

1996 CARBON MONOXIDE LIMITED MAINTENANCE PLAN

FOR THE

TUCSON AIR PLANNING AREA

(as updated August, 1997)

PIMA ASSOCIATION OF GOVERNMENTS
177 NORTH CHURCH AVENUE, SUITE 405
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JUNE 26, 1996

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This plan has been prepared by the Pima Association of Governments (PAG) in cooperation with the Pima County Department of Environmental Quality, the Arizona Department of Environmental Quality, the Arizona Department of Transportation and the U. S. Environmental Protection Agency.

TABLE OF CONTENTS

I.	INTRODUCTION	1
II.	BACKGROUND INFORMATION	1
III.	LIMITED MAINTENANCE PLAN OPTION	3
IV.	AGENCY ROLES	4
V.	PUBLIC PARTICIPATION	5
VI.	ATTAINMENT INVENTORY	5
VII.	MAINTENANCE DEMONSTRATION	5
VIII.	MONITORING NETWORK/VERIFICATION CONTINUED ATTAINMENT	5
IX.	CONTINGENCY PLAN	12
X.	CONFORMITY DETERMINATIONS UNDER LIMITED MAINTENANCE PLANS	19
XI.	PLAN APPROVAL PROCESS	20
XII.	PUBLIC PARTICIPATION RECORD	21

APPENDICES

- A. Memorandum of Agreement of April 22, 1993
- B. Pima Association of Governments Regional Transportation Planning Public Involvement Plan dated July 1994
- C. Pima County 1994 CO emission inventory report AQ-290
- D. Arizona Revised Statutes Section 49-406 Nonattainment area plan 1994
- E. Resolutions from the PAG jurisdictions concerning priorities for Transportation Improvement Programs
- F. Estimated emissions benefits from mandated control measures
- G. 40 CFR § 52.138 Conformity procedures.
- H. Public participation record
- I. 1996 legislation regarding authorization of contingency measures for CO Limited Maintenance Plan

I. INTRODUCTION

Significant progress has been made over the last ten years to reduce carbon monoxide (CO) levels in the Tucson Air Planning Area (TAPA). No violations of the CO National Ambient Air Quality Standard (NAAQS) have been recorded during that period and the ambient concentrations continue to trend lower. This plan provides a means to redesignate the TAPA from a CO nonattainment area to a maintenance area that has attained the CO NAAQS. This plan meets the requirements of the "Limited Maintenance Plan Option for Nonclassifiable [not classified] CO Nonattainment areas" announced by the U. S. Environmental Protection Agency (EPA) on October 6, 1995. This is a ten year plan that is designed to be replaced by another ten year plan about eight years after promulgation by EPA.

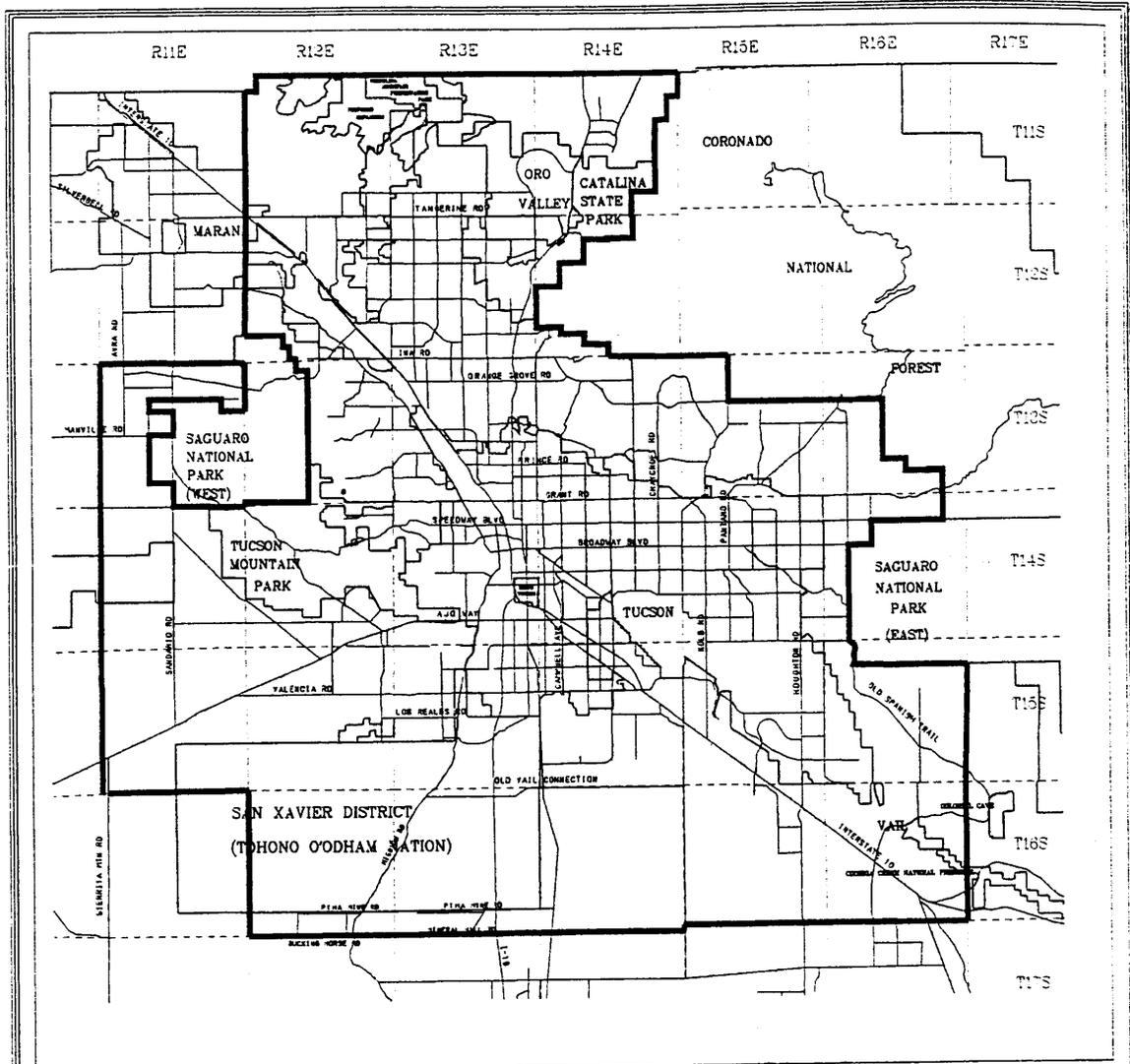
II. BACKGROUND INFORMATION

The Tucson Air Planning Area is designated as a CO nonattainment area "not classified" by operation of law as published in accordance with §107(d)(1)(C)(i) of the Clean Air Act (CAA). The extent of the TAPA is described in 40 CFR § 81.303 as the Tucson [sic] Area, Pima County (part) by Township and Range. A map of the TAPA is presented as Figure 1.

The Pima Association of Governments (PAG), as the designated air quality planning agency for Pima County, addresses regional air quality issues in keeping with federal, state and local requirements. Failure to meet the requirements of the CAA can result in economic sanctions and/or civil lawsuits. Such a civil lawsuit was filed in 1985 by the Arizona Center for Law in the Public Interest (ACLIPI). It forced EPA and others to respond to a number of CAA deadlines that had not been met, including nonattainment area plans to be submitted and approved for Maricopa and Pima Counties.

One of the results of this litigation was the EPA approval of *The 1987 Carbon Monoxide State Implementation Plan Revision for the Tucson Air Planning Area*. The EPA approval was later vacated by an Order of the Ninth Circuit Court of Appeals on March 1, 1990 in response to an appeal filed by ACLIPI. In response to the court order, EPA promulgated the Arizona Federal Implementation Plan (FIP) on January 28, 1991. At the same time EPA carried forward all control measure commitments contained in the 1987 SIP Revision and those that were later added to the SIP through legislation.

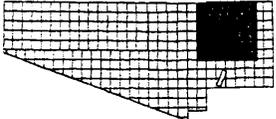
The FIP contained no new control measures because ". . . the 1987 Pima plan accurately predicted that attainment would occur in or before early 1990." Therefore, EPA concluded, "sufficient emission reductions have already been achieved in Pima County to assure that current CO emission levels are below those needed to attain the CO NAAQS and that no additional federal measures are needed to ensure attainment." The EPA hot-spot modeling for the FIP showed that with the existing control strategies ambient CO concentrations for the next ten years would be well below the CO NAAQS, even under worst case meteorological conditions.



Eastern Pima County
 Tucson CO Nonattainment Area
FIGURE 1.

Comments

All information is provided as is, with all faults, and without warranty of any kind, express or implied, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose.



Pima County Index Map

Legend

-  Administrative Boundaries
-  Major Roads
-  Township-Ranges
-  Tucson CO Nonattainment Area

October 1995




Prepared by
 PIMA COUNTY DEPARTMENT
 ENVIRONMENTAL QUALITY

Scale 1:100,000

III. LIMITED MAINTENANCE PLAN OPTION

The "Limited Maintenance Plan Option" guidance document lists the core requirements for this plan as follows:

a. Attainment Inventory

The State should develop an attainment emissions inventory to identify a level of emissions in the area which is sufficient to attain the CO NAAQS. This inventory should be consistent with EPA's most recent guidance on emissions inventories for nonattainment areas available at the time and should represent emissions during the time period associated with the monitoring data showing attainment. The inventory should be based on actual "typical winter day" emissions of CO.

b. Maintenance Demonstration

The maintenance demonstration requirement is considered to be satisfied if the monitoring data show that the area is meeting the air quality criteria for limited maintenance areas (7.65 ppm or 85% of the CO NAAQS). There is no requirement to project emissions over the maintenance period. The EPA believes if the area begins the maintenance period at or below 85 percent of exceedance levels, the air quality along with the continued applicability of PSD requirements, any control measures already in the SIP (or FIP), and Federal measures, should provide adequate assurance of maintenance over the initial 10-year maintenance period.

When EPA approves a limited maintenance plan, EPA is concluding that an emissions budget may be treated as essentially not constraining for the length of the maintenance period because it is unreasonable to expect that such an area will experience so much growth in that period that a violation of the CO NAAQS would result.

c. Monitoring Network/Verification of Continued Attainment

To verify the attainment status of the area over the maintenance period, the maintenance plan should contain provisions for continued operation of an appropriate, EPA-approved air quality monitoring network, in accordance with 40 CFR § part 58. This is particularly important for areas using a limited maintenance plan because there will be no cap on emissions.

d. Contingency Plan

Section 175A of the CAA requires that a maintenance plan include contingency provisions, as necessary, to promptly correct any violation of the NAAQS that occurs after redesignation of the area. These contingency measures do not have to be fully adopted at the time of redesignation.

However, the contingency plan is considered to be an enforceable part of the SIP and should ensure that the contingency measures are adopted expeditiously once they are triggered by a specified event. The contingency plan should identify the measures to be promptly adopted and provide a schedule and procedure for adoption and implementation of the measures. The State should also identify specific indicators, or triggers, which will be used to determine when the contingency measures need to be implemented. While a violation of the NAAQS is an acceptable trigger, States may wish to choose a pre-violation action level as a trigger, such as an exceedance of the NAAQS. By taking early action, a State may be able to prevent any actual violation of the NAAQS and, therefore, eliminate any need on the part of EPA to redesignate an area back to nonattainment.

e. Conformity Determinations Under Limited Maintenance Plans

The transportation conformity rule (58 FR 62188; November 24, 1993) and the general conformity rule (58 FR 63214; November 30, 1993) apply to nonattainment areas and maintenance areas operating under maintenance plans. Under either rule, one means of demonstrating conformity of Federal actions is to indicate that expected emissions from planned actions are consistent with the emissions budget for the area. Emissions budgets in limited maintenance plan areas may be treated as essentially not constraining for the length of the initial maintenance period because it is unreasonable to expect that such an area will experience so much growth in that period that a violation of the CO NAAQS would result. In other words, EPA would be concluding that emissions need not be capped for the maintenance period. Therefore, in areas with approved limited maintenance plans, Federal actions requiring conformity determinations under the transportation conformity rule could be considered to satisfy the "budget test" required in sections 93.118, 93.119, and 93.120 of the rule. Similarly, in these areas, Federal actions subject to the general conformity rule could be considered to satisfy the "budget test" specified in section 93.158 (a) (5) (i) (A) of the rule.

As this is guidance, final and binding determinations regarding the eligibility of areas for the limited maintenance plan option will only be made in the context of notice and comment rulemaking actions regarding specific redesignation requests.

IV. AGENCY ROLES

a. Agreements

In 1993, pursuant to A.R.S. § 49-406(D) and (E), a Memorandum of Agreement (MOA) was executed between the Pima Association of Governments, the Pima County Department of Environmental Quality (PDEQ), the Arizona Department of Transportation (ADOT) and the Arizona Department of Environmental Quality (ADEQ) regarding nonattainment area air quality planning, implementation and enforcement. It is included as Appendix A. This Agreement lays out the responsibilities and authorities of the parties, particularly as they relate to the preparation of nonattainment area plans, but also as they relate to the preparation and implementation of this maintenance plan.

b. Consultation Process

The consultation procedures outlined by the final Federal conformity rule have been adopted by the State of Arizona at A.A.C. R18-2-1405. These rules supplement the MOA cited above and the PAG Public Involvement Plan described below.

V. PUBLIC PARTICIPATION

The PAG Public Involvement Plan (PIP) was adopted by the PAG Regional Council in August of 1994. The PIP was required by the Metropolitan and Statewide Planning Rules at 23 CFR § 450.212 Public Involvement. A copy of the PAG Public Involvement Plan is included as Appendix B.

VI. ATTAINMENT INVENTORY

The Pima County 1994 CO Emission Inventory was prepared by PDEQ and published as AQ-290 dated January 10, 1996. It is included as Appendix C. The emissions calculations used the most recent planning assumptions for transportation network vehicle miles traveled and speed using MOBILE5a low altitude emission factors. This methodology gives total 1994 CO emissions of 127,677 tons with a mobile source total of 108,149 tons.

VII. MAINTENANCE DEMONSTRATION

The Pima County Department of Environmental Quality (PDEQ) has tabulated ten quarters of ambient CO concentration (highest and second highest non-overlapping 8-hour average) for all CO monitor stations operating from July 1, 1993 through December 31, 1995 in the TAPA. The results are presented in Table 1. The highest 8- hour average CO concentration measured during the eight quarters was 6.5 ppm at the 22nd Street and Alvernon monitor station on December 5, 1993. No 8-hour average CO concentration above 7.65 ppm has been recorded at any CO monitoring station from December 31, 1995 to date.

VIII. MONITORING NETWORK/VERIFICATION OF CONTINUED ATTAINMENT

The current CO monitoring network consists of five monitoring stations. Figure 2 shows the location of these monitoring stations. PDEQ operates and maintains these monitors through an EPA grant program (Section 105). The network is EPA-approved, in accordance with 40 CFR § part 58.

TABLE 1

CO MAINTENANCE DEMONSTRATION
 HIGHEST AND SECOND HIGHEST 8-HOUR AVERAGE
 JULY 1, 1993 - DECEMBER 31, 1995
 AS RECORDED IN AIRS DATABASE

DOWNTOWN MONITOR STATION

SITE	YEAR	QUARTER	DATE	MAX1 ppm	MAX2 ppm
DOWNTOWN	1993	3	08/26/93	2.6	
DOWNTOWN	1993	3	09/03/93		2.6
DOWNTOWN	1993	4	12/08/93	4.9	
DOWNTOWN	1993	4	12/10/93		3.7
DOWNTOWN	1994	1	01/14/94	5.0	
DOWNTOWN	1994	1	01/20/94		3.8
DOWNTOWN	1994	2	04/19/94	2.5	
DOWNTOWN	1994	2	05/02/94		2.4
DOWNTOWN	1994	3	09/29/94	2.5	
DOWNTOWN	1994	3	09/01/94		2.4
DOWNTOWN	1994	4	12/03/94	4.5	
DOWNTOWN	1994	4	12/05/94		3.8
DOWNTOWN	1995	1	01/19/95	3.6	
DOWNTOWN	1995	1	01/06/95		3.1
DOWNTOWN	1995	2	04/19/95	2.7	
DOWNTOWN	1995	2	04/20/95		2.3
DOWNTOWN	1995	3	08/28/95	1.9	
DOWNTOWN	1995	3	07/21/95		1.8
DOWNTOWN	1995	4	12/20/95	5.5	
DOWNTOWN	1995	4	12/06/95		4.5

TABLE 1 (cont.)

CO MAINTENANCE DEMONSTRATION
 HIGHEST AND SECOND HIGHEST 8-HOUR AVERAGE
 JULY 1, 1993 - DECEMBER 31, 1995
 AS RECORDED IN AIRS DATABASE

22ND STREET / CRAYCROFT MONITOR STATION

SITE	YEAR	QUARTER	DATE	MAX1 ppm	MAX2 ppm
22ND / CRAYCROFT	1993	3	09/22/93	1.7	
22ND / CRAYCROFT	1993	3	09/21/93		1.4
22ND / CRAYCROFT	1993	4	12/08/93	5.1	
22ND / CRAYCROFT	1993	4	12/04/93		3.1
22ND / CRAYCROFT	1994	1	01/05/94	3.9	
22ND / CRAYCROFT	1994	1	01/21/94		3.2
22ND / CRAYCROFT	1994	2	04/03/94	1.5	
22ND / CRAYCROFT	1994	2	06/03/94		1.4
22ND / CRAYCROFT	1994	3	09/28/94	1.3	
22ND / CRAYCROFT	1994	3	07/12/94		1.1
22ND / CRAYCROFT	1994	4	11/22/94	2.5	
22ND / CRAYCROFT	1994	4	12/16/94		2.3
22ND / CRAYCROFT	1995	1	01/07/95	2.6	
22ND / CRAYCROFT	1995	1	01/08/95		2.3
22ND / CRAYCROFT	1995	2	06/24/95	1.2	
22ND / CRAYCROFT	1995	2	04/05/95		1.1
22ND / CRAYCROFT	1995	3	09/21/95	1.0	
22ND / CRAYCROFT	1995	3	08/28/95		1.0
22ND / CRAYCROFT	1995	4	12/06/95	3.0	
22ND / CRAYCROFT	1995	4	12/02/95		2.6

TABLE 1 (cont.)

CO MAINTENANCE DEMONSTRATION
 HIGHEST AND SECOND HIGHEST 8-HOUR AVERAGE
 JULY 1, 1993 - DECEMBER 31, 1995
 AS RECORDED IN AIRS DATABASE

22ND STREET / ALVERNON MONITOR STATION

SITE	YEAR	QUARTER	DATE	MAX1 ppm	MAX2 ppm
22ND / ALVERNON	1993	3	08/31/93	5.0	
22ND / ALVERNON	1993	3	08/04/93		4.7
22ND / ALVERNON	1993	4	12/05/93	6.5	
22ND / ALVERNON	1993	4	12/08/93		6.0
22ND / ALVERNON	1994	1	01/06/94	6.0	
22ND / ALVERNON	1994	1	01/14/94		5.4
22ND / ALVERNON	1994	2	05/06/94	3.9	
22ND / ALVERNON	1994	2	05/12/94		3.8
22ND / ALVERNON	1994	3	09/16/94	4.3	
22ND / ALVERNON	1994	3	08/11/94		4.0
22ND / ALVERNON	1994	4	12/04/94	5.5	
22ND / ALVERNON	1994	4	12/21/94		5.4
22ND / ALVERNON	1995	1	01/06/95	6.0	
22ND / ALVERNON	1995	1	01/11/95		5.4
22ND / ALVERNON	1995	2	06/26/95	4.3	
22ND / ALVERNON	1995	2	06/30/95		3.6
22ND / ALVERNON	1995	3	08/14/95	5.2	
22ND / ALVERNON	1995	3	09/01/95		5.1
22ND / ALVERNON	1995	4	11/18/95	5.9	
22ND / ALVERNON	1995	4	12/06/95		5.7

TABLE 1 (cont.)

CO MAINTENANCE DEMONSTRATION
 HIGHEST AND SECOND HIGHEST 8-HOUR AVERAGE
 JULY 1, 1993 - DECEMBER 31, 1995
 AS RECORDED IN AIRS DATABASE

POMONA MONITOR STATION

SITE	YEAR	QUARTER	DATE	MAX1 ppm	MAX2 ppm
POMONA	1993	3	09/21/93	1.8	
POMONA	1993	3	09/29/93		1.6
POMONA	1993	4	12/05/93	3.7	
POMONA	1993	4	12/25/93		3.7
POMONA	1994	1	01/14/94	3.9	
POMONA	1994	1	02/03/94		3.4
POMONA	1994	2	04/19/94	1.8	
POMONA	1994	2	04/28/94		1.4
POMONA	1994	3	09/20/94	2.1	
POMONA	1994	3	09/30/94		1.6
POMONA	1994	4	12/04/94	4.0	
POMONA	1994	4	11/26/94		3.8
POMONA	1995	1	01/20/95	3.0	
POMONA	1995	1	01/19/95		3.0
POMONA	1995	2	04/20/95	1.8	
POMONA	1995	2	04/05/95		1.8
POMONA (insufficient data)	1995	3			
POMONA (insufficient data)	1995	3			
POMONA	1995	4	12/13/95	3.8	
POMONA	1995	4	12/19/95		3.3

TABLE 1 (cont.)

CO MAINTENANCE DEMONSTRATION
 HIGHEST AND SECOND HIGHEST 8-HOUR AVERAGE
 JULY 1, 1993 - DECEMBER 31, 1995
 AS RECORDED IN AIRS DATABASE

CHERRY / GLENN MONITOR STATION

SITE	YEAR	QUARTER	DATE	MAX1 ppm	MAX2 ppm
CHERRY / GLENN (insufficient data)	1993	3			
CHERRY / GLENN (insufficient data)	1993	3			
CHERRY / GLENN	1993	4	12/05/93	4.5	
CHERRY / GLENN	1993	4	12/08/93		4.4
CHERRY / GLENN	1994	1	02/03/94	5.1	
CHERRY / GLENN	1994	1	01/14/94		3.8
CHERRY / GLENN	1994	2	04/19/94	2.4	
CHERRY / GLENN	1994	2	04/20/94		1.8
CHERRY / GLENN	1994	3	09/20/94	2.5	
CHERRY / GLENN	1994	3	09/30/94		2.1
CHERRY / GLENN	1994	4	11/26/94	5.4	
CHERRY / GLENN	1994	4	12/07/94		4.0
CHERRY / GLENN	1995	1	01/07/95	4.0	
CHERRY / GLENN	1995	1	01/08/95		3.7
CHERRY / GLENN	1995	2	04/08/95	1.8	
CHERRY / GLENN	1995	2	06/24/95		1.8
CHERRY / GLENN	1995	3	08/29/95	1.9	
CHERRY / GLENN	1995	3	08/23/95		1.3
CHERRY / GLENN	1995	4	12/07/95	4.9	
CHERRY / GLENN	1995	4	12/12/95		4.5

Pima County
CO Monitoring Stations

FIGURE 2.

Legend

-  Major Roads
- Carbon Monoxide
-  Current Monitoring Stations
-  Discontinued Monitoring Stations

March 1996

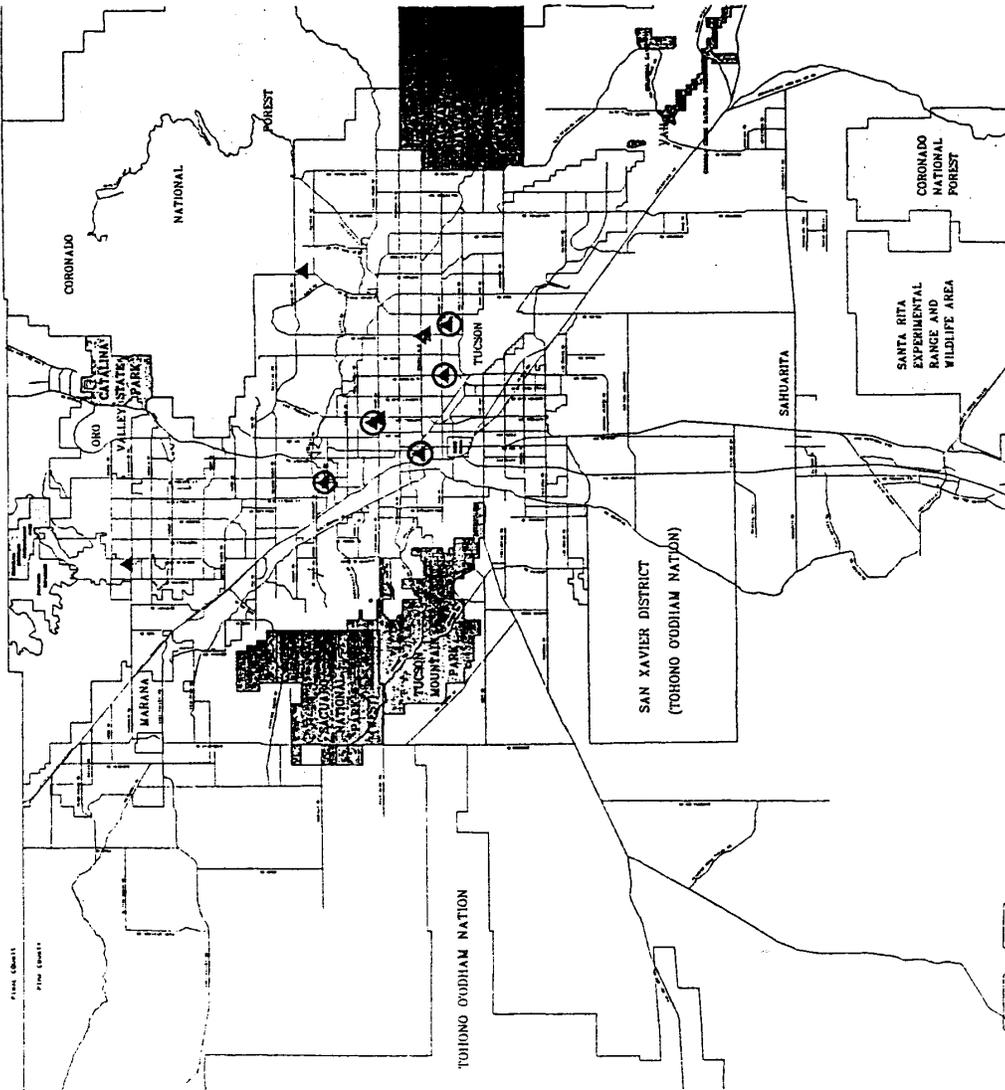
Comments

All locations to be verified in the field, and where accuracy of the data is in question, particularly in areas of responsibility and future use.



Pima County Index Map

Prepared by
Pima County Secretary
Pamela H. HARRIS
ENVIRONMENTAL QUALITY



For the purposes of the Limited Maintenance Plan, PAG has obtained the support of all its member jurisdictions to assure that two additional monitors are available for future use during the maintenance period. One of the monitors will be set up in a portable shelter for use at identified hot spots, as described in the following contingency plan section. It was under construction and testing early in 1996. The other monitor will be set up as a special purpose microscale monitor at a site to be chosen within one year of the approval of this maintenance plan. The principal criteria for the location of the new microscale site will be to best characterize Tucson hot spots during the maintenance period. If a violation of the CO NAAQS is monitored by the portable monitor, the special purpose monitor will be moved to that site no later than the next CO season – if it can be established at that location and meet all EPA siting requirements for a NAMS microscale monitor.

IX. CONTINGENCY PLAN

This contingency plan provides a procedure to prevent future violations and promptly correct any violation of the CO NAAQS that occurs after redesignation of the area by EPA from nonattainment to attainment. Contingency measures do not have to be fully implemented at the time of redesignation. This contingency plan is considered to be a federally enforceable part of the SIP. The assurance that contingency procedures will be followed and commitments will be implemented and enforced is found in State law at A.R.S. § 49-406 (Appendix D). By adopting this limited maintenance plan, the PAG Regional Council and member jurisdictions promise to adhere to the procedures outlined herein. In addition, resolutions from each of the PAG jurisdictions confirming their commitment to implement certain contingency control measures recommended within their authority are reproduced in Appendix E.

This plan ensures that needed contingency measures are adopted and implemented expeditiously once they are triggered by a specified event. The event is specified in the plan at a level well below the violation level to assure that additional control measures are implemented before a violation of the standard occurs or is imminent. This contingency plan identifies measures that can be promptly adopted and implemented by following the procedures specified below:

a. Action Levels

PAG hereby adopts the following process to define the trigger event to evaluate the need for contingency measures to avoid any CO NAAQS violations. First, a verified ambient CO level over 7.65 ppm for an 8-hour period must be recorded at least twice at one monitor station during the CO season (October through March). Next, the most recent microscale modeling at known hot-spot locations will be reviewed. At least four, to as many as seven, such potential hot-spot intersections are modeled annually.

Field studies using a portable CO monitor will be conducted at one or more of the hot-spot locations most likely to have high CO concentrations. The monitor will run for at least 90 days during each CO season (October through March) or portion of a season (December, January and February). Each location will be monitored for at least 30 days unless appropriate weather conditions (calm and cold) occur sooner. The objective is to record episodes at each site that are typical of weather and traffic conditions that produce high ambient concentrations. Finally, using all the data available, PAG staff will make a determination and recommendation to implement additional control measures, if needed to assure that the CO NAAQS will not be violated.

b. Procedure

PDEQ must notify PAG within seven days every time verified monitoring data indicate that a CO concentration greater than 7.65 ppm CO for an 8-hour average has been recorded at one of the monitor sites. An 8-hour average of 7.65 ppm (85% of the CO NAAQS) is the maximum level designated by the EPA for Nonclassifiable CO Nonattainment areas to qualify for the limited maintenance plan option. Two verified 8-hour average concentrations in excess of 85% of the CO NAAQS at any one monitor site in any CO season has been selected by PAG as the pre-violation action level. When this criterion is first reached, there should be ample time (estimated at five years or more) available to complete all necessary field studies, technical evaluations, recommendations and provide for implementation of mitigation measures, if needed, to prevent any violations of the CO NAAQS. If the field studies can not be completed during the CO season of the occurrence, they must be completed within **12** months of reaching the pre-violation action level.

At this point it should be noted that since 1988 Tucson has recorded no exceedances at any monitor. The NAMS microscale monitor at 22nd and Alvernon generally records the highest annual 8-hour maximum, as would be expected. The area has not yet experienced any areawide, high CO concentrations. Thus, the cause of monitored concentrations above the action level must be determined so that the most appropriate control measures can be implemented. If the event is the result of monitored emissions from an identified hot-spot, local mitigation measures will be assessed first. If local transportation system improvements at that hot-spot location can be implemented promptly, and will fully mitigate the congestion and emissions problem, that action will be recommended to the appropriate jurisdiction by the PAG Regional Council. If it is determined that the cause of the problem is common to a number of hot-spots or is areawide, a general control measure such as increasing the oxygen content in the oxyfuels program will be requested from the appropriate authority as pre-authorized by State statute as a more

effective remedy. If it is determined that no violation is threatened, the data acquired will be filed as part of the data base to evaluate future trigger events.

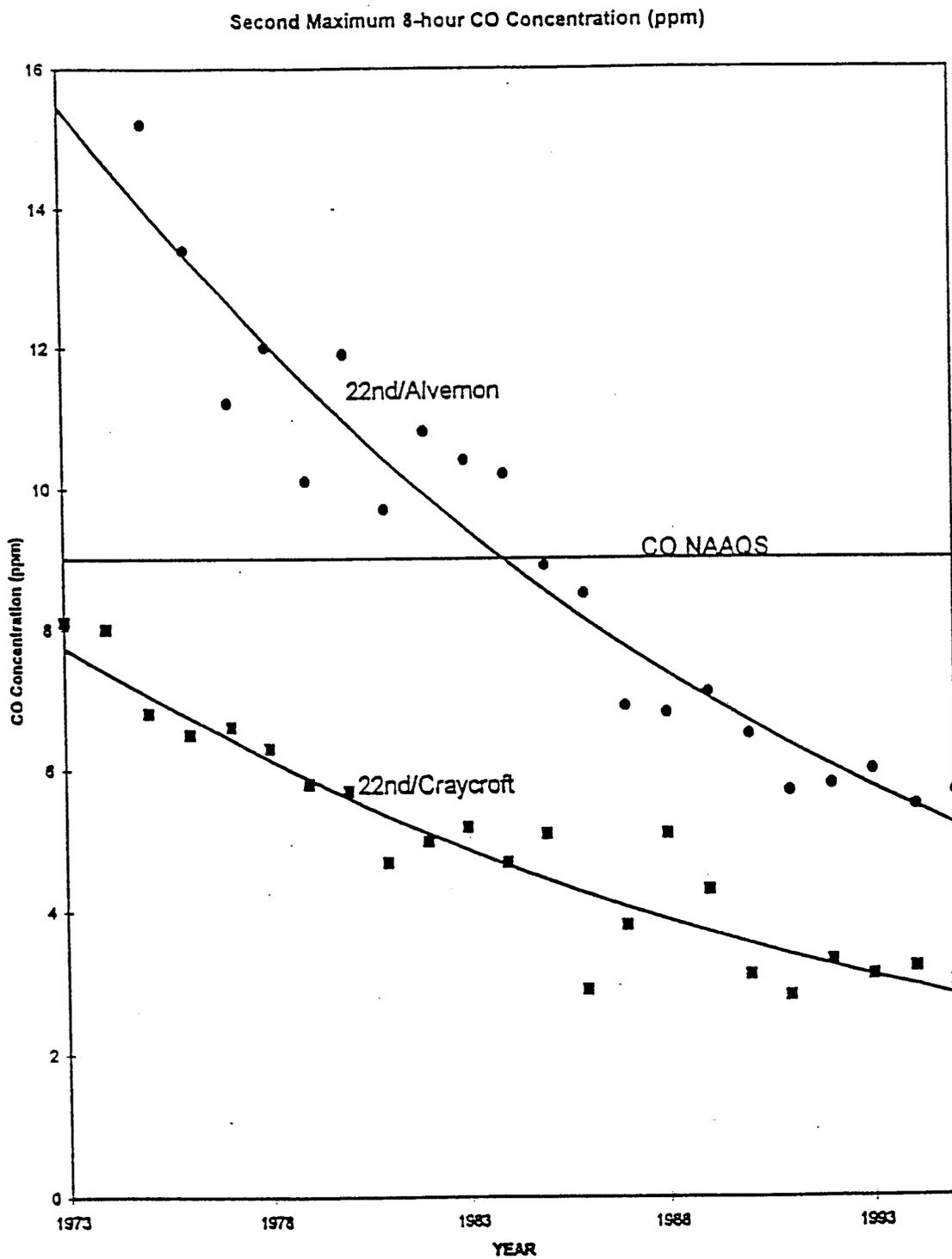
PAG already annually models current and future ambient CO concentrations for selected hot-spot intersections as part of the annual air quality evaluation of the Mobility Management Plan (MMP) data on congestion. PAG evaluates the 3 highest total average daily traffic (ADT) and the 3 worst level of service (LOS) intersections using the most current microscale model (CAL3QHC or its successors). The results are evaluated to determine which intersections model high ambient CO levels during the current year and five years into the future.

These modeling results are also compared to projected trends of monitored ambient air quality values over the most recent 10 year period as a test of validity. Recent trends in monitored ambient air quality are displayed on Figure 3. It shows the downward trend of 2nd high 8-hour average concentrations of carbon monoxide at the NAMS microscale monitor at 22nd Street and Alvernon and the NAMS neighborhood scale monitor near 22nd Street and Craycroft. Figure 3 also shows a convergence of the two trend lines, indicating that neighborhood (background) concentrations are becoming a greater proportion of the microscale concentrations.

If the PAG analyses indicate a reasonable probability of violating the CO NAAQS at any of these modeled hot-spot locations within the five year period, and no trigger event has occurred a field study deploying the portable monitoring station will still be initiated, no later than the beginning of the next CO season, at the worst hot-spot intersection that will accommodate the monitoring equipment. The portable station will measure ambient CO levels and meteorological data for at least 30 days during the primary CO season (December through February) unless suitable meteorological conditions occur sooner. Traffic data will be obtained from the department of transportation of the jurisdiction where the monitor is located to provide up-to-date traffic data. The data collected at the intersection site will be compared with the data inputs and outputs of the microscale modeling for that intersection. An analysis of the entire data package will then be prepared by PAG and PDEQ air quality staff within 3 months of completion of the field study monitoring program.

The analysis will focus on the probability of exceeding the CO NAAQS; when that might occur; and what control measures, if any, should be implemented to assure no violations of the CO NAAQS occur. The analysis will be prepared with full agency consultation and public participation (in accordance with the PAG Public Involvement Plan). The analysis report will be presented to the PAG Regional Council after consultation, review and recommendation from the appropriate PAG committees and other interested parties.

Figure 3. Recent Trends in Ambient Air Quality



If the PAG air quality analysis indicates a probable violation of the CO NAAQS within 5 years, the analysis report will recommend that PAG Regional Council implement, or specifically request the appropriate agency to implement, the control measures recommended in the analysis that will fully mitigate the projected violation. Implementation must be initiated by the start of the next CO season (October 1). Failure of the PAG Regional Council and/or the PAG jurisdictions (within their legal authority) to implement the recommendations may be considered a failure to fulfill the obligations of this plan. Likewise, a failure of the State of Arizona and its agencies to implement control measures (within their legal authority) requested by PAG may be considered a failure to fulfill the obligations of this plan.

A monitored exceedance of the CO NAAQS (one verified ambient CO level over 9.5 ppm for an 8-hour period) at any monitor is an event that will trigger the same evaluation and implementation process described above. In the event of a violation of the CO NAAQS, the Director of ADEQ is authorized to reduce the maximum volatility of gasoline sold in Area B (the Tucson vehicle emissions control area) according to the provisions of A.R.S. § 41-2122(E) as amended in 1996 by Senate Bill 1002. H.B. 1002 also amended the statutory authorization of the oxyfuels program for the Tucson area to allow additional increments of oxygen content in motor vehicle fuels up to 2.7% for MTBE and 3.5% for ethanol for implementation as needed to prevent future CO NAAQS violations. The pertinent sections of H.B. 1002 are reproduced in Appendix I [included as an update after original submission of this plan].

c. Mobile Source Emissions Control Measures Mandated in SIP

The following mobile source emissions control measures for the Tucson Air Planning Area are currently mandated by federal, state, or local statute or rule:

Federal Motor Vehicle Control Program;

State Inspection and Maintenance Program;

State Oxyfuels Program (1.8% O₂, that can be increased according to the provisions of A.R.S. § 2125(B));

PAG Travel Reduction Program (TRP) including RideShare Program; and

Pima County Department of Environmental Quality (PDEQ) Voluntary No-Drive Days Program.

All of these control measures are assured of funding as long as current statutes are not changed and current agreements continue. Appendix D (A.R.S. § 49-406) describes the requirements for a Memorandum of Agreement (Appendix A) and

the statutory requirements for implementation and enforcement of a "nonattainment area plan". We believe that this statute applies to maintenance area plans as well as nonattainment area plans. All of these control measures are already federally enforceable commitments in the SIP. PAG believes that state and federal law requires that these programs be continued at their current level of effort and funding. These are the permanent and enforceable commitments (as required under § 107(d)(3)(E)(iii) of the Clean Air Act) that have brought the Tucson area into attainment and/or will help keep the area in attainment of the CO NAAQS.

Emissions benefits from the control measures listed above are estimated and reported each year in the annual CO Progress Report and the annual transportation improvement program (TIP). Quantitative estimates of CO emissions benefits from these control measures are presented in Appendix F. The benefits from travel demand management measures such as the PAG TRP, RideShare Program and Volunteer No-Drive Days Program have not been claimed as credits against any emissions budgets in the past because CO "not classified" areas are not required to have an emissions budget. However, these programs together with other emissions control programs (compressed natural gas (CNG) buses and fleets, bike racks on buses and at transit centers, traffic light sequencing, bike/pedestrian paths, telecommuting, etc.) give an additional emissions benefit estimated conservatively at 25-30 tons per day. Technical support documents for these estimates are available at the PAG office.

Conformity determinations currently require a base year (1990) emissions inventory that serves as a constraint for approval of transportation plans, programs and projects. The emissions benefit attributable to travel demand management strategies, such as TRP, RideShare and No-Drive Days are generally 1% or less individually, but are considered relatively cost effective on a cost per ton CO emissions saved. They can be used in conformity determinations, when needed. An important fact about the travel demand programs is that they provide education and understanding to a large segment of the working public about the need for and effect of other air quality control measures. Without this broad understanding, it would be very difficult for governments to implement transportation control measures when necessary for the protection of air quality and public health.

d. Prioritization of Contingency Measures

The Air Quality Subcommittee (see Appendix A) of the PAG Environmental Planning Advisory Committee (EPAC) serves as the principal public review body for evaluation of the control measures considered for inclusion on the contingency measure list. The committee has reviewed the cost effectiveness of

the reasonably available measures. It has also evaluated the public acceptability of these measures. This has resulted in a listing of contingency measures for consideration when a triggering event occurs. The ranking process for inclusion in the list will likely change over time as better information becomes available concerning the effectiveness of various control measures. Also, the most suitable control measure to correct a particular problem may not be the highest ranked one.

The criteria used by the Air Quality Subcommittee to rank the candidate control measures include:

- Cost effectiveness based on cost estimates per ton of carbon monoxide reduction;
- Amount of emissions reduction needed and/or available;
- Feasibility of governmental actions required for implementation;
- Equity for all affected publics;
- Public perception and acceptance of measure; and
- Reliability of available cost and effectiveness data.

The principal sources of information used by PAG staff and the Subcommittee were: Woodard and Horn, "Arizona Carbon Monoxide Emissions Reduction Study" prepared for ADEQ, May 1990.

Sierra Research, et. al., "Feasibility and Cost-Effectiveness Study of New Air Pollution Control Measures Pertaining to Mobile Sources" prepared for MAG, June 1993.

Sierra Research, et. al., "Feasibility and Cost Effectiveness of New Air Pollution Control Measures" Final Report, prepared for MAG, September 1993.

e. Current List of Contingency Measures

The following list will be considered first when evaluating the appropriate measure to implement for a defined problem. Implementation of one or more of these measures would be the probable choice of PAG if emissions reductions are needed to prevent a violation of the CO NAAQS. The final decision on which measure or measures to implement will be made by the PAG Regional Council based on recommendations from PAG staff, after review by the EPAC Air Quality Subcommittee and the required public participation and agency consultation. Changes to the list may be made by SIP revision following the required public participation and agency consultation.

- *Transportation system management improvements such as additional signal light coordination, turn lanes, etc.
- ** Incremental increase in the oxygen content during the oxyfuels season (October through March) up to the practical limit (3.5% for 100% ethanol oxygenate, 2.7% for MTBE oxygenate) in no less than 0.3% increments.
- ** Setting a maximum winter Reid Vapor Pressure (RVP) at 9 pounds per square inch (psi) with an ethanol waiver of 1 psi.***
- ** Setting a maximum winter RVP at 9 psi without an ethanol waiver of 1 psi.***
 - * Resolutions enacted by all PAG jurisdictions
 - ** Legislation passed by 42nd Legislature (1996)
 - *** Only available as contingency measures to be implemented in the event of a violation of the CO NAAQS

f. Other Candidate Contingency Measures

The following contingency control measures are also considered feasible and effective, but were not ranked, and no effort has been made to obtain enabling legislation:

- Mandatory no-burn (fireplace) days for defined, high risk weather conditions.
- Elimination of, or restrictions on, I/M waivers.*
- Remote sensing in conjunction with I/M program.
- Emissions based vehicle use fee.
- VMT based vehicle use fee.
- One of the congestion pricing methodologies such as high parking fees in areas of congestion. I/M 240 consistent with current Maricopa County use.
- Mandatory no-drive days for defined, high risk weather conditions (cold, calm).

*Legislation already passed by 42nd Legislature (1996)

X. CONFORMITY DETERMINATIONS UNDER LIMITED MAINTENANCE PLANS

Conformity analyses will continue to follow the federal transportation conformity rule (40 CFR § 93.100 *et seq.*), the federal general conformity rule (40 CFR § 93.150 *et seq.*), the Arizona FIP

conformity rule (40 CFR § 52.138) and the Arizona conformity rules (A.A.C. R18-2-1401 *et seq.*).

The basic conformity findings for transportation plans and programs as required in the FIP (see Appendix G) are:

- (A) that implementation of the transportation plan/program will provide for the implementation of TCMs in the applicable plan on the schedule set forth in the applicable plan;
- (B) that CO emission levels, microscale and regional, resulting from the implementation of the plan/program will not delay attainment or achievement of any interim emission reductions needed for attainment and/or interfere with maintenance of the CO NAAQS throughout the nonattainment area during the period covered by the applicable plan; and
- (C) that implementation of the plan/program would not cause or contribute to a violation of the CO NAAQS anywhere within the nonattainment area during the period covered by the applicable plan.

The continuing modeling of CO emissions levels will give an indication of future trends in ambient CO concentrations that may not be apparent in the trends of monitored data. The air quality analysis results will be an important factor in evaluating possible control measures for implementation under the contingency plan procedures. The initial CO inventory for 1994 sets the emissions budget level target for the plan. Even though this budget is treated as essentially not constraining for the length of the maintenance period, the annual conformity determination will produce useful information for continuing air quality planning.

Modeling emissions levels for the end of the maintenance plan will not be feasible until the new Metropolitan Transportation Plan is completed and analysis year transportation networks have been established. Transportation Plan conformity analysis years will be modeled for emissions levels, as required by the transportation conformity rules. Under the limited maintenance plan, however, the finding of conformity will not depend on the modeling results.

XII. PLAN APPROVAL PROCESS

An important aspect of the planning program is the adoption process. The public participation process requires that all local governments, interest groups, the general citizenry, and the public agencies which are affected by the plan or will need to implement the plan are aware of its impacts and implications. The following flow chart illustrates the sequence and major actions of the adoption process:

	<u>Responsible Party</u>	<u>Action</u>
Local	EPAC Air Quality Subcommittee	Formulate Review
	Environmental Planning Advisory Committee (EPAC)	Review Recommend
	PAG Management Committee	Review Recommend
	PAG Jurisdictions	Approve
	PAG Regional Council	Adopt
State	Department of Environmental Quality	Review Recommend
Federal	U. S. Environmental Protection Agency	Review Publish Proposed rule Promulgate

Public participation is encouraged throughout the approval process, from formulation of the first draft document to promulgation of the final rule by EPA. In addition, the PAG Public Involvement Plan requires a proactive program to encourage public participation in the process as soon as the first complete draft plan is available. The Memorandum of Agreement (Appendix A) provides a listing of the PAG committee structure that plays a central role in preparing the draft plan.

XIII. PUBLIC PARTICIPATION RECORD

The public participation record includes the written record of all committee meetings, public workshops, public hearings, consultation packages, legal notices and the minutes of the final approval by the PAG Regional Council. This record file is maintained in the Administrative Record file at the PAG offices. Copies of essential parts of the Administrative Record file will accompany this plan throughout the formal approval process as Appendix H.