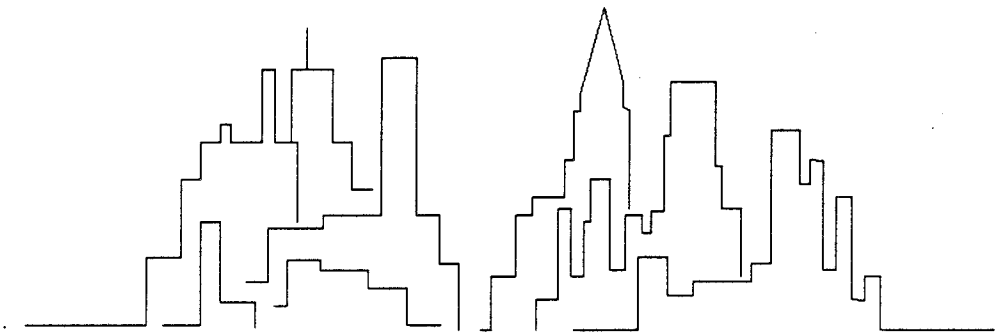

AIR QUALITY COMPLIANCE ADVISORY COMMITTEE

Annual Report
1989

AIR QUALITY COMPLIANCE ADVISORY COMMITTEE

November 1, 1989

Members:
Representative Jack B. Jewett, Co-chairman
Senator Pete Corpstein, Co-chairman
Representative Peter Goudinoff
Senator Alan Stephens
Randolph Wood, Director, Department of Environmental Quality
Supervisor Raul Grijalva, Pima County
Supervisor Carole Carpenter, Maricopa County
Councilman Roy Laos, City of Tucson
Councilman Paul Johnson, City of Phoenix
Pamela Beilke, Tucson Metropolitan Chamber of Commerce
Mark DeMichele, Phoenix Chamber of Commerce
Robert D. Willis, Governor's Appointee
James Bennitt, Governor's Appointee

AUTHORITY AND SCOPE OF DUTIES

The Air Quality Compliance Advisory Committee (Laws 1988, Chapter 252, Section 15*) was established as a means of monitoring compliance with state air quality laws. The current committee is actually a variation on the Committee on Air Quality Compliance (Laws 1987, Chapter 365, Section 27*) which was part of Senate Bill 1360 from 1987. The legislation establishing the original committee was repealed (Laws 1988, Chapter 252, Section 12*) because lawmakers wanted to place the provision in statute (A.R.S. §49-403*) rather than session law as it had formerly appeared. The Committee's scope was also broadened so that it now monitors compliance with all requirements under the 1988 air quality legislation, rather than just those areas dealing with air pollution control. Represented on the Committee are the State Legislature, the Maricopa and Pima County Boards of Supervisors, the Phoenix and Tucson City Councils, the Phoenix and Tucson Chambers of Commerce, the Department of Environmental Quality, and the Governor, who appoints three members to the Committee.

The Air Quality Compliance Advisory Committee is repealed from and after November 1, 1992 (Laws 1988, Chapter 252, Section 16*). The duties of the Committee are:

1. to monitor the compliance of this state and cities, towns and counties of this state with the requirements of this chapter dealing with air quality;
2. to develop a plan for business to adjust the work schedules of employees in order to reduce the level of carbon monoxide (CO) concentrations caused by vehicular travel;
3. to evaluate the reports submitted pursuant to Sections 49-404** and 49-553*, take public testimony and receive written comments on such reports;

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* See appendix A.

** A.R.S. §49-404 was repealed by Laws 1988, Ch 252, Sec. 16, par. 2.

4. to prepare a report to both houses of the Legislature. The report shall include recommendations for any changes needed in the air quality legislation.

Legislative staff must submit a report containing the number and nature of complaints received regarding the Vehicle Emissions Inspection (VEI) Program.[1]

COMMITTEE ACTIVITY

The Committee met once, on November 28, 1989, and received reports from various agencies and industry spokespersons regarding compliance with state air quality statutes.[2] The following agencies reported to the Committee:

Department of Environmental Quality (DEQ)

DEQ distributed its annual briefing book, Reports to the Legislature[3] which highlights the Department's responsibilities under HB 2206, enacted in 1988.

William Watson, Manager of the Vehicle Emissions Section of the Office of Air Quality for the DEQ, testified that calls related to the oxygenated fuels program are down to seven per day from the 217 per day that were coming in at the beginning of the program. Watson also said that, due to the oxygenated fuels program, CO emissions are down by 20 percent. However, he added that nitrogen oxide (NO_x) emissions will increase slightly from the use of oxygenated fuels. A study prepared for the DEQ revealed several impediments to annual tailpipe testing for NO_x. The Department called for additional study before mandating annual NO_x testing.

Ken Evans, Manager of the Air Quality Evaluation Unit of the DEQ, addressed

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[1] See appendix B.

[2] See appendix C.

[3] A copy of the cover letter from Reports to the Legislature is contained in appendix D; a copy of the report is available from DEQ.

the subject of expanding the VEI program boundaries. The DEQ and the Arizona Department of Transportation (ADOT) conducted traffic surveys last winter to determine the benefits of expanding the boundaries of the program. Their report concluded that expanding the boundaries would result in immeasurable reductions in CO and ozone pollution.

Regarding the effectiveness of the current VEI program, Watson told Committee members that the implementation of the new loaded mode test has resulted in failure patterns among certain models. Efforts are underway to get makers of pattern-case failure vehicles to recall the failing vehicles so that they may be repaired at no cost to the owners.

The Department reported progress in researching the air quality benefits of alternative fuels and Reid Vapor Pressure controls.

The cost-benefit analysis required by A.R.S. §49-553.A.5[4] will be completed by December, 1989.

Ken Evans informed the Committee that the only exceedance so far reported during this CO season occurred recently. Most violations occur in the month of October. According to Evans, the most effective tool for reducing CO violations is to reduce the number of vehicle miles traveled.

In other reports, the DEQ said that "no installation of new traffic flow improvement monitors would result in a lower number of violations" and, in reference to the Department's toxic emissions analysis, Watson said that while oxygenated fuels can reduce tailpipe emissions of benzene, aldehyde emissions tend to increase with their use.

In closing, DEQ responded to co-chairman Jack B. Jewett's request to give an overview of the procedure the Department took in selecting Gordon-Darby Inc.

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[4] See appendix A.

as the next VEI program contractor. Jewett asked whether a performance bond was required of Gordon-Darby. Watson answered that a performance bond was not required in the contract, but that the contractor would have to pay stiff daily penalties for nonperformance. Representative Peter Goudinoff questioned Gordon-Darby's ability to enter the contract at such a reduced price and then to promise additional services. Watson said that Gordon-Darby uses modern technology which would allow them to operate the program for less. Randy Wood, Director of DEQ, and member of the Committee, added that Hamilton Test Systems, the current VEI contractor, charges what they have to charge in order to support their technology.

Arizona Department of Transportation (ADOT)

Charles Miller, Director of ADOT, summarized the findings of the ADOT Alternative Fuels Study[5] required by A.R.S. §49-404. Miller said that there were no reports of disintegrated parts or other fuel-related damage. ADOT found the fuels to be readily available and at an insignificant increase in cost. The Department finished its test this year with 79 of the original 90 vehicles. Some vehicles were dropped from the study due to damage from accidents, testing errors, etc. The vehicles were emissions tested through the state VEI program operated by Hamilton Test Systems. The ADOT study reported only marginal reductions in CO. However, Miller emphasized that ADOT's results do not conflict with the DEQ's tests findings which show a 20% reduction in CO. He said that the two agencies used two different processes. The Federal Testing Procedure (FTP) used by the DEQ is much more rigorous than the state VEI test.

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[5] The DEQ emissions test results for the Alternative Fuels Study are contained in appendix E. A copy of the Alternative Fuels Study is available from ADOT.

Maricopa Association of Governments (MAG)

Lindy Bauer, Environmental Programs Coordinator for MAG, discussed the status report on the three air quality plans, future MAG activities, and the most recent air quality lawsuit.

Bauer said that MAG now believes that the 22 percent reduction in CO targeted for 1991 by the Environmental Protection Agency (EPA) was "overly optimistic." Though overall growth in the region has slowed, the number of vehicle miles traveled has increased. The EPA approved the MAG CO plan on August 10, 1988, and said that the measures in the plan would allow us to maintain current levels for 10 years.

According to Bauer, the latest air quality lawsuit attacks the EPA for failing to consider the increase in the vehicle miles traveled in the MAG region when approving the plan. Also, the delay in freeway construction may impact the 10-year maintenance plan for CO. The cities of Tucson and Phoenix are brought under fire for neglecting to implement plans for transit, including increasing the number of buses in their systems.

Bauer reported that the ozone plan was submitted in July, 1987, with no commitment for Stage II Vapor Recovery. MAG has received a State Implementation Plan (SIP) call to prepare a new ozone plan two years after EPA finalizes the proposed 1987 CO and ozone policy. To date, EPA has not gone final with the ozone policy. The current status of the policy is unknown. According to Bauer, the most difficult problem for MAG to work with is the particulate problem. A 34.4 percent reduction in PM-10 emissions is needed by 1992 in order to attain the particulate standard.

MAG's future activities include working with Maricopa County on its Trip Reduction Ordinance (TRO), the Brown Cloud Study, and updating the MAG Freeway

Plan.

In closing, Bauer informed Committee members that the federal government is now considering a requirement that California's new car emissions standards be applied to the entire country. These standards would be beneficial to the carbon monoxide and ozone problem in Maricopa County.

Weights and Measures

In reviewing the first few weeks of the oxygenated fuels program Dick Wolfe, Deputy Director of Weights and Measures, said state officials should have encouraged the industry to make an earlier transition to the new fuels. The Department reported 48 stop sale orders and 32 removal orders so far in the program. Despite these problems, Wolfe said that compliance is high. He noted that the majors have made smoother transitions and committed fewer violations than their independent competitors. Wolfe provided Committee members with a copy of Weights and Measures' Guidelines for Use and Sale of Motor Fuels and Petroleum Products.[6]

Arizona Petroleum Resources Group

Charles T. Stevens, representing the Arizona Petroleum Resources Group, a lobby comprised of the major oil companies marketing in Arizona, praised what he called "a successful program." Stevens said that only a few start-up problems were encountered in the initial weeks of the program. He explained that some companies are blending the oxygenate with the fuel in California and shipping it here while others are shipping the oxygenate and the neat gas to Arizona to be either splash-blended or in-line blended here. The major oil companies did not offer any suggestions for improving the legislation.

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[6] See appendix F.

Atlantic Richfield Company (ARCO)

Jim White, Manager of ARCO's Environmental Legislation and Regulation division, spoke on his company's experience with the oxygenated fuels program thus far. ARCO had received no fuel-related complaints during the two weeks preceding the meeting of the Air Quality Compliance Advisory Committee and reported no serious fuel-related problems to date. White said that ARCO remains concerned over the negative press that is given to ethanol; he added that there seems to be a misperception that one cannot switch from one oxygenate to another.

Pima Association of Governments (PAG)

Hank Eyrich, Physical Planning Manager for PAG, gave an update on PAG's air quality compliance programs.[7] Eyrich said that the most effective strategies have been the expansion and strengthening of the VEI program and the implementation of a travel reduction ordinance (TRO). Pima County is marginal in ozone and particulate pollution. Eyrich noted that PM-10 is very difficult to model.

Pima County

Marian Slavin, Travel Reduction Program Manager for Pima County, discussed the Pima County TRO.[8] The DEQ provides about $250,000 in funds to the TRO. The County reports that 120 major employers are involved with 90,000 employees at 154 sites. According to Slavin, 23 plans have been approved by the Travel Reduction Program Task Force and have been sent for review by the lead agency.

Tucson Metropolitan Chamber of Commerce

According to Dan Cavanagh, Group Vice President of the Tucson Metropolitan Chamber of Commerce, some complaints were lodged regarding the scope of the

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[7] See appendix G.

[8] See appendix H.

Travel Reduction Program; however, he added that many businesses with under 100 employees participated voluntarily.

Maricopa County

Harvel Alishouse, Air Quality Advisor to the Maricopa County Department of Public Health, introduced the Maricopa County TRO program. According to Alishouse, 52.5 million miles are traveled daily in the Valley. He said that the plans of major employees are the first to be approved. Alishouse introduced Suzanne Pfister of the Regional Public Transportation Authority, the subcontractor of the program, to outline the details of the TRO.

Regional Public Transportation Authority (RPTA)

Suzanne Pfister, Manager of Community Affairs, presented an update on the TRO and the Clean Air Campaign.[9] RPTA's function is to provide technical and administrative support to the County for its TRO program. Pfister said that about 180,00 employees are represented in the program now. For every dollar spent from the Air Quality fund, seven dollars were donated. One hundred and forty-two thousand people took advantage of the free bus day October 18, 1989; average ridership is 93,000 per day. The free bus day cost about $50,000 and was funded by part of a grant from DEQ. The RPTA noted a 37 percent increase in participation in the Clean Air Campaign this year, as well as a 97 percent awareness rate.

Regarding the TRO, Pfister said that all businesses with 500 or more employees have completed the survey process. One hundred and fifty employers with 200-400 employees are currently being surveyed.

Regional Travel Reduction Task Force

Lonnie Hurst, Chairman of the Task Force, discussed the industries'

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[9] See appendix I.

perception of the TRO program. Hurst reported a varied response from the industries. While large employers have been responsive, many of the smaller employers have been reluctant. Hurst said that the Task Force's major goal is to get smaller employers to work together more.

I. Members of the commission are not eligible to receive compensation but are eligible for reimbursement of expenses pursuant to title 38, chapter 4, article 2, Arizona Revised Statutes.

J. This section expires from and after December 31, 1987.

Sec. 27. Committee on air quality compliance

A. A committee on air quality compliance is established consisting of:

1. Two members of the senate who are not members of the same political party and who are appointed by the president of the senate, one of whom shall be designated by the president to cochair the committee.

2. Two members of the house of representatives who shall not be members of the same political party and who are appointed by the speaker of the house of representatives, one of whom shall be designated by the speaker to cochair the committee.

3. One member who is appointed by the Maricopa county board of supervisors from its membership.

4. One member who is appointed by the Pima county board of supervisors from its membership.

5. One member who is appointed by the Phoenix city council from its membership.

6. One member who is appointed by the Tucson city council from its membership.

7. One member who is appointed by the Phoenix chamber of commerce from its membership.

8. One member who is appointed by the Tucson chamber of commerce from its membership.

9. Three members of the public who are appointed by the governor, one of whom shall reside outside a nonattainment area as defined in section 49-541, Arizona Revised Statutes.

10. The director of the department of environmental quality or his designee.

B. The committee may use the expertise and services of legislative staff.

C. Members of the committee are not eligible to receive compensation, but the members appointed pursuant to subsection A, paragraph 7 are eligible for reimbursement of expenses pursuant to title 38, chapter 4, article 2, Arizona Revised Statutes.

D. Legislative staff shall document complaints received regarding vehicle emissions testing procedures pursuant to title 49, chapter 3, article 5, Arizona Revised Statutes, and submit a report containing the number and nature of complaints to the committee four times each year.

E. The committee shall:

1. Monitor the compliance of this state and cities, towns and counties of this state with the requirements of title 49, chapter 3, Arizona Revised Statutes, dealing with air pollution control.

2. Develop a plan for business to adjust the work schedules of employees in order to reduce the level of carbon monoxide concentrations caused by vehicular travel.

3. Develop a written report containing its findings and recommendations, including recommendations for legislation and other actions dealing with local compliance with state air quality standards and changes in vehicle emissions testing procedures.

4. Submit its written report to the president of the senate and the speaker of the house of representatives no later than November 1 of each year.

F. The committee terminates and this section expires from and after May 31, 1992.

Sec. 28. Effective date

A. Section 21 of this act is effective from and after December 31, 1987.

B. Sections 2 and 19 of this act are effective from and after December 31, 1988.

C. Section 25 of this act is effective from and after January 1, 1990.

D. Section 49-455, Arizona Revised Statutes, as added by this act is effective from and after January 1, 1989.

Sec. 29. Clean burning reporting requirements; definition

A. From and after December 31, 1987, with respect to the three month period ended on December 31, 1987, and at three month intervals thereafter, the state, its political subdivisions and all entities which own or lease twenty-five or more motor vehicles which are operated in a carbon monoxide nonattainment area as defined in section 49-541, Arizona Revised Statutes, shall report to the department of transportation, on a form provided by the department, the following information:

1. The number, make and model year of all motor vehicles owned or leased and primarily operated in a carbon monoxide nonattainment area as defined in section 49-541, Arizona Revised Statutes.

2. The amount of gasoline or other fuel purchased and used in those motor vehicles during the period for which the report is filed.

3. The amount of clean burning fuel purchased and used in those motor vehicles during the period for which the report is filed.

4. Information respecting the type or types and the cost of clean burning fuels purchased and used during the period for which the report is filed.

5. Information respecting the performance of those motor vehicles using clean burning fuels during the period for which the report is filed.

6. With regard to cities, towns and counties which provide bus service, the number of buses in their fleet, the number of those buses which use clean burning fuels in 1988 and 1989 and any other information which demonstrates efforts to comply with section 49-571, Arizona Revised Statutes, as added by this act.

7. Other information the director of the department of transportation requires. For purposes of subsection A, paragraphs 1 through 5 of this section, a motor vehicle shall be considered to be primarily operated in a carbon monoxide nonattainment area if it was operated in that area at least fifty per cent of the time during the period with respect to which the report is filed.

B. The director, on or before February 15, 1988, and at three month intervals thereafter shall report to the speaker of the house and the president of the senate regarding the information reported pursuant to subsection A of this section.

C. The director shall adopt rules to implement the reporting requirements of this section. These rules shall be adopted, amended and renewed as an emergency measure pursuant to the provisions of section 41-1026, Arizona Revised Statutes.

D. For the purposes of this section:

1. "Clean burning fuel" means any of the following:

(a) Compressed natural gas.

(b) Liquified propane gas.

(c) A blend of leaded or unleaded gasoline with ethanol, methanol, methyl tertiary butyl ether which:

(i) If unleaded, complies with the provisions of waivers issued by the United States Environmental Protection Agency pursuant to 42 United States Code section 7545(f), or, if leaded, meets the requirements of such waivers with respect to corrosion inhibition and use of cosolvent alcohols.

(ii) Does not contain more than 3.7 percent oxygen by weight.

(iii) Complies with ASTM D439-86 (standard specifications for automotive gasoline) as modified to incorporate the following test methods

Sec. 12. Repeal

A. Section 41-2083, Arizona Revised Statutes, as amended by Laws 1987, chapter 314, section 8 and Laws 1987, chapter 365, section 15, is repealed.

B. Laws 1987, chapter 365, section 31 is repealed.

C. Section 49-455, Arizona Revised Statutes, is repealed.

D. Laws 1986, chapter 319, section 8, as amended by Laws 1987, chapter 317, section 44, is repealed.

E. Laws 1987, chapter 139, sections 3 and 4 are repealed.

F. Laws 1987, chapter 365, section 27, is repealed.

G. Laws 1987, chapter 365, section 29, is repealed.

H. Laws 1987, chapter 365, section 32, is repealed.

Sec. 13. Title 41, chapter 15, Arizona Revised Statutes, is amended by adding article 6, to read:

ARTICLE 6. OXYGENATED FUEL

41-2121. Definitions

IN THIS ARTICLE, UNLESS THE CONTEXT OTHERWISE REQUIRES:

1. "AREA A" MEANS A CARBON MONOXIDE NONATTAINMENT AREA IN A COUNTY WITH A POPULATION OF ONE MILLION TWO HUNDRED THOUSAND OR MORE PERSONS.

2. "AREA B" MEANS A CARBON MONOXIDE NONATTAINMENT AREA IN A COUNTY WITH A POPULATION IN EXCESS OF FOUR HUNDRED THOUSAND BUT FEWER THAN ONE MILLION TWO HUNDRED THOUSAND PERSONS.

3. "GASOLINE" MEANS A VOLATILE, HIGHLY FLAMMABLE LIQUID MIXTURE OF HYDROCARBONS WHICH IS PRODUCED, REFINED, MANUFACTURED, BLENDED, DISTILLED OR COMPOUNDED FROM PETROLEUM, NATURAL GAS, OIL, SHALE OILS OR COAL AND OTHER FLAMMABLE LIQUIDS FREE FROM UNDISSOLVED WATER, SEDIMENT OR SUSPENDED MATTER, WITH OR WITHOUT ADDITIVES, WHICH IS COMMONLY USED AS A FUEL FOR SPARK IGNITION INTERNAL COMBUSTION ENGINES AND WHICH MEETS THE SPECIFICATIONS OF THE AMERICAN SOCIETY FOR TESTING AND MATERIALS. GASOLINE DOES NOT INCLUDE DIESEL FUEL.

4. "LEADED GASOLINE" MEANS GASOLINE CONTAINING MORE THAN FIVE ONE-HUNDREDTHS GRAMS OF LEAD PER UNITED STATES GALLON.

5. "NONATTAINMENT AREA" HAS THE SAME MEANING AS PROVIDED IN SECTION 49-541.

6. "OXYGENATE" MEANS ANY OXYGEN-CONTAINING ASHLESS, ORGANIC COMPOUND, INCLUDING ALIPHATIC ALCOHOLS AND ALIPHATIC ETHERS, WHICH MAY BE USED AS A FUEL OR AS A GASOLINE BLENDING COMPONENT AND WHICH IS APPROVED AS A BLENDING AGENT UNDER THE PROVISIONS OF A WAIVER ISSUED BY THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY PURSUANT TO 42 UNITED STATES CODE SECTION 7545(f).

7. "OXYGENATED FUEL" MEANS A MOTOR FUEL BLEND, WHETHER LEADED OR UNLEADED, CONSISTING PRIMARILY OF GASOLINE AND A SUBSTANTIAL AMOUNT OF ONE OR MORE OXYGENATES, AND WHICH HAS BEEN BLENDED CONSISTENT WITH THE PROVISIONS OF A WAIVER ISSUED BY THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY PURSUANT TO 42 UNITED STATES CODE SECTION 7545(f).

8. "SUPPLIER" MEANS ANY PERSON WHO IMPORTS GASOLINE INTO A CARBON MONOXIDE NONATTAINMENT AREA BY MEANS OF A PIPELINE OR IN TRUCKLOAD QUANTITIES FOR HIS OWN USE WITHIN THE NONATTAINMENT AREA OR ANY PERSON WHO SELLS GASOLINE INTENDED FOR ULTIMATE CONSUMPTION WITHIN A NONATTAINMENT AREA, EXCEPT THAT SUPPLIER DOES NOT MEAN A PERSON WITH RESPECT TO GASOLINE SUPPLIED OR SOLD BY THE PERSON TO ANOTHER FOR RESALE TO A RETAILER WITHIN A NONATTAINMENT AREA OR TO A FLEET FOR CONSUMPTION WITHIN A NONATTAINMENT AREA.

9. "UNLEADED GASOLINE" MEANS GASOLINE CONTAINING NOT MORE THAN FIVE ONE-HUNDREDTHS GRAMS OF LEAD PER UNITED STATES GALLON.

41-2122. Standards for oxygenated fuel; volatility exceptions

A. FROM AND AFTER SEPTEMBER 15, 1988 THROUGH APRIL 15, 1989 AND FROM AND AFTER SEPTEMBER 15 THROUGH APRIL 15 OF EACH YEAR THEREAFTER, BLENDS OF GASOLINE WITH ETHANOL MAY EXCEED THE VOLATILITY REQUIREMENTS OF ASTM D439, OR IF FORMALLY ADOPTED BY THE AMERICAN SOCIETY FOR TESTING AND MATERIALS,

SEPTEMBER 30 THROUGH MARCH 31 OF EACH YEAR THEREAFTER, ALL LEADED OR UNLEADED GASOLINE SUPPLIED OR SOLD BY ANY PERSON INTENDED AS A FINAL PRODUCT FOR THE FUELING OF MOTOR VEHICLES WITHIN AREA B AND DELIVERED BY TRUCK TO A RETAIL SELLER OR TO A FLEET FOR CONSUMPTION IN AREA B SHALL CONTAIN NOT LESS THAN 1.8 PER CENT BY WEIGHT OF OXYGEN NOR MORE THAN 3.7 PER CENT BY WEIGHT OF OXYGEN.

B. NOTWITHSTANDING SUBSECTION A OF THIS SECTION, IF A COUNTY WITH A POPULATION IN EXCESS OF FOUR HUNDRED THOUSAND PERSONS BUT FEWER THAN ONE MILLION TWO HUNDRED THOUSAND PERSONS RECORDS A CARBON MONOXIDE READING WHICH EXCEEDS THE NATIONAL PRIMARY OR SECONDARY AMBIENT AIR STANDARD FOR THE POLLUTANT OF CARBON MONOXIDE IN AREA B DURING THE MONTHS OF OCTOBER 1988 THROUGH MARCH 1989 OR IF BOTH THE BOARD OF SUPERVISORS OF SUCH A COUNTY AND THE GOVERNING BODY OF THE MUNICIPALITY WHICH CONTAINS THE LARGEST POPULATION IN SUCH A COUNTY ADOPT AN ORDINANCE OR RESOLUTION NOT LATER THAN MARCH 31, 1989 REQUIRING THE SALE OF OXYGENATED FUELS WITHIN AREA B, FROM AND AFTER SEPTEMBER 30, 1989 THROUGH MARCH 31, 1991 AND FROM AND AFTER SEPTEMBER 30 THROUGH MARCH 31 OF EACH YEAR THEREAFTER, ALL LEADED OR UNLEADED GASOLINE SUPPLIED OR SOLD BY ANY PERSON INTENDED AS A FINAL PRODUCT FOR THE FUELING OF MOTOR VEHICLES WITHIN AREA B AND DELIVERED BY TRUCK TO A RETAIL SELLER OR TO A FLEET FOR CONSUMPTION IN AREA B SHALL CONTAIN NOT LESS THAN 1.8 PER CENT BY WEIGHT OF OXYGEN NOR MORE THAN 3.7 PER CENT BY WEIGHT OF OXYGEN.

41-2126. Use of gasoline purchased outside of area A or area B

THIS ARTICLE DOES NOT PROHIBIT THE USE WITHIN AREA A OR AREA B OF GASOLINE PURCHASED OUTSIDE OF AREA A OR AREA B WHICH DOES NOT CONTAIN THE PERCENTAGE WEIGHTS OF OXYGEN REQUIRED BY THIS ARTICLE IF THE USE IS INCIDENTAL AND NOT FOR THE PURPOSE OF EVADING THE REQUIREMENTS OF THIS ARTICLE.

Sec. 14. Section 43-1063, Arizona Revised Statutes, is amended to read:

43-1063. Deduction for employees' transportation expenses; definitions

A. In computing taxable income a deduction is allowed to an employer equal to any amount paid during the taxable year to purchase tickets on behalf of employees for the purpose of commuting to and from their place of employment by means of public transportation OR TO PAY FOR COMMUTING TO AND FROM THEIR PLACE OF EMPLOYMENT WITH A VAN POOL OPERATOR. The employer shall retain receipts received from purchasing the ~~tickets~~ TRANSPORTATION as evidence of qualification for the deduction allowed by this section.

B. The department shall maintain an account of the total dollar amount of deductions allowed pursuant to this section each fiscal year and immediately notify the state treasurer of that amount at the end of the fiscal year.

C. For purposes of this section: ~~:~~

1. "Public transportation" means local transportation of passengers by means of a public conveyance operated or licensed by an incorporated city or town or a regional public transportation authority.

2. "VAN POOL OPERATOR" HAS THE SAME MEANING AS PROVIDED IN SECTION 28-101.

Sec. 15. Title 49, chapter 3, article 1, Arizona Revised Statutes, is amended by adding sections 49-403 through 49-406, to read:

49-403. Air quality compliance advisory committee

A. THE ADVISORY COMMITTEE ON AIR QUALITY COMPLIANCE IS ESTABLISHED CONSISTING OF:

1. TWO MEMBERS OF THE SENATE WHO ARE NOT MEMBERS OF THE SAME POLITICAL PARTY AND WHO ARE APPOINTED BY THE PRESIDENT OF THE SENATE, ONE OF WHOM SHALL BE DESIGNATED BY THE PRESIDENT TO COCHAIR THE COMMITTEE.

2. TWO MEMBERS OF THE HOUSE OF REPRESENTATIVES WHO SHALL NOT BE MEMBERS OF THE SAME POLITICAL PARTY AND WHO ARE APPOINTED BY THE SPEAKER OF THE HOUSE OF REPRESENTATIVES, ONE OF WHOM SHALL BE DESIGNATED BY THE SPEAKER TO COCHAIR THE COMMITTEE.

3. ONE MEMBER WHO IS APPOINTED BY THE MARICOPA COUNTY BOARD OF SUPERVISORS FROM ITS MEMBERSHIP.

4. ONE MEMBER WHO IS APPOINTED BY THE PIMA COUNTY BOARD OF SUPERVISORS FROM ITS MEMBERSHIP.

5. ONE MEMBER WHO IS APPOINTED BY THE PHOENIX CITY COUNCIL FROM ITS MEMBERSHIP.

6. ONE MEMBER WHO IS APPOINTED BY THE TUCSON CITY COUNCIL FROM ITS MEMBERSHIP.

7. ONE MEMBER WHO IS APPOINTED BY THE PHOENIX CHAMBER OF COMMERCE FROM ITS MEMBERSHIP.

8. ONE MEMBER WHO IS APPOINTED BY THE TUCSON CHAMBER OF COMMERCE FROM ITS MEMBERSHIP.

9. THREE MEMBERS OF THE PUBLIC WHO ARE APPOINTED BY THE GOVERNOR, ONE OF WHOM SHALL RESIDE OUTSIDE A NONATTAINMENT AREA AS DEFINED IN SECTION 49-541.

10. THE DIRECTOR OF THE DEPARTMENT OF ENVIRONMENTAL QUALITY OR HIS DESIGNEE.

B. THE COMMITTEE MAY USE THE EXPERTISE AND SERVICES OF LEGISLATIVE STAFF AND MAY HIRE OUTSIDE CONSULTANTS TO ACCOMPLISH THE PURPOSES OF THIS SECTION.

C. MEMBERS OF THE COMMITTEE ARE NOT ELIGIBLE TO RECEIVE COMPENSATION, BUT THE MEMBERS APPOINTED PURSUANT TO SUBSECTION A, PARAGRAPH 9 OF THIS SECTION ARE ELIGIBLE FOR REIMBURSEMENT OF EXPENSES PURSUANT TO TITLE 38, CHAPTER 4, ARTICLE 2.

D. LEGISLATIVE STAFF SHALL DOCUMENT COMPLAINTS RECEIVED REGARDING VEHICLE EMISSIONS TESTING PROCEDURES PURSUANT TO ARTICLE 5 OF THIS CHAPTER AND SUBMIT A REPORT CONTAINING THE NUMBER AND NATURE OF COMPLAINTS TO THE COMMITTEE FOUR TIMES EACH YEAR.

E. THE COMMITTEE SHALL:

1. MONITOR THE COMPLIANCE OF THIS STATE AND CITIES, TOWNS AND COUNTIES OF THIS STATE WITH THE REQUIREMENTS OF THIS CHAPTER DEALING WITH AIR QUALITY.

2. DEVELOP A PLAN FOR BUSINESS TO ADJUST THE WORK SCHEDULES OF EMPLOYEES IN ORDER TO REDUCE THE LEVEL OF CARBON MONOXIDE CONCENTRATIONS CAUSED BY VEHICULAR TRAVEL.

3. EVALUATE THE REPORTS SUBMITTED PURSUANT TO SECTIONS 49-404 AND 49-553, TAKE PUBLIC TESTIMONY AND RECEIVE WRITTEN COMMENTS ON SUCH REPORTS.

4. AFTER EVALUATING THE REPORTS, ALL TESTIMONY AND ALL WRITTEN COMMENTS, PREPARE A WRITTEN REPORT TO BOTH HOUSES OF THE LEGISLATURE. THE REPORT SHALL INCLUDE RECOMMENDATIONS AS TO WHAT CHANGES, IF ANY, ARE NECESSARY TO THE VEHICLE EMISSIONS TESTING PROGRAM ESTABLISHED PURSUANT TO ARTICLE 5 OF THIS CHAPTER, THE OXYGENATED FUELS PROGRAM ESTABLISHED BY TITLE 41, CHAPTER 15, ARTICLE 6 AND OTHER PROGRAMS ESTABLISHED BY LAW TO ACCOMPLISH THE PURPOSE AND INTENT OF THIS CHAPTER.

5. THE REPORTS REQUIRED BY THIS SECTION SHALL BE SUBMITTED TO THE PRESIDENT OF THE SENATE AND THE SPEAKER OF THE HOUSE OF REPRESENTATIVES ON OR BEFORE NOVEMBER 1, 1988 AND ON OR BEFORE NOVEMBER 1 OF EACH YEAR THEREAFTER.

49-404. Department of transportation pilot project on oxygenated fuels, compressed natural gas and liquid propane gas; reports

A. THE DEPARTMENT OF TRANSPORTATION SHALL CONDUCT A PROJECT TO DETERMINE THE COST AND EFFECT OF USING OXYGENATED FUELS, COMPRESSED NATURAL GAS AND LIQUIFIED PROPANE GAS IN MOTOR VEHICLES. THE DEPARTMENT SHALL DESIGNATE CERTAIN DEPARTMENT OF TRANSPORTATION MOTOR VEHICLES TO DETERMINE, AMONG OTHER THINGS:

1. THE COST OF MAINTAINING A MOTOR VEHICLE OPERATED WITH SUCH FUELS.

2. THE EFFECT ON THE MILES PER GALLON OF A MOTOR VEHICLE OPERATED WITH SUCH FUELS.

3. THE AVAILABILITY OF SUCH FUELS.

2. THE AMOUNT OF GASOLINE OR OTHER FUEL PURCHASED AND USED IN THOSE MOTOR VEHICLES DURING THE PERIOD FOR WHICH THE REPORT IS FILED.

3. THE AMOUNT OF CLEAN BURNING FUEL PURCHASED AND USED IN THOSE MOTOR VEHICLES DURING THE PERIOD FOR WHICH THE REPORT IS FILED.

4. INFORMATION RESPECTING THE TYPE OR TYPES AND THE COST OF CLEAN BURNING FUELS PURCHASED AND USED DURING THE PERIOD FOR WHICH THE REPORT IS FILED.

5. INFORMATION RESPECTING THE PERFORMANCE OF THOSE MOTOR VEHICLES USING CLEAN BURNING FUELS DURING THE PERIOD FOR WHICH THE REPORT IS FILED.

6. WITH REGARD TO CITIES, TOWNS AND COUNTIES WHICH PROVIDE BUS SERVICE, THE NUMBER OF BUSES IN THEIR FLEET, THE NUMBER OF THOSE BUSES WHICH USE CLEAN BURNING FUELS IN 1988 AND 1989 AND ANY OTHER INFORMATION WHICH DEMONSTRATES EFFORTS TO COMPLY WITH SECTION 49-571.

7. OTHER INFORMATION THE DIRECTOR OF THE DEPARTMENT OF TRANSPORTATION REQUIRES. FOR PURPOSES OF PARAGRAPHS 1 THROUGH 5 OF THIS SUBSECTION, A MOTOR VEHICLE SHALL BE CONSIDERED TO BE PRIMARILY OPERATED IN A CARBON MONOXIDE NONATTAINMENT AREA IF IT WAS OPERATED IN THAT AREA AT LEAST FIFTY PER CENT OF THE TIME DURING THE PERIOD WITH RESPECT TO WHICH THE REPORT IS FILED.

THE REPORTING REQUIREMENTS OF THIS SECTION DO NOT APPLY TO VEHICLES WHICH ARE OWNED BY A LICENSED MOTOR VEHICLE DEALER AND HELD FOR RESALE AS A PART OF THE DEALER'S BUSINESS INVENTORY.

B. THE DIRECTOR OF THE DEPARTMENT OF TRANSPORTATION, ON OR BEFORE AUGUST 15, 1988 AND AT THREE MONTH INTERVALS THEREAFTER, SHALL REPORT TO THE SPEAKER OF THE HOUSE OF REPRESENTATIVES AND THE PRESIDENT OF THE SENATE REGARDING THE INFORMATION REPORTED PURSUANT TO SUBSECTION A OF THIS SECTION.

C. THE DIRECTOR SHALL ADOPT RULES TO IMPLEMENT THE REPORTING REQUIREMENTS OF THIS SECTION.

D. FOR THE PURPOSES OF THIS SECTION:

1. "CLEAN BURNING FUEL" MEANS ANY OF THE FOLLOWING:

(a) COMPRESSED NATURAL GAS.

(b) LIQUIFIED PROPANE GAS.

(c) OXYGENATED FUEL AS DEFINED IN SECTION 41-2121.

2. "MOTOR VEHICLE" HAS THE SAME MEANING AS IN SECTION 28-101.

Sec. 16. Delayed repeal

1. Section 49-403, Arizona Revised Statutes, as added by this act, is repealed from and after November 1, 1992.

2. Sections 49-404 and 49-405, Arizona Revised Statutes, as added by this act, are repealed from and after September 30, 1989.

3. Section 49-406, Arizona Revised Statutes, as added by this act, is repealed from and after August 31, 1989.

Sec. 17. Title 49, chapter 3, article 3, Arizona Revised Statutes, is amended by adding section 49-506, to read:

49-506. Voluntary no-drive days

A COUNTY WITH A POPULATION OF FOUR HUNDRED THOUSAND OR MORE PERSONS SHALL IMPLEMENT A VOLUNTARY PROGRAM TO ENCOURAGE ALL DRIVERS WITHIN SUCH A COUNTY TO NOT DRIVE THEIR MOTOR VEHICLES DURING CERTAIN PRESCRIBED DAYS DURING THE MONTHS OF OCTOBER THROUGH MARCH 31 OF EACH YEAR.

Sec. 18. Section 49-542, Arizona Revised Statutes, is amended to read:

49-542. Annual emissions inspection program; powers and duties of the director; administration; periodic inspection; minimum standards and rules; limitation on repair costs; exception

A. The director shall administer a comprehensive annual emissions inspection program which shall require the inspection of vehicles in this state pursuant to this article and applicable administrative regulations. Such inspection is required in counties with a population in excess of three hundred fifty thousand persons only in nonattainment areas of the

Section
49–584. Staff duties.
49–585. Powers and duties of the board.
49–586. Repealed.
49–587. Voluntary participation.
49–588. Requirements for major employers.
49–589. Variances.
49–590. Requirements for high schools, community colleges and universities.
49–591. Exemptions.
49–592. Appeals.
49–593. Violations; civil penalties.

ARTICLE 1. GENERAL PROVISIONS

Historical Note

Laws 1987, Ch. 365, § 27 [see Historical Note, quoted in main volume] was repealed by Laws 1988, Ch. 252, § 12, subsec. F.

§ 49–403. Air quality compliance advisory committee

A. The advisory committee on air quality compliance is established consisting of:

1. Two members of the senate who are not members of the same political party and who are appointed by the president of the senate, one of whom shall be designated by the president to cochair the committee.

2. Two members of the house of representatives who shall not be members of the same political party and who are appointed by the speaker of the house of representatives, one of whom shall be designated by the speaker to cochair the committee.

3. One member who is appointed by the Maricopa county board of supervisors from its membership.

4. One member who is appointed by the Pima county board of supervisors from its membership.

5. One member who is appointed by the Phoenix city council from its membership.

6. One member who is appointed by the Tucson city council from its membership.

7. One member who is appointed by the Phoenix chamber of commerce from its membership.

8. One member who is appointed by the Tucson chamber of commerce from its membership.

9. Three members of the public who are appointed by the governor, one of whom shall reside outside a nonattainment area as defined in § 49–541.

10. The director of the department of environmental quality or his designee.

B. The committee may use the expertise and services of legislative staff and may hire outside consultants to accomplish the purposes of this section.

C. Members of the committee are not eligible to receive compensation, but the members appointed pursuant to subsection A, paragraph 9 of this section are eligible for reimbursement of expenses pursuant to title 38, chapter 4, article 2.[1]

D. Legislative staff shall document complaints received regarding vehicle emissions testing procedures pursuant to article 5 of this chapter and submit a report containing the number and nature of complaints to the committee four times each year.

E. The committee shall:

1. Monitor the compliance of this state and cities, towns and counties of this state with the requirements of this chapter dealing with air quality.

2. Develop a plan for business to adjust the work schedules of employees in order to reduce the level of carbon monoxide concentrations caused by vehicular travel.

3. Evaluate the reports submitted pursuant to §§ 49–404 and 49–553, take public testimony and receive written comments on such reports.

executed. Nothing in this paragraph shall be construed to prevent the department from completing or renewing a contract entered into prior to September 1, 1990."

Cross References

Oxygenated fuel, civil penalties, see § 41–2124.

§ 49–553. Reports to legislature by department of environmental quality

A. The department of environmental quality with the support of the department of weights and measures and the department of transportation shall develop data and report on the following:

1. The benefits, test methods and feasibility of testing gasoline and diesel powered vehicles for oxide of nitrogen and diesel powered vehicles for vehicle emissions.

2. The metropolitan air quality benefits derived from the emissions testing of vehicles registered in areas contiguous to the nonattainment areas for automotive related pollutants.

3. The effectiveness of the vehicle emissions testing program in reducing carbon monoxide and other forms of pollution.

4. The effectiveness of the measures set forth in § 41–2083 and title 41, chapter 15, article 6 [1] in reducing carbon monoxide and hydrocarbon emissions.

5. The results of studies which the director shall conduct showing the costs and benefits of the carbon monoxide reduction measures adopted by this chapter and recommendations as to how benefits may be increased and costs decreased.

6. The specific causes of carbon monoxide concentrations at air quality monitors which exceed federal standards and recommendations concerning specific traffic flow improvements that may reduce such concentrations.

B. The department of environmental quality shall conduct research to quantify the effect of alternative fuels on toxic components of vehicular emissions. This shall include aldehydes, particularly formaldehyde, benzene and other aromatics.

C. The director shall transmit the reports required by this section to the president of the senate, the speaker of the house of representatives and the air quality compliance advisory committee established pursuant to § 49–403 on or before October 1, 1988 and on or before October 1 of each year thereafter.

D. The department shall acquire, with monies from the air quality fund, equipment capable of measuring the emissions effects of the use of oxygenated gasoline blends by means of the federal test procedures. The department shall use the equipment for the purpose of emissions testing of the vehicles required to be tested pursuant to § 49–404.

E. The department may hire consultants for the purpose of analyzing the costs and benefits of the carbon monoxide reduction measures adopted by this chapter and to design and execute and to evaluate the results of the testing program required by subsection C of this section.

Added by Laws 1988, Ch. 252, § 21.

[1] Section 41–2121.

Cross References

Department of transportation pilot project on oxygenated fuels, see § 49–404.

ARTICLE 7. EMISSIONS CONTROL OF BUSES

§ 49–571. Clean burning fuel requirements for new buses

Text of section effective January 2, 1990

A. Buses purchased by a city, town or county for operation in a nonattainment area as defined in § 49–541 must use clean burning fuel.

B. In this section, "clean burning fuel" means:

HOUSE OF REPRESENTATIVES

MEMO

TO: Air Quality Compliance Advisory Committee

FROM: Legislative Staff

RE: Complaints on the Vehicle Emissions Program

DATE: November 28, 1989

Section 49-403, paragraph D, ARS, requires that legislative staff document complaints received regarding vehicle emissions testing procedures. Listed below are the number and type of complaints received by House Research during the past year. Also attached is a list of complaints received by the Department of Environmental Quality. These reports do not include complaints which were handled by individual legislators or their offices.

VEHICLE EMISSIONS COMPLAINTS
(January - October, 1989)

Personnel complaints	1
Economic hardship	4
Waiver information	2
General information	2
Technical information	5

Staff observes that the number of phone calls regarding the emissions program has declined over the past year.

kbh89.395

VEI:WEW-220

ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY

ROSE MOFFORD, GOVERNOR
RANDOLPH WOOD, DIRECTOR

M E M O R A N D U M

November 27, 1989

TO: Ken Heaton, Transportation Analyst
House of Representatives

FROM: William E. Watson, Manager
Vehicle Emissions Section
Office of Air Quality

RE: Complaints on Vehicle Emissions Program

This information is submitted in response to your request to Nancy Wrona dated November 22, 1989.

Our records indicate that we receive approximately one complaint per day on the average. However, many of these complaints are associated with people who fail the emissions test for various reasons and believe that the failure was an incorrect decision. We often determine that the fail decision was accurate and after obtaining additional information on the subject, explain this to the caller.

Another observation is that we receive complaints about unprofessional discourteous behavior on the part of Hamilton Test Systems' personnel. Again, these can be grouped into a minimum of two categories of those who pass or fail the test. Most of the complaints are associated with those who fail the test. A summary of this activity is listed below:

INCOMING PHONE CALLS (AUGUST 1989)

Waiver information:	926
General information:	1476
Technical information:	534
Exemption information:	270
Complaints:	51
Inspection station information:	1644
Other:	1426
TOTAL	6327

The Department of Environmental Quality is An Equal Opportunity Affirmative Action Employer.

600 North 40th Street Phoenix, Arizona 85008

This information is tabulated by the clerical staff that is assigned these duties, however, all personnel (at times) answer the phones. The above information should accurately indicate the majority phone activity.

If you have any questions or need more information, please contact me at 255-1167.

WEW:en

c: Nancy Wrona

ARIZONA STATISTICS 1989
INITIAL TEST STATISTICS

	JANUARY	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	YTD TOTAL
TOTAL TESTS	179,424	154,513	153,252	164,361	176,349	171,065	153,906	189,009	167,607	169,068	0	0	1,735,564
ADMINISTRATION	1,046	984	1,123	1,044	1,224	1,118	1,061	1,195	1,065	1,095	0	0	10,960
ABORTS	1,074	722	729	534	583	751	702	709	530	602	0	0	7,136
TOTAL INIT <81	56,648	55,260	64,273	54,256	57,677	55,334	51,067	53,896	50,867	51,931	0	0	551,229
TOTAL INIT >80	74,835	75,812	88,744	81,405	88,382	84,289	81,911	98,788	85,130	87,227	0	0	856,523
TOTAL INIT TESTS	141,493	131,072	153,017	135,661	146,059	139,643	132,978	152,684	135,997	139,158	0	0	1,407,752
INIT <81 PASS 1ST IDLE	34,470	33,723	33,562	33,909	35,817	34,053	31,112	32,906	31,906	33,226	0	0	340,694
INIT <81 FAIL 1ST IDLE	22,178	21,537	24,711	20,347	21,860	21,301	19,955	20,990	18,961	18,705	0	0	210,545
INIT <81 FAIL REF COND	860	709	824	749	812	730	605	765	710	742	0	0	7,506
INIT <81 PASS 2ND IDLE	4,359	4,242	4,522	3,929	3,951	3,960	3,937	3,897	3,866	3,881	0	0	40,435
INIT <81 FAIL 2ND IDLE	16,758	16,586	19,365	15,669	17,097	16,611	15,513	16,328	14,385	14,082	0	0	162,604
TOTAL INIT <81 FAILURE	17,823	17,275	20,189	16,418	17,909	17,341	16,118	17,093	15,095	14,824	0	0	170,110
% INIT <81 FAIL #1 IDL	39.2 %	39.0 %	38.4 %	37.5 %	37.9 %	38.5 %	39.1 %	38.9 %	37.3 %	36.0 %	by zero	by zero	38.2 %
% INIT <81 REFUSE COND	1.5 %	1.3 %	1.3 %	1.4 %	1.4 %	1.3 %	1.2 %	1.4 %	1.4 %	1.4 %	by zero	by zero	1.4 %
% INIT <81 FAIL #2 IDL	30.0 %	30.0 %	30.1 %	28.9 %	29.6 %	30.0 %	30.4 %	30.3 %	28.3 %	27.1 %	by zero	by zero	29.5 %
% TOTAL INIT <81 FAIL	31.5 %	31.3 %	31.4 %	30.3 %	31.1 %	31.3 %	31.6 %	31.7 %	29.7 %	28.5 %	by zero	by zero	30.9 %
INIT >80 PASS	64,011	63,141	77,821	72,315	78,508	73,463	70,470	85,294	74,714	78,702	0	0	738,439
INIT >80 FAIL	20,824	12,671	10,923	9,090	9,874	10,826	11,441	13,494	10,416	8,525	0	0	118,084
INIT >80 FAIL CRUISE	15090	7500	7414	6470	7091	9036	8557	10059	7209	5311	0	0	82,827
INIT >80 FAIL IDLE	15722	7777	5480	4208	4535	4880	4958	5889	4847	4572	0	0	57,869
% INIT >80 PASS	75.5 %	83.3 %	87.7 %	88.8 %	88.8 %	87.2 %	86.0 %	86.3 %	87.8 %	90.2 %	by zero	by zero	86.2 %
% INIT >80 FAIL	24.5 %	16.7 %	12.3 %	11.2 %	11.2 %	12.8 %	14.0 %	13.7 %	12.2 %	9.8 %	by zero	by zero	13.8 %
% INIT >80 FAIL CRUISE	17.8 %	9.9 %	8.4 %	7.9 %	8.0 %	9.5 %	10.4 %	10.2 %	8.5 %	6.1 %	by zero	by zero	9.7 %
% INIT >80 FAIL IDLE	12.6 %	10.3 %	6.2 %	5.2 %	5.1 %	5.8 %	6.1 %	6.0 %	5.7 %	5.2 %	by zero	by zero	6.8 %
TOTAL INIT PASS	102,831	101,106	121,905	110,153	119,276	111,476	105,419	122,097	110,485	115,809	0	0	1,119,559
TOTAL INIT FAIL	39,652	23,956	31,112	25,508	27,783	28,167	27,559	30,587	25,511	23,349	0	0	288,194
% TOTAL INIT PASS	72.7 %	77.1 %	79.7 %	81.2 %	81.0 %	79.8 %	79.3 %	80.0 %	81.2 %	83.2 %	by zero	by zero	79.5 %
% TOTAL INIT FAIL	27.3 %	22.9 %	20.3 %	18.8 %	19.0 %	20.2 %	20.7 %	20.0 %	18.8 %	16.8 %	by zero	by zero	20.5 %

~ 2 wks Dr fails

Nancy - Note change in fail rate

NOV 13 1989

ARIZONA STATE LEGISLATURE

INTERIM MEETING NOTICE

OPEN TO THE PUBLIC

ADVISORY COMMITTEE ON AIR QUALITY COMPLIANCE
(Chapter 252 - H.B. 2206, 1988)

DATE: Tuesday, November 28, 1989

TIME: 10:00 a.m.

PLACE: House Hearing Room 3

SUBJECT: Updates on Air Quality Compliance from the following:

Department of Environmental Quality
Department of Transportation
Department of Weights and Measures
Maricopa Association of Governments
Pima Association of Governments
Maricopa County
Pima County
Regional Public Transportation Authority
Charles T. Stevens, Arizona Petroleum Resources Group
Lawrence "Lonnie" G. Hurst, Motorola
Dan Cavanaugh, Tucson Metropolitan Chamber of Commerce

MEMBERS

Representative Jewett, Cochairman
Representative Goudinoff

Senator Corpstein, Cochairman
Senator Stephens

Carole Carpenter, Maricopa County Supervisor
Paul Johnson, Phoenix City Council
Mark DeMichele, Phoenix Chamber of Commerce
Raul Grijalva, Pima County Supervisor
Tucson City Council
Tucson Metropolitan Chamber of Commerce
Randolph Wood, Department of Environmental Quality
Governor's Appointees (3)

ijs
11/16/89

MEETING OF THE AIR QUALITY COMPLIANCE ADVISORY COMMITTEE
(Chapter 252 -- HB 2206, 1988)

NOVEMBER 28, 1989

PURPOSE OF THE COMMITTEE

Laws 1988, chapter 252, charges the Air Quality Compliance Advisory Committee with the responsibility of monitoring compliance with Arizona's air quality laws. The Committee must also evaluate annual air quality reports by the Arizona Department of Environmental Quality, and the oxygenated fuels pilot project report by the Arizona Department of Transportation. In its report to the legislature, the Committee may suggest changes to air quality legislation.

AGENDA

Presentations by the following:

Arizona Department of Environmental Quality

Randolph Wood, Director. RE: annual air quality report.

Ken Evans, Manager of Air Quality Evaluation Unit. RE: expansion of the Inspection/Maintenance area, CO violations.

William E. Watson, Manager of Vehicle Emissions Section, Office of Air Quality. RE: oxygenated fuels, Reid vapor pressure, NO_x testing, effectiveness of the Inspection/Maintenance program, toxic emissions.

Arizona Department of Transportation

Charles L. Miller, Director. RE: pilot clean-burning fuel project.

Maricopa Association of Governments

Lindy Bauer, Environmental Programs Coordinator. RE: status report on the three air quality plans, future activities, update on air quality lawsuit.

Arizona Department of Weights and Measures

Dick Wolfe, Deputy Director. RE: rules adopted to implement the oxygenated fuels program, fuel tests performed.

Arizona Petroleum Resources Group

Charles T. Stevens, Attorney at Law. RE: overview of industry compliance with oxygenated fuels program, experience with the program.

Atlantic Richfield Company

Jim White, Manager, Environmental Legislation and Regulation. RE: overview of ARCO's compliance program, ARCO's experience with the oxygenated fuels program.

Pima Association of Governments

Hank Eyrich, Physical Planning Manager. RE: implementation CO plan, progress on commitments, scheduling for redesignation.

Pima County

Marian Slavin, Travel Reduction Program Manager. RE: update on region-wide implementation of Trip Reduction Ordinance (TRO) program resulting from local ordinances.

Tucson Metropolitan Chamber of Commerce

Dan Cavanagh, Group Vice President. RE: the business community's perspective on the TRO program.

Maricopa County

Harvel Alishouse, Air Quality Advisor, Department of Public Health. RE: overview of TRO and Clean Air Campaign.

Regional Public Transportation Authority

Suzanne Pfister, Manager of Community Affairs. RE: update on TRO and clean air campaign.

Regional Travel Reduction Task Force

Lawrence "Lonnie" G. Hurst, Chairman. RE: industries' perception of the TRO program.

ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY

ROSE MOFFORD, GOVERNOR
RANDOLPH WOOD, DIRECTOR

RECEIVED
OCT 4 1989

October 2, 1989

The Honorable Jane Dee Hull
Speaker of the House
1700 West Washington
Phoenix, Arizona 85007

RE: Air Quality Reports

Dear Representative Hull:

I am pleased to provide the attached reports, which are being submitted in accordance with provisions of HB 2206, enacted in 1988. That Bill required the Department to report annually to the Legislature on seven issues related to urban air pollution. This is the second installment on these reports, providing an update over those submitted last year and an overview of our current state of knowledge for the respective topics, as summarized below. Wherever possible, we have provided a description of our plans for future research, where appropriate.

1. <u>NOx Feasibility: A.R.S. § 49-553.A.1</u>

   This report was prepared under contract with Energy and Environmental Analysis, Inc. The consultant has reviewed the "benefits, test methods and feasibility" of requiring emissions testing for diesel powered vehicles in general and the options for testing gasoline and diesel powered vehicles for nitrogen oxide (NOx) emissions. NOx emissions are of concern as they contribute to ozone formation.

   The report reviews relevant testing programs in other states, discusses the status of Federal new car standards for NOx, and makes recommendations for future state policy. Consistent with last year's reports, this one documents several impediments to the implementation of an annual tailpipe test for NOx:

   - Uncertainties exist about the proper loaded test procedure for pass/fail standards;

- The repair industry is relatively uninformed about the causes of high NOx emissions and types of appropriate repairs, requiring considerable training;

- Accurate diagnoses and repair would require each vehicle repair facility to invest over $10,000 in a dynamometer and other equipment.

2. Expansion of I & M Area: A.R.S. § 49-553.A.2

This report provides an assessment of the expected benefits of expanding the Vehicle Emissions Inspection Program boundaries, based on traffic surveys conducted last winter by ADEQ and ADOT. The report concludes that expanding test boundaries to contiguous areas would produce immeasurably small cuts in carbon monoxide and ozone pollution.

3. I & M Effectiveness: A.R.S. § 49-553.A.3

This report, prepared by Energy and Environmental Analysis, Inc. under contract, provides an in-depth analysis of the benefits of the Vehicle Emission Inspections program. As part of the analysis, EEA examined the benefits of the new loaded mode test, and the implications of the discovery that several models and makes fail this test in disproportionate numbers. Nine of the twelve failing vehicle families have already been subject to an EPA recall for failure of emissions control systems. The report concludes that these high failure rates show that these vehicles were not repaired properly. Because Arizona's "tailpipe" test identifies these vehicles, the loaded test is effective in identifying high polluters.

4. Air Quality Effects of the Arizona Oxygenated Fuels Program and Reid Vapor Pressure: A.R.S. § 49-553.A.4

This report discusses the current status of the new ADEQ Vehicle Emissions Research Program and explains the research design in use for assessing the impact of oxygenated fuels on automobile emissions. Background information on the issue of reducing gasoline volatility or RVP standards as air quality strategy is also provided.

5. Cost Benefit: A.R.S. § 49-553.A.5

The report submitted to the Legislature last year determined that cost-benefit analysis would be very expensive to perform and would not yield results useful to policy makers. The Department, in its presentation to the Air Quality Compliance Committee, suggested that cost-effectiveness analysis would be a less expensive and more beneficial approach to the question posed by the Legislature. This suggestion was well received, and the Department proceeded with a cost-effectiveness study.

Regretfully, we have been unable to complete this report in time for this submittal. A draft report containing cost effectiveness analysis for the vehicle emissions program, oxygenated fuels, voluntary no-drive days, and trip reduction programs will be completed by October 1, 1989. A final report including cost effectiveness analysis for all carbon monoxide reduction programs contained in A.R.S., Title 49, Chapter 3 will be completed by December, 1989. This study is being prepared under a contract with the U of A Center for Business and Economic Research.

6. Causes of Violations at Monitors: A.R.S. § 49-553.A.6

This report provides an overview of Arizona Air Quality Monitoring System and its relationship to the EPA prescribed modeling. The relationship of local traffic patterns to carbon monoxide violations is explained, and anticipated ADEQ analysis of violation patterns is discussed. Consistent with last year's study, this report documents that high carbon monoxide levels represent a regional air quality problem. Furthermore, no installation of new traffic flow improvement monitors would result in lower number of violations.

The 1990 report may be a slightly expanded discussion or may need to address new issues raised by the legislature.

7. Toxic Emissions Analysis: A.R.S. § 49-553.B

This report is a comprehensive review of current research on vehicular toxic emissions conducted throughout the country. Initial conversations with EPA and engineering consultants suggest that this type of research is in its infancy at the national level and may be difficult to conduct at the new ADEQ Emissions Research Lab. This report also provides recommendations for conducting the research at the DEQ Vehicle Emissions Research facility.

The report includes research showing that the use of oxygenated fuel can reduce tailpipe emissions of benzene, a known cancer causing compound. At the same time, the use of these fuels will likely increase tailpipe emissions of aldehydes, another carcinogen.

We expect to work closely with the Legislature and the Air Quality Compliance Advisory Committee to ensure that our research will provide the information you need for future policy decisions. We would be pleased to have the comments or suggestions for future reports, or to brief you on these issues.

Sincerely,

Randolph Wood
Director

RW/ID/sds

Attachments

ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY

ROSE MOFFORD, GOVERNOR
RANDOLPH WOOD, DIRECTOR

November 27, 1989

Mr. Ken Heaton
House Transportation Research
House of Representatives
1700 West Washington
Phoenix, Arizona 85007

Dear Mr. Heaton:

I am pleased to provide fourteen compilations of reports for submittal to the Air Quality Compliance Advisory Committee, as required in H.B. 2206.

As you may recall, H.B. 2206 required the Department to report annually to the committee on several issues. The first set of reports on these issues was submitted to the committee on October 1, 1988.

If you require any information concerning these reports, do not hesitate to contact me at 257-2308.

Sincerely,

Nancy Wrona
Assistant Director
for Air Quality

NW/RB/sds

c: Randolph Wood
Neena Laxalt

The Department of Environmental Quality is An Equal Opportunity Affirmative Action Employer.

Central Palm Plaza Building 2005 North Central Avenue Phoenix, Arizona 85004

October 24, 1989

ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY

ROSE MOFFORD, GOVERNOR
RANDOLPH WOOD, DIRECTOR

ADOT ALTERNATIVE FUELS FLEET -- EMISSION TEST PROGRAM

By Frank W. Cox

Introduction

An increasing population (both human and vehicle) and corresponding increases in various environmental pollutants has prompted the State of Arizona to enact legislation establishing controls and mandating research aimed at abatement. HB 2115 and SB 1360 mandated an alternative-fuels fleet study to be performed by the Arizona Department of Transportation (ADOT), and HB 2206 mandated a vehicle emissions study of a representative portion of the ADOT fleet to be performed by the Arizona Department of Environmental Quality (ADEQ).

The ADOT vehicle fleet was put into service in October of 1987 using unleaded gasoline to gather baseline performance and I&M emission data. In January of 1988 the use of the baseline gasoline was discontinued and operation on the various alternative fuels began. In February of 1989, after thirteen months of operation on the alternative fuels, the ADEQ Emissions Research Laboratory (ERL) began testing selected ADOT fleet vehicles to determine the effect, if any, of the alternative fuels on evaporative and exhaust emissions as compared to these emissions generated by the use of unleaded gasoline.

This report contains the summarized data obtained from the ERL testing and discussions of this data and the test methods.

Vehicles

The test vehicle fleet is listed in Table 1. The only vehicle type included in the ADOT fleet which was not tested was the 1984 Chevrolet S10 pickup. This vehicle type was omitted from the test fleet because of its similarity to the 1983 Chevrolet S10 pickup. In order to directly compare fuel effects, vehicles 1 thru 5 were tested with unleaded gasoline and two discreet oxygenated fuels, one containing methyl tertiarybutyl ether (MTBE) and the other containing ethanol (EtOH). Vehicle 6 was a gasoline/CNG (compressed natural gas) dual-fueled vehicle and was tested only with these two fuels (no oxygenated fuel substituted for the gasoline). Vehicle 7 had been converted to liquid petroleum gas (LPG), was fuel dedicated, and could not be tested with other fuels. The remaining vehicle (8) was tested with unleaded gasoline and with a third oxygenated fuel containing methanol (MeOH). Vehicles 6,7, and 8 were, with respect to emission control system and to engine size and configuration, similar to vehicles 5,4, and 3, respectively.

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Fuels

The oxygenate compositions and Reid vapor pressures (RVP) of the liquid test fuels were:

	Composition (nominal)	RVP, psi Original Fuel Samples	RVP, psi Actual Test Fuels
1.	Unleaded Gasoline (neat)	12.1	10.3[1]
2.	Gasoline/11% MTBE	11.7	11.8
3.	Gasoline/10% EtOH	11.6	11.5
4.	Gasoline/5% MeOH/5% TBA[2]	7.3[3]	11.9

1. This apparently low RVP is discussed later in this report.
2. Actually equivalent to "Oxinol" (ARCO trade name) with 4.75% MeOH/4.75% TBA.
3. This fuel was not used for testing.

Fuel samples were taken from the storage tanks at the ADOT fueling depots. The criterion for acceptance for testing was that the RVPs of the liquid fuels be similar. Fuels, 1,2, and 3 were judged to be acceptable, but the vapor pressure of the "Oxinol" blend was too low. The entire supplies of fuels 1,2, and 3 were taken as single batches of the individual fuels directly from the ADOT storage tanks into 55-gallon drums and immediately sealed. The storage tanks from which the test fuels were taken were the same as those from which the original samples were obtained. The "Oxinol" test fuel was acquired after the ADOT took delivery of a new batch. The vapor pressure of this fuel was within the desired range.

Test Procedures

Upon delivery, each vehicle fuel tank was removed and a drain line and thermocouple were installed. The drain line was extended to the lowest point of the tank and the thermocouple to the midpoint between the tank bottom and the fuel surface at the 40% nominal fuel tank volume level. Each tank was then pressurized to 3 psi air to ensure vapor tightness and reinstalled on the vehicle.

Each vehicle was checked for engine vacuum leaks and faulty spark plugs and spark plug wires. These were the only maintenance items replaced when found to be faulty. Engine operating parameters were also checked and, excepting the LPG and CNG vehicles, set to factory specifications. Vehicle preparation was completed with checks of the exhaust system and installed fuel tank for leaks. This was accomplished with the instrument bench hydrocarbon analyzer by attaching a 3-port valve and sniff line between the sample inlet and the analyzer.

At the end of testing, the thermocouple was removed from the fuel tank and the fittings installed for the thermocouple and drain line were capped.

With three exceptions, to be discussed below, the Federal Test Procedure (FTP) was used for all tests. The details of the procedure are given in the Code of Federal Regulations (CFR) Title 40, Part 86, Subpart B. This reference also gives the details of the required equipment, calibrations, and conditions.

One departure from the FTP concerned the ambient test temperature limits. The FTP requires that the temperature to which the vehicle and test equipment are exposed be maintained within the limits, 68°F to 86°F. Since the available test fuels were winter grade (vapor pressures at the lower end of volatility class D), the decision was made to test at lower than the specified ambient temperature range. An ambient temperature range of 51°F to 69°F was chosen (a -17°F offset from the FTP) because 1. it was believed to be the lowest feasible range at which the facility could be maintained, 2. this range more nearly simulates winter temperatures in Maricopa county, and 3. the FTP specified temperatures would result in unrealistic canister loading during the pretest soak period.

The diurnal (or heat build) evaporative (SHED) test is intended to measure evaporative losses during a simulated diurnal (daily) temperature rise. Testing at lower ambient temperatures required that the temperature range for the fuel heat build also be lowered. Accordingly, this range was lowered 17°F from the FTP to 43°F-67°F. The FTP heat build ramp was maintained.

Preceding the 12-36 hour soak period prior to testing, the FTP stipulates that the fuel tank be drained, the vehicle refueled to the required volume, and then driven on the dynomometer according to the Urban Dynomometer Driving Schedule (UDDS) and at the vehicle test weight and horsepower. The UDDS is required within one hour of refueling. The FTP allows up to three additional preconditioning driving cycles, each preceded by a one hour soak period.

Since each ADOT test fuel was significantly different from the others, and to minimize memory effects, a three-driving-cycle schedule was adopted for preconditioning when the test fuel was different from the preceding test. For back-to-back tests with the same fuel, the single preconditioning driving cycle was used. The three-driving-cycle schedule was:

1. drain and refuel
2. UDDS driving cycle within one hour of refueling
3. ten minute soak
4. UDDS driving cycle
5. one hour soak
6. drain and refuel
7. UDDS driving cycle.

The soak period between the first and second driving cycles was reduced to ten minutes to conserve time and the extra refueling was included as an added measure to minimize memory effects of the previous fuel.

The fuel sequence was random beginning or ending the test series with no particular fuel. For the first test, however, each vehicle was preconditioned using the three-driving-cycle schedule.

At least two tests were performed with each vehicle/fuel couple. A third test was performed when agreement between the duplicate tests was judged to be inadequate or when FTP limits were exceeded to a point considered to be capable of producing significant effects on test data.

Results and Discussions

The results of the emissions test program are presented in Table 2. Excepting the SHED emissions for vehicle B545 in the CNG mode, each emission value is the arithmetic average of at least duplicate tests, and in some cases, triplicate tests. The number of vehicles was small and little effort was exerted to verify mechanical condition or emission control functionality. Therefore, no statistical evaluation has been performed to determine the significance of data magnitude or relativity. This discussion is based upon a general interpretation of the data and the resulting conclusions reflect the opinion of the author.

Evaporative emissions are primarily effected by 1. test temperature (and temperature ramp), 2. fuel composition and volatility, 3. the type and condition of the fuel handling system, and 4. the configuration and condition of the evaporative emission controls. Since both ambient and heat build temperatures were lowered by 17°F from the FTP, the SHED data can only be internally compared. The magnitude of the evaporative emissions is significant only for comparison of the various fuels with a single vehicle. Relative data can, however, be compared across the vehicle/fuel matrix. The fuel vapor pressures given previously in this report would lead to a tentative conclusion that the evaporative emissions from the gasoline should be lower than from the alternative liquid fuels. The data, however, do not support this conclusion. At face value, the data indicate that essentially equivalent vapors are emitted from the MTBE fuel as compared to gasoline and lower levels are emitted from the EtOH fuel.

A number of parameters which influence evaporative emissions must be considered. First, RVP is a measure of volatility at 100°F and the rate of vapor pressure change as a function of temperature is not known for the test fuels. In addition, the history and condition of the control canisters is not known, and the average replicate variation of all vehicle/fuel couples was about 20%, a variability consistent with literature values. These uncertainties leave little doubt that no conclusion can be drawn with respect to the effect of fuel composition upon evaporative emissions.

The repeatability of the exhaust measurements was much better than that for evaporative emissions. The average replicate variations for all vehicle/fuel couples were about 8.5% for hydrocarbons, 7.0% for nitrogen oxides, and 12.5% for carbon monoxide. Actual fuel vapor pressure and vapor control canister condition cannot be ignored as exhaust emission variables, but their effects should be less prominent with respect to exhaust emissions as compared to evaporative emissions.

For the group of five vehicles tested with gasoline, MTBE, and EtOH fuels; the emission trends for the oxygenated fuels relative to gasoline are:

1. hydrocarbons - decreases for both MTBE and EtOH,
2. nitrogen oxides - no apparent effect for either oxygenated fuel, and
3. carbon monoxide - decreases for both MTBE and EtOH.

These general trends are also consistent with the gasoline/"Oxinol" test results. The oxygenated fuels produced no positive deviations for hydrocarbon emissions and the two deviations shown for NO_x emissions are very close to the average variation for replicate tests.

One emission anomaly shown in Table 2 requires discussion. Vehicle B729 with MTBE shows a 29.4% increase for CO as compared to gasoline. This vehicle was exceptionally hard to start and required triplicate tests with MTBE. The CO levels produced by the independent tests were 5.1, 3.0, and 5.2 grams/mile. Long cold starts for the first and third tests produced high phase 1 emissions, but this did not account for the difference between 3 and 5 grams/mile. Further analysis of the raw data revealed consistently high CO emissions in phase 3 (the hot start) of the tests with MTBE as compared to either gasoline or the EtOH fuel. The only conclusion supported by the data is that this vehicle, under the test conditions and in its operating condition at the time, did produce higher CO emissions with MTBE fuel than with gasoline. The author cannot offer a reasonable explanation for this anomaly.

Excepting the vehicle/fuel anomaly discussed in the preceding paragraph, the CO emissions with the oxygenated fuels are substantially lower than those produced with gasoline. The average decreases (percent change with respect to gasoline) for both MTBE and EtOH fuels are larger than the corresponding average duplication variations.

Very little can be said about the single vehicle (BC32) tested with gasoline and an "Oxinol" type oxygenated blend other than the exhaust emission changes for the oxygenated fuel relative to gasoline agree with the changes shown for the 5-vehicle X 3-fuel matrix discussed above.

Extreme caution must be practiced when comparing test results from two vehicles. The exhaust emissions from the propane fueled vehicle (B745), however, are impressively low when compared to the emissions from a similar vehicle (B729) operating on the liquid fuels.

The dual-fueled gasoline/CNG vehicle (B545) emissions are not representative. Test results prompted an "after-the-fact" more detailed inspection of the vehicle. Apparently, a faulty PCV valve had caused engine oil to be drawn into the intake system. Both the intake air filter and the evaporative control canister were saturated with engine oil. Comparing emissions from this vehicle, again with reservations, to those from a similar vehicle (B511) leads to the conclusion that the dual-fueled vehicle was operating fuel rich with gasoline and exceptionally fuel rich with CNG. The significance of the vehicle B545 data lies in their value for demonstrating the high evaporative emissions associated with an inoperative control canister and the change in exhaust emissions associated with fuel rich operation (exhaust NO_x is lowered, but HC and CO emissions increase; at some point, to intolerable levels).

It is well known that the composition of exhaust hydrocarbon emissions is similar to the fuel hydrocarbon composition. The methane fractions of vehicle B545 exhaust hydrocarbon emissions were calculated and found to average 7.9% with gasoline and 71.3% when the vehicle was fueled by CNG. The large increase in the methane portion of the hydrocarbon emissions is indicative of a decrease in reactivity with respect to atmospheric smog formation.

Table 2 also contains volumetric fuel economy (FE) values. Since the UDDS involves very little steady state operation at cruise speeds, the FE magnitude is not directly relatable to user service. The values in the table should, however, approximate the fuel economy of the vehicles when operated in populated areas. The volumetric FE gains shown for MTBE (B938) and for MTBE and EtOH (B511) resulted from two (of twelve) anomalous exhaust CO_2 levels. CO_2 was low for one of the duplicate tests of B938 with MTBE fuel and high for one of the duplicate tests of B511 with gasoline. The volumetric energy content of the oxygenated fuels is slightly less than that of gasoline and a small corresponding decrease in volumetric fuel economy should be expected. The 2.2% average loss for the oxygenated fuels (disregarding the values discussed above) is reasonable.

The volumetric fuel economies for the vehicles operating on gaseous fuels (CNG and LPG) are given in gasoline equivalents based upon the energy consumed. The energy charge density within the engine cannot be maintained with carbureted gaseous fuels as compared to liquid fuels (there is a volumetric efficiency loss); therefore, a fuel economy loss is inevitable.

The fuel economy based upon energy content is given in Table 3 in terms of BTU consumption per mile traveled. These data show that there is little, if any, difference in operating efficiency associated with the use of any of the liquid fuels. Disregarding the three values discussed earlier in conjunction with volumetric fuel economy, the average change in fuel-energy economy was +0.4% when the oxygenated fuels were used.

Summary

The Emissions Research Laboratory of the ADEQ tested eight (8) selected vehicles from the ADOT alternative fuels fleet to determine the effect of the alternative fuels upon evaporative and exhaust emissions. Duplicate tests were performed for all vehicle/fuel couples. Five (5) vehicles were tested with three (3) fuels (unleaded gasoline, gasoline/11% MTBE, and gasoline/10% ethanol); one (1) vehicle was tested with gasoline and gasoline/5% methanol/5% TBA; one (1) vehicle (dual-fueled) was tested with gasoline and CNG; and one (1) vehicle (dedicated) was tested with LPG.

For the 5-vehicle/3-fuel test matrix (and tentatively the single vehicle with gasoline/"Oxinol") the oxygenated fuel effects were: 1. no apparent effect on evaporative emissions, exhaust NO_x, or fuel-energy economy; and 2. decreases in exhaust HC, exhaust CO, and volumetric fuel economy. A mechanical problem (a faulty PCV valve) severely limited the value of the data obtained from the gasoline/CNG dual-fueled vehicle, but emissions from the dedicated LPG vehicle were impressively low.

FWC:mc

Attachments:
Table 1
Table 2
Table 3

TABLE 1
TEST VEHICLE MATRIX

	MAKE	ENGINE FAMILY	EMISSION CONTROL	ADOT No.
1.	1986 Chevrolet S10	G1G2-8T5HTR5	EGR/PMP/OXD/CLS	BD12
2.	1985 Chevrolet Celebrity	F1G2-8V8HGG9	EGR/3CL	A446
3.	1985 Ford Ranger	FFM2-8T2HKG0	EGR/PMP/OXD/3CL	B938
4.	1983 Chevrolet S10	D1G2-8T2H5C2	EGR/PMP/OXD	B729
5.	1980 Chevrolet C10	08Y2A	EGR/OXD	B511
	Optional*			
6.	1980 Chevrolet C10	08Y2A	EGR/OXD (CNG)	B545
7.	1983 Chevrolet S10	D1G2-8T2H5C2	EGR/PMP/OXD (LPG)	B745
8.	1985 Ford Ranger	FFM2-8T2HKG0	EGR/PMP/OXD/3CL	BC32

* Vehicles in the optional category to be tested only on base gasoline and one alternative fuel: CNG for 6, LPG for 7 and methanol blend for 8.

Table 2 ---- ADOT FLEET EVAPORATIVE AND EXHAUST EMISSIONS[1]

FUEL TYPE	EMISSIONS: EVAPORATIVE		EXHAUST						Miles/Gal	
	Shed gms.	% Chg.	HC gms.	% Chg.	NOx gms.	% Chg.	CO gms.	% Chg.	FE	%Chg.
1985 CHEVROLET CELEBRITY (A446)										
Gasoline	0.3		0.4		0.5		8.0		17.8	
MTBE 11%	0.3	0.0	0.3	-25.0	0.5	0.0	6.7	-16.3	17.2	-3.4
Ethanol 10%	0.2	-33.3	0.3	-25.0	0.5	0.0	7.8	-2.5	17.0	-4.4
1986 CHEVROLET S10 (S012)										
Gasoline	0.3		0.4		1.2		5.3		17.8	
MTBE 11%	0.3	0.0	0.4	0.0	1.1	-8.3	4.1	-22.6	17.6	-1.1
Ethanol 10%	0.2	-33.3	0.3	-25.0	1.1	-8.3	3.6	-32.1	17.5	-1.7
1985 FORD RANGER (8938)										
Gasoline	1.6		1.8		1.0		33.3		15.5	
MTBE 11%	1.3	-18.8	1.5	-16.7	1.0	0.0	28.5	-14.4	16.2	+2.5
Ethanol 10%	1.2	-25.0	1.5	-16.7	1.0	0.0	25.6	-23.1	15.7	+0.6
1980 CHEVROLET S10 (8729)										
Gasoline	1.6		0.6		1.8		3.4		19.6	
MTBE 11%	1.7	+6.3	[illegible]	[illegible]	1.9	+5.6	4.4[illegible]	+29.4	19.2	-2.0
Ethanol 10%	1.6	0.0	[illegible]	0.0	2.0	+11.1	2.2	-35.3	19.5	-0.5

[1]All values are arithmetic averages of at least two tests.
[2]The author does no plausible explanation for this anomaly.

Table 2 cont. --- [illegible] FLEET [illegible] EMISSIONS[1]

TRIPLICATE 3

FUEL TYPE	EVAPORATIVE		EXHAUST						Miles/Gal.	
	Grams	% Chg.	HC grams	% Chg.	CO grams	% Chg.	CO2 grams	% Chg.	FE	%Chg.
1980 CHEVROLET C10 (85111)										
Gasoline	3.4		1.0		7.4		14.7		12.4	
MTBE 11%	3.3	-2.9	0.9	-10.0	7.4	0.0	17.4	-9.3	12.7	+2.4
Ethanol 10%	4.1	+20.6	0.8	-20.0	7.4	0.0	11.3	-23.1	12.6	+1.6
1985 FORD RANGER (8C02)										
Gasoline	4.1		1.6		0.8		31.0		17.5	
Methanol 5% TBA 5%	1.9	-53.7	1.5	-6.3	3.9	+12.5	25.3	-18.4	16.8	-4.0
1981 CHEVROLET S10 (8745)										
Propane	----[2]		0.4		0.9		0.0		16.7[3]	
1980 CHEVROLET C10 (8E45)										
Gasoline	23.0		2.2		5.0		41.7		12.9	
CNG	26.1[4]		4.1	+86.4	2.0	-59.7	105.2	+152.3	10.4[5]	-19.4[6]

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[1] All values are arithmetic averages of at least two tests.

[2] Evaporative emissions are meaningless for a closed system. System integrity was checked with the hot soak (0.5 grams emitted).

[3] Fuel economy in terms of a volume of gasoline containing energy equivalent to the propane consumed.

[4] Equivalent evaporative emissions while on the CNG mode, shows that the two fuel systems are independent.

[5] See footnote 3 energy equivalent to the CNG consumed.

[6] The 19% fuel economy loss is the sum of the effects: 12% fuel-rich mixture, 12% volumetric efficiency loss, and 1% increased combustion speed.

Table 3 - ADOT FLEET FUEL-ENERGY ECONOMY

FUELS

1. Gasoline (unleaded)
2. Gasoline/11% MTBE
3. Gasoline/10% Ethanol
4. Gasoline/ 5% Methanol/5% TBA
5. Compressed Natural Gas (CNG)
6. Propane

VEHICLE	BTU/mi. With Corresponding Fuel					
	1	2	3	4	5	6
A446	6347	6424	6428			
BD12	6341	6297	6252			
B938	7122	6830	6956			
B729	5761	5770	5611			
B511	9102	8725	8644			
BC32	6450			6514		
B545	8725				10878	
B745						6746

STATE OF ARIZONA

DEPARTMENT OF WEIGHTS AND MEASURES

GUIDELINES FOR USE AND SALE OF MOTOR FUELS AND PETROLEUM PRODUCTS

IMPORTANT

THIS BOOKLET CONTAINS BOTH EXISTING RULES AND PROPOSED RULES THAT ARE IN VARYING STAGES OF RULE ADOPTION. THOSE RULES THAT ARE UNDERLINED ARE NOT IN EFFECT AT THIS TIME. THEY ARE INCLUDED ONLY TO REFLECT WHAT THE DEPARTMENT HAS PROPOSED AND WHAT IS BELIEVED, ACCORDING TO THE BEST INFORMATION NOW AVAILABLE, TO CLOSELY REFLECT WHAT MAY BE CERTIFIED AND BECOME FINAL RULES.

OCTOBER, 1989

DEPARTMENT OF WEIGHTS AND MEASURES
A.A.C. TITLE 4, CHAPTER 31
ARTICLE 7. MOTOR FUELS AND PETROLEUM PRODUCTS
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DEPARTMENT OF WEIGHTS AND MEASURES
A.A.C. TITLE 4, CHAPTER 31
ARTICLE 7. MOTOR FUELS AND PETROLEUM PRODUCTS

R4-31-701. Definitions

In this article, unless the context other wise requires:

1. "ASTM" means American Society for Testing and Materials.

2. "Co-solvent" means a chemical compound with good solvent properties that is added to a methanol-gasoline blend to prevent phase separation, reduce corrosion and improve lubrication and may be any one or a mixture of ethanol, propanols, or butanols, including gasoline grade tertiary butyl alcohol.

3. "Diesel fuel" means a hydrocarbon fuel that is suitable for use as a fuel in a diesel engine.

4. "EPA waivers" means:

a. The waivers granted in the document entitled "Waiver Requests under Section 211 (f) of the Clean Air Act" (revised November 19, 1986) prepared by the United States Environmental Protection Agency;

b. The "Allowable Limits for Oxygenates in Unleaded Gasoline" (revised November 21, 1986) prepared by the Fuels Section of the United States Environmental Protection Agency;

c. The Federal Register, Volume 46, No. 144, Tuesday, July 28, 1981, Notices, entitled "Fuels and Fuel Additives; Revised Definition of 'Substantially Similar,'" pages 38582 to 38586; and

d. Waiver 170, Federal Register, Volume 53, September 1, 1988, pages 33846 and 33847.

All of the preceding documents contained in this definition of EPA Waivers are incorporated herein by reference and on file with the Office of the Secretary of State. This definition of EPA Waivers does not include any later amendments or editions to the preceding documents. Copies of each of the preceding documents are available from the Department and from the Fuels Section, United States Environmental Protection Agency, 401 M Street, SW, Washington, DC, 20460.

5. "Fuel" means any material which is capable of releasing energy or power by combustion or other chemical or physical reaction.

6. "Gasoline" means a volatile, highly flammable liquid mixture of hydrocarbons which is produced, refined, manufactured, blended, distilled or compounded from petroleum, natural gas, oil, shale oils or coal and other flammable liquids free from undissolved water, sediment or suspended matter, with or without additives, which is commonly used as a fuel for spark ignition internal combustion engines and which meets the specifications of the American society for testing and materials. Gasoline does not include diesel fuel.

7. "Lead" means the lead compound in gasoline and can be tetraethyl lead, tetramethyl lead, physical mixtures of tetraethyl lead and tetramethyl lead, and reacted mixtures of tetraethyl lead and tetramethyl lead.

8. "Leaded gasoline" means gasoline containing more than five one-hundredths grams of lead per United States gallon.

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IMPORTANT - The underlined portions of these pages are proposed rules and are NOT in effect at this time.

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9. "Motor fuel" includes all products commonly or commercially known or sold as gasoline, oxygenated fuel, or diesel fuel.

10. "MTBE" means methyl tertiary butyl ether.

11. "Octane" "octane number" or "octane rating" mean and shall be used to express the anti-knock quality of gasoline as determined by adding the research octane number and the motor octane and dividing by two (R+M)/2.

12. "Oxygen content" means the percent by weight of oxygen as calculated by multiplying the oxygen weight of any oxygenate as listed herein, by the volumetric percent of that oxygenate in the blend. Weight oxygen of:

a. Methyl Tertiary Butyl Ether: 18.2%

b. Ethanol: 34.7%

c. Methanol: 49.9%

d. Other oxygenates as listed in Merck Index, 1983 Edition, which is incorporated herein by reference and on file with the Office of the Secretary of State. This Index incorporated herein by this rule does not include any later amendments or editions of the Index. Copies of the Index are available from the Department and from Merck & Co., Inc., W.B.S. 435, P. O. Box 2000, Rahway, N.J., 07065.

13. "Oxygenate" means any oxygen-containing ashless, organic compound, including aliphatic alcohols and aliphatic ethers, which may be used as a fuel or as a gasoline blending component and which is approved as a blending agent under the provisions of a waiver issued by the United States environmental protection agency pursuant to 42 United States Code section 7545(f).

14. "Oxygenated fuel" means a motor fuel blend, whether leaded or unleaded, consisting primarily of gasoline and a substantial amount of one or more oxygenates, and which has been blended consistent with the provisions of a waiver issued by the United States environmental protection agency pursuant to 42 United States Code section 7545(f).

15. "Service station" means a place operated primarily for the purpose of delivering motor vehicle fuel into the fuel tanks of motor vehicles.

16. "Unleaded gasoline" means gasoline containing not more than five one-hundredths grams of lead per United States gallon.

R4-31-702. Reserved

R4-31-703. Inspection of motor fuels

A. The investigator shall not work under conditions deemed to be unsafe.

B. In no case shall the investigator climb a ladder or move an inconvenient distance from the testing site to return the fuel to the storage tank.

C. Any fuel which is to be returned to the licensee shall be returned to the operator at the testing site.

R4-31-704. Diversion of measured liquid

No means shall be provided by which any measured liquid can be diverted from the measuring chamber of the meter or from the discharge lines leading from it. However, two delivery outlets may be installed on a

motor fuel device used exclusively in the fueling of trucks, if safeguards are also installed, limiting access to only one vehicle being filled from the primary dispenser without the use of diversionary valves. In all cases, where safeguards are not installed, direct diversion valves will be installed to allow delivery of fuel through only one outlet at any one time. This Subsection amends S.3.1. of the section entitled "Liquid Measuring Devices" of the National Bureau of Standards Handbook 44 (as adopted by the National Conference on Weights and Measures).

R4-31-705. Price posting on external signs

Pursuant to the provisions of A.R.S. § 41-2081.I., the following shall govern the use and means of advertising the price of all petroleum motor fuels on external signs at retail motor fuel establishments when external signs are used to advertise price:

1. External signs shall identify the type of sale, i.e., cash or credit card (if different prices), and whether self service or full service (if both are available).
2. External signs shall identify the grade of gasoline, i.e., regular, unleaded, premium, premium (super) unleaded.
3. External signs shall identify diesel fuel but need not identify grade of the diesel fuel.
4. External signs advertising the price of all motor fuels shall include all federal and state taxes.
5. The following portion gallon pricing on external signs shall not be allowed: $1.9^{9}, $.09^{9}, or $1.19^{-}.
6. External sign prices shall be of sufficient size to be plainly visible and easily readable from the road including any fraction of a cent. Signs shall conform to the codes or ordinances of applicable county or municipality.

R4-31-706. Price posting on dispensers

The following shall govern the use and means of informative price posting on all petroleum motor fuel dispensers, used in retail trade, available to the general public at attended or unattended business locations:

1. When a cash discount is offered, either the credit card price or the cash price may be set on the dispenser price computer. However, if the cash price is set on the dispenser price computer, both the credit card price and the cash price must be posted on the dispenser to be plainly visible to the customer.
2. When only one price is posted on a dispenser, the posted price shall be the highest price of the product which is being sold from that dispenser. Any discount for cash or other discounts will be plainly and visibly posted on the dispensers.
3. Electronic dispensers capable of cash and credit card pricing (two tier or two level pricing) electronically at each dispenser may indicate the cash or credit card price and the cash price for the products dispensed on each dispenser by a placard or sign, unless it is displayed electronically. This posting shall be of sufficient size as to be plainly visible to the customer.

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IMPORTANT - The underlined portions of these pages are proposed rules and are NOT in effect at this time.

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4. An exception is motor fuel dispensing devices that are used in retail trade that are non-price computing. Non-price computing motor fuel dispensing devices used in retail trade shall post a price per gallon sign adjacent to or on the dispensing device. This posted price sign shall include all federal and state taxes.

R4-31-707. Unattended retail dispensers

Unattended retail motor fuel dispensing business locations shall conspicuously post on or adjacent to the dispensers a sign or label containing company name, address and telephone number of the responsible party for the device.

R4-31-708. Money value computations

National Bureau of Standards Handbook 44 notwithstanding, money value indication on retail motor fuel devices shall not differ from the mathematically computed money value (Quantity X Unit Price = Sales Price), for any delivered quantity, by an amount greater than one-half the value of the money value division.

R4-31-709. Unbranded motor fuels

Unbranded motor fuels shall not be sold through a dispenser identified as branded. All branded retail locations dispensing unbranded motor fuels shall remove, obliterate or cover all references to the branded product that appears on the dispenser, and the dispenser shall be posted on both sides of the dispenser near the grade identity with signs indicating "This is not a (identify brand) product". This sign shall be of sufficient size as to be conspicuous to all customers with letters no less than one inch in height and shall be of contrasting color.

R4-31-710. Oxygenated fuel blends

A. The amount of any oxygenate in an unleaded gasoline blend shall not exceed the volume allowed by EPA waivers. The amount of any oxygenate in a leaded gasoline blend shall not exceed the volume allowed by EPA waivers for unleaded gasoline blends. Except as provided by EPA waivers, ethanol or methanol blended unleaded or blended leaded gasolines shall contain a corrosive inhibitor in an amount determined by the manufacturer of the inhibitor. Any gasoline blend containing methanol shall contain a co-solvent in an amount equal to or greater than the amount required by EPA waivers for unleaded gasolines within the oxygen limits allowed.

B. Reporting requirements.

1. Any person who blends gasoline with any of the following oxygenates shall file a report with the Department prior to the initial sale or use of such blend.

a. More than two and three-quarters percent by volume of methanol with an equal amount of co-solvent, or

b. More than five and one-half percent by volume of ethanol, or

c. More than 11 percent by volume of MTBE, or

d. Any other oxygenate at a level that requires a waiver from the Federal Environmental Protection Agency.

2. The report shall contain the following:

a. The name of the person blending oxygenates with gasoline and the person's address and telephone number;

b. The name, address, telephone number, and signature of the person preparing the report;

c. The date the report was prepared;

d. The type and maximum volume of oxygenate as a percent of the total blend; and

e. The amount of co-solvent contained in methanol-gasoline blends.

R4-31-711. Retail oxygenated fuel labeling

A. All dispensers shall be labeled when offering gasoline containing:

1. More than two and three-quarters percent by volume of methanol with an equal amount of co-solvent, or

2. More than five and one-half percent by volume of ethanol, or

3. More than 11 percent by volume of MTBE, or

4. Any other oxygenate at a level that would require a waiver from the Federal Environmental Protection Agency.

B. For gasoline containing ethanol, methanol, or MTBE, identification shall be accomplished by conspicuously posting, on the face of the dispenser, the appropriate following label indicating the maximum volumetric percentage of oxygenate contained in the oxygenated fuel:

1. Contains up to % ethanol

2. Contains up to % methanol and % co-solvent; or

3. Contains up to % ether (MTBE)

C. Any other oxygenate blended with gasoline shall be disclosed in the format as set forth in Subsection B.

D. The posting shall be with block letters no less than one-half inch in height, easily readable and plainly visible to the customer.

R4-31-712. Distribution of oxygenated fuel

A. Any person distributing oxygenated fuel on a wholesale basis shall provide the buyer with the type of oxygenate and the volume of oxygenate as a percent of the total blend when gasoline contains:

1. More than two and three-quarters percent by volume of methanol and an equal amount of co-solvent, or

2. More than five and one-half percent by volume of ethanol, or

3. More than 11 percent by volume of MTBE, or

4. Any other oxygenate at a level that would require a waiver from the Federal Environmental Protection Agency.

B. This information shall be provided on the bill of lading or other documentation used in customary business practice.

C. In any area with a mandatory minimum oxygen level, during any specific period of time, the weight oxygen content, in each truck distributing oxygenated fuel in that area, shall be calculated by the Department by using the prescribed percent volume to percent oxygen formula as described in the definition for oxygen content contained in this chapter.

R4-31-713. Blending requirements

To enable adjustments in noncompliance inventory and to preclude neat oxygenate blending at the retail location no fuel shall be introduced into a retail storage tank that contains more than 20 percent by volume of any oxygenate. No fuel in the retail tank shall be allowed to exceed EPA waiver requirements.

R4-31-714. Retail oxygenated fuel marketing

In any area with a mandatory minimum oxygen level during any specific period of time the weight oxygen content of the oxygenated fuel being dispensed from any dispenser shall be calculated by the department by using the prescribed percent volume to percent oxygen formula as described in the definition for oxygen content in this chapter.

R4-31-715. Retail station preparation and record keeping

Prior to the introduction of any oxygenated fuel into a retail station storage tank the following procedures shall be followed:

1. Prior to the introduction of any alcohol oxygenated fuel into a retail station storage tank, the tank shall be tested for the presence of water and, if any water is detected, it shall be pumped from the tank and properly disposed of.
2. Fuel filters approved for use with alcohol oxygenated fuels by the manufacturer shall be installed in the fuel line of all dispensers that will dispense alcohol blends.
3. The inventory of non-oxygenated fuel in the retail station storage tank shall be reduced to a level that is less than 25 percent of the tank's maximum capacity before introducing the initial shipment of oxygenated fuel.
4. Each station shall maintain records at the retail location of the two deliveries of fuel preceding the transition to, from or between oxygenated fuels and the records of the first two shipments of the new fuel. Such records shall be maintained at the retail station until the third consecutive shipment of the new fuel has been received.

R4-31-716. Transitions

Special provisions shall apply to labeling requirements at the retail level when a station is in transition to, from or between oxygenated fuels. Retail labeling shall be deemed to be in a transition period prior to delivery of the second consecutive shipment of the new fuel. Retail maximums as established by EPA waiver shall not be exceeded, however, pump labeling at a level higher than the fuel being dispensed shall be allowed until receipt of the second shipment.

R4-31-717. Motor fuel storage tank labeling

A. All fuel storage tank fill pipes located at retail motor fuel service stations shall have a label affixed to properly identify one of the following:

1. Leaded regular gasoline
2. Unleaded regular gasoline
3. Unleaded premium gasoline
4. Leaded gasoline with ethanol
5. Unleaded gasoline with ethanol

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IMPORTANT - The underlined portions of these pages are proposed rules and are NOT in effect at this time.

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6. Unleaded premium gasoline with ethanol
7. Leaded gasoline with MTBE
8. Unleaded gasoline with MTBE
9. Unleaded premium gasoline with MTBE
10. Leaded gasoline with methanol
11. Unleaded gasoline with methanol
12. Unleaded premium gasoline with methanol
13. #2 Diesel fuel
14. Gasoline vapor return line

B. The labels shall be no less than 1-1/2" x 5" displaying black or white block lettering of not less than 1/4" in height, on a sharply contrasting background. The label and printing shall be resistant to all petroleum products, all weather conditions, and securely affixed to the fill pipe by wire or other substantial means. The label shall be clean and legible at all times.

C. Other information may be displayed on the reverse side of the label as desired.

D. Fuel shall not be introduced into storage tanks unless the proper label is affixed.

R4-31-718. Requirements for gasoline products

Except as provided in EPA waivers for gasoline ethanol blends, gasoline products shall meet all the requirements as delineated below for Area I or Area II. Area I covers all of Arizona from an altitude of 4500 feet or less and including the area within a 40 mile radius of Prescott, Arizona, city limits. Area II is all of Arizona over 4500 feet altitude. The vapor pressure may be up to one pound per square inch higher than the requirements as delineated below during the period from May 1 through September 14 of each year for fuel containing at least nine percent ethanol. The vapor pressure may be up to one pound per square inch higher than the requirements as delineated below during the period from September 15 through April 30 of each year for fuel containing ethanol.

1.	Distillation.	AREA I	AREA II
a.	Evaporation	(Jan.)	(Dec. thru Feb.)
i.	10 percent	131°F(55°C)max	131°F(55°C)max
ii.	50 percent	170°F(77°C)min	170°F(77°C)min
iii.	50 percent	235°F(113°C)max	235°F(113°C)max
iv.	90 percent	365°F(185°C)max	365°F(185°C)max
v.	End point	437°F(225°C)max	437°F(225°C)max
vi.	Residue	2 percent maximum	2 percent maximum
b.	Evaporation	(Feb.,Dec.)	(Mar.,Nov.)
i.	10 percent	140°F(60°C)max	140°F(60°C)max
ii.	50 percent	170°F(77°C)min	170°F(77°C)min
iii.	50 percent	240°F(116°C)max	240°F(116°C)max
iv.	90 percent	365°F(185°C)max	365°F(185°C)max
v.	End point	437°F(225°C)max	437°F(225°C)max
vi.	Residue	2 percent maximum	2 percent maximum
c.	Evaporation	(Mar.,Apr.,Nov.)	(Apr.,Oct.)
i.	10 percent	149°F(65°C)max	149°F(65°C)max
ii.	50 percent	170°F(77°C)min	170°F(77°C)min
iii.	50 percent	245°F(118°C)max	245°F(118°C)max

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IMPORTANT - The underlined portions of these pages are proposed rules and are NOT in effect at this time.

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iv.	90 percent	374°F(190°C)max	374°F(190°C)max
v.	End point	437°F(225°C)max	437°F(225°C)max
vi.	Residue	2 percent maximum	2 percent maximum
d.	Evaporation	(May thru Oct.)	(May thru Sept.)
i.	10 percent	158°F(70°C)max	158°F(70°C)max
ii.	50 percent	170°F(77°C)min	170°F(77°C)min
iii.	50 percent	250°F(121°C)max	250°F(121°C)max
iv.	90 percent	374°F(190°C)max	374°F(190°C)max
v.	End point	437°F(225°C)max	437°F(225°C)max
vi.	Residue	2 percent maximum	2 percent maximum

2. Pressure.

a. The maximum Reid Vapor Pressure authorized for Area I shall be:

i. 62kPa (9.0 psi) (June thru Aug.)
ii. 66kPa (9.5 psi) (May,Sept.)
iii. 69kPa (10.0 psi) (Apr.,Oct.)
iv. 79kPa (11.5 psi) (Mar.,Nov.)
v. 93kPa (13.5 psi) (Dec. thru Feb.)

b. The maximum Reid Vapor Pressure authorized for Area II shall be:

i. 62kPa (9.0 psi) (June, thru Aug.)
ii. 66kPa (9.5 psi) (May,Sept.)
iii. 79kPa (11.5 psi) (Apr.,Oct.)
iv. 93kPa (13.5 psi) (Nov. thru Mar.)

3. Vapor/Liquid ratio of 20:1, maximum.

a. Test temperatures for Area I shall be:

i. 116° F (47° C) (Jan.)
ii. 124° F (51° C) (Feb.,Dec.)
iii. 133° F (56° C) (Mar.,Apr.,Nov.)
iv. 140° F (60° C) (May thru Oct.)

b. Test temperatures for Area II shall be:

i. 116° F (47° C) (Dec. thru Feb.)
ii. 124° F (51° C) (Mar.,Nov.)
iii. 133° F (56° C) (Apr.,Oct.)
iv. 140° F (60° C) (May thru Sept.)

4. Corrosion. When a copper testing strip is immersed in finished gasoline for three hours at 122°F, the corrosion discoloration shall not exceed a slight tarnish, as set forth in classification No. 1, ASTM D 130.

5. Sulfur. Sulfur content shall not exceed:

a. 0.10 percent by weight, for unleaded gasoline.

b. 0.15 percent by weight, for leaded gasoline.

6. Existent gum content: Gum content shall not exceed five milligrams per 100 milliliters (after Heptane wash).

7. Visible water and sediment: The finished gasoline shall be visually free of undissolved water, sediment, and suspended matter and shall be clear and bright at the ambient temperature or 70°F (21°C), whichever is higher.

8. Lead. Lead content shall not exceed:

a. .05 grams per U.S. gallon for unleaded gasoline.

b. Amounts prescribed by EPA regulations for leaded gasoline.

9. The minimum octane rating as determined by (R+M)/2 for the state shall be:

a. For unleaded 85

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IMPORTANT - The underlined portions of these pages are proposed rules and are NOT in effect at this time.

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b. For leaded 87

10. Oxidation stability. The indication period shall be equal to or greater than 240 minutes.

R4-31-719. Requirements for diesel fuel

A. All No. 1-D Diesel fuel shall meet all of the requirements of ASTM D 975, Standard Specifications for Diesel Fuel Oils, 1989 edition, which is incorporated herein by reference and on file with the Office of the Secretary of State. The Specifications incorporated herein by this rule do not include any later amendments or editions of Specifications. Copies of these Specifications are available from the Department and from the American Society for Testing Materials, 1916 Race Street, Philadelphia, PA 19103-1187.

B. All No. 2-D Diesel fuel shall meet all of the specifications of ASTM D 975, Standard Specifications for Diesel Fuel Oils, 1989 edition, which is incorporated herein by reference and on file with the Office of the Secretary of State. The Specifications incorporated herein by this rule do not include any later amendments or editions of Specifications. Copies of these Specifications are available from the Department and from the American Society for Testing Materials, 1916 Race Street, Philadelphia, PA 19103-1187.51

R4-31-720. Testing methods

The method of test shall be the latest methods established by the American Society for Testing and Materials.

1. Tests for gasoline:

a. Distillation. The test shall be ASTM D 86.

b. Corrosion. The test shall be ASTM D 130.

c. Sulfur. The test shall be either ASTM D 1266 or ASTM D 2622.

d. Octane number. The test shall be either ASTM D 2700 motor method and D2699 research method or ASTM D 2699 research method, coupled with a proper computer algorithm to determine motor octane number. Octane number results shall be given as:

$$\text{"anti-knock index"} = \frac{\text{Research method + motor method}}{2}$$

e. The test used to determine the lead content of gasoline shall be either ASTM D 2547 or D2599. For lead levels below 0.1 gram per gallon, use ASTM methods D 3116 or D3329 or D3237.

f. The gum content of gasoline shall be determined by using the ASTM D 381 method.

g. V/L ratio. The test shall be ASTM D 2533 or D439, Appendix 11.

h. Oxidation stability. The test shall be ASTM D 525.

2. Tests for diesel fuels:

a. Cloud point. The test shall be ASTM D 2500.

b. Flash point. The test shall be ASTM D 56 or D 93.

c. Viscosity. The test shall be ASTM D 445.

d. Visible water and sediment. The test shall be ASTM D 1796.

e. Carbon residue. The test shall be on ten percent residuum, using ASTM D 524 as the test.

f. Ash. The test shall be ASTM D 482.

g. Cetane number. The test shall be ASTM D 613; however, the calculated Cetane Index, ASTM 976, may also be used. In the case of a dispute, D 613 shall be the referee method.

h. Distillation. The test shall be ASTM D 86.

i. Corrosion. The test shall be ASTM D 130.

R4-31-721. Testing samples

Samples of petroleum products for testing shall be obtained by the personnel of the Department from the same dispensing device used for sales to customers. Samples shall be taken in the following manner:

1. At the retail dispensing device, the testing sample shall be collected in a clear or brown glass bottle, or a metal container approved for such use.

2. The container shall be sealed immediately after the testing sample has been taken.

3. The testing sample shall be collected after at least one gallon has been dispensed, or within 15 minutes of normal use of the dispenser.

4. This sample shall be considered representative of the product dispensed.

PIMA ASSOCIATION OF GOVERNMENTS
405 TRANSAMERICA BUILDING
TUCSON, ARIZONA 85701
792-1093

November 28, 1989

AIR QUALITY COMPLIANCE UPDATE

"The 1987 Carbon Monoxide State Implementation Plan Revision for the Tucson Planning Area" (SIP Revision) was approved by EPA on August 10, 1988.

Omnibus Air Quality Bills of 1987 (S.B. 1360) and 1988 (H.B. 2206) added air quality programs to be implemented.

1987 ambient air quality modeling in the SIP Revision projects attainment of the carbon monoxide standard in early 1990.

A schedule for redesignation to "Attainment" for the Pima County Carbon Monoxide Nonattainment Area has been tentatively set; showing application to EPA in the summer of 1991.

Programs required for air quality compliance include commitments made in the State Implementation Plan (SIP), requirements of Arizona legislation (LEG) including S.B. 1360 (1360) and H.B. 2206 (2206) and local ordinances (ORD) as well as voluntary efforts (VOL).

PROGRAMS

* State Inspection/Maintenance Program (LEG) expanded and strengthened (1360) (2206)

* Travel Reduction Program (ORD)(SIP)

* Implement Short Range Transit Plan (SIP)

* Implement Oxyfuels Program (2206)

* Clean burning fuels evaluation programs (1360)

* Adjusted work hours (1360)

* Winter daylight savings time evaluation study (1360)

* Commitment to expanded bicycle paths, lanes and facilities (1360)(SIP)

* Traffic control signal synchronization (1360)

* Voluntary no-drive days program (2206)

* Permissive protected left turn (Lag left) (SIP)(VOL)

* RideShare Program (VOL)(SIP)

* Park and Ride lots (SIP)(VOL)

PROGRAMS (cont.)

* Parking Management (SIP)

* Traffic count programs (SIP)

* One half mile spacing policy for separation of traffic signals (SIP)

* Commitment to Long Range Modeling and Monitoring Program (SIP)

* Revise the Regional Transportation Plan to include more weight to air quality impacts - BAJA Project (VOL)

* Develop Regional Comprehensive Land Use Plan (VOL)

The effective programs and commitments that are required by the SIP and implemented by state law and local ordinances must continue if Pima County is to maintain air quality compliance in the long term. The PAG jurisdictions are commited to do their part in assuring continued compliance with the air quality standards.

PIMA ASSOCIATION OF GOVERNMENTS
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TUCSON, ARIZONA 85701
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TRAVEL REDUCTION PROGRAM

Pima County
11/28/89 Update

HISTORY

Pima County's Travel Reduction Program (TRP) is the result of five local ordinances and IGA. The IGA identified Pima Association Of Governments (PAG) as the centralized point of implementation.

Region-wide implementation began in January 1989.

Program objective:
15% alternate mode usage or VMT reduction end of year 1, 20% end of year 2, and 25% end of year 3.

ADEQ funds at approximately $250,000 per year.

PAG staffs with four people.

TRAVEL REDUCTION PROGRAM
STATUS TO DATE

120 major employers with 90,000 employees at 154 sites actively participating.

142 sites have completed the survey phase yielding an average response rate of 68% (47,900 surveys returned).

23 TRP plans have been approved by TRP Regional Task Force and sent for Lead Agency review.

PIMA ASSOCIATION OF GOVERNMENTS

405 TRANSAMERICA BUILDING
TUCSON, ARIZONA 85701
792-1093

TRP TASK FORCE MEMBERS

MAJOR EMPLOYERS (10)

Arnoldo Acosta	Burr-Brown Corporation	746-7565
Larry Barton	University of Arizona	621-3710
H. Duane Bock	Tucson Electric Power Company	745-7126
Carol Reynolds	Sheraton El Conquistador Resort	742-7000
Mark J. Grushka	Tucson Medical Center	327-5461
Geno Patriarca	Davis-Monthan Air Force Base	750-5791
Melissa Franklin	Amphitheater Public Schools	742-8024
Catherine Smith	Tucson Airport Authority	573-8100
Ed Spaulding	Hughes Aircraft Company	794-4400
Tom J. Brosnan	Arizona Portland Cement Co.	622-3503

VOLUNTARY PARTICIPANTS (2)

Barbara Lowell	PICOR	748-7100
Tim Murphy	Forest City Southwest	888-3962

JURISDICTION REPRESENTATIVE (5)

Fernando Castro	City of South Tucson	792-2424
Charles Dinauer	Town of Marana	624-9917
Jesse Craft	Pima County	882-2608
James Peterson	Town of Oro Valley	297-2591
Karen Heidel	City of Tucson	791-5414

PUBLIC INTEREST ORGANIZATION REPRESENTATIVES (2)

Kathy Loomis	League of Women Voters	886-7500
To Be Determined		

TRP TECHNICAL ADVISORY COMMITTEE

Jim Altenstadter	Pima Cty. Planning and Dev. Svc.	792-8361
Tom Buick	PAG Transp. Planning Division	628-5313
George Caria	SunTran	623-4301
Greg Carmichael	Pima Cty. Air Qual. Control Dist.	792-8618
Fernando Castro	City of South Tucson	792-2424
Charles Dinauer	Town of Marana	624-9917
Jesse Craft	Pima Cty. Dept. of Transportation	882-2608
Joshua Lytle	Tucson Planning Department	791-4505
James Peterson	Town of Oro Valley	297-2591
Karen Heidel	Office of Energy & Environment	791-5414
Martha Salvato	PAG Air Quality	792-1093

TRAVEL REDUCTION PROGRAM
MAJOR EMPLOYER SUMMARY
NOVEMBER 27, 1989

989	Notice Sent	CEO Pres.	Survey	Alt. Modes Info Dissem.	9-Week Planning Period Begun	Plan Submitted to PAG	Plan Approved by Task Force	Plan Approved by Lead Agency
ANUARY								
Amphitheater Public Schools (3)	X	X	X	X	08/30/89	11/01/89	11/20/89	
City of Tucson (9)	X	X	X	X	09/19/89	11/22/89		
Federal Correctional Inst.	X	X	X	X	10/12/89			
Huck Manufacturing Co.	X	X	X	X	07/12/89	09/11/89	09/18/89	
Hughes Aircraft Co.	X	X	X	X	09/13/89	11/01/89		
Sheraton El Conquistador	X	X	X	X	07/21/89	09/13/89	10/16/89	
V.A. Medical Center	X	X	X	X	08/14/89	10/16/89	11/20/89	
ASARCO	X	X	X	X	08/11/89	09/25/89	10/16/89	
Broadway Southwest-Park Mall	X	X	X	X	09/26/89	11/24/89		
Broadway Southwest-Tucson Mall	X	X	X	X	09/26/89			
Cooke Cablevision	X	X	X	X	08/17/89	10/16/89	11/20/89	
La Frontera Medical Center	X	X	X	X	08/14/89	10/06/89	10/16/89	
Palo Verde Hospital	X	X	#					
EBRUARY								
Arizona Air National Guard	X	X	X	X	10/04/89			
Foley's (2)	X	X	X	X	09/26/89			
Arizona Portland Cement Co.	X	X	X	X	09/20/89	10/20/89	11/20/89	
Blue Circle West Concrete	X	X	X	X	08/31/89	10/17/89	11/20/89	
Brush Wellman, Inc.	X	X	X	X	10/04/89			
Del Webb Communities, Inc.	X	X	X	X	09/08/89			
El Dorado Hospital	X	X	X	X	09/11/89	11/01/89	11/20/89	
Goodwill Indust. of Tucson	X	X	X	X	09/12/89	10/12/89	11/20/89	
Hotel Park Tucson	X	X	X	X	10/13/89			
Jim Click-Auto Mall	X	X	X	X	09/08/89	11/01/89	11/20/89	
Jim Click-22 St.	X	X	X	X	09/08/89	11/20/89		
Montgomery Ward & Co.	X	X	X	X	08/31/89	11/02/89		
Sears Roebuck & Co-Tucson Mall	X	X	X	X	08/31/89	10/31/89	11/20/89	
Sears Roebuck & Co-Park Mall	X	X	X	X	09/26/89	11/15/89		

= Major employer volunteering to begin TRP.
= Volunteer company not required by TRO to participate.
= Step in progress/completed.
= Does not meet site FTE minimum requirements.
= New date reflects TRP Task Force deferral.

TRAVEL REDUCTION PROGRAM
MAJOR EMPLOYER SUMMARY
NOVEMBER 27, 1989

1989	Notice Sent	CEO Pres.	Survey	Alt. Modes Info Dissem.	9-Week Planning Period Begun	Plan Submitted to PAG	Plan Approved by Task Force	Plan Approved by Lead Agency
FEBRUARY (Cont'd)								
The Foster Grant Corp.	X	X	X	X	08/31/89	09/15/89	10/16/89	
#The Tanner Co.	X	X	#	X				
TNI Partners	X	X	X	X	08/21/89	11/13/89		
Tucson Medical Center	X	X	X	X	09/11/89	11/13/89	11/20/89	
Tucson Medical Center-La Posada	X	X	X	X	10/19/89			
MARCH								
*Davis-Monthan AFB	X	X	X	X	10/05/89			
+National Optical Astronomy Obs.	X	X	X	X	09/08/89	09/28/89	10/16/89	
*Pima County (5)	X	X	X	X	10/25/89			
*U.S. West (3)	X	X	X	X				
Arizona Inn	X	X	X	X	10/06/89			
Desert Life Health Center	X	X	X	X	10/04/89			
#Inn at the Airport	X	X	#	X				
#Skyline Country Club	X	X	#					
Southern Pacific Transp. Co.	X	X	X	X	10/04/89			
Thomas-Davis Medical Center	X	X	X	X	10/05/89			
Cadence Technologies, Inc. (formerly Thor Electronics)	X	X	X	X	09/13/89	11/20/89		
Tucson Airport Authority	X	X	X	X	09/26/89	11/16/89		
Tucson General Hospital	X	X	X	X	11/03/89			
APRIL								
*McCulloch Corporation	X	X	X	X	10/10/89	11/20/89		
Anderson DeBartolo Pan, Inc.	X	X	X	X	09/26/89	11/13/89		
Dillard's Dept. Stores (4)	X	X	X	X	10/10/89			
Group Health Medical Assoc. (formerly Maxicare)	X	X	X	X	11/28/89			

* = Major employer volunteering to begin TRP.
\+ = Volunteer company not required by TRO to participate.
X = Step in progress/completed.
\# = Does not meet site FTE minimum requirements.
= New date reflects TRP Task Force deferral.

TRAVEL REDUCTION PROGRAM
MAJOR EMPLOYER SUMMARY
NOVEMBER 27, 1989

1989	Notice Sent	CEO Pres.	Survey	Alt. Modes Info Dissem.	9-Week Planning Period Begun	Plan Submitted to PAG	Plan Approved by Task Force	Plan Approved by Lead Agency
APRIL (Cont'd)								
Handmaker Jewish Geri. Ctr.	X	X	X	X	10/19/89			
K-Mart (Valencia)	X	X	X	X	10/12/89	10/13/89	11/20/89	
K-Mart (Broadway)	X	X	X	X	10/12/89			
K-Mart (Miracle Mile)	X	X	X	X	10/12/89			
Loews Ventana Canyon Resort	X	X	X	X	10/13/89			
Northwest Hospital	X	X	X	X	10/31/89			
Old Tucson Company	X	X	X	X	11/03/89			
Southwest Gas Company	X	X	X	X	09/20/89	10/02/89	11/20/89	
Sunnyside School District	X	X	X	X	09/22/89	11/22/89		
Tucson Hilton East	X	X	X	X	09/26/89	10/12/89	11/20/89	
Tucson Shopper	X	X	X	X	09/20/89	10/12/89	11/20/89	
Valley House Health Care	X	X	X	X	10/16/89			
MAY								
Arizona State Prison Complex	X	X	X	X	10/18/89			
Burr Brown	X	X	X	X	10/20/89			
Pima Savings & Loan	X	X	X	X				
Southern Arizona Mental H.C.	X	X	X	X	11/10/89			
Sun Tran	X	X	X	X	11/02/89			
Sundt Corporation	X	X	X	X	11/01/89			
University Medical Center	X	X	X	X	11/06/89			
Cyprus Sierrita Corporation	X	X	X	X				
J.C. Penney-El Con	X	X	X	X	10/12/89			
J.C. Penney-Tucson Mall	X	X	X	X	11/10/89			
Learjet Corporation	X	X	X	X	11/03/89			
Sahuarita School District (2)	X	X	X	X	10/27/89	11/8/89	11/20/89	
Tucson National Resort & Spa	X	X	X	X	10/26/89			
Tucson Truck Terminals, Inc.	X	X	X	X	10/10/89			
Villa Campana Health Center	X	X	X	X	10/10/89			
YMCA	X	X	#					

= Major employer volunteering to begin TRP.
= Volunteer company not required by TRO to participate.
= Step in progress/completed.
= Does not meet site FTE minimum requirements.
= New date reflects TRP Task Force deferral.

TRAVEL REDUCTION PROGRAM
MAJOR EMPLOYER SUMMARY
NOVEMBER 27, 1989

1989	Notice Sent	CEO Pres.	Survey	Alt. Modes Info Dissem.	9-Week Planning Period Begun	Plan Submitted to PAG	Plan Approved by Task Force	Plan Approved by Lead Agency
JUNE								
+ABC Trade & Technical Schools	X	X	X	X				
*The Groundskeeper (2)	X	X	X	X				
*Tucson Electric Power Co.	X	X	X	X				
+U.S. Postal Service	X	X	X	X				
Coca-Cola Bottling Co. of Tucson	X	X	X	X	10/26/89			
Control Systems/Hamilton	X	X	X	X				
#Don Mackey Olds-Cadillac	X		#					
El Rio Santa Cruz Health Ctr.	X	X	X	X				
Golden Eagle Dist., Inc.	X	X	X	X				
Krueger Div. of Philips Ind.	X	X	X	X				
Qualtronics Manufacturing	X	X	X	X	11/1/89	11/22/89		
Sunquest Information Systems	X	X	X	X	11/3/89			
Target - Broadway Blvd.	X	X	X	X				
Target - Oracle Road	X	X	X	X				
The Westin La Paloma Resort	X	X	X	X				
Tusonix, Inc.	X	X	X	X				
JULY								
*National Semiconductor Corp.	X	X	X	X				
*Waste Management, Tucson	X	X	X	X				
Alphagraphics Print Shops	X	X	X	X				
Beacon Foundation	X	X	X	X				
Beaudry Motor Company	X	X	X	X				
Devon Gables Health Care Center	X	X	X	X				
Flower Square Health Care Ctr.	X	Refused	X	X				
Great American First Savings	X	X	X	X				
Mission Industries	X	X	X	X	11/3/89			
Palo Verde Plaza Holiday Inn	X	X	X	X				
Patio Pools of Tucson	X	X	X	X				
Shape West	X	X	X	X				
Southwest Vacuum Devices	X	X	X	X				
Watson Chevrolet	X	X	X	X				

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TRAVEL REDUCTION PROGRAM
MAJOR EMPLOYER SUMMARY
NOVEMBER 27, 1989

989	Notice Sent	CEO Pres.	Survey	Alt. Modes Info Dissem.	9-Week Planning Period Begun	Plan Submitted to PAG	Plan Approved by Task Force	Plan Approved by Lead Agency
UGUST								
>University of Arizona	X	X	X	X				
Ansell, Inc.	X	X	X	X				
Bill Breck Dodge	X	X	X	X				
Canyon Ranch Resort	X	X	X	X				
Embassy Suites	X	X	#					
Farmers Investment Company	X	X	X	X				
Flowing Wells School District	X	X	X	X				
Lambda Electronics	X	X	X	X				
Pima Community College	X	X	X	X				
Price Club (Grant Rd.)	X	X	X	X				
Price Club (NW)	X	X	X	X				
Radisson Suite Hotel	X	X	X	X				
R.E. Darling Companies	X	X	X	X				
Sierra Tucson	X	X	X					
St. Joseph's Hospital	X	X	X	X				
Westward Look Hotel	X	X	X	X				
EPTEMBER								
Tucson Unified School District	X	X	X	X				
Pima Association of Governments	X	X	X	X				
Arizona Mail Order Company	X	X	X	X				
Cella Barr	X	X	X	X				
Cigna Healthplan of Arizona	X	X	X	X				
Doubletree Hotel	X	X	X	X				
Hamilton Aviation	X	X	#					
Holmes Tuttle Ford, Inc.	X	X	X	X				
Kalil Bottling Company	X	X	X	X				
O'Rielly Motor Company	X	X	X	X				
St. Mary's Hospital	X	X	X	X				

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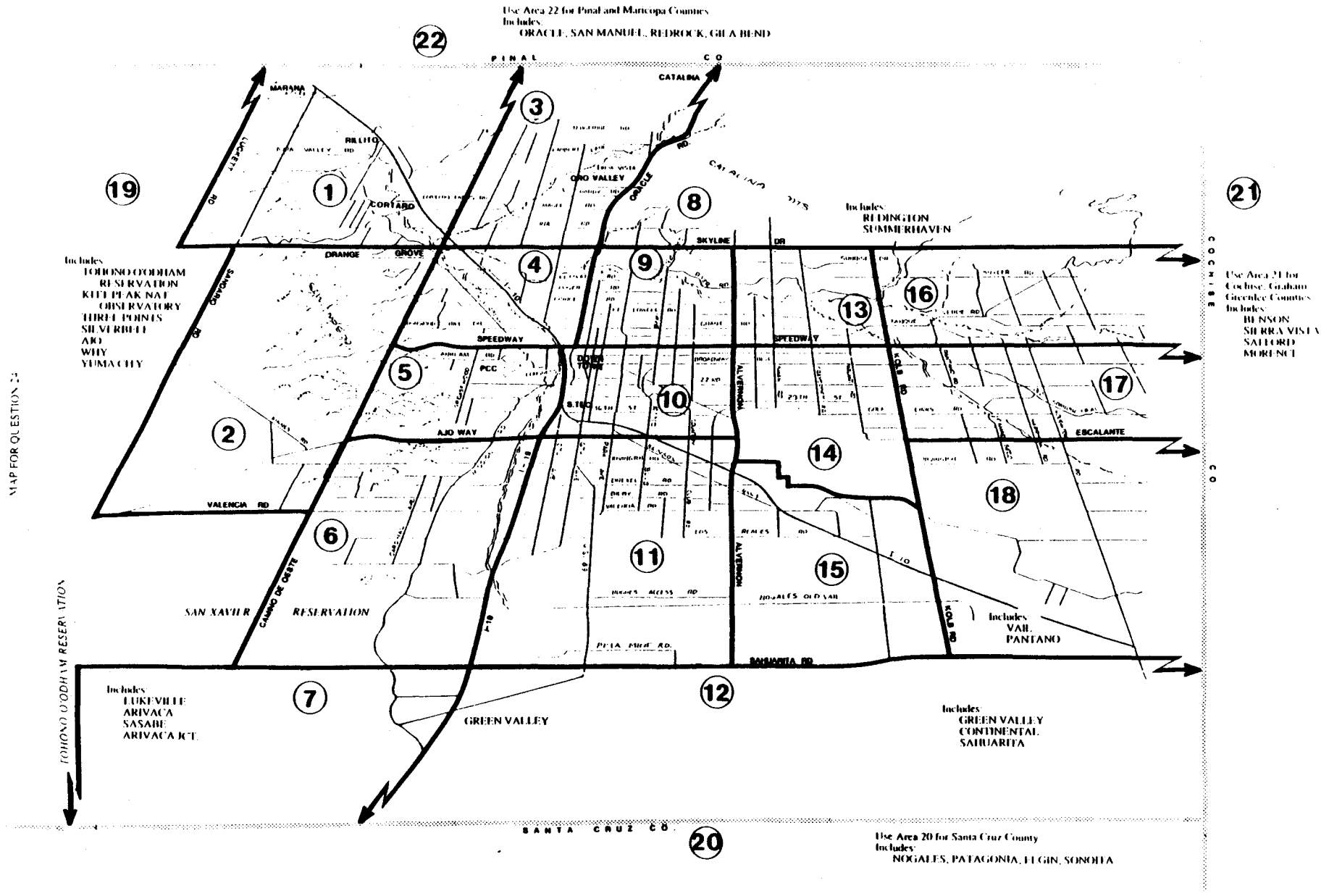
TRAVEL REDUCTION PROGRAM
MAJOR EMPLOYER SUMMARY
NOVEMBER 27, 1989

1989	Notice Sent	CEO Pres.	Survey	Alt. Modes Info Dissem.	9-Week Planning Period Begun	Plan Submitted to PAG	Plan Approved by Task Force	Plan Approved by Lead Agency
SEPTEMBER (Cont'd)								
Tucson Greyhound Park	X	X	X	X				
Wal-Mart (Wetmore)	X	X	X	X				
Wal-Mart (Pantano)	X	X	X	X				
DECEMBER								
IBM	X							

* = Major employer volunteering to begin TRP.
+ = Volunteer company not required by TRO to participate.
X = Step in progress/completed.
# = Does not meet site FTE minimum requirements.
^ = New date reflects TRP Task Force deferral.



MAP FOR QUESTION 23

* * DRAWING ENTRY FORM * *

CASH PRIZES TOTALING $750.00

To thank you for completing the Travel Reduction Program questionnaire, Pima Association of Governments is holding a drawing for CASH PRIZES.

PRIZES

1ST Place	$500.00	(one prize will be awarded)
2ND Place	$ 75.00	(two prizes will be awarded)
3RD Place	$ 25.00	(four prizes will be awarded)

The drawing will be held in April 1989 and will include employee entries from all companies participating in the Travel Reduction Program that return completed questionnaires in January, February or March.

To be eligible for the drawing, your questionnaire must be completely filled out and returned on time. You need not be present at the drawing to win.

If you want to participate in the drawing, please fill out this entry form. Name and phone number information will only be used to contact prize winners. All winners will be notified within thirty days of the drawing.

Your Name: _____

Company: _____

Department: _____

Work Telephone Number: _____

If you do not wish to participate in the drawing, leave this page blank.

- 0 0 0 _____ Company _____ Department
_____ Date

EMPLOYEE SURVEY
TRAVEL REDUCTION PROGRAM

PLEASE READ INSTRUCTIONS AND QUESTIONS CAREFULLY. YOUR OPINION COUNTS.

DEFINITIONS

CARPOOL = 2 - 5 working adults in a vehicle (include family/spouse)
VANPOOL = 6 or more working adults in a vehicle (include family/spouse)
BUS = Sun Tran or Project PPEP Rural Transit

1. Mark **ALL** the ways you use to get to work and indicate the number of days for a typical week.

   1. ☐ Drive alone _____ days per week
   2. ☐ Take the bus _____ days per week
   3. ☐ Carpool _____ days per week
   4. ☐ Vanpool _____ days per week
   5. ☐ Walk _____ days per week
   6. ☐ Bicycle _____ days per week
   7. ☐ Motorcycle _____ days per week

2. How many miles is your current, most common commute (one way)? _____ miles

3. How much time do you currently spend on your average daily commute to work (one way)? _____ minutes

4. When you choose how to travel to work (drive alone, carpool, bus, etc.) what matters most to you? *(Please mark ONLY the single most important thing to you. Mark only one.)*

   1. ☐ Privacy
   2. ☐ Make car available to others at home
   3. ☐ Safety
   4. ☐ Reduce wear and tear on car
   5. ☐ Travel time to work
   6. ☐ Need car before/after work (for example, transportation for children's daycare needs or for shopping)
   7. ☐ Not having to depend on others
   8. ☐ Work schedule (for example, needing to work early or late)
   9. ☐ Exercise or health benefit
   10. ☐ Special needs (for example, wheelchair access)
   11. ☐ Cost of commuting
   12. ☐ Use car during work
   13. ☐ Enjoy traveling with others
   14. ☐ Comfort and relaxation
   15. ☐ Reduce air pollution
   16. ☐ Other (please explain) _____

5. Which one of the following encouraged or would encourage you to try **CARPOOLING?** *(Please mark ONLY the single most important thing to you.)*

   1. ☐ If carpools had covered parking.
   2. ☐ If I could join a carpool with a work schedule compatible with mine.
   3. ☐ If I could carpool regularly, but only two or three days a week.
   4. ☐ If I could arrange transportation for children's daycare needs.
   5. ☐ If my special needs were met (for example, wheelchair access).
   6. ☐ If I could locate a fellow employee who lives near me.
   7. ☐ If carpools had reserved parking near my workplace.
   8. ☐ Other (please explain)_____

DEFINITIONS

CARPOOL	=	**2 - 5 working adults in a vehicle (include family/spouse)**
VANPOOL	=	**6 or more working adults in a vehicle (include family/spouse)**
BUS	=	**Sun Tran or Project PPEP Rural Transit**

6. Which one of the following encouraged or would encourage you to try riding the **BUS?** *(Please mark ONLY the single most important thing to you.)*

1. ☐ If I could make my commute trip without transferring or changing buses.
2. ☐ If I had scheduled information at my stop or workplace.
3. ☐ If the bus were roomy and comfortable to ride.
4. ☐ If bus shelters were provided at my home and work stops.
5. ☐ If the buses and bus stops were safer.
6. ☐ If I could arrange transportation for children's daycare needs.
7. ☐ If my special needs were met (for example, wheelchair access).
8. ☐ If my monthly total bus fare were $_____ (fill in).
9. ☐ If bus stops were closer to my home or workplace.
10. ☐ If the bus came more frequently.
11. ☐ If I could get express service on my commute trip (that is, make very few stops).
12. ☐ Other (please explain)_____

_____

7. Which one of the following encouraged or would encourage you to try **VANPOOLING?** *(Please mark ONLY the single most important thing to you.)*

1. ☐ If the vans used were roomy and comfortable to ride in.
2. ☐ If my monthly total cost were $_____ (fill in).
3. ☐ If there were an overtime/emergency backup vehicle available each day, at no extra cost.
4. ☐ If I could arrange transportation for children's daycare needs.
5. ☐ If my special needs were met (for example, wheelchair access).
6. ☐ If the vanpool had reserved parking near my workplace.
7. ☐ If I could join a vanpool with a work schedule compatible with mine.
8. ☐ Other (please explain)_____

_____

8. Which one of the following encouraged or would encourage you to try **BICYCLING?** *(Please mark ONLY the single most important thing to you.)*

1. ☐ If there were safe bicycle lanes between my home and work.
2. ☐ If showers were provided for bicyclists at my workplace.
3 ☐ If secure bicycle parking areas were provided at work.
4. ☐ If a course in bicycle commuting that covered safety, laws, and maintenance were provided through my employer.
5. ☐ Other (please explain) _____

_____

9. Which of the following categories best describes your experience with a carpool or vanpool?

1. ☐ Currently I am in a carpool or vanpool. **(skip to Question 11)**
2. ☐ Never been in a carpool or vanpool. **(skip to Question 11)**
3. ☐ Previously in a carpool or vanpool but stopped. **(go to 10)**

0 0 0

10. What made you stop using a carpool or vanpool? *(Answer this question only if you checked number 3 on Question 9. Please check one.)*

1. ☐ I ride the bus now.
2. ☐ Did not like making carpool/vanpool arrangements.
3. ☐ Need my car for business.
4. ☐ I moved or changed jobs.
5. ☐ Work schedule (for example, needing to work early or late).
6. ☐ Need my car before/after work (for example, transportation for children's daycare or shopping).
7. ☐ Lost my pooler(s).
8. ☐ Did not like my pooler(s).
9. ☐ Other (please explain) _____

_____

11. Do you drive or ride to work with any other employed adults *(including your family or spouse)*?

1. ☐ Yes (go to 11a)
2. ☐ No (skip to Question 12)

11a. How many adults drive or ride with you?

_____ number

11b. Would you be willing to add another adult?

1. ☐ Yes
2. ☐ No

12. If an additional Park & Ride Lot(s) could be located where you could meet a carpool/vanpool or the bus, would you be likely to use it?

1. ☐ Yes
2. ☐ No

13. In a typical week, how many days do you work at home as a regularly scheduled part of your job?

_____ Days per week

14. Are you able to vary your work start and stop times as a part of an established company policy?

1. ☐ Yes
2. ☐ No

15. At what time do you usually **ARRIVE** at work?

_____ A.M. or _____ P.M.

16. At what time do you usually **LEAVE** work?

_____ A.M. or _____ P.M.

17. How many years have you been employed at your current work site?

1. ☐ Less than 1 year
2. ☐ 1 to 4 years
3. ☐ Over 4 years

18. If all of these options were readily and easily available for your home to work commute, which **three** of these would you be most likely to use? *(Please rank only **THREE**. **"1" as the most likely, "2" as the second most likely, and "3" as the third most likely**).*

1. _____ Carpool
2. _____ Bus
3. _____ Vanpool
4. _____ Bicycle
5. _____ Motorcycle
6. _____ Drive Alone
7. _____ Walk
8. _____ Other (please explain) _____

_____

THE INFORMATION FROM THE FOLLOWING QUESTIONS WILL BE USED FOR STATISTICAL CLASSIFICATION PURPOSES ONLY. THANKS FOR YOUR HELP.

19. Which category best describes the work you do? (Please pick only one.)
    1. ☐ Clerical/Secretarial
    2. ☐ Managerial
    3. ☐ Manufacturing/Production
    4. ☐ Professional
    5. ☐ Sales/Service
    6. ☐ Skilled Crafts/Trades
    7. ☐ Technical

20. Are you male or female?
    1. ☐ Male
    2. ☐ Female

21. In which age group do you fall?
    1. ☐ 18-25 years
    2. ☐ 26-35 years
    3. ☐ 36-45 years
    4. ☐ 46-55 years
    5. ☐ 56-65 years
    6. ☐ 66-75 years
    7. ☐ Over 75 years

22. In which range does your total gross (before taxes) annual family income fall? ***(Please include your spouse.)***
    1. ☐ Less than $10,000
    2. ☐ $10,000 - $14,999
    3. ☐ $15,000 - $19,999
    4. ☐ $20,000 - $29,999
    5. ☐ $30,000 - $39,999
    6. ☐ $40,000 - $59,999
    7. ☐ $60,000 - $79,999
    8. ☐ $80,000 - $99,999
    9. ☐ Over $100,000

23. What is the zip code of your home street address? _____

24. Please carefully examine the Tucson map on the next page and find the locations of your home and work place. ***(Note the circled number on the map contained within the same area as your home address and your work address. Enter the appropriate numbers below.)***
    1. Map location of my home _____ (area number)
    2. Map location of my usual work place _____ (area number)

CLEAN AIR FORCE
DON'T DRIVE ONE IN FIVE

Pre-Campaign Study

report of a survey
conducted for the

REGIONAL PUBLIC TRANSPORTATION AUTHORITY

Study 89-544
September, 1989

FOR FURTHER INFORMATION:

Michael J. O'Neil, Ph.D.
O'Neil Associates, Inc.
412 East Southern Avenue
Tempe, Arizona 85282
(602) 967-4441 (Tempe-Phoenix)
(602) 252-4991 (Northwest Valley)

ONEIL ASSOCIATES

EXECUTIVE HIGHLIGHTS

Nearly all residents recognize that there is an air quality problem in Maricopa County. The degree to which air quality is perceived to be a problem varies, yet two-thirds identify the situation as serious. There is a strong feeling among residents that air quality will get worse before it gets better.

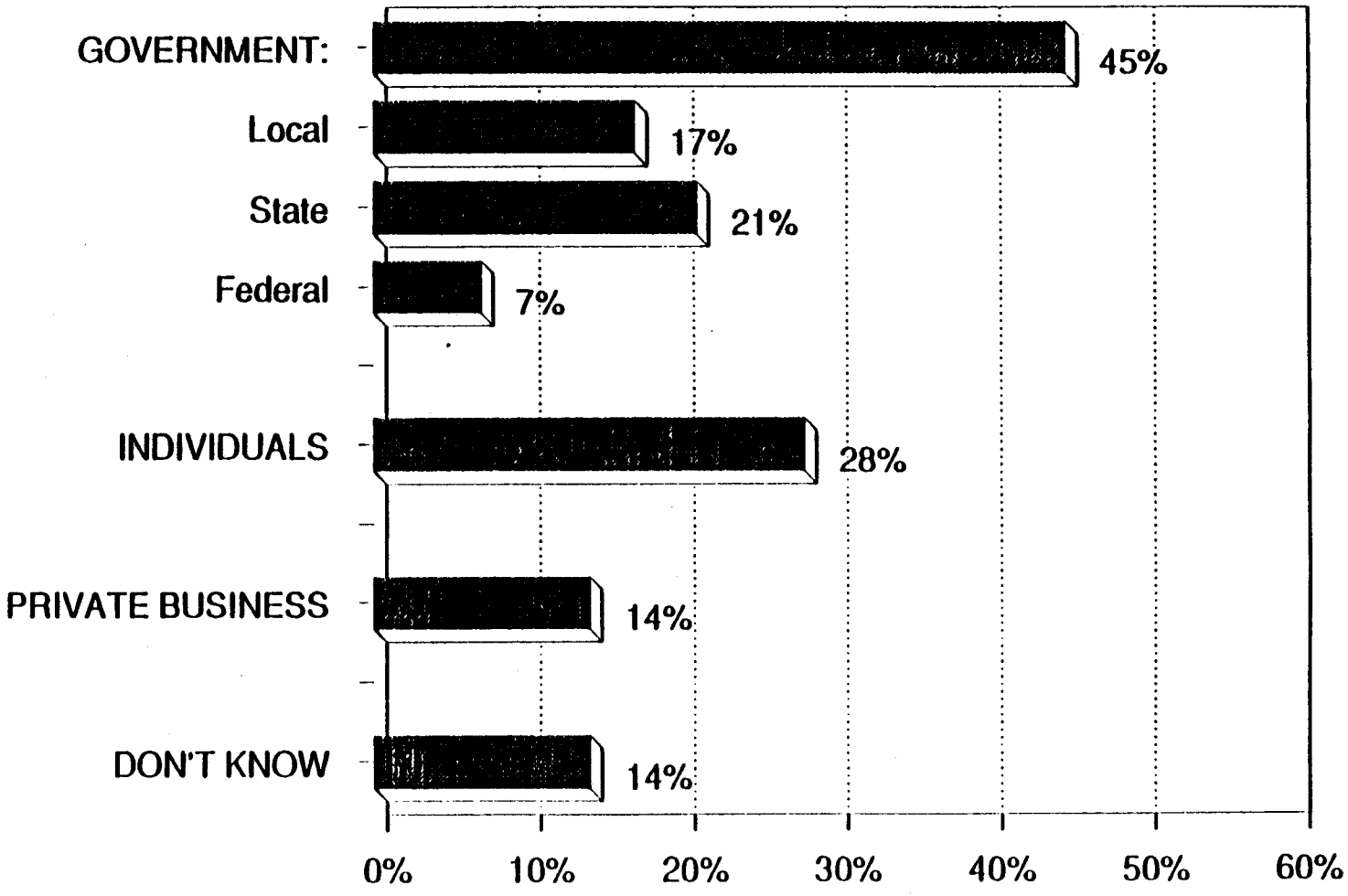
Government officials on a local, state, and federal level are targeted as the most effective catalyst for bringing about an improvement in air quality. Residents want to see government pass legislation that will improve air quality. Local officials are pinpointed for this task because they live closest to the problem and are in a position to pass laws to protect the quality of air in Maricopa County.

Nearly one-fourth of the Maricopa County residents surveyed feel that *individuals* can most effectively solve the air quality problem by working together with government and driving their cars less. **Other research we have conducted regarding responsibility for air quality problems shows a strong sentiment among residents that government needs to create incentives to *motivate* individuals to drive less.** Thus, there is an understanding that individuals need to limit their individual travel behavior to solve the problem, but research indicates that government is held responsible for encouraging these shifts in individual travel behavior.

When asked about the effect of oxygenated fuels on improving air quality, 29% of residents did not know what oxygenated fuels are. The general consensus among residents is that oxygenated fuels will help to solve air quality problems, as will an expansion of bus service and a limitation in the use of private vehicles. There is also recognition among respondents that limiting the use of cars will still be necessary even if cars are using cleaner burning fuels.

The primary travel behavior to and from work continues to be driving alone, though there has been an increase in the percentage of respondents who car-pool to work. Only a very small percentage ride the public bus system, walk, or ride bikes or motorcycles.

WHO CAN SOLVE AIR QUALITY PROBLEMS MOST EFFECTIVELY



ASSOCIATES

CAMPAIGN OVERVIEW

BACKGROUND

The Clean Air Force Campaign Voluntary "Don't Drive One-In-Five" Campaign is a multi-media promotional campaign designed to highlight the critical air pollution problems in Maricopa County.

The primary focus of the Campaign:

1. Convince people to alter their driving patterns so that they use an alternative mode of transportation at least one day a week;

2. Instill in the public the idea that one of the best ways to reduce the air pollution problem is to reduce the amount of vehicle miles travelled;

3. Reinforce in people the direct relationship between automobile use and air pollution.

CAMPAIGN OBJECTIVES

The primary objectives of the Clean Air Force Campaign are to:

- Educate the public about alterative modes of transportation.

- Educate people about the relationship of vehicle use, air pollution, and their harmful health effects.

- Educate the public about a high pollution advisory program and convince people to especially reduce their vehicle travel on high pollution days when inversions occur in order to prevent an exceedance of the National Ambient Air Quality Standard.

- To work in conjunction with the Travel Reduction Program (TRP) and area employers to reduce commute trips by their employees during peak periods.

- To develop and promote a joint educational campaign with the local media and schools to help improve air quality and campaign participation.

- To educate the public that the mandatory use of oxygenated fuels will reduce Carbon Monoxide levels in the Valley.

CAMPAIGN GOAL

The goal of the Clean Air Force Campaign is to reduce average daily weekday trips by 4.0% or 2.1 million miles thereby reducing 34 tons of Carbon Monoxide. In Maricopa County, it is estimated that during the 1989 - 90 Clean Air Force Campaign, 52.2 million miles will be driven on an average weekday.

CAMPAIGN SPONSORS

Arizona Department of Environmental Quality
Arizona Energy Office
Maricopa County
Phoenix Chamber of Commerce
Regional Public Transportation Authority

FACT SHEET

CAMPAIGN CHAIRMAN:	Richard Lehmann, President & CEO Valley National Bank Phoenix, Arizona
CAMPAIGN GOAL:	The goal of the 1989 - 90 Clean Air Force Campaign is to reduce average daily weekday trips by 4.0% or 2.1 million miles thereby reducing 34 tons of Carbon Monoxide (CO).
TRAFFIC DATA:	In Maricopa County, it is estimated that during the 1989 - 1990 Clean Air Force Campaign 52.2 million miles will be driven on an average weekday.
CAMPAIGN SPONSORS:	The Arizona Energy Office Arizona Department of Environmental Quality Maricopa County The Phoenix Chamber of Commerce The Regional Public Transportation Authority
AIR POLLUTION FACTS:	In 1987, Phoenix had the third highest concentration of carbon monoxide pollution in the nation. In recent months, our ranking has improved to now place Phoenix between the 7th and 10th worst cities in the nation.
AREAS SERVED:	Maricopa County, Arizona
POLLUTION PER PERSON:	• Residents of Maricopa County consumed 56% of the total motor gasoline consumed in the State in 1988. • Average motor fuel consumption per registered motor vehicle was 620.1 gallons per vehicle per yearin 1988. • The average one-way work commute is 9.6 miles or 19.2 miles roundtrip. • It would take 32 miles to reduce one pound of carbon monoxide. • It would take 25 miles to reduce one pound of total pollutants.

TRAVEL REDUCTION PROGRAM

ORDER OF EVENTS

1. County contacts employers to determine eligibility
2. County sends letter to employers asking for the number of surveys needed
3. County provides employer with commuter survey
4. Employer conducts survey within 30 days of receipt
5. County analyzes survey and provides report back to company
6. Company then has 9 weeks to submit an action plan
7. The Task Force and the Travel Reduction Board will review the action plan.
8. They have 90 days to approve or reject the plan.

Flextime

WHAT IS FLEXTIME?

"Flextime" means a system of varying work hours, whereby employees start and end work at different schedules, while maintaining a core time of coverage in the office. The "core time" is a time when everyone is expected to be on the job - generally from 9:30 a.m. to 3:30 p.m.

HOW DOES FLEXTIME ACTUALLY WORK?

There are several guidelines for developing a flextime program:

1. A project coordinator should be appointed to study current operations and customize the program.
2. Establish the core time of service as well as the range of start and stop times.
3. Develop a pilot program in one department with a group ranging from 20 to 200 employees.

RESOURCES AVAILABLE

The RPTA Staff can:

1. Provide professional assistance in developing a flextime program in your company.
2. Provide corporate case studies on organizations currently using flextime.
3. Host a training session for managers and employees.
4. Provide flextime brochures and promotional materials.

This material has been prepared under the auspices of the Maricopa County Department of Health Services with funding from an air quality grant by the Arizona Department of Environmental Quality.

Transit

WHAT IS THE BUS SYSTEM LIKE TODAY IN OUR VALLEY?

- Valley transit providers operate an ever-growing number of routes all over the Valley. There are many regular local routes in addition to several new express routes designed specifically for commuters.
- A one-ride bus trip is still a bargain for only 75 cents or $1.00 (for express) which can be much less than the cost of driving your car.
- Monthly bus passes can be purchased with up to a 20% savings from the single ticket price. It also makes it much more convenient for employees who ride the bus ($25 for local pass, $30 for express).

RESOURCES AVAILABLE

RPTA can:

- Help you develop a special bus promotion for your employees.
- Provide you with bus schedules, bus books, racks and specially designed materials to help you inform your employees about the bus system and how to use it.
- Provide you with a "How To" booklet including simple procedures and forms that will help you set up a ticket sales program tailored for your organization.
- Provide you with information on both the State and Federal tax laws allowing deductions for the transportation subsidies.

WHAT CAN AN EMPLOYER DO TO ENCOURAGE TRANSIT?

Provide Incentives to Employees

- Subsidize the cost - $15.00 per month per employee is a non-taxable fringe benefit (Federal), tax deductible by the State of Arizona and a big bonus to employees.
- Conduct drawings for prizes to bus riders.
- Have contests between departments or between riders for the most number of employees or number of days riding the bus.

Please turn to the reverse side of this page for additional information.

- Employers can assist in organizing subscription bus service for their employees and possibly subsidizing the cost.

Remove Obstacles Employees Sometimes Face

- Allow bus riders flexibility with work hours to accommodate their bus schedule.
- Have a company car available for business related errands performed by employees as part of their job.
- Develop an "emergency policy" for the employees who rideshare and have a true emergency situation that requires them to leave work.

Travel Reduction Program Strategies

- Construct special loading and unloading facilities or re-route traffic in the parking area to minimize problems with drop off and pick-up of bus riders and other ridesharing employees.
- Construct a sheltered bus stop or provide benches for employees waiting for the bus.

Promote and Provide Information to Employees Periodically

- Keep a supply of bus books and/or schedules available in visible areas.
- Publish articles and/or post information about new or revised transit routes, schedule changes (3 times/year), testimonials from employees, etc.
- Provide information on the bus pass program, schedules, and a new bus rider's guide to new hires during orientation.
- Publish the Transit Information number in your Company Phone Directory.

For more information, consult with your Rideshare Representative or call Phoenix Transit at 261-8505.

This material has been prepared under the auspices of the Maricopa County Department of Health Services with funding from an air quality grant by the Arizona Department of Environmental Quality.

Bicycling and Walking

WHAT ADDED BENEFITS ARE THERE WITH THE BICYCLE COMMUTE?

- Absenteeism can be greatly reduced through employee participation in a physical exercise program.
- The cost of 1 bicycle locker is 1/10th that of 1 parking space.
- Bicycles emit absolutely no hydrocarbons, nitrogen oxides or carbon monoxide.
- Good public relations for a company by demonstrating to the community an open concern for the maintenance of employee health.
- Employees enjoy their commute and start the day with a feeling of accomplishment through providing their own transportation.

RESOURCES AVAILABLE

RPTA can:

- Provide information and maps for the different established bike routes in the Valley.
- Facilitate discussions with city planners to identify the safest bicycle routes to your work site(s).
- Provide you with material especially designed to inform and encourage the bicycle commute.

WHAT YOU CAN DO TO PROMOTE BICYCLING

- Offer incentives (i.e. bonuses, rebate on purchase of a bike for the purpose of commuting, rebate on purchase of helmet).
- Furnish company bicycles which are quite useful and cost efficient for short trips or inter-plant travel.
- Provide bicycle lockers for storage and to ensure against theft.
- Eliminate barriers by providing changing areas and showers.
- Offer 15 minute "grace period" to all bicycle commuters.
- Organize employee recreational rides and "lunch-and-learn" programs.

Please turn to the reverse side of this page for more information.

WALKING

- Most of the same benefits as above can be applied to pedestrian programs.
- Assistance can be provided to locate barriers to pedestrian travel.
- RPTA can assist in promotional events to encourage pedestrian travel.

This material has been prepared under the auspices of the Maricopa County Department of Health Services with funding from an air quality grant by the Arizona Department of Environmental Quality.

Vanpool

WHAT IS VANPOOLING?

- Vanpooling is an organized program in which a group of 7-15 commuters with similar destinations and work hours share the ride to work each day.
- The vanpool driver (who is part of the vanpool group) receives a free commute each day, plus personal use of the van on weekends and off hours.
- Vanpool passengers pay a monthly fare based on the group's daily roundtrip mileage. In return they receive a chauffeured ride to work each day which turns commute time into productive time; riders can read, relax, converse, or prepare for the day's work instead of hassling with the traffic.

HOW DOES A VANPOOL OPERATE?

- The driver signs a 30 day agreement (no lease is involved) and is responsible for driving fellow commuters, arranging for maintenance, being punctual, keeping records, and collecting fares.
- Riders pay the driver a monthly subscription fare (also with a 30 day commitment) based on the style of van, daily roundtrip mileage, and fuel costs.
- The vanpool fare includes ALL expenses for the vanpool's regular operation (excluding parking fees, van washes, etc.).
- Insurance liabilities, maintenance, monthly vanpool lease costs, taxes, title and registration charges are paid by the vanpool company.

Please turn to the reverse side of this page for more information.

RESOURCES AVAILABLE

RPTA can:

- Assist in group formation through the rideshare matching program.
- Provide printed materials for employee distribution and assist the employer with any promotional efforts.
- Provide fare information based on the proposed route(s) prior to their formation.
- Conduct general information and group formation meetings for your interested employees.

WHAT CAN AN EMPLOYER DO TO ENCOURAGE VANPOOLING?

- Allow vanpool information meetings to be held at the work site (preferably on work time, if possible).
- Provide preferential and/or discounted or free parking for all vanpools.
- Subsidize vanpool fares to encourage their use.
- Make vanpool information available as part of your new employee orientation program.

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Transportation Management Associations

WHAT IS A TMA?

Transportation Management Associations (TMAs) are groups of employers, real estate developers, building owners, and local government officials who work together to solve local transportation problems and to establish policies.

Nationwide, as transportation becomes an increasingly urgent issue, the private sector has taken on a greater role in transportation management. Public/private sector partnerships have emerged to identify techniques for managing traffic congestion, making needed capital improvements, solving inadequate parking problems and more.

TMA BENEFITS

TMAs provide a forum for major employers, developers, and government leaders in your community to solve transportation problems.

TMAs provide opportunities to reduce the cost of compliance with local travel reduction legislation through shared services, staffing and planning that otherwise would be required on an individual basis.

TMAs also provide the opportunity for shared capital improvement expenditures, which may be needed to reduce traffic congestion.

RESOURCES AVAILABLE:

RPTA can provide:

Personalized assistance in TMA formation.

Identification of other key decision-makers in your area with an interest in transportation issues.

Assistance in preparing a work plan through site analysis, survey of commuters, identification of issues, and more.

Presentations to interested groups regarding TMAs and their benefits.

Implementation assistance.

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Services Available to Employers

THE PROBLEM:

Two of the most critical problems in the Valley are traffic congestion and air pollution. These problems threaten the potential future economic growth and have already affected our quality of life.

Employers experience problems with recruiting qualified employees, parking and traffic congestion around the worksite and decreased employee productivity because of commute-related stress.

Individuals in the Valley of the Sun experience frustration with traffic congestion, road construction, parking problems and lowered air quality standards. This affects their cost of living and their productivity.

THE SOLUTION:

Regional Public Transportation Authority (RPTA) is an organization with the goal of making commuting easier, less costly and thus reducing air pollution and energy consumption. RPTA offers specifically designed services and products to employers, works jointly with local governments, developers and consultants, as well as providing carpool matching for individuals.

WHAT WE OFFER:

RPTA offers a number of specialized services:

Consulting Service

- Provide expertise in transportation problem-solving.
- Provide employer assistance with the Travel Reduction Program (TRP) including surveys, plan development and plan implementation.
- Provide matchlists of potential van and carpoolers.
- Provide literature for employees and internal company newsletters.
- Provide employers with assistance in the promotion of alternative modes of transportation.

Employee Transportation Coordinator Training

- Assist new Transportation Coordinators in developing and implementing an effective TRP.
- Give ideas for good marketing strategies to promote the program.

Please turn to the reverse side of this page for more information.

- Help conduct the County transportation survey to assess current parking problems, transit modes and rideshare potential.
- Create a network in which Transportation Coordinators can exchange ideas to explore solutions for common problems.
- Give evaluation tools to monitor the impact and success of ridesharing.

Relocation Program

- Retain skilled employees during corporate relocation.

Transportation Management

- Assist developers in complying with new requirements.
- Help reduce transportation impact costs.
- Improve marketability and access to new sites.
- Assist in the development and formation of Transportation Management Associations.

CALL US: For information on the Travel Reduction Program, contact Maricopa County at 258-6381.

For information on implementing rideshare strategies, contact the Regional Public Transportation Authority, 256-0996.

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What is the Travel Reduction Program?

BACKGROUND

The 1988 Omnibus Air Quality Bill that was passed by the Arizona State Legislature requires a Travel Reduction Program (TRP) to be implemented in Maricopa County. It affects all employers who have more than 100 full-time equivalent employees at any work site.

An employer must meet both requirements 1 and 2 below to be considered a major employer.

1. The employer has 208,000 or more paid hours (hourly and salaried) during the year or the combination of full-time students[1] and full-time equivalent (FTE) employees[2] equals at least 100, and;

2. The employer has 100 or more employees working at or reporting to a single work site during any 24-hour period for at least 3 days per week during at least six months of the year (See A.R.S. 49-581) (9)).

GOAL

The first-year goal of the TRP is to achieve a 5% reduction in the proportion of employees commuting by single-occupancy vehicles and/or the total vehicle miles traveled. This will be determined by an annual employee survey.

Please turn to the reverse side of this page for more information.

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[1] Full-Time Student - For purposes of this definition, a student as defined in Section 23, Title 49, Chapter 3, Arizona Revised Statutes, Article 8, Section 49-590 as a full-time student. For any educational institution under the jurisdiction of the State of Arizona Board of Regents, or the Maricopa Community College Distnct, a full-time student is a student enrolled for seven or more credit-hours during any normal enrollment period. For any educational institution not under the jurisdiction of the State of Arizona Board of Regents a full-time student is a student of driving age who reports to the educational site at least three calendar days per week during any normal enrollment period whether it be semester, trimester, quarter or other.

[2] FTE Employees, (simplified definition for F.T.E. employees according to A.R.S. 49-581(8)). The number of full-time equivalent employees is determined by dividing the total paid hours (hourly and salaried) by 2080.

REQUIREMENTS

To comply with the statute, each employer must:

1. Designate a Transportation Coordinator
2. Conduct an Employee Transportation Survey
3. Provide employees and new hires with information on alternative mode options.
4. Prepare a TRP Action Plan which outlines strategies the employer will use to achieve the 5% goal.

PHASED-IN EFFECTIVE DATES/SCHEDULES

Since there are over 1,000 companies in Maricopa County who fall under this requirement, their participation has been phased in based on the size of their workforce.

500 or more employees: From 12-31-88 until 9-30-89

200 to 499 employees: From 9-30-89 until 12-31-89

100 to 199 employees: From 12-31-89

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How Does the Program Work?

1. Maricopa County will contact employers to determine eligibility.

2. If eligible, the County will determine a schedule for compliance, based on the size of the company.

3. The County will provide the employer with the commuter survey and supply all necessary copies.

4. The employer should conduct the survey within 30 days of receipt.

5. The County tabulates the survey and provides a report back to the company within 30 days.

6. The company then has nine weeks to submit an action plan, listing the strategies they intend to implement.

7. RPTA can provide assistance in preparing the plan and implementing the travel reduction strategies.

8. The County then has 90 days to evaluate and approve the plan.

COUNTY REVIEW

There are three levels of County review that will occur with each Travel Reduction Action Plan:

1. The County Travel Reduction staff will review the plan and make a recommendation to the County's TRP Task Force as to whether or not the plan meets approvable guidelines.

2. The TRP Task Force is a 15-member group of citizens, appointed by the County Board of Supervisors. They represent major employers, public interest groups and cities in the region.

Please turn to the reverse side of this page for additional information.

They will review each plan again, relying on the staff recommendation for general guidance.

If it is approved it will be sent to the Travel Reduction Board for final action. If the plan is not approved the Task Force will describe the inadequacies and direct the employer to modify it within 30 days.

3. The Travel Reduction Board is the County's Air Pollution Advisory Council, also made up of citizens appointed by the Board of Supervisors. They have 90 days to object to the Task Force's recommendation or the plan is automatically approved.

   If the Board rejects a plan it is returned to the Task Force. The Board can also take enforcement action against an employer for failure to meet the requirements.

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How to Implement a Travel Reduction Program

1. Meet with Company Management:
   Securing the attention and support of your company's management is very important to achieving success. They should know what the law requires your company to do and when you are supposed to prepare a plan.

2. Form a TRP Committee:
   If your company is large, select a representative from each department or worksite to act as your communications liaison to the employees.

3. Determine Existing Conditions and Incentives:
   Check into the programs you already have, such as bus subsidies, bike racks and carpool parking. You should also do an assessment of current transit services and the parking situation at each work site.

4. Conduct the County's Transportation Survey:
   Decide on the best ways to get full participation from your employees.

5. Evaluate Survey Results:
   From your survey you will be able to determine potential areas for carpooling and vanpooling, as well as which strategies will appeal to your employees.

6. Prepare an Action Plan and Implement Strategies:
   Explain the various travel reduction strategies you will be using to encourage your employees to reduce single occupancy trips, and prepare a timetable of events for the next year.

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TRP Strategies You Can Implement

You can use a wide variety of strategies to promote travel reduction and encourage your employees to try an alternative mode of commuting. These include:

1. Designate preferential parking areas for carpools and vanpools.

2. Subsidize monthly fares for buses or vanpools.

3. Incorporate ridesharing into new employee orientation programs.

4. Provide amenities for bicycling, such as racks and showers.

5. Allow expanded use of company vehicles for carpoolers.

6. Provide special information centers for bus route information and material on other modes of transportation.

7. Implement measures designed to reduce commute trips such as day care facilities and emergency taxi services.

8. Construct bus shelters and other waiting facilities for passengers.

9. Develop a commuter matching service to facilitate employee ridesharing for work trips.

10. Provide funds to local public transit providers to extend regular or express bus service to the work sites.

11. Construct walkways or enhance bicycle routes to the work sites.

12. Establish a program of adjusted work hours, including compressed work weeks or flextime.

13. Establish a program of parking incentives, such as rebates for employees who do not use the parking facilities.

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How We Can Help

BOTH MARICOPA COUNTY AND THE RPTA CAN HELP YOUR COMPANY IMPLEMENT THE TRP.

MARICOPA COUNTY WILL:

- Provide overall coordination for the Program
- Assist the Task Force in developing guidelines to implement the TRP
- Provide commuter surveys to each employer
- Review each Travel Reduction Action Plan submitted by an employer and recommend approval/disapproval to the Task Force
- Work with employers whose plans fail to achieve the goals

CONTACT THE COUNTY TOLL-FREE AT 258-6381 FOR MORE INFORMATION

THE REGIONAL PUBLIC TRANSPORTATION AUTHORITY WILL:

- Suggest strategies to implement based on survey results
- Assist employers in writing Travel Reduction Action Plans
- Provide computerized matching services for carpool/vanpool formation
- Provide detailed information on alternative modes of transportation
- Train coordinators and internal staff on how to implement travel reduction strategies

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Request for Service

____Yes, I am interested in developing a Travel Reduction Program in my company. Please have a Maricopa County representative contact me or my designee listed below.

Name_____

Title_____

Company Name_____

Number of employees_____

Address_____

City/Zip_____

Phone_____

Other Company Contact:_____

Phone:_____

Comments:

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A PEP RALLY!

Clean Air Force
"Don't drive one in five"
Campaign Kick Off
October 11, 1989
Noon-1:00 p.m.
Patriots Square
Central and Washington
in Phoenix

Let's cheer the team that's bringing clean air back to the Valley. With Valley Mayors and VIPs. Cheerleaders, pompons, a dixieland band, and free pop from Kalil Bottlers. Ride the shuttle bus provided by the City of Phoenix from City, County and State offices to the festivities between 11:30 a.m.-1:15 p.m. Bring your lunch, the fun's on us.

Join the Clean Air Team!
Call 262-RIDE for
rideshare and 253-5000 for
bus information.
And don't forget Free Bus Day
on October 18.

Special thanks to
Kalil Bottlers,
Mayor Goddard's Sights 'n' Sounds,
the City of Phoenix,
and Frye Elementary School
in Chandler.

CLEAN AIR FORCE
Don't drive one in five

Clean Air Force "Don't drive one in five" is sponsored by Maricopa County, Arizona Department of Environmental Quality, the Arizona Energy Office, the Phoenix Chamber of Commerce, and the Regional Public Transportation Authority

THERE ARE A LOT OF GOOD REASONS TO JOIN THE CLEAN AIR TEAM

CLEAN AIR FORCE
Don't drive one in five

The Clean Air Force is sponsored by Arizona Energy Office, Maricopa County, the Regional Public Transportation Authority, Phoenix Chamber of Commerce, and Department of Environmental Quality.

THE NEWS IS ON THE AIR

The Clean Air Force and the media community have joined forces to give a "High Pollution Advisory" on days when carbon monoxide levels are high enough to violate health standards.

Look for this advisory when you read the daily newspaper or watch the news. It's your cue to make a special effort to leave your car at home and use alternate transportation instead.

Join the Clean Air Team and we'll win the battle against air pollution.

CARPOOL 262-RIDE

BUS 253-5000

CLEAN AIR FORCE
Don't drive one in five

CLEAN AIR FORCE
505 NORTH SECOND STREET, SUITE 365
PHOENIX, ARIZONA 85004-9916

NO POSTAGE NECESSARY IF MAILED IN THE UNITED STATES

BUSINESS REPLY MAIL
FIRST CLASS PERMIT NO. 12728 PHOENIX, AZ

POSTAGE WILL BE PAID BY ADDRESSEE

CLEAN AIR FORCE
505 NORTH SECOND STREET SUITE 365
PHOENIX AZ 85004-9916

There are a lot of good reasons to drive your car. But there's a better reason not to. Clean air.

Cars are the major cause of air pollution in the Valley. And every day, our cars pump more than 900 tons of carbon monoxide into the air. You can't see it, it's invisible. But it can cause serious health problems that affect your heart, lungs—even fetal development in pregnant women.

The solution to air pollution is simple. Join the Clean Air Team and don't drive one-in-five. Instead, try a carpool or vanpool. Walk. Ride your bike. Take the bus. Go on flextime. Or consolidate your trips.

Last year, with *just a few* people using alternate transportation instead of their own cars one day a week, we reduced Carbon Monoxide in the Valley by 27 tons a day.

Please learn your don't drive day and join the Clean Air Team. There are reasonable alternatives to air pollution.

EVERYBODY INTO THE POOL

Carpool to work and make your dollars travel farther with insurance discounts, less wear and tear on your car, plus savings on gas. And you'll enjoy a stress-free commute. You can share a carpool through our matching file of 12,000 names. Just call 262-RIDE.

"Carpooling saves money on gas, on wear and tear, and using the high occupancy lane on the freeway saves time. We zip by hundreds of cars stuck in rush hour traffic."

Barb Niebel
Brown & Bain Law Firm

Vanpool with 7-15 commuters who live and work nearby and we'll provide the van and insurance. Drivers ride free and have personal use of the van. The group shares the cost by paying a monthly fare. And they make their own decisions regarding meeting points, schedules and other rules of the road. Call 262-RIDE.

"Riding the bus is a relaxing way to get to and from work without fighting traffic. It even works when I have business appointments because I can take it home at night and just leave my car at the office, then ride the bus back to work in the morning."

Jim Haynes
Phoenix Chamber of Commerce

THE BUS STOPS HERE

There are 58 bus routes, including 18 express routes, that can get you wherever you want to go in the Valley. In fact, several major roads already have routes on them—with runs conveniently timed to fit your schedule. More than 60 Park and Ride lots are available if there's no bus stop close by. For a route that works for you, call 253-5000.

TRY A NEW SET OF WHEELS

Short car trips—those associated with cold starts and low average speeds—pollute more than long ones. Yet these are the trips that could easily be made by bicycling. It's non-polluting, energy efficient, quiet, quick, economical and convenient.

"Biking to work provides so many opportunities. I can beat rush hour traffic, I stay in really good shape and it's easy to find a parking spot."

Eric Prosnier
Arizona Department of Transportation

WALK ALL OVER AIR POLLUTION

Walking to work raises your energy level and relieves tension. Best of all, it promotes physical fitness. A moderate pace of 4 miles per hour burns 300-400 calories.

"Walking to work is better for you physically than sitting in a car, and I can go at my own pace and enjoy the scenery."

Verne Moutray
Arizona State East Valley Job Service

A SCHEDULE THAT WORKS FOR YOU

Ask your employer about participating in an alternate work schedule. A variety of programs like flextime, staggered work hours, working at home and shorter work weeks, allow you to work different schedules while maintaining a core time of coverage in the office.

I WANT TO JOIN THE TEAM

To join the Clean Air Team, just complete this Rideshare application form and we'll send you a free personalized car and vanpool matchlist containing names and phone numbers of other commuters who live and work near you.

Name _____
Home Address _____
City _____ State _____ Zip _____
Home Phone _____ Apt # _____

Employer _____
Department _____
Business Address _____
City _____ State _____ Zip _____
Work Phone _____
Hours _____ am pm to _____ am pm
Are your work hours flexible by ½ hour or more? ☐ Yes ☐ No
Do you have a car available for carpooling? ☐ Yes ☐ No
How do you currently get to work (most often)?
☐ Drive Alone ☐ Carpool ☐ Vanpool
☐ Bus ☐ Bike ☐ Other
In a carpool, I would be willing to:
☐ Drive ☐ Share Drive ☐ Ride

In a vanpool, I would be willing to:
☐ Drive ☐ Backup Drive ☐ Ride
Please send me a second match, using an alternate origin, i.e., daycare location. Give address or cross streets.
_____
_____
☐ Check if you do not want your address used in match letters.
☐ Check if you would like information on the "Official Carpool Driver" Program.

FOR MORE INFORMATION CALL 262-RIDE
FOR CARPOOLING, VANPOOLING OR 253-5
FOR BUS