

**REGIONAL TRANSPORTATION IMPROVEMENT PROGRAM
FY 2001 THROUGH FY 2005**

Pima Association of Governments (PAG)

177 N. Church Avenue, Suite 501
Tucson, Arizona 85701

Tel (520) 792-1093
Fax (520) 792-9151

Web <http://www.pagnet.org>

TIP Approved by PAG Regional Council on July 26, 2000

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PAG STAFF

Thomas L. Swanson Executive Director	James D. Altenstadter Deputy Director	Cherie Campbell Transportation Planning Director	Don W. Freeman Transportation Programming Manager
Imelda Angelo TIP Planner	Hank Eyrich Air Quality	Pat Tamarin Graphics	Pat Kendall & Sharon Ridde Secretarial Support

(* for transportation matters only)

(** ex-officio members)

This report has been prepared in cooperation with, and financed in part by, the US Department of Transportation - Federal Highway Administration, the Federal Transit Administration, and the Arizona Department of Transportation. The contents of this report do not necessarily reflect the official views of the Arizona Dept. of Transportation or the Federal Highway Administration. This report does not constitute a standard, specification, or regulation.

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CHAPTER 1 - INTRODUCTION

The Transportation Improvement Program (TIP), prepared by Pima Association of Governments (PAG), is a five-year schedule of proposed transportation improvements within the Pima County, Tucson urbanized area.

The TIP is typically updated annually through a multi-step process in association with PAG's member jurisdictions or other implementing agencies. The TIP addresses improvements to diverse elements of the regional transportation system including national, state and local highways, transit, aviation, ride sharing, bikeways, and pedestrian facilities. The TIP also responds to various state and federal regulatory requirements for development of a transportation improvement program and TIP conformance with air quality implementation plans, including the Transportation Equity Act for the 21st Century (TEA-21) enacted in June 1998.

The projects listed in Appendix 1 have an identified source of funding and are presently in some stage of project development. Every project, whether highway or transit, that is federally funded must be included in the TIP. The TIP also includes all regionally significant projects funded from non-federal sources.

The current five-year Transportation Improvement Program encompasses fiscal years 2001 to 2005. The complete project listing by jurisdiction is contained in Appendix 1. Total programmed expenditures for this time period exceed \$875 million dollars.

CHAPTER 2 - TRANSPORTATION EQUITY ACT FOR THE 21ST CENTURY (TEA-21)

On June 9, 1998, Public Law 105-178, the Transportation Equity Act for the 21st Century (TEA-21), was signed into law authorizing highway, safety, transit and other surface transportation programs for the next six years.

TEA-21 builds on the initiatives established in the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA), which was the last major authorizing legislation for surface transportation. This new Act combines the continuation and improvement of current programs with new initiatives to meet the challenges of improving safety as traffic continues to increase at record levels, protecting and enhancing communities and the natural environment as we provide transportation and advance economic growth and competitiveness through an efficient and multi-modal transportation system.

TEA-21 continues the proven and effective program structure established for highways and transit under the landmark ISTEA legislation. Flexibility in the use of funds, emphasis on measures to improve the environment, focus on a strong planning process as the foundation of good transportation decisions - all ISTEA hallmarks - are continued and enhanced by TEA-21. New programs such as Border Infrastructure, Transportation Infrastructure Finance and Innovation, Transit Enhancements, and Access to Jobs target special areas of national interest and concern.

As the designated metropolitan planning organization, the Pima Association of Governments has the responsibility to develop a transportation improvement program in cooperation with the State and any affected public transit operator. In developing the program, citizens, affected public agencies, representatives of transportation agency employees, freight shippers, providers of freight transportation services, private providers of transportation, representatives of users of public transit, and other interested parties are provided an opportunity to comment on the proposed program.

The transportation planning process provides for consideration of projects and strategies that will:

- Support the economic vitality of the United States, the State of Arizona, and the Tucson metropolitan area, especially by enabling global competitiveness, productivity, and efficiency;
- Increase the safety and security of the transportation system for motorized and non-motorized users;
- Increase the accessibility and mobility options for people and freight;

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- Protect and enhance the environment, promote energy conservation, and improve quality of life;
 - Enhance the integration and connectivity of the transportation system, across and between modes throughout the State, for people and freight;
 - Promote efficient system management and operation; and
 - Emphasize the preservation of the existing transportation system.

CHAPTER 3 - TRANSPORTATION IMPROVEMENT PROGRAMMING OVERVIEW

The goal of the transportation improvement programming process is to develop a TIP that makes optimum use of available funds and resources to serve transportation needs and implement the long range transportation plan known as the Metropolitan Transportation Plan or MTP in the PAG region.

Federal legislation (Title 23, Section 134, Part h) sets forth the parameters for TIP development. Subpart 1, specifies that:

The TIP, including the Annual Element, shall be developed by the Metropolitan Planning Organization in cooperation with the state and affected transit operators, and shall provide reasonable opportunity to comment on the proposed TIP to:

- *Citizens*
- *Private providers of transportation*
- *Representatives of transportation agency employees*
- *Other affected employee representatives*
- *Affected public agencies*
- *Other interested parties*

The legislation specifically defines certain aspects of the programming process. The TIP includes project priorities and a financial plan which documents the financial resources available to implement the Program.

Federal laws regarding air quality [§109(j) of 23 U.S.C. and 40 CFR 52.138(d)1] require that the Regional TIP be analyzed and conform to the air quality implementation plan(s). The documentation of this effort is provided under the Air Quality section of this document.

The primary resource used for formulating the TIP is the MTP. The MTP documents transportation facilities and services required to meet future travel needs. Additional roadway facilities and expanded public transportation services, combined

with greater opportunities for ride sharing, bicycling, intermodalism, and alternate modes, are incorporated into the MTP to improve air quality and support the efficiency of our regional transportation network.

PAG'S TIP PROCESS

Purpose: PAG's TIP covers a 5-year period and describes planned regional transportation projects and improvements, which lead toward implementation of the MTP. The TIP is the mechanism through which the MTP is implemented in a manner consistent with local needs and priorities. It is also the mechanism through which the air quality impacts of regionally significant transportation projects can be evaluated and addressed. The TIP is financially constrained and includes only those projects for which funding has been determined to be available. In addition to available federal funding sources, information is also included on projects using State and regional funding. The TIP includes regionally significant projects whether or not they are Federal Aid Projects. Information on other projects, which are locally funded, is included as available.

Contributing Jurisdictions or Agencies: Information on programmed projects is provided by the following agencies:

- PAG's six member jurisdictions-the Cities of Tucson and South Tucson, Pima County and the Towns of Oro Valley, Marana and Sahuarita;
- Tucson Airport Authority (TAA);
- SunTran;
- Tohono O'Odham Nation;
- Pascua Yaqui Indian Nation;
- Pima County Department of Environmental Quality (PDEQ);
- Arizona Department of Environmental Quality (ADEQ);
- Arizona Department of Transportation (ADOT); and
- Other agencies or transportation interests.

TIP Subcommittee: PAG's TIP Subcommittee is the standing technical committee responsible for development of the TIP. The TIP Subcommittee meets once a month throughout the year with additional meetings on an as

needed basis to deal with technical issues and other matters related to TIP development. Regular meeting notices are provided to committee members and to a list of interested parties, which includes citizens, neighborhood groups, non-profit organizations and various special interest groups. Key aspects of the cooperative TIP process include maintenance of funding flexibility, recognition of diverse needs, and an ability to respond to changes in the community. Thus, the ability to request and take timely action upon TIP amendments is an important component of the process. Amendments to the TIP document may be processed, where necessary, to reflect changing needs, priorities, or funding scenarios.

Types of Projects: The types of projects that appear in the TIP may include roadway improvements, bridge improvements, transit improvements, transportation enhancements, transportation planning studies, bicycle and pedestrian programs, RideShare, Travel Reduction, Clean Cities, alternate mode programs, and airport improvements.

Revenue Sources: The use of major sources of transportation revenues such as federal transportation funds or regional Highway User Revenue Funds (HURF) monies is specified in the TIP. No regionally significant project is eligible to receive federal funding unless it has been included in the TIP with a finding that there are no adverse air quality impacts. While revenues available through the TIP are limited, competition for those funds is great. Thus, extensive cooperation between local jurisdictions and other competing agencies is required.

Prioritization: During 1995, PAG developed detailed evaluation criteria in support of ISTEA and PAG's transportation planning goals. A test of the proposed procedure was conducted during 1996 for the development of PAG's 1997-2001 TIP. This test indicated that improvements should be made, in terms of the ease of utilization and verification of results of the process. Working from the initial prioritization criteria as a base, subsequent refinement of the process continues.

Additionally, the public input component provides for public evaluation and ranking of both the criteria used and their overall importance to the community. Finally, all projects are reassessed for consistency with the MTP. The overall program is itself evaluated to ensure an appropriate regional balance of selected projects by transportation mode, type of project, jurisdiction and/or geographical distribution.

Schedule: PAG's TIP development process typically starts in January of each year. The first step in the process consists of revising the existing TIP to reflect the actual obligation of funds for specific projects, such as changes in schedules and budgets. Information about planned transportation improvements is then gathered from all involved jurisdictions or agencies. The information that is collected forms the core of the draft TIP document. This draft TIP is presented to the public for comments at PAG's Annual Transportation Open House, held this past year on April 6, 2000.

A financially constrained draft TIP is developed after TIP Subcommittee review of Open House input and the prioritization input. This draft TIP is presented for review at meetings of the PAG Transportation Planning Committee, Management Committee, and Regional Council for tentative approval, following which an air quality conformity determination is made. Based upon a successful air quality conformity determination, the final TIP is presented to the Regional Council for adoption. This is scheduled for July 26, 2000.

JURISDICTIONAL PROGRAM DEVELOPMENT

The following section describes procedures used by each jurisdiction in developing their portion of the Regional Transportation Improvement Program.

STATE OF ARIZONA

The Arizona State Transportation Board determines state priorities through recommendations from their Priority Planning Advisory Committee (PPAC) (mandated by A.R.S. 28-6951). The PPAC is comprised of key ADOT personnel plus a representative of the Citizen's Transportation Oversight Committee, as a non-voting member.

The state uses a priority rating system as one of the major criteria in selecting projects for the Five Year Construction Program. The intent is for projects with the highest priority ranking to be constructed first. However, such factors as continuity of improvement, environmental/utility clearances, right-of-way acquisition, and/or funding constraints may cause changes in the priorities.

When the Five Year Highway Construction Program is approved by the State Transportation Board, it is filed with the Director of the Department of Transportation and the Governor.

PIMA ASSOCIATION OF GOVERNMENTS

PAG is the designated Metropolitan Planning Organization for Pima County. PAG's program areas include regional transportation planning as required by federal transportation legislation.

The Pima Association of Governments Transportation Planning Committee (TPC) provides guidance to PAG's Transportation Overall Work Program and the products produced. The TPC is comprised of the department heads of the local planning and transportation implementing agencies, as well as representatives from the Arizona State Transportation Board, ADOT Transportation Planning and Highway Divisions, the Tucson Airport Authority (TAA), Davis-Monthan Air Force Base, the Federal Highway Administration, the University of Arizona, Citizens Transportation Advisory Committee (CTAC), and the local public transit system.

The TPC reviews the TIP within the framework of the regional transportation planning and air quality conformity process and federal and state regulations. The TIP Subcommittee, composed of key staff from involved planning and implementing agencies, and other important stakeholders such as freight service providers, was established by TPC for this purpose. The TIP Subcommittee reviews the composite jurisdictional programs for consistency with both regional needs and the MTP. The programs found to be consistent are recommended by the TPC to the PAG Management Committee as the TIP. A public open house is held to acquire input for development of a tentative program. The PAG Management Committee schedules the TIP for jurisdictional review and action, followed by adoption by the PAG Regional Council. Public hearings are held for adoption of both the tentative and final program documents.

PIMA COUNTY

Projects put forth for consideration in this TIP were developed by the Pima County Department of Transportation (PCDOT) staff and were subject to administrative review. Projects were selected on the basis of critical needs, giving due regard to social, economic, environmental, and energy conservation considerations.

These highway improvement projects primarily involve upgrading existing facilities in areas warranting immediate relief. These areas were identified by existing or imminent development trends, land use patterns, or by present and projected transportation demand.

Most projects included in the TIP are along major routes whose primary function is to provide mobility for heavy transportation demand areas. The cost figures for the projects include right-of-way acquisition costs, design work, and construction estimates.

All feasible traffic engineering alternatives have either been implemented or were considered on these projects and by themselves are inadequate to meet traffic demands. These projects are on routes required to provide adequate mobility in areas of ongoing or imminent development. Such rapidly increasing demand for greater capacity, as is being experienced on these routes, dictates the need for longer range solutions than would normally be provided by interim traffic engineering measures. These projects were further prioritized on the basis of available federal-aid funds and coordination with other proposed improvements.

PCDOT also operates Ajo and Marana Northwest Regional Airports. Improvements to airport facilities are programmed on the basis of the current Regional Aviation System Plan (1995) and the Airport Development Master Plans.

CITY OF TUCSON

The City of Tucson develops its transportation improvement projects using funds from various sources: allocated highway user taxes, approved streets and corresponding bond funds, federal-aid funds, FTA funds, the General Fund, and assessments under state statutes. Local general funds are

used primarily to provide operating revenue for transit and are minimally programmed for capital improvements.

Projects selected for implementation are based on evaluation of many criteria, which define need, consistent with adopted Regional Plan Elements.

The criteria are:

1. Street and Highway Projects - Criteria for selection involve a highway sufficiency priority rating system involving physical conditions, traffic volume to capacity ratios (existing and future), and safety. The sufficiency index is updated annually. These items combined with professional experience, use data, and modal interfacing, assist in determining the needs for street and highway improvements. Bikeway and pedestrian projects are considered an integral part of street and highway projects.
2. Transit Projects - Criteria for selection include: balance of public and handicapped transportation; route and service expansion; express service with the inclusion of park-and-ride facilities; and air quality conformity requirements.

The Mayor and Council of the City of Tucson have formally appointed a Citizens Transportation Advisory Committee (CTAC) to review and make recommendations to the Mayor and Council on all transportation issues. The Citizens Advisory Planning Committee works in conjunction with both the City's Transportation and Planning Departments and in coordination with the MTP process to provide for more effective regional transportation development programs.

TOWN OF ORO VALLEY

The Town of Oro Valley's road, street, and drainage-way maintenance program falls under the supervision of the Town Engineer. Projects are selected for completion based on vehicular traffic safety, pedestrian safety, and usage, as well as the preservation of existing pavement and drainage-ways.

During this fiscal year, the Town will be involved in community transportation planning and programming projects for construction in FY 2001.

CITY OF SOUTH TUCSON

The City of South Tucson implements its transportation improvements through its Public Works Department. The determination of the projects to be undertaken is a combined process involving professional judgment, South Tucson's needs, and financial resources.

South Tucson encourages citizen participation via open Council meetings and public hearings. Through these meetings, residents have the opportunity to voice their opinions on transportation matters. A listing of transportation projects, stemming from the Public Works Department's assessment and public comments, is prepared for final action by the Mayor and Council.

TOWN OF MARANA

The Town of Marana prepared a Master Transportation Plan in 1989 to guide roadway development within the Town limits. The Circulation Element of the Town's General Plan, updated in February 1997, reflects the roadway concepts contained within the Master Transportation Plan. More recently, two sub-regional studies have been conducted: the Continental Ranch Sub-regional Transportation Study in 1997 and the Dove Mountain Sub-regional Transportation Study in 1999. The Master Transportation Plan was updated in 1999, and provides fiscally constrained project phasing through the year 2020 with expanded bicycle and pedestrian elements.

TOWN OF SAHUARITA

The transportation improvement projects for the Town of Sahuarita are developed from the town's Capital Improvement Plan (CIP). When the town prepares its CIP, it holds public meetings at the Council level. The public input is used to help prioritize projects in the plan.

TUCSON AIRPORT AUTHORITY

The Tucson Airport Authority is responsible for implementing projects at Tucson International Airport and Ryan Airfield. Projects are identified by the Tucson International Airport Master Plan, Ryan Airfield Master Plan, or from the Airport Authority staff. These proposed projects are then forwarded to the Operations Committee for their review and recommendation to the Authority's Board of Directors.

Primary consideration is given to airport needs, available federal and state funds, bonding capacity and the availability of Airport Authority matching funds. After determinations are made on specific projects, they are sent to the Board of Directors for final approval.

PUBLIC PARTICIPATION IN TIP PROCESS

The primary event of the FY 2001-2005 Transportation Improvement Program public involvement effort is the Annual Regional Transportation Open House. The Open House provides the public with an opportunity to review the candidate list of projects for the updated TIP and to submit comments on projects, project selection criteria and/or other issues of concern. Other opportunities for public involvement are provided through PAG's website and TIP Subcommittee meetings, which are open to the public.

The Regional Transportation Open House for the FY 2001-2005 TIP Open House was held at the Randolph Golf Course Clubhouse on April 6, 2000. Approximately 4,000 copies of an English/Spanish flyer advertising the Open House were widely distributed to PAG's mailing lists, jurisdictions, public libraries, and neighborhood associations. Notice of the Open House was

published in the Arizona Daily Star, and The Daily Territorial and through news releases that resulted in substantial media coverage of the event. A TIP Web Page is also available to provide opportunities for public comment on the TIP Program.

The 2000 Open House featured displays about the regional transportation planning process, candidate project listings by jurisdiction or agency and other related information, the TIP survey, and an open-ended comment form. Transportation professionals from PAG member jurisdictions also were available to talk one-on-one with members of the public in attendance.

Approximately 125 people attended the 2000 Open House, of which 61 percent indicated they were not transportation professionals. A total of 75 public comment forms were received, either in the form of a TIP survey (70 responses) or an open-ended written comment (5 responses). These responses include those transmitted via the web page.

Following the Open House, TIP survey results and comments were compiled and analyzed, and written comments were categorized by subject. This documentation was transmitted to the TIP Subcommittee, Transportation Planning Committee, Management Committee, and Regional Council. Duplicates of all comment sheets were attached to the summary and provided to each PAG member jurisdiction. Individual letters thanking the Open House participants and explaining any known future action to be taken relative to individual comments were sent to those members of the public who included their name and address on the comment form. Specific information and the results of the TIP survey on prioritization criteria are then used by the TIP Subcommittee as their recommendations for project selection were developed.

Survey questions and results of the survey are presented below.

TRANSPORTATION IMPROVEMENT PROGRAM (TIP) SURVEY RESULTS 2000 Regional Transportation Open House - April 6, 2000

Seventy surveys were returned at the open house, no other copies were received by this office in the two weeks after it was held. Responses have been tabulated for the various questions.

Open House 2000 Evaluation:		
Do you work in a job related to transportation planning?	Yes	39%
Is the location of the Open House convenient?	Yes	89%
Is the time of the Open House convenient?	Yes	94%
Would you like to be added to our mailing list?	Yes	48%
How did you come to the open House?	Bike	<1%
	Walked	5%
	Bus	5%
	Car	83%
How did you hear about the Open House?	Newspaper	3%
	Flyer	34%
	Work	25%
	Meetings/Website	29%

Transportation Projects should: (Rankings from 1 (least) to 5 (most important), scores of 4 and 5 were combined for the ranking of Important. (Total responses = 70)	
Be used by many people	61%
Use signal coordination, video monitoring or other technologies to improve traffic flow	63%
Minimize adverse environmental or land-use impacts	64%
Be part of land use plans to integrate transportation and land use planning	70%
Reduce traffic	70%
Maintain and repair the existing roads, bridges, pavement, sidewalks, pathways, etc.	74%
Incorporate bicycles, pedestrians, and public transit into the transportation system	77%
Enhance the quality of life in the community	77%
Improve air quality	80%

Given the option of choosing EITHER the first item, OR the second, where would YOU prefer to allocate our limited transportation dollars?		
Technology to reduce idling at intersections by coordinating stop lights	38	54%
Additional roadways to increase capacity and alleviate congestion at	28	40%

intersections		
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Did you find the information you had expected when you came to today's Open House?		
Yes	57	85%
No	7	10%
Some	3	4%
Neither	0	0%

Did you receive adequate answers to your questions?		
Yes	60	86%
No	6	8%
Some	0	0%
Neither	4	6%

CHAPTER 4 - AIR QUALITY EVALUATION OF THE TRANSPORTATION IMPROVEMENT PROGRAM

AIR QUALITY OVERVIEW

Motor vehicle emissions are a major contributor to air pollution across the nation and in the Tucson urban area. At least 70% of the total air pollutants within eastern Pima County, and up to 85% of the carbon monoxide (CO) emissions come from motor vehicles.

To assist local jurisdictions in measuring and improving air quality, the Environmental Protection Agency (EPA) established maximum acceptable levels of pollution for six common air contaminants. National Ambient Air Quality Standards (NAAQS) for outdoor or "ambient" air were established for carbon monoxide, lead, nitrogen dioxide, ozone, particulate matter and sulfur oxides. If an area measures air pollution concentrations that violate these standards, that area is designated as a "non-attainment area" for that pollutant. When this happens, a non-attainment area plan must be developed and adopted to reduce emissions of that pollutant. The non-attainment area plan is incorporated in the State Implementation Plan (SIP) as a SIP amendment. If this is not done by the established deadline, or if the plan is declared inadequate, the EPA is required to promulgate a federal implementation plan (FIP) for the non-attainment area.

The SIP (or FIP) must contain effective strategies for curtailing air pollution. If a plan is to be approved by EPA it must also include financial and resource commitments for plan implementation.

Part of the Tucson urban area was designated by EPA as a CO non-attainment area. This designation meant that the ambient CO concentration in the non-attainment area exceeded the level set as the NAAQS (9 parts per million for an 8-hour average) enough times to be in violation of the Federal standard. Historically, these violations occurred only at congested intersections, but none have been recorded since 1984.

The 1987 Carbon Monoxide State Implementation Plan Revision for the Tucson Air Planning Area (CO SIP) was fully approved by EPA on August 10, 1988. The EPA approval was appealed (*Delaney v. EPA*), and the Ninth Circuit Court of Appeals vacated the EPA approval (April 11, 1990) and ordered EPA to promulgate a CO FIP for Pima County. It was promulgated January 28, 1991. All transportation control measures included in the CO SIP when it was adopted continue in effect. In June of 1998 federal legislation was passed that voids the requirements of the Arizona FIP.

The Tucson area has not violated the CO NAAQS since 1984, and is projected to maintain compliance with the CO NAAQS for at least ten years. Redesignation to maintenance status was approved by Felicia Marcus, the Regional Administrator, Region IX, EPA on April 24, 2000. The **1996 Carbon Monoxide Limited Maintenance Plan for the Tucson Air Planning Area** (LMP) is approved as a SIP amendment and redesignates the area to attainment of the CO NAAQS.

MAJOR DEVELOPMENTS

The Clean Air Act Amendments of 1990 (CAAA) and the CO SIP for Pima County require a comprehensive evaluation of the CO air quality impacts of transportation plans, programs and (under certain circumstances) projects. The 1994 PAG Metropolitan Transportation Plan was updated in 1998 as the 1998-2020 Pima Association of Governments Metropolitan Transportation Plan (MTP) to comply with the 1991 ISTEA requirements. It was adopted by the PAG Regional Council on May 27, 1998. The Federal Highway Administration and Federal Transit Administration determined the plan to be in conformity with the applicable implementation plan on September 9, 1998. The conformity determinations for the MTP and the 1999-2003 PAG Regional Transportation Improvement Program (TIP) were reaffirmed by FHWA on July 6, 1999.

The transportation conformity rule was promulgated by EPA on November 24, 1993. Conformity procedures for the State of Arizona were certified by the Attorney General on June 16, 1995 and submitted to EPA on June 20, 1995 for promulgation and approval. EPA chose not to approve the Arizona conformity rules, pending amendment of the federal rule, but PAG must still comply with the Arizona conformity rules. In August of 1997 EPA amended the transportation conformity rule. The

State of Arizona was required to revise its rule to conform with the amended federal rule by August 1998. However, a recent D.C. appeals court decision has modified the ability to enforce parts of the rule, pending possible EPA appeal. PAG continues to comply with all legal requirements for transportation conformity determinations in effect at the time of the conformity determination for this TIP.

The FIP replaced the 1987 CO SIP attainment demonstration and added detailed contingency and conformity procedures (similar to those in the CAAA). EPA did not impose any federal control measures for Pima County, but did include the PAG Travel Reduction Program, the PDEQ No Drive Days campaign and the State oxygenated fuels program for Pima County as federally enforceable air quality control measures. Because these control measures are all included in the Arizona SIP, they will continue to be implemented in the absence of the FIP. A few other control measures have been added by Arizona statute including: a one-time only vehicle inspection failure waiver, a lawn and garden equipment replacement program, and a voluntary vehicle repair and retrofit program.

ISTEA also required that a Congestion Management System (CMS) plan be adopted. PAG has adopted such a plan. It is referred to as the PAG Mobility Management Plan (MMP). Implementation of the MMP is being carried out through a Memorandum of Understanding (MOU) between the PAG member jurisdictions, PAG and the Arizona Department of Transportation.

SIP CONTROL MEASURES

The air quality emissions reduction measures now required for CO in the SIP are as follows, in order of effectiveness:

- Federal Motor Vehicle Control Program (FMVCP)
- Arizona Inspection and Maintenance Program (I/M)
- Oxyfuels Program for Pima County (1.8% oxygen)
- Voluntary Lawnmower Replacement Program
- PAG Travel Reduction Program

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- PAG RideShare Program
 - Pima County Voluntary No-Drive Days Program
 - One-time emission inspection violation waiver (benefit not yet quantified)

All legally enforceable commitments to other control measures outlined in the 1987 SIP revision have been completed.

The EPA made the following statements in the January 28, 1991 FIP regarding the attainment and maintenance of the CO NAAQS in Pima County:

- "The 1987 Pima plan (CO SIP) projected attainment of the CO NAAQS in early 1990 and maintenance through 2000 relying solely on emission reductions from the FMVCP, the State I/M program without the loaded-mode component, existing traffic flow improvements, and programmed road improvements. The Pima plan did not rely, for either attainment or maintenance, upon any of the additional measures being proposed in the plan (e.g., the travel reduction program) or later adopted by the State legislature (e.g., the loaded-mode I/M program and the oxygenated fuels program). Finally, new population and vehicle miles traveled (VMT) forecasts for the Pima area have recently been completed and are predicting substantially less growth in 1990 and future years than was assumed in the 1987 Pima plan. Combined, these three factors argue strongly that the 1987 Pima plan accurately predicted that attainment would occur in or before early 1990.
- Therefore, EPA concludes today that sufficient emission reductions have already been achieved in Pima County to assure that current CO emission levels are below those needed to attain the CO NAAQS, and that no additional Federal measures are needed to ensure attainment.
- EPA performed hot-spot modeling using the approved hot-spot model, CAL3QHC, to determine if sufficient measures were in place to ensure maintenance in Pima County for the required ten-year period after plan promulgation, i.e., until early 2001. This hot-spot modeling

showed that with the existing control strategy that ambient CO concentrations for the next ten years would be well below the CO NAAQS even under 'worst-case' meteorological conditions.

- Emission reductions from two control measures were explicitly included in the maintenance demonstration for Pima County. These control measures are the Arizona State inspection and maintenance program with the loaded-mode component and the oxygenated fuels program at 1.8 percent oxygen. Other measures in the SIP such as the travel reduction program were not explicitly included in the maintenance demonstration; however, such measures will provide an extra margin of emission reductions for maintenance. EPA, therefore, finds that no additional controls are necessary for maintenance in Pima County."

These EPA statements were based on a conservative use of the available data in most cases. The attainment demonstration is based on only two major control measures (three if the FMVCP is counted). Modeling was done for two microscale sites using "worst case" meteorology. The results were as follows: the estimated ambient concentration in parts per million (ppm) CO for an 8-hour average was 6.4 for the 22nd St./Alvemon intersection and 7.2 for the Broadway/Craycroft intersection in the year 2000. EPA commented in the Technical Support Document, "These concentrations are well below the federal ambient CO standard of 9 ppm per 8-hour average. One thing to bear in mind is that all the modeling analyses were based on the worst case conditions. Therefore, the 8-hour average concentrations at these hot spots could be much lower." It should also be noted that EPA's attainment demonstration for Pima County is based on "existing traffic flow improvements and programmed road improvements." Emission "milestones" were not established for the Tucson Air Planning Area (TAPA) in the 1987 SIP. However, the annual emissions inventory for 1990 serves as a base-case because that is the year that the CO NAAQS attainment was projected and achieved. If future annual emissions inventories can be held below that level, and hotspot problems avoided, maintenance of the CO NAAQS is assured.

The long range control strategy will be to continue programs to control mobile emissions and reduce per capita VMT to offset continued regional population growth both through roadway and non-roadway elements. The most significant local strategy focused on direct VMT reduction (as

compared to congestion management strategies) and the continued implementation of the PAG RideShare Program and the PAG Travel Reduction Program.

THE ANALYSIS APPROACH

The understanding of, and the continued compliance with, the SIP in Pima County is especially important. First, by reducing the amount of pollutants in the air, a significant contribution is made to the maintenance of the health of the region's citizens. Second, by conforming to an air quality plan that meets federal requirements, the Tucson urban area will continue to be eligible to receive available federal funding for essential transportation projects.

In order to assure compliance with clean air standards, an annual program of planning and evaluation has been established in Pima County. As part of this process an air quality analysis of the Regional TIP is performed, as prescribed by Federal laws (§109(j) of 23 U.S.C. and §176 of the Clean Air Act). The purpose of this analysis is to demonstrate compliance with the State transportation conformity rule (R18-2-1401 et seq.), to assure that all transportation control measure commitments are being implemented on schedule, and that the federal conformity requirements are met. With approval of the LMP, the requirement of meeting an emissions budget and demonstrating conformity through a modeling demonstration will be removed for the 10-year period of the LMP.

The principal air quality evaluation of the TIP is done by calculating the year 2005 CO emissions from mobile sources on the transportation network as it will exist if all TIP projects are completed on schedule and compare it to the 1990 base year emissions. The comparison for this TIP shows a decrease of 137.6 tons from 1990 base year to 2005. The 1990 base year CO emissions inventory from mobile sources is 444.8 tons. All calculations of VMT, speed and CO emissions include an addition to the "network system" figures of 15% of VMT at 15 mph to account for local (non-network) travel.

A supplementary air quality evaluation, required under the LMP, is conducted on the most congested hotspot intersections using the EPA-approved CAL3QHC microscale model using current year traffic

conditions. The purpose of the microscale air quality analyses is to determine if any TIP projects are likely to affect or be affected by congested intersections. The analyses are performed annually for the hot spots most likely to be the location for future CO NAAQS violations. The intersections that qualified in 1999 with the highest average daily traffic (ADT) and the worst level of service (LOS) are as follows:

- Speedway/Campbell #1 highest ADT
 - Ina/Oracle #2 highest ADT, #3 worst LOS
 - Speedway/Wilmot #3 highest ADT
 - Broadway/Wilmot #1 worst LOS
 - 22nd/Wilmot #2 worst LOS
 - 22nd/Alvernon* #14 highest ADT, #20 worst LOS
- * modeled for historical purposes

The most recent microscale analyses (using CAL3QHC) are presented below (worst at top) showing the 8-hour average CO concentration in ppm (The 8-hour NAAQS is 9 ppm):

- Speedway/Wilmot 7.02 ppm
- 22nd/Wilmot 6.74 ppm
- Broadway/Wilmot 6.45 ppm
- Speedway/Campbell 6.34 ppm
- 22nd/Alvernon 6.28 ppm
- Ina/Oracle 5.37 ppm

Reductions in carbon monoxide emissions from the non-roadway elements such as carpooling and mass transit were estimated for the Regional TIP using data compiled from PAG's Travel Reduction / RideShare Program, the City of Tucson's Department of Transportation and SunTran. Emission reductions were calculated using methods developed in the Pima County Air Quality Control District's (now PDEQ) *Reasonable Further Progress Reports (1981-1985)* and PAG's report on the *System for Monitoring Progress Toward Emission Reduction Goals (1983)*.

SUMMARY OF EMISSIONS REDUCTION MEASURES

PAG RIDESHARE PROGRAM

The RideShare Program was established in 1974 and is administered by PAG. It offers a free computer-matching service for people interested in carpooling to work or college. At the close of 1999 the RideShare carpool database contained 39,421 active registrants. Currently, requests for matching average 1,000 per month. The carpool database changes daily with the receipt of new applications for matching, requests for rematching, change to the registrant's information and deletions.

The RideShare Program also promotes the use of alternate modes of transportation, bicycling, walking, telecommuting and transit use. Printed material and promotional assistance are available from RideShare to employers wishing to promote alternate modes of transportation to their employees. Individuals can also call RideShare at (520) 884-RIDE to obtain carpool matching or other alternate mode information. In 1999, RideShare distributed 288,528 informational pieces including 5,945 bicycle maps, 16,547 bicycle guides, 8,190 bicycle posters, 6,703 walking posters and 14,187 walking guides.

RideShare coordinates the Parent Pool Program (PPP) which is a free, confidential service to aid parents in organizing carpools in order to share the responsibility of driving their children to and from school. Participating in the (PPP) can help parents save time and money, and improve traffic congestion around the school. RideShare provides materials, personnel and handles the data entry matching process for parents interested in finding carpools to their children's school. Home address information is confidential and parents are referred only to other parents with children at the same school.

PAG TRAVEL REDUCTION PROGRAM

Travel Reduction Ordinances (TROs) creating the Travel Reduction Program (TRP) are in place for each of the following jurisdictions: Pima County, the Cities of Tucson and South Tucson, and the Towns of Oro Valley, Marana, and Sahuarita. The TRP is implemented through PAG, working with major employers (an employer with 100 or more full-time equivalent employees at a single or contiguous site) to encourage their employees to reduce the vehicle miles traveled in the home to commute trip through the use of alternate modes or adjusted work schedules such as compressed work weeks or telecommuting.

The TROs establish targets for increases in alternate mode usage and reductions in employee vehicle miles traveled for each year of participation in the program. During 1999, 247 employment sites completed the TRP process and 39% successfully met their TRP goal. The number of participating employers and sites continues to rise as a result of Tucson's economic growth and population increase and as PAG's TRP efforts expand. TRP staff contact employers on a regular basis to determine "full time employee" (FTE) status for eligibility under the TRP. Employers that don't qualify (less than 100 FTE) are added to the RideShare Program database to receive alternate mode information.

Travel Reduction Program participants during the 1999 program year helped improve the environment by saving:

- 77.1 million driving miles
- 3.9 million gallons of gas
- 35.4 million dollars
- 3.1 million pounds of pollution

The following tables show regional results comparing the base year (1989) result with the most recent full year of the program (1999). This provides a picture of the performance of the program over its ten year history.

In addition to the data obtained through the TRP database, statistically valid surveys on regional travel behavior have been performed for Pima County by O'Neil & Associates from 1988 to 1992 and FMR Associates from 1993 to 1999. The mode splits from selected years of these surveys are also tabulated.

Table 1: Travel Reduction Program 1989 vs. 1999 Regional Results

	1989	1999	% Change
TRO Goals	Baseline		
AMU%	N/A	32	
VMT% change	N/A	35.5	
AMU results %	17.59	29.16	65.78
VMT results	47.29	50.51	6.81
Survey Response Rate %	68.48	86.31	26.04
Number of Sites	148	247	66.89
Number of Employees	77,230	108,172	40.06

TRO Travel Reduction Ordinance

AMU Alternate Mode Usage in daily home-work commute (carpool, bus, bicycle, walk, vanpool or special programs)

VMT Regional average weekly one-way motor Vehicle Miles Traveled factored by mode readership

Table 2: O'Neil & FMR* Telephone Surveys Showing Mode Split (%) for the Home-to-Work Commute

	12/88	4/90	7/91	4/92	4/93	4/94	4/95	4/96	4/97	4/98	4/99
Drive Alone	71	70	69	62	67	63	68	69	75	70	72
Carpool	13	14	14	19	20	18	18	21	12	17	18
Bus	7	7	4	7	6	7	5	4	5	5	3
Bicycle	5	4	2	6	2	5	2	3	2	5	2
Walk	1	4	2	2	3	3	2	2	2	2	1
Vanpool	1	0	6	1	0	1	1	1	2	0	8
Motorcycle	2	0	1	2	1	1	1	1	1	0	1
Other	1	1	1	1	1	2	4	0	1	2	1

*FMR surveys (1993 - 1999) include the home-to-school commute as well as the home-to-work commute.

CLEAN CITIES PROGRAM

Vehicle miles traveled in the region have increased from 12 million miles a day in 1990 to nearly 20 million miles a day in 1999. As vehicle miles increase, air quality suffers since approximately 70 per cent of our air pollution is caused by motor vehicle use. The increasing miles being traveled gave birth to the Tucson Region Clean Cities Program.

The Tucson Region Clean Cities Program is a partnership of public and private agencies and businesses committed to improving air quality through the promotion of the use of alternative fuels

and alternative fuel vehicles (AFVs). The National Clean Cities Program is administered by the U.S. Department of Energy which formally established the Regional Program in the Tucson Area in August, 1999. The Regional Program maintains a fuel-neutral position with respect to the promotion and use of specific alternative fuels. Currently regional emphasis is on the use of Liquefied Petroleum Gas (LPG), Compressed Natural Gas (CNG) and Electricity.

The known AFV inventory in the region in 1999 was 502 compared to the currently known inventory of 847 with a projection of 1237 by 2003. The projected figure is considered to be a very conservative estimate, because AFVs are gaining in acceptance and popularity as fleet managers and the general public become aware of the benefits of owning and using AFVs. In addition, State and Federal Agencies and fuel providers are required by the Energy Policy Act of 1992 (EPACT 92) to begin procuring AFVs during their annual vehicle buys for replacing their older vehicles.

An obstacle to the proliferation of AFVs is an inadequate support infrastructure. The electric infrastructure is sufficient at this time with 12 electric recharging stations throughout the metropolitan area plus one in Casa Grande to facilitate travel between Tucson and Phoenix. Likewise, LPG (Propane) refueling is available throughout the region. By 2003, it is projected that the number of electric recharge stations will reach 25 and LPG will continue to be readily available. The significant infrastructure drawback is the lack of CNG refueling stations that are accessible to the public. Although the region has 8 CNG stations in place, none of them are available to the general public. With the assistance of financial grants provided by the State of Arizona Energy Office, efforts are underway to form private-public partnerships that would construct at least 3 publicly accessible CNG refueling stations in the region by 2003.

The Tucson Region Clean Cities Program Steering Committee meets bi-monthly to network, exchange information and work on the goals and objectives of the Clean Cities Plan that was adopted in August, 1999. The Clean Cities Program is currently staffed on a part-time basis, providing staff support to the Steering Committee, coordinating and participating at community outreach events to promote AFVs and acting as a clearing house for the fledgling Clean Cities Program to advocate use of alternative fuels.

SUNTRAN

SunTran provides fixed route transit service within the City of Tucson, with limited service into Pima County, the City of South Tucson and the Town of Oro Valley. Currently 48 percent of SunTran's fleet operates on compressed natural gas (CNG). SunTran operates 50 dedicated CNG buses, and 47 dual fuel buses. All new buses purchased will be dedicated CNG.

To accommodate its growing CNG fleet, SunTran and the City of Tucson opened a CNG fueling facility in October 1995. The new facility is the largest CNG vehicle fueling site in Arizona. SunTran's advanced fueling system accommodates 102 buses.

The environmental benefits of using CNG are significant. One of the safest alternate fuels available, CNG emits significantly less particulates than traditional diesel-fueled vehicles.

While all of SunTran's transit centers offer accessibility features, in December 1994 SunTran opened Tohono Tadaí Transit Center, Arizona's first transit center built to Americans with Disabilities Act (ADA) guidelines. From the earliest design stages through construction, the City of Tucson and SunTran worked closely with persons with disabilities and community organizations. By incorporating their input, features were added to the design that exceed ADA requirements while creating a facility that is user friendly and accessible. Tohono Tadaí Transit Center's accessibility features promote independence for persons with disabilities such as vision impairment, mobility impairment/wheelchair users, and hearing impairment. SunTran also serves 21 free park and ride lots. To support multi-modal transportation, all buses have bike racks that allow passengers to bike and ride.

SunTran currently operates 174 wheelchair accessible buses, which is 88 percent of its fleet. All weekend busses are wheelchair accessible.

A Comprehensive Operations Analysis was conducted for SunTran from November 1996 to June 1997. The analysis of transit operations is done to evaluate the efficiency and effectiveness of the transit system and to consider possible improvements. The study featured both an onboard and a community wide survey.

The total ridership for FY 1998-99 was 15,199,693 passenger trips on the standard routes. The average trip length is 3.5 miles. Strong transit campaigns and the impact of the PAG Travel Reduction Program promotion of SunTran have all helped to minimize the reduction in ridership in the Tucson metropolitan area.

TUCSON AREA INTELLIGENT TRANSPORTATION SYSTEMS

In 1994, the Tucson area received a federal grant to study the application and benefits of ITS in eastern Pima County. Since that time, PAGTPD has been coordinating the development and implementation of ITS in the Tucson area. Management and deployment of the program is aided by the establishment of a multi-jurisdictional Tucson Area ITS Working Group.

ITS uses real-time, travel-related information to integrate all components of a traditional transportation system (roads, transit, traffic control devices, vehicles, and drivers) into an interconnected network. By using advanced technologies in electronics, information processing, and communications to gather, process, and distribute information necessary for maintaining the functioning system, ITS results in more effective use of available transportation system capacity, while enhancing the overall efficiency of the system itself. In turn, this increased efficiency enhances mobility, and improves both safety and environmental quality.

The ITS Strategic Deployment Plan (SDP), published by PAGTPD in June of 1996, identified a guideline for the integrated implementation of ITS projects throughout the Tucson metro area. This guideline defines four basic components of an ITS infrastructure, which satisfy both the goals of the user services, and the parameters of the communication network identified by the study. These components are the Transit Management System, the Arterial Traffic Management System, the Freeway Management System (FMS), and the Regional Traveler Information Center.

The first Tucson Area ITS SDP Progress Update was published by PAGTPD in March 1998. It serves to update the status of ITS deployment in the area as a supplement to the original Plan. Additionally, the first Tucson Area ITS Newsletter was also published by PAG in March 1998.

PAG, in coordination with the Tucson Area ITS Working Group, is developing a new ITS strategic plan for the greater Tucson metropolitan area. The new Tucson Area ITS Strategic Deployment Plan -21st Century will replace the original ITS Plan completed in June 1996.

The new Plan will identify local transportation options with the assistance of an ITS Citizens' Advisory Committee as well as various ITS Technical Advisory Committees (TAC). The various TAC's will examine details associated with ITS issues such as necessary communications infrastructure, transit, ITS data and traveler information, costs and fiscal considerations, intermodal applications, freeway management, etc., providing an expansion upon the original four basic ITS components identified in the original ITS strategic plan.

The study will result in a "roadmap" for implementation of ITS projects and programs in the PAG region for the next 10-15 years. The new Plan will propose a five-year capital ITS program along with an extended intermediate plan to be defined in more detail on an annual basis. This approach aims at mainstreaming ITS projects into traditional transportation planning and programming processes as well as identifying more cost efficient programming and operation of ITS related projects. Additional ITS programs and applied research studies will evolve from the new ITS Plan.

The ITS Plan relies heavily on the establishment of a Regional ITS System Architecture which clearly identifies in-place, programmed and planned ITS projects along with their integration and operation. This System Architecture will provide an accurate record of the region's ITS program while also maintaining consistency with the National ITS Program.

TRAFFIC SIGNAL COORDINATION

The City of Tucson, Arizona Department of Transportation, Pima County, Marana, Oro Valley, Sahuarita, and the City of South Tucson have been in partnership to provide a "seamless" traffic signal operation across jurisdictional boundaries since the early 1990's. The partnership has resulted in the interconnection of traffic signals, in and adjacent to the City of Tucson, into a single central

coordinated operation. The system has been expanded to encompass all of the traffic signals in the Greater Tucson Metropolitan Area by June 30, 2001. All funding is in place.

The central hub of the traffic signal interconnect system and the major ITS components cited earlier is the City of Tucson Transportation Control Center (TCC). The TCC computer provides the necessary coordination "pulse" to the signals to allow each governmental jurisdiction responsible for the intersection to operate the traffic signal controller equipment in a coordinated mode with other traffic signal controllers and monitor the traffic signal operation. Thus, drivers moving within and from one governmental authority to another can pass through a system of traffic signals whose timing is coordinated to result in the mathematically best possible flows to reduce delay and accidents and to improve air quality.

Coordination of the signal timing along the major arterials serving the region has historically reduced delay, improved air quality, and reduced accidents. Connected signals will show as much as 10% improvement in CO emissions at those sites. Also, the integrated signal system has an emergency alert system to notify each governmental jurisdiction of traffic signal failures within a few seconds. The emergency alert system provides for quicker emergency response and equipment repair of intersections with failed signals.

In addition to the "seamless" interconnection of the traffic signals, the City, in conjunction with the Federal Highway Administration and the University of Arizona, is working on advanced technology to develop "smart corridors of signals" that can adapt the traffic signal timing on a real-time basis to meet forecasted traffic flows beyond the current technology of vehicle actuation and time of day operations. The system is called "RHODES"¹. Field testing is scheduled to take place in Tucson during 2000.

The City of Tucson Transportation Control Center will soon be linked with the Freeway Management Center in Phoenix, providing coordination of Intelligent Transportation Systems beyond the Tucson region.

¹Real Time, Hierarchical, Optimum seeking, Distributed processing, Effective systemization of the traffic control process.

A grant from State Legislature for Fiscal Year 1998-99 was used to expand the central system software to interconnect, monitor, and provide emergency alerts to the responsible traffic signal governmental agency of approximately half of the signals in operation in the Greater Tucson Metropolitan Area. Funding has also been obtained to include the remaining signals.

Expansion of the system has resulted in the expansion of "smart-corridors" throughout the area and especially the arterial systems connected to the Freeway system in Tucson.

FREEWAY MANAGEMENT SYSTEM

PAG, in coordination with local jurisdictions, has completed the design for Phase I of the Tucson Area Freeway Management System (FMS). Funds made available by the Pima Association of Governments for the design of Phase I, coupled with construction moneys provided by the Arizona Department of Transportation, have accelerated Phase 1 implementation of the FMS. Construction activities for Phase 1 FMS will take place starting in July 2000. Currently, estimated FMS operation is planned to begin in late 2001.

In Pima County, travel demand on the I-10 and I-19 freeways is expected to increase dramatically over the next 20 years. Even with major freeway corridor improvements programmed for implementation over the next 10-15 years, significant congestion is still expected over the long term. Through the implementation of the FMS, Pima County and the Greater Tucson Metropolitan Area will be able to reduce the anticipated growth in congestion. The principle purpose of the FMS is to instrument the sections of I-10 and I-19 carrying the heaviest traffic flows to allow ADOT and emergency services agencies to more quickly respond to traffic conditions and incidents.

The FMS will use twelve Closed Circuit Television cameras with the ability to tilt, zoom, and pan 359 degrees to monitor traffic. The cameras will be placed along the mainline so that they can be used to observe traffic on the connecting arterials as well as the Interstates. Eight Variable Message Signs will also be used to provide up to date information for drivers. FMS equipment will be installed along the Interstate system so that the FMS will remain functional during and after planned future capacity

expansions along the Interstates. The City of Tucson Transportation Control Center will serve as the operations headquarters for the FMS. All maintenance and detection information of the FMS will also be directly linked to the City of Tucson 911 Center, the State Department of Public Safety 911 Center, and Traffic Operations Center in Phoenix. This will allow for enhanced emergency response times as well as maintaining monitored coverage during non-business hours.

CONFORMITY OF THE TIP

In order for PAG and the U.S. Department of Transportation (US DOT) to determine that this TIP is in conformity with the applicable air quality implementation plan (the SIP), the TIP must meet the conformity requirement findings in Arizona Administrative Code R18-2-1401 et seq.

This TIP is derived from, and consistent with, the 1998 through 2020 PAG Metropolitan Transportation Plan. As described in previous TIPs, the following three conformity findings are required:

PAG finds by adoption of this TIP that the TIP provides for, or does not impede, the implementation of all Transportation Control Measures (TCM) in the applicable air quality implementation plan (SIP) on the schedule set forth in the SIP.

PAG also finds by adoption of this TIP that CO emission levels, microscale and regional, resulting from implementation of the TIP will not interfere with maintenance of the CO NAAQS throughout the non-attainment area during the period covered by the program.

In addition, PAG finds, by adopting this TIP that implementation of the program would not cause or contribute to a violation of the CO NAAQS anywhere within the non-attainment area during the period covered by the program.

The Clean Air Act, as amended in 1990, requires conformity of the TIP to the "applicable air quality implementation plan's" (SIP's) purpose of eliminating or reducing the severity and number of

violations of the NAAQS and achieving expeditious attainment of such standards; and that TIP activities will not cause or contribute to any new violation of any standard in any area, increase the frequency or severity of any existing violation of any standard in any area, or delay timely attainment of any standard or any required interim emission reductions or other milestones in any area.

PAG finds by adopting this TIP that the TIP is in conformity with the applicable air quality implementation plan's (SIP's) purpose of attaining (maintaining) compliance with the CO NAAQS. PAG also finds by adopting this TIP that the CO NAAQS was attained in 1990 and that TIP projects will not contribute to any new violation of the CO NAAQS or delay any required emission reductions or other milestones in any area.

EPA promulgated a final rule on April 24, 2000 to redesignate the Tucson Air Planning Area (TAPA) to attainment for the carbon monoxide (CO) National Ambient Air Quality Standard (NAAQS) and to approve a maintenance plan that will insure that the area remains in attainment. EPA confirmed in the rule that no emissions budget test is needed to demonstrate conformity as long as the maintenance plan is followed and no violations of the CO NAAQS occur.

In Pima County, CO mobile source emissions estimates are calculated by PDEQ and/or PAG using MOBILE5a emission factors. The MOBILE5a emission factors are developed from local data, to the extent possible, including state I/M program, oxyfuels program, and local (County) vehicle registration distribution. PAG Transportation Planning Division (PAGTPD) uses the most recent population data (from the PAG Population Handbook, 1998 as published in July, 1999, in combination with State and local transportation and traffic data to generate vehicle miles traveled (VMT), vehicle hours traveled (VHT) and congestion levels. All these updated data sources were used for the air quality evaluation of this TIP. PDEQ is the designated air quality control agency for Pima County. PAG is the designated regional air quality planning agency and the MPO.

PAG finds, by adopting this TIP, that the Regional Transportation Improvement Program for FY 2001-2005 is in conformity with the SIP. PAG also affirms by adopting this TIP that it is consistent with the 1998 through 2020 Metropolitan Transportation Plan.

CONFORMITY OF THE PLAN

The PAG Regional Council and the U.S. Department of Transportation made a conformity determination for the 1998 through 2020 PAG Metropolitan Transportation Plan (MTP) in 1998, and reaffirmed that determination in 1999. It was found to be in conformity with the SIP following conformity procedures outlined in the Federal transportation conformity rule (40 CFR Part 93) and the State of Arizona conformity rule (R18-2-1401 et. seq.). Air quality analyses have been performed on the MTP showing the following average winter day CO emissions levels for 1990 (base year), 2000, 2010 and 2020:

Table 3: CO Emissions Levels

YEAR	TOTAL VMT	CO EMISSIONS (TONS)
1990	14,982,125	444.8
2000	20,860,738	316.4
2010	27,286,950	367.2
2020	32,760,981	428.7

PAG finds by adopting this TIP that the MTP continues to be in conformity with the SIP.

REGIONAL AIR QUALITY CONFORMITY ASSESSMENT

PAG is the designated air quality planning agency for the region and, as such, maintains close, cooperative relationships with the U.S. Environmental Protection Agency (EPA), Arizona Department of Environmental Quality (ADEQ), Arizona Department of Transportation (ADOT), and Pima County Department of Environmental Quality (PDEQ). Coordination of regional transportation planning with air quality planning has been carried out for many years. In April 1993, the procedures, methods and responsibilities for air quality planning were incorporated in a Memorandum of Agreement (MOA) between PAG, ADEQ, ADOT and PDEQ. That MOA will be updated in 2000.

In summary, the Regional Council of the Pima Association of Governments finds, by adopting this TIP, that the TIP and all projects contained in this TIP are in conformity with the applicable implementation plan, the SIP.

APPENDIX 1 - PAG'S FY 2001 - 2005 TIP TABLES

The tables on the following pages present PAG's Regional TIP for the five-year period beginning in FY 2001 and ending with FY 2005. Project priorities are indicated by the year during which the project is programmed to utilize the designated funds. For federally funded projects, the year programmed refers to the federal fiscal year ending September 30th. For state and locally funded projects from sources other than federal, the year programmed refers to the fiscal year ending June 30th.

The TIP includes federally funded transportation system improvements (highways, transit, airports, etc.) and, for informational purposes, non-federally funded transportation system improvements of regional significance. The project sponsor is the agency responsible for implementation and is identified with each project. The tables present information in columns that cover the following:

1. TIP ID: Each project has a project ID number that is used to identify the projects in the text and on any reference maps.
2. Project Name: Each project is identified by its location and beginning and ending points, where applicable.
3. Project Description: The general scope of each project is described.
4. Length: The length of the project in miles, where applicable.
5. Total Cost: The total cost of the project including studies, design and construction in thousands of dollars.
6. Yearly Costs: Costs associated with the project in the years one to five as applicable in thousands of dollars.
7. Phase: Phase indicates whether the funds are programmed for Study, (D) Design, (R) Right of Way, or (C) Construction
8. Funding Source: The funding source or sources. Funding source acronyms are listed in Appendix 3.

* Unless otherwise designated, the funding ratio for STP and NBP projects is assumed to be 94.3% federal/5.7% local match. Transit projects are 80% federal and 20% local match unless otherwise shown. These ratios conform to historical ratios.

APPENDIX 2 - FUNDING SUMMARY BY JURISDICTION AND TOTAL PROGRAM

ADOT

	2001	2002	2003	2004	2005	Totals
IM	60400	3822	0	0	1800	66022
HELP	1150	0	650	0	0	1800
ASTP	14927	5800	680	0	6000	27407
TEA	685	1305	0	63	0	2053
NH	23613	21980	0	15500	1800	62893
2.60%	14937	6300	6200	5200	12200	44837
Local	0	0	2000	0	0	2000
State	1375	399	0	200	0	1974
Totals	117087	39606	9530	20963	21800	208986

Marana

	2001	2002	2003	2004	2005	Totals
12.60%	5500	4850	8375	800	8000	27525
PDAF	200	0	0	0	0	200
Local	1400	740	650	700	900	4390
STP	0	1401	0	0	0	1401
Totals	7100	6991	9025	1500	8900	33516

Oro Valley

	2001	2002	2003	2004	2005	Totals
STP	1693	4001	8408	2370	1200	17672
12.60%	3310	120	0	1200	3100	7730
PDAF	170	0	0	0	0	170
Local	547	649	727	625	980	3528
Totals	5720	4770	9135	4195	5280	29100

PAG

	2001	2002	2003	2004	2005	Totals
STP	2035	2654	2686	2717	2636	12728
FTA	94	94	96	0	0	284
ADEQ	373	373	373	373	373	1865
12.60%	5930	2323	1177	2391	2545	14366
TENH	199	200	200	200	200	999
Local	217	86	88	67	62	520
Totals	8848	5730	4620	5748	5816	30762

Pima County

	2001	2002	2003	2004	2005	Totals
Bonds	12118	36120	33641	30411	51918	164208
TEA	1000	443	0	0	0	1443
DIFO	611	2418	2969	2878	10683	19559
12.60%	7215	8119	705	1175	1530	18744
DEMO	808	4540	6000	4166	0	15514
STP	100	100	5740	5860	100	11900
FAA	68	0	0	413	12	493
HELP	3000	293	290	3575	30297	37455
Local	3240	12135	6773	3346	6085	31579
State	2183	1097	300	220	1	3801
PVT	0	2500	0	1000	0	3500
COT	0	355	0	0	0	355
BR	0	1200	1200	600	0	3000
Totals	30343	69320	57618	53644	100626	311551

Sahuarita

	2001	2002	2003	2004	2005	Totals
STP	50	363	297	290	3172	4172
12.60%	25	240	0	0	500	765
Local	3	22	18	0	19	62
Totals	78	625	315	290	3691	4999

South Tucson

	2001	2002	2003	2004	2005	Totals
12.60%	3800	0	2000	1050	1400	8250
Totals	3800	0	2000	1050	1400	8250

TAA

	2001	2002	2003	2004	2005	Totals
TAA	2107	4984	2176	2313	525	12105
FAA	5803	5549	10346	7368	5984	35050
PDAF	300	0	0	0	0	300
State	3837	2792	2660	2926	2374	14589
Totals	12047	13325	15182	12607	8883	62044

Tucson

	2001	2002	2003	2004	2005	Totals
STP	7397	6365	4502	3932	3958	26154
12.60%	15860	8150	4400	4400	4400	37210
TEA	872	0	471	0		1343
HELP	14400	0	0	0	0	14400
FTA	13708	15462	16702	9509	6459	61840
PDAF	150	0	0	0	0	150
Local	24223	9602	4732	3285	3757	45599
Totals	76610	39579	30807	21126	18574	186696

Tucson Transit

	2001	2002	2003	2004	2005	Totals
FTA	13708	15462	16702	9509	6459	61840
STP	784	943	0	0	0	1727
Local	2741	2031	1443	1433	1277	8925
Totals	17233	18436	18145	10942	7736	72492

All Sponsors

	2001	2002	2003	3004	2005	Total
12.60%	41640	23802	16657	11016	21475	114590
2.60%	14937	6300	6200	5200	12200	44837
ADEQ	373	373	373	373	373	1865
ASTP	14927	5800	680	0	6000	27407
Bonds	12118	36120	33641	30411	51918	164208
BR	0	1200	1200	600	0	3000
COT	0	355	0	0	0	355
DEMO	808	4540	6000	4166	0	15514
DIFO	611	2418	2969	2878	10683	19559
FAA	5871	5549	10346	7781	5996	35543
FTA	13802	15556	16798	9509	6459	62124
HELP	18550	293	940	3575	30297	53655
IM	60400	3822	0	0	1800	66022
Local	29630	23234	14988	8023	11803	87678
NH	23613	21980	0	15500	1800	62893
PDAF	820	0	0	0	0	820
PVT	0	2500	0	1000	0	3500
State	7395	4288	2960	3346	2375	20364
STP	11275	14884	21633	15169	11066	74027
TAA	2107	4984	2176	2313	525	12105
TEA	2557	1748	471	63		4839
TENH	199	200	200	200	200	999
Totals	261633	179946	138232	121123	174970	875904

APPENDIX 3 - FUNDING SOURCES

Fund Name	Description
2.6%	Highway User Revenue Funds reserved for State Highways
12.6%	Highway User Revenue Funds
ADEQ	Arizona Dept. of Environmental Quality
ASTP	Federal STP Funds Programmed by ADOT
BOND	Local Jurisdiction Bond Funds
BR	ADOT Federal Bridge Funds
DEMO	Federal High Priority Project Funds
DIFO	Local Funds Generated by Development Impact Fee Ordinances
FAA	Federal Aviation Administration
FED	Federal Sources
FTA Sec 3	FTA Capital Assistance Funds Sec 3
FTA Sec 5307	Federal Transportation Administration Sec 5307
FTA	Federal Transit Administration
IM	Federal Interstate Maintenance Program
LOCAL	Local Jurisdiction Sources
NHS	Federal National Highway System
PDAF	Project Development Activity Funds (subcategory of 12.6%)
PFC	Passenger Facility Charge (Airport)
PVT	Private Contributions
STATE	Non Federal State Funds
STP	Federal Surface Transportation Program Funds Programmed by PAG
TAA	Tucson Airport Authority Funds
TEA	Transportation Enhancement Funds Programmed by ADOT
TENH	STP Funds Programmed by PAG for Transit Enhancement Purposes

The local share for roadway and transit improvements refers to funds contributed by local governments and does not include any federal or state funds. The local share for Airport improvements sponsored by TAA does not include any contributions by local governments but represents revenue derived from the operation of the airport. Airport improvements sponsored by Pima County include revenue from the operation of County owned airports plus Pima County General Funds.

APPENDIX 4 - GLOSSARY OF TERMS AND ACRONYMS

ADA	American with Disabilities Act
ADEQ	Arizona Department of Environmental Quality
ADOT	Arizona Department of Transportation
ADT	Average Daily Traffic
AFV	Alternate Fuel Vehicle
AMU	Alternate Mode Usage
ASTM	American Society for Testing Materials
CAAA	Clean Air Act Amendments of 1990
CIP	Capital Improvement Plan
CMAQ	Congestion Mitigation and Air Quality Improvement Program
CNG	Compressed Natural Gas
CO SIP	Carbon Monoxide State Implementation Plan
CO	Carbon Monoxide
CTAC	Citizens Transportation Advisory Committee
EPA	Environmental Protection Agency
FAA	Federal Aviation Administration
FHWA	Federal Highway Administration
FIP	Federal Implementation Plan
FMS	Freeway Management System
FMVCP	Federal Motor Vehicle Control Program
FTA	Federal Transit Administration
FTE	Full time employee
FY	Fiscal Year
HC	Hydrocarbons
HURF	Highway User Revenue Funds
I/M	Inspection and Maintenance Program
ISTEA	Intermodal Surface Transportation Efficiency Act of 1991
ITS	Intelligent Transportation Systems

IVHS	Intelligent Vehicle Highway Systems
OWP	PAG's Overall Work Program
MMP	Mobility Management Plan
MOA	Memorandum of Agreement
MPO	Planning Organization
MTP	Metropolitan Transportation Plan
MTPD	Metric Tons Per Day
NAAQS	National Ambient Air Quality Standards
NHS	National Highway System
NOX	Oxides of Nitrogen
PAG	Pima Association of Governments
PAGTPD	PAG's Transportation Planning Division
PCDOT	Pima County Department of Transportation
PDEQ	Pima County Department of Environmental Quality
PPC	Priority Planning Committee
ppm	parts per million
RAQCA	Regional Air Quality Conformance Assessment
RS	Regional Significance
RTA	Regional Transportation Authority
SDP	Strategic Deployment Plan
SIP	State Implementation Plan
SRTP	Short Range Transit Plan
STIP	State Transportation Improvement Program
STP	Surface Transportation Program
TAA	Tucson Airport Authority
TAP	Transportation Action Program
TAPA	Tucson Air Planning Area
TCM	Transportation Control Measures
TE	Transportation Enhancements
TEA-21	Transportation Equity Act for the 21st Century of 1998
TIP	Transportation Improvement Program

TPC	Transportation Planning Committee
TPY	Tons Per Year
TRO	Travel Reduction Ordinance
TRP	Travel Reduction Program
US DOT	U.S. Department of Transportation
VHT	Vehicle Hours Traveled
VMT	Vehicle Miles Traveled

APPENDIX 5 - PREVIOUS TIP PROJECTS

The following table provides data regarding projects that were previously listed in the TIP and have been completed or progressed to a stage where additional funding is not needed within the current 5 year program.

APPENDIX 6 - FEDERAL CERTIFICATIONS

In the Tucson Arizona urbanized Area, the City of Tucson plans and operates the local transit system. This function has been delegated to the City of Tucson by the PAG Regional Council.

PRIVATE SECTOR PARTICIPATION AND FINANCIAL CAPABILITY

The City is the FTA grantee and has adopted procedures and policies that meet FTA requirements; these are effectively PAG's processes, as the Metropolitan Planning Organization (MPO), for inclusion of private enterprise participation in transit planning, programming and operations. In fact, PAG helped formulate these private sector participation procedures.

PAG certifies, through adoption of this TIP, that the required local process for private sector participation and transit operator's financial capability has been followed as part of the TIP/AE documentation/submission process. PAG staff has monitored and reviewed them each year in conjunction with the development of both the Short Range Transit Plan (SRTP) and the transit portion of the TIP.

METROPOLITAN TRANSPORTATION PLANNING PROCESS SELF-CERTIFICATION

The Arizona Department of Transportation and the Pima Association of Governments, the Metropolitan Planning Organization for the Tucson urbanized area(s) hereby certify that the transportation planning process is addressing the major issues in the metropolitan planning area and is being conducted in accordance with all applicable requirements of:

- I. 49 U.S.C. Section 5323(k) and 23 U.S.C. 134;
- II. Title VI. Of the Civil Rights Act of 1964 and the Title VI. Assurance executed by each State under 23 U.S.C. 324 and 29 U.S.C. 794;
- III. Section 1101 of the Transportation Equity Act for the 21st Century (Pub. L. 105-178) regarding the involvement of disadvantaged business enterprises in the FHWA and the FTA funded project (Sec. 105(f), Pub. L. 97-424, 96 Stat. 2100, 49 CFR part 23);
- IV. The provisions of the Americans with disabilities Act of 1990 (Pub. L. 101-336, 104 Stat. 327, as amended) and the U.S. DOT implementing regulation;
- V. The provision of 49 CFR part 20 regarding restrictions on influencing certain activities; and
- VI. Sections 174 and 176(c) and (d) of the Clean Air Act as amended (42 U.S.C. 7504, 7506(c) and (d)). (Note - only for Metropolitan Planning Organizations with non-attainment and/or maintenance areas within the metropolitan planning area boundary.)

Pima Association of Governments

Arizona Department of Transportation

Thomas L. Swanson, Executive Director

Date

Mary E. Peters, Director

Date