	-	(1.0)
2. Institutional, legal	-	-	-	(1.0)	-	(1.0)
3. Economic, fiscal	-	(3.0)	-	(3.0)	-	(6.0)
4. Energy	-	-	-	(1.0)	-	(1.0)
5. Environmental, including air quality distribution effects	-	-	-	(1.0)	-	(1.0)
F. Identify priority areas for parking & traffic circulation studies	(1.0)	-	(1.0)	-	(2.0)	-
6. Develop Group 2 Stationary Source Control Regulations	-	-	-	(3.0)	-	(3.0)
Analyze Policy Implications						
A. Internal Policy Review	(1.0)	(2.0)	(1.0)	(2.0)	(2.0)	(4.0)
B. Identify Priority Concerns	(1.0)	(2.0)	(1.0)	(2.0)	(2.0)	(4.0)
C. Recommend Priorities	(1.0)	(1.0)	(1.0)	(1.0)	(2.0)	(2.0)
D. Literature Review	(1.0)	(1.0)	(1.0)	(1.0)	(2.0)	(2.0)
E. Report on Alternative Policies	(0.5)	(0.5)	(0.5)	(0.5)	(1.0)	(1.0)
F. Detail Policy Recommendations	(1.0)	-	-	(1.0)	(1.0)	(1.0)
8. Review Federal Requirements	(1.0)	(2.0)	(1.0)	(2.0)	(2.0)	(4.0)
A. Coordination with state officials						
B. Mechanism for Review						
C. Comments/Suggestions to EPA						
D. "Determination of Consistency" Process						

PHASE 2 (Continued)	Jackson County		D E Q		Totals	
Task	1/1--6/30/79	2nd Yr	1/1--6/30/79	2nd Yr	1/1--6/30/79	2nd Yr
). Identify funding	(1.0)	(1.0)	(2.0)	(2.0)	(3.0)	(3.0)
A. Coordination with Agency						
B. Coordination with Grants Office						
C. Quarterly reports to elected officials						
10. Prepare Draft SIP revision for adoption						
A. Evaluate cost-effectiveness of existing program	(0.5)	-	(0.5)	-	(1.0)	-
B. Study application of existing programs to other parts of Metropolitan area	(0.5)	-	(0.5)	-	(1.0)	-
C. DEQ Coordination on Meeting Reports	-	-	(1.0)	(2.0)	(1.0)	(2.0)
D. Identify 1980 Demonstration Control Measures		(2.0)	-	(1.0)	-	(3.0)
E. Develop Revised TCP	-	(4.0)	-	(4.0)	-	(8.0)
F. Document Process (Per Phase 1 Item 10)	-	(1.0)	-	(2.0)	-	(3.0)
11. SIP Selection Activities						
A. Review findings and Plan Proposals with local jurisdictions	-	(2.0)	-	(2.0)	-	(4.0)
B. Review findings and plan proposals with State Regulatory Authorities		(2.0)	-	(2.0)	-	(4.0)
C. Conduct Citizen Involvement Efforts	-	(2.0)	-	(1.0)	-	(3.0)
PHASE 2 TOTALS	(26)	(50)	(40.5)	(72.5)	~~(78.5)~~ 66.5	~~(133.5)~~ 122.5
@ $500.00 per person week	~~$49,500~~ 38,000		$56,500		~~$106,000~~ 94,500	

Oregon Department of Transportation, Phase 2 See Footnote, Page 4

PHASE 1 & 2 TOTALS	Jackson County	~~$99,500~~ 65000	(199)
	DEQ	$91,500	(183)
	ODOT	-	(32)[1]

PHASE 3 (7/1/80 - 6/30/82) NOTE: Budget to be developed if needed.

.. Prepare second state submittal of SIP Revision if extension granted

A. Revise SIP in EPA required format

B. Conduct Public hearings

C. Staff Reports

D. Commission Adoption

E. Submit to EPA

Medford-Ashland AQMA Air Quality Work Program

Table 2 - Identification of Financial Resources and Expenditures (Estimates)

	Jackson County	ODOT	DEQ	Total
A. Phase 1 (7-1-78 to 12-31-78)				
Expenditures	~~$50,000~~ 27,000	$14,500	$35,000	~~$ 99,500~~ 62,000
Resources	22,500 (8)	14,500 (9)	35,000 (10)	72,000
Deficit(s) (11)	~~27,500~~ 4500	-none-	-none-	
B. Phase 2 (1-1-79 to 6-30-80)				
Expenditures	~~49,500~~ 38,000	0	56,500	~~106,000~~ 94,500
Resources	12,500 (8)	0	60,018	72,518
Deficit(s) (11)	~~37,000~~ 25,500	-none-	-none-	
C. Phase 1 & 2 (7-1-78 to 6-30-80)				
Expenditures	~~99,500~~ 65000	14,500	91,500	~~205,500~~ 171,000
Resources	35,000 (8)	14,500	95,018 (10)	144,518
Deficit(s) (11)	~~64,500~~ 30,000	-none-	-none-	

(8) Jackson County Comprehensive Planning Department estimate of $25,000 per annum by Bruce Shaw 8-21-78 funds appropriated through 6-30-79.

(9) ODOT has indicated costs to accomplish tasks will be through existing resources.

(10) Refer to Appendix A for DEQ Resource Estimate Calculation.

(11) Jackson County and DEQ could pursue sources of funds to supplement the above resources. DEQ will disburse any available funds as needed to complete tasks.

FIGURE 1

MEDFORD-ASHLAND AQMA
PHASE I SCHEDULE
(7/1/78 → 1/1/79)

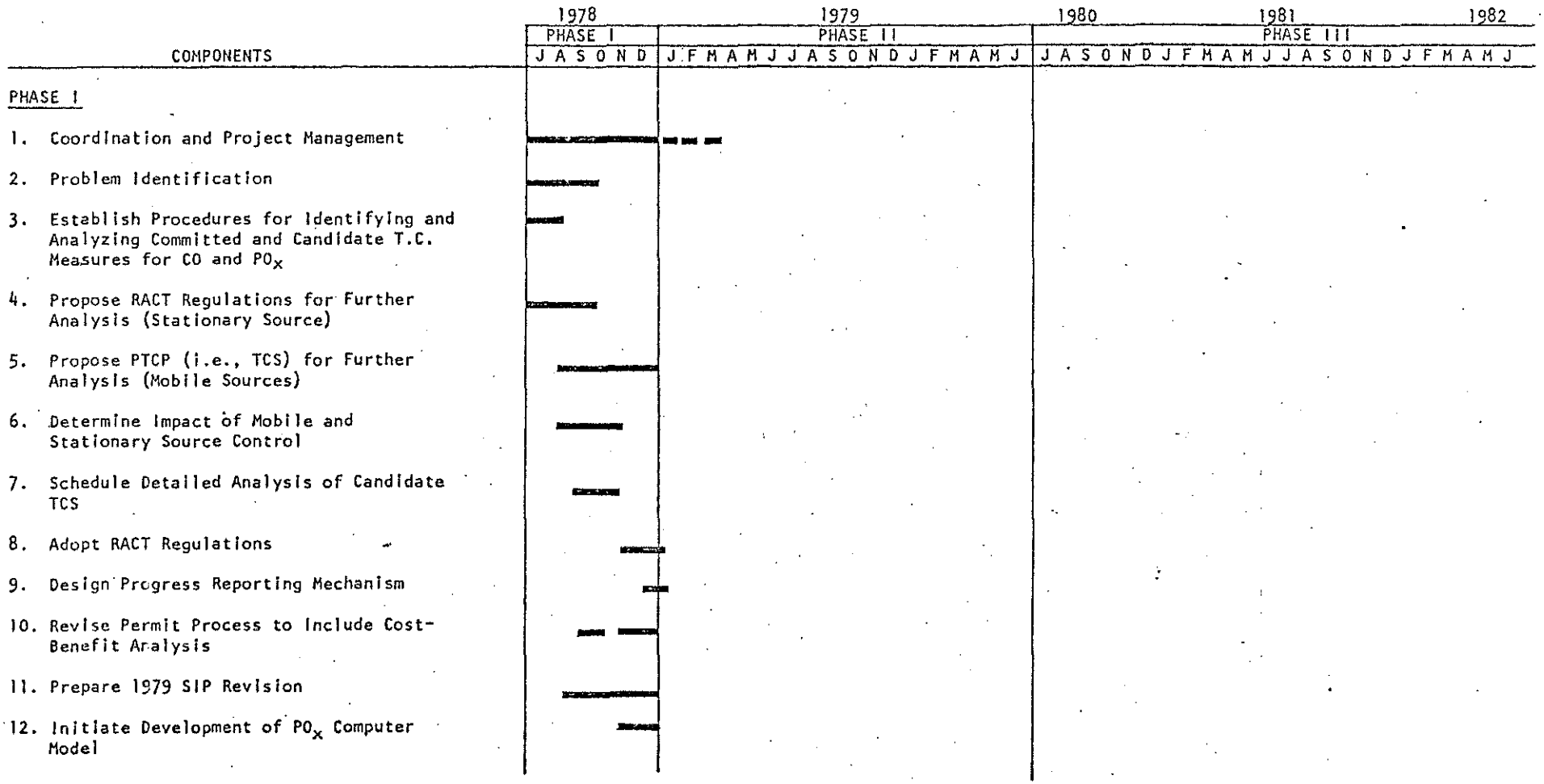


FIGURE 2

MEDFORD-ASHLAND AQMA
PHASE II SCHEDULE
(1/1/79 → 6/30/80)

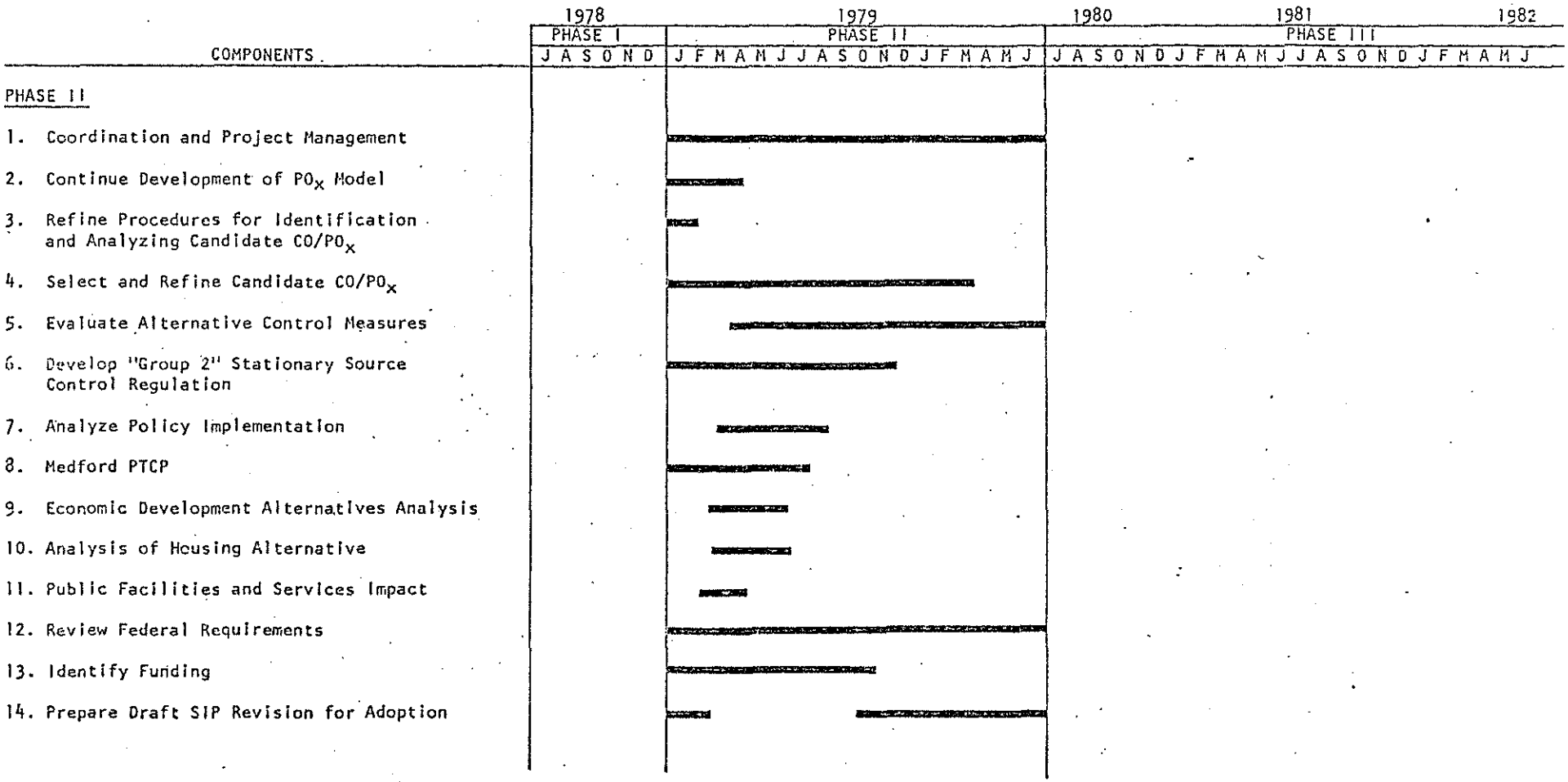


FIGURE 3

MEDFORD-ASHLAND AQMA
PHASE III SCHEDULE
(7/1/80 → 7/1/82)

COMPONENTS	1978						1979												1980						1981						1982
	PHASE I						PHASE II												PHASE II												
	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J
PHASE III																																				
(To be Developed Later In 1979)																																				

PROFESSIONAL SERVICES CONTRACT

This contract is between the Oregon Department of Environmental Quality, hereinafter called Department, and Jackson County Board of Commissioners, hereinafter called Contractor.

Whereas, the Department requires the professional services of a Contractor who has the expertise and special knowledge of regional transportation planning and can provide the services set forth in this contract, the Department and Contractor agree as follows:

1. Contractor Status

Contractor is not a contributing member of the Public Employes' Retirement System and will be responsible for any Federal or State taxes applicable to this payment. Contractor will not be eligible for any benefits from these contract payments of Federal Social Security, State Workers' Compensation, unemployment insurance, or the Public Employes' Retirement System, except as a self-employed individual.

2. Statement of Work

The Contractor agrees to accomplish the following work under this contract during the period of July 1, 1978, through December 31, 1978, by the dates as indicated:

Task Period (July 1, 1978, to September 30, 1978)

a. Establish procedures to identify and analyze committed and candidate transportation control measures by September 30, 1978.

b. Perform an ambient PO_X in the AQMA (and outside to determine background and/or PO_X influx from outside the AQMA) during periods of peak PO_X formation totaling a minimum of 20 hours and provide the Department with verified data by September 30, 1978. It is recognized the survey's success depends upon suitable meterological conditions occurring. The Department is not adverse to postponing the survey, if necessary, until summer, 1979, so as to conduct the survey during peak PO_X formation.

c. Identify the scope of a survey to measure carbon monoxide in Medford and Ashland during December 1978. The prime purpose of the survey will be to determine ground level carbon monoxide concentration and develop isopleths of equal concentration. December is considered to be the peak CO period due to Christmas activity and poor dispersion.

d. Submit monthly progress reports on AQMA activity by the 15th of each month for the preceding calendar month.

e. Coordinate SIP revision activity with the Medford-Ashland AQMA Advisory Committee, Oregon Department of Transportation (ODOT), Oregon Department of Environmental Quality (DEQ), local governments, associations of local governments, private industry, and other interested parties (activity is of an ongoing nature).

Task Period (October 1, 1978, to December 31, 1978)

f. Propose and schedule candidate Transportation Control Measures (TCM) for further analysis by December 31, 1978.

g. Determine impact (social, health, welfare, institutional, legal, economic, fiscal, energy, environment, and policy implications) of required mobile source control measures by December 31, 1978.

h. Design progress reporting mechanism by October 30, 1978 (interdependency on concurrent DEQ development is recognized).

i. Revise permit process to include a cost-benefit review analysis by December 31, 1978 (interdependency on concurrent DEQ development is recognized).

j. Prepare Transportation Control Plan (TCP) SIP revision which meets EPA requirements and includes attainment analysis and finalized work program for Phase 2 and 3 and submit to DEQ by December 31, 1978.

k. Perform CO survey as developed in Item c above by December 31, 1978.

3. Consideration

a. The Department agrees to pay Contractor the sum of $10,000 for accomplishment of the statement of work. This payment shall be the sole monetary obligation of the Department.

b. One third (1/3) of the monetary consideration specified in 3a above shall be paid to the Contractor within 14 days of approval of this contract by all parties. One-half (1/2) of the monetary consideration specified in 3a above shall be paid to the Contractor within 14 days after the submission and Department approval of all items listed to be completed in the period July 1, 1978, to September 30, 1978. The remaining one-sixth (1/6) of the monetary consideration listed in 3a above shall be paid to the Contractor upon submission and Department approval of all items listed in Section 2 of this contract.

4. Government Employment Status

Contractor certifies that he/she is not currently employed by the Federal Government or the State of Oregon.

5. Subcontracts

Contractor shall not enter into any subcontracts for any work scheduled under this contract without obtaining prior written approval from the Department.

6. Dual Payment

Contractor shall not be compensated for work performed under this contract from any other department of the State of Oregon.

7. Funds Available and Authorized

Department certifies at the time the contract is written that sufficient funds are available and authorized for expenditure to finance costs of this contract within the Department's current appropriation/limitation, Oregon Laws 1977, Chapter 704, Section 3(1) Federal Funds, Air Quality Program, as amended by the Emergency Board meeting of June 16, 1978.

8. Termination

This contract may be terminated by mutual consent of both parties, or by either party upon 30 days' notice, in writing, and delivered by certified mail or in person.

The Department may terminate this contract effective upon delivery of written notice to the Contractor, or at such later date as may be established by the Department, under any of the following conditions:

a. If Department funding from Federal, State, or other sources is not obtained and continued at levels sufficient to allow for purchase of the indicated quantity of services. When possible, and when agreed upon, the contract may be modified to accommodate a reduction in funds.

b. If Federal or State regulations or guidelines are modified or changed in such a way that the services are no longer allowable or appropriate for purchase under this contract.

c. If any license or certificate required by law or regulation to be held by the Contractor to provide the services required by this contract is for any reason denied, revoked, or not renewed.

Any such termination of this contract shall be without prejudice to any obligations or liabilities of either party already accrued prior to such termination.

The Department by written notice of default (including breach of contract) to the Contractor may terminate the whole or any part of this agreement:

a. If the Contractor fails to provide services called for by this contract within the time specified herein or any extension thereof; or

b. If the contractor fails to perform any of the other provisions of this contract, or so fails to pursue the work as to endanger performance of this contract in accordance with its terms, and after receipt of written notice from the Department, fails to correct such failures within 10 days or such longer period as the Department may authorize.

The rights and remedies of the Department provided in the above clause related to defaults (including breach of contract) by the Contractor shall not be exclusive and are in addition to any other rights and remedies provided by law or under this contract.

9. Access to Records

Department, the Secretary of State's Office of the State of Oregon, the Federal Government, and their duly authorized representatives shall have access to the books, documents, papers, and records of the Contractor which are directly pertinent to the specific contract for the purpose of making audit, examination, excerpts, and transcripts.

10. Nondiscrimination

Contractor agrees to comply with the requirements of the Civil Rights Act of 1964 and the Vocational Rehabilitation Act of 1973.

11. Executive Department Approval

Executive Department approval is required before any work may begin under this contract.

12. Contractor Data

Jackson County Board of Commissioners
Jackson County Comprehensive Planning
107 East Main, Suite 12
Medford, Oregon 97501

Contractor's Code - Y9995

13. Department Address

Department of Environmental Quality
522 S. W. Fifth Avenue
P. O. Box 1760
Portland, Oregon 97207

14. Signatures

Contractor	7/5/78 Date
Department Project Officer	10-17-78 Date
Department Contract Officer	10/23/78 Date
Department Director	10/23/78 Date
Executive Department Director or his Delegate	10-30-78 Date

APPENDIX 4.9-3

ROBERT W. STRAUB
GOVERNOR

Department of Environmental Quality

522 SOUTHWEST 5TH AVE. PORTLAND, OREGON

MAILING ADDRESS: P.O. BOX 1760, PORTLAND, OREGON 97207

Prepared: March 8, 1979
Hearing Date: May 3, 1979

NOTICE OF PUBLIC HEARING

A CHANCE TO BE HEARD ABOUT

Revision of the State Implementation Plan Involving Carbon Monoxide and Ozone Pollutants in the Medford-Ashland Air Quality Maintenance Area.

The Department of Environmental Quality is proposing to revise the Oregon State Implementation Plan (SIP) regarding carbon monoxide and ozone pollutants in the Medford-Ashland Air Quality Maintenance Area (AQMA). The proposed revision is necessary to meet certain requirements of the Federal Clean Air Act. The proposed SIP revision will be submitted to the Environmental Protection Agency (EPA) by July 1, 1979. A hearing on this matter will be held in Medford May 3, 1979 at the Jackson County Courthouse Auditorium at 9 a.m.

WHAT IS THE DEQ PROPOSING?

Interested parties should request a copy of the proposed revision. The major aspects of the proposed revision are:

** The State is documenting compliance with the requirements of the Federal Clean Air Act regarding SIP revision in non-attainment areas such as the Medford-Ashland AQMA.

** An analysis of existing and projected carbon monoxide air quality which indicates meeting federal air quality standards is unlikely in the Medford-Ashland AQMA without instituting further emission reduction strategies.

** A commitment to identify and analyze candidate carbon monoxide emission reduction strategies by July, 1980. Selected strategies will be made part of the SIP by July, 1982.

** A request that EPA grant an extension from December 31, 1982 to December 31, 1987 to meet federal air quality standards for carbon monoxide.

** An analysis of existing and projected ozone air quality which indicates the AQMA will be in attainment of the federal air quality standards by December 31, 1982 without developing and

implementing further transportation related measures. By 1987 the margin of attainment will be approximately 500 tons of volatile organic compound emissions.

WHO IS AFFECTED BY THIS INFORMATION:

This SIP revision affects the following activities which emit Volatile Organic Compounds (VOC): a) new sources which have potential emissions more than 100 tons per year VOC; b) underground tank (over 8000 gallon capacity) filling at gasoline stations; c) the use of cutback asphalt; d) petroleum liquid storage; e) surface coating in manufacturing; f) degreasing operations; g) Asphaltic and Coar Tar Pitch Used for Roofing Coating; and h) bulk gasoline plants. Individuals who are exposed to carbon monoxide and ozone in areas where the air quality standards are exceeded.

HOW TO PROVIDE YOUR INFORMATION:

Written comments should be sent to the Department of Environmental Quality, Dennis Belsky, Air Quality Division, P.O. Box 1760, Portland, Oregon 97207, and should be received by May 3, 1979. The hearing record closes 5 p.m. May 3, 1979.

Oral and written comments may be offered at the following public hearing:

City	Time	Date	Location
Medford	9 a.m.	May 3, 1979	Auditorium, Jackson County Courthouse 10 South Oakdale

WHERE TO OBTAIN ADDITIONAL INFORMATION:

Copies of the proposed SIP revisions may be obtained after March 30, 1979 from:

Dennis Belsky
DEQ Air Quality Division
P.O. Box 1760
Portland, Oregon 97207
(503) 229-6446

LEGAL REFERENCES FOR THIS PROPOSAL:

This SIP revision includes additional regulations in OAR 340-22 and 340-20-190. This SIP revision is proposed under authority of ORS 468.295, ORS 468.305, and ORS 197.180.

LAND USE PLANNING CONSISTENCY:

The Department has concluded that the proposals do affect land use.

With regard to Goal 6 (air, water and land resources quality) the rules are designed to enhance and preserve air quality in the affected area and are considered consistent with the goal.

Goal 11 (public facilities and services) is deemed unaffected by the proposals.

Public comment on any land use issue involved is welcome and may be submitted in the same fashions as are indicated for testimony in this NOTICE OF PUBLIC HEARING.

It is requested that local, state, and federal agencies review the proposed action and comment on possible conflicts with their programs affecting land use and with Statewide Planning Goals within their expertise and jurisdiction.

The Department of Environmental Quality intends to ask the Department of Land Conservation and Development to mediate any apparent conflict brought to our attention by local, state or federal authorities.

FURTHER PROCEEDINGS:

After public hearing the Commission may adopt rule amendments identical to the proposed amendments, adopt modified rule amendments on the same subject matter, or decline to act. The adopted regulations may be submitted to the Environmental Protection Agency as part of the State Clean Air Act Implementation Plan. The Commission's deliberation should come in June, 1979 as part of the agenda of a special Commission meeting.

DWB:kmm

YOUR OPPORTUNITY TO COMMENT
ON PROPOSED DEQ
AIR POLLUTION EMISSION RULES FOR
MEDFORD-ASHLAND OZONE AND CARBON MONOXIDE CONTROL

The proposed revisions contain an analysis of existing and projected carbon monoxide (CO) and ozone air quality levels as well as a program for analyzing potential new CO control strategies. Projected ozone air quality indicates attainment with EPA standards by December 31, 1982 without implementing additional transportation control measures. A request for extension of the December 31, 1982 EPA CO standards attainment date is also included. The revisions would be submitted to EPA as a change to Oregon's Clean Air Act Implementation Plan. You may comment orally at:

9:00 A.M. PUBLIC HEARING MAY 3, 1979
AUDITORIUM
JACKSON COUNTY COURTHOUSE
MEDFORD, OR

Copies of the proposed rule are available for your study and comment by writing or phoning Dennis Belsky, 229-6446, DEQ Air Quality Division, P.O. Box 1760, Portland, OR 97207; or by phoning toll-free 1-800-452-7813, and asking for DEQ 229-6446

Written comments may be submitted until May 3 at the above DEQ address

MEDFORD MAIL TRIBUNE
MARCH 30, 1979

YOUR OPPORTUNITY TO COMMENT
ON PROPOSED DEQ
AIR POLLUTION EMISSION RULES FOR
MEDFORD-ASHLAND OZONE AND CARBON MONOXIDE CONTROL

The proposed revisions contain an analysis of existing and projected carbon monoxide (CO) and ozone air quality levels as well as a program for analyzing potential new CO control strategies. Projected ozone air quality indicates attainment with EPA standards by December 31, 1982 without implementing additional transportation control measures. A request for extension of the December 31, 1982 EPA CO standards attainment date is also included. The revisions would be submitted to EPA as a change to Oregon's Clean Air Act Implementation Plan. You may comment orally at:

9:00 A.M. PUBLIC HEARING MAY 3, 1979
AUDITORIUM
JACKSON COUNTY COURTHOUSE
MEDFORD, OR

Copies of the proposed rule are available for your study and comment by writing or phoning Dennis Belsky, 229-6446, DEQ Air Quality Division, P.O. Box 1760, Portland, OR 97207; or by phoning toll-free 1-800-452-7813, and asking for DEQ 229-6446

Written comments may be submitted until May 3 at the above DEQ address

MEDFORD MAIL TRIBUNE
APRIL 9, 1979

Medford-Ashland AQMA Emission Inventory
Carbon Monoxide, Tons Per Year

Source	Baseline Year 1977	1982 Projected Allowable Emissions		
		Emissions from sources existing in 1977	Growth Since 1977	Projected 1982 Total Emissions
1. Fuel Combustion External				
A. Residential Fuel (Area)				
1. Anthracite Coal	0	0	0	0
2. Bituminous Coal	0	0	0	0
3. Distillate Oil	13.1	13.1	0	13.1
4. Residual Oil	0	0	0	0
5. Natural Gas	8.7	8.7	0.1	8.8
6. Wood	5314.2	5314.2	811.4	6125.2
7. Total	5336.0	5336.0	811.5	6147.5
B. Electric Generation (Point)				
1. Antracite Coal	0	0	0	0
2. Bituminous Coat	0	0	0	0
3. Lignite	0	0	0	0
4. Residual Oil	0	0	0	0
5. Distillate Oil	0	0	0	0
6. Natural Gas	0	0	0	0
7. Process Gas	0	0	0	0
8. Coke	0	0	0	0
9. Solid Waste/Coal	0	0	0	0
10. Total	0	0	0	0
C. Industrial Fuel (Point)				
1. Anthracite Coal				
a. area	0	0	0	0
b. point	0	0	0	0
2. Bituminous Coal				
a. area	0	0	0	0
b. point	0	0	0	0
3. Lignite				
a. point	0	0	0	0
4. Residual Oil				
a. area	0	0	0	0
b. point	0.7	0.7	0.1	0.8
5. Distillate Oil				
a. area	0	0	0	0
b. point	12.0	12.0	0.6	12.6
6. Natural Gas				
a. area	0	0	0	0
b. point	4.5	4.5	0.5	5.0

Medford-Ashland AQMA Emission Inventory
Carbon Monoxide, Tons Per Year

Source	Baseline Year 1977	1982 Projected Allowable Emissions		
		Emissions from sources existing in 1977	Growth Since 1977	Projected 1982 Total Emissions
7. Process Gas				
a. area	0	0	0	0
b. point	0	0	0	0
8. Coke				
a. point	0	0	0	0
9. Wood				
a. area	0	0	0	0
b. point	434.4	434.4	0	434.4
10. Liquid Petro Gas				
a. point	0.3	0	0.1	0.4
11. Bagasse				
a. point	0	0	0	0
12. Other				
a. point	0	0	0	0
13. Total				
a. area	0	0	0	0
b. point	451.9	451.9	1.3	453.2
D. Commercial/Institutional Fuel				
1. Anthracite Coal				
a. area	0	0	0	0
b. point	0	0	0	0
2. Bituminous Coal				
a. area	0	0	0	0
b. point	0	0	0	0
3. Lignite				
a. point	0	0	0	0
4. Residual Oil				
a. area	121.5	121.5	0	121.5
b. point	0	0	0	0
5. Distillate Oil*				
a. area	0	0	0	0
b. point	0	0	0	0
6. Natural Gas				
a. area	4.5	4.5	0.1	4.6
b. point	0	0	0	0
7. Wood				
a. area	0	0	0	0
b. point	0	0	0	0
8. Liquid Petrol Gas				
a. point	0	0	0	0

*EI data combines R.O. & D.O.

Medford-Ashland AQMA Emission Inventory
Carbon Monoxide, Tons Per Year

Source	Baseline Year 1977	1982 Projected Allowable Emissions		
		Emissions from sources existing in 1977	Growth Since 1977	Projected 1982 Total Emissions
9. Other				
a. point	0	0	0	0
10. Total				
a. area	126.0	126.0	0.1	126.1
b. point	0	0	0	0
E. Other				
1. Point	0	0	0	0
F. Total External Combustion				
1. Area	5462.0	5462.0	811.6	6273.6
2. Point	451.9	451.9	1.3	453.2
2. Fuel Combustion Internal				
A. Electric Generator				
1. Distillate Oil	0	0	0	0
2. Natural Gas	0	0	0	0
3. Diesel	0	0	0	0
4. Other	0	0	0	0
5. Total	0	0	0	0
B. Industrial Fuel				
1. Distillate Oil	0	0	0	0
2. Natural Gas	0	0	0	0
3. Gasoline	0	0	0	0
4. Diesel	0	0	0	0
5. Other	0	0	0	0
6. Total	0	0	0	0
C. Commercial/Institutional Fuel				
1. Diesel	0	0	0	0
2. Total	0	0	0	0
D. Engine Testing Aircraft	0	0	0	0
E. Total Internal Combustion	0	0	0	0

Medford-Ashland AQMA Emission Inventory
Carbon Monoxide, Tons Per Year

Source	Baseline Year 1977	1982 Projected Allowable Emissions		
		Emissions from sources existing in 1977	Growth Since 1977	Projected 1982 Total Emissions
Total Fuel Combustion				
Area	5462.0	5462.0	811.6	6273.6
Point	451.9	451.9	1.3	453.2
3. Industrial Process (Point)				
A. Chemical Manufacturing	1294.0	1294.0	0	1294.0
B. Food/Agriculture	0	0	0	0
C. Primary Metal	0	0	0	0
D. Secondary Metals	0	0	0	0
E. Mineral Products	0	0	0	0
F. Petroleum Industry	0	0	0	0
G. Wood Products	60.6	58.6	30.0	88.6
H. Metal Fabrication	0	0	0	0
I. Leather Products	0	0	0	0
J. Textile Manufacturing	0	0	0	0
K. Inprocess Fuel	0	0	0	0
L. Other/Not Classified	0	0	0	0
M. Total	1354.6	1352.6	30.0	1382.6
4. Solid Waste Disposal				
A. Government (Point)				
1. Municipal Incin.	0	0	0	0
2. Open Burning	0	0	0	0
3. Other	0	0	0	0
4. Total	0	0	0	0
B. Residential (Area)				
1. Onsite Incin.	257.0	257.0	23.80	280.8
2. Open Burning	1170.9	1170.9	35.1	1206.0
3. Total	1427.9	1427.9	58.9	1486.8
C. Commercial/Institutional				
1. Onsite Incin.				
a. area	unknown	unknown	unknown	unknown
b. point	0	0	0	0

Medford-Ashland AQMA Emission Inventory
Carbon Monoxide, Tons Per Year

Source	Baseline Year 1977	1982 Projected Allowable Emissions		
		Emissions from sources existing in 1977	Growth Since 1977	Projected 1982 Total Emissions
2. Open Burning				
a. area	unknown	unknown	unknown	unknown
b. point	0	0	0	0
3. Apartment				
a. point	0	0	0	0
4. Other				
a. area	0	0	0	0
b. point	0	0	0	0
5. Total				
a. area	unknown	unknown	unknown	unknown
b. point	0	0	0	0
D. Industrial				
1. Onsite Incin.				
a. area	0	0	0	0
b. point	0	0	0	0
2. Open Burning				
a. area	0	0	0	0
b. point	0	0	0	0
3. Auto Body Incin.				
a. point	0	0	0	0
4. Other				
a. area	0	0	0	0
b. point	0	0	0	0
5. Total				
a. area	0	0	0	0
b. point	0	0	0	0
E. Total Solid Waste Disposal				
1. area	1427.9	1427.9	58.9	1486.8
2. point	0	0	0	0
5. Transportation (Area)				
A. Land Vehicles				
1. Gasoline				
a. light duty	42480.0	17688.1	17874.8	35562.9
b. heavy duty	4534.4	2315.7	2526.3	4842.0
c. off highway	1275.5	1275.5	173.9	1449.4
d. total	48289.9	21279.3	20575.0	41854.3

Medford-Ashland AQMA Emission Inventory
Carbon Monoxide, Tons Per Year

Source	Baseline Year 1977	1982 Projected Allowable Emissions		
		Emissions from sources existing in 1977	Growth Since 1977	Projected 1982 Total Emissions
2. Diesel				
a. heavy duty	716.0	260.5	355.5	616.0
b. off highway	23.5	23.5	0.5	24.0
c. rail	54.9	54.9	0.0	54.9
d. total	794.4	338.9	356.0	694.9
B. Aircraft				
1. Military	4.7	4.7	0	4.7
2. Civil	463.1	463.1	57.9	521.0
3. Commercial	43.4	43.4	0	43.4
4. Total	511.2	511.2	57.9	569.1
C. Vessels				
1. Bituminous Coal	0	0	0	0
2. Diesel Fuel	0	0	0	0
3. Residual Oil	0	0	0	0
4. Gasoline	0	0	0	0
5. Total	0	0	0	0
D. Total Transportation	49595.5	22129.4	20988.9	43118.3
6. Miscellaneous (Area)				
A. Fires				
1. Structural	unknown	unknown	unknown	unknown
2. Frost Control	6.5	6.5	0	6.5
3. Slash Burning	1177.6	1177.6	0	1177.6
4. Wild Forest	unknown	unknown	unknown	unknown
5. Agricultural	32.6	32.6	0	32.6
6. Total	1216.7	1216.7	0	1216.7
B. Total Miscellaneous	1216.7	1216.7	0	1216.7
TOTAL AREA	57702	30236	21860	52096
TOTAL POINT	1806	1804	31	1835
GRAND TOTAL (rounded to nearest hundred)	59500	32000	21900	53900

Medford-Ashland AQMA Emission Inventory
Carbon Monoxide, Tons Per Year

Source	Baseline Year 1977	1987 Projected Emissions		
		Emissions from sources existing in 1977	Growth Since 1977	Projected 1987 Total Emissions
1. Fuel Combustion External				
A. Residential Fuel (Area)				
1. Anthracite Coal	0	0	0	0
2. Bituminous Coal	0	0	0	0
3. Distillate Oil	13.1	13.1	0	13.1
4. Residual Oil	0	0	0	0
5. Natural Gas	8.7	8.7	0.2	8.9
6. Wood	5314.2	5314.2	1530.7	6844.3
7. Total	5336.0	5336.0	1530.3	6866.3
B. Electric Generation (Point)				
1. Antracite Coal	0	0	0	0
2. Bituminous Coat	0	0	0	0
3. Lignite	0	0	0	0
4. Residual Oil	0	0	0	0
5. Distillate Oil	0	0	0	0
6. Natural Gas	0	0	0	0
7. Process Gas	0	0	0	0
8. Coke	0	0	0	0
9. Solid Waste/Coal	0	0	0	0
10. Total	0	0	0	0
C. Industrial Fuel (Point)				
1. Anthracite Coal				
a. area	0	0	0	0
b. point	0	0	0	0
2. Bituminous Coal				
a. area	0	0	0	0
b. point	0	0	0	0
3. Lignite				
a. point	0	0	0	0
4. Residual Oil				
a. area	0	0	0	0
b. point	0.7	0.7	0.2	0.9
5. Distillate Oil				
a. area	0	0	0	0
b. point	12.0	12.0	1.2	13.2
6. Natural Gas				
a. area	0	0	0	0
b. point	4.5	4.5	1.0	5.5

Medford-Ashland AQMA Emission Inventory
Carbon Monoxide, Tons Per Year

Source	Baseline Year 1977	1987 Projected Emissions		
		Emissions from sources existing in 1977	Growth Since 1977	Projected 1987 Total Emissions
7. Process Gas				
a. area	0	0	0	0
b. point	0	0	0	0
8. Coke				
a. point	0	0	0	0
9. Wood				
a. area	0	0	0	0
b. point	434.4	434.4	0	434.4
10. Liquid Petro Gas				
a. point	0.3	0.3	0.1	0.4
11. Bagasse				
a. point	0	0	0	0
12. Other				
a. point	0	0	0	0
13. Total				
a. area	0	0	0	0
b. point	451.9	451.9	2.5	454.4
D. Commercial/Institutional Fuel				
1. Anthracite Coal				
a. area	0	0	0	0
b. point	0	0	0	0
2. Bituminous Coal				
a. area	0	0	0	0
b. point	0	0	0	0
3. Lignite				
a. point	0	0	0	0
4. Residual Oil				
a. area	121.5	121.5	0	121.5
b. point	0	0	0	0
5. Distillate Oil*				
a. area	0	0	0	0
b. point	0	0	0	0
6. Natural Gas				
a. area	4.5	4.5	0.2	4.7
b. point	0	0	0	0
7. Wood				
a. area	0	0	0	0
b. point	0	0	0	0
8. Liquid Petrol Gas				
a. point	0	0	0	0

*EI data combines R.O. & D.O.

Medford-Ashland AQMA Emission Inventory
Carbon Monoxide, Tons Per Year

Source	Baseline Year 1977	1987 Projected Emissions		
		Emissions from sources existing in 1977	Growth Since 1977	Projected 1987 Total Emissions
9. Other				
a. point	0	0	0	0
10. Total				
a. area	126.0	126.0	0.2	126.2
b. point	0	0	0	0
E. Other				
1. Point	0	0	0	0
F. Total External Combustion				
1. Area	5462.0	5462.0	1530.5	6992.5
2. Point	451.9	451.9	2.5	454.4
2. Fuel Combustion Internal				
A. Electric Generator				
1. Distillate Oil	0	0	0	0
2. Natural Gas	0	0	0	0
3. Diesel	0	0	0	0
4. Other	0	0	0	0
5. Total	0	0	0	0
B. Industrial Fuel				
1. Distillate Oil	0	0	0	0
2. Natural Gas	0	0	0	0
3. Gasoline	0	0	0	0
4. Diesel	0	0	0	0
5. Other	0	0	0	0
6. Total	0	0	0	0
C. Commercial/Institutional Fuel				
1. Diesel	0	0	0	0
2. Total	0	0	0	0
D. Engine Testing Aircraft	0	0	0	0
E. Total Internal Combustion	0	0	0	0

Medford-Ashland AQMA Emission Inventory
Carbon Monoxide, Tons Per Year

Source	Baseline Year 1977	1987 Projected Emissions		
		Emissions from sources existing in 1977	Growth Since 1977	Projected 1987 Total Emissions
Total Fuel Combustion				
Area	5462.0	5462.0	1530.5	6992.5
Point	451.9	451.9	2.5	454.4
3. Industrial Process (Point)				
A. Chemical Manufacturing	1294.0	1294.0	0	1294.0
B. Food/Agriculture	0	0	0	0
C. Primary Metal	0	0	0	0
D. Secondary Metals	0	0	0	0
E. Mineral Products	0	0	0	0
F. Petroleum Industry	0	0	0	0
G. Wood Products	60.6	58.6	30.0	88.6
H. Metal Fabrication	0	0	0	0
I. Leather Products	0	0	0	0
J. Textile Manufacturing	0	0	0	0
K. Inprocess Fuel	0	0	0	0
L. Other/Not Classified	0	0	0	0
M. Total	1354.6	1352.6	30.0	1382.6
4. Solid Waste Disposal				
A. Government (Point)				
1. Municipal Incin.	0	0	0	0
2. Open Burning	0	0	0	0
3. Other	0	0	0	0
4. Total	0	0	0	0
B. Residential (Area)				
1. Onsite Incin.	257.0	257.0	47.6	304.6
2. Open Burning	1170.9	1170.9	70.2	1241.1
3. Total	1427.9	1427.9	117.8	1545.7
C. Commercial Institutional				
1. Onsite Incin.				
a. area	unknown	unknown	unknown	unknown
b. point	0	0	0	0
2. Open Burning				

Medford-Ashland AQMA Emission Inventory
Carbon Monoxide, Tons Per Year

Source	Baseline Year 1977	1987 Projected Emissions		
		Emissions from sources existing in 1977	Growth Since 1977	Projected 1987 Total Emissions
a. area	unknown	unknown	unknown	unknown
b. point	0	0	0	0
3. Apartment				
a. point	0	0	0	0
4. Other				
a. area	0	0	0	0
b. point	0	0	0	0
5. Total				
a. area	unknown	unknown	unknown	unknown
b. point	0	0	0	0
D. Industrial				
1. Onsite Incin.				
a. area	0	0	0	0
b. point	0	0	0	0
2. Open Burning				
a. area	0	0	0	0
b. point	0	0	0	0
3. Auto Body Incin.				
a. point	0	0	0	0
4. Other				
a. area	0	0	0	0
b. point	0	0	0	0
5. Total				
a. area	0	0	0	0
b. point	0	0	0	0
E. Total Solid Waste Disposal				
1. area	1427.9	1427.9	117.8	1545.7
2. point	0	0	0	0
5. Transportation (Area)				
A. Land Vehicles				
1. Gasoline				
a. light duty	42480.0	4066.4	27128.8	31195.2
b. heavy duty	4534.4	1035.9	3806.1	4842.0
c. off highway	1275.5	1275.5	347.8	1623.3
d. total	48289.9	6377.8	31282.7	37660.5

Medford-Ashland AQMA Emission Inventory
Carbon Monoxide, Tons Per Year

Source	Baseline Year 1977	1987 Projected Emissions		
		Emissions from sources existing in 1977	Growth Since 1977	Projected 1987 Total Emissions
2. Diesel				
a. heavy duty	716.0	42.7	511.8	554.4
b. off highway	23.5	23.5	1.0	24.5
c. rail	54.9	54.9	0.0	54.9
d. total	794.4	121.1	512.8	633.9
B. Aircraft				
1. Military	4.7	4.7	0	4.7
2. Civil	463.1	463.1	115.8	578.9
3. Commercial	43.4	43.4	0	43.4
4. Total	511.2	511.2	115.8	627.0
C. Vessels				
1. Bituminous Coal	0	0	0	0
2. Diesel Fuel	0	0	0	0
3. Residual Oil	0	0	0	0
4. Gasoline	0	0	0	0
5. Total	0	0	0	0
D. Total Transportation	49595.5	7010.1	31911.3	38921.4
6. Miscellaneous (Area)				
A. Fires				
1. Structural	unknown	unknown	unknown	unknown
2. Frost Control	6.5	6.5	0	6.5
3. Slash Burning	1177.6	1177.6	0	1177.6
4. Wild Forest	unknown	unknown	unknown	unknown
5. Agricultural	32.6	32.6	0	32.6
6. Total	1216.7	1216.7	0	1216.7
B. Total Miscellaneous	1216.7	1216.7	0	1216.7
AREA TOTAL	57702	15117	33560	48676
POINT TOTAL	1806	1804	32	1837
GRAND TOTAL	59500	16900	33600	50500

MEDFORD-ASHLAND AQMA CO ANALYSIS METHODOLOGY

I. Introduction

The purpose of this appendix is to document the methodology to be used for determining whether the Medford-Ashland AQMA will be in compliance with the Federal Ambient Air Quality Standards for Carbon Monoxide (CO) by the end of 1982. The report consists of two main sections: Section II explains the methodology to be employed and Section III contains the Technical Appendix with supporting documentation.

II. Methodology

1. Background

CO concentrations (C) measured near an urban roadway can be expressed as the sum of two terms:

$$C = C_l + C_g \qquad (1)$$

where C_l is the microscale CO concentration resulting from local traffic adjacent to the monitor and C_g is the mesoscale concentration which is related to all other sources of CO in the vicinity of the monitor. Under the stable conditions which characterize CO violations days, areawide CO levels accumulate and the C_g term becomes significant.

To effectively design a transportation control strategy for CO, all possibly violating roadways should be identified. However, Medford has only one continuous air monitoring (CAM) site measuring CO. To identify other possibly violating roadways, the CO data from the CAM station has been expanded through the use of two models, SAPOLLUT and AIRPOL-4A. AIRPOL-4A calculates local CO concentrations from a specific roadway and thus can be used to determine the C_l term in equation (1) for any roadway. To use SAPOLLUT, the AQMA has been divided into 94 grids, 2 km on each side. SAPOLLUT interfaces directly with transportation models and calculates total CO emission per grid as a function of vehicle miles traveled (VMT) and speed. This information has been used to calculate the C_g term for the CAM site as described in Section II.3 and to estimate the C_g term for other areas as described in Section II.4.

2. Determination of base CO concentration (C).

The EPA stipulates that the CO value used for attainment calculations be the highest of the second highest 8-hour average concentrations observed during 1975, 1976, or 1977. Since CO has only been monitored in Medford since 1977, the second highest 8-hour average concentration occurring during that year (19.8 mg/m^3) is the design value.

3. Determination of C_g at the CAM Site

To scale the CO concentrations observed at the CAM site to non-monitored areas of potentially high concentrations, an estimation of C_g at the CAM site is necessary. This can be done through the use of the AIRPOL-4A model. This model uses traffic volumes and emission factors combined with physical and meteorological conditions to determine traffic-generated CO. The traffic volume input for the model at the CAM site is based on actual traffic counts. The physical input consists of the monitoring site and roadway geometries of the CAM station.

The meteorological input is the result of an analysis of the reaction of AIRPOL to a variety of parameters and the actual meteorological conditions typical of CO violations in Salem. Since the C_g concentration calculated for the CAM station is later modified and applied to other sites (Sections II.4 and II.5), a standardized set of "worst case" meteorological conditions had to be identified. Although the general conditions of D stability and low wind speeds are typical of CO violation days at any site in Medford-Ashland, wind direction effects are not constant. To measure the maximum concentration of CO from a designated link at receptor distances less than 135 ft, AIRPOL requires that the wind be parallel to that link. Based on these considerations, 1.2 mph wind speed, D stability, and parallel wind direction were identified as typical "worst case" meteorology.

These meteorological conditions must be applied to both the C_g calculations and the screening technique (Section II.5) to provide a common basis for the estimation of the CO concentrations at sites other than the CAM station.

The output of AIRPOL-4A is representative of the CO produced by traffic on the roadways adjacent to the CAM station. Since total CO is the sum of local plus grid CO, the modeled concentration will be subtracted from the observed second highest CO concentration (C) to estimate Cg at the monitoring site:

$$C_{g(cam)} = C - C_{l(mod)} \qquad (2)$$

where $C_{g(cam)}$ is the grid CO concentration for the grid containing the CAM site, and $C_{l(mod)}$ is the CO concentration obtained from AIRPOL-4A.

4. Expansion of CAM's C_g to other grids

CO emission densities will be calculated by SAPOLLUT for the base year 1977, and future years, 1983 and 1987, for each two

kilometer grid in the AQMA. Since C_g is assumed to be a proportional to grid-wide emission density, C_g concentrations in the non-monitored grids will be estimated by comparing their emission densities with the CAM grid emission density as follows:

$$\frac{C_{g(cam)}}{ED_{cam}} = \frac{C_{g(n)}}{ED_n} \qquad (3)$$

or rearranging:

$$C_{g(n)} = \frac{C_{g(cam)}}{ED_{cam}} \times ED_n \qquad (4)$$

where $C_{g(cam)}$ is the grid CO concentration determined for the CAM station as described in Section II.3, ED_{cam} is the emission density calculated by SAPOLLUT for the grid containing the CAM site, $C_{g(n)}$ is the grid concentration to be calculated for a non-monitored grid, and ED_n is the SAPOLLUT emission density for that grid. This exercise is carried out using the emission densities for 1977. The 1977 background concentration for the non-monitored grid is then scaled to 1983 by multiplying the 1977 concentration by the 1983/1977 emission density ratio for that grid. An example of this process is contained in Section III. 2.

5. Screening Technique

A screening technique has been developed to streamline the calculation of C_l for all non-monitored roadways. Rick Wood of the Oregon Department of Transportation developed a standardized equation for estimating CO concentration by running AIRPOL-4A to determine how changes in input parameters affected the output CO concentrations. Correction factors were derived for roadway length, perpendicular distance of the receptor from the roadway, stability class, wind direction, and wind speed.

If these factors are held constant, CO concentration at any given site is a function only of speed (which determines emission factors) and average weekday traffic volume (AWDT):

$$C_l = k\ (\text{Emission Factor})(\text{AWDT}) \qquad (5)$$

where k is the product of the correction factors and varies only with roadway type (CBD, arterial or freeway).

By using the standardized assumptions listed below, C_1 can be calculated solely from peak 8-hour speed and AWDT:

Characteristic	Roadway Type CBD	Arterials	Freeways
Receptor Height	10 ft.	10 ft.	10 ft.
Receptor distance	12 ft.	25 ft.	75 ft.
Stability class	D	D	D
Wind Speed	1.2 mph	1.2 mph	1.2 mph
Wind direction	parallel	parallel	parallel
Lane Configuration	4 lanes	4 lanes	6 lanes
Length upwind	1000 ft.	1000 ft.	1000 ft.

Screening tables were developed to include all grid CO concentrations (C_g) from 0 to 9 mg/m^3. The grid concentration was subtracted from the standard of 10 mg/m^3, leaving a C_1 term from 9 to 1 mg/m^3.

$$C_1 = (10 - C_g) \text{ mg/m}^3 \qquad (6)$$

To obtain the AWDT which would cause the total of $C_g + C_1$ to equal 10 mg/m^3 equation (5) can be rearranged as follows:

$$\text{AWDT} = \frac{C_1}{k(\text{Emission Factor})}$$

The AWDT that would bring total CO up to 10 mg/m^3 has been calculated for each possible grid CO concentration and speeds from 5 to 55 mph. An example of the resulting tables is contained in Section III. 1.

To screen a given link having an associated volume, speed, and grid CO level; the appropriate table (CBD, freeway, arterial) will be entered at the same grid CO concentration and speed. If the projected volume on the link is greater than the tabulated volume, the link will be flagged as potentially violating the 8-hour CO standard. An example of this process is contained in Section III. 2.

6. Screening Technique Follow Up Procedure

Links that screen out as potentially violating the 8 hour average CO standard in 1983 will receive closer scrutiny. Actual critical receptor distances will be identified, and if they are greater than the distances built into the screening tables, then the resulting concentrations will be factored, based on distance correction factors from Rick Wood's screening technique. Roadway alignment relative to critical receptors will also be evaluated

to determine whether the assumption of a straight segment of roadway for 1000 feet upwind is appropriate. If, after performing the above analysis on the set of screened out links, any problem links remain, and reasonably available measures cannot correct this problem by 1983, then a compliance extension will be requested.

III. Technical Attachments

The following documents are attached.

1. CO Screening Tables
2. Example of the Screening technique
3. Methodology

CO Screening Tables for Medford
Receptor height = 10 ft. Receptor distance = 25 ft.

Average 8-hr speed in mph	Grid CO Concentration (mg/m^3) 0	1	2	3	4	5	6	7	8	9
	Allowable AWDT									
	1982									
5	14,600	13,100	11,700	10,200	8,800	7,300	5,800	4,400	2,900	1,500
10	27,900	25,100	19,500	19,500	16,700	13,900	11,100	8,400	5,600	2,800
15	39,900	35,800	31,800	27,900	24,900	19,900	16,000	11,900	7,900	4,000
20	49,700	44,800	39,800	34,800	29,900	24,900	19,900	10,000	10,000	4,900
25	59,200	53,300	47,300	41,400	35,500	29,600	23,700	17,700	11,900	5,900
30	69,200	62,300	55,300	48,400	41,500	34,600	27,600	20,700	13,800	6,900
35	79,100	71,500	63,500	55,500	47,600	39,700	31,700	23,800	15,900	7,900
40	88,100	79,300	70,500	61,700	52,800	44,100	35,200	26,400	17,600	8,800
45	93,600	84,300	74,900	65,500	56,200	46,900	37,400	28,100	18,800	9,400
50	96,300	86,700	77,100	67,500	57,800	48,200	38,500	28,900	19,200	9,600
55	101,200	91,000	80,900	70,700	60,700	50,600	40,400	30,300	20,300	10,100
	1987									
5	19,700	17,800	15,800	13,800	11,800	9,900	7,900	5,900	3,900	2,000
10	37,300	33,600	29,800	26,100	22,400	18,600	14,900	11,200	7,500	3,700
15	52,500	47,200	42,000	36,700	31,500	26,200	21,000	15,700	10,500	5,300
20	64,900	58,400	51,900	45,400	39,000	32,500	26,000	19,500	13,000	6,500
25	76,900	69,200	61,500	53,800	46,200	38,500	30,800	23,100	15,400	7,700
30	90,000	81,000	72,000	63,000	54,000	45,000	36,000	27,000	18,000	9,000
35	103,000	93,000	82,700	72,300	62,000	51,700	41,300	31,000	20,700	10,300
40	114,500	103,000	91,600	80,100	68,700	57,200	45,800	34,300	22,900	11,400
45	121,100	109,000	96,900	84,800	72,600	60,500	48,400	36,300	24,200	12,100
50	124,000	111,600	99,200	86,800	74,400	62,000	49,600	37,200	24,800	12,400
55	130,600	117,500	104,500	91,400	78,300	65,300	52,200	39,200	26,100	13,100

CO Screening Tables for Medford
Receptor height = 12 ft. Receptor distance = 75 ft.

Average 8-hr speed in mph	Grid CO Concentration (mg/m^3)									
	0	1	2	3	4	5	6	7	8	9
	Allowable AWDT									
	1982									
5	24,000	21,600	19,200	16,800	14,400	12,000	9,600	7,200	4,800	2,400
10	45,900	41,300	36,700	32,100	27,600	23,000	18,400	13,700	9,200	4,600
15	65,600	59,100	52,500	45,900	39,400	32,800	26,200	19,700	13,300	6,600
20	82,000	73,800	65,600	57,400	49,200	41,000	32,800	24,600	16,400	8,200
25	97,500	87,700	78,000	68,300	58,500	48,800	39,000	29,200	19,500	9,800
30	114,000	102,500	91,200	79,800	68,400	57,000	45,600	34,100	22,800	11,400
35	130,800	117,800	104,600	91,600	78,500	66,500	52,300	49,300	26,200	13,100
40	145,100	130,700	116,200	101,700	87,100	72,600	58,100	43,200	29,000	14,500
45	154,300	138,900	123,400	108,000	92,500	77,100	61,700	46,300	30,800	15,400
50	158,800	142,900	127,000	111,100	95,300	79,400	63,500	47,600	31,800	15,900
55	166,600	150,000	133,300	116,700	100,000	83,300	66,700	50,000	33,300	16,700
	1987									
5	32,500	29,300	26,000	22,800	19,500	16,300	13,000	9,800	6,500	3,300
10	61,400	55,300	49,100	43,000	36,900	30,700	24,600	18,400	12,300	6,100
15	86,500	77,800	69,200	60,500	51,900	43,200	34,600	25,900	17,300	8,600
20	107,000	96,300	85,600	74,900	64,200	53,500	42,800	32,100	21,400	10,700
25	126,800	114,100	101,400	88,700	76,100	63,400	50,700	38,000	25,400	12,700
30	148,200	133,400	118,600	103,800	88,900	74,100	59,300	47,500	29,600	14,800
35	170,200	153,200	136,200	119,200	102,100	85,100	68,100	51,100	34,000	17,000
40	188,600	169,700	150,900	132,000	113,200	94,300	75,400	56,600	37,700	18,900
45	199,500	179,600	159,600	139,700	119,700	99,800	79,800	59,900	39,900	20,000
50	204,300	183,900	163,500	143,000	122,600	102,200	81,700	61,300	40,900	20,400
55	215,200	193,600	172,100	150,600	129,100	107,600	86,100	64,500	43,000	21,500

CO Screening Tables for Medford
Receptor height = 10 ft. Receptor distance = 10 ft.

Average 8-hr speed in mph	Grid CO Concentration (mg/m^3)									
	0	1	2	3	4	5	6	7	8	9
	Allowable AWDT									
	1977									
5	9,500	8,600	7,600	6,700	5,700	4,800	3,800	2,900	1,900	1,000
10	18,300	16,500	14,600	12,800	11,000	9,100	7,300	5,500	3,700	1,800
15	26,400	23,800	21,200	18,500	15,900	13,200	10,600	7,900	5,300	2,600
20	33,300	30,000	26,600	23,300	20,000	16,600	13,300	10,000	6,700	3,300
25	39,600	35,600	31,700	27,700	23,700	19,800	15,800	11,900	7,900	4,000
30	46,000	41,400	36,800	32,200	27,600	23,000	18,400	13,800	9,200	4,600
35	52,500	47,300	42,000	36,800	31,500	26,300	21,000	15,800	10,500	5,300
40	58,200	52,400	46,600	40,700	334590	29,100	23,300	17,500	11,600	5,800
45	62,000	55,800	49,600	43,400	37,200	31,000	24,800	18,600	12,400	6,200
50	64,100	57,700	51,200	44,800	38,400	32,000	25,600	19,200	12,800	6,400
55	66,800	60,100	53,400	46,700	40,100	33,400	26,700	20,000	13,400	6,700

CO Screening Tables for Medford
Receptor height = 10 ft. Receptor distance = 10 ft.

Average 8-hr speed in mph	Grid CO Concentration (mg/m^3) 0	1	2	3	4	5	6	7	8	9
	Allowable AWDT									
	1982									
5	13,400	12,000	10,700	9,400	8,100	6,700	5,300	4,100	2,800	1,400
10	25,700	23,200	20,600	18,000	15,200	12,900	10,300	7,700	5,100	2,600
15	36,800	33,100	29,400	25,700	22,300	18,500	14,700	11,000	7,300	3,700
20	45,800	41,300	36,800	32,200	27,900	23,000	18,400	13,800	9,200	4,600
25	55,000	49,200	43,700	38,300	32,800	27,600	21,800	16,300	10,900	5,500
30	63,800	57,500	51,100	44,700	38,400	32,000	25,500	19,200	12,800	6,300
35	73,200	66,000	58,600	51,400	44,000	36,700	29,300	22,000	14,700	7,300
40	81,400	73,200	65,000	65,000	48,800	40,700	32,500	24,400	16,300	8,200
45	86,400	77,800	69,200	69,200	51,900	43,300	34,500	25,900	17,300	8,600
50	88,900	80,100	71,200	62,300	53,400	44,500	35,600	26,700	17,800	8,900
55	93,300	84,100	74,700	65,400	56,000	46,700	37,400	28,000	18,600	9,400
	1987									
5	18,200	16,400	14,600	12,800	10,900	9,100	7,300	5,500	3,700	1,800
10	34,500	31,000	27,600	24,100	20,700	17,200	13,800	10,300	6,900	3,400
15	48,400	43,600	38,800	33,900	29,000	24,300	19,400	14,500	9,600	4,900
20	60,000	53,900	48,000	42,000	36,000	29,900	24,000	18,000	12,000	6,000
25	71,000	63,900	56,900	49,700	42,400	35,600	28,400	21,300	14,200	7,100
30	83,100	74,800	66,500	58,200	49,900	41,500	33,300	24,900	16,600	8,300
35	95,400	85,900	76,300	66,800	57,200	47,700	38,100	28,700	19,100	9,600
40	105,700	95,100	84,500	74,000	63,400	52,800	42,300	31,700	21,100	10,600
45	111,800	100,600	89,500	78,300	67,100	55,900	44,700	33,500	22,300	11,200
50	114,600	103,100	91,600	80,100	68,700	57,200	45,800	34,400	22,900	11,500
55	120,700	108,500	96,500	84,400	72,300	60,300	48,200	36,200	24,100	12,000

ATTACHMENT 2

Example of Screening Method

Assume: $C_{g(cam)} = 6.0\ mg/m^3$

ED_{cam} (1977) = 18,000

ED_n (1977) = 4000

ED_n (1983) = 3000

Projected AWDT (1983) = 36,000

Receptor distance = 25 feet

Average speed = 20 mph

$$C_{g(n)}\ (1977) = \frac{6.0 \times 4000}{18,000} = 1.3\ mg/m^3$$

$$C_{g(n)}\ (1983) = \frac{1.3 \times 3000}{4,000} = 1.0\ mg/m^3$$

From Attachment I: Allowable traffic in 1983 with a background of 1.0 mg/m^3, receptor distance of 25 feet and an average speed of 20 mpg = 44,800 vehicles/day. Since the projected Average Weekday Traffic (AWDT) for 1983 is only 36,000, this link should not be in violation.

ATTACHMENT 3

METHODOLOGY FOR DETERMINING CO HOT SPOTS

The following discussion is intended to provide the reviewer with a general outline of the methodology for determining CO hot spots in the non-attainment areas of Salem, Eugene and Medford. The Department is in the process of developing the procedure and will provide full documentation once it is refined.

The methodology consists of two major components: 1) background CO levels; 2) screening tables. Background CO levels will be determined through a computer modeling process. A Gaussian diffusion model, AIRPOL-4, will be employed to determine line source CO contribution to the second highest concentration observed at Continuous Air Monitoring Stations (CAMS) for a given year for each of the non-attainment areas. Concentrations calculated by AIRPOL-4 will be for the 8 hour average. Background CO for the second highest day at each CAMS will be derived by subtracting the value obtained in AIRPOL-4 from the actual measured concentration. A background value of 8 hour average CO will be determined for each 2 kilometer grid cell in a non-attainment area. This will be done by calculating a ratio of emission density of a given 2 kilometer grid cell versus the emission density of the 2 kilometer CAMS grid cell. There will be one ratio for each 2 kilometer grid cell. The ratios will be multiplied by the derived CAMS background CO. The resulting values will be 8 hour average background CO for each 2 kilometer grid cell in the respective non-attainment areas.

The second part of the methodology will be the development of screening tables. A given background CO level will have associated with it a unique table of traffic volumes and speeds. Links with traffic volumes that exceed tabulated traffic volumes for the appropriate background level and speed will likely exceed the 8 hour average CO standard. Those links will have "screened out".

The set of "screened out" links for 1983 will then be subjected to a closer scrutiny. Actual site geometry and critical receptor distances will be taken into account. The 8 hour average CO concentration will be calculated using a nomograph technique developed by R. M. Wood of the Oregon Department of Transportation and the background CO level previously determined. If, after applying the nomograph technique, a given link still demonstrates CO levels above the 8 hour average CO standard in 1983, then the link will either be subjected to an actual detailed AIRPOL-4 simulation, or it will be directly considered for Reasonably Available Control Measures (RACM) that will bring it into attainment status.

The above outlined methodology is preliminary and subject to change.

The Department is currently validating the methodology on Portland data. A complete set of detailed documentation will be provided by September 18, 1978.

MOBILE SOURCE EMISSIONS QUESTIONNAIRE

This questionnaire is based on EPA's computer program MOBILE 1. Please fill in all blanks. Use "NA" when the question does not apply and "D" when a default value is used.

I. GENERAL

1. What areas are covered by the modeling analysis (include a map if necessary), for CO? See attached map

For O_3? Same as above

2. What season is considered (Spring, Summer, August-October, etc.), for CO? All seasons

For O_3? Summer

3. What methodology is used in determining the projected emissions, for CO? Emission factors from a program developed by ODOT and based on AP-42 Supplement 8 methodology; Total emissions from SAPOLLUT

For O_3? Empirical Kinetic Modeling Approach (EKMA) from EPA publication EPA-450/2-77-021A November 1977

4. What methodology is used in determining the projected air quality, for CO? See attachment

For O_3? Empirical Kinetic Modeling Approach

5. What is the base year, for CO? 1977

For O_3? Same

6. For what years is air quality projected?

1982 1983, 1987 X, Others

7. What is the base year concentration, for CO? 19.8 mg/m^3

For O_3? 255 ug/m^3

8. How is it determined (number of days above the standard, second highest concentration, etc.), for CO? Second highest concentration

For O_3? Same

9. Is the influence of a background concentration taken into account? Yes

If yes, what is the background concentration, for CO? See attachment

For O_3? Included in transport

Are these concentrations measured, calculated, or assumed; for CO? Calculated

For O_3? Assumed to be included in transport which is based on monitoring data

10. If the Empirical Kinetic Modeling Approach is used to model O_3, is the influence of transported emissions taken into account? Yes, but not yet determined

If yes, what is the concentration? Not determined

What is the additivity factor? 0.45

How were these values determined? EPA criteria

II. TRAFFIC AND EMISSION FACTORS

1. What projected VMT growth rate is used in each analysis area, for central areas? Transportation modeled systems for the specific years reflecting adopted transportation plans, growth and policies which produce specific VMT instead of growth rates.

For outlying areas? Growth based on statewide projections

2. What is the basis for these growth rates, for central areas? See answer to question 1, Section II.

For outlying areas? Same

3. What is the range of speeds used in the analysis, for central areas? Speeds range from below 10 M.P.H and up depending on traffic volumes, transportation model, assigned speeds and other factors.

For outlying areas? Speeds are usually higher and are determined in a similar manner as for the central area.

4. If an average route speed is used, what is it, for central areas? Specific transportation model assigned speeds are used.

For outlying areas? Same

5. What is the cold-start/hot-start ratio? Values that have been determined and approved by the lead air quality agency are: Hot Start = 38%; Cold Start = 33%

Or: What is the percentage of non-catalyst equipped light-duty vehicle (LDV) VMT accumulated in the cold-start mode? 1977:23.7% 1983:10.5% 1987:3.4%

And: What is the percentage of catalyst-equipped LDV VMT accumulated in the hot-transient mode? 1977:10.7% 1983:25.9% 1987:34%

And: What is the percentage of catalyst-equipped LDV VMT accumulated in the cold-start mode? 1977:9.3% 1983:22.5% 1987:29.6%

6. What is the fraction of total VMT accumulated by:

a. light-duty vehicles (LDV)? 0.69

b. light-duty gasoline-powered trucks, 0-6000lbs. gross vehicle weight (LDT1)? 1977:0.190 1983:0.166 1987:0.154

c. light-duty gasoline-powered trucks, 6000-8500 lbs. gross vehicle weight (LDT2)? 1977:0.080 1983:0.104 1987:01116

d. heavy-duty gasoline-powered trucks (HDG)? 0.015

e. heavy-duty diesel-powered trucks (HHD)? 0.015

f. motorcycles (MC)? 0.01

Or: What is the annual rate of mileage accrual for:

a. LDV's?

b. LDT1's?

c. LDT2's?

d. HDG's?

e. HDD's?

f. MC's?

And: What is the number of registered:

a. LDV's?

b. LDT1's?

c. LDT2's?

d. HDG's?

e. HDD's?

f. MC's?

7. What is the fraction of LDV's:

a. which are using air conditioning? 0.0 (No local data available; estimated as insignificant)

b. which are towing a trailer? 0.0 (No local data available; estimated as insignificant)

8. What is the fraction of LDV's, LDT1's, and LDT2's with an additional 500 pound loading? 0.0 (No local data available; estimated as insignificant)

9. What is the average gross vehicle weight for:

a. HDG's? 18,500 lbs.

b. HDD's? 45,000 lbs.

10. What is the average engine displacement for:

a. HDG's? 370 CID

b. HDD's? 600 CID

III. INSPECTION/MAINTENANCE

1. What is the year of program implementation? N/A

2. What is the earliest model year included in the program?

N/A

3. What is the latest model year to be included in the program?

N/A

4. What is the stringency level? N/A

5. Is mechanic training an integral part of the program?

N/A

IV. METEOROLOGY

1. What is the ambient temperature for the modeling period, for CO? 40^{0} F

For O_3? Same

2. What is the ambient humidity for the modeling period, for CO?

75 grains

For O_3? Same

V. What are any additional assumptions made in the analysis?

As compared to the areawide truck mix, a different mix of trucks was considered on the I-5 Freeway. The results indicate a negligible change in pollutant emissions. Therefore, only one truck percentage figure will be used in the analysis.

APPENDIX 4.9-6

Medford-Ashland AQMA (OAR 340-30-010)

The AQMA is legally defined as the area within the bounds beginning at a point approximately one mile NE of the town of Eagle Point, Jackson County, Oregon, at the NE corner of Section 36, T35S, R1W; thence South along the Willamette Meridian to the SE corner of Section 25, T37S, R1W; thence SE along a line to the SE corner of Section 9, T39S, R2E; thence SSE to the SE corner of Section 22, T39S, R2E; thence South to the SE corner of Section 27, T29S, R2E; thence SW to the SE corner of Section 33, T39S, R2E; thence West to the SW corner of Section 31, T39S, R2E; thence NW to the NW corner of Section 26, T29S, R1E; thence NW along a line to the SE corner of Section 7, T39S, R1E; thence West to the SW corner of Section 12, T39S, R1W; thence NW along a line to the SW corner of Section 20, T39S, R1W; thence West to the SW corner of Section 4, T38S, R2W; thence NW along a line to the SW corner of Section 4, T38S, R2W; thence West to the SW corner of Section 5, T38S, R2W; thence NW along a line to the SW corner of Section 31, T37S, R2W, thence North along a line to the Rogue River, thence North and East along the Rogue River to the North boudary of Section 32, T35S, R1W; thence East along a line to the point of beginning.

APPENDIX 4.9-7

Rogue Valley Transit District

The Rogue Valley Transportation District (RVTD) has just begun a "No Fare Zone" policy in the CBD area of Medford. This service is expected to attract a significant amount of the CBD movement of people. However, the system has limited service to other areas in the valley, thus is expected to reduce trips to the CBD by only a small fraction. Currently, RVTD accounts for approximately one percent of the trip ends in the Medford CBD.

It should be noted that approximately 75 percent of the traffic volume is through traffic, not having a trip end in the CBD. This condition arises from the fact that the CBD of Medford is dissected by two state highways, Highway 99 North-South, and Highway 199 East-West with interstate 5 nearby. The problem is compounded by the lack of an arterial street system in Medford, thus forcing traffic to move through the CBD to find north-south or east-west corridors. According to the screen line analysis, removal of this through traffic would in itself be sufficient to reduce CO concentrations to within an acceptable level.

With the considerations just given and the fledgling nature of RVTD, it is impossible to project any significant reduction of emissions attributable to their service in the near future. However, it is of paramount importance that their service remain, and increase, so as to provide a viable alternative to the private auto. Additionally, their commitment to a "No Fare Zone" provides the best response to be expected from a public agency in that area in which a problem exists.

ROGUE VALLEY TRANSPORTATION DISTRICT
FACTS AND DEVELOPMENT

State of Oregon
DEPARTMENT OF ENVIRONMENTAL QUALITY
RECEIVED
MAY 24 1979
AIR QUALITY CONTROL

I. PURPOSE - ROGUE VALLEY TRANSPORTATION DISTRICT

A. To provide the community

1. A transportation alternative

a. To improve the valley's transportation plan

b. To Provide transportation to

1- Transportation handicapped

2- Elderly

3- Commuters

4- The environmentally oriented or concerned

2. A transportation alternative

a. To reduce the areas air quality problems

b. To reduce traffic problems

c. To alleviate parking problems

3. To assist other transportation alternative programs

a. Carpooling

b. Vanpooling

c. Bicycles

d. Social action agencies and their transportation programs

1- ACCESS

2- Senior Citizens services

3- Volunteers Unlimited

4- Volunteer Bureau

5- Helpline

6- RSVP

7- ACTION/VISTA

8- Rogue Valley Council on Aging

B. Ultimate Goal

1. To provide all District Residents

a. Commuter transportation within

1- One half mile of their residences and destinations

2- Half-hourly service during peak hours

b. Midday (Shopping, Medical) Transportation within

1- One half mile of their residences and destinations

2- Hourly service during midday

c. Social/Recreational Service

1- Saturday and Sunday (church)

2. Priority of Service Expansion
    a. Commuter
        1- Economic
            a- To address rising fuel costs for autos
            b- To address decreasing fuel allocations
            c- To address the diminishing fuel reserve
    b. Shopping/Medical
        1- Economic
    c. Handicapped
        1- Demand responsive service (Dial-a-bus system)
    d. Social/Recreational/Cultural
        1- After levels of service in other areas have been attained

II. History of the Rogue Valley Transportation District
A. Bear Creek Area Transportation Study (BCATS)
    1. Oregon Dept of Transportation (ODOT) administered
        a. Coordinated and generated by Jackson County
            1- To define transportation as it existed (late 60's, early 70's)
            2- To define transportation needs for the 70's
    2. Jackson County
        a. Commissioners respond to study
            1- Recognize need for public mass transit
        b. Realized need for an agency to address mass transit/transportation
            1- Created Rogue Valley Transportation District
            2- District formed July 1975
            3- Validation Suit by Jackson County Circuit Court
                a- Established District's Jurisdiction
                b- In accordance with ORS 260.1
B. Election of Board of Directors
    1. Seven members - totally autonomous
        a. RVTD answers only to the voters
            1- Board members elected to two and four year terms
C. Metropolitan Centers (Cities) sign District Resolution for service
    1. Central Point abstained
        a. Reason: no immediate service foreseen
        b. Reason: City Council believed citizens did not want service
    2. Eagle Point abstained
        a. Reason: No immediate service foreseen
D. District Boundaries

1. Northern Boundary
    a. North of Central Point
    b. South of Blackwell Hill
    c. East of Eagle Point and north of Eagle Point
    d. West hills, north and west of Central Point
2. Western Boundary
    a. West hills (foothills)
        1- West of Jacksonville
3. Eastern Boundary
    a. East hills (foothills)
        1- Including White City
4. Southern Boundary
    a. The confluence of East and West valley foothills
        1- South of Ashland
        2- West of Emigrant Lake
        3- Ashland City limit and I-5

E. Two Years Research (No Buses)
1. 1975 to July 1977
    a. Board research to establish service
        1- Locate vehicles
        2- Funding
            a- Payroll tax - defeated
            b- City/County general funds - opposed
            c- Inital property tax - defeated
            d- Property tax ($.10/$1000 TCV) approved by voters

F. First Service - July 1977
1. Contract initiated for two buses with Robert C Gilbert Construction
    a. Gilbert creates Rogue Transportation Inc
        1- For two buses
        2- For bus maintenance
        3- For dispatching and operators
    b. Contract with RVTD at $1.05 per mile travelled
2. First service is two buses on four routes
    a. Eight hours of daily service
        1- Medford to Ashland
        2- Medford to Jacksonville
        3- One inner-Medford loop

G. Additional vehicles - November 1977

1. City of Medford grants RVTD three vans
   a. For service in Medford
2. Medford's Mayor encourages ODOT Public Transit Division (PTD)
   a. Include RVTD in small/rural operational contracts
      1- RVTD receives PTD contract for operational expenses
         a- $.28 per mile travelled
3. RVTD applies for Urban Mass Transportation Administration (UMTA)
   a. For two year capital assistance/operational assistance grant
      1- Rejected - RVTD not operating in an Urban area
   b. For one year managerial assistance grant ($12,000)
      1- Approved - RVTD hires first manager
4. Two vans put into service (operating fleet now four vehicles)
   a. Downtown shopping center shuttles

H. April 1978 Service Expansion
   1. Six Routes 12 hours per day

I. Budget Increases (Defeats and Gains)
   1. Three year levy ($.25/$1000 TCV) defeated May 1978
   2. Three year levy ($.25/$1000 TCV) approved August 1978

J. December 1978 Service Expansion
   1. New contract with RTI
      a. All RTI employes converted to RVTD (Operators)
      b. New monthly maintenance agreement signed
         1- $8750 per month
            a- Dispatching
            b- Preventive maintenance program - all vehicles
            c- Routing maintenance
            d- Cleaning and storage
            e- Leased maintenance vehicle
            f- Two mechanics
      c. RVTD acquires RTI buses (PTD match with RVTD 50-50)
            a- Two 1956 GMC 3714 (37 passenger)
      d. RVTD acquires fourth van for two Ashland routes
            a- 1977 Dodge 15 passenger
      e. RVTD acquires three buses (PTD match with RVTD 50-50)
            a- 1961 GMC 4517 (45 passenger)
      f. RVTD's Fleet now
            1- Three mainline buses
            2- Two backup mainline buses
            3- Four Dodge vans

g. 13 new routes introduced Dec 4, 1978
   a. Two Jacksonville mainlines
   b. Two Ashland mainlines
   c. Two Intra Ashland fixed routes
   d. Seven Intra Medford fixed routes
h. 14 hours of daily service (6 A.M. to 8 P.M.)

K. April 1978 Revisions - additional expansion
1. From three buses and three vans to
   a. Four buses and two vans
      1- Vans overcrowded
2. From one bus and two vans on Saturday to
   a. Two buses and one van
      1- Vans overcrowded

L. May 1978 Revisions
1. Addition of Peak hour schedules to
   a. Seven Intra Medford routes
   b. Route 11N in Ashland
2. Additions to both Ashland routes
   a. Route 11S from 17 schedules per day to 13
   b. Route 11N from 9 schedules per day to 13
   c. Route 11S to now include SOSC dorms
   d. Route 11N to now include "Quiet Village"
3. New Transfer policy
   a. Less problems for operators
   b. More convenience for riders
   c. Less misuse of transfer system
4. New Schedule format
   a. Times enlarged by one-third for easier reading
   b. Book changed to foldout
   c. Advertising space added for decreased costs (actual profit)
   d. Price per copy reduction ($.11 previous to $.07)

III. RIDERSHIP

A. Initial Service Limitations
1. Primarily for Shopping/Medical appointments
   a. Midday service only
   b. Few commuter uses
2. Average Ridership July 77 to Nov 77
   a. 200 per day

3. Average Ridership Nov 77 to April 78
    a. 300 per day
4. Average Ridership May 77 to Nov 78
    a. 450 per day
5. Average Daily Ridership Since Dec 78
    a. Dec 78: 600
    b. Jan 79: 700
    c. Feb 79: 750
    d. Mar 79: 800
    e. Apr 79: 950

B. Ridership Summary Ratios
1. (Commuter to Shopper)
    a. Through Nov 78: .5:2
    b. Dec 78: 1:1
    c. Jan 79: 1.5:1
    d. Feb 79: 1.75:.75
    e. Mar 79: 2:.5
    f. Apr 79: 3:1

C. Assessing Ridership ratio changes
1. Rising fuel costs
2. Shortage of fuel allocations
3. Realization of air quality problems

D. Projected Ridership - after May expansion
1. May 79: 1000-1100 per day
2. Sep 79: 1200-1500 per day

E. Ridership Summary - RVTD capacity
1. April 79:
    a. Peak hour: 75% capacity
    b. Midday: 30% capacity

IV. TRANSPORTATION NEEDS OF THE COMMUNITY

A. Expansion of District
1. To serve more residents of county
    a. Acquire Central Point
    b. Acquire Eagle Point
    c. Commuter service to White City
2. Residents of above want bus service

B. The Premise of Need
1. Air Quality

2. Economy

C. Requirements/Needs outside of District (Commuter)

1. Gold Hill, Rogue River, Shady Cove, Prospect, The Applegate

2. Necessary to adjust District's boundaries

a. Applicant City/Region votes on property tax

b. District votes on applicants inclusion

c. Applicant signs District Resolution

D. More Routes/Schedules

E. Park and Ride Lots

1. To centralize high volume outlying ridership

2. To encourage reduction in auto air pollution

3. To service areas outside of RVTD's scheduled routes

F. Bus Shelters and Benches

V. RVTD NEEDS TO RESPOND TO DEMAND

A. Uniformity in Fleet

1. Need for medium size buses - 25/31 passengers

a. Greater peak hour/non-peak hour versatility

2. Use of existing fleet for

a. Express buses between urban centers

b. Experimental route service (vans)

B. Vehicles equipped with lifts

1. A Federal mandate

2. For demand responsive type service for handicapped

C. Additional Vehicles

1. Newer equipment

a. Enhance the quality of service

b. Decreased operational maintenance expenses

c. Increased marketability

2. Increase number of routes and schedules

a. As the demand indicates

D. Maintenance Facility

1. Transition from contracted RTI maintenance to RVTD maintenance

a. Increased cost effectiveness

E. Additional Staff

1. Transit planning

2. Information clerks

3. Transportation coordinator (Action Agencies)

F. Additional Communications

1. Bus communications
   a. Enroute maintenance reaction
   b. Rerouting
   c. Lift buses
   d. Enroute emergencies - safety

VI. RVTD FUNDING - CAPITAL EXPENSES - OPERATIONAL EXPENSES

A. For fiscal year 78/79 RVTD operated

1. At rate of $82 per hour of service

B. Funding came from four sources

1.	Property tax levy	78%	$296,000
2.	ODOT Operating contract	9%	30,000
3.	RVTD Farebox	12%	45,000
4.	Charters and ads	1%	4,000
5.	Total		$375,000

C. Expenses were in seven major areas

1.	Maintenance Contract	26%	$ 96,000
2.	Salaries/Emp Benefits	30%	114,000
3.	Capital Purchases	11%	40,000
4.	Gas, oil, diesel	13%	50,000
5.	Parts & Equipment	11%	42,000
6.	Vehicle Insurance	7%	27,000
7.	Administration	2%	6,000
			$375,000

D. Needs for FY79/80 at same rate of operational costs

1.	$82 per hour x 16 hours per day x 260 weekdays:	$341,120
2.	Plus, $82 x 14 hours per day x 52 Saturdays:	59,696
3.	Plus 10% of $255,000 for new equipment:	25,500
4.	Total	$426,316
5.	x 12.6% annual inflation rate	53,716
6.	Total	$480,032

E. Actual needs for FY79/80 if __buses are added to daily operation

1.	One additional bus:	$500,034 ($103 per hour)
2.	Two additional buses:	$540,036 ($111 per hour)

F. Anticipated Revenue for FY79/80:

1.	Tax levy 26.2% increase	$373,552
2.	Farebox, charters, ads	68,640
3.	ODOT/UMTA Sec 18 funds	101,500
		$543,692

G. Self-sufficiency

1. Can RVTD attain zero deficit/zero profit posture?
   a. Not without some form of subsidy
      1- Tax levy revenue can be replaced by UMTA dollars
         a- Replacement of local tax subsidy with Federal tax subsidy
            1) Which evil is worse? RVTD assumes the local tax is
   b. The mass transit industry is totally subsidized
   c. Raising fares can reduce subsidies
      1- Raising them too far reduces ridership
   d. Advertising sales can reduce subsidies
      1- Space on buses (inside and outside) should be sold
      2- Space on schedules and system maps should be sold
   e. Increasing ridership can reduce subsidies
      1- Key would be to operate at 100% capacity all operating hours
         a- Contrary to our culture
2. RVTD, like other systems, will achieve as much self-sufficiency as possible
   a. Using all available means
      1- Selling ad space
      2- Increasing fares
      3- Increasing ridership
3. Aiming towards high percentage self-sufficiency
   a. FY 78/79's 200,000 riders would have to have been charged
      1- $1.88 per ride to break even from farebox alone
      2- $330,000 in ads would have to have been sold to break even
   b. Realistic goals for future years operations would be
      1- 30% farebox
      2- 10% advertising sales
      3- 5% charters
      4- 55% subsidy
      5- RVTD would then be more self-sufficient than 95% of all US systems
      6- Local tax subsidy would be reduced significantly

H. Federal help towards reducing local tax subsidies

1. Rogue Valley declared an Urban Area (Medford becomes SMSA)
   a. RVTD eligible for
      1- UMTA Sec 3 Capital grants (purchase of equipment)
      2- UMTA Sec 5 Operation grants (half of annual operating costs)
2. Federal changes in the Urban Mass Transit Act
   a. Allowing manufacturers of bus equipment to proliferate
   b. Reducing bus equipment costs through more competition
   c. Re-aligning grant application process

1- Larger systems hold equipment longer

2- Dollars available spread more evenly and fairly throughout US

3- Based on actual need rather than past performance

VII. RVTD COOPERATION WITH OTHER GOVERNMENTAL BODIES AND AGENCIES

A. Public works, all, State, County and Cities

1. RVTD does not have a public works staff

a. Reliant upon other government bodies for

1- Erecting bus stop signs (RVTD bears cost of material)

2- Constructing safe turnouts (RVTD bears cost of material)

3- Selecting and preparing sites for benches/shelters (RVTD bears mat costs)

B. Scheduling and Routing

1. RVTD must be constantly cognizant of

a. Governmental planning

2. RVTD must gain approval for certain routing requests

a. Local traffic/parking commissions

3. RVTD must gain approval for certain scheduling requests

a. City councils and Public Safety agencies

C. Jackson County and funding

1. Jackson County collects RVTD tax revenue

2. Jackson County invests portions of RVTD tax revenue

D. Problems in Funding

1. RVTD operates on the standard fiscal year - July 1 through June 30

2. Jackson County collects and distributes funds between Nov and June 30

3. RVTD must operate between July 1 and November 15 on previous years budget

a. Which was not budgeted

b. County previously stated they would not advance tax receipts again

c. RVTD must go to the private sector for commercial loan

1- Tax receipts, once received, must pay back interest on loan

2- No purchases of capital equipment may be made with borrowed money

d. Eligible Federal money (Sec 18) cannot be obtained

1- After mileage is earned, funds are paid

E. The needs of RVTD, when dealing with government agencies

1. Responsibility of General Manager and Board Members

a. To insure solidarity

2. Will express needs of the entire District

a. To insure assistance in furthering RVTD's service

b. To engage in common goals

III. THE RVTD MESSAGE

A. RVTD realizes a need to foster support outside of government
   1. To stimulate ridership
   2. To make the recipients of its service more aware of
      a. What service is offered
      b. Limitations of service based upon
         1- RVTD's ability to provide service
         2- RVTD's financial limitations
      c. What RVTD intends to do
   3. To seek from its riders and potential riders
      a. Assessments of service provided
      b. Suggestions for additional service or convenience

B. RVTD's most visible opposition comes from
   1. Those that believe RVTD should be self-supporting
      a. Like any successful business operation
   2. Those that resent RVTD's tax subsidies
   3. Those that believe the conventional automobile is the only answer
      a. For everyone
         1- Regardless of their ability to afford to own or operate an auto
         2- Regardless of their physical impairments prohibiting use of an auto
         3- Regardless of the choice many make about our ecology/environment
   4. The "para-transit" sector (private taxis and bus systems)
      a. Who believe mass transit takes away from their profit margin
   5. Political entities that propose the limitation of all spending on
      a. Social improvement programs

C. RVTD's answer to its opposition
   1. Ridership increasing at a rate of 10-15% without mass media promotion
   2. The number of autos parked each day in favor of buses
      a. Reducing traffic circulation problems
      b. Reducing parking problems
      c. Reducing air pollution
      d. The conservation of fossil fuel energy sources

D. Another common complaint - buses seen empty
   1. What time of day? Empty buses are common during non-peak hours
      a. The demand during non-peak hours is not as great
      b. Does RVTD ignore the shopper?
      c. Does RVTD ignore the needs of the elderly, non-worker?
         1- Who may need to see a doctor
         2- Who may be out grocery shopping
   2. Bus may have just completed, or just started its route

E. Continuing the message for the future
   1. RVTD wants to impress the younger set
      a. Encourage elementary students to think about transportation alternatives

IX. ROUTING CHANGES FORTHCOMING

A. RVTD operates a "flex" system
   1. All routes begin and end at a common point (6th & Bartlett)
   2. Good system when all routes are of the same time duration
      a. If not, the ability to transfer is retarded
         1- RVTD routes vary, 25, 30 and 40 minutes

B. What system is best for us?
   1. "Lines"
      a. "Lines" are buses that operate
         1- Only two or three routes
         2- May or may not end up at common transfer point
         3- Often means the need for several "transfer stations"
         4- More easier to operate express buses
         5- Simplifies scheduling
            a- More convenient for riders
               1) Enables more to reach destination without coming "downtown"

OTHER GENERAL CHANGES FORTHCOMING

A. Additional ticket/pass sales outlets
   1. The easier it is to purchase block tickets, the easier it is to
      a. Increase ridership
      b. Market RVTD

B. Closer work with Medford's CBD Revitalization Committee
   1. To plan bus routing

C. Agreement(s) with the Regional Shopping Center Sponsers
   1. Additional buses (partially or totally provided by sponser)
   2. Additional routes and schedules for the center

D. Transportation System Map for additional marketing and sales
   1. A display map showing all routes
   2. Ringed with advertising

E. Vista Transportation Coordinator
   1. RVTD to teach Coordinator how to
      a. Assist action agencies in transportation budgetting
      b. Coordinate the various vehicles of all action agencies
         1- To avoid overlap in vehicle use
         2- To share support of their respective clientele

WHAT'S IN STORE FOR RVTD IN 1980

New buses/shelters

1. Capital Grant through ODOT's PTD for UMTA Section 18 Funds
   a. 80% Federal match, 10% State match, 10% RVTD match
   b. To purchase three Chance Omnibus type buses
      1- Four cylinder Caterpiller Diesel
      2- Collins type wheelchair lift
      3- Air conditioning
      4- Garbage truck chasis and frame (very heavy duty)
      5- Jump seats fold down when wheelchair space not in use
      6- 26-31 passenger
      7- Price: $87,000 (estimate)
      8- Delivery time: 10 months minimum from date of order
   c. To purchase three to five shelters
      1- For use in Medford, Ashland, Jacksonville
      2- Similar to those used in Eugene and Salem

# # #

Appendix 4.9-8

A public hearing on the Medford-Ashland AQMA carbon monoxide and ozone control strategies was held in Medford, Oregon on May 3, 1979. The public notice for this hearing was mailed to interested and affected citizens on March 30. A newspaper advertisement for the hearing was published in the Medford Mail Tribune on March 30, 1979 and April 9, 1979. Eight people and/or groups submitted testimony; a summary of these comments is in the hearing report in this appendix.

Copies of the State Implementation Plan were sent to the State A-95 Clearinghouse and to fourteen areawide clearinghouses for review, as well as to the U.S. Department of Interior, the U.S. Fish and Wildlife Service, and the U.S. Forest Service. Copies of comments received are also in this appendix.

ROBERT W. STRAUB
GOVERNOR

Environmental Quality Commission

POST OFFICE BOX 1760, PORTLAND, OREGON 97207 PHONE (503) 229-5696

MEMORANDUM

TO: Environmental Quality Commission DATE: May 4, 1979

FROM: Hearings Officer

SUBJECT: Hearing Report on May 3, 1979 Hearing regarding "Proposed Revision of the State Implementation Plan Involving Carbon Monoxide and Ozone Pollutants in the Medford-Ashland Air Quality Maintenance Area".

SUMMARY OF PROCEDURE

Pursuant to public notice, a public hearing was convened in the Jackson County Courthouse Auditorium at 9:00 AM on May 3, 1979. The purpose was to receive testimony regarding adoption of a "Revision to the State Implementation Plan Involving Carbon Monoxide and Ozone Pollutants in the Medford-Ashland Air Quality Maintenance Area".

SUMMARY OF TESTIMONY

The following five citizens provided testimony for the record while Fritz Reith of the Ashland Daily Tidings had questions on the concept of "growth management":

Lois N. Kent - League of Women Voters of Rogue Valley and Ashland
Bruce Shaw - Representing Jackson County Commissioners
Bob Gantenbein - Marquess & Marquess and Medford Chamber of Commerce
Patricia Kuhn - Citizen (former member of AQMA Advisory Committee)
John Brown - Citizen (also mentioned affiliation with Sierra Club)

The following pertinent testimony was offered:

Qualified support for most of the proposed revisions (Kent, Shaw, Kuhn, Brown)

Ozone standard should not be reduced and SIP revision should be submitted based on the more restrictive State Standard (0.08ppm) not the less restrictive Federal Standard (0.12ppm) (Kent, Shaw, Kuhn, Brown)

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AIR QUALITY DIVISION

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Proposed SIP revisions for ozone and carbon monoxide should contain the more restrictive State offset policy not the less restrictive Federal offset policy. (Kent, Brown)

Questioned the legality of the proposed revision since it doesn't include "all legally enforcement measures adopted by the State (i.e. State offset rules and current State ozone rules). (Shaw, Kuhn, Brown)

Concern expressed over the ozone data base for Medford-Ashland airshed. Recommend the SIP be more explicit in Section 4.8.6 as to what additional ambient air monitoring and meterological studies the Department is committed to doing. (Gantenbein)

Concern that the Department's proposal in Section 4.8.3.2 to "blindly" follow EQA's requirement to adopt "reasonably available control technology" and the Department's single dependence on "IKMA forecasting" may result in point source requirements that may be unrealistic or not required. (Gantenbein)

Respectively submitted,

Richard P. Reiter

Richard Reiter
Hearings Officer

RR:ml
Attachments

ROBERT W. STRAUB
GOVERNOR

Environmental Quality Commission

522 S.W. 5th AVENUE, P.O. BOX 1760, PORTLAND, OREGON 97207 PHONE (503) 229-5696

MEMORANDUM

To: Environmental Quality Commission

From: Director

Subject: Addendum to Hearings Officer Report regarding the May 3, 1979 hearing on "Proposed Revision to the State Implementation Plan Involving Carbon Monoxide and Ozone Pollutants in the Medford-Ashland Air Quality Maintenance Area."

Written Testimony was received at DEQ's Portland office on May 7, 1979 from Mr./Mrs. Tim Caswell. They oppose the extension of up to five years to meet the carbon monoxide standard.

Written testimony was received at DEQ's Portland office on May 16, 1979, from the Environmental Protection Agency. Several comments were made.

1. The proposed New Source Review rule (OAR 340-20-190,191,192) applies to all nonattainment areas.

2. Parking lot emissions are to be included in the emission inventories.

3. The NMHC/NOx ratio may be unrealistically low.

4. The ozone design value is incorrect.

Written testimony was received at DEQ's Portland Office on May 16 from Merlyn Hough. Several comments were made.

1. Recommend that the state ozone standard be used in revising the State Implementation Plan.

2. Include the offset rule in the revised State Implementation Plan.

3. Recommend that a plant site emission limit be established for the 3M company.

Contains Recycled Materials

4. The indirect source review is necessary to evaluate carbon monoxide until a parking and traffic circulation plan is developed by the lead agency. The indirect source review rule should be referenced in the State Implementation Plan.

William H. Young

Dennis W. Belsky:tf
May 10, 1979
Attachment
cc: Rich Reiter, Southwest Region Manager

U.S. ENVIRONMENTAL PROTECTION AGENCY

REGION X

1200 SIXTH AVENUE

SEATTLE, WASHINGTON 98101

APPENDIX 4.9-9

REPLY TO ATTN OF: M/S 625

Mr. Bruce Shaw
Jackson Co. Planning and Development
Office Suite 12
107 E. Main
Medford, OR 97501

Dear Mr. Shaw:

Enclosed for your information is a list of those organizations designated in Region X as "lead agencies" under Section 174 of the Clean Air Act. The designation for Fairbanks has not yet been made but will be added as soon as it is received.

EPA Headquarters is putting together a similar list on a national basis which will be forward to you as soon as possible. In the meantime, if there are any changes or corrections to the Region X listing, please contact me at (206) 442-1226 (FTS 8-399-1226).

Sincerely yours,

Kathryn Davidson

Kathryn M. Davidson
Environmental Protection Specialist

cc: N. Edmisten

State of Oregon
DEPARTMENT OF ENVIRONMENTAL QUALITY
RECEIVED
MAR 2 8 1979
AIR QUALITY CONTROL

LEAD AGENCY DESIGNATIONS

Nonattainment Area	Pollutant	Designated Organization	Agency Head	Staff Contact	Telephone Number
Eugene-Springfied AQMA	CO, O_x	Lane Council of Governments 135 Sixth Ave. E. Eugene, OR 97401	Thomas Jenkinson Executive Director	Ollie Snowden	(503) 687-4283
Medford-Ashland AQMA	CO, O_x	Jackson County Board of Commissioners Jackson County Courthouse Medford, OR 97501	Carol Doty Board of Commissioners	Bruce Shaw Jackson Co. Planning and Development Office Suite 12 107 E. Main Medford, OR 97501	(503) 776-7520
shington					
Seattle-Tacoma	CO, O_x	Puget Sound Air Pollution Control Agency 410 W. Harrison ST. Seattle, WA 98119	Arthur R. Dammkoehler Air Pollution Control Officer	Jim Pearson	(206) 344-7330
City of Spokane	CO	Spokane Regional Planning Conference Room 353 City Hall Spokane, WA 99201	Jerry C. Kopet Chairman	Jose Urcia	(509) 456-4340 (FTS 8-439-4340
Portland-Vancouver AQMA	O_x	Clark County Regional Planning Council 1408 Franklin St. Vancouver, WA 98663	Larry Rice Acting Director	Rich Hines	(206) 699-2361

LEAD AGENCY DESIGNATIONS

nattainment Area	Pollutant	Designated Organization	Agency Head	Staff Contact	Telephone Number
laska					
Anchorage	CO	Municipality of Anchorage Pouch 6-650 530 W. Fifth Anchorage, AK 99502	Honorable Geogge Sullivan, Mayor	A. Reid Gibby	(907) 264-4865
Fairbanks	CO				
aho					
Boise	CO	Ada Planning Association P. O. Box 500 Boise, ID 87701	Mike Silva Chairman	Cliff Clark	(208) 384-4445
egon					
Portland-Vancouver AQMA	CO,O_x	State of Oregon Department of Environmental Quality P. O. Box 1760 Portland, OR 97207	William Young Director	John Kowalczyk	(503) 229-6459 (FTS 8-424-6459)
City of Salem	CO, O_x	Mid-Willamette Valley Council of Governments 220 High Street N.E. Salem OR 97301	Alan Hershey Director	Frank Mauldin	(503) 588-6177

Medford-Ashland AQMA Citizen's Advisory Committee

Esther Jensen, Chairman
1121 South Oakdale
Medford, OR 97501

Don Partridge
3M Co.
8124 Pacific Avenue
White City, OR 97501

Julius Courtney
U.S. Forest Service
PO Box 520
Medford, OR 97501

Dianne Meyers
Sierra Club
419 Pearl Street
Medford, OR 97501

Leslie Shannon
571 Henely Way
Ashland, OR 97520

Martin Craine
Southern Oregon Timber
Industries Assn.
2680 North Pacific Highway
Medford, OR 97501

Dr. Michael Slaughter
650 Royal
Medford, OR 97501

Patricia Kuhn
2419 Hillcrest Road
Medford, OR 97501

Eleanor Bradley
854 Twin Pines Circle
Ashland, OR 97520

Mr. Roger E. Wilkerson
3M Co.
8124 Pacific Avenue
White City, OR 97501

Candy Rayburn
5090 Rock Way
Central Point, OR 97502

Kerry L. Lay
Jackson County Planning & Dev.
Medford, Oregon 9750]

Dean Phelps
1383 Oregon Street
Ashland, OR 97520

Lou Hannum
2900 Seckel Street
Medford, OR 97501

Debra McFadden
Oregon Lung Association
1019 North Riverside-Suitell
Medford, OR 97501

Dr. James E. Dunn, II
33 North Central Avenue
Medford, OR 97501

Don Moody
Oregon State Dept. of Forestry
5286 Table Rock Road
Central Point, OR 97502

John LaRiviere
Rogue Valley Council of Govern.
33 North Central
Medford, OR 97501

Gary Grimes
SWF Plywood
PO Box 370
Medford, OR 97501

Hugh Jennings
Medford City Council
City Hall
Medford, OR 97501

Kay Alsing
970 Walker Avenue
Ashland, OR 97520

Bob Lichlyter
Rogue River National Forest
PO Box 520
Medford, OR 97501

Doug Roach
Fruit Growers Assc.
300 Lumin Road Space 87
Phoenix, OR 97535

BEFORE THE BOARD OF COMMISSIONERS

COUNTY OF JACKSON, STATE OF OREGON

IN THE MATTER OF DEFINING THE JURISDICTION OF THE MEDFORD-ASHLAND AIR QUALITY MAINTENANCE AREA ADVISORY COMMITTEE

ORDER

Whereas the Bear Creek Valley portion of Jackson County has been designated as an Air Quality Maintenance Area; and

Whereas the Medford-Ashland Air Quality Maintenance Area is a designated non-attainment area for three air pollutants; particulate matter, carbon monoxide, and photochemical oxidants; and

Whereas experienced levels of these pollutants are unhealthful to the general population; and

Whereas Jackson County has been designated as lead agency for developing a state implementation plan revision for transportation related pollutant sources; and

Whereas Jackson County has been designated lead agency for local comprehensive planning; and

Whereas local comprehensive plans are often referred to in state implementation plans; and

Whereas Jackson County has an Air Quality Advisory Committee charged generally with reviewing air quality issues and making recommendations; and

Whereas Jackson County has the responsibility of developing the process by which recommendations will be reviewed and implemented;

Therefore, the Board of Commissioners of Jackson County sets forth the responsibilities of the Medford-Ashland Air Quality Maintenance Area Advisory Committee and a process whereby recommendations will be reviewed.

Section 1. The responsibilities of the Medford-Ashland Air Quality Maintenance Area Advisory Committee are:

A) Advising the Jackson County Board of Commissioners, lead agency for developing controls of transportation related air pollutants, of the most acceptable transportation control measures.

B) Recommending to the Department of Environmental Quality an acceptable emergency action plan to avoid substantial health hazards in the event of very adverse ventilation.

C) Providing public dissemination of information concerning activities and issues regarding local air quality problems and potential solutions.

D) To review and make recommendation to the Board of Commissioners on issues regarding local air quality problems and potential solutions or impacts.

Section 2. The process by which the Medford-Ashland Air Quality Maintenance Area Advisory Committee recommendations are to be reviewed is graphically displayed on attachment "A" and outlined below:

A) Initiating agency suggests a proposal:

1) Probable agencies list:

a) Department of Environmental Quality

b) Jackson County

c) Medford-Ashland Air Quality Maintenance Area Advisory Committee

d) Air quality maintenance area cities

e) Rogue Valley Council of Governments

f) Public

g) Other agencies

2) Review criteria for the various proposal types:

a) Committee recommendation requires local review prior to being sent to implementing agency.

i) Proposal requires local ordinance to implement.

ii) Proposal requires local funding to be implemented.

iii) Recommendation being sent to implementing agency is to be endorsed by lead agency.

iv) Example; transportation control measures.

b) Proposals not needing local review prior to being sent to implementing agency - though needing lead agency endorsement.

i) Committee position on rules which are proposed by and will be implemented by the Department of Environmental Quality.

ii) Adoption of the proposed rule will not require a local ordinance or a local funding to be implemented.

iii) Proposed rule has significance to the local economy or environment.

iv) Example; Department of Environmental Quality proposed emission off-set rule.

c) It is necessary to have a mechanism which allows the Medford-Ashland Air Quality Maintenance Area Advisory Committee to take a position which differs from the lead agency position.

i) Air Quality Advisory Committee makes recommendation directly to implementing agency as committee position.

ii) Example; case by case committee decision.

B) Medford-Ashland Air Quality Maintenance Area Advisory Committee actions:

1) Committee receives proposal.

2) Committee action:

a) Proposal unacceptable to committee.

b) Proposal acceptable, with modifications.

c) Proposal acceptable.

3) Committee forwards action to Board of Commissioners. These actions shall be grouped into complete packages whenever possible.

4) Board of Commissioners notifies committee chair of review procedure to be used:

a) Sent back to committee for further analysis.

b) Sent on to implementing agency.

c) Requires local review.

C) Local review procedure:

1) Board notifies the Air Quality Advisory Committee of intention to hold local review.

2) Air Quality Advisory Committee action is forwarded to local governments, local agencies, and state agencies.

3) 30 days given for comment period - comments sent to Board.

4) Board reviews comments and determines whether or not the action has received a favorable or unfavorable review.

5) Board forwards action to implementing agency if review is favorable.

6) Board forwards action with direction to the Air Quality Advisory Committee if review is unfavorable.

7) The Board will review each action and determine specific entities to review on a case by case basis.

8) The Air Quality Advisory Committee either reworks the proposal or drops it as unacceptable.

D) Implementing agency.

1) Receives action from Board of Commissioners as lead agency.

2) Implementing agency reviews action.

3) Action is considered during the state/local hearings process.

4) Action is implemented through compliance schedule, condition applied, rule change, legislative action, etc.

5) Lead agency notified of state/local disposition.

6) Air Quality Advisory Committee notified of final disposition.

Section 3. The intent of this order is to provide an interim means whereby the Medford-Ashland Air Quality Maintenance Area Advisory Committee may make recommendations on air quality issues, and those recommendations then being given a timely review and consideration. In the event of the air quality process continuing beyond the period of time for which committee appointments have been made, it will be necessary to review, amend, or otherwise update this order upon reappointment or restructuring of the Medford-Ashland Air Quality Maintenance Area Advisory Committee.

Section 4. This order shall be effective from the date signed and stand until December 31, 1978.

Dated this _____ day of _____, 1978 at Medford, Oregon.

JACKSON COUNTY BOARD OF COMMISSIONERS

_____

Tam Moore, Chairman

_____

Isabel Sickels, Commissioner

_____

Carol Doty, Commissioner

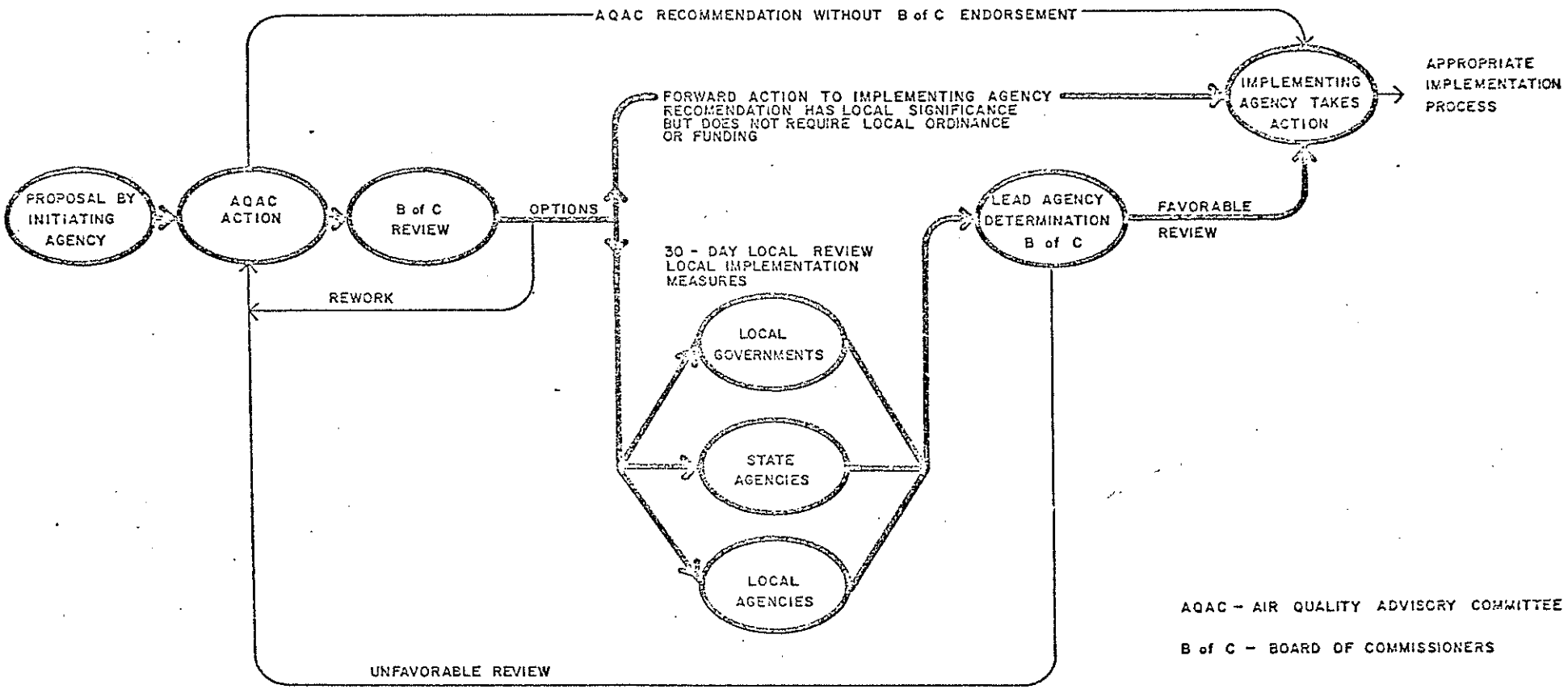
ATTEST:

_____

By: Recording Secretary

ATTACHMENT A

PROCESS FOR REVIEWING AND FORWARDING
AIR QUALITY ADVISORY COMMITTEE RECOMMENDATIONS



AQAC – AIR QUALITY ADVISORY COMMITTEE

B of C – BOARD OF COMMISSIONERS