

**REGIONAL TRANSPORTATION IMPROVEMENT PROGRAM
FY 2000 THROUGH FY 2004**

Pima Association of Governments (PAG)

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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, ridesharing, 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.

All the projects listed in this document 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 2000 to 2004. A complete project listing by jurisdiction is contained in Appendix C. Total programmed expenditures for this time period exceed \$775 million dollars. All yearly costs are expressed as 2000 dollars, while all subsequent year costs are a mixture of current and inflated dollars. This is due to the different budgetary requirements of the various PAG member jurisdictions.

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 shall be provided a reasonable 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 nonmotorized users;
- Increase the accessibility and mobility options for people and freight;
- 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.

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 Metropolitan Transportation Plan (MTP).

Federal legislation (Title 23, Section 134, Part h) requires a TIP. 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 shall include 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 ridesharing, 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 Projects. Information on other projects, which are locally funded, is included as available.

Contributing Jurisdictions or Agencies: Information on upcoming 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 annual TIP update. 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 and alternate modes 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 1, 1999.

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 September 22, 1999.

A typical schedule for TIP development is shown on the following page.

TYPICAL TIP DEVELOPMENT SCHEDULE

Pima Association of Governments Transportation Improvement Program (TIP) FY 2000-2004 DRAFT TIP Subcommittee Meeting Schedule for 1999 (Subject to change)																																					
ACTIVITIES	TIP FY 2000-2004 PROGRAM DEVELOPMENT																																				
	PROJECT SOLICITATION																																				
	PROJECT SUBMISSIONS																																				
	PROJECT EVALUATION																																				
	PREPARE DRAFT TIP																																				
	PUBLIC INVOLVEMENT																																				
	PREPARE FINAL DRAFT TIP																																				
	FINAL DRAFT SUBMISSION / APPROVAL																																				
	AIR QUALITY CONFORMITY																																				
	PREPARE FINAL TIP																																				
DATE	06-Jan-99	14-Jan-99	26-Jan-99	27-Jan-99	03-Feb-99	11-Feb-99	23-Feb-99	24-Feb-99	03-Mar-99	11-Mar-99	23-Mar-99	24-Mar-99	01-Apr-99	07-Apr-99	15-Apr-99	27-Apr-99	28-Apr-99	05-May-99	13-May-99	25-May-99	26-May-99	02-Jun-99	10-Jun-99	22-Jun-99	23-Jun-99	07-Jul-99	15-Jul-99	27-Jul-99	28-Jul-99	04-Aug-99	12-Aug-99	24-Aug-99	25-Aug-99	01-Sep-99	09-Sep-99	22-Sep-99	
	W	TH	T	W	W	TH	T	W	W	TH	T	W	TH	W	TH	T	W	W	TH	T	W	W	TH	T	W	W	TH	T	W	W	TH	T	W	W	TH	W	
MEETING	TPC				TPC				TPC				TPC					TPC				TPC				TPC					TPC					TPC	
		MC				MC				MC				MC					MC				MC				MC					MC					MC
			TIP				TIP				TIP				OH		TIP				TIP				TIP					TIP					TIP		
				RC				RC				RC				RC				RC				RC				RC					RC				RC
	TIP	TIP Subcommittee Meeting															RC	Regional Council Meeting										OH	TIP Open House								
	TPC	Transportation Planning Committee Meeting															MC	Management Committee Meeting																			

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 Committee (PPC) (mandated by A.R.S. 28-6951). The PPC 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 Transportation Planning Division (PAGTPD) performs transportation planning activities within the region.

The Pima Association of Governments Transportation Planning Committee (TPC) provides guidance to the 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, 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.

All 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 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 Avra Valley 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 for implementation are selected 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 involves 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 includes: 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 is 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 2000.

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 subregional studies have been conducted: the Continental Ranch Subregional Transportation Study in 1997 and the Dove Mountain Subregional Transportation Study in 1999. The Master Transportation Plan will be updated in 1999, and will provide fiscally constrained project phasing through the year 2020 and 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 2000-2004 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 2000-2004 TIP Open House was held at the Randolph Golf Course Clubhouse on April 1, 1999. Approximately 5,000 copies of an English/Spanish flyer advertising the Open House were widely distributed to PAG's mailing lists, jurisdictions, public libraries, and neighborhood associations. In addition, the Open House was advertised in the Arizona Daily Star, Tucson Citizen, and Aguila, a Spanish language newspaper and through new releases that resulted in substantial media coverage of the event. A 2000-2004 TIP Web Page also was developed which provided an opportunity for the public to review and comment on the candidate project lists on-line.

The 1999 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 100 people attended the 1999 Open House, of which 66 percent indicated they were not transportation professionals. A total of 138 public comment forms were received, either in the form of a TIP

survey (110 responses) or an open-ended written comment (28 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 on the following page. Additionally, a separate comprehensive document detailing the Public Involvement Effort for the FY 2000-2004 TIP was prepared and distributed.

TRANSPORTATION IMPROVEMENT PROGRAM (TIP) SURVEY RESULTS

1999 Regional Transportation Open House – April 1, 1999

Do you work in a job related to transportation or transportation planning?	YES	33%
Is the location of the Open House convenient?	YES	91%
Is the time of the Open House convenient?	YES	97%

<u>Transportation Projects should:</u>	<u>% Responses Ranked Important</u>	
	1999	1998
Enhance the quality of life in neighborhoods	72	80
Improve and/or avoid any negative impacts on air quality	81	79
Complete gaps in the transportation system for bicycles, pedestrians, transit, & automobiles	76	72
Address points of congestion	78	78
Include technologies such as signal coordination and video monitoring to improve traffic flow	72	75
Accommodate bicycles, pedestrians, and transit in addition to automobiles	75	76
Preserve the existing transportation infrastructure (roads, bridges, pavement, etc.)	62	74
Be part of adopted land use plans to help integrate transportation and land use planning	72	76
Be used by many people (i.e., serves larger number of bike trips/day, etc.)	61	55
Be completed within a specified time and at a specified cost	57	70
Have a positive impact on the economic vitality of an area	58	65
Not have adverse environmental or land use impacts on any specific population group	67	71
Be distributed widely throughout the community	59	68

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. The National Ambient Air Quality Standards (NAAQS) for outdoor or “ambient” air are 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 “nonattainment area” for that pollutant. When this happens, a nonattainment area plan must be developed and adopted to reduce emissions of that pollutant. The nonattainment 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 nonattainment 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 is designated by EPA as nonattainment for CO. This designation means that the ambient CO concentration in the nonattainment area has 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 have 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. The FIP was promulgated on 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 will be possible when certain deficiencies in the SIP are corrected. It is expected that these deficiencies will be corrected to meet all EPA requirements very soon and that EPA will be able to approve the **Carbon Monoxide Limited Maintenance Plan for the Tucson Air Planning Area** as a SIP amendment by the end of 1999. The EPA would concurrently approve redesignation of 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 will continue 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: one-time only vehicle inspection failure waiver and a gasoline lawnmower replacement 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
- 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 programs 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./Alvernon 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 hotspots 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.

The principal air quality evaluation of the TIP is done by calculating the year 2004 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 which must not be exceeded. The comparison for this TIP shows a decrease of 117.5 tons from 1990 base year to 2004. 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 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 hotspots most likely to be the location for future CO NAAQS violations. The intersections that qualified in 1998 with the highest average daily traffic (ADT) and the worst level of service (LOS) are as follows:

- Broadway/Kolb (#1 ADT, #1 worst LOS)
- Speedway/Campbell (#2 highest ADT)
- 22nd/Alvernon (#3 highest ADT)
- Speedway/Wilmot (#2 worst LOS)
- 22nd/Kolb (#3 worst LOS)

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):

- 22nd/Kolb 8.12 ppm
- Speedway/Wilmot 7.46 ppm
- Broadway/Kolb 6.98 ppm
- 22nd/Alvernon 6.86 ppm
- Speedway/Campbell 5.84 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 PAG RideShare Program has promoted carpooling activities throughout eastern Pima County since 1974 by providing personalized computer matching assistance and worksite

employer services to aid in the formation and maintenance of carpools. Since the implementation of the Travel Reduction Program (TRP) in 1988, the RideShare Program has expanded to promote increased participation rates in other alternate modes of transportation such as transit, walking, bicycling, and vanpooling for all trip purposes throughout eastern Pima County. One ongoing RideShare project aids parents with school age children in finding carpools at specific schools. Along with reducing traffic congestion at school locations, children are provided with an experience in the benefits of alternate modes of travel. In addition, special programs such as compressed work weeks, telecommuting and alternative fuel vehicles are being promoted by both TRP and RideShare.

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 1998, 232 employment sites completed the TRP process and 37% 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 1998 program year helped improve the environment by saving:

- 71.3 million driving miles
- 3.6 million gallons of gas
- 31.9 million dollars
- 2.9 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 (1998). 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. 1998 Regional Results

	1989	1998	% Change
TRO Goals	Baseline		
AMU %	NA	31	
VMT % change	NA	-34	
AMU Results %	17.59	29.29	+66.52%
VMT Results	47.29	49.08	+ 3.79%
Survey Response Rate %	68.48	84.74	+23.74%
Number of Sites	148	227	+53.37%
Number of Employees	77,230	106,274	+37.61%

TRO Travel Reduction Ordinance

AMU Employee 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 ridership

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	1
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.

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 52 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 27 free park and ride lots. To support multi-modal transportation, many buses have bike racks that allow passengers to bike and ride.

SunTran currently operates 174 wheelchair accessible buses, which is 86 percent of its fleet. Six of those buses are 26-foot low-floor Orions designed especially for people with limited mobility.

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 1997-98 was 14,860,000 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.

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 Tucson area's original Intelligent Vehicle Highway Systems (IVHS) "Early Deployment" study was designed to determine the most beneficial and appropriate method by which to create and apply a local ITS infrastructure. To best assess the comprehensive ITS needs of the Tucson area, the study was composed of two distinct elements; a determination of what user services would be most appropriate for the Tucson area, and an analysis of what communications architectures would best support those user services. The resulting recommendations for each element can be found in the companion documents: User Services/Options Study and the TCOM 2000 (Tucson Advanced Transportation Technologies Communication Plan, 1996). Through coordination with local officials, transportation professionals, and citizens, the study resulted in the development of the ITS Strategic Deployment Plan specific to the Tucson area.

The ITS Strategic Deployment Plan (SDP), published by PAGTPD in June of 1996, incorporates recommendations from both the User Services/Options Study and the TCOM 2000 to create 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, the Transit Management System, the Arterial Traffic Management System, the Freeway Management System (FMS), and the Regional Traveler Information Center are being deployed over three phases. The phases: Phase I (0-5 years), Phase II (5-10 years), and Phase III (10+ years) were also identified as part of the original SDP. Management and deployment of the program is aided by the establishment of a multi-jurisdictional Tucson Area ITS Working Group.

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. The newsletters keep the public informed of the many ITS related projects frequently deployed in the area.

TRAFFIC SIGNAL COORDINATION

The City of Tucson, Arizona Department of Transportation, Pima County, 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 and the software was scheduled to be under test in Tucson during the Summer and Fall of 1998.

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

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.

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, is nearing completion of 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 I implementation of the FMS. Phase I design of the FMS is expected to be completed by the end of 1999, with construction activities immediately following. Currently, estimated FMS operation is planned to begin in late 2000.

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 nonattainment 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 nonattainment 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.

The Clean Air Act, as amended in 1990, also requires all conformity determinations to be “based upon the most recent estimates of emissions, and such estimates shall be determined from the most recent population, employment, travel and congestion estimates as determined by the metropolitan planning organization or other agency authorized to make such estimates.” The TIP documentation must reference the published source of these estimates and the authority of those sources to make such estimates. Also, the Clean Air Act, as amended in 1990, requires that the TIP be consistent with the most recent estimates of mobile source emissions and provide for the expeditious implementation of transportation measures in the air quality plan (SIP).

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 2000-2004 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.

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.

CERTIFICATIONS FOR FEDERAL TRANSIT ADMINISTRATION

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.

PLANNING PROCESS CERTIFICATION

We certify that this Transportation Improvement Program and the Metropolitan Transportation Plan have been found to be in conformance with the State Implementation Plan, in accordance with § 109(j) of 23 U.S.C. and 40 CFR 93.100 *et seq.*

We certify that the planning process conducted by the Pima Association of Governments Metropolitan Planning Organization is being carried on in conformance with all applicable requirements of 23 CFR 450.334(a).

Mary E. Peters

Date

ARIZONA DEPARTMENT OF TRANSPORTATION

Thomas L. Swanson

Date

PIMA ASSOCIATION OF GOVERNMENTS

TEA-21 CERTIFICATION

We certify that this Transportation Improvement Program was developed by the Pima Association of Governments Metropolitan Planning Organization for the PAG metropolitan area in a cooperative process with the State of Arizona, as represented by the Arizona Department of Transportation.

We certify that this process was conducted in conformance with, and pursuant to, all applicable requirements of the Transportation Equity Act for the 21st Century (TEA-21).

George Miller, Chair

Date

PAG Regional Council

Mary E. Peters, Director

Date

ARIZONA DEPARTMENT OF TRANSPORTATION

On behalf of Jane Hull, Governor

STATE OF ARIZONA

APPENDICES

APPENDIX A: 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
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
SRTTP	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 21 st 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
W	Work Codes associated with the project

APPENDIX B: FUNDING SOURCES

Fund Name	Description
15%	Highway User Revenue Funds
ADEQ	Arizona Dept. of Environmental Quality
ADOT	Arizona Dept. of Transportation
BOND	Pima County Bonds Funds
BR	Bridge Funds
C/f	Carry Forward
DEMO	Demonstration Funds
DIFO	Development Impact Fee Ordinance
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	Interstate Maintenance
LOCAL	LOCAL Jurisdiction Sources
NHS	National Highway System
PAG/SPCL	Portion of Highway User Revenue Funds
PDAF	Project Development Activity Funds
PFC	Passenger Facility Charge (Airport)
PVT	Private Contributions
STATE	State Funds
STP	Surface Transportation Program Funds
TAA	Tucson Airport Authority Funds
TE	Transportation Enhancement Funds
UNF	Unfunded (design completed)

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 C: PAG'S FY 2000-2004 TIP TABLES

The tables on the following pages present PAG's Regional TIP for the five-year period beginning in FY 2000 and ending with FY 2004. 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 at the start of each section and top of each page. The tables present information in columns that cover the following:

1. **Project 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 scope of each project is described.
4. **Len**: The length of the project in miles, where applicable.
5. **LB**: For roadway projects, the number of lanes existing before the project has been started.
6. **LA**: For roadway projects, the number of lanes after the described project will be completed.
7. **RS**: RS stands for "Regional Significance". A Yes here indicates that the described project is on a regionally significant route.
8. **5-Year Costs**: The total five-year cost from all funding sources in thousands of dollars.

9. **Yearly Costs**: Costs associated with the project in the years one to five as applicable in thousands of dollars.

10. **Yearly Work (W) Codes**: Work codes associated with the project. The abbreviations are listed at the end of the table.

11. **Fund Type**: The funding source or sources. Funding source acronyms are listed in Appendix B.

** 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.